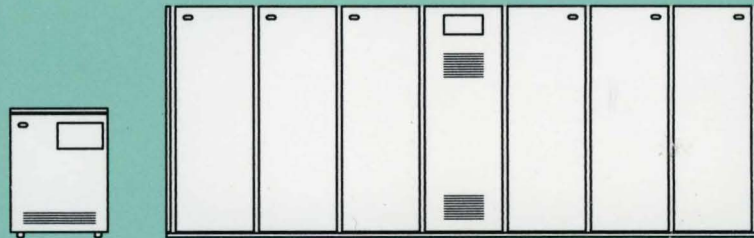


Advanced Operations Guide



3745
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IBM 3745 Communication Controller
Models 130, 150, 170, 210, 310, 410, and 610

SA33-0097-5

IBM 3746 Expansion Unit
Models A11, A12, L13, L14, and L15

Advanced Operations Guide

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page xv.

Sixth Edition (September 1991)

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Start — Read This First

This book describes advanced operator functions for the IBM 3745 Communication Controller. It is recommended that you use this book as follows:

1. If this is the first time you have used this book, read Chapter 1, "About This Book," especially "Conventions Used in This Book" on page 1-2 .
2. If you are not familiar with using the 3745 operator consoles, read Chapter 2, "Using the Operator Consoles."
3. Log on and do one of the following:

- Enter the acronym for a MOSS function.

Follow the instructions given on the screen carefully. Only if you need further help, refer to this book.

MOSS functions are listed alphabetically by acronym starting on page xxi .

- Enter DEX to access NCP or EP functions.

These are described in Chapter 24, "NCP and EP Functions."

- Enter CPP to access control program procedures.

These are described in Chapter 25, "Control Program Procedures (CPP)."

4. If you need help with an operator message, refer to Appendix A, "Messages."

In all cases, you can use the index following to locate information rapidly.

Replace this page by the separator:

"Start Page"



Replace this page by the separator:



"Start Page"



MOSS Functions

Models: No specific comment in the column 'Models' means the MOSS function is applicable to all models.

To set: **MOSS alone**, go to page 3-3.
MOSS offline, (MOF function) go to page 23-13.
MOSS online, (MON function) go to page 23-13.

Table 0-1 (Page 1 of 2). MOSS Functions (by Acronyms) and Required MOSS Statuses

| MOSS Functions by Acronyms and Required MOSS Statuses | | | | | Models | Page |
|---|--|----------------|----------------|----------------|---------------|-------|
| Acron. | MOSS Functions | Alone | Offline | Online | | |
| ABP | Address Compare and Branch Trace Parameter Display | | X | X | | 23-3 |
| BCK | Bypass CCU Check | | X | X | | 23-3 |
| BIK | Bypass IOC Check | | X | X | | 23-3 |
| CBT | Conditional Branch Trace | X | X | X | 130, 150, 170 | 23-4 |
| CDF | Configuration Data File | X ¹ | X ¹ | X ¹ | | 3-1 |
| CID | Channel Adapter Interface Display | X | X | X | | 23-4 |
| CNM | CCU Normal Mode | | | X | | 23-5 |
| CPP | Control Program Procedures | | X | X | | 25-1 |
| CSR | CCU Selection/Release | X | X | X | 410 and 610 | 23-6 |
| CST | CCU Status | X | X | X | | 23-6 |
| DAL | Display/Alter | | X | X | | 23-7 |
| DEX | Data Exchange | | X | X | | 23-9 |
| DIF | Disk Functions | X | X | | | 4-1 |
| DII | Disk IPL Information | X | X | X | | 5-1 |
| DLO | Display Long | | X | X | | 23-11 |
| EID | ESS Interface Display | | X | X | | 20-3 |
| ELD | Event Log Display | X | X | X | | 6-1 |
| FBK | Fallback | | | X | 410 and 610 | 7-1 |
| IL3 | CCU Level-3 Interrupt | | | X | | 23-12 |
| IML | MOSS IML | X | X | X | | 8-1 |
| IMS | Scanner IML | | | X | | 8-2 |
| IPL | 3745 IPL | X | X | X | | 9-1 |
| LID | Line Interface Display | | X | X | | 10-1 |
| LKP | Link IPL Ports | X | X | X | | 11-1 |

¹ The required MOSS status depends on the selected option (refer to the appropriate chapter).

Table 0-1 (Page 2 of 2). MOSS Functions (by Acronyms) and Required MOSS Statuses

| MOSS Functions by Acronyms and Required MOSS Statuses | | | | | Models | Page |
|--|-----------------------------------|----------------|----------------|----------------|---------------------------|-------|
| Acron. | MOSS Functions | Alone | Offline | Online | | |
| LTQ | (SAT) Request Link Test Program | X | X | X | | 17-11 |
| LTS | (SAT) Responder Link Test Program | X | X | X | | 17-17 |
| MCF | Microcode Fixes | X | X | | | 12-1 |
| MLT | Machine Level Table | X | X | X | | 13-1 |
| MOF | MOSS Offline | | | X | | 23-13 |
| MON | MOSS Online | | X | | | 23-13 |
| POS | Power Services | X | X | X | 210, 310, 410, and 610 | 14-1 |
| PSF | Port Swap File | X ¹ | X ¹ | X ¹ | | 15-1 |
| PSW | Passwords | X | X | X | | 16-1 |
| RAC | Reset Address Compare | | X | X | | 23-14 |
| RBT | Reset Branch Trace | | X | X | | 23-14 |
| RCK | Reset CCU Check | | X | X | | 23-14 |
| RCL | Reset CCU/LSSD | | X | X | | 23-14 |
| RIO | Reset IOC | | | X | | 23-15 |
| RIS | Reset I-Step | | X | X | | 23-15 |
| RST | Reset CCU | | X | X | | 23-15 |
| SAC | Set Address Compare | | X | X | | 23-16 |
| SAT | Stand-Alone Link Tests | | X | X | | 17-1 |
| SBT | Set Branch Trace | | X | X | | 23-18 |
| SBK | Switchback | | X | X | 410 and 610 | 18-1 |
| SCK | Stop On CCU Check | | | X | | 23-20 |
| SIK | Stop On IOC Check | | | X | | 23-20 |
| SIP | Set I-Step | | X | X | | 23-20 |
| SIT | Scanner Interface Trace | | X | X | | 19-1 |
| STP | Stop CCU | | X | X | | 23-21 |
| STR | Start CCU | | X | X | | 23-21 |
| TID | TRSS Interface Display | | X | X | | 20-1 |
| TIM | Time Services | X | X | X | | 21-1 |
| WTT | Wrap Test | | | X | | 22-1 |

¹ The required MOSS status depends on the selected option (refer to the appropriate chapter).

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Chapter 1. About This Book

This book applies to the IBM* 3745 Communication Controller Models 130, 150, 170, 210, 310, 410, and 610, and the IBM 3746 Expansion Unit Models A11, A12, L13, L14, and L15.

It describes only **advanced** operator functions for the 3745. These include the 3745 maintenance and operator subsystem (MOSS) functions and control program (NCP or EP) functions. Basic operator functions are described in the *3745 Basic Operations Guide* (see page 1-5 about 3745 user publications).

This book should be used as a **complement** to the MOSS functions invoked from the 3745 operator console.

This book is **not** intended for evaluating or learning about the 3745.

Who Should Use This Book

This book is intended for experienced 3745 operators and teleprocessing specialists supporting the 3745.

How This Book is Organized


This book is organized as follows:

- Start - Read This First
The normal entry point to this book, including an index and table of MOSS functions
- About This Book
- Using the Operator Consoles
- MOSS Menu 1 Functions
Sequenced alphabetically by acronym in several chapters
- MOSS Menu 2 Functions
Sequenced alphabetically by acronym in a single chapter
- NCP and EP Functions
Control program functions available via the MOSS DEX function
- Control Program Procedures (CPP)
Catalogued procedures available from the operator console.

Appendixes and back matter include:

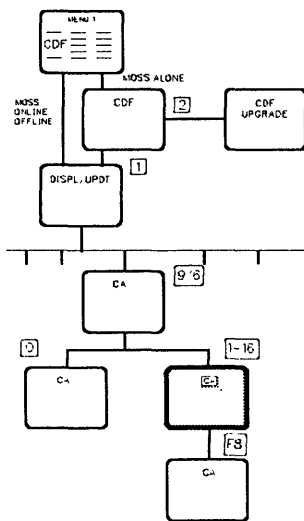
- Messages
- Machine Status Area
- Default and Personal Patterns for Wrap Tests
- List of Abbreviations
- Glossary
- Index.

Conventions Used in This Book

- A drawing of a key means you must press that key.
 - A solid box (■) indicates that a screen is displayed on the terminal.
- For example, when you see:
- C D F SEND ■ 9 SEND ■ 0 SEND
1. Enter C, D, F; then press SEND.
 2. A screen is displayed. On that screen, enter 9; then press SEND.
 3. Another screen is displayed. On that screen, enter 0; then press SEND.
- Text shown below a screen describes the most significant actions that you can perform, including any special F key options (that are not described on page 2-2).
 - MOSS functions are applicable to all 3745 models, unless the function description in this book is qualified by the model numbers as following:
 - Models 130, 150, 170 for models 130 150, and 170.
 - Models 210, 310, 410, 610 for models 210, 310, 410, and 610.
 -  means contact the appropriate service representative.

About Screen Representation

On the left side of a displayed screen there is a small chart showing the sequence of screens you have to go through before reaching the selected option. In this sequence, the shaded screen corresponds to the one enlarged on the right side of the page.



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY/UPDATE : CA 5

SWITCH : -         CAB : -         PS ID : -         ADDR : 0800
IOC    : 1         GROUP : 1         CCU   : A         TYPE : CADS

I/O ERROR ALERT (Y OR N)           : Y

TWO-PROCESSOR SWITCH MODE (TPS OR TCS) : TPS ■ A

===>
F1:END          F3:ALARM  F5:UPDATE  F6:QUIT  F7:PREVIOUS CA  F8:FWD
    
```

What Is New in This Book

This edition reflects the following enhancements:

- The Ethernet** subsystem (ESS) provides an attachment to Ethernet LANs. Ethernet V2 and 802.3 frames are supported. The following chapters have been updated to include ESS:
 - Chapter 2, Using the Operator Consoles
 - Chapter 3, Configuration Data File (CDF)
 - Chapter 6, Event Log Display (ELD)
 - Chapter 8, MOSS IML, Scanner IML
 - Chapter 11, Link IPL Ports (LKP)
 - Chapter 15, Port Swap File (PSF)
 - Chapter 19, Scanner Interface Trace (SIT)
 - Chapter 20, TRSS and ESS Interface Displays (TID/EID).
- In the MOSS CDF function, additional screens to display information concerning the new type of CCU.
 - The new type of CCU led to the creation of the new 3745 models 310 and 610.
- In the MOSS DIF function, modifications to EC install and restore disk from diskette procedures in order to support a NCP load module greater than 4MB.
- In the MOSS DII function, additional information concerning the dump overlay.

It also includes general improvements to the text.

Where to Find More Information

This book should be used in conjunction with the publications shown on page 1-5.

Transferring a dump to the host is described in:

- *IBM Advanced Communications Function for Network Control Program Versions 3, 4, and 5; Advanced Communications Function for System Support Programs, Version 3; Emulation Program for IBM Communication Controllers Release 5: Diagnosis Guide, LY30-5591.*

This manual will be referred to as the *NCP, SSP, and EP Diagnosis Guide*.

Transferring the BER file to the host, and printing it, are described in:

- *IBM Advanced Communication Function for Network Control Program, System Support Programs and Emulation Program: Diagnosis Guide, LY30-5591.*

This manual will be referred to as the *NCP, SSP, and EP Diagnosis Guide*.

The Synchronous Data Link Control (SDLC) is described in the *IBM Synchronous Data Link Control, General Information, GA27-3093*.

The scanner interface trace (SIT) function are described in:

- *IBM Advanced Communication Function for Network Control Program, System Support Programs and Emulation Program: Diagnosis Guide, LY30-5591.*

This manual will be referred to as the *NCP, SSP, and EP Diagnosis Guide*.

About This Book

For VTAM commands, you should refer to:

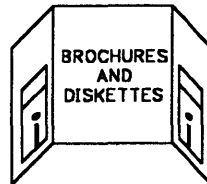
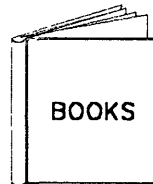
- *VTAM Operation*, SC23-0113
- *Network Control Program, System Support Program, Emulation Program, Resource Definition Reference* Version 5 Release 3 and later versions and releases, SC30-3448.

This manual will be referred to as the *NCP, SSP, and EP Resource Definition Reference*.

The console and keyboard of the 3101-like terminal are fully described in the *IBM 3101 Display Terminal Description*, GA18-2033.

Task and User Publications (3745 Models 130, 150, and 170)

The product library is presented in two formats:



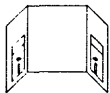
Evaluating and Configuring



GA33-0138

Introduction

To evaluate and learn about the 3745 capabilities



GA33-0093

Configuration Program

To configure a 3745

Preparing Your Site



GC22-7064

S/370 I/O Installation Manual Physical Planning

To plan the physical site



GA33-0140

Preparing for Connection

To prepare cable installation and LIC5 or LIC6 configuration

Preparing for Operation



GA33-0126 ¹

Telecommunication Products Safety Handbook

To recall safety principles



SA33-0141 ¹

Connection and Integration Guide

To install and test LICs and customize your 3745 after installation



SA33-0158 ¹

Console Setup Guide

To install local, alternate, or remote consoles

Customizing Your Control Program



SA33-0102

Principles of Operation

To understand the 3745 instruction set in order to write or modify a control program

Note: ¹ Documentation shipped with the 3745.

Task and User Publications (3745 Models 130, 150, and 170)

O

Operating and Testing



SA33-0146 ¹

Basic Operations Guide
To carry out routine daily operations



SA33-0097 ¹

Advanced Operations Guide
To carry out advanced operations and testing from the 3745 operator console



SA33-0161

Remote Loading/Activation Guide
To customize VTAM, NCP, and NPSI generations to support a remote controller

Managing Problems



SA33-0096 ¹

Problem Determination Guide
To perform problem determination

Finding Information



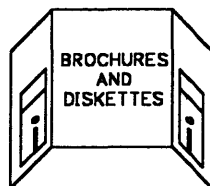
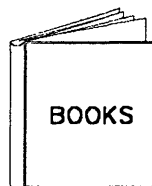
SA33-0142 ¹

Master Index
To find information in the customer library

Note: ¹ Documentation shipped with the 3745.

Task and User Publications (3745 Models 210, 310, 410, and 610)

The product library is presented in two formats:



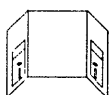
Evaluating and Configuring



GA33-0092

Introduction

To evaluate and learn about the 3745 capabilities



GA33-0093

Configuration Program

To configure a 3745

Preparing Your Site



GC22-7064

S/370 I/O Installation Manual Physical Planning

To plan the physical site



GA33-0127

Preparing for Connection

To prepare cable installation and LIC5 or LIC6 configuration

Preparing for Operation



GA33-0126 ¹

Telecommunication Products Safety Handbook

To recall safety principles



SA33-0129 ¹

Connection and Integration Guide

To install and test LICs and customize your 3745 after installation



SA33-0158 ¹

Console Setup Guide

To install local, alternate, or remote consoles

Customizing Your Control Program



SA33-0102

Principles of Operation

To understand the 3745 instruction set in order to write or modify a control program

Note: ¹ Documentation shipped with the 3745.

Task and User Publications (3745 Models 210, 310, 410, and 610)

Operating and Testing



SA33-0098 ¹

Basic Operations Guide

To carry out routine daily operations



SA33-0097 ¹

Advanced Operations Guide

To carry out advanced operations and testing from the 3745 operator console



SA33-0161

Remote Loading/Activation Guide

To customize VTAM, NCP, and NPSI generations to support a remote controller

Managing Problems



SA33-0096 ¹

Problem Determination Guide

To perform problem determination

Finding Information



SA33-0172 ¹

Master Index

To find information in the customer library

Note: ¹ Documentation shipped with the 3745.

Chapter 2. Using the Operator Consoles

The different types of consoles you may use to perform the MOSS functions are documented in the *3745 Introduction*.

Console operating characteristics are given in the *3745 Connection and Integration Guide*.

The console and keyboard of the 3101-like terminal are described fully in the *IBM 3101 Display Terminal Description, GA18-2033*.

Console Screen Layout

The operator console screen is formatted as illustrated below.

```

CUSTOMER ID: xxxxxxxxxxxxxxxx   3745-XXX   SERIAL NUMBER: nnnnnnn
                                     Machine Status Area
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN:                FUNCTION PENDING:

                                     FUNCTION AREA

===>  Message Area
       Alarm Area
       Function Keys
       Operation Information Area

```

CUSTOMER ID: Customer identification, permanently displayed (16 characters). To enter or modify the customer identification use the Password function (see page 16-7).

MACHINE TYPE: The machine type and model: 3745-XXX.

SERIAL NUMBER: Machine serial number of the 3745 (7 characters).

MACHINE STATUS AREA (MSA): Information on the CCU, scanners, token-ring interface couplers and IPL progression. For details, see Appendix B.

FUNCTION ON SCREEN: The name of the function being displayed.

FUNCTION PENDING: The name of the function waiting to be displayed.

FUNCTION AREA: Function display and operator input.

MESSAGE AREA: Area to display messages. Messages are explained in Appendix A.

ALARM AREA: Area to display alarms. The alarms give the probable cause, the area of the error, and a reference code that may lead to a list of field-replaceable units (FRU list). All alarms are listed in the *3745 Problem Determination Guide*. When there is more than

Using the Operator Consoles

one alarm, the word ALARM blinks. Pressing F3 displays the next alarm and erases the previous one.


F KEY LINE: Available F keys are shown on this line.

OPERATION INFORMATION AREA: This area is reserved for the display of:

- Operator information messages
- Test messages.

These messages are documented in the appropriate operator console documentation.

Moving the Cursor

To move the cursor from one input area to another, use the Tab key .

Input areas are represented as follows on the screen:

=== > to enter the acronym of a function.

=== > to enter an option, enter or modify data.

In display mode, === > is changed into the equal sign (=) or the colon sign (:).

Keyboard Terminology

Since the consoles may be of different types, the keyboards used may vary. For consistency, the following terminology is used when referring to some keys of the keyboard.

 This is the key pressed to confirm the data just typed in. Also called the ENTER key.

 This is the key pressed to stop the refreshing of diagnostics, in order to communicate directly with the system. Also called the ATTN key or the INTERRUPT key.

 To move the cursor for one input area to another.

Explanations of Common Commands and F Keys on Screen

OFF (Log off): If you enter *OFF*, you are disconnected from the MOSS. You cannot use *OFF* while a function is active or pending; press F1 to terminate it.

F1: END Pressing F1:

- Terminates any function that is running, and
- Displays the previous screen.

F2: MENUx: Pressing F2 displays menu 1, menu 2, or the pending function.

F3: ALARM: Pressing F3 erases the latest alarm displayed (if any) from the alarm area, and displays any alarms still queued. You should note all information, especially the

reference code, before erasing an alarm. This information can still be found by selecting the ELD function.

F6: RULES: Pressing this key displays the Function Selection Rules screen.

Fx: QUIT: Pressing this key returns you to the previous menu.

Logging On and Off

To log on at the operator console:

1. **Ensure the 3745 is powered on.** Powering on is described in the *3745 Basic Operations Guide*.
2. **Power on the operator console.** When powered on, the CA INTERFACE DISPLAY screen is displayed. Proceed as in "How to Select MOSS Functions."
3. **To terminate a function,** press F1.
4. **To log off at the console,** enter OFF and press SEND.

How to Select MOSS Functions

You can select MOSS functions in disk mode from the local, alternate or remote consoles.

Selecting Functions in Disk Mode from the Local or Alternate Console

When you select MOSS functions from the local or alternate console, the first screen after IML displays the channel adapter statuses (see "MOSS IML from the Operator Console (IML)" on page 8-1). This screen is accessible without entering a password, but only the ENABLE/DISABLE request field of a channel adapter can be modified. See "Channel Adapter Interface Display (CID)" on page 23-4 for a description of the function.

| CA INTERFACE DISPLAY | | | | | | |
|----------------------|----------------|-------------|------------------|---------------------|-----------------|-------------|
| INTERFACE NUMBER | CHANGE E/D REQ | E/D REQUEST | INTERFACE STATUS | HOST OR SWITCH UNIT | CHANNEL ADDRESS | NSC ADDRESS |
| 1A | ==> | E | DISABLED | | | 39 |
| 2A | | - | - | | | |
| 3A | | - | - | | | |
| 4A | | - | - | | | |
| 5A | ==> | E | DISABLED | | | 3A |
| 6A | | - | - | | | |
| 7A | | - | - | | | |
| 8A | | - | - | | | |

- TYPE E OR D TO CHANGE THE ENABLE/DISABLE REQUEST, THEN PRESS SEND

F4:MOSS FUNCTIONS F5:UPDATE F8:FORWARD

From the previous screen: _____

You can use the following keys:

- F4 to select MOSS functions. The password screen is displayed.
- F5 to update the channel address field and the host or switch unit.
- F8 to display channel adapters 9 through 16.

- Press F4 to select the following password screen:

```
CUSTOMER ID:          3745-XXX          SERIAL NUMB
                        3745 MICROCODE (C) COPYRIGHT IBM CORP. 1987          mm/dd/yy hh:mm
                        ENTER PASSWORD ==>
                        F4:Channel Interface Display
```

- Enter your password and press SEND (see Chapter 16 for details). After you have entered your password, the Function Selection Rules screen is displayed.
- You can also press F4 to select the channel adapter interface display.

```
----- mm/dd/yy hh:mm
                        FUNCTION SELECTION RULES
- TO SELECT ONE OF THE MENUS, PRESS THE APPROPRIATE F KEY
- TO SELECT A FUNCTION, ENTER ITS 3-CHARACTER NAME THEN PRESS SEND
- ONCE YOU HAVE SELECTED A FUNCTION FROM ONE MENU, YOU MAY SELECT
  A FUNCTION FROM THE OTHER
- TO END THE FUNCTION ON SCREEN, PRESS F1
- TO RETURN TO THE PENDING FUNCTION, PRESS F2
- TO LOG OFF, ENTER OFF THEN PRESS SEND
===>
F1:END  F2:MENU2  F3:ALARM  F4:MENU1
```

From the previous screen:

You can use the following keys:

- F1 to terminate a function.
- F2 to display Menu 2 functions (see "Menu 2 Functions" on page 2-7).
- F3 to display the next alarm (if any), or clear the displayed alarm (if no other alarms are waiting).
- F4 to display Menu 1 functions (see "Menu 1 Functions" on page 2-6).
- You can also enter directly the acronym of a particular MOSS function (refer to Table 0-1 on page xxi).

Selecting Functions in Disk Mode from the Remote Console

When you select MOSS functions from the remote console, the first screen displayed is the Password screen. In all other respects, this procedure is the same as that from the local or alternate console (see "Selecting Functions in Disk Mode from the Local or Alternate Console" on page 2-3).

Selecting Functions in Diskette Mode

To restart the 3745 after a failure, you may be requested to perform an IPL in diskette mode from the control panel. In this case, refer to the *Basic Operations Guide*.

After an IPL in diskette mode, the model number may be:

- 010 instead of 210, 310, 410 or 610 for models 210, 310, 410, or 610
- 090 instead of 130, 150 or 170 for models 130, 150, or 170.

To install engineering change microcode you also need to start the EC installation in diskette mode. Refer to page 4-3 to perform this function.

Menu 1 Functions

The MENU 1 screen contains the following MOSS functions:

Models 130, 150, 170

```

----- mm/dd/yy hh:mm
                                MENU 1
CONFIG DATA FILE.: CDF      IML ONE SCANNER.: IMS      PASSWORDS.....: PSW
CONTROL PGM PROC.: CPP      IPL CCU.....: IPL        PORT SWAP FILE.: PSF
DISK FUNCTIONS...: DIF      LD LINK TEST REQ.: LTQ
DISK IPL INFO....: DII      LD LINK TEST RESP.: LTS    SCANNER I/F TRACE: SIT
EVENT LOG DISPLAY: ELD      LINE INTERF DSPLY: LID    STAND ALONE TEST.: SAT
                                LINK IPL PORTS...: LKP
                                MACHINE LVL TABLE: MLT    TIME SERVICES....: TIM
IML MOSS.....: IML         MICROCODE FIXES..: MCF    TRSS INTERF DSPLY: TID
                                ESS INTERF DSPLY.: EID    WRAP TEST.....: WTT

                                ENTER OFF TO LOG OFF
====>
F1:END  F2:MENU2  F3:ALARM      F5:MENU3  F6:RULES
    
```

Models 210, 310, 410, 610

```

----- mm/dd/yy hh:mm
                                MENU 1
CONFIG DATA FILE.: CDF      IML ONE SCANNER.: INS      PASSWORDS.....: PSW
CONTROL PGM PROC.: CPP      IPL CCU(S).....: IPL      PORT SWAP FILE...: PSF
DISK FUNCTIONS...: DIF      LD LINK TEST REQ.: LTQ    POWER SERVICES...: POS
DISK IPL INFO....: DII      LINK TEST RESP...: LTS    SCANNER I/F TRACE: SIT
EVENT LOG DISPLAY: ELD      LINE INTERF DSPLY: LID    STAND ALONE TEST.: SAT
FALLBACK.....: FBK         LINK IPL PORTS...: LKP    SWITCHBACK.....: SBK
                                MACHINE LVL TABLE: MLT    TIME SERVICES....: TIM
IML MOSS.....: IML         MICROCODE FIXES..: MCF    TRSS INTERF DSPLY: TID
                                ESS INTERF DSPLY.: EID    WRAP TEST.....: WTT

                                ENTER OFF TO LOG OFF
====>
F1:END  F2:MENU2  F3:ALARM      F5:MENU3  F6:RULES
    
```

This screen displays functions and their acronyms. Consult the table on page xxi to locate the description of a function.

To select one of the displayed functions:

- Enter the acronym of the function next to the arrow at the bottom left-hand corner of the screen.
- Press SEND.

To log off at the console, enter "OFF" and press SEND.

If a function cannot be accessed, the following message is displayed in the message area:

PRESS SEND TO DISPLAY FUNCTION MENU

Menu 2 Functions

The MENU 2 screen contains the following MOSS functions:

Models 130, 150, 170

```

----- mm/dd/yy hh:mm

                                MENU 2

AC/BT PARAMETERS.: ABP   CCU LV3 INTERRUPT: IL3   RESET CCU..... RST
BYPASS CCU CHECK.: BCK   MOSS OFFLINE..... MOF   SET ADDR COMPARE.: SAC
BYPASS IOC CHECK.: BIK   MOSS ONLINE..... MON   SET BRANCH TRACE.: SBT
COND BRANCH TRACE: CBT   RESET ADDR COMP... RAC   STOP ON CCU CHCK.: SCK
CA INTERF DISPLAY: CID   RESET BRCH TRACE.: RBT   STOP ON IOC CHECK: SIK
CCU NORMAL MODE..: CNM   RESET CCU CHECK... RCK   SET I-STEP..... SIP
CCU STATUS.....: CST   RESET CCU/LSSD.... RCL   STOP CCU.....: STP
DISPLAY/ALTER....: DAL                                     START CCU.....: STR
DATA EXCHANGE....: DEX   RESET IOC.....: RIO
DISPLAY LONG.....: DLO   RESET I-STEP..... RIS
                                ENTER OFF TO LOG OFF

===>

F1:END  F2:MENU2  F3:ALARM          F5:MENU3  F6:RULES

```

Models 210, 310, 410, 610

```

----- mm/dd/yy hh:mm

                                MENU 2

AC/BT PARAMETERS.: ABP   DISPLAY LONG..... DLO   RESET IOC(S)..... RIO
BYPASS CCU CHECK.: BCK   MOSS OFFLINE..... MOF   RESET I-STEP..... RIS
BYPASS IOC CHECK.: BIK   MOSS ONLINE..... MON   SET ADDR COMPARE.: SAC
CA INTERF DISPLAY: CID   RESET ADDR COMP... RAC   SET BRANCH TRACE.: SBT
CCU LVL3 INTERRUPT: IL3   RESET BRCH TRACE.: RBT   SET I-STEP..... SIP
CCU NORMAL MODE..: CNM   RESET CCU..... RST     START CCU.....: STR
CCU SEL/RELEASE...: CSR   RESET CCU/LSSD.... RCL   STOP CCU.....: STP
CCU STATUS.....: CST   RESET CCU CHECK... RCK   STOP ON CCU CHECK: SCK
DATA EXCHANGE....: DEX   RESET CCU/LSSD.... RCL   STOP ON IOC CHECK: SIK
DISPLAY/ALTER....: DAL                                     ENTER OFF TO LOG OFF

===>

F1:END  F2:MENU1  F3:ALARM          F5:MENU3  F6:RULES

```

This screen displays functions and their acronyms. These functions are described in Chapter 23. Consult the table on page xxi to locate the description of a function.

To select one of the displayed functions:

- Enter the acronym of the function next to the arrow at the bottom left-hand corner of the screen.
- Press SEND.

To log off at the console, enter "OFF" and press SEND.

If a function cannot be accessed, the following message is displayed in the message area.

PRESS SEND TO DISPLAY FUNCTION MENU

How to Switch between Menu 1 and Menu 2 Functions

You may enter any function from either menu if you know the acronym of the function. To switch between the display of menu 1 functions and menu 2 functions, use the F2 key.

When switching is not possible, F2 is not displayed on the F key line.

To Switch from a Function on Menu 1 to a Function on Menu 2

1. Press F2 when a function from menu 1 is selected.
2. The menu 1 function is disconnected.
3. The name of the menu 1 function is displayed in the function pending area.
4. Menu 2 is displayed.
5. Select a menu 2 function.
6. If you press F2, the menu 1 function that was pending becomes active and the menu 2 function becomes pending.
7. When you end the active menu 1 function, the pending menu 2 function appears on the screen and becomes active.

To Switch from a Function on Menu 2 to a Function on Menu 1

1. Press F2 when a function from menu 2 is selected.
2. The menu 2 function is disconnected.
3. The name of the menu 2 function is displayed in the function pending area.
4. Menu 1 is displayed.
5. Select a menu 1 function.
6. If you press F2, the menu 2 function that was pending becomes active and the menu 1 function becomes pending.
7. When you end the active menu 2 function, the pending menu 1 function appears on the screen and becomes active.

How to Start and Stop Refresh

For certain functions you can press F5:REFRESH to refresh or update the information in the MSA.

To stop refresh, press the BREAK key.

Menu 1 - MOSS Functions

Replace this page by the separator:

"Menu 1 - MOSS Functions"



Replace this page by the separator:



"Menu 1 - MOSS Functions"



Menu 1 - MOSS Functions

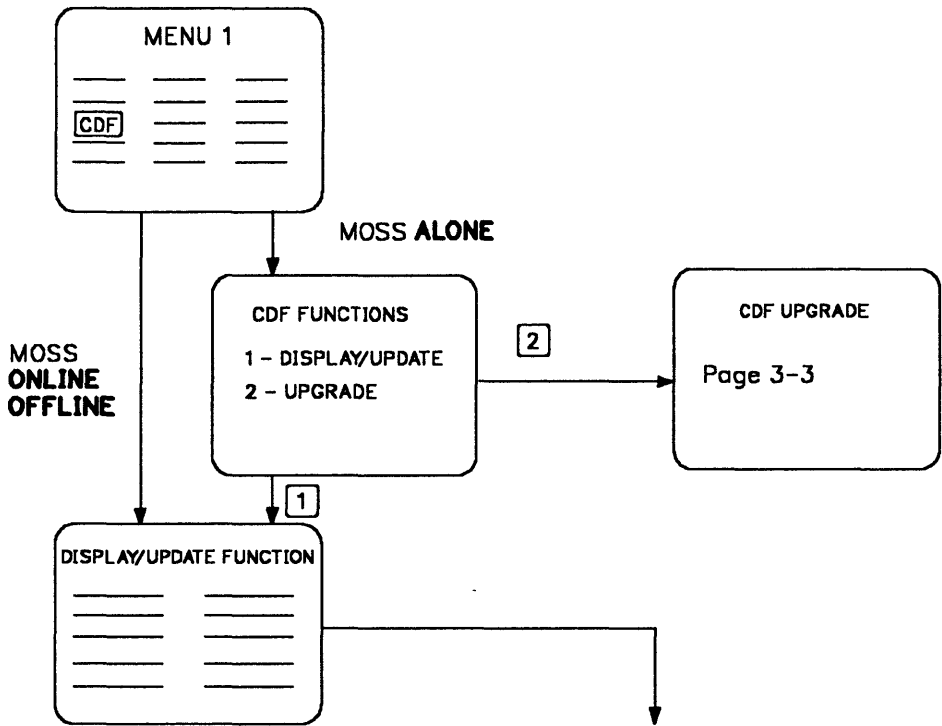
| MOSS Functions by Acronyms and Required MOSS Statuses | | | | | Models | Page |
|---|-----------------------------------|----------------|----------------|----------------|-----------------------|-------|
| Acron. | MOSS Functions | Alone | Offline | Online | | |
| CDF | Configuration Data File | X ¹ | X ¹ | X ¹ | | 3-1 |
| CPP | Control Program Procedures | | X | X | | 25-1 |
| DIF | Disk Functions | X | X | | | 4-1 |
| DII | Disk IPL Information | X | X | X | | 5-1 |
| EID | ESS Interface Display | | X | X | | 20-3 |
| ELD | Event Log Display | X | X | X | | 6-1 |
| FBK | Fallback | | | X | 410 and 610 | 7-1 |
| IML | MOSS IML | X | X | X | | 8-1 |
| IMS | Scanner IML | | | X | | 8-2 |
| IPL | 3745 IPL | X | X | X | | 9-1 |
| LID | Line Interface Display | | X | X | | 10-1 |
| LKP | Link IPL Ports | X | X | X | | 11-1 |
| LTQ | (SAT) Request Link Test Program | X | X | X | | 17-11 |
| LTS | (SAT) Responder Link Test Program | X | X | X | | 17-17 |
| MCF | Microcode Fixes | X | X | | | 12-1 |
| MLT | Machine Level Table | X | X | X | | 13-1 |
| POS | Power Services | X | X | X | 210, 310, 410 and 610 | 14-1 |
| PSF | Port Swap File | X ¹ | X ¹ | X ¹ | | 15-1 |
| PSW | Passwords | X | X | X | | 16-1 |
| SAT | Stand-Alone Link Tests | | X | X | | 17-1 |
| SBK | Switchback | | X | X | 410 and 610 | 18-1 |
| SIT | Scanner Interface Trace | | X | X | | 19-1 |
| TID | TRSS Interface Display | | X | X | | 20-1 |
| TIM | Time Services | X | X | X | | 21-1 |
| WTT | Wrap Test | | | X | | 22-1 |

Note: To set: **MOSS alone**, go to page 3-3.
MOSS offline, (MOF function) go to page 23-13.
MOSS online, (MON function) go to page 23-13.

¹ The required MOSS status depends on the selected option (refer to the appropriate chapter).



Chapter 3. Configuration Data File (CDF)



Models 130, 150 and 170

From the preceding screen, select the required option and go to the appropriate page.

| | | |
|--|------------------|-----------|
| 1 - MOSS | (Display) | page 3-8 |
| 2 - LSSD | (Display) | page 3-9 |
| 4 - CCU | (Display) | page 3-12 |
| 6 - CA FRU LEVEL | (Display) | page 3-15 |
| 7 - LA/MUX FRU LEVEL | (Display) | page 3-16 |
| 8 - LIC FRU LEVEL | (Display) | page 3-17 |
| 9 - CHANNEL ADAPTERS (CA) | (Display/Update) | page 3-18 |
| 10 - LINE ADAPTERS (LA) - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-29 |
| 11 - PORTS - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-43 |

Models 210, 310, 410 and 610

From the preceding screen, select the required option and go to the appropriate page.

| | | |
|---|------------------|-----------|
| 1 - MOSS | (Display) | page 3-8 |
| 2 - LSSD | (Display) | page 3-9 |
| 3 - FRAMES | (Display) | page 3-10 |
| 4 - CCU | (Display) | page 3-13 |
| 5 - SWITCH | (Display) | page 3-14 |
| 6 - CHANNEL ADAPTERS (CA) | (Display/Update) | page 3-18 |
| 7 - LINE ADAPTERS (LA) - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-29 |
| 8 - PORTS - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-43 |
| 9 - CCU OPERATING MODE | (Display/Update) | page 3-50 |

Upgrading the CDF

Upgrade the configuration data file **to reflect all 3745 hardware changes.**

To perform a CDF upgrade, the MOSS must be **alone**.

How to upgrade the CDF is explained on the next page.

How to Set the MOSS Alone

Keep in mind that when the MOSS is alone, **the control program is no longer operational.**

- To set the MOSS alone on models 130, 150, 170, 210, or 310:

1. Press the following keys from 3745 main menu 1 or 2:

to reset the CCU.

2. The messages RESET CCU COMPLETED and MOSS ALONE are displayed on the screen.
3. Press F1.
4. Now you can upgrade the configuration data file.

- To set the MOSS alone on models 410 and 610:

Proceed as for the other models but each CCU must be selected and reset. Refer to "CCU Selection/Release (CSR) Models 410 and 610" on page 23-6.

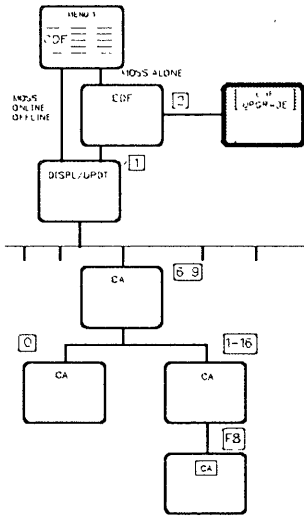
How to Upgrade the CDF

To perform the upgrade, you must set MOSS alone. Refer to the previous procedure to do this.

Note: You cannot upgrade the CDF if you canceled IPL by pressing F1 during the IPL phase 1.

Models 210, 310, 410, 610

If a power supply is not operational when the upgrade function is initiated, the following screen is displayed:



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPGRADE

- SOME INSTALLED POWER SUPPLIES ARE NOT UP

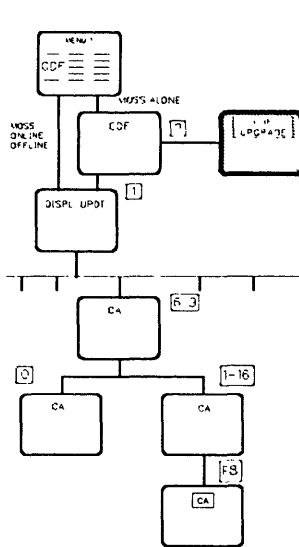
- TO CONTINUE, SELECT Y OR N, THEN PRESS SEND  ==>

==>

F1:END           F3:ALARM           F6:QUIT
    
```

From the preceding screen:

- Enter Y to continue with the upgrade then the next screen is displayed.
- Enter N to cancel the function. Refer to Chapter 14, "Power Services (POS) - Models 210, 310, 410, and 610" on page 14-1 to check the power statuses.



All Models

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPGRADE

ALL INSTALLED POWER SUPPLIES ARE UP
MOSS  INFORMATION : FETCHED
CCU   INFORMATION : FETCHED
SWITCH INFORMATION : FETCHED
CA    INFORMATION : FETCHED
SCANNER IHL      : COMPLETED
LA    INFORMATION : FETCHED
CDF UPGRADE COMPLETED

====>

F1:END          F3:ALARM          F6:QUIT
    
```

Refer to Appendix A, "Messages" on page A-1 for action in case of error detected while upgrading the CDF.

After the upgrade is completed, the hardware associated with power supplies that are not operational is considered as not installed.

Once the upgrade is complete, perform a 3745 IPL if you wish to set the MOSS online:

F1 ■ I P L SEND

Refer to page 9-1 for more information on the 3745 IPL.

CDF Option Selection (from Menu 1)

If the MOSS is Offline or Online

If the MOSS is Alone

Models 130, 150, 170

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE FUNCTION

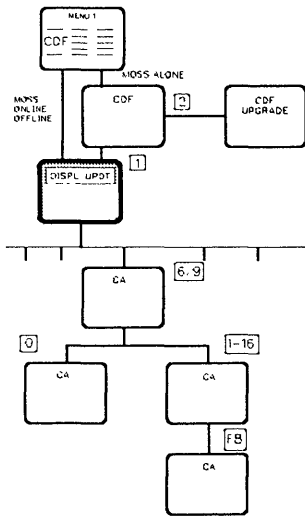
- SELECT ONE OPTION, THEN PRESS SEND ==>

        DISPLAY                DISPLAY/UPDATE

1 = MOSS          5 = NOT USED      9 = CHANNEL ADAPTERS (CA)
2 = LSSD          6 = CA FRU LEVELS 10 = LINE ADAPTERS (LA)
3 = NOT USED      7 = LA/MUX FRU LEVELS 11 = PORTS
4 = CCU           8 = LIC FRU LEVELS 12 = NOT USED

====>

F1:END           F3:ALARM           F6:QUI
    
```



Models 210, 310, 410, 610

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE FUNCTION

- SELECT ONE OPTION (1 TO 9), THEN PRESS SEND ==>

        DISPLAY :                DISPLAY/UPDATE :

1 = MOSS          6 = CHANNEL ADAPTERS (CA)
2 = LSSD          7 = LINE ADAPTERS (LA)
3 = FRAMES        8 = PORTS
4 = CCU           9 = CCU OPERATING MODE
5 = SWITCH

====>

F1:END           F3:ALARH           F6:QUIT
    
```

Models 130, 150 and 170

From the preceding screen, select the required option and go to the appropriate page.

| | | |
|--|------------------|-----------|
| 1 - MOSS | (Display) | page 3-8 |
| 2 - LSSD | (Display) | page 3-9 |
| 4 - CCU | (Display) | page 3-12 |
| 6 - CA FRU LEVEL | (Display) | page 3-15 |
| 7 - LA/MUX FRU LEVEL | (Display) | page 3-16 |
| 8 - LIC FRU LEVEL | (Display) | page 3-17 |
| 9 - CHANNEL ADAPTERS (CA) | (Display/Update) | page 3-18 |
| 10 - LINE ADAPTERS (LA) - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-29 |
| 11 - PORTS - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-43 |

Models 210, 310, 410 and 610

From the preceding screen, select the required option and go to the appropriate page.

| | | |
|---|------------------|-----------|
| 1 - MOSS | (Display) | page 3-8 |
| 2 - LSSD | (Display) | page 3-9 |
| 3 - FRAMES | (Display) | page 3-10 |
| 4 - CCU | (Display) | page 3-13 |
| 5 - SWITCH | (Display) | page 3-14 |
| 6 - CHANNEL ADAPTERS (CA) | (Display/Update) | page 3-18 |
| 7 - LINE ADAPTERS (LA) - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-29 |
| 8 - PORTS - TSS/HPTSS/TRSS/ESS - | (Display/Update) | page 3-43 |
| 9 - CCU OPERATING MODE | (Display/Update) | page 3-50 |

Displaying the MOSS

If the MOSS is Offline or Online

C D F SEND 1 SEND

If the MOSS is Alone

C D F SEND 1 SEND 1 SEND

Models 130, 150, 170

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : MOSS

STORAGE SIZE : XXXX K   DISKETTE SIZE : XX MB   DISK SIZE : XX MB

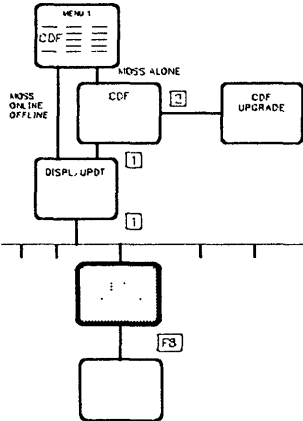
PS ID       : 1       MOSS MICROCODE EC LEVEL : XXXXXXXXXXXXXXXXXXXX
                   MCF LEVEL                   : XXXXXXXXXXXXXXXXXXXX

                   FRU-LEVEL

MCC       : XX       NSC       : XX       PCC       : XX
DFA       : XX                               PCC MICROCODE : XX

====>

F1:END           F3:ALARM           F6:QUIT
    
```



Models 210, 310, 410, 610

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : MOSS

STORAGE SIZE : XXXX K   DISKETTE SIZE : XX MB   DISK SIZE : XX MB

PS ID       : 1       MOSS MICROCODE EC LEVEL : XXXXXXXXXXXXXXXXXXXX
                   MCF LEVEL                   : XXXXXXXXXXXXXXXXXXXX

                   FRU-LEVEL

MCA       : XX       MSC       : XX       PLC       : XX
DFA       : X                               PAC       : XX
MAC       : XXX                               PLC MICROCODE : XX

====>

F1:END           F3:ALARM           F6:QUIT
    
```

- DISKETTE SIZE** Diskette drive size (MB)
- DISK SIZE** Hard disk size (MB)
- DFA** Disk file adapter card
- MAC** MOSS adapter card

| | |
|--------------------------------|-----------------------------------|
| MCA | MOSS console adapter card |
| MCC | MOSS control card |
| MCF LEVEL | Latest installed MCF |
| MOSS MICROCODE EC LEVEL | Driver microcode EC level |
| MSC | MOSS storage card |
| PAC | Power analog card |
| PCC | Power control card |
| PCC MICROCODE | Power control card software level |
| PLC MICROCODE | Power logic card software level |
| PS ID | Power supply identifier (1-41) |
| STORAGE SIZE | MOSS memory (K bytes). |

Displaying LSSD

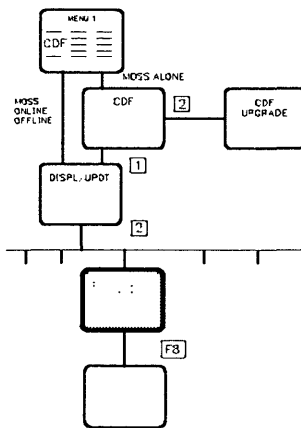
The level sensitive scan design (LSSD) information is used by IBM service representative only.

If the MOSS is Offline or Online

C D F SEND 2 SEND

If the MOSS is Alone

C D F SEND 1 SEND 2 SEND



```

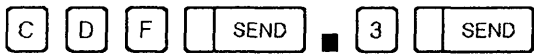
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : LSSD

 00 03 04 07 08 0B 0C 0F 10 13 14 17 18 1B 1C 1F
0000 011F0600 C0080000 00000000 00003FFF 91FE0000 00000100 00000048 02C00804
0020 A1000002 1302FFFF FFFFFFFF 10FFF8FF 7FFFF77F DDBE083D A4C00316 0723FC07
0040 1A000040 000000A0 07FE0000 40E200E0 00000000 04190700 08000000 00000000
0060 00003FF0 00040001 03000000 94000009 40051307 0C000000 00000060 00000000
0080 00030000 00000000 060B028F F000047F 800023FC 00000007 13070C00 00000000
00A0 00600000 00000003 00000000 0000080B 028FF000 047F8000 23FC0000 40091A07
00C0 0C000000 00000060 001FFFFF FFC30000 00000000 0001A000 0000000A 0B028FF0
00E0 00040077 FFE3FC00 00000B0F 00000000 FF1FF002 FF1FF002 FF1FF002 0C0C 0200

===>
F1:END          F3:ALARM          F6:QUIT          F8:FWD
  
```

Displaying Frames (3745 Models 210, 310, 410, 610 and 3746)

If the MOSS is Offline or Online



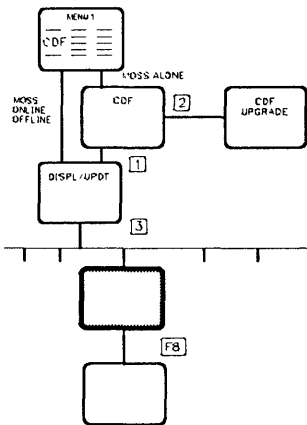
If the MOSS is Alone



The following screens will be displayed in this sequence:

- 3745 line adapter board 1 (LAB-BOARD 1)
- 3745 channel adapter board 1 (CAB-BOARD 1)
- 3746-A11 line adapter board 2 (LAB-BOARD 2)
- 3746-A11 line adapter board 3 (LAB-BOARD 3)
- 3746-A11 channel adapter board 2 (CAB-BOARD 2)
- 3746-A12 line adapter board 4 (LAB-BOARD 4).

Up to eight line adapters can be installed on each line adapter board.



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : FRAMES

3745 : LAB-BOARD 1
                                LIC INSTALLED
NUMBER  TYPE  ADDRESS  PRESENCE  GROUP  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
LA 1   TRSS  4800    Y         1
LA 2   TRSS  4802    Y         1
LA 3   TSS   11      Y         2   Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y
LA 4   TSS   21      Y         2
LA 5   TRSS  C800    Y         1
LA 6   TRSS  C802    Y         1
LA 7   HPTSS 91      Y         2
LA 8   ESS   A1      Y         2
====>

F1:END          F3:ALARH          F6:QUIT          F8:FWD
    
```

From the preceding screen:

Press F8 to display the 3745 channel adapter board 1 screen.

ADDRESS Physical address of the LA on the IOC BUS.

GROUP Identifies a pair of line adapters (from 1 to 8).

LIC INSTALLED

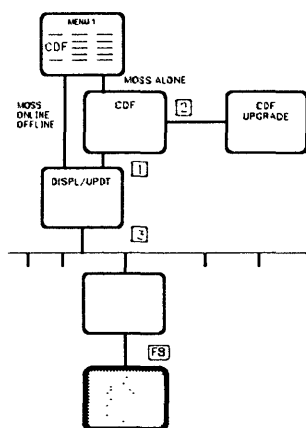
Y (yes) or N (no), and is valid only for TSS. LICs may be installed in any of the 3745 frames.

NUMBER Identifies the line adapter number.

PRESENCE Y (yes) or N (no), depending upon whether the line adapter is installed or not.

TYPE may be:

- **ESS** (Ethernet** subsystem): 1-byte address. The Ethernet subsystem includes up to 8 Ethernet line adapters (ELAs). One ELA is composed of a communication scanner processor (CSP) and an Ethernet adapter card (EAC), and is a line adapter for lines operating at up to 10 million bps.
- **TSS** (transmission subsystem): 1-byte address. The transmission subsystem includes up to 32 low-speed scanners (LSSs) or line adapters (LAs). One LSS is composed of a communication scanner processor (CSP) and a front-end low-speed scanner (FESL), and is a line adapter for lines operating at up to 256 kbps.
- **HPTSS** (high-performance transmission subsystem): 1-byte address. The high-performance transmission subsystem includes up to eight high-speed scanners (HSSs) or line adapters (LAs). One HSS is composed of a communication scanner processor (CSP) and a front-end high-speed scanner (FESH), and is a line adapter for lines operating at up to 2 million bps.
- **TRSS** (token-ring subsystem): 2-byte address. The token-ring subsystem includes up to four token-ring adapters (TRAs).



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : FRAMES

3745 : CAB-BOARD 1

NUMBER TYPE ADDRESS PRESENCE GROUP
CA 1 A CADS 8800 Y 1
CA 2 A CADS 8802 N 1
CA 3 A BCCA 8804 Y 2
CA 4 A BCCA 8806 Y 2
CA 5 A ---- 0800 N -
CA 6 A ---- 0802 N -
CA 7 A ---- 0804 N -
CA 8 A ---- 0806 N -
===>

F1:END           F3:ALARM           F6:QUIT         F7:BWD         F8:FWD
    
```

From the preceding screen:

- Press F3 to display the next alarm, if any, or clear the displayed alarm, if none are waiting.
- Press F6 to return to the CDF Display/Update screen.
- Press F7 to display the previous screen.
- Press F8 to display the next screen.

TYPE: CADS or BCCA. Refer to page 3-19.

Displaying CCU Information (Models 130, 150, and 170)

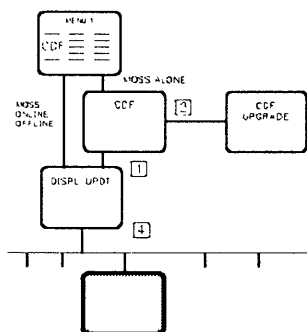
If the MOSS is Offline or Online

C D F SEND 4 SEND

If the MOSS is Alone

C D F SEND 1 SEND 4 SEND

Models 130, 150, 170



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : CCU

CCU-A

PRESENCE      : X
PS ID         : X
STORAGE SIZE  : X HB
PUC FRU LEVEL : XX
SCTL FRU LEVEL : XX

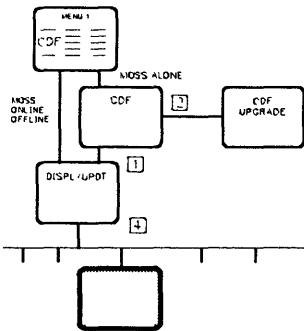
====>

F1:END          F3:ALARM          F6:QUIT
    
```

- PRESENCE** Y (yes) or N (no) depending on whether the CCU is present.
- PS ID** Power supply identifier (see POS function).
- STORAGE SIZE** 4MB or 8MB (1 MB equals 1 048 576 bytes).
- PUC FRU LEVEL** Used by the service representative.
- SCTL FRU LEVEL** Used by the service representative.

Displaying CCU Information (Models 210, 310, 410, and 610)

Models 210, 310, 410, 610



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : CCU

                CCU-A                          CCU-B

PRESENCE       : X                            PRESENCE       : X
PS ID          : X                            PS ID          : X
STORAGE SIZE   : X MB                         STORAGE SIZE   : X MB
CCU FRU LEVEL  : XX                           CCU FRU LEVEL  : XX
SCTL FRU LEVEL : XX                           SCTL FRU LEVEL : XX
CCU TYPE       : XXX                          CCU TYPE       : XXX

===>

F1:END          F3:ALARM                       F6:QUIT
    
```

The next screen may be displayed if an error is detected while upgrading the CDF after a CCU replacement.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : CCU

                CCU-A                          CCU-B

PRESENCE       : X                            PRESENCE       : ?
PS ID          : X                            PS ID          : ?
STORAGE SIZE   : X MB                         STORAGE SIZE   : ? MB
CCU FRU LEVEL  : XX                           CCU FRU LEVEL  : ??
SCTL FRU LEVEL : XX                           SCTL FRU LEVEL : ??
CCU TYPE       : XXX                          CCU TYPE       : ???

===> DATA WITH ? IS NOT AVAILABLE. CALL SERVICE PERSONAL TO RUN CCU DIAGS

F1:END          F3:ALARM                       F6:QUIT
    
```

For models 210 and 310 The right-hand part of the screen is suppressed.

- PRESENCE** Y (yes) or N (no) depending on whether the CCU is present.
- PS ID** Power supply identifier (see POS function).
- STORAGE SIZE** 4MB or 8MB (1 MB equals 1 048 576 bytes).
- CCU FRU LEVEL** Used by the service representative.
- SCTL FRU LEVEL** Used by the service representative.
- CCU TYPE** May be one of the following:
 - TCM** Thermally-controlled module
 - PUC** Processor unit card.

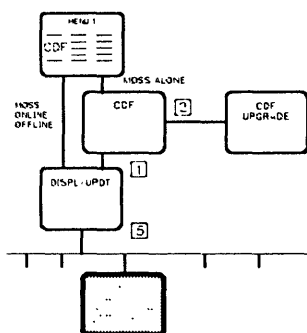
Displaying Switch Information (Models 210, 310, 410, and 610)

If the MOSS is Offline or Online

C D F SEND 5 SEND

If the MOSS is Alone

C D F SEND 1 SEND 5 SEND



```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : SWITCH

                SWITCH A                SWITCH B
PRESENCE         : X                    PRESENCE         : X
PS ID            : X                    PS ID            : X
IOSW1 ADDRESS    : XX                   IOSW1 ADDRESS    : XX
IOSW2 ADDRESS    : XX                   IOSW2 ADDRESS    : XX
DMA PRESENCE     : X                    DMA PRESENCE     : X
IOSW FRU LEVEL   : XX                   IOSW FRU LEVEL   : XX
DMSW FRU LEVEL   : XX                   DMSW FRU LEVEL   : XX

====>
F1:END           F3:ALARM                F6:QUIT
    
```

For models 130, 150, 170, 210, and 310

The right-hand part of the screen is suppressed.

PRESENCE

Y to indicate that the CCU is present.

PS ID

Power supply identifier (see POS function).

DMA PRESENCE

Y to indicate the direct memory access is present.

IOSW1 ADDRESS

Only used by service representative.

IOSW2 ADDRESS

Only used by service representative.

IOSW FRU LEVEL

Only used by service representative.

DMSW FRU LEVEL

Only used by service representative.

Displaying Channel Adapter FRU Level (Models 130, 150, and 170)

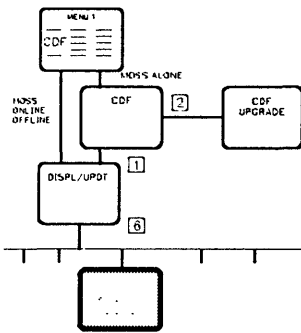
Note: The FRU level information is mainly used by the service representative.

If the MOSS is Offline or Online

C D F SEND 6 SEND

If the MOSS is Alone

C D F SEND 1 SEND 6 SEND



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : CHANNEL ADAPTERS FRU LEVEL

CA NUMBER          1      2      3      4      5      6      7      8
CAL                ----  ----  ----  ----  xxxx  xxxx  xxxx  xxxx
CADR-A            -      -      -      -      x      x      x      x
CADR-B            -      -      -      -      x      x      x      x
MICROCODE          --  --  --  --  xx  xx  xx  xx

CA NUMBER          9      10     11     12     13     14     15     16
CAL                ----  ----  ----  ----  ----  ----  ----  ----
CADR-A            -      -      -      -      -      -      -      -
CADR-B            -      -      -      -      -      -      -      -
MICROCODE          --  --  --  --  --  --  --  --

===>
F1:END           F3:ALARM           F6:QUIT
  
```

- CAL** Channel adapter logic card
- CADR** Channel adapter driver receiver card.

Displaying Line Adapter and MUX FRU Level (Models 130, 150, and 170)

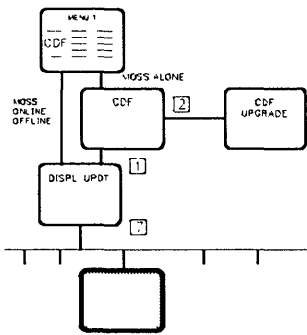
Note: The FRU level information is mainly used by the service representative.

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : LINE ADAPTERS AND MUX FRU LEVEL
LA          0          1          2          3
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2
CSC/CSP    x x x x x x x x x x x x x x x x x x x x x x x x x x x x
FESH       x x x x x x x x x x x x x x x x x x x x x x x x x x x x

MUX NUMBER 0          1          2          3
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
DMUX       x x x x x x x x x x x x x x x x x x x x x x x x x x x x
SMUX       x x x x x x x x x x x x x x x x x x x x x x x x x x x x

MUX NUMBER 3          4          5
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
DMUX       x x x x x x x x x x x x x x x x x x x x x x x x
SMUX       x x x x x x x x x x x x x x x x x x x x x x x x

===>
F1:END          F3:ALARM          F6:QUIT
    
```

- CSC/CSP** Communication scanner processor
- DMUX** Double multiplex card for board on LIC 1
- FESH** Front-end scanner (high-speed)
- MUX** Multiplex function
- SMUX** Single multiplex card for board on LIC 2.

Displaying LIC FRU Level (Models 130, 150, and 170)

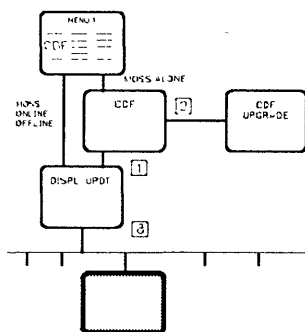
If the MOSS is Offline or Online

C D F SEND 8 SEND

If the MOSS is Alone

C D F SEND 1 SEND 8 SEND

You cannot update the level of the LIC FRU.



----- mm/dd/yy hh:mm

FUNCTION ON SCREEN: CONFIG DATA FILE

CDF - DISPLAY : LIC TYPE (1 TO 4) AND FRU LEVELS

LIC NUMBER IN HUNDREDS (H), TENS (T), AND UNITS:

| HT | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 1 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 2 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 3 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 4 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 5 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 6 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 7 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 8 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |
| 9 | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy | xy |

====>

F1:END F3:ALARM F6:QUIT F8:FWD

How to Read the Above Screen

x is the LIC type, y is the FRU level.

Example:

- **43** applies to LIC 117 (read **11** on line of hundreds (HT) and **7** in column of units). The first digit is the LIC type: In the example 43, it is LIC type 4. The second digit is the FRU level: In the example 43, it is FRU level 3.
- The FRU level information is mainly used by the service representative.

To terminate the function, press F1.

Channel Adapters Selection (Displaying/Updating)

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 9 SEND

If the MOSS is Alone

C D F SEND 1 SEND 9 SEND

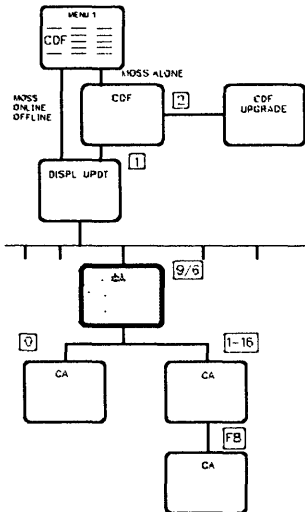
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 6 SEND

If the MOSS is Alone

C D F SEND 1 SEND 6 SEND



----- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: CONFIG DATA FILE
 CDF - DISPLAY/UPDATE : CHANNEL ADAPTERS (CA)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-----------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| PRESENCE: | Y | N | Y | Y | Y | N | N | N | Y | Y | Y | N | N | N | Y | Y |
| NUMBER : | 1A | 1B | 3A | 4A | 5A | 5B | 7A | 8A | 9A | 10A | 11A | 11B | 13A | 14A | 15A | 16A |
| TYPE * : | 6 | | 7 | 6 | 7 | | | | 7 | 6 | 6 | | | | 7 | 6 |

* CHANNEL ADAPTER TYPE : 6=CADS, 7=BCCA

- SELECT ONE OPTION (0 TO 16), THEN PRESS SEND ==>

0 = TO DISPLAY ALL CA
 1 TO 16 = TO DISPLAY/UPDATE ONE CA

====>

F1:END

F3:ALARM

F6:QUIT

From the preceding screen:

- Select option 0 to display all channel adapters (see screen on page 3-21).
- Select options 1 to 16 to display channel adapters numbered 1 through 16 (see screen on page 3-23).

For example, if the channel adapter number 2 is selected, the following message is displayed:
 THIS CA CANNOT EXIST.

It means that the CA number 2 is associated with the CA number 1 and shares a two-processor switch (TPS) feature.

NUMBER Channel adapter number followed by the interface identifier A or B. The channel adapter number defines the physical position (refer to table on page 3-22 to see the relation between physical and logical addresses of CAs).

PRESENCE Indicates whether the CA is present or not, (Y = Yes and N = No).

TYPE Two types of channel adapter exist:

6 = CADS Channel adapter with data streaming:

- Allows a high-speed data rate for a host located up to 122 meters (400 feet) from the controller. Data can be transferred in synchronous mode at an average rate of 2 million bytes per second.
- Supports PEP, therefore ESC addresses (emulation sub-channel addresses).

7 = BCCA Buffer chaining channel adapter:

- BCCA is a new type of channel adapter with improved performance capability.

Improved performance is obtained when the BCCA operates in "buffer chaining" mode.

It handles chains of NCP buffers (provided that the parameter 'CA = type 7' is defined for this CA in the NCP 'LINE' macro definition).

- A BCCA supports the same features as a CADS.
- A BCCA allows a high-speed data rate for a host located up to 122 meters (400 feet) from the controller. Data can be transferred in synchronous mode at an average rate of 2 million bytes per second.
- Make sure that you have the right NCP level.

Only NCP V5R3.1 and later can run the BCCA in "buffer chaining" mode.

With older Control Programs, the BCCA works as a CADS for NSC traffic.

The BCCA does not support ESC traffic.

Before the service representative adds a channel adapter type seven (BCCA), check that the control program level, the BCCA working mode and the sub-channel addresses (NSC/ESC) are compatible.

Refer to the following tables:

Table 3-2 on page 3-20 for NCP

Table 3-3 on page 3-20 for PEP.

CA updates implementation

Remember, even if the MOSS console shows that the changes have been made, the CA characteristic changes will only be effective either:

- At the next 3745 power off/power on of the 3745
or
- After a general IPL from the control panel of the 3745.

You can also call the service representative to initialize channel adapters.

| Table 3-2. Supported Channel Adapter Types versus NCP Levels | | | |
|--|---------------------------------|--------------------------|----------------------|
| NCP Levels | Installed Channel Adapter Types | | |
| | CADS | BCCA | |
| | | Non-buffer Chaining Mode | Buffer Chaining Mode |
| NCP (W/O EP) V5R1 to V5R3 Included | Yes | Yes | No |
| NCP (W/O EP) V5R3.1 and later | Yes | Yes | Yes |

| Table 3-3. Supported CA Types and NSC/ESC Addresses versus PEP/NCP Levels | | | | | | |
|---|---------------------------------|-----|--------------------------|-----|----------------------|-----|
| NCP/PEP Levels | Installed Channel Adapter Types | | | | | |
| | CADS | | BCCA | | | |
| | | | Non-buffer Chaining Mode | | Buffer Chaining Mode | |
| | NSC | ESC | NSC | ESC | NSC | ESC |
| PEP (NCP + EP) NCP V5R1 to V5R3 Included | Yes | Yes | Yes | No | No | |
| PEP (NCP + EP) NCP V5R3.1 and later | Yes | Yes | Yes | No | Yes | No |

Displaying All Channel Adapters

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 9 SEND 0 SEND

If the MOSS is Alone

C D F SEND 1 SEND 9 SEND 0 SEND

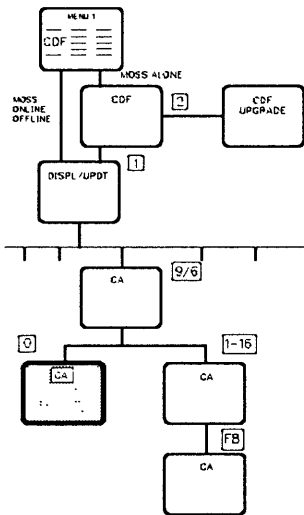
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 6 SEND 0 SEND

If the MOSS is Alone

C D F SEND 1 SEND 6 SEND 0 SEND



----- mm/dd/yy hh:mm

FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : CHANNEL ADAPTERS (1-8)

| NUMBER | TYPE | ADDRESS | PRESENCE | PS ID | TPS | FRAME | NSC | ESCL | ESCH |
|--------|------|---------|----------|-------|-----|-------|-----|------|------|
| 1 A | CADS | 8800 | Y | 4 | Y | BF | 0 | 0 | 0 |
| 1 B | | | N | 4 | | | 0 | 0 | 0 |
| 3 A | BCCA | 8804 | Y | 5 | N | BF | 5 | | |
| 4 A | CADS | 8806 | Y | 5 | N | BF | 0 | 0 | 0 |
| 5 A | ---- | 0800 | N | 6 | N | -- | 0 | 0 | 0 |
| 6 A | ---- | 0802 | N | 6 | N | -- | 0 | 0 | 0 |
| 7 A | ---- | 0804 | N | 7 | N | -- | 0 | 0 | 0 |
| 8 A | ---- | 0806 | N | 7 | N | -- | 0 | 0 | 0 |

====>

F1:END F3:ALARM F6:QUIT F8:FWD

(Blank or ---) means not applicable. Y means yes. N means no.

From the preceding screen:

- You cannot update displayed characteristics.

In order to display or update the characteristics of a specific channel adapter, you must press F6 to return to the screen of the page 3-18, enter its CA number then go to page 3-23.

- Press F8 to display channel adapters numbered 9 through 16 (for models 210, 310, 410, and 610).

NUMBER Channel adapter number followed by the interface identifier A or B. The channel adapter number defines the physical position (refer to table on page 3-22 to see the relation between physical and logical addresses of CAs).

- TYPE** CADS or BCCA.
- ADDRESS** Physical address of the CA on the IOC BUS.
- PRESENCE** Indicates whether the CA is present or not, (Y = Yes and N = No).
- PS ID** (For models 210, 310, 410, and 610 only)
Associated power supply identifier, see POS function.
- TPS** Y (yes) or N (no), depending on whether a two-processor switch is installed. Interfaces A and B (below 'NUMBER') may be connected either to the same host or to two different hosts.
- FRAME** (For models 210, 310, 410, and 610 only)
- BF for the 3745 base frame
 - L13, L14, or L15 for the corresponding 3746 unit number.
- NSC** Native sub-channel address. Any value from 0 through FF can be assigned to the NSC device address. If a TPS is installed on a channel, the two NSC interfaces (A and B) are assigned separately.
- ESCL** (Not used for BCCA)
Lowest emulation sub-channel address. This field is left blank if the selected CA is of the type BCCA.
- ESCH** (Not used for BCCA)
Highest emulation sub-channel address. This field is left blank if the selected CA is of the type BCCA.

| Physical Address (PA) | Logical Address (LA) | |
|-----------------------|---------------------------|----------------------|
| | Models 210, 310, 410, 610 | Models 130, 150, 170 |
| 1 | 8 | |
| 2 | 9 | |
| 3 | 10 | |
| 4 | 11 | |
| 5 | 0 | 0 |
| 6 | 1 | 1 |
| 7 | 2 | 2 |
| 8 | 3 | 3 |
| 9 | 12 | |
| 10 | 13 | |
| 11 | 14 | |
| 12 | 15 | |
| 13 | 4 | |
| 14 | 5 | |
| 15 | 6 | |
| 16 | 7 | |

Displaying or Updating One Channel Adapter

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 9 SEND X SEND
x = CA number

If the MOSS is Alone

C D F SEND 1 SEND 9 SEND X SEND
x = CA number

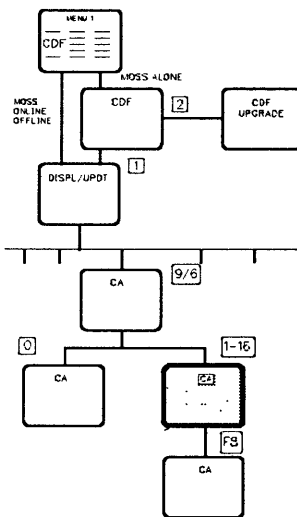
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 6 SEND X SEND
x = CA number

If the MOSS is Alone

C D F SEND 1 SEND 6 SEND X SEND
x = CA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY/UPDATE : CA 5

SWITCH : -      CAB : -      PS ID : -      ADDR : 0800
IOC     : 1      GROUP : 1      CCU   : A      TYPE : CADS

I/O ERROR ALERT (Y OR N)           : Y
TWO-PROCESSOR SWITCH MODE (TPS OR TCS) : TPS A

===>
F1:END      F3:ALARM  F5:UPDATE  F6:QUIT  F7:PREVIOUS CA  F8:FWD
  
```

--- means not applicable. Y means yes. N means no.

From the preceding screen:

- Press F5 to modify the I/O ERROR ALERT and the TWO-PROCESSOR SWITCH fields. Line **A** is displayed only if a TPS is installed. After alteration, you must press F8 for updating of additional CA information. See screen on page 3-26.
- Press F8 to display or update more CA information. See screen on page 3-26.
- The message: **CA NOT INSTALLED** is displayed and the display of **F5:UPDATE** is suppressed when the selected CA is not installed.

Note: Before the service representative adds a channel adapter type seven (BCCA), check that the control program level, the BCCA working mode and the sub-channel addresses (NSC/ESC) are compatible.

Refer to the following tables:

Table 3-2 on page 3-20 for NCP

Table 3-3 on page 3-20 for PEP.

When adding a BCCA, the following warning is displayed:

**WARNING: CA TYPE 7 (BCCA) DOES NOT SUPPORT ESC ADDRESSES.
CHECK COMPATIBILITY BETWEEN CTRL PROGRAM GENERATION AND ESC ADDRESSES.**

- CAB** Indicates the channel adapter board number.
- CCU** (For models 410 and 610 only)
A or B to indicate the CCU to which the CA is connected.
- IOC** Indicates the input/output controller number (1 or 2).
- SWITCH** Used by the service representative only.
(A for CCU = A and B for CCU = B.)
- TYPE** CADS or BCCA.
- GROUP** Address of a pair of CA.
- ADDR** Address of the CA on the IOC BUS.

I/O ERROR ALERT

Allows the channel to detect a channel adapter malfunction and generates an alert. It is available on all IBM hosts supporting the 3745. If not available on a non-IBM host, enter N on the screen. To do so, MOSS must be alone and the channel interface not enabled.

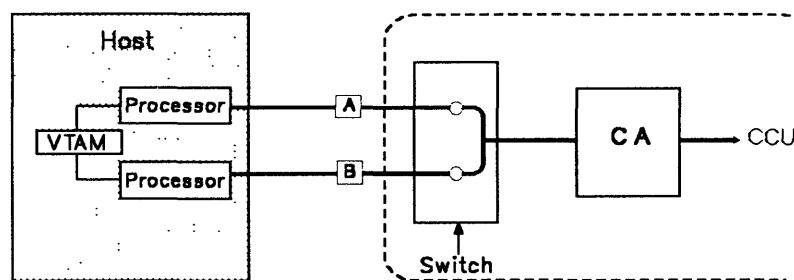
If the interfaces are connected to two different hosts, I/O ERROR ALERT can be set to Yes only if both hosts support the I/O ERROR ALERT feature.

TWO PROCESSOR SWITCH

Is displayed only for a CA with TPS.

When you have a TPS installed, you can use one of these modes:

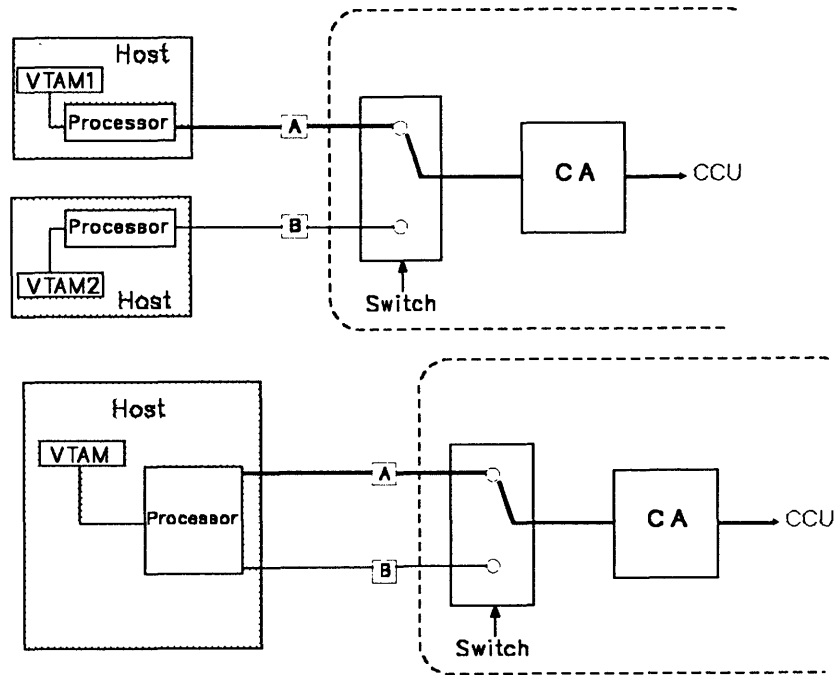
- **TPS mode**



Interfaces A and B are connected to two different channels of the same host (but different processors).

These interfaces **can** work (be enabled) at the same time.

TCS mode



Interfaces A and B are connected to channels of two different hosts/processors or to two channels of a unique host/processor. These interfaces **cannot** work (be enabled) at the same time.

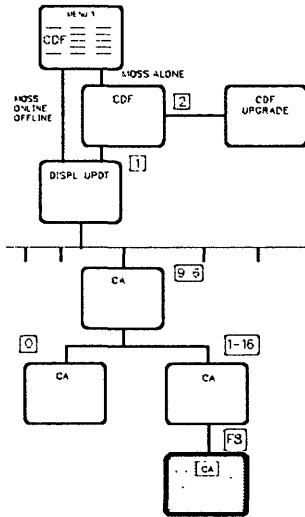
- TPS and TCS modes cannot be used at the same time.

Displaying or Updating Additional CA Information

If you pressed F8 from the preceding screen, the next screen is displayed.

Information on interface B is displayed if a TPS is installed (**B** on next screen).

When using TPS feature, the burst length must be specified for both the A and B interfaces on the channel adapter.



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : CA 5
                                B
                                INTERFACE A      INTERFACE B
CHANNEL BURST LENGTH (4 TO 254)           : 16           : 16
CHANNEL PRIORITY (L=LOW,H=HIGH)           : L             : L
NSC ADDRESS (00 TO FF)                    : 40            : 41
DATA STREAMING (Y=YES,N=NO)               : N             : N
HIGH SPEED DATA TRANSFER (Y=YES,N=NO)    : N             : N
BYTE MULTIPLEXER CHANNEL (Y=YES,N=NO)     : N             : N
DATA STREAMING SPEED (1 TO 3)              :               :
(1=1MB, 2=2MB, 3=3MB)
ESC ADDRESS RANGE (00 TO FF) A           : -             :
====>
F1:END      F3:ALARM    F5:UPDATE  F6:QUIT  F7:BWD  F8:NEXT CA
    
```

From the preceding screen:

- Press F5 to update the displayed information.
Read the displayed information carefully and the restrictions shown in table Table 3-5 on page 3-27 before updating.
- Do not forget to press SEND once the information is updated. The line **A** is displayed only if the selected CA is of the type CADS.

CA updates implementation

Remember, even if the MOSS console shows that the changes have been made, the CA characteristic changes will only be effective either:

- At the next 3745 power off/power on of the 3745
or
- After a general IPL from the control panel of the 3745.

You can also call the service representative to initialize channel adapters.

CHANNEL PRIORITY

Priority to be given to the CA among the other units attached to the channel. For NCP, enter H for CAs with the most traffic and L for the other CAs. For PEP, enter H.

NSC ADDRESS

Address of the native sub-channel for the NCP or PEP.

ESC ADDRESS RANGE (CADS only)

Address range of the emulation sub-channel for the PEP when ESC is used. Enter two hexadecimal numbers from 00 through FF. Read the "Restrictions" in Table 3-5 on page 3-27.

DATA STREAMING

Feature on a host for block multiplexer or selector channels. Read the "Restrictions" on Table 3-5.

Enter N when the 3745 is connected to an IBM 43xx, 308x or 3033, or when an IBM 3044 is used as channel extender. Read the "Restrictions" in Table 3-5.

DATA STREAMING SPEED

Select a speed according to the host channel speed. Read the "Restrictions" in Table 3-5.

BYTE MULTIPLEXER CHANNEL

Enter Y or N according to the channel type used. Read the "Restrictions" in Table 3-5.

| Table 3-5. Restrictions for Updating of CA Information | |
|--|--|
| If this is displayed: | You must enter: |
| DATA STREAMING ==> Y | HIGH SPEED DATA TRANSFER ==> N BYTE MULTIPLEXER CHANNEL ==> N DATA STREAMING SPEED ==> 1, 2, or 3 |
| BYTE MULTIPLEXER CHANNEL ==> N | ESC ADDRESS RANGE left blank |
| DATA STREAMING ==> N | DATA STREAMING SPEED left blank |
| TWO-PROCESSOR SWITCH MODE ==> TPS (on preceding screen) | ESC ADDRESS RANGE left blank |

HIGH SPEED DATA TRANSFER

Basic feature installed on a host channel according to Table 3-6.

| Table 3-6. High Speed Data Transfer feature | | | |
|---|--------------------------|---------------------------|------------------|
| IBM Host | Byte Multiplexer Channel | Block Multiplexer Channel | Selector Channel |
| 3033 | No | Yes | Yes |
| 308x, 309x, 4361, 4381, ES/9000 | Yes | Yes | No |
| IBM 4341 | Yes | Yes | Yes |
| IBM 937x | No | Yes | No |

CHANNEL BURST LENGTH

Length of the burst which can be transferred between the CA and the host. It is an even number from 4 and 254.

- For a block multiplexer or selector channel the recommended values are:

- 64 for a channel adapter of type CADS
- 254 for a channel adapter of type BCCA.

These values allow better channel adapter throughput.

- For a byte multiplexer channel, check the host byte transfer rate and select the burst length accordingly.

The recommended values are:

- With buffered devices on the byte multiplexer channel: 254 for NCP, and 64 for PEP.

Choose the value 254 to optimize the data transfer over the channel. It reduces the number of channel connections and disconnections.

Choose the value 64 for a better channel adapter throughput.

Based on performance tests, it seems that in most of cases, 64 is preferable. It allows a better overlap between the data transfer on the channel interface (3745 to/from host), and the data transfer on IOC buses (channel adapter to/from CCU).

- With unbuffered devices on the byte multiplexer channel:
 - 32 for the IBM 3033, 308x, 309x and ES/9000
 - 16 for the IBM 4341 and 4381
 - 8 for the IBM 4361.

Displaying or Updating All Line Adapters

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND

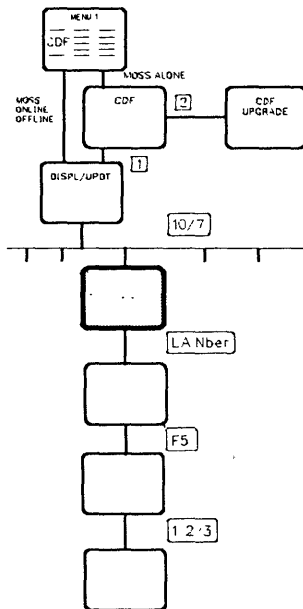
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY/UPDATE : LINE ADAPTERS

NUMBER 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
PRESENCE Y N Y N N N N N Y Y N N N N N N
LA TYPE* 3 - 5 5 - - - 1 1 - - - - -

NUMBER 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
PRESENCE N N N N N N N N N N N N N N N N
LA TYPE* - - - - - - - - - - - - - - -

* LA TYPE MEANING : 1=TSS , 2=HPTSS , 3=TRSS , 4=RSRVD , 5=ESS
- TO DISPLAY/UPDATE LA, SELECT ITS NUMBER (1-32), THEN PRESS SEND ==>
===>

F1:END          F3:ALARN          F6:QUIT
  
```

From the preceding screen you may:

- Display more information on an LA.

The screen displayed depends upon the type of line adapter:

- To display or update a TSS type line adapter, go to page 3-31.
- To display or update a HPTSS type line adapter, go to page 3-36.
- To display a TRSS type line adapter, go to page 3-41.
- To display an ESS type line adapter, go to page 3-42.

- Update an LA after a LIC, HPTSS, or TSS cable change (see screens on pages 3-33 and 3-38).

To do so, enter the LA number; then press SEND.

NUMBER Line adapter number.

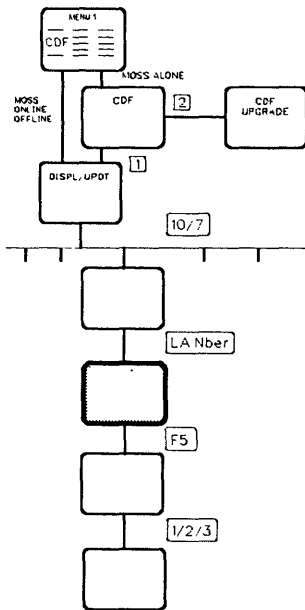
PRESENCE Indicates whether the LA is present (Y) or not (N).

LA TYPE TSS (low-speed scanner), TRSS (token-ring adapter), HPTSS (high-speed scanner), or ESS (Ethernet subsystem).

For models 210, 310, 410 and 610, there can be 32 line adapters, which are installed as follows:

| LA | Frame | LAB |
|-------|----------|-----|
| 1-8 | 3745 | 1 |
| 9-16 | 3746-A11 | 2 |
| 17-24 | 3746-A11 | 3 |
| 25-32 | 3746-A12 | 4 |

If you select a line adapter that is not installed, the following screen is displayed:



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY : LA 5

SWITCH : A        LAB : 1   PS ID : 10   ADDR : 90
IOC    : 2        GROUP : 1   CCU   : A    TYPE : ----

                   LA NOT INSTALLED

====>
F1:END          F3:ALARM          F6:QUIT          F7:PREVIOUS LA  F8:NEXT LA
    
```

Note: Even though the adapter is not installed, the switch, IOC, LAB, group, PS ID, and address information are displayed.

CCU A or B to indicate the CCU to which the CA is connected.

GROUP From 1 to 8.

IOC Input/output controller number (1 or 2).

LAB Line adapter board number (1, 2, 3 or 4).

PS ID Associated power supply identifier (see POS function).

SWITCH Used by the service representative only (A for CCU=A and B for CCU=B).

TYPE TSS (low-speed scanner), TRSS (token-ring adapter), HPTSS (high-speed scanner) or ESS (Ethernet subsystem).

Displaying or Updating One TSS Line Adapter

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND
 x = LA number

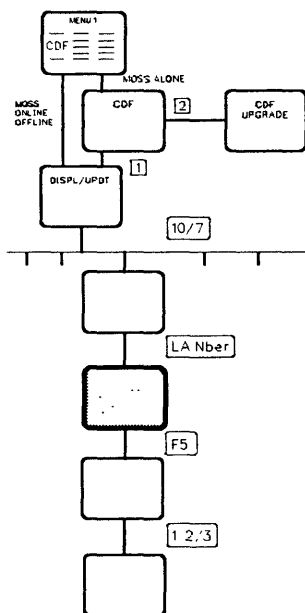
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND
 x = LA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : LA 9

SWITCH : -- LAB : -- PS ID : -- ADDR : 12 MUX : 1
IOC : 1 GROUP : 3 CCU : A TYPE : TSS EXTEND : YES

LIC          CLOCK (C) AND CABLE INFO (I)
POSITION    PRESENCE  NUMBER  TYPE  C  I  C  I  C  I  C  I
  1          Y        1      1    3  5  2  4  3  5  2  4
  2          Y        2      1    3  5  2  4  3  5  2  4
  3          Y        3      1    3  5  2  4  3  5  2  4
  4          Y        4      1    3  5  2  4  3  5  -  -
====>

F1:END      F3:ALARM F5:UPDATE F6:QUIT F7:PREVIOUS LA F8:EXTEND
    
```

--- means not applicable. Y means yes. N means no.

From the preceding screen:

- Press F8:EXTEND or F8:MUX (if displayed) to display more information on this LA.
- Press F5 (if displayed) to update this LA after a LIC or TSS cable change and if the MOSS is ONLINE or OFFLINE and the adapter is operative (see page 3-33).
You cannot update the characteristics displayed on this screen.
- Press F7 which has three possible meanings, depending on your configuration:
 - PREVIOUS LA - To display the previous line adapter.
 - MUX - To display LIC positions 5 to 8 (when EXTEND is YES).
 - BWD - To display LIC positions 1 to 4 and 13 to 16 (when EXTEND is YES).
- Press F8 which has three possible meanings, depending on your configuration:
 - NEXT LA - To display the next line adapter.
 - FWD - To display LIC positions 5 to 8 and 13 to 16 (when EXTEND is YES).
 - EXTEND - To display LIC positions 9 to 12 (when EXTEND is YES).

MUX Multiplex function number.

EXTEND If EXTEND = YES, the corresponding LA can contain up to eight LICs of type 1 to 4, and up to 16 LICs of type 5 or 6, and can support up to 32 lines.
If EXTEND = NO, the corresponding LA can contain up to four LICs of type 1 to 4, and up to 8 LICs type 5 or 6, and can support up to 16 lines.

LAB Line adapter board number.

NUMBER LIC number.

TYPE The type of the LIC (1, 3, 4, 5, or 6).

PRESENCE Indicates whether the LIC is present (Y) or not (N). The cable for LICs 5 and 6 is internal and assumed to be present.

CLOCK (C) AND CABLE INFO (I)

C (clock type):

- 0 Clock not defined
- 1 Internal clock
- 2 External clock
- 3 Direct attachment.

I (cable information):

- 0 Cable not installed
- 1 LIC type 1, 4 wrap block
- 2 LIC type 3 wrap cable
- 3 LIC type 5 wrap
- 4 Modem attachment
- 5 Direct attachment
- 6 Autocall
- 7 LIC type 6 wrap.

Note: For a LIC 5 or LIC 6, the clock is 0 or 2.

Updating One TSS Line Adapter

Replacing, Deleting, or Adding a LIC or a TSS Cable

Note: The MOSS must be **online** or **offline**.

Lines on LIC must be deactivated before proceeding with update.

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 0 SEND X SEND F5
 x = LA number

Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 7 SEND X SEND F5
 x = LA number

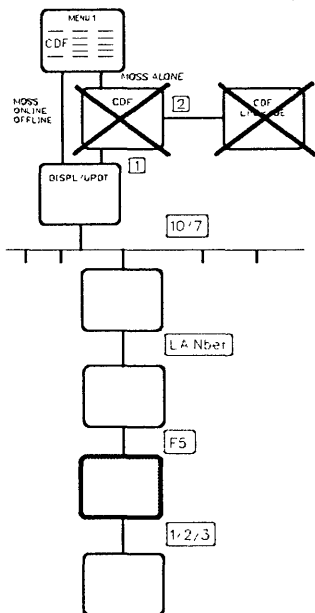
Use one of the following CDF options to update the configuration data file after you have physically removed or added a LIC or a TSS cable. If you replaced a LIC or a TSS cable by another one of the same type, you need not update the CDF.

If you removed, or added a TSS cable, you must use option REPLACE LIC.

To replace, delete, or add a LIC

Refer to the *3745 Connection and Integration Guide*.

Remember also the port swap facility, (see Chapter 15, "Port Swap File (PSF)" on page 15-1).



```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPDATE : LA 9

- SELECT ONE OPTION (1 TO 3), THEN PRESS SEND ==>

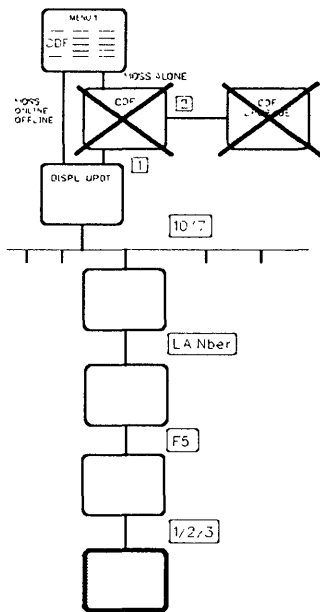
1 = REPLACE LIC
2 = DELETE LIC
3 = ADD LIC

==>
F1:END      F3:ALARM      F6:QUIT      F7:DISPLAY
```

Refer to Appendix A, "Messages" on page A-1 in case of messages.

From the preceding screen:

- Select option 1 then press SEND:
 - To replace an existing LIC with another LIC. This is the same as deleting an existing LIC, then adding a different LIC.
 - For a TSS cable change.
- Select option 2 then press SEND:
 - To delete an existing LIC (that has been replaced by a dummy LIC).
- Select option 3 then press SEND:
 - To add a new LIC (that has replaced a dummy LIC).



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - UPDATE : REPLACE LIC OF LA 3

- SELECT THE LIC POSITION (1 TO xx), THEN PRESS SEND ==>

- PRESS SEND
===>

F1:END      F3:ALARM      F6:QUIT      F7:DISPLAY
    
```

From the preceding screen:

Enter the LIC position then press SEND.

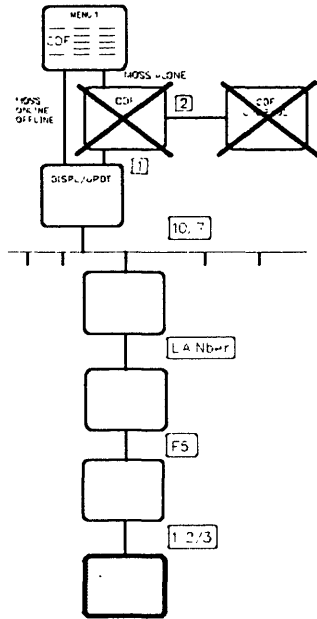
To find out the LIC position, refer to the *3745 Connection and Integration Guide*.

Note: The MOSS must be **online** or **offline**.

Lines on LIC must be deactivated before proceeding with update.

If a LIC type 6 running at 56 kbps is plugged in a wrong position, the following message is displayed:

- 56 KBPS LIC(S) 6 MISPLUGGED: PLUG IN ODD POSITION
- Refer to Appendix A, "Messages" on page A-1. Do as told, then restart the CDF Update function.



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - LIC CHANGE: LIC 1

CDF LIC CHANGE STARTED

  ADAPTER INFORMATION : FETCHED
  OPERATOR CHOICE    : ACCEPTED

CDF LIC CHANGE COMPLETED

===>

F1:END      F3:ALARM      F6:QUIT      F7:DISPLAY
    
```

About the preceding screen:

It is displayed when the update is successfully completed.

All changes performed with the MOSS offline will become effective after the MOSS is online.

ADAPTER INFORMATION If ERROR is displayed: ☎

OPERATOR CHOICE If REJECTED is displayed, you may have entered a wrong option or done an incorrect hardware modification.

If the LIC is not present, the operator choice will be rejected.

Displaying or Updating One HPTSS Line Adapter

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND
 x = LA number

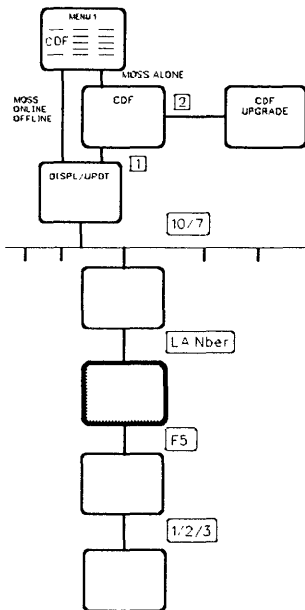
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND
 x = LA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE : LA 3

SWITCH : --   LAB : --   PS ID : --   ADDR : 11   PORT1 : 1028
IOC    : 1-   GROUP : 2   CCU  : A    TYPE  : HPTSS  PORT2 : 1029

ERROR SEQUENCE                               : 7FFF
DSR INTEGRATION TIMER (0,1,4,16,32,64,128,256 HS) : 0

====>
F1:END    F3:ALARM   F5:UPDATE   F6:QUIT   F7:PREVIOUS LA   F8:NEXT LA
    
```

From the preceding screen:

The following data may be updated:

- The error sequence
- The DSR integration timer.

To do so, press F5; then, on the next screen (shown on page 3-38), select option 1. All changes will become effective after the next IML of the line adapter.

DMA SIZE Length of burst. Depending on the microcode level of the 3745, this field may no longer be displayed and modifiable on the screen. Default values are set as follows:

- 64 for receive operations
- 253 for transmit operations.

ERROR SEQUENCE Pattern sent in case of error.

DSR INTEGRATION TIMER

Adjustable confirmation delay when the Data Set Ready (DSR) level changes. The default value is 16.

Updating One HPTSS Line Adapter

Replacing, Deleting, or Adding an HPTSS Cable

Use this CDF option to update the configuration data file after you have physically replaced, removed or added an HPTSS cable.

Models 130, 150, 170

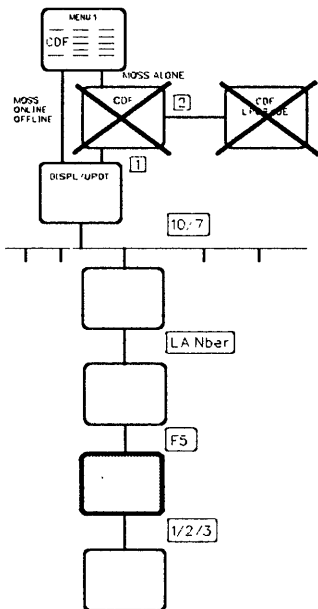
The MOSS must be Online

C D F SEND 1 0 SEND X SEND F5
 x = LA number

Models 210, 310, 410, 610

The MOSS must be Online

C D F SEND 7 SEND X SEND F5
 x = LA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPDATE : LA 9

- SELECT ONE OPTION (1 TO 2), THEN PRESS SEND ==>

    1 = UPDATE LA PARAMETERS
    2 = UPDATE LA PARAMETERS WITH CABLE INFORMATION ONLY

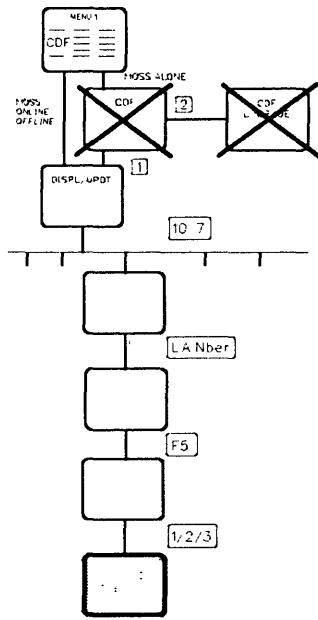
==>

F1:END           F3:ALARM           F6:QUIT           F7:DISPLAY
    
```

From the preceding screen:

- Select option 1; then press SEND to update the LA parameters displayed on the preceding screen. (The preceding screen is once more displayed as shown on page 3-39.)
- Select option 2; then press SEND to update the cable information. Go to page 3-40.

Option 1 - Update LA Parameters



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPDATE : LA 5

SWITCH : A        LAB  : 1    PS ID : 10    ADDR : 90    PORT1 : 1032
IOC    : 2        GROUP: 1    CCU  : A     TYPE : HPTSS  PORT2 :

ERROR SEQUENCE                               ==> 7FFF
DSR INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) ==> 16

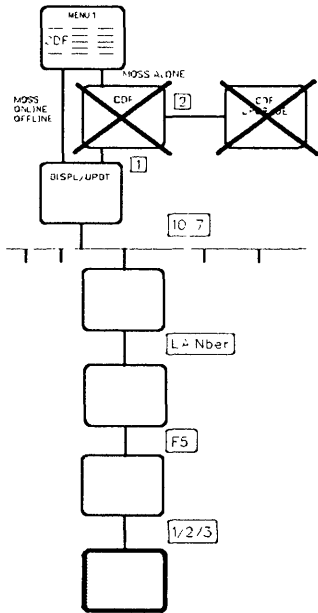
====>

F1:END      F3:ALARM      F6:QUIT  F7:DISPLAY
    
```

When the change is complete, you see the message:
 UPDATE OF THE CDF FILE SUCCESSFUL.

Option 2 - Update LA Parameters with Cable Information Only

If you select option 2 from the HPTSS Line Adapter Update screen, the following screen is displayed:



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - LA 9 CHANGE

CDF LA CHANGE STARTED

  ADAPTER INFORMATION : FETCHED
  OPERATOR CHOICE    : ACCEPTED

CDF LA CHANGE COMPLETED

===>

F1:END      F3:ALARM      F6:QUIT      F7:DISPLAY
  
```

This screen is displayed when the update is successfully completed.

Changes are automatically taken into account by NCP.

- If only one port was active at update time, the following message is displayed:
ONLY PORT xxxx IS TAKEN INTO ACCOUNT BY THE CDF
- If the two ports were inactive at update time, the following message is displayed:
PORTS xxxx AND xxxx ARE TAKEN INTO ACCOUNT BY THE CDF

ADAPTER INFORMATION If ERROR is displayed: ☎

OPERATOR CHOICE If REJECTED is displayed, you may have entered a wrong option or performed an incorrect hardware modification.

The presence of the HPTSS line adapter cable is reflected in the configuration data file and in the Network Control Program (NCP).

Displaying One TRSS Line Adapter

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND
 x = LA number

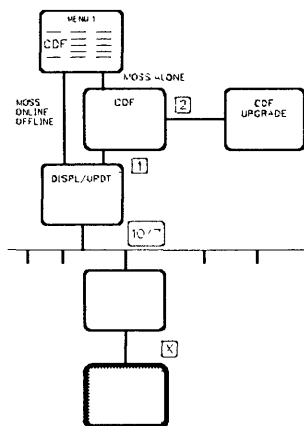
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND
 x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND
 x = LA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE : LA 1

SWITCH : ---   LAB : ---   PS ID : ---   ADDR : 4800
IOC    : 1     GROUP : 1    CCU   : A     TYPE  : TRSS

TIC
POSITION  PRESENCE  PORT NUMBER  TYPE
  1         Y         1088      2
  2         Y         1089      2

====>
F:END      F3:ALARM      F6:QUIT      F8:NEXT LA
    
```

From the preceding screen: _____
 You cannot update TRSS line adapter characteristics.

TIC POSITION Position number of the TIC in the TRA board.

PRESENCE Y (yes) or N (no), depending on whether a TIC card is present or not.

PORT NUMBER Port in the range 1088 through 1095.

- TYPE**
- TIC type 1 attaches a token-ring network operating at 4 Mbps.
 - TIC type 2 attaches a token-ring network operating at 4 or 16 Mbps.
(Only the TIC type 2 is installed on models 130, 150, and 170.)

Displaying One ESS Line Adapter

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 0 SEND X SEND
x = LA number

If the MOSS is Alone

C D F SEND 1 SEND 1 0 SEND X SEND
x = LA number

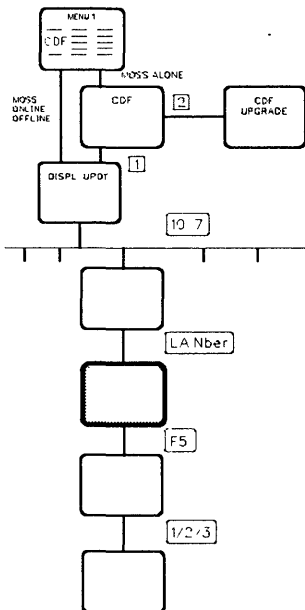
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 7 SEND X SEND
x = LA number

If the MOSS is Alone

C D F SEND 1 SEND 7 SEND X SEND
x = LA number



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : LA **

SWITCH : --      LAB : --      PS ID : --      ADDR : 11      PORT1 : 1060
IOC : 1          GROUP : 2      CCU : A         TYPE : ESS     PORT2 : 1061

==> ...

F1:END          F3:ALARM          F6:QUIT  F7:PREVIOUS LA  F8=NEXT LA
  
```

Displaying or Updating Ports

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 1 SEND

If the MOSS is Alone

C D F SEND 1 SEND 1 1 SEND

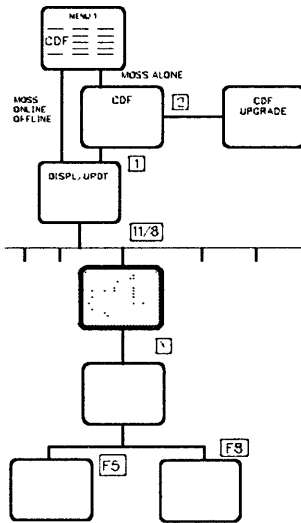
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 8 SEND

If the MOSS is Alone

C D F SEND 1 SEND 8 SEND



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY/UPDATE : PORTS

- SELECT ONE PORT (0 TO 1095), THEN PRESS ENTER ==>

    0 TO 895 = TO DISPLAY/UPDATE TSS PORTS
  1024 TO 1039 = TO DISPLAY HPTSS PORTS
  1056 TO 1071 = TO DISPLAY ESS PORTS
  1088 TO 1095 = TO DISPLAY TRSS PORTS

====>
F1:END          F3:ALARH          F6:QUIT
    
```

You can select:

- A TSS port number from 0 through 895.
- An HPTSS port number from 1024 through 1039.
- An ESS port number from 1056 through 1071.
- A TRSS port number from 1088 through 1095.

Displaying or Updating One TSS Port

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND ■ 1 1 SEND ■ X SEND
 x = port number (0-895)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 1 SEND ■ X SEND
 x = port number (0-895)

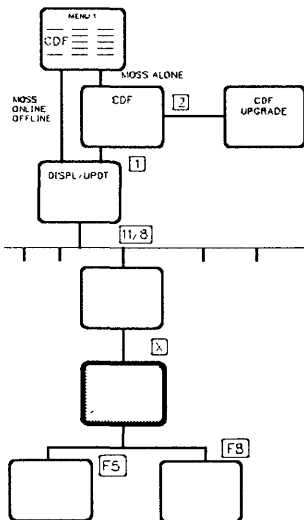
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND ■ 8 SEND ■ X SEND
 x = port number (0-895)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 8 SEND ■ X SEND
 x = port number (0-895)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY: PORT 1

CCU   : A   IOC  : 1   FRAME : --  MUX  : 1   MUX  LIC CABLE
SWITCH : --- LA  : 5   IPL   : N   LIC  : 1   Y   Y   Y

PORT CLOCKING (0,1,2,3)           : 0  A
TRANSIENT THRESHOLD (0 TO 15)    : 3  A

====>

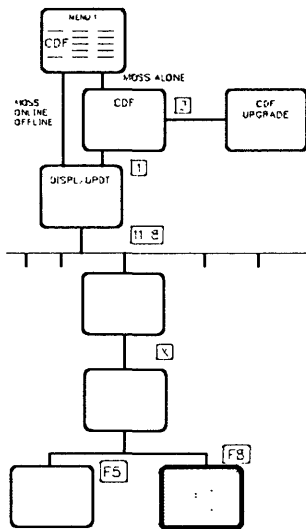
F1:END      F3:ALARM      F5:UPDATE  F6:QUIT      F8:FWD
    
```

From the preceding screen:

- Press F8:FWD to display INTEGRATION TIMER information **B** (on screen of page 3-45).
- Press F5 to update lines **A** or **B** (on screen of page 3-46).

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying the Integration Timer (by Pressing F8)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - DISPLAY: PORT 1

CCU   : A      IOC : 1      FRAME : ---  MUX : 1      MUX LIC CABLE
SWITCH : ---  LA  : 5      IPL  : N      LIC : 1      Y   Y   Y

DSR INTEGRATION TIMER (0,1,4,16,32,64,128MS OR 10S) : 16  B
RLSD INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) : 16  B
RI   INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) : 16  B

===>
F1:END          F3:ALARM          F5:UPDATE  F6:QUIT  F7:BWD  F8:NEXT PORT
  
```

--- means not applicable.

From the preceding screen:

- Press F7:BWD to re-display preceding screen.
- Press F5 to update lines **A** or **B** (on screen of page 3-46).

CCU CCU attached to the port.

FRAME BF for the 3745 base frame or L13, L14, or L15 for the appropriate 3746 unit number.

MUX Number of the multiplexer from 1 through 56.

LIC LIC number.

CABLE The cable for LIC types 5 and 6 is internal and assumed to be present.

PORT CLOCKING

- 0 Clock not defined
- 1 Internal clock
- 2 External clock
- 3 Direct attachment (also called: 3745 mode or direct mode)
- For LIC types 1, 3, and 4, port clocking values can be 0, 1, 2, or 3.
For a LIC 5 or LIC 6, values can only be 0 or 2 (default value is 2).

TRANSIENT THRESHOLD

Maximum number of consecutive transient TSS errors received before a solid error is generated. The default value 3 is recommended.

DSR INTEGRATION TIMER

Adjustable confirmation delay when the Data Set Ready level changes. The value 256 is not allowed for this timer.

RLSD INTEGRATION TIMER

Adjustable confirmation delay when the Receive Line Signal Detector level changes. The value 10 is not allowed for this timer.

RI INTEGRATION TIMER

Adjustable confirmation delay when the Ring Indicator level changes. Used only with LIC types 1 through 4. The value 10 is not allowed for this timer.

IPL

Y or N. Indicates if it is an IPL port or not.

Note: The RI integration timer options line is not used and, therefore, displayed for LIC types 5 and 6.

DSR

Adjustable confirmation delay when the Data Set Ready (DSR) level changes. The default value is 16.

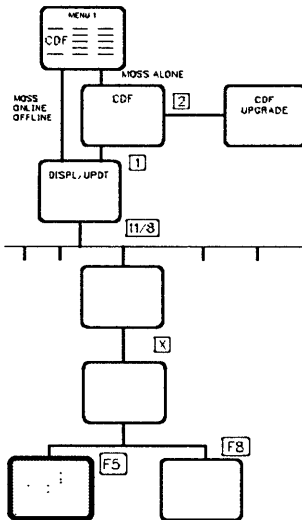
RLSD

Adjustable confirmation delay when the Receive Line Signal Detector (RLSD) level changes. The default value is 16.

RI

Adjustable confirmation delay when the Ring Indicator (RI) level changes. The default value is 16.

Updating One TSS Port (by Pressing F5)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                   CDF - UPDATE : PORT 14

PORT CLOCKING (0, 1, 2, 3)           ==> 2  A
TRANSIENT THRESHOLD (0 TO 15)       ==> 3  A
DSR INTEGRATION TIMER (0,1,4,16,32,64,128MS OR 10S) ==> 16  B
RLSD INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) ==> 16  B
RI INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) ==> 16  B

===>

F1:END           F3:ALARM           F6:QUIT  F7:DISPLAY
    
```

From the preceding screen:

You can update information in the appropriate fields.
Do not forget to press SEND after you have updated port information.

Displaying One HPTSS Port

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 1 SEND X SEND
 x = port number (1024-1039)

If the MOSS is Alone

C D F SEND 1 SEND 1 1 SEND X SEND
 x = port number (1024-1039)

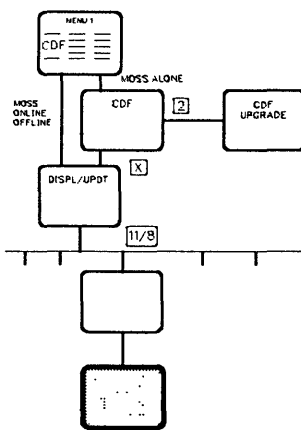
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 8 SEND X SEND
 x = port number (1024-1039)

If the MOSS is Alone

C D F SEND 1 SEND 8 SEND X SEND
 x = port number (1024-1039)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                  CDF - DISPLAY: PORT 1028
CCU   : A   IOC : 1   FRAME : ---   PRESENCE
SWITCH : --- LA  : 3   IPL  : N   CABLE
                                     Y

CABLE ID : x
INTERFACE TYPE : V.35

====>

F1:END      F3:ALARM      F6:QUIT      F7:PREVIOUS PORT      F8:NEXT PORT
    
```

From the preceding screen:

You cannot update HPTSS port characteristics.

| CABLE ID | INTERFACE TYPE |
|---------------------|----------------|
| 1 Wrap block | V.35 |
| 4 Modem attachment | X.21 |
| 5 Direct attachment | |

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying One ESS Port

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 1 SEND X SEND
 x = port number (1056-1071)

If the MOSS is Alone

C D F SEND 1 SEND 1 1 SEND X SEND
 x = port number (1056-1071)

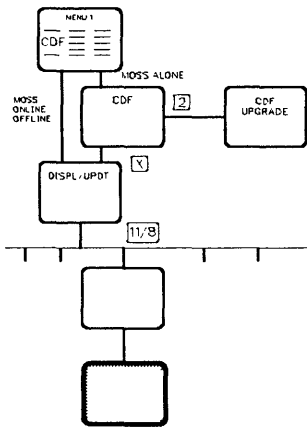
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 8 SEND X SEND
 x = port number (1056-1071)

If the MOSS is Alone

C D F SEND 1 SEND 8 SEND X SEND
 x = port number (1056-1071)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                  CDF - DISPLAY PORT : 1056

CCU   : A   IOC : 1   FRAME : BF
SWITCH : -   LA  : 1   IPL  : N

==> ...

F1:END   F3:ALARM   F6:QUIT   F7:PREVIOUS PORT   F8:NEXT PORT
    
```

From the preceding screen:

You cannot update ESS port characteristics.

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying One TRSS Port

Models 130, 150, 170

If the MOSS is Offline or Online

C D F SEND 1 1 SEND X SEND
 x = port number (1088-1095)

If the MOSS is Alone

C D F SEND 1 SEND 1 1 SEND X SEND
 x = port number (1088-1095)

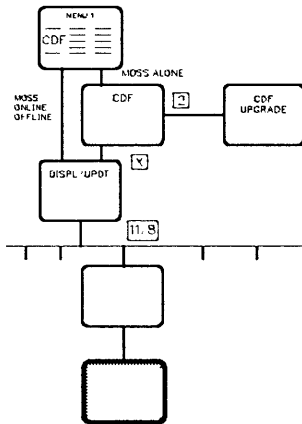
Models 210, 310, 410, 610

If the MOSS is Offline or Online

C D F SEND 8 SEND X SEND
 x = port number (1088-1095)

If the MOSS is Alone

C D F SEND 1 SEND 8 SEND X SEND
 x = port number (1088-1095)



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY: PORT 1088

CCU   : A   IOC  : 1   FRAME : ---
SWITCH : --- LA  : 1   IPL   : N

====>
F1:END      F3:ALARM    F6:QUIT      F8:NEXT PORT
    
```

From the preceding screen: _____
 You cannot update TRSS port characteristics.

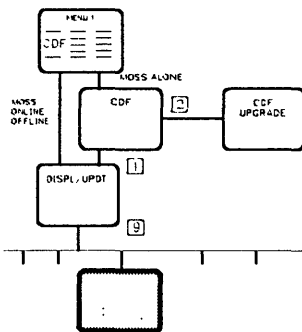
CCU Operating Mode Display/Update (Models 210, 310, 410, and 610)

If the MOSS is Offline or Online

C D F SEND 9 SEND

If the MOSS is Alone

C D F SEND 1 SEND 9 SEND



```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
CDF - DISPLAY : CCU OPERATING MODE

CCU OPERATING MODE (1 TO 4) : 2
  1 = TWIN DUAL
  2 = TWIN STANDBY
  3 = TWIN BACKUP
  4 = SINGLE

TWIN STANDBY MODE ONLY : OPERATIONAL CCU (A OR B) : A

===>

F1:END      F3:ALARM      F5:UPDATE      F6:QUIT
    
```

The default CCU operating modes are

- **Twin-backup** for models 410 and 610.
- **Single** for models 210 and 310. Modes 1, 2 and 3 are not available for models 210 and 310.

For a detailed description of the 3745 modes of operation, refer to the *3745 Communication Controller: Introduction*.

From the preceding screen:

- You can select another CCU operating mode by entering the appropriate number. If you select the mode 2 (**twin-standby**), you must select either CCU-A or CCU-B by entering A or B in the appropriate field. In this case, the CCU that is selected is the CCU that is operational during IPL.
- After you have changed modes, perform an IPL (refer to "IPL Twin-CCU Configuration (for Models 410 and 610)" on page 9-3).
If neither CCU is loaded (Both, Run, or Ready), an IPL will be accepted for either CCU.

CCU Operating Mode Changes

The operating modes can be changed according to the following rules:

1. With the MOSS ALONE: All operating modes
2. With the MOSS ONLINE or OFFLINE:
 - Twin-dual to twin-backup
 - Twin-backup to twin-dual (if no fallback)
 - Twin-standby to twin-backup, or twin-dual, or single.

If some files (such as port swap file) are opened, the request will be rejected.

The following table shows the possible changes of the CCU operating mode, and the action taken for each change request.

| Current Operating Mode | Selected Operating Mode | | | | |
|------------------------|-------------------------|----------------|----------------|-----------|-------------|
| | Single | Twin-standby A | Twin-standby B | Twin-dual | Twin-backup |
| Single | - | 3 | 3 | 3 | 3 |
| Twin-standby A | 3 | - | 2 | 2 | 2 |
| Twin-standby B | 3 | 2 | - | 2 | 2 |
| Twin-dual | 3 | 2 | 2 | - | 1 |
| Twin-backup | 3 | 2 | 2 | 1 | - |

Actions

1. If fallback is:
 - Active: Change refused
 - Not active: Change accepted (no IPL needed).
2. If NCP is:
 - Running: Change refused
 - Not running: Change accepted (IPL needed).
3. Change refused

When the change is refused, CDF create or upgrade must be performed first.

Impact on NCP/PEP Load Module of CCU Operating Mode Changes

| Table 3-8. Impact of CCU Operating Mode Changes on NCP/PEP Load Modules (Models 410 and 610) | | | | | |
|--|-------------------------|----------------------|----------------------|-----------|-------------|
| Current Operating Mode | Selected Operating Mode | | | | |
| | Single (NCP A) | Twin-standby (NCP A) | Twin-standby (NCP B) | Twin-dual | Twin-backup |
| Single (NCP A) | No effect | No effect | A to B | No effect | No effect |
| Twin-standby (NCP A) | No effect | No effect | A to B | No effect | No effect |
| Twin-standby (NCP B) | B to A | B to A | No effect | No effect | No effect |
| Twin-dual | Deactivate NCP B | Deactivate NCP B | Deactivate NCP A | No effect | No effect |
| Twin-backup | Deactivate NCP B | Deactivate NCP B | Deactivate NCP A | No effect | No effect |

Single-CCU Mode (Models 210 and 310)

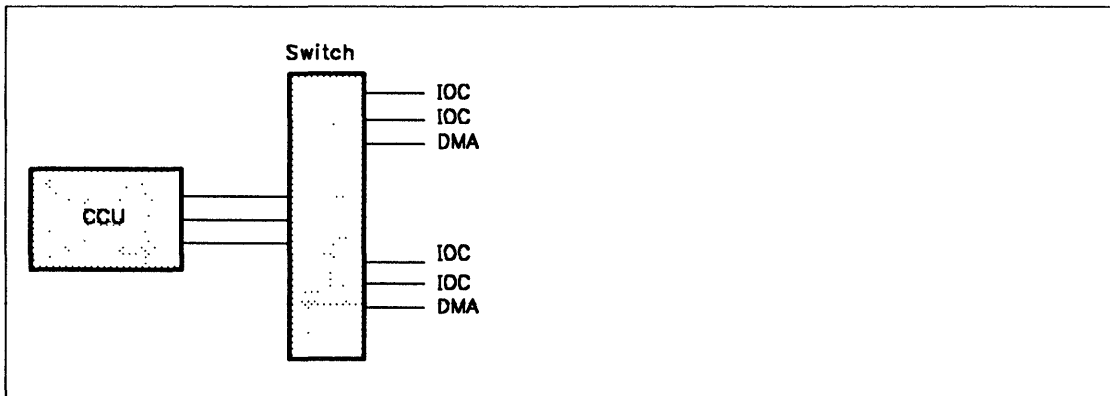


Figure 3-1. Single-CCU Mode

In single-CCU mode:

- A single CCU is installed.
- There is no CCU backup possibility.

Twin-Dual Mode (Models 410 and 610)

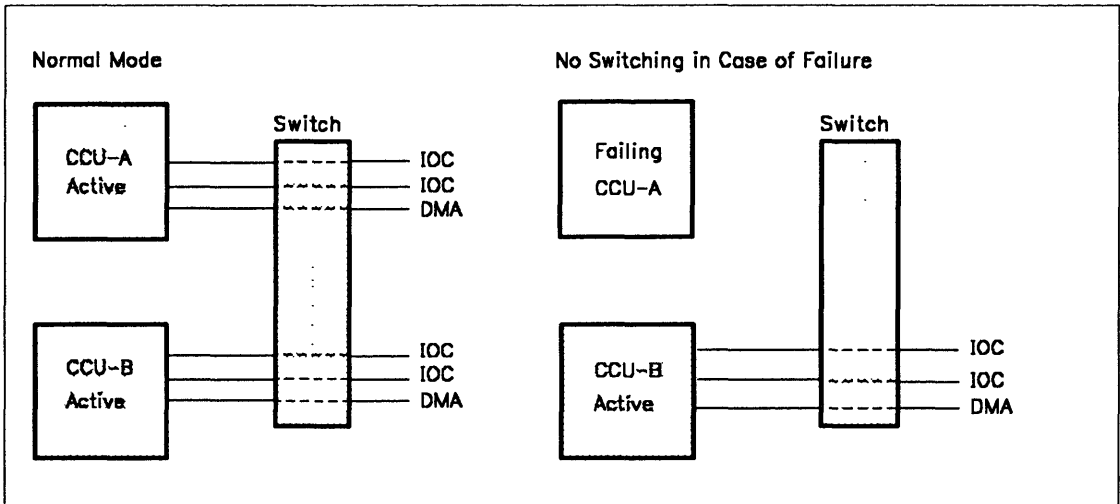


Figure 3-2. Twin-Dual Mode

In twin-dual mode:

- Two CCUs are installed.
- Both CCUs are operational simultaneously.
- Each CCU has its own NCP/PEP load module and controls its own network.
- There is no provision for backup.

Before changing the operating mode, refer to Table 3-7 on page 3-51 and Table 3-8 on page 3-52.

Twin-Standby Mode (Models 410 and 610)

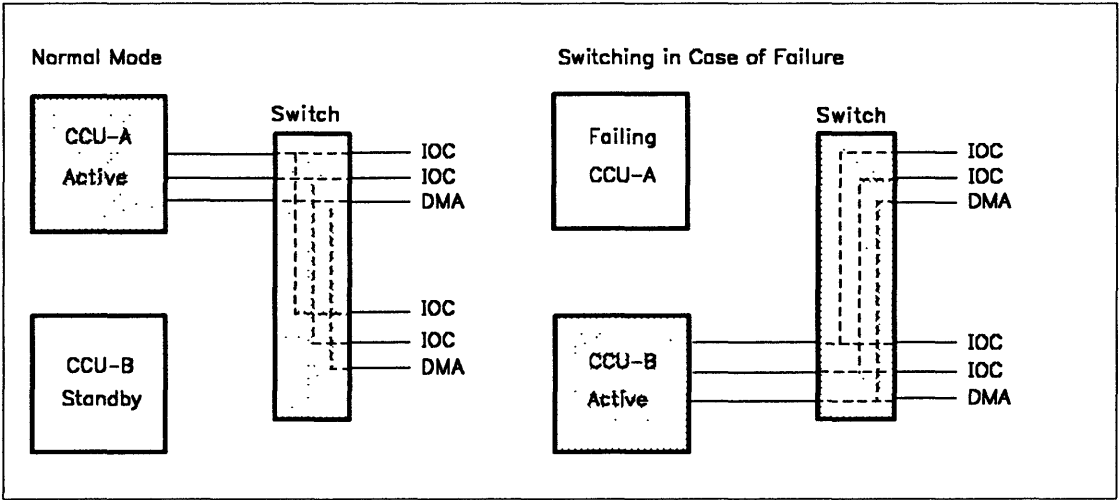


Figure 3-3. Twin-Standby Mode

In twin-standby mode:

- Two CCUs are installed.
- Only one CCU is operational and the other CCU is in standby mode. It is recommended that the two CCUs have the same NCP/PEP load module.
- The active CCU controls channel and line adapters of the network.

CDF - CCU Operating Mode

- If the active CCU fails, its channel and line adapters are automatically switched to the other CCU.

In this case, the MOSS performs a *fallback* procedure, which consists of:

- Disconnecting all the adapters from the failing CCU via the bus switch
- Connecting all adapters to the other CCU instead
- Triggering an automatic IPL on the standby CCU.

After the fallback is complete, the user can then reactivate the network resources. There is no performance or network degradation.

With the **fast fallback** capability (**hot standby**), the standby CCU is already pre-loaded with a copy of the control program. It is idle but ready to take over the full configuration in case of a hardware failure of the active CCU. Fast fallback requires the following conditions:

- NCP Version 5 Release 2.1 or later level is running in the CCU(s).
- The save on disk and auto dump/load options have been set appropriately.
- There is an active load module on the controller disk.
- There is no NCP dump on the disk.

For more details, refer to “Bus Switching” on page 3-55.

Before changing the operating mode, refer to Table 3-7 on page 3-51 and Table 3-8 on page 3-52.

Twin-Backup Mode (Models 410 and 610)

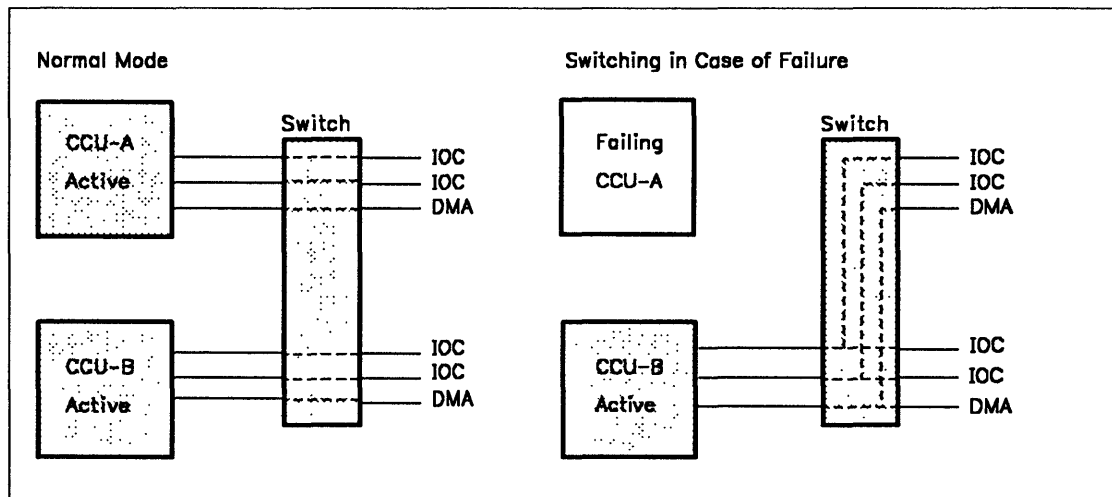


Figure 3-4. Twin-Backup Mode

In twin-backup mode:

- Two CCUs are installed.
- Both CCUs are operational simultaneously, each controlling part of the network.
- If one CCU fails, its channel and line adapters are automatically switched to the other CCU.

- The switching is performed by the MOSS through a *fallback* procedure. The user can then activate all or part of the resources of the failing CCU on the other CCU.
- Each NCP should be generated to be able to backup the other NCP in the twin-backup mode. The number of resources that would be taken over by the active CCU and NCP may be restricted depending upon the network performance requirements.

Before changing the operating mode, refer to Table 3-7 on page 3-51 and Table 3-8 on page 3-52.

Bus Switching: Bus switching enables all line and channel adapters to be switched from one CCU to the other CCU for twin configurations in standby and backup mode. This function is performed automatically in the event of a CCU hardware failure through the MOSS fallback procedure.

- **In standby mode**, the bus switching disconnects all the resources from the failing CCU, and moves them to the other CCU. The current control program load module is automatically loaded in this CCU. The resources can then be reactivated from the host. Sessions are disrupted during the fallback process.
- **In backup mode**, the bus switching disconnects the resources from the failing CCU and moves them to the backup CCU. It is recommended that the two NCPs be generated appropriately so that the running CCU can take over the new line configuration. Switching has no impact on the sessions already running in the backup CCU. The network operator can reactivate all or part of the switched resources. When the failure is repaired, all resources can be reactivated on the previously-failed CCU. This is performed through a MOSS manual *switchback* procedure.



Chapter 4. Disk Functions (DIF) and Microcode Changes

This chapter describes:

- How to manage your disk and diskettes (using the MOSS DIF function as explained in the next table).
- How to perform a microcode change.
- How to restore the disk from diskettes.

- To perform the **DIF**, MOSS must be **alone** or **offline**.
 - To set MOSS alone, go to page 3-3.
 - To set MOSS offline, go to page 23-13.

| DIF Options To select an option, go to "Selecting Disk Functions" on page 4-2. | Go to page |
|--|------------|
| <p>Save a disk onto diskettes to:</p> <ul style="list-style-type: none"> • Create a backup copy of the initial diskettes. • Copy the MOSS disk files after new microcode fixes have been applied. • Copy the disk after changing link IPL ports, CDF, and control program procedures. <p>This will enable you to restore the disk from diskettes if the disk becomes unusable due to wrong information on the disk or physical damage.</p> | 4-10 |
| Format (initialize) a diskette. | 4-18 |

- To perform a **microcode change**, you must start from the control panel. Refer to "Diskette Information" and "Installing a Microcode Engineering Change (EC)" on page 4-3.
- To **restore** a disk from diskettes, refer to page 4-12.

Restore the disk if:

- You suspect a disk problem.
- Your disk has been replaced.
- You suspect that the new release or the latest EC update in your files has disturbed your applications.

Selecting Disk Functions

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

          DISK FUNCTION SELECTION

- SELECT ONE OF THE FOLLOWING FUNCTIONS ==>

    2 = SAVE DISK ONTO DISKETTES
    6 = DISKETTE INITIALIZATION

====>
F1:END      F3:ALARM
```

From the previous screen:

If you selected option:

- **2 = SAVE DISK ONTO DISKETTE**, go to page 4-10
- **6 = DISKETTE INITIALIZATION**, go to page 4-18

Diskette Information

- Use PC* diskettes with part number 2HC 6109660 or equivalent (double-sided, high-capacity, size 5.25 in.).
- The diskettes must be compatible with the MOSS disk format. Use either:
 - The five backup diskettes for a 3745, or
 - Diskettes formatted with the Diskette Initialization option described under "Formatting a Diskette" on page 4-18. Label the diskettes and their envelopes to indicate clearly what they are.

All diskettes for initial installation, new engineering changes (ECs) or microcode fixes (MCFs) are supplied by IBM in two sets.

You receive 10 diskettes: two sets of five diskettes, one set labeled "normal" and one set labeled "backup."

Use the *normal* diskettes for the first installation or first application of microcode fixes, then use the *backup* set for the saving procedure.

Installing a Microcode Engineering Change (EC)

Before starting a new EC installation, ensure that the disk contents have been saved to a current set of backup diskettes. These diskettes are used to restore the disk if the installation of the new EC failed or disturbed applications.

The installation of new microcode can only be done in diskette mode.

Installing a microcode engineering change requires the following actions to be performed in sequence:

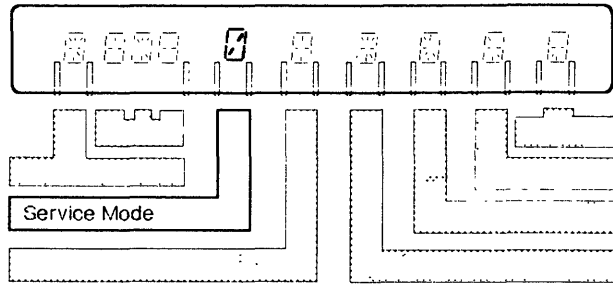
- Preparing for installation (steps 1 to 8)
- Checking the diskettes (steps 9 to 11)
- Copying the diskettes to the disk (steps 12 to 16)
- Applying any microcode fixes contained in the new microcode EC diskettes (steps 17 and 18).

The beginning of the procedure is identical to the IPL function in diskette mode. You must start from the control panel.

Step 1 Power on the local console.

Step 2 Select the service mode on the control panel.

- 1) Press **Service Mode** repeatedly until **0** is displayed.

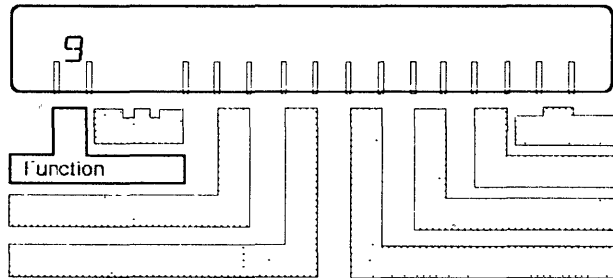


- 2) Press **Validate**.

Step 3 Insert the first (primary) diskette from the set labeled "normal".

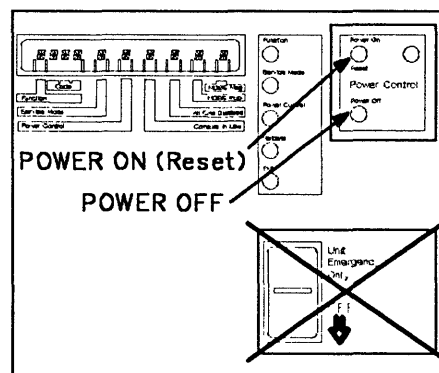
Step 4 Select the function:

- 1) Press **Function** repeatedly until **9** is displayed.



- 2) Press **Validate**.

Step 5 If the 3745 is powered off, press **Power On Reset** on the control panel. If it is already powered on, go to the next step.



Step 6 MOSS IML starts. Wait a few minutes until the MOSS is IMLed, then the following screen is displayed:

```
DISKETTE MODE

- SELECT ONE OF THE FOLLOWING FUNCTIONS ==>

  1 = GENERAL IPL
  2 = DISK FUNCTIONS

===>
```

Step 7 Select option 2 (DISK FUNCTIONS) and press ENTER, then the following screen is displayed.

```
DISK FUNCTION SELECTION

- SELECT ONE OF THE FOLLOWING FUNCTIONS ==>

  1 = EC MICROCODE INSTALLATION
  3 = RESTORE DISK FROM DISKETTE

===>

F1:END
```

If one of the following hex codes is displayed on the control panel:

- **0E4:** the diskette may be wrongly inserted (upside down). Insert it correctly.
- **14A:** the diskette is missing. Insert the primary diskette.

Step 8 Select function 1 (EC MICROCODE INSTALLATION) and press ENTER, then the following screen is displayed:

```
                EC MICROCODE INSTALLATION

- MOUNT PRIMARY DISKETTE, THEN PRESS SEND
-

====>

F1:END                                F6:QUIT
```

From the previous screen:

- Ignore the first part of the message: MOUNT PRIMARY DISKETTE, THEN PRESS SEND, if you have already inserted the primary diskette at step 3.
- Press SEND as requested.

- If during the process some tracks are found to be in error, the screen shown on page 4-19 may be displayed. Refer to that page for more details.
- You may also have one of the following messages:

HARDWARE CONFIGURATION SUPPORTS UP TO 4MB NCP LOAD MODULE
(refer to page 4-19).

INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES
(refer to page 4-20).

READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES
(refer to page 4-20).

FORMAT COMPLETED, NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY
(refer to page 4-19).

HARD DISK FAILURE, CHANGE YOUR DISK TO SUPPORT 6MB LOAD MODULE
(refer to page 4-20).

- Step 9** Check the 'EC NUMBER' shown at **A**
- If it is the correct one, type Y then press ENTER.
 - If it is not the correct number, enter N; then insert the correct primary diskette.

Ignore 'INTERNAL ID' at **B**. Leave as it is.

```

                                EC MICROCODE INSTALLATION

MOUNTED PRIMARY DISKETTE IDENTIFICATION:

    EC NUMBER   = 198198 A
    INTERNAL ID = B

- PLEASE CONFIRM YOUR SELECTION (Y OR N) ==>

====>

F1:END          F3:ALARM          F6:QUIT

```

EC numbers are compared and the program checks if the diskette belongs to the set. During the diskette checking, the following message is displayed:

PRIMARY DISKETTE CHECKING IN PROGRESS

Wait a few minutes until the following message is displayed:

MOUNT SECONDARY DISKETTE, THEN PRESS ENTER

- Step 10** Insert the second (secondary), third, fourth and fifth diskettes in order. Do not forget to press SEND after you have inserted a diskette.

- Step 11** If all the diskettes match, go to step 12.

If any of the diskettes do not match, it is because either the EC number or the internal identifier of the subsequent diskettes does not match that of the primary diskette.

```

                                EC MICROCODE INSTALLATION

DISKETTES DO NOT BELONG TO THE SAME SET:

    PRIMARY  EC NUMBER : 198198 INTERNAL ID: 00:20:38 B
    SECONDARY EC NUMBER : 198198 INTERNAL ID: 00:20:38
    THIRD    EC NUMBER : 198198 INTERNAL ID: 00:00:00 B
- PRESS SEND

====>

F1:END          F3:ALARM          F6:QUIT

```

The previous screen:

Shows a mismatch between the primary and third diskette internal identifiers (**B**).

In this case, do the following:

- Insert the correct diskette.
- Press SEND.

Step 12 Insert the primary diskette, then press SEND.

Wait until the primary diskette is copied.

If new formatting of the disk is necessary due to an extension of the disk size/capacity, the following message may be displayed:

COPY LOAD MODULE IN PROGRESS - PLEASE WAIT SEVERAL MINUTES -

Step 13 Insert the secondary diskette; then press SEND. Repeat the procedure for the third, fourth and fifth diskettes.

The following screen is displayed:

```
EC MICROCODE INSTALLATION

- MOUNT FIFTH DISKETTE, THEN PRESS SEND

WARNING: PRESSING F1 CAUSES MOSS DOWN
AND DISK DATA DESTROYED

EC INSTALLATION FROM FIFTH DISKETTE IN PROGRESS

F1:END
```

When the EC installation is completed, the following screen is displayed:

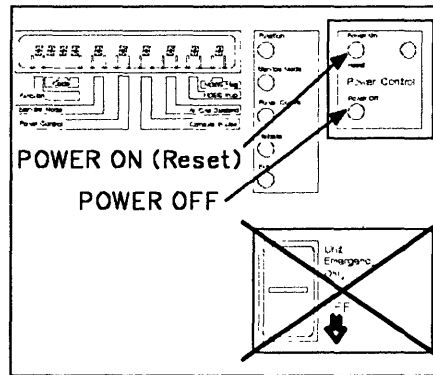
```
EC MICROCODE INSTALLATION

EC xxxxxx CORRECTLY INSTALLED
- POWER OFF THEN POWER ON THE 3745
- PERFORM MOSS INL FROM CONTROL PANEL WITH FUNCTION 1

===>

F1:END      F3:ALARM
```

Step 14 Remove the fifth diskette then power off the 3745.



Step 15 Wait 10 seconds. On the control panel, press **Function** repeatedly until 1 is displayed then press **Validate**.

Step 16 Power on the 3745.

When MOSS is IMLed:

- **F0E** is displayed on the control panel.
- The 3745 CA Interface Display screen is displayed on the MOSS console.

If it is not required to apply MCFs, the EC install procedure is finished.

An EC to the microcode may also contain microcode fixes (MCFs).

Step 17 Once you have installed the new release, apply any MCFs (if any), which are now on your disk, by selecting the MCF function, option 2 (Automatic Upgrade of the Microcode):

[M] [C] [F] [SEND] ■ [1] [SEND] ■ [2] [SEND]

If no MCFs exist, you will get the message MCF FILE EMPTY. If there are non-applied MCFs, they will automatically be applied on the disk.

If MCFs are applied

- **IML the MOSS**, this is a mandatory operation.
- **IML the scanners** (MOSS IMS function), this is a mandatory operation only if a MCF applies to scanners.

For more information on the MCF function, go to page 12-4.

Step 18 Once you have installed the new EC and applied MCFs, you should save your disk on your backup diskettes. Go to "Saving Disk onto Diskettes" on page 4-10.

If you have any diskette problems, use the set of diskettes labelled "normal" and request a second set from IBM.

Saving Disk onto Diskettes

This function should be used to:

- Create a backup copy of normal (initial) diskettes.
- Copy the MOSS disk files after new microcode fixes have been applied.
- Copy the disk after changing link IPL ports, CDF, and control program procedures.

This will enable you to restore the disk from diskettes if the disk becomes unusable due to bad information on the disk, or physical damage.

D **I** **F** **SEND** **2** **SEND**

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                SAVE DISK ONTO DISKETTES

DATE: 01/01/83 (MM/DD/YY)
- ENTER SAVE ID (FROM 1 TO 8 CHARACTERS) ==> C

- WARNING : YOU MUST SAVE THE COMPLETE SET OF DISKETTES

====>

F1:END      F3:ALARH   F6:QUIT
```

From the previous screen:

- Enter a save identifier. **C** Each diskette of the set is labelled with the same ID. It will help you identify the level of the diskettes.
- Press SEND.
- From now on, follow the procedure on the screen carefully. You will have to save the complete set of diskettes.

When you have saved a diskette, label it as follows:

- The first one: PRIMARY
- The second one: SECONDARY
- The third one: THIRD
- The fourth one: FOURTH
- The fifth one: FIFTH.

When all diskettes are saved, the following screen is displayed:

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                SAVE DISK ONTO DISKETTES

DISK CORRECTLY SAVED. TAKE NOTE OF THE FOLLOWING INFORMATION:
DATE           = mm/dd/yy (MM/DD/YY)
EC             = xxxxxx
SAVE ID        = yyyyyy
INTERNAL ID    = 09:27:01
THEN PRESS SEND

===>

F1:END        F3:ALARM
```

Do not forget to note on the diskettes and diskette envelopes the information displayed on this screen: date, EC number, save, and internal identifiers.

Restoring the Disk from Diskettes

Restoring the disk from diskettes can only be done in diskette mode, and requires the following actions to be performed in sequence:

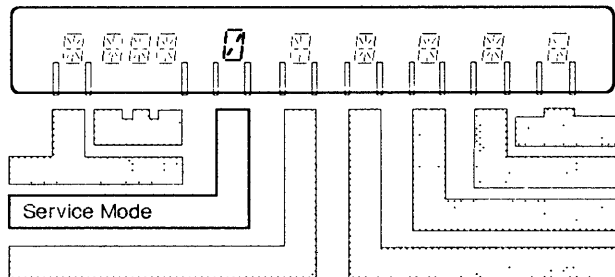
- Preparing for restoration in diskette mode (steps 1 to 6)
- Checking the diskettes (steps 7 to 10)
- Copying the diskettes to the fixed disk (steps 11 to 14)

Note: You can restore the fixed disk only from the diskettes that you created using the Save Disk onto Diskettes option (page 4-10).

Step 1 Power on the local console and go to the control panel.

Step 2 Select the service mode on the control panel:

- 1) Press **Service Mode** repeatedly until **0** is displayed.

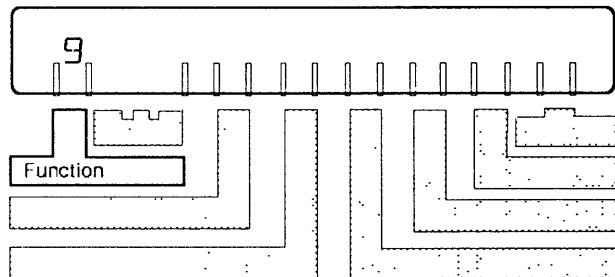


- 2) Press **Validate**.

Step 3 Insert the primary diskette from the set labeled "normal".

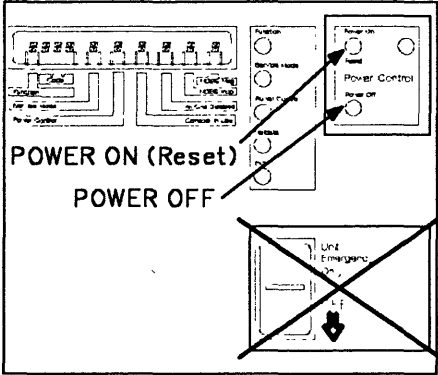
Step 4 Select the function:

- 1) Press **Function** repeatedly until **9** is displayed.



- 2) Press **Validate**.

Step 5 If the 3745 is powered off, press **Power On Reset** on the control panel. If it is already powered on, go to the next step.



MOSS IML starts. Wait a few minutes until the MOSS is IMLed, then the following screen is displayed:

```

                                DISKETTE MODE

- SELECT ONE OF THE FOLLOWING FUNCTIONS ==>

    1 = GENERAL IPL
    2 = DISK FUNCTIONS

==>

```

Step 6 Select option 2 (DISK FUNCTIONS), press ENTER, and the next screen is displayed:

```

                                DISK FUNCTION SELECTION

- SELECT ONE OF THE FOLLOWING FUNCTIONS ==>

    1 = EC MICROCODE INSTALLATION
    3 = RESTORE DISK FROM DISKETTE

==>

F1:END

```

If one of the following hex codes is displayed on the control panel:

- **0E4:** the diskette may be wrongly inserted (upside down). Insert it correctly.
- **14A:** the diskette is missing. Insert the primary diskette.

Step 7 Select option 3 = RESTORE DISK FROM DISKETTES. The following screen is displayed:

```
                RESTORE DISK FROM DISKETTE

- MOUNT PRIMARY DISKETTE, THEN PRESS SEND

===>

F1:END                                F6:QUIT
```

Step 8 Insert the primary diskette and press SEND.

- If during the process some tracks are found to be in error, the screen shown on page 4-19 will be displayed. Refer to this page for more details.

- You may have also one of the following messages:

HARDWARE CONFIGURATION SUPPORTS UP TO 4MB NCP LOAD MODULE

(refer to page 4-19).

INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES

(refer to page 4-20).

READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES

(refer to page 4-20).

FORMAT COMPLETED, NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY

(refer to page 4-19).

HARD DISK FAILURE, CHANGE YOUR DISK TO SUPPORT 6MB LOAD MODULE

(refer to page 4-20).

- The following screen is displayed.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                RESTORE DISK FROM DISKETTES

MOUNTED PRIMARY DISKETTE IDENTIFICATION :

    CREATED ON  = mm/dd/yy /MM/DD/YY) D
    SAVE ID     = yyyyyy    E
    INTERNAL ID = 00:20:38  F
    EC LEVEL    = xxxxxx

- PLEASE CONFIRM YOUR SELECTION (Y OR N) ==>

====>

F1:END      F3:ALARM      F6:QUIT

```

- D** Is the saving date.
- E** Is the save identification you entered when you saved the fixed disk onto the diskettes.
- F** Is the internal save identification automatically created during the save.

Step 9 Check that the displayed information matches the information you wrote on the diskette envelopes:

- If they match, enter Y and press SEND.
- If they do not match, enter N; then insert the correct primary diskette.

Step 10 Insert the secondary diskette, then the third, fourth and fifth diskettes. Press SEND after you have inserted each diskette.

- If all the diskettes match, go to the next step.
- If the secondary, third, fourth or fifth diskettes do not match the primary diskette, the following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                RESTORE DISK FROM DISKETTES

DISKETTES DO NOT BELONG TO THE SAME SET

          CREATED   SAVE ID   INTERNAL ID   EC LEVEL
PRIMARY    00/00/00  xxxxxxxx    xxxxxxxx    A4720
SECONDARY  00/00/00  yyyyyyyy    yyyyyyyy    A4721

- PRESS SEND

====>

F1:END      F3:ALARM      F6:QUIT

```

When the five diskettes are correctly checked, the disk restoration starts.

Step 11 Remove the write protect tab (if any) from the primary diskette, insert the diskette, then press SEND.

Disk Functions (Restoring Disk)

When the primary diskette is copied, repeat the procedure with the secondary, third, fourth and fifth diskettes.

When the restoration is completed, the following screen is displayed.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                                RESTORE DISK FROM DISKETTES

DISK CORRECTLY RESTORED

SELECT ONE OF THE NEXT ACTIONS:

- IF YOU HAVE DONE CONCURRENT DISK REPLACEMENT, A
  PERFORM MOSS IML FROM CONTROL PANEL WITH SERVICE 0
  THEN FUNCTION 1.

- IN ALL OTHER CASES, POWER OFF THE 3745 B
  THEN POWER ON WITH FUNCTION 1 AND SERVICE 0.

===>

F1:END      F3:ALARM
```

Step 12 Remove the fifth diskette then, as shown on the previous screen, select one of the following actions:

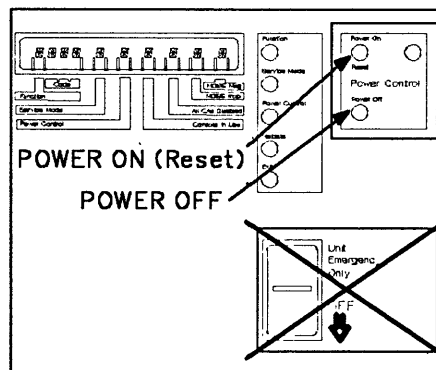
- **A** When the disk restore function is performed by the service representative:

Do not power off the 3745 if you have replaced a disk during a concurrent maintenance.

Perform only MOSS IML from the control panel (function 1 and service 0).

- **B** When the disk restore function is performed by the customer from a backup copy:

a. Power off the 3745.



- Wait 10 seconds.
- On the control panel, press **Function** repeatedly until 1 is displayed then press **Validate**.
- Power on the 3745. MOSS IML starts.

When MOSS is IMLed:

- **FOE** is displayed on the control panel.
- The 3745 CA Interface Display screen is displayed on the MOSS console.

Step 13 After restoring the disk, the default password is **IBM3745**. You can refer to Chapter 16, "Passwords (PSW)" on page 16-1 to update the password.

Step 14 After restoring the disk from diskette, the NCP is no longer accessible. You must reload NCP. The RLA procedure (remote loading activation) may be used if the restore disk is performed on a remote controller.

This ends the procedure "Restoring the Disk from Diskettes".

Formatting a Diskette

D **I** **F** **SEND** **6** **SEND**

Follow the procedure on the screen carefully.

If the diskette formatting (initialization) ends without errors, the message: DISKETTE INITIALIZATION SUCCESSFULLY COMPLETED is displayed.

If there are errors, the following message is displayed:
DISKETTE INITIALIZATION UNSUCCESSFULLY COMPLETED
with the number of tracks in error. When this message is displayed, **you must press F1**, then the error and its associated alarm will be recorded for further analysis.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

          DISKETTE INITIALIZATION


DISKETTE INITIALIZATION UNSUCCESSFULLY COMPLETED:

  NUMBER OF TRACK(S) IN ERROR WHILE FORMATTING: 000
  NUMBER OF TRACK(S) IN ERROR WHILE CHECKING  : 001

WARNING: DO NOT USE THIS DISKETTE TO SAVE YOUR DISK

===>

F1:END      F3:ALARM      F6:QUIT
```

- Remove the diskette and make sure that it is not damaged.
- Insert the diskette and make sure that:
 - It is correctly inserted.
 - The drive latch is correctly closed.
- Repeat the formatting procedure. If the procedure is again unsuccessful, repeat the procedure with a new diskette.
 - Discard the diskette that did not format correctly.
 - If the problem persists: 

Messages on Installing an EC and Restoring Disk from Diskette

The following screen is displayed when the disk has been reformatted from 45MB up to 72MB and errors are found on some tracks.

```

                                ALTERNATE TRACK ASSIGNMENT MAP

DEFFECTIVE TRACK      ALTERNATE TRACK      DEFFECTIVE TRACK      ALTERNATE TRACK
HEAD-CYLINDER        HEAD-CYLINDER        HEAD-CYLINDER        HEAD-CYLINDER

1 0664                0 0001                4 0684                1 0001
4 0685                2 0001                4 0686                ENTRY NOT USED
ENTRY NOT USED       ENTRY NOT USED       ENTRY NOT USED       ENTRY NOT USED
ENTRY NOT USED       ENTRY NOT USED       ENTRY NOT USED       ENTRY NOT USED

FORHAT ERRORS: xx   ID ERRORS: xx   DATA ERRORS: xx

====>

F1:END                F6:QUIT                F8:FORWARD

```

Press F1 or F6.

Return to the step you left and continue installing the EC microcode or restoring the disk.

FORMAT COMPLETED, NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY

Cause: The disk has been reformatted from 45MB up to 72MB without any defective tracks.

Action: This message is in the sequence of events described under the message: INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES on page 4-20.

Return to the step you left and continue installing the EC microcode or restoring the disk.

HARDWARE CONFIGURATION SUPPORTS UP TO 4MB NCP LOAD MODULE

Cause: The physical disk capacity is 45MB and cannot support an NCP load module greater than 4 Megabytes.

Action: If an NCP load module greater than 4 Megabytes is planned or necessary to support your activity, contact the hardware service representative to have the disk replaced.

If an NCP load module greater than 4 Megabytes is not necessary, ignore the message, it has no impact on the EC microcode installation or the restoring disk from diskette function.

Return to the step you left and continue installing the EC microcode or restoring the disk.

Disk Functions (Restoring Disk)

HARD DISK FAILURE, CHANGE YOUR DISK TO SUPPORT 6MB LOAD MODULE

Cause: Unrecoverable errors were found on the part of the disk from 45MB up to 72MB.

Action: If an NCP load module greater than 4 Megabytes is planned or necessary to support your activity, contact your service representative to have the disk replaced.

If an NCP load module greater than 4 Megabytes is not necessary, the failure has no impact on the EC microcode installation or the restoring disk from diskette function.

Return to the step you left and continue installing the EC microcode or restoring the disk.

INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES

Cause: The physical disk capacity is 72MB but is not yet formatted up to 72MB.

Action: During or after the formatting is performed, one of the following messages may be displayed:

- **READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES**
- **FORMAT COMPLETED, NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY**

Return to the step you left and continue installing the EC microcode or restoring the disk.

READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES

Cause: The disk is being reformatted up to 72MB, and a read checking is in progress.

Action: This message is in the sequence of events described under the message: INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES on page 4-20.

Wait for the next message or next screen.

Chapter 5. Disk IPL Information (DII)

Use the DII function to:

1. Display the name of the control program that is running.
2. Display the name of disk load modules with associated status.
3. Display the name of the control program dump with time and date.
4. Display the name of the active disk load module.
5. Change the setting of the automatic dump/load options.
6. Purge the NCP/PEP dump.
7. Copy the NCP/PEP load module from the hard disk to the diskette.
8. Copy the NCP/PEP load module from the diskette to the hard disk to allow loading and activation of NCP/PEP on a remote 3745 through switched subarea links.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

          1 - DISK IPL INFORMATION
          2 - DISKETTE MANAGEMENT

SELECT AN OPTION THEN PRESS SEND ==>>

F1:END  F2:MENU2  F3:ALARM
  
```

From this screen you may:

- Select option 1 (DISK IPL INFORMATION) to perform actions 1 to 6 (listed at the top of the page). Go to pages 5-2 through 5-8.
- Select option 2 (DISKETTE MANAGEMENT) to perform actions 7 or 8 (listed at the top of the page). Go to page 5-8.

Disk IPL Information (Models 130, 150, 170, 210, and 310)

[D] [I] [I] [SEND] [1] [SEND]

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: SINGLE

                CCU-A
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME
LOAD MODULES:      PETITB4 (mm/dd/yy hh:mm:ss)
                   RPETITB (mm/dd/yy hh:mm:ss)

DUMP:
AUTO DUMP/LOAD:    YES      [A]
ACTIVE LOAD MODULE: RPETITB [B]

===>

F1:END F2:MENU2 F3:ALARH F4:CHG DHP/LD F5:PURGE DHP F6:QUIT F7:GEN DATE

```

From this screen you may:

- Press F4 to **change** the setting of the auto dump/load option.
If YES is displayed (**A**) and if a load module is active (**B**), on the nextabend, the control program will be loaded from the disk and not from the host.
- Press F5 to **purge** the NCP dump. You will be asked to confirm your intention to purge the dump.
- Press F6 to return to the "DISPLAY IPL INFORMATION" screen.
- Press F7 to **display** either the date and time the load module was generated (GEN) or saved (SAVE).
- Press SEND to refresh the information displayed on this screen.

Disk IPL Information (Models 410 and 610)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

      C                D
CONFIGURATION: TWIN      OPERATING MODE: DUAL

CP RUNNING:             CCU-A                CCU-B
                      xxxxxxxx            xxxxxxxx
DISK CONTENTS:         SAVE DATE/TIME      SAVE DATE/TIME
LOAD MODULES:         xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                      xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
DUHP:                 xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:       Yes                    Yes
ACTIVE LOAD MODULE:   xxxxxxxx                xxxxxxxx

===>

F1:END F2:MENU2 F3:ALARM F4:CHG DMP/LD F5:PURGE DMP F6:QUIT F7:GEN DATE

```

From this screen you may:

- Press F4 to **change** the setting of the auto dump/load option. (Go to page 5-4.)
- Press F5 to **purge** the NCP dump. (Go to page 5-5.)
- Press F6 to return to the "DISPLAY IPL INFORMATION" screen.
- Press F7 to **display** either the date and time the load module was generated (GEN) or saved (SAVE).
- Press SEND to refresh the information displayed on this screen.

The format of the screen changes depending upon the CCU configuration and operating mode.

Configuration **C** and Operating Mode **D**:

If the configuration is twin, the operating mode **D** is also given on the same line. If the operating mode is twin-backup mode, a fallback message appears if either CCU is supporting the whole configuration.

Changing the auto load/dump settings, and purging the dump can be done at each CCU.

Changing the Automatic Dump/Load Option (Models 410 and 610)

If your 3745 is in twin-dual or twin-backup mode, when you press F4 on the screen of page 5-3, you are prompted to select a CCU.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN          OPERATING MODE: BACKUP

CP RUNNING:          CCU-A          CCU-B
                   xxxxxxxx          xxxxxxxx
DISK CONTENTS:      .              .
LOAD MODULES:      xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                   xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
DUMP:              xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:    NO              YES
ACTIVE LOAD MODULE: xxxxxxxx          xxxxxxxx
                   A
                   B

- SELECT A CCU (A or B) THEN PRESS SEND ==> B

==>

F1:END  F2:MENU2  F3:ALARH          F6:QUIT

```

After you select a CCU, the operation continues.

If YES is displayed (**A**) and if a load module is active (**B**), on the next abend, the control program will be loaded from the disk and not from the host.

You can use F6 to return to the previous screen without performing the change.

If your 3745 is in single or twin-standby mode, the operation is performed immediately.

NCP Dump Purge (Models 410 and 610)

If your 3745 is in twin-dual or twin-backup mode, when you press F5, you are prompted to select a CCU.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN          OPERATING MODE: BACKUP

CP RUNNING:          CCU-A          CCU-B
XXXXXXXXX           XXXXXXXXX      XXXXXXXXX
DISK CONTENTS:      SAVE DATE/TIME  SAVE DATE/
LOAD MODULES:      XXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (m
XXXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (m
DUMP:              XXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (m
AUTO DUMP/LOAD:    NO              YES
ACTIVE LOAD MODULE: XXXXXXXXX      XXXXXXXXX

- SELECT A CCU (A or B) THEN PRESS SEND ==> A

====>

F1:END  F2:MENU2  F3:ALARM          F6:QUIT

```

Before the dump is purged, you are asked to confirm your intention to purge the dump.

You can use F6 to return to the previous screen without performing the purge.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN          OPERATING MODE: BACKUP

CP RUNNING:          CCU-A          CCU-B
XXXXXXXXX           XXXXXXXXX      XXXXXXXXX
DISK CONTENTS:      SAVE DATE/TIME  SAVE DATE/TIME
LOAD MODULES:      XXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (mm/dd/yy hh:mm:ss)
XXXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (mm/dd/yy hh:mm:ss)
DUMP:              XXXXXXXXX (mm/dd/yy hh:mm:ss) XXXXXXXXX (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:    YES              YES
ACTIVE LOAD MODULE: XXXXXXXXX      XXXXXXXXX

- PLEASE CONFIRM THE DUMP PURGE (Y OR N) THEN PRESS ==> Y

====>

F1:END  F2:MENU2  F3:ALARM          F6:QUIT

```

If the dump does not exist, an error message is displayed. If the dump exists, it is purged.

After the function is complete, the main screen is refreshed and error messages, if any, are displayed.

Field Meanings (All Models)

CP RUNNING: The name of the control program running in the CCU is visible in the CP RUNNING field. This information is read from CCU storage at an address passed from NCP to MOSS during initialization. The information is available only when NCP has been properly initialized. This field is blank when no control program is running.

LOAD MODULES: This field is blank when there are no load modules on the disk.

The load module information gives:

1. The name and status of any load modules that reside on the hard disk. If there is only one disk load module, the related information is placed in the first associated line.
2. The generation date and time of any load modules. MOSS retrieves this information from the NCP load module. If the appropriate information is not found, the screen field contains zeros.
3. The date and time of the save are given when the load module has been completely saved onto the disk.

When performing the initial loading of a **remote controller** (using the diskette management procedure), the displayed date and time reflect the date and time that the load module was saved on the **local controller** hard disk. The copy from diskette to the remote controller hard disk does not change the date and time. (See "Diskette Management Overview" on page 5-8.)

If the load module has not been completely loaded, one of the following messages is displayed:

- **SAVE IN PROGRESS:** A non-disruptive save from the host to the hard disk is in progress.
- **SAVE SUSPENDED:** A non-disruptive save may be in progress, but there has been no host activity on this load module for more than 5 minutes. It is assumed that communication with the host has been broken, and the associated file may be used for a subsequent save, if needed.

Incomplete load modules will be purged at the next IPL.

DUMP: If an NCP dump is present on the disk, its name and the time and date of the dump are indicated.

The statuses of the automatic dump/load switches are given as the AUTO DUMP/LOAD option. The switches must always be set or reset together. If both are set, YES is displayed. If the switches are not set, NO is displayed.

If the dump occurred during NCP initialization before the location of the dump name (in CCU storage) was passed to the MOSS, a default name of CCUDUMP appears. This default name is also given to the dump if the MOSS was unable to read the dump name from CCU storage at the time the dump occurred.

AUTO DUMP/LOAD: The automatic dump/load options are set or reset together. They may be set only if an active load module resides on the disk.

The auto dump/load default settings are:

- Load from disk.
- Dump to disk.

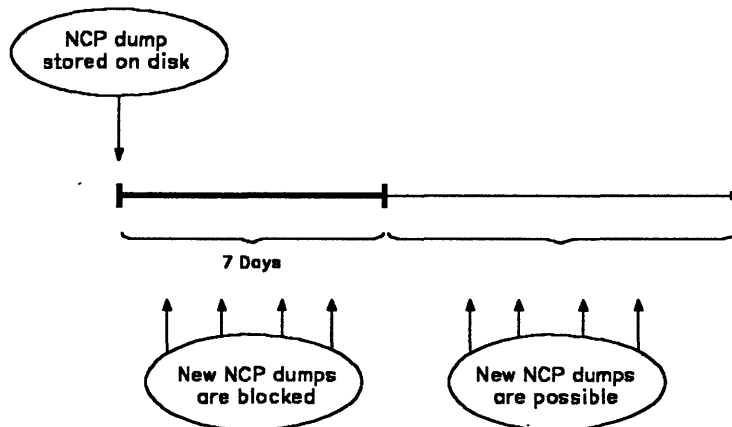
and are used only:

- The first time a load/dump occurs.
- After a disk restore.

The auto dump/load flag information may be updated by the host, therefore the current settings may be different from the information given on the screen. The current settings are used to determine the final setting of the flags.

When using the DISKETTE MANAGEMENT option, and after a copy from the diskette to the disk, the auto dump/load option is set to YES. (See **F5** in Figure 5-1 on page 5-8.)

Dump Overlay: A NCP dump stored on the 3745 disk must be retrieved and/or erased as soon as possible. If it is not, when the next CCU problem occurs (on the same CCU), an automatic NCP dump cannot be taken. This obstruction lasts seven days, and, as illustrated, if a NCP dump is not retrieved and/or erased from the disk during this time, it is not possible to record a new NCP dump concerning the same CCU during this period.



ACTIVE LOAD MODULE: This field displays the name of the disk load module currently active on the disk. It does not imply that it is running in the CCU. This load module will be currently active and running in the CCU at the next load from disk. If no load module residing on the disk is active, the field is blank. The load module can be made active from VTAM application. This is accomplished through the SAVEMOD and DUMPLOAD on the vary command. (Refer to *VTAM Operation*, SC23-0113 documentation.)

Since much of the information on the screen can be changed by a host operator, the information is refreshed after a purge dump or change auto dump/load operation.

When using the DISKETTE MANAGEMENT option, and after a copy from the diskette to the disk, the active load module name is updated. (See **F5** in Figure 5-1 on page 5-8.)

Diskette Management Overview

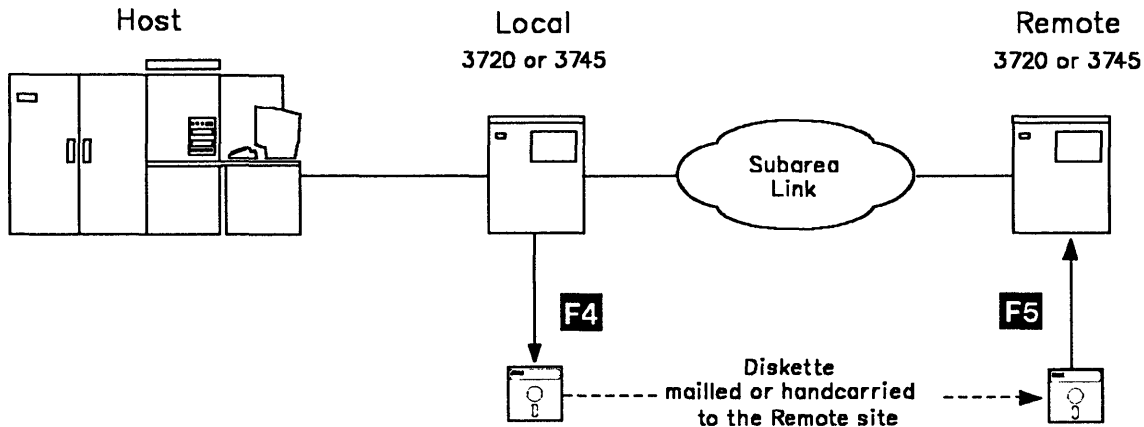


Figure 5-1. DII Function (Diskette Management)

When the subarea link to the remote controller is token-ring, switched X.21, switched or non-switched X.25, an active NCP/PEP configuration must be initially loaded into the remote 3745 or 3720 for subsequent activation and loading.

A minimal NCP/PEP load module (less than 1 Megabyte) is generated at the host and transferred to the local controller hard disk. This minimal NCP/PEP is copied from the hard disk onto a diskette which is mailed or hand-carried to the remote controller and then copied to the remote hard disk.

Formatting and copying diskettes

The diskette must be formatted first. This can be done on a PC/AT or on 3720/3745 controllers using the MOSS disk function. Refer to: "Formatting a Diskette" on page 4-18.

Use 5.25 inches diskettes, double-sided and high capacity to support 1.2 Megabytes.

No track in error must be found at the end of the diskette formatting operation. This could lead to unexpected results when copying. Only use error free diskettes.

When the copying of diskettes is done on a PC/AT, the DOS command DISKCOPY must be used.

Remote Initial Loading

Through Switched/Nonswitched SDLC and Nonswitched X.21

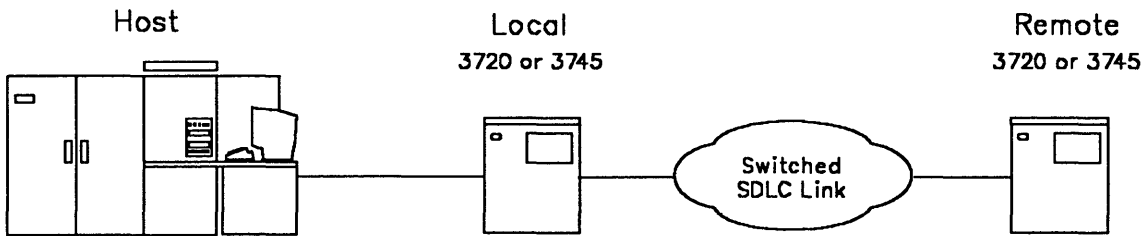


Figure 5-2. Initial Loading on Switched/Nonswitched SDLC and Nonswitched X.21 Links

- The remote initial loading can be performed by using VTAM commands from the host.
- You **must** define a link IPL port (LKP) in the remote controller.

This procedure is well known and therefore no example is shown.

Through Switched X.21, X.25 (SVC/PVC), and Token-Ring

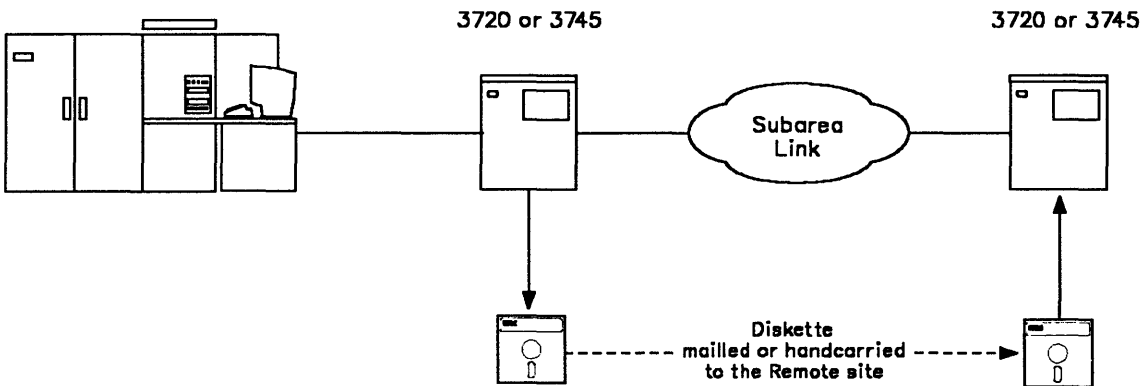


Figure 5-3. Initial Loading on Switched X.21, X.25 (SVC/PVC), and Token-Ring Links

- The remote initial loading can be performed only by using the diskette management procedure. Refer to: *3720/3745 Remote Loading/Activation Guide*, SA33-0161 for additional information.
- You **must not** define a link IPL port (LKP) in the remote controller. This definition is not valid for these types of link.

For examples of VTAM commands, refer to:

- "Remote Initial Loading (Switched X.21 Link)" on page 5-10
- "Remote Initial Loading (X.25 Link - SVC/PVC)" on page 5-13
- "Remote Initial Loading (Token-Ring Link)" on page 5-17.

Remote Initial Loading (Switched X.21 Link)

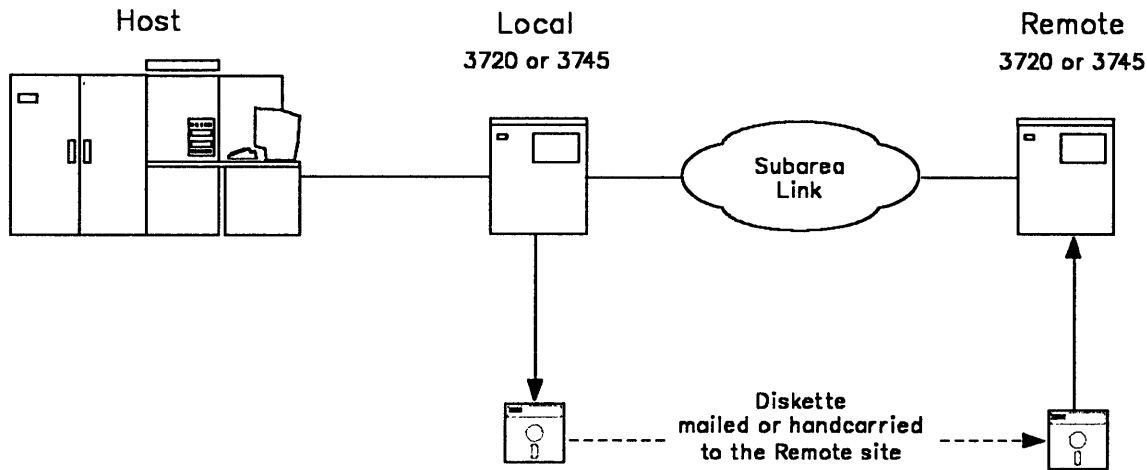


Figure 5-4. Remote Loading and Activation Across a Switched X.21 Link

| Host (VTAM V3R3) | Local 37xx (NCP V5R3 and later) | Network Switched X.21 | Remote 37xx (NCP V5R3 and later) |
|--|---|--------------------------|--|
| <ol style="list-style-type: none"> 1 Generate Mini. NCP 2 Transfer NCP to local 37xx hard disk | <ol style="list-style-type: none"> 3 MOSS DII Function | | <ol style="list-style-type: none"> 4 MOSS DII Function 5 Perform IPL |
| <ol style="list-style-type: none"> 6 Activate Mini. NCP 7 Transf. NCP from Host 8 Inactivate Mini. NCP 9 Activate Complete NCP | | | |
| Remote Initial Loading - Perform actions in sequence from 1 to 9 | | | |

- 1 (Host)** Under MVS/XA*, or VM, generate a minimal remote NCP/PEP load module. This module must contain at least the subarea link definitions and also the appropriate NCP parameters for the link over which activation and loading will take place. Its size must be less than 1 Megabyte.

The remote line used (for the link over which activation and loading will take place) must be defined with at least: MONLINK=YES (or CONT), SWMMT, SWMMTID, and IPL=YES.

(Refer to *NCP, SSP and EP: Resource Definition Reference*.)

Sizing the NCP/PEP load module:

In the link-edit output, find the \$NCPEND variable within the cross reference table of the load module. This parameter gives you the size of the load module expressed in hexadecimal.

In hexadecimal, 1 Megabyte = 100 000.

- 2 (Host)** Transfer the minimal NCP/PEP load module to the local 3745 or 3720 hard disk.

Use the following VTAM command:

```
'F NET,LOAD,ACTION=ADD,ID=yyy,LOADMOD=miniNCPname'
```

Note: miniNCPname is not a specific type of load module name, it is called this to improve comprehension.

- 3 (MOSS)** At the local 3745 or 3720:

- Format the diskette (see following remarks on formatting and copying diskettes).
- Select the MOSS DII function.
- Select the diskette management option and press **F4** (CPY LM TO DSKT).

Refer to:

- page 5-20 for local 3745 models 130, 150, 170, 210, and 310
- page 5-23 for local 3745 models 410 and 610.

This copies the minimal NCP/PEP load module onto the diskette.

Then mail or hand-carry the diskette to the remote site.

— **Formatting and copying diskettes** —

The diskette must be formatted first. This can be done on a PC/AT or on 3720/3745 controllers using the MOSS disk function. Refer to: "Formatting a Diskette" on page 4-18.

Use 5.25 inches diskettes, double-sided and high capacity to support 1.2 Megabytes.

No track in error must be found at the end of the diskette formatting operation. This could lead to unexpected results when copying. Only use error free diskettes.

When the copying of diskettes is done on a PC/AT, the DOS command DISKCOPY must be used.

- 4 (MOSS)** At the remote 3745 or 3720:

- Select the MOSS DII function.
- Select the diskette management option and press **F5** (CPY LM FROM DSKT).

Refer to:

- page 5-20 for remote 3745 models 130, 150, 170, 210, and 310
- page 5-23 for remote 3745 models 410 and 610.

This copies the NCP/PEP load module from the diskette onto the hard disk.

The load module becomes the ACTIVE LOAD MODULE and the AUTO DUMP/LOAD option is set to YES for the next IPL.

- 5 (MOSS)** From the remote 3745 or 3720 MOSS console, perform an IPL (a load from disk will be automatically done, AUTO DUMP/LOAD being set to YES).

DII (Switched X.21 Link)

6 (Host) To activate the minimal NCP across the subarea link use the following VTAM commands:

1. Activate the switched major node (SWMJN).
(`'V NET,ACT,ID=SWMJNxx,SCOPE=ALL'`)
2. Activate the minimal NCP/PEP load module.
(`'V NET,ACT,ID=...,LOADMOD=miniNCPname,
LOAD=NO,SCOPE=ONLY,LOADSTA=PUswitch,RNAME=PUswitch'`)

(Refer to *VTAM Operation* documentation.)

7 (Host) Using the MODIFY LOAD command, transfer the complete NCP/PEP load module from the host to the remote 3745 or 3720 disk across the subarea link.
(`'F NETxxxx,LOAD,ACTION=ADD/REPLACE,ID=...,LOADMOD=realremotegeneration'`)

A VTAM message (IST241I) appears on the VTAM console informing you that the transfer is completed. (The time required to receive this message depends on the line speed).

8 (Host) Using the VTAM command VARY INACT, the minimal NCP/PEP load module must be set inactive in the remote 3745 or 3720.
(`'V NET,INACT,F,ID=...,'`)

9 (Host) Activate the remote controller with the real remote generation.
(`'V NET,ACT,ID=...,LOADMOD=realremotegeneration,
SCOPE=ONLY,LOAD=YES,LOADFROM=EXT,LOADSTA=PUswitch,RNAME=PUswitch'`)

The remote 3745 or 3720 is now ready for communication exchange.

Remote Initial Loading (X.25 Link - SVC/PVC)

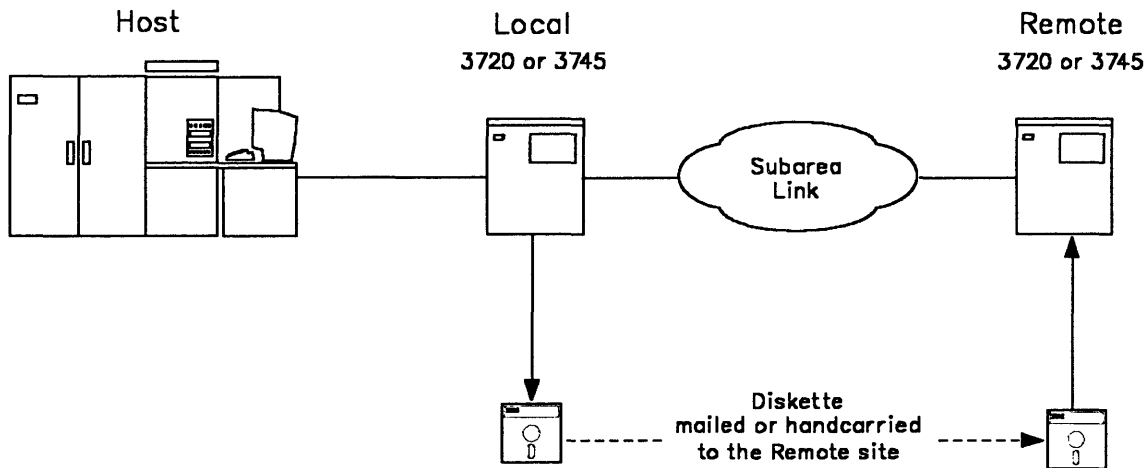


Figure 5-5. Remote Loading and Activation Across an X.25 (SVC/PVC) Link

| Table 5-2. Remote Loading and Activation Across an X.25 SVC and PVC Link | | | |
|--|--|---------------------------|--|
| Host (VTAM V3R3) | Local 37xx (NCP V5R3 and later) (NPSI V3R3) | Network X.25 (SVC/PVC) | Remote 37xx (NCP V5R3 and later) (NPSI V3R3) |
| <ol style="list-style-type: none"> 1 Generate Mini. NCP 2 Transfer NCP to local 37xx hard disk | <ol style="list-style-type: none"> 3 MOSS DII Function | | <ol style="list-style-type: none"> 4 MOSS DII Function 5 Perform IPL |
| Remote Initial Loading - Perform actions in sequence from 1 to 9 | | | |

- 1 (Host)** Under MVS/XA, or VM, generate a minimal remote NCP/PEP load module. This module must contain at least the subarea link definitions and also the appropriate NCP parameters for the link, over which activation and loading will take place. Its size must be less than 1 Megabyte (NCP plus NPSI).

PVC or SVC lines used (for the link over which activation and loading will take place) must be defined with at least:

- MONLINK=YES (or CONT), and IPL=YES on X.25 PVC
- MONLINK=YES (or CONT), SWMMTID, and IPL=YES on X.25 SVC.
- SWMMT statements which must appear in the NCP system generation just after the BUILD and SYSCNTRL statements.

The physical line (MCH) which holds the PVC/SVC lines must be defined with at least XMONLINK = YES.

(Refer to *NCP, SSP and EP: Resource Definition Reference*.)

Note: This note is valid only from XI V2R2 and later versions/releases.

If XI exists in the remote controller and handles the X.25 traffic from/to the PSDN, the selected gateway DTE and the XI NPSI bridge DCE must be automatically made active (that is NSFDRIV = NO). NPSI MCH becomes virtual and is supported by NPSI bridge.

Sizing the NCP/PEP load module:

In the link-edit output, find the \$NCPEND variable within the cross reference table of the load module. This parameter gives you the size of the load module expressed in hexadecimal notation.

In hexadecimal, 1 Megabyte = 100 000.

2 (Host) Transfer the minimal NCP/PEP load module to the local 3745 or 3720 hard disk.

Use the following VTAM (MLM) command:

```
'F NET,LOAD,ACTION=ADD,ID=yyy,LOADMOD=miniNCPname'
```

Note: miniNCPname is not a specific type of load module name, it is called this to improve comprehension.

3 (MOSS) At the local 3745 or 3720:

- Format the diskette (see following remarks on formatting and copying diskettes).
- Select the MOSS DII function.
- Select the diskette management option and press **F4** (CPY LM TO DSKT).

Refer to:

- page 5-20 for 3745 models 130, 150, 170, 210, and 310
- page 5-23 for 3745 models 410 and 610.

This copies the minimal NCP/PEP load module onto the diskette.

Then mail or hand-carry the diskette to the remote site.

Formatting and copying diskettes

The diskette must be formatted first. This can be done on a PC/AT or on 3720/3745 controllers using the MOSS disk function. Refer to: "Formatting a Diskette" on page 4-18.

Use 5.25 inches diskettes, double-sided and high capacity to support 1.2 Megabytes.

No track in error must be found at the end of the diskette formatting operation. This could lead to unexpected results when copying. Only use error free diskettes.

When copying of diskettes is made on a PC/AT, the DOS command DISKCOPY must be used.

4 (MOSS) At the remote 3745 or 3720:

- Select the MOSS DII function.
- Select the diskette management option and press **F5** (CPY LM FROM DSKT).

Refer to:

- page 5-20 for remote 3745 models 130, 150, 170, 210, and 310
- page 5-23 for remote 3745 models 410 and 610.

This copies the NCP/PEP load module from the diskette on to the hard disk.

The load module becomes the ACTIVE LOAD MODULE and the AUTO DUMP/LOAD option is set to YES for the next IPL.

- 5 (MOSS)** From the remote 3745 or 3720 console, perform an IPL (a load from disk will be automatically done, AUTO DUMP/LOAD being set to YES).

6 (Host) Across SVC

To activate the minimal NCP across the subarea link use the following VTAM commands:

1. Activate the MCH (multiple channel link).
(‘V NET,ACT,ID = ...’)
2. Activate the MCH-PU.
(‘V NET,ACT,ID = ...’)
3. Activate the switched major node (SWMJN).
(‘V NET,ACT,ID = SWMJNxx’)
4. Activate the SVC line.
(‘V NET,ACT,ID = SVCxxxx,’)
5. Activate the minimal NCP/PEP load module.
(‘V NET,ACT,ID =,LOADMOD = miniNCPname,
LOAD = NO,SCOPE = ONLY,LOADSTA = PUswmjn,RNAME = PUswmjn’)

Note: The commands described in steps 1, 2 and 4, are not necessary if ISTATUS=ACTIVE was defined at NCP generation time and the activation of the local NCP is done with SCOPE=ALL.

(Refer to *VTAM Operation* documentation.)

Across PVC

To activate the minimal NCP across the subarea link use the following VTAM commands:

1. Activate the MCH (multiple channel link).
(‘V NET,ACT,ID = ...’)
2. Activate the MCH-PU. (‘V NET,ACT,ID = ...’)
3. Activate PVC link.
(‘V NET,ACT,ID = PVCxxxx,’)
4. Activate the minimal NCP/PEP load module.
(‘V NET,ACT,ID =,LOADMOD = miniNCPname,
LOAD = NO,SCOPE = ONLY,LOADSTA = PUofPVC,RNAME = PUofPVC’)

Note: The commands described in steps 1, 2 and 3, are not necessary if ISTATUS=ACTIVE was defined at NCP generation time and the activation of the local NCP is done with SCOPE=ALL.

(Refer to *VTAM Operation* documentation.)

- 7 (Host)** Using the MLM command, transfer the complete NCP/PEP load module from the host to the remote 3745 or 3720 disk across the subarea link.
(‘F NETxxxx,LOAD,ACTION = ADD/REPLACE,ID =, LOADMOD = realremotegeneration’)

A message VTAM (IST241I) appears on the VTAM console informing you that the transfer is completed. (The time required to receive this message depends on the configuration.)

8 (Host) Using the VTAM command VARY INACT, the minimal NCP/PEP load module must be set inactive in the remote 3745 or 3720.
(‘V NET,INACT,F,ID=.....’)

9 (Host) Across SVC
Activate the remote controller with the real remote generation.
(‘V NET,ACT,ID =,LOADMOD = realremotegeneration,
SCOPE = ONLY,LOAD = YES,LOADFROM = EXT,LOADSTA = PUswmjn,RNAME = PUswmjn’)
The remote 3745 or 3720 is now ready for communication exchange.

Across PVC
Activate the remote controller with the real remote generation.
(‘V NET,ACT,ID =,LOADMOD = realremotegeneration,
SCOPE = ONLY,LOAD = YES,LOADFROM = EXT,LOADSTA = PUofPVC,RNAME = PUofPVC’)
The remote 3745 or 3720 is now ready for communication exchange

Remote Initial Loading (Token-Ring Link)

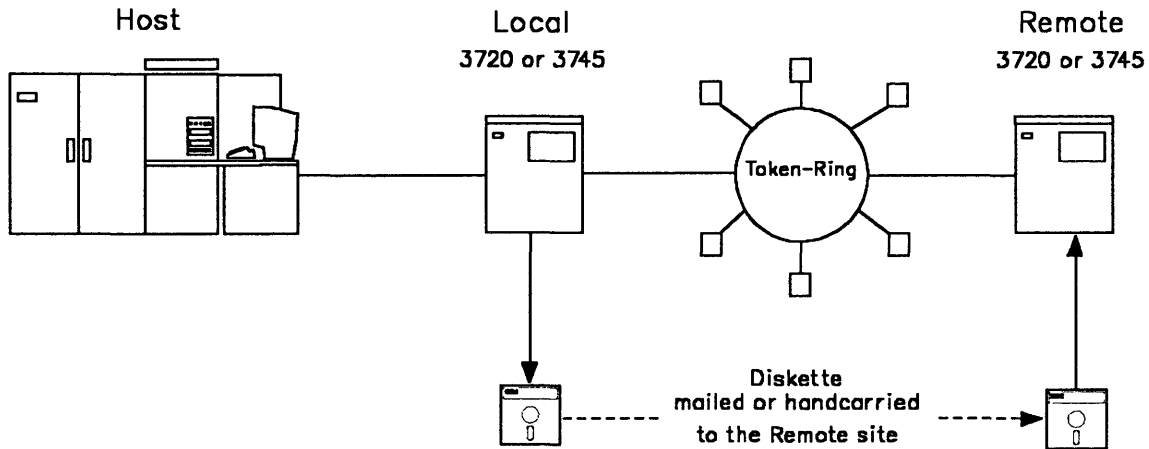


Figure 5-6. Remote Loading and Activation Across a Token-Ring Link

| Host (VTAM V3R3) | Local 37xx (NCP V5R3 and later) | Network Token-Ring | Remote 37xx (NCP V5R3 and later) |
|--|------------------------------------|-----------------------|--|
| 1 Generate Mini. NCP 2 Transfer NCP to local 37xx hard disk 6 Activate Mini. NCP 7 Transf. NCP from Host 8 Inactivate Mini. NCP 9 Activate Complete NCP | 3 MOSS DII Function | | 4 MOSS DII Function 5 Perform IPL |
| Remote Initial Loading - Perform actions in sequence from 1 to 9 | | | |

- 1 (Host)** Under MVS/XA or VM, generate a minimal remote NCP/PEP load module. This module must contain at least the subarea link definitions and also the appropriate NCP parameters for the link over which activation and loading will take place. Its size must be less than 1 Megabyte (NCP plus NTRI).

The line (for the link over which activation and loading will take place) must be defined with at least: MONLINK=YES (or CONT), and IPL=YES for the logical token-ring link and with XMONLNK=YES for the physical token-ring link.

As opposed to token-ring BNN (boundary network node) lines, token-ring subarea connections are supported only as nonswitched lines.

(Refer to *NCP, SSP and EP: Resource Definition Reference*.)

Sizing the NCP/PEP load module:

In the link-edit output, find the \$NCPEND variable within the_cross reference table of the load module. This parameter gives you the size of the load module expressed in hexadecimal.

In hexadecimal, 1 Megabyte = 100 000.

- 2 (Host)** Transfer the minimal NCP/PEP load module to the local 3745 or 3720 hard disk.

Use the following (or similar) VTAM MODIFY LOAD command:

```
'F NETxxxx,LOAD,ACTION=ADD,ID=yyy,LOADMOD=miniNCPname'
```

Note: miniNCPname is not a specific type of load module name, it is called this to improve comprehension.

- 3 (MOSS)** At the local 3745 or 3720:

- Format the diskette (see following remarks on formatting and copying diskettes).
- Select the MOSS DII function.
- Select the diskette management option and press **F4** (CPY LM TO DSKT).

Refer to:

- page 5-20 for 3745 models 130, 150, 170, 210, and 310
- page 5-23 for 3745 models 410 and 610.

This copies the minimal NCP/PEP load module onto the diskette.

Then mail or hand-carry the diskette to the remote site.

Formatting and copying diskettes

The diskette must be formatted first. This can be done on a PC/AT or on 3720/3745 controllers using the MOSS disk function. Refer to: "Formatting a Diskette" on page 4-18.

Use 5.25 inches diskettes, double-sided and high capacity to support 1.2 Megabytes.

No track in error must be found at the end of the diskette formatting operation. This could lead to unexpected results at copy time. Only use error free diskettes.

When copying of diskettes is made on a PC/AT, the DOS command DISKCOPY must be used.

- 4 (MOSS)** At the remote 3745 or 3720:

- Select the MOSS DII function.
- Select the diskette management option and press **F5** (CPY LM FROM DSKT).

Refer to:

- page 5-20 for remote 3745 models 130, 150, 170, 210, and 310
- page 5-23 for remote 3745 models 410 and 610.

This copies the NCP/PEP load module from the diskette on to the hard disk.

The load module becomes the ACTIVE LOAD MODULE and the AUTO DUMP/LOAD option is set to YES for the next IPL.

- 5 (MOSS)** From the remote 3745 or 3720 MOSS console, perform an IPL (a load from disk will be automatically done, AUTO DUMP/LOAD being set to YES).

6 (Host) To activate the minimal NCP across the subarea link use the following VTAM commands: and across the subarea link, perform the following:

1. Activate the physical token-ring line.
(`'V NET,ACT,ID=lineTOK'`)
2. Activate the minimal NCP/PEP load module.
(`'V NET,ACT,ID=.....,LOADMOD=miniNCPname,
LOAD=NO,SCOPE=ONLY,LOADSTA=PUlogical,RNAME=PUlogical'`)

Notes:

1. The local physical address is related to the remote logical address and the local logical address is related to the remote physical address.
2. If the defaulted value `ISTATUS=ACTIVE` is kept at generation time, the logical line is automatically made active.

(Refer to *VTAM Operation* documentation.)

7 (Host) Using the MLM command, transfer the complete NCP/PEP load module from the host to the remote 3745 or 3720 disk across the subarea link.
(`'F NETxxxx,LOAD,ACTION=ADD/REPLACE,ID=.....,LOADMOD=realremotegeneration'`)

A VTAM message (IST241I) appears on the VTAM console informing you that the transfer is completed.

8 (Host) Using the VTAM command `VARY INACT`, the minimal NCP/PEP load module must be set inactive in the remote 3745 or 3720.
(`'V NET,INACT,F,ID=.....'`)

9 (Host) Activate the remote controller with the real remote generation.
(`'V NET,ACT,ID=.....,LOADMOD=realremotegeneration,
SCOPE=ONLY,LOAD=YES,LOADFROM=EXT,LOADSTA=PUlogical,RNAME=PUlogical'`)

The remote 3745 or 3720 is now ready for communication exchange

Diskette Management (Models 130, 150, 170, 210, and 310)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: SINGLE
                CCU-A
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34)
                STBG001 (02/03/89 12:56:38)
DUMP:             STAG001 (02/03/89 13:67:54)
AUTO DUMP/LOAD: YES

ACTIV LOAD MOD: STAG001

===>

F1:END  F2:MENU2  F3:ALARM  F4:CPY LM TO DSKT  F5:CPY LM FROM DSKT  F6:QUIT

```

From this screen you may:

- **Press F4** and go to:
"Copying the Load Module to a Diskette (Models 130, 150, 170, 210, and 310)" on page 5-21.
- **Press F5** and go to:
"Copying the Load Module from a Diskette (Models 130, 150, 170, 210, and 310)" on page 5-22.
This action sets the load module active and sets the automatic DUMP/LOAD option **(for the next IPL)**.

Copying the Load Module to a Diskette (Models 130, 150, 170, 210, and 310)

(See **F4** on Figure 5-1 on page 5-8.)

- This operation is done on the local 3745.
- The NCP/PEP or minimal NCP/PEP load module size must be less than 1 Megabyte.
- The NCP/PEP load module generated on the host has been stored on the local controller disk using the VTAM command MODIFY LOAD.
- After pressing F4 on the screen shown on page 5-20, the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION
CONFIGURATION: SINGLE

                CCU-A
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34)
                STBG001 (02/03/89 12:56:38)
DUMP:             STAG001 (02/03/89 13:67:54)

AUTO DUMP/LOAD: YES
ACTIV LOAD MOD: STAG001

ENTER NAME OF THE LM TO BE COPIED TO DSKT THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                F6:QUIT

```

- Enter the load module name then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

You must get the **COMMAND COMPLETED** message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
(Appendix A, "Messages" on page A-1 includes diskette management messages.)

- Then mail or hand-carry the diskette to the remote site.

Copying the Load Module from a Diskette (Models 130, 150, 170, 210, and 310)

(See **F5** in Figure 5-1 on page 5-8.)

- This operation is done on the remote 3745.
- From the diskette created by the local 3745, a minimal or complete NCP/PEP load module is copied on to the remote controller disk and set active.

Setting a load module active means that this load module is the one to be used in case an IPL is requested from the console or follows an NCP abend or a hard-check.

- After pressing F5 on the screen shown on page 5-20, the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: SINGLE

                CCU-A
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34)
                STBG001 (02/03/89 12:56:38)
DUMP:            STAG001 (02/03/89 13:67:54)

AUTO DUMP/LOAD: YES
ACTIV LOAD MOD: STAG001

PLEASE CONFIRM THE COPY OF THE DSKT LM (Y OR N) THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                F6:QUIT

```

- Confirm the copy of the load module and then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

You must get the **COMMAND COMPLETED** message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
(Appendix A, "Messages" on page A-1 includes diskette management messages.)

- If a load module with the same name exists on the hard disk, it will be replaced.
- If space is available on the hard disk, the load module from the diskette will be added.
If space is not available, the oldest load module will be replaced.
Refer to SAVE DATE/TIME on the screen to identify the oldest load module.

- For backup purposes it is suggested that you make a copy of this diskette.
- Then continue with the next step of the procedure you left.

Diskette Management (Models 410 and 610)

[D] [1] [1] [SEND] [2] [SEND]

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: TWIN          OPERATION MODE: BACKUP

                CCU-A                      CCU-B
CP RUNNING:
DISK CONTENTS:          SAVE DATE/TIME          SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34) STBG001 (02/06/89 15:34:31)
                STBG001 (02/03/89 12:56:38)
DUMP:      STAG001 (02/03/89 13:67:54) STBG001 (02/06/89 12:23:11)

AUTO DUMP/LOAD: YES          YES
ACTIV LOAD MOD: STAG001     STBG001

====>
F1:END  F2:MENU2  F3:ALARM  F4:CPY LM TO DSKT  F5:CPY LM FROM DSKT  F6:QUIT
  
```

From this screen you may:

- **Press F4** and go to:
"Copying the Load Module to a Diskette (Models 410 and 610)" on page 5-24.
- **Press F5** and go to:
"Copying the Load Module from a Diskette (Models 410 and 610)" on page 5-26.
This action sets the load module active and sets the automatic DUMP/LOAD option
(for the next IPL).

Copying the Load Module to a Diskette (Models 410 and 610)

(See **F4** in Figure 5-1 on page 5-8.)

- This operation is done on the local 3745.
- The NCP/PEP or minimal NCP/PEP load module size must be less than 1 Megabyte.
- The NCP/PEP load module generated on the host has been stored on the local controller disk using the VTAM command MODIFY LOAD.
- After pressing F4 on the screen shown on page 5-23, the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: TWIN          OPERATION MODE: BACKUP

                CCU-A                      CCU-B
CP RUNNING:
DISK CONTENTS:          SAVE DATE/TIME          SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34) STBG001 (02/06/89 15:34:31)
                STBG001 (02/03/89 12:56:38)
DUMP:          STAG001 (02/03/89 13:67:54) STBG001 (02/06/89 12:23:11)

AUTO DUMP/LOAD: YES          YES
ACTIV LOAD MOD: STAG001      STBG001

SELECT A CCU (A OR B) THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM          F6:QUIT

```

- Select the CCU then press SEND.
- The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: TWIN          OPERATION MODE: BACKUP

                CCU-A                      CCU-B
CP RUNNING:
DISK CONTENTS:          SAVE DATE/TIME          SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34) STBG001 (02/06/89 15:34:31)
                STBG001 (02/03/89 12:56:38)
DUMP:          STAG001 (02/03/89 13:67:54) STBG001 (02/06/89 12:23:11)

AUTO DUMP/LOAD: YES          YES
ACTIV LOAD MOD: STAG001      STBG001

ENTER NAME OF THE LM TO BE COPIED TO DSKT THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM          F6:QUIT

```

- Give a load module name then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

You must get the COMMAND COMPLETED message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
(Appendix A, "Messages" on page A-1 includes diskette management messages.)

- Then mail or hand-carry the diskette to the remote site.

Copying the Load Module from a Diskette (Models 410 and 610)

(See **F5** in Figure 5-1 on page 5-8.)

- This operation is done on the remote 3745.
- From the diskette created by the local 3745, a minimal or complete NCP/PEP load module is copied on the remote controller disk, and set active.

Setting a load module active means this load module is the one to be used in case an IPL is requested from the console or follows an NCP abend or a hard-check.

- After pressing F5 on the screen shown on page 5-23, the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: TWIN          OPERATION MODE: BACKUP

                CCU-A                      CCU-B
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME          SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34) STBG001 (02/06/89 15:34:31)
                STBG001 (02/03/89 12:56:38)
DUMP:              STAG001 (02/03/89 13:67:54) STBG001 (02/06/89 12:23:11)

AUTO DUMP/LOAD: YES                YES
ACTIV LOAD MOD: STAG001            STBG001

SELECT A CCU (A OR B) THEN PRESS SEND ====>

F1:END  F2:MENU2  F3:ALARH          F6:QUIT
  
```

- Select the CCU, press SEND, and the following screen is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

CONFIGURATION: TWIN          OPERATION MODE: BACKUP

                CCU-A                      CCU-B
CP RUNNING:
DISK CONTENTS:      SAVE DATE/TIME          SAVE DATE/TIME
LOAD MODULES: STAG001 (02/06/89 12:23:34) STBG001 (02/06/89 15:34:31)
                STBG001 (02/03/89 12:56:38)
DUMP:              STAG001 (02/03/89 13:67:54) STBG001 (02/06/89 12:23:11)

AUTO DUMP/LOAD: YES                YES
ACTIV LOAD MOD: STAG001            STBG001

PLEASE CONFIRM THE COPY OF THE DSKT LM (Y OR N) THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARH          F6:QUIT
  
```

- Confirm the copy of the load module from the diskette and press SEND.
- When the copy is successful, the **COMMAND COMPLETED** message is displayed.

You must get the COMMAND COMPLETED message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
(Appendix A, "Messages" on page A-1 includes diskette management messages.)

- If a load module with same name exists on the hard disk, it will be replaced.
- If space is available on the hard disk, the load module from the diskette will be added.
If space is not available, the oldest load module will be replaced.
Refer to SAVE DATE/TIME on the screen to identify the oldest load module.
- For backup purposes it is suggested that you make a copy of this diskette.
- Then continue with the next step of the procedure you left.



Chapter 6. Event Log Display (ELD)

The box event record file collects information on errors and events. Each piece of information is referred to as a BER.

- A BER created for an **error** is always associated with an alarm. This alarm immediately follows the BER. In this case, perform the action required for that alarm.
- A BER created for an **event** requires no specific action.

When the BER log is full, the next BER to arrive overrides the oldest BER in the file. BERs are stored in the order of arrival.

Use the ELD function to display:

- The summary of all the BERs and alarms.
- The list of all the BERs and alarms.
- Details of a specific BER.

The BER file may be printed at the host. The print procedure, as well as the transfer of the file to the host, is described in *NCP, SSP: Diagnosis Guide*.

ELD Summary (BER Summary)

When you select the Event Log function, the Summary screen is first displayed. Two screens are necessary to display the complete summary of BERs.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                      ELD SUMMARY

SEL#  NAME                                TYPE PENDING DATE 1ST BER TOTAL
  A   (ALL FILE CONTENTS)                  BERS  MM/DD HH:MM IN FILE
0 ALL (ALL FILE CONTENTS)                  380
1 CA  (CHANNEL ADAPTERS)                   10    1  10/07 11:29    1
2 TSS (TRANSMISSION SUBSYSTEM)             11    0
3 CP  (CONTROL PROGRAM)                   12    0
4 CCU (CENTRAL CONTROL UNIT)               13    0
5 IOC (I/O CONTROL)                       14    2  10/07 11:26    2
6 MOSS (MAINTENANCE OPERATOR SUBSYSTEM)    01    61  10/06 09:37    61
7 ALARM                                     02    78  10/06 09:37    78

-ENTER SEL# OR NAME ==>
====>

F1:END  F2:MENU2  F3:ALARM                      F8:FORWARD

```

From the previous screen you may:

- Press F8:FORWARD to display the continuation of the Summary screen.

----- mm/dd/yy hh:mm

FUNCTION ON SCREEN: EVENT LOG DISPLAY

ELD SUMMARY

| SEL# | NAME | TYPE | PENDING | DATE 1ST BER | TOTAL |
|----------|-----------------------------|------|---------|--------------|---------|
| | | | BERS | MM/DD HH: MM | IN FILE |
| A | | | 215 | | 215 |
| 0 | ALL (ALL FILE CONTENTS) | | | | |
| 8 | TRSS (TOKEN-RING SUBSYSTEM) | 15 | 4 | 01/01 17:09 | 4 |
| 9 | POWER (POWER SUBSYSTEM) | 04 | 4 | 01/01 17:09 | 4 |
| 10 | DIAGS (DIAGNOSTICS) | 03 | 2 | 01/01 17:09 | 2 |
| 11 | ESS (ETHERNET) | 08 | 0 | | 0 |

-ENTER SEL# OR NAME ==>
====>

F1:END F2:MENU2 F3:ALARM F7:BACKWARD

From the previous screen you may:

- **Press F7:BACKWARD** to display the beginning of the Summary screen.
- **Press F8:FORWARD** to display the continuation of the Summary screen.
- **Enter a SEL# or a NAME** to display the list of all the BERS for that specific component (page 6-3).
(NAME means acronyms: CA, TSS, CP, .. and so on .. **A**)
 - Select ALARM to display the list of all the alarms recorded in the BER file.
 - Select ALL to display the list of all the BERS and alarms recorded in the BER file.

TYPE and PENDING BERS: Service personnel only.

DATE 1ST BER: The date and time of the oldest BER in this category that is not flagged (pending BER).

TOTAL IN FILE: The total number of BERS.

ELD List (BER List)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                        MOSS      LIST
                        TOTAL: 202

SEL# DATE/TIME FLAG  NAME  TYPE ID  EVENT DESCRIPTION
455 10/13 09:32 MOSS      01 19  IHL COMPLETE
453 10/13 09:28 MOSS MIOC  01 02  INVALID OUT MBOX ON LVL4
451 10/13 09:18 MOSS APPL 01 06  IPL COMPLETE WITH ERROR
450 10/13 09:18 MOSS      01 44  MOSS CODE DATA FOR PROBLEM
449 10/13 09:07 MOSS SCRN 01 05  SCANNER FAILURE DURING IPL
448 10/13 09:06 MOSS APPL 01 21  IPL STARTED
446 10/13 09:05 MOSS      01 19  IPL COMPLETE
443 10/13 09:02 MOSS APPL 01 06  IPL CHECK OF61
442 10/13 09:02 MOSS APPL 01 21  IPL STARTED
441 10/13 09:02 MOSS APPL 01 21  IPL STARTED
ENTER SEL# OR NAME ==>
===>

F1:END  F2:MENU2  F3:ALARM  F4:SUMMARY      F7:BACKWARD

```

From the previous screen you may:

- Press F4:SUMMARY to display the Summary screen.
- Enter a SEL# to display the details of a specific BER (page 6-3).

TOTAL: The total number of BERs for the selected component is displayed on the first line.

SEL#: Use this number to display the details of a specific BER.

DATE/TIME: The date and time at which the BER was recorded. The date is four digits defining month and day. The time is four digits defining hours and minutes.

FLAG, TYPE and ID: Service personnel only.

NAME: This origin name should not be confused with the component name. It may also be used to list all the BERs having the same origin.

EVENT DESCRIPTION: An asterisk (*) at the end of the description indicates that the description is truncated. To display the full description of the BER, enter the SEL# of the BER.

ELD Detail (BER Detail)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                    ELD DETAIL
SEL#:448 FLAG:00 DATE: 10/13 TIME: 09:06 TYPE:01 ID:21

  BER Detail Information  ref. code

====>
F1:END F2:MENU2 F3:ALARM F4:SUNHARY F5:LIST F7:PREVIOUS F8:NEXT
    
```

From the previous screen you may:

- Press F4:SUNHARY to display the Summary screen.
- Press F5:LIST to display the BER List screen.
- Press F7:PREVIOUS to display the BER Detail screen of the previous BER.
- Press F8:NEXT to display the BER Detail screen for the next BER.
- The reference code is the last string of characters on the BER detail line.

Chapter 7. Fallback (FBK) - Models 410 and 610

The normal fallback procedure is automatic but you can perform fallback manually.

Fallback in Twin-Standby Mode

The fallback function allows you to switch the configuration onto the standby CCU (refer to page 7-2).

With the **fast fallback** capability (**hot standby**), the standby CCU is already pre-loaded with the active load module. This assumes that:

- The appropriate control program is used (NCP Version 5 Release 2.1 or later release) and defined to support 'hot standby'.
- The save and auto/dump options have been set appropriately.
- The load module has been saved on the disk and made active (at host level).
- The standby CCU has been pre-loaded with a copy of the active load module at the last stand-alone IPL.
- There is no control program dump on the disk. If this is the case, the network operator will be requested to purge the dump.

Otherwise, the standby CCU IPL will be automatically performed.

Fallback in Twin-Backup Mode

The fallback function allows you to add the configuration of one CCU to the other one (refer to page 7-3).

Twin-Standby Mode

To select the Fallback function.



The following screen is displayed if your 3745 is in **twin-standby mode**.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

- SELECT THE FALLBACK PHASE (1, 2) ==>
    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK

====>
F1:END F2:MENU2 F3:ALARM
```

From the previous screen:

Select the fallback phase:

- Enter 1 if you want to request network deactivation. An alert is sent to the host. Wait for confirmation from the network operator.
- Enter 2 to perform fallback.

The following screen is displayed:

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

- SELECT THE FALLBACK PHASE (1, 2) ==> 2
    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK

- PLEASE CONFIRM YOUR SELECTION: Y or N, THEN PRESS SEND ==>
====>
F1:END F2:MENU2 F3:ALARM
```

From the previous screen you may:

- Enter Y to confirm fallback procedure. In this case, you cannot cancel or terminate the fallback process. You will then get the function selection rules screen. An automatic IPL is started.
- Enter N if you do not want to perform fallback. In this case, you will get the message PRESS SEND TO EXIT THE FUNCTION.

If there is an active load module on the disk and the standby CCU has been pre-loaded, the automatic IPL after fallback is not needed. In this case, there will be a tentative re-IPL of the CCU that was previously active. Also, a dump is taken to allow problem determination. Once this CCU is successfully pre-loaded, it is ready for subsequent fallback provided the dump has been purged in the meantime.

Twin-Backup Mode

To select the Fallback function.



The following screen is displayed if your 3745 is in **twin-backup mode**.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

- SELECT THE CCU THAT WILL SUPPORT THE WHOLE CONFIGURATION (1,2) ==>

    1 = CCU-A
    2 = CCU-B

- SELECT THE FALLBACK PHASE (1, 2) ==>

    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK

====>

F1:END F2:MENU2 F3:ALARM
    
```

From the previous screen:

Select the CCU that will support the whole configuration by entering either 1 or 2.

Select the fallback phase:

- Enter 1 if you want to request network deactivation. An alert is sent to the host. Wait for confirmation to continue with the fallback procedure.
- Enter 2 to perform fallback.

Note: In order to use the inactive CCU again, you have to perform the SWITCHBACK function (SBK on page 18-1). The message READY will appear in the MSA under the backup CCU when fallback is entered.

Then you will get the following screen:

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

- SELECT THE CCU THAT WILL SUPPORT THE WHOLE CONFIGURATION (1,2) ==> 1

    1 = CCU-A
    2 = CCU-B

- SELECT THE FALLBACK PHASE (1, 2) ==> 2

    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM FALLBACK

- PLEASE CONFIRM YOUR SELECTION: Y or N, THEN PRESS SEND ==> Y
===>

F1:END F2:MENU2 F3:ALARM
```

From the previous screen:

- Enter Y to confirm the fallback procedure. As soon as fallback is confirmed, you cannot cancel or terminate the fallback process. You will get the following screen.
- Enter N if you do not want to perform fallback. You will then get the message PRESS SEND TO EXIT THE FUNCTION.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

                                FALLBACK

                                WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1

===>

F1:END F2:MENU2 F3:ALARM
```

When fallback is complete, the message FALLBACK COMPLETE appears in the MSA.

Chapter 8. MOSS IML, Scanner IML

MOSS IML from the Operator Console (IML)

You may IML MOSS from:

- The control panel
- The local or alternate console
- The remote console.

All MOSS IML procedures and console logon procedures are documented in the *3745 Basic Operations Guide*.

To IML the MOSS from an operator console:

1. The message IML IS IN PROGRESS is displayed.
2. The channel interface screen is displayed on the local console at the end of the MOSS IML.
3. Press F4.
4. The password screen is displayed:

| | | |
|---|----------|----------------|
| CUSTOMER ID: | 3745-XXX | SERIAL NUMB |
| 3745 MICROCODE (C) COPYRIGHT IBM CORP. 1987 | | mm/dd/yy hh:mm |
| ENTER PASSWORD ==> | | |
| F4:Channel Interface Display | | |

5. Enter the customer local password.
6. You will get the Function Selection Rules screen.

When the MOSS is IMLed, the remote console is disconnected.

Scanner IML from the Operator Console (IMS)

Before you IML a scanner, note that:

- You must stop all the lines on the scanner using access method facilities.
- The MOSS must be **online**. To set the MOSS online, go to page 23-13.
- If an IPL is in progress, you must either wait until the IPL is completed, or cancel the IPL by pressing F1.

Note: Cancelling an IPL (by pressing F1 during the IPL phase 1) may give unexpected results. (For instance, you cannot upgrade the CDF if you canceled IPL in such a condition.)

- If you do one of the following before the IML is complete, the IML is canceled:
 - Press F1.
 - Switch the operator console from normal mode to test mode.
 - Power off the operator console.

MSA fields N and O give information on the scanner. Refer to “MSA Fields Definition (CCU Information)” on page B-2 and “MSA Fields Definition (Scanner Information)” on page B-6 for details of these fields.

To IML only one scanner:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: IML ONE SCANNER

- ENTER:

    THE SCANNER NUMBER PRECEDED BY S (S1 TO S32)
    OR
    THE LINE ADDRESS (0 TO 1071)
    (0 TO 895 FOR TSS )
    (1024 TO 1039 FOR HPTSS)
    (1056 TO 1071 FOR ESS )

====>

F1:END F2:MENU2 F3:ALARM
    
```

From the previous screen:

- Follow the instructions on the screen to select the scanner you want to IML.
- Press SEND.

When the IML is complete, the following message is displayed:
 IML FOR SCANNER xx COMPLETED - SCANNER IS CONNECTED

Reactivate the lines on the scanner using host access method facilities.

Chapter 9. 3745 IPL from the Operator Console (IPL)

IPL Single-CCU Configuration

Note: For Models 130, 150, 170, 210, and 310, the 3745 is always considered as single-CCU.

Use this function to IPL the CCU and IML all scanners. You may also IPL the 3745 from the control panel. All 3745 IPLs are documented in the *3745 Basic Operations Guide*.

Before you IPL the 3745, note that:

- You cannot select a menu 2 function before IPL phase 2. The control panel shows FF2 and MSA displays IPL PHASE 2.
- After the 3745 IPL, the MOSS is **online**.
- If you do one of the following before the IPL is complete, the IPL is canceled:
 - Press F1.

Note: Canceling an IPL (by pressing F1 during the IPL phase 1) may give unexpected results. (For instance, you cannot upgrade the CDF if you canceled IPL in such a condition.)
 - Switch the operator console from normal mode to test mode.
 - Power off the operator console.
 - Switch the operator console to another 3745 with the IBM 7427 Console Switching Unit.

To IPL the 3745 from the operator console:



-----mm/dd/yy hh:mm

FUNCTION ON SCREEN: IPL CCU(S)

- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
 ===>

F1:END F2:MENU2 F3:ALARM

If you enter Y, the IPL starts immediately.

If you enter N, the following message is displayed:

PRESS SEND TO EXIT THE FUNCTION

Once you have confirmed your selection, the IPL starts.

IPL

The following screen is displayed while the IPL is in progress, and remains until you press F1.

The progression of the IPL is displayed in the machine status area described in Appendix B.

```
-----mm/dd/yy hh:mm  
FUNCTION ON SCREEN: IPL CCU(S)  
  
          CCU AND SCANNER IPL  
  
          WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1  
  
====>  
F1:END  F2:MENU2  F3:ALARM  F4:STOP  F5:RESUME
```

From the previous screen you may:

- Press F4:STOP to stop within a phase.
- Press F5:RESUME to resume the IPL.

When the IPL is complete, IPL COMPLETE and MOSS-ONLINE are displayed in the MSA.

If the automatic IPL/Dump option is set, a control program load module is automatically loaded from the 3745 disk. Otherwise, the 3745 is loaded from the channel or link.

The control program may be loaded from the host or from the disk. To load the control program from the disk:

- A control program load module must have been saved on disk and
- The automatic load option must have been specified in the Disk IPL Information (DII) function (page 5-1).

IPL Twin-CCU Configuration (for Models 410 and 610)

If you have a twin-CCU configuration it will be in one of the following modes:

- Twin-dual mode
(Go to "Twin-Dual Mode").
- Twin-backup mode
(Go to "Twin-Backup Mode" on page 9-5).
- Twin-standby mode
(Go to "Twin-Standby Mode" on page 9-7).

The mode you have can be found in the CDF by selecting option 9, "CCU Operating Mode."

Twin-Dual Mode

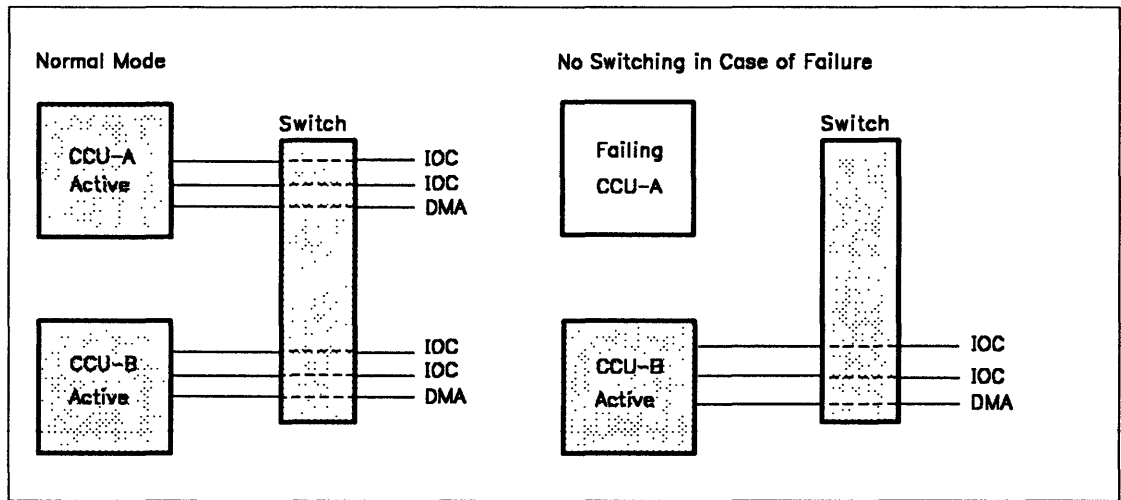


Figure 9-1. Twin-Dual Mode

When the 3745 is in twin-dual mode:

I P L SEND 1 SEND

IPL is performed on CCU-A and CCU-B in parallel.

I P L SEND 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

The following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)

- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==> 1

    1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
    2 = CCU-A
    3 = CCU-B

- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
====>

F1:END F2:MENU2 F3:ALARM

```

You are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:

PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1.

```

CUSTOMER ID:          3745-XXX          SERIAL NUMBER:
IPL CCU-A             IPL IN PROGRESS   mm/dd/yy hh:mm
IPL CCU-B             IPL IN PROGRESS

FUNCTION ON SCREEN: IPL CCU(S)
                   CCU AND SCANNER IPL

                WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1

====>

F1:END F2:MENU2 F3:ALARM F4:STOP F5:RESUME

```

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.

When the IPL is complete, the following message is displayed in the MSA:

IPL COMPLETE

Twin-Backup Mode

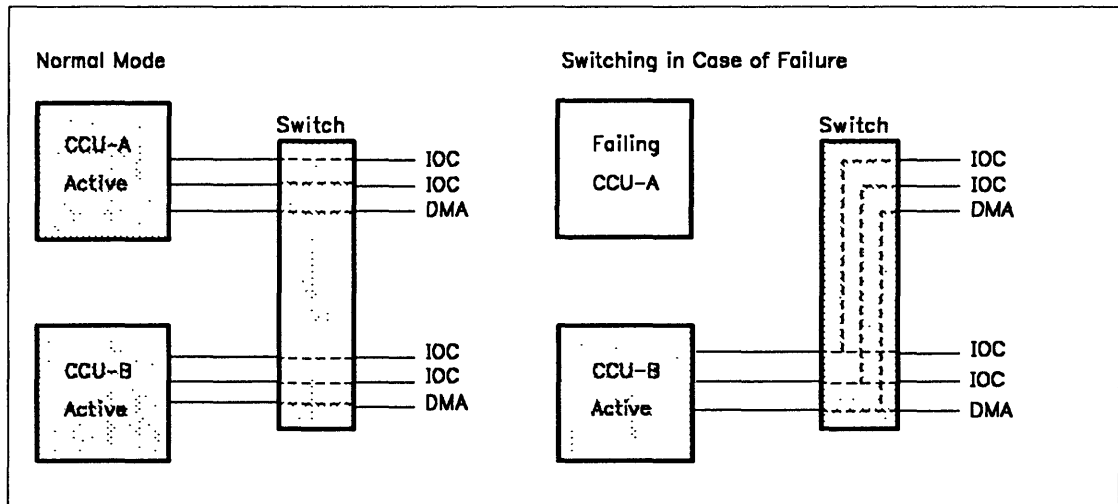


Figure 9-2. Twin-Backup Mode

When the 3745 is in twin-backup mode:

I P L SEND 1 SEND

1. If the two CCUs are supporting a part of the configuration, IPL is performed on both of the CCUs.
2. If one CCU is supporting the whole configuration, IPL is performed on this CCU. Fallback has taken place.
3. If no bus is attached to any CCU, IPL is performed on both CCUs.

I P L SEND 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

If the CCU you selected (by option 2 or 3) is standby, the IPL will be performed. If there is no active load module on the disk, the IPL will terminate after Phase 1. Otherwise the standby CCU will be loaded with the active load module.

IPL

The following screen is displayed:

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)

- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==>  1

    1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
    2 = CCU-A
    3 = CCU-B

- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

Once you have selected the option, you are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:
PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1.

```
CUSTOMER ID:          3745-XXX          SERIAL NUMBER:
IPL CCU-A             IPL IN PROGRESS    mn/dd/yy hh:mm
IPL CCU-B             IPL IN PROGRESS

FUNCTION ON SCREEN: IPL CCU(S)
                   CCU AND SCANNER IPL

                WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1

====>

F1:END  F2:MENU2  F3:ALARM  F4:STOP  F5:RESUME
```

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.

When the IPL is complete, the following message is displayed in the MSA:

IPL COMPLETE

Twin-Standby Mode

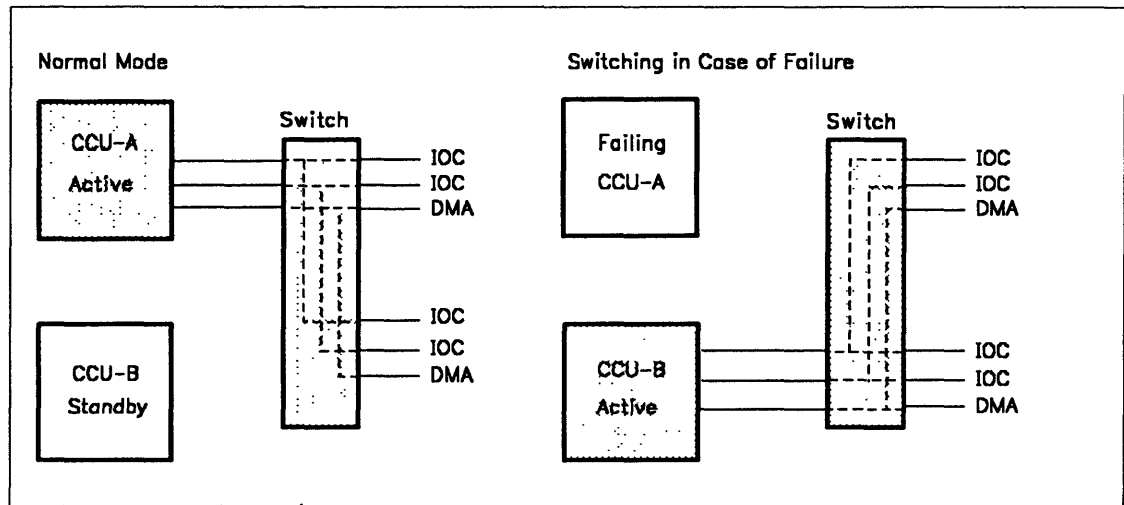


Figure 9-3. Twin-Standby Mode

When the 3745 is in twin-standby mode, you can request the IPL of:

- Both the active and standby CCUs
- CCU A only or CCU B only.

I P L SEND ■ 1 SEND

1. If one CCU is running with the whole configuration, IPL is performed on that CCU.
2. If no CCU is running, IPL is performed on the standby CCU.

Note: Look in the configuration data file (see Chapter 3) to find out which is the default CCU.

I P L SEND ■ 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND ■ 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

If the CCU you selected (by option 2 or 3) is standby, the IPL will be performed. If there is no active load module on the disk, the IPL will terminate after Phase 1. Otherwise the standby CCU will be loaded with the active load module.

The following screen is displayed:

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)

- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==>  1

    1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
    2 = CCU-A
    3 = CCU-B

- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

Once you have selected the option, you are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:
PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1.

```
CUSTOMER ID:          3745-XXX          SERIAL NUMBER:
IPL CCU-A             IPL IN PROGRESS    mm/dd/yy hh:mm
IPL CCU-B             IPL IN PROGRESS

FUNCTION ON SCREEN: IPL CCU(S)
                    CCU AND SCANNER IPL

                    WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1

===>

F1:END  F2:MENU2  F3:ALARM  F4:STOP  F5:RESUME
```

If you selected option 1:

- When the IPL is complete, you will see CCU AND SCANNER IPL at the top of the screen.
- With the fast fallback capability, the standby CCU will automatically be pre-loaded with the active load module. (It is assumed that the load module has been saved on the disk and is active.)

Refer to Chapter 7 for more details on the fast fallback capability.

Otherwise, the standby CCU will only be tested.

If you selected option 2 or 3:

- When the IPL is complete, the following message is displayed in the MSA:
IPL COMPLETE

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.



Chapter 10. Line Interface Display (LID)

When modifying the network or installing terminals, use the LID function to display the following line information:

- Line parameters
 - Line interface standard
 - Line type
 - Line protocol
 - Cable identification
 - Transmission mode
 - Clock type
 - Speed.
- Transmit and receive commands, and command status
- State of the data set leads (interchange circuits)
- 32 bytes of transmitted data
- 32 bytes of received data.

Notes:

1. To take full advantage of the LID function, the control program should be loaded.
2. If a hardware configuration change has been made, for example, a cable change, you must update the configuration data file before using the LID function. See Chapter 3.
3. To display line information for TRSS lines, refer to "TRSS Interface Display (TID)" on page 20-1.
4. To display line information for ESS lines, refer to "ESS Interface Display (EID)" on page 20-3.

To start the LID function:

----- mm/dd/yy hh:mm

FUNCTION ON SCREEN: LINE INTERF DSPLY
 - ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> **A**

====>

F1:END F2:HENU2 F3:ALARM

- A** You can enter an address from 0 through 895 for TSS, and from 1024 through 1039 for HPTSS. Enter the address and press SEND. The Line Parameter screen is displayed.

Line Parameters

The parameters of the line that you selected on the previous screen are displayed as shown below.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> A

LINE 27 11 IN SCANNER 2 CCITT V24 OR EIA RS232C B

CONTROL PROGRAM: NCP
LINE TYPE: NON SWITCHED
PROTOCOL: SDLC - NRZI = NO
TRANSMISSION MODE: HALF DUPLEX
CABLE ID: DIRECT ATTACHMENT
CLOCK: BUSINESS MACHINE - LOCAL ATTACHMENT
SPEED: 9600 BPS

====>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS F7:LEADS F8:DATA

```

From the previous screen you may:

- Display the parameters of another line:
 - Enter its address on line **A**.
 - Press SEND.
- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line. See next screen.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

On line **B** are displayed:

- The line address (example: line 27)
- The line number (11) in the scanner and the scanner number (2) (example: line 11 in line adapter 2)
- The line interface standard

```

CCITT V.24 OR EIA 232D
CCITT V.25 OR EIA RS366
CCITT X.21
CCITT X.21 LOW SPEED
CCITT X.21 WIDE BAND
WIDE BAND
CCITT V.35

```

CCITT V.24 OR EIA 232D is also displayed when the interface supports the V.25 bis protocol.

If the lines are not activated, you will see 'INTF STANDARD NOT ACCESSED' instead of 'CCITT V 24 OR EIA 232C' (see **B** on screen of page 10-6).

LINE TYPE:

SWITCHED or NONSWITCHED

TRANSMISSION MODE:

DUPLEX, HALF-DUPLEX, or HALF-DUPLEX RTS PERMANENT

CABLE ID:

BMI - LIC 5

BMI - LIC 6

CABLE NOT INSTALLED

WRAP PLUG

MODEM ATTACHMENT

DIRECT ATTACHMENT

AUTOCALL

If the lines are not activated, you will see CABLE ID NOT ACCESSED.

SPEED: The speed for internal clock, high-speed lines and direct-attached lines. These speeds are set at NCP generation.

Data Set Leads

If you press F7 on the Line Parameter screen, the Data Set Lead screen is displayed. All the abbreviations used in the Data Set Leads screen are documented in the list of abbreviations at the back of the manual.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> A

LINE 80 11 IN SCANNER 3 CCITT V24 OR EIA RS232C B

C XHIT CMD: SDLC XHIT DATA      RCV CMD: SDLC RCV DATA
D STATUS: IN-PROGRESS          STATUS: IN-PROGRESS

E  MODEN-OUT DTR ON           MODEN-IN DSR ON F
    RTS ON                    RFS ON
    NS                        RI
    DRS                       CD
    NT                        TI

====>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS F7:LEADS F8:DATA

```

From the previous screen you may:

- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

To display the data set leads of another line:

- Enter its address on line **A**.
- Press SEND.
- The Line Parameter screen (page 10-2) is displayed, press F7 again to obtain the Data Set Lead screen.

When a data set lead has a blank beside it, the lead is off. For example, in the above screen NS means NS OFF.

To interpret the most significant leads displayed on the above screen and take appropriate actions, go to the page indicated below.

The line interface standard is indicated on line **B**.

| | |
|--|---|
| CCITT V.24 | <ul style="list-style-type: none"> • If nonswitched DCE attachment, go to page 10-7 • If switched DCE attachment, go to page 10-8 • If direct attachment, go to page 10-8 |
| CCITT V.24 supporting the V.25 bis protocol. | <p>You have a switched DCE attachment using a V.25 bis protocol. The data set leads may reflect the status of the line during the call establishment phase or during the data transfer phase.</p> <p>If you are sure that the data set leads displayed apply to the data transfer phase, you can go to page 10-8. The V.24 switched DCE attachment table can help you on problem determination.</p> <p>Otherwise, it is preferable to refer to the <i>Problem Determination Guide</i> on the chapter which analyzes problems on LIC1 to LIC4 lines.</p> |
| CCITT V.35 | <ul style="list-style-type: none"> • If direct attachment, go to page 10-8 • If DCE attachment, go to page 10-9 |
| CCITT V.25 | <ul style="list-style-type: none"> • If autocal, go to page 10-9 |
| CCITT X.21 | <ul style="list-style-type: none"> • If DCE attachment, go to page 10-10 |
| CCITT X.21 | <ul style="list-style-type: none"> • If direct attachment, go to page 10-10 |

B Same as for Line Parameters screen (see page 10-2)

C The last transmit and receive commands

D The status of the transmit and receive commands

E Modem-out data set leads: DCE-source

F Modem-in data set leads: DTE-source.

Transmit and Receive Data

If you press F8 on the Line Parameter screen or on the Data Set Lead screen, the Transmit and Receive Data screen (TSS only) is displayed.

```

----- mn/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> A

LINE 32 0 IN SCANNER 9 INTF STANDARD NOT ACCESSED B

C XMIT CHD: LINE NOT ACTIVE RCV CHD: LINE NOT ACTIVE
D STATUS: STATUS:

G SAMPLING OF XMIT DATA SAMPLING OF RCV DATA H
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

====>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAHETERS F7:LEADS F8:DATA

```

From the previous screen you may:

- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

To display the transmit and receive data of another line:

- Enter its address on line **A**.
- Press SEND.
- The Line Parameter screen (page 10-2) is displayed, press F8 again to obtain the Transmit and Receive Data screen.

- B** Same as for Line Parameters screen
- C** The last transmit and receive commands
- D** The status of the transmit and receive commands
- G** 32 bytes of transmit data from the buffer (the first four are transmit data for SS)
- H** 32 bytes of receive data from the buffer (the first one is receive data for SS).

V.24 Nonswitched DCE Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|---|
| DSR OFF | Check if the DCE is powered on and correctly connected. |
| DTR OFF | <ul style="list-style-type: none"> - Activate the line (host side). - Check the DTE-to-DCE cable connection. |
| <i>Duplex lines:</i> RTS OFF and RFS OFF | Check if RTS PERMANENT is on Line Parameter screen (press F6). <ul style="list-style-type: none"> - <i>If permanent</i>, activate the line. - <i>If not permanent</i>, check the scanner and system generation parameters. |
| <i>Duplex lines:</i> RTS ON and RFS OFF | <ul style="list-style-type: none"> - Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected. |
| <i>Half-duplex lines:</i> RTS and RFS do not flash | Because of synchronization between the refresh rate and the transmission rate, data may never appear. To verify if data is being transmitted, press F8. If no data: <ul style="list-style-type: none"> - Check if the DCE is powered on and correctly connected. - Check the DTE-to-DCE cable connection. |
| <i>Half-duplex lines:</i> RTS ON and RFS OFF | <ul style="list-style-type: none"> - Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected. |
| <i>Point-to-point:</i> CD OFF | Check data transmission. Press F8. <i>If no data in receive buffer</i> , suspect network problem. |
| <i>Multipoint:</i> CD ON steady | Check the local DCE, the link, or the remote site (network problem). |
| TI ON | Reset the DCE test switch to normal operating position. |
| DRS OFF DRS ON | No action required. You may check that the speed matches that displayed on the Line Parameter screen (F6). |
| MT ON | Reset test condition at the host side. |
| NS | Not significant |
| RI ON | Not significant |
| All data set leads are OK but there is traffic only on transmit side | Check terminal configuration at remote site and control program generation parameters (for example, the remote terminal address, NRZ-I, or non-NRZ-I). |

V.24 Switched DCE Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|---|
| 108/1 (Connect Data Set to Line) DTR ON | Check the system generation parameters and line parameters (press F6). If parameters OK, and RI = ON, check the DCE. |
| 108/2 (Data Terminal Ready) DTR OFF | Activate the line (host side). |
| Auto-answer line 108/1 (Connect Data Set to Line) or 108/2 (Data Terminal Ready) RI OFF and DSR OFF | Incoming call: - Check the transmission line. - Check the DCE. - Check the DTE-to-DCE cable connection. |
| RTS and RFS do not flash | Check data transmission (press F8). If no data: - Check if the DCE is powered on and correctly connected. - Check the DTE-to-DCE cable connection. |
| CD OFF | - Check the DCE. - Check the DTE-to-DCE cable connection. - Check the remote site or the system generation parameters. |
| TI ON | Significant only if DSR is ON. In this case, reset the DCE test switch to the normal operating position. |
| MT ON | Reset test condition at the host side. |
| NS | Not significant |

V.24 or V.35 Direct Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|---|
| DTR OFF | - Enable the line at the host side. - Check the DTE-to-DCE cable connection. |
| RFS OFF | Same actions as DTR OFF |
| DSR OFF | |
| RTS OFF | |
| CD OFF | |
| All other data set leads are not significant | |

V.35 DCE Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|---|
| DSR OFF | Check if the DCE is powered on and correctly connected. |
| DTR OFF | <ul style="list-style-type: none"> - Activate the line (host side). - Check the DTE-to-DCE cable connection. |
| <i>Duplex lines:</i> RTS OFF and RFS OFF | <p>Check if RTS PERMANENT is on Line Parameter screen (press F6).</p> <ul style="list-style-type: none"> - <i>If permanent</i>, activate the line. - <i>If not permanent</i>, check the scanner and the system generation parameters. |
| <i>Duplex lines:</i> RTS ON and RFS OFF | <ul style="list-style-type: none"> - Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected. |

V.25 Autocall

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|---|
| PWI OFF | <ul style="list-style-type: none"> - Check if the automatic calling unit (ACU) is powered on. - Check the ACU-to-DTE cable connection. |
| CRQ OFF | Activate the ACU line (host side). |
| DLO OFF | <ul style="list-style-type: none"> - Check the ACU. - Suspect the ACU-to-DCE cable. |
| PND does not flash | <ul style="list-style-type: none"> - Check the ACU. - Suspect the ACU-to-DCE cable. - If the cable is OK, suspect the network. |
| DPR does not flash | <ul style="list-style-type: none"> - Check the ACU-to-DCE cable. - If OK, contact the appropriate service representative. |
| ACR ON | <ul style="list-style-type: none"> - Check the ACU line. - If OK, suspect the network. |
| RSE OFF (DSC) | <ul style="list-style-type: none"> - Check the ACU line. If OK, suspect the network. - Press F6 to display the Line Parameter screen. - Enter the address of the data transmission line, then press SEND. - Check the line parameters. - Press F7 to display the data set leads according to the V.24 - Switched DCE Attachment list, on page 10-8 |

X.21 DCE Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|--|
| T OFF C OFF | DTE not ready: <ul style="list-style-type: none"> - Check the line parameters (press F6). - If the problem persists, contact the appropriate 3745 service representative. |
| R ON I OFF | DCE not ready: <ul style="list-style-type: none"> - Check if DCE is powered on and correctly connected. - If the problem persists, contact the public switched network service representative. |

X.21 Direct Attachment

| If on the screen, the STATUS of the data set lead is: | Perform the following ACTIONS: |
|---|--|
| T OFF C OFF | DTE not ready: <ul style="list-style-type: none"> - Check the line parameters (press F6). - If the problem persists, contact the appropriate service representative. |
| R OFF I OFF | Remote 3745 attachment not ready: <ul style="list-style-type: none"> - Check cable installation. - Check remote 3745 to ensure line is ACTIVE. |

Chapter 11. Link IPL Ports (LKP)

Use the LKP function to define the communication link addresses for each IPL port at installation time, or to update them. The parameters of each IPL port that are used to initialize the controller are maintained on the MOSS disk.

Note: If a hardware configuration change has been made which affects, for example, a cable plugged into an IPL port, you must update the configuration data file before using the LKP function.

At installation time, you must:

1. Perform a MOSS IML.
2. Execute the Link IPL Port function to inform the 3745 from which hosts a 3745 initialization can be expected.

For a *link-attached* 3745, the control program can be transferred via a communication line (SDLC link). You must give the characteristics of the SDLC link that connects both 3745 controllers used for initialization.

3. Perform an IPL.

Note: No priority is assigned to channel adapters or link IPL ports. The first IPL request that comes from a host is taken.

Any modifications become effective with the next IPL.

Models 130, 150, 170, 210, 310

| | | | |
|---|---|---|------|
| L | K | P | SEND |
|---|---|---|------|

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU-A                LINK IPL PORTS

-SELECT IPL PORT OPTION (0 TO 9) ==>

0  = CHANNEL ADAPTERS (DISPLAY ONLY)
1-8 = LINK IPL PORT SLOT
9  = LINK COMMON OPTIONS
    (CONTROLLER ADDRESS AND TIMERS)

      LINK IPL PORTS

PORT SLOT :  1  2  3  4  5  6  7  8
LINE ADDRESS: ----- A
====>

F1:END                F3:ALARM
  
```

From the previous screen you may:

- Display CAs that have been defined in the 3745 configuration:
 - Select option 0, press SEND.
 - Go to page 11-4.
- Define (or update) a link IPL port:
 - Select option 1-8, press SEND.
 - Go to page 11-5.
- Delete a defined link IPL port:
 - Select option 1-8, press SEND.
 - Go to page 11-10.
- Define (or update) the options common to all the link IPL ports:
 - Select option 9, press SEND.
 - Go to page 11-11.

The line addresses of the defined link IPL ports are displayed on line **A**.

Models 410, 610

| | | | |
|---|---|---|------|
| L | K | P | SEND |
|---|---|---|------|

The following screen is displayed if you have a model 410 or 610 in either twin-dual or twin-backup mode. If you have any other model, the Select IPL Port Option screen on page 11-3 is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
                    LINK IPL PORTS

SELECT CCU (A OR B) ==>

  A = CCU-A
  B = CCU-B

====>

F1:END              F3:ALARM

```

From this screen you must choose either CCU-A or CCU-B.

Then the following screen is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
                    LINK IPL PORTS
CCU-A

-SELECT IPL PORT OPTION (0 TO 9) ==>

  0 = CHANNEL ADAPTERS (DISPLAY ONLY)
  1-8 = LINK IPL PORT SLOT
  9 = LINK COMMON OPTIONS
      (CONTROLLER ADDRESS AND TIMERS)

      LINK IPL PORTS

PORT SLOT : 1  2  3  4  5  6  7  8
LINE ADDRESS: ----- A
====>

F1:END              F3:ALARM              F6:QUIT

```

From the previous screen you may:

- Display CAs that have been defined in the 3745 configuration:
 - Select option 0, press SEND.
 - Go to page 11-4.
- Define (or update) a link IPL port:
 - Select option 1-8, press SEND.
 - Go to page 11-5.
- Delete a defined link IPL port:
 - Select option 1-8, press SEND.
 - Go to page 11-10.
- Define (or update) the options common to all the link IPL ports:
 - Select option 9, press SEND.
 - Go to page 11-11.
- Press F6 to return to the main Link IPL Ports Selection screen.

The line addresses of the defined link IPL ports are displayed on line **A**.

Channel Adapter IPL Port Display

Models 130, 150, 170, 210, 310

L K P SEND ■ 0 SEND

Models 410, 610

L K P SEND ■ A or B SEND ■ 0 SEND

The following screen displays the channel adapters that have been defined in the 3745 configuration.

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A                CHANNEL ADAPTERS

CHANNEL ADAPTER IS INSTALLED (Y)
CHANNEL ADAPTER IS NOT INSTALLED (N)

      CA-1 = Y   CA-5 = Y   CA-9 = Y   CA-13 = Y
      CA-2 = Y   CA-6 = Y   CA-10 = Y  CA-14 = Y
      CA-3 = Y   CA-7 = Y   CA-11 = Y  CA-15 = Y
      CA-4 = Y   CA-8 = Y   CA-12 = Y  CA-16 = Y

===>

F1:END                F3:ALARM                F6:QUIT
```

Depending on the selected CCU operating mode, only channel adapters from 1 to 4 and from 9 to 12 may be displayed.

The preceding screen displays channel adapters installed and attached to the CCU A in twin-standby mode.

Defining a Link IPL Port

Models 130, 150, 170, 210, 310

X = link IPL port slot (1 to 8)

Models 410, 610

or

X = link IPL port slot (1 to 8)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A          LINK IPL PORT 2
- LINE ADDRESS (0 TO 1039) ==> 
- DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) ==> 

WARNING : FOR HPTSS PORTS, ENTER LINE ADDRESS ONLY.

-START ISIT DURING REMOTE LOAD/DUMP (Y = YES, N = NO) ==> N 

====>

F1:END          F3:ALARM          F6:QUIT          F8:FWD
  
```

From the previous screen:

- You can define a link IPL port.
 - Enter a line address ().
The message 'INVALID INPUT' is displayed if a line address out of the allowed range is entered.
 - Select a clock option ().
 - Press SEND, then go to page:
 - 11-6 for TSS.
 - 11-9 for HPTSS.
- You can start a link IPL port trace (LIPT) on a remote controller ().
Enter 'Y' to start the link IPL port trace (which is similar to the I-SIT function on a local controller).

B This is the decimal line address that will be used as an IPL port. If you specify a line address for any of the IPL ports, you must also specify the controller SDLC address and link time out values; to do so, use the "Defining Link Common Options" screen page 11-11.

The address you enter must be that of a 3745 line that has been physically installed and configured.

- If you enter the address of an uninstalled or unconfigured line, CABLE DOES NOT EXIST is displayed.

- If you enter an address in the range 1056 to 1071, the message 'INVALID INPUT' is displayed. This range of addresses is reserved for ESS lines (Ethernet lines).

C If the modem supplies the clock, enter E. If the link-attached 3745 supplies the clock, enter D (direct attachment). See the *3745 Introduction* to determine the direct-attached clock speeds supported.

For example, LIC5 and LIC6 have external clocks, and so E should be entered.

Note: For HPTSS link IPL port, the clocking is automatically set by the system to D (DIRECT-ATTACH) or E (EXTERNAL CLOCK) based on the type of cable connected to the HPTSS port.

X This option is very useful on a **remote controller** to trace all activities between CLDP and the line defined as link IPL port.

This option is similar to the MOSS I-SIT function (internal scanner interface trace) which can be performed on the local controller. The main difference is that the traced data is not displayed on a screen and must be analyzed by the service representative after he has performed a scanner dump.

The trace process in the scanner stays active on the remote controller until NCP is loaded.

Link IPL Port Characteristics: TSS

The following screen is displayed if you selected E (External Clock) on the screen of the page 11-5.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
  CCU A          LINK IPL PORT X
B - LINE ADDRESS (0 TO 1039)          : XXXX
C - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) : E
D - DUPLEX (D) OR HALF DUPLEX (H) ==> X
E - ENABLE TIMER IN 0.1 SECOND INTERVALS ==> XXXX
  - LINK INTERFACE OPTIONS (Y = YES, N = NO) :
F   TRANSMIT TWO FLAGS ==> X TRANSMIT FLAGS BETWEEN FRAMES ==> X L
G   NRZI ==> X DX FACILITY ==> X M
H   SWITCHED LINE ==> X RING INDICATOR ==> X N
I   ANSWER TONE ==> X ECHO MODE ==> X O
J - DATA RATE (H = HIGH, L = LOW) ==> X
  - EXTERNAL LINE SPEED IN KBPS ==> X
    (1=LOWER OR EQUAL TO 9.6, 2=GREATER THAN 128, 3=OTHER CASES)
===>
F1:END          F3:ALARM          F6:QUIT          F8:FWD

```

The following screen is displayed if you selected D (Direct Attach) on the screen of the page 11-5.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A          LINK IPL PORT X
B - LINE ADDRESS (0 TO 1039)          : XXXX
C - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) : D
D - DUPLEX (D) OR HALF DUPLEX (H) ==> X
E - ENABLE TIMER IN 0.1 SECOND INTERVALS ==> XXXX
- LINK INTERFACE OPTIONS (Y = YES, N = NO) :
F TRANSMIT TWO FLAGS ==> X TRANSHIT FLAGS BETWEEN FRAMES ==> X L
G NRZI ==> X DX FACILITY ==> X M

K - DIRECT-ATTACH SPEED IN BPS ==> X
      (1=2400, 2=4800, 3=9600, 4=19200,, 5=38400, 6=55855, 7=245760, 8=RPQ)
====>
F1:END          F3:ALARM          F6:QUIT          F8:FWD

```

From the previous screens:

- You cannot modify the values of **B** and **C**. These values were entered on the screen of the page 11-5.
- Enter (or modify) the link IPL port characteristics.
- Press SEND. The port characteristics are filed unless there is an error.
- Press F6 and select option 9 to display (or modify) the link common options. If you do not define the link common options, the link IPL port is inoperative. Go to page 11-11.

D D for duplex.
H for half-duplex.

If you enter D (duplex), you must enter Y at position **M**.

E The enable timer is used by the scanner to limit the waiting time for the proper response from the line interface. Once it is loaded, the control program can change this value. Specify a maximum wait time of zero for modem interface leads to respond to changes in the 3745 interface leads.

For example:

- 'data set ready' coming active in response to 'data terminal ready'
- 'clear to send' coming active after 'request to send' has been raised
- 'clear to send' dropping in response to 'request to send' dropping.

Zero will result in an infinite wait. The default value of the ENABLTO parameter of the BUILD macro is 022 (2.2 seconds). Consult your data communication equipment specifications.

F At the beginning of the transmission, the scanner sends two flags before the SDLC message is transmitted if Y is entered.

G Specifies whether the data terminal equipment at the ends of the SDLC link must operate in non-return-to-zero change-on-ones recording (NRZ-1) mode (NRZI = Y). The NRZ-1 setting must match the NRZ-1 setting generated in the channel-attached controller line macro that represents the SDLC link between the channel-attached and link-attached controllers. If you do not plan to operate the link in NRZ-1 mode, specify NRZI = N.

- H** (External clocking only) Specifies whether the physical path making up the SDLC link is switched (SWITCHED LINE = Y) or nonswitched (SWITCHED LINE = N). If the path is switched, the controller can monitor the link for the 'ring indicator' signal (RING INDICATOR = Y) and present an answer tone (ANSWER TONE = Y).

LIC Types 4, 5, or 6 do not support switched operation.

- I** (External clocking only) Specifies whether the link-attached controller is to transmit an answer tone to the calling station (ANSWER TONE = Y) to signify completion of the connection. ANSWER TONE = Y is valid only for incoming calls on switched lines (SWITCHED LINE = Y). An answer tone is required only if the modem at the call-originate location requires an answer tone and the modem at the receiving location is not capable of generating one. Consult your data communication equipment specifications.

Note: LIC types 5 and 6 do not support the answer tone feature. This field must not be altered.

- J** EXTERNAL LINE SPEED IN KBPS is needed by the scanner to initialize the lines. Select a value from 1 to 3. There is no external line speed for LIC types 5 and 6. This field must not be altered.

- K** DIRECT-ATTACH SPEED IN BPS. Select a value from 1 to 7. There is no external line speed for LIC types 5 and 6. This field must not be altered. Value 8 is reserved for Request Price Quotation (RPQ). Ignore this field if you are not using RPQ.

- L** Between two SDLC transmissions the scanner sends the flags continuously. If this parameter is not specified, the TSS will keep the line at a mark level.

- M** Specifies whether the communication line and modem constitute a half-duplex facility (DX FACILITY = N) or a duplex facility (DX FACILITY = Y).

This should not be confused with half-duplex or duplex data transfer. The entry specifies only the physical characteristics of the communication facility (line and modem).

- N** (External clocking only) For modems outside the USA that go off-hook when 'data terminal ready' is raised by the 3745, 'ring indicator' is monitored before 'data terminal ready' is raised so that this situation will not occur until an actual connection has been made (RING INDICATOR = Y).

For all other modem types, RING INDICATOR = N (consult your data communication equipment specifications). The Y option is valid only for incoming calls on switched lines (SWITCHED LINE = Y).

Note: The ring indicator is not valid for LIC types 5 and 6. This field cannot be altered.

- O** (External clocking only) Echo mode is specified only when the TSS is connected to satellite transmission equipment.

Link IPL Port Characteristics: HPTSS

If you entered a HPTSS line address for the link IPL port, the following screen is displayed:

Notes:

1. For HPTSS link IPL port, the clocking is automatically set by the system to 'D' (DIRECT-ATTACH) or 'E' (EXTERNAL CLOCK) based on the type of cable connected to the HPTSS port.
2. You can enable only one port per HPTSS. If you try to enable two, the second one will not be enabled.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A          LINK IPL PORT X
- LINE ADDRESS (0 to 1039)      : XXXX
- DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) : X
E - ENABLE TIMER IN 0.1 SECOND INTERVALS ==> XXXX
P - REPLY TIMER IN 0.1 SECOND INTERVALS  ==> XXXX
- LINK INTERFACE OPTIONS (Y = YES, N = NO) :
G NRZI                ==> X
F TRANSHIT TWO FLAGS ==> X
L TRANSHIT FLAGS BETWEEN FRAMES ==> X
O ECHO NODE           ==> X

Q

F1:END          F3:ALARM          F6:QUIT          F8:FWD

```

From the previous screen:

- Enter (or modify) the link IPL port characteristics.
- Press SEND. The port characteristics are filed unless there is an error.
- Press F6 and select option 9 to display (or modify) the link common options. If you do not define the link common options, the link IPL port is inoperative. Go to page 11-11.

You can enable only one port per HPTSS. If you try to enable two, the second one will not be enabled.

E, **F**, **G**, **L**, and **O** same as for TSS. See page 11-6 for TSS.

P The reply timer defines the amount of time you must wait for data during transmission turnaround time.

Q For HPTSS link IPL port, the message DIRECT-ATTACH SPEED IN KBPS is displayed.

Deleting a Defined IPL Port

You may delete a link IPL port that you already defined.

Models 130, 150, 170, 210, 310

L K P SEND X SEND
X = link IPL port slot (1 to 8)

Models 410, 610

L K P SEND A or B SEND X SEND
X = link IPL port slot (1 to 8)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A          LINK IPL PORT 2
- LINE ADDRESS (0 TO 1039) ==> B
- DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) ==> C

WARNING : FOR HPTSS PORTS, ENTER LINE ADDRESS ONLY.

-START ISIT DURING REMOTE LOAD/DUMP (Y = YES, N = NO) ==> N X

===>

F1:END          F3:ALARM          F6:QUIT          F8:FWD
    
```

From the previous screen:

- To delete an already defined link IPL port:
- Blank out the address on line **B**.
- Press SEND. The configuration data file is automatically updated.
- The following message is then displayed:

UPDATE OF THE CDF FILE SUCCESSFUL

Defining Link Common Options

Models 130, 150, 170, 210, 310

[L] [K] [P] [] SEND ■ [9] [] SEND

Models 410, 610

[L] [K] [P] [] SEND ■ [A] or [B] [] SEND ■ [9] [] SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
CCU A                LINK IPL PORT - COMMON OPTIONS

- SDLC CONTROLLER ADDRESS (1 TO FE) ==> T
- TIMER VALUES (1 TO 3 DIGITS IN 0.1 SEC INTERVALS)

  DISABLE TIMER (1 TO 200) ==> 2 R
  LINK ACTIVITY TIMER      ==> 600 S

====>

F1:END          F3:ALARM          F6:QUIT
  
```

From the previous screen:

1. Enter the SDLC controller address **T** that will be used by the link-attached controller when communicating with the channel-attached controller. Remote controller address (link attached) and local controller address (channel attached) must recognize each other to be identified at both ends of the link.

This address is the one that is returned by the responder controller to the requester controller when using the MOSS SAT function (stand-alone link tests). Refer to pages: 17-6 and 17-8 for an illustration of environments in which the SDLC controller address is used.

2. You may modify the disable timer **R** and the link activity timer **S**.
3. Press SEND.

R If the modem interface characteristics at the link-attached controller are the same as at the channel-attached controller, use the value that was generated in the channel-attached controller DSABLTO parameter of the BUILD macro statement. The DSABLTO parameter represents the SDLC link between the channel-attached and link-attached controllers.

The disable timer is used by the scanner as a wait time before checking for the proper response from the line interface when CLDP attempts to disable the line.

Once it is loaded, the control program can change this value. Specify the time for the scanner to wait before checking that 'data set ready' has dropped after 'data terminal ready' has dropped. The Common Option screen indicates the default time out used by a local NCP (3 seconds). If the SDLC link is a leased line, the disable timer should be smaller (for example, 0.1 second). Consult your data communication equipment specifications.

- S** Use the value generated in the link-attached controller ACTIVTO group macro that represents the SDLC link between the channel-attached and link-attached controllers.

The link activity timer specifies the time that the CLDP will wait for communication from the channel-attached host before it abandons. Once it is loaded, the control program can change this value. Zero will result in an infinite time out. The Common Option screen indicates the default time out used by a local NCP (600 or 1 minute) for SDLC links.

Chapter 12. Microcode Fixes (MCF)

Between two major engineering changes, modifications referred to as microcode fixes (MCFs) may be made to the microcode. The MCFs are transferred onto the MOSS fixed disk by means of:

- A MCF file transfer from RETAIN (IBM service representative), or
- A set of new diskettes.

To perform the MCF function, MOSS must be **offline** or **alone** (check the status of the MOSS in MSA field d). To set MOSS offline, go to page 23-13.

The MCF options are explained in the following table.

| MCF Options | Go to Page |
|--|------------|
| Display a history table that lists all upgrades and restores. | 12-3 |
| Apply (upgrade) all MCFs transferred to you. | 12-4 |
| Restore the previous level of the microcode, if you suspect that the MCFs are incompatible with your applications. | 12-5 |
| List old MCFs that have been applied in an earlier upgrade of the microcode. Old MCFs can no longer be restored. They are a permanent part of the code. | 12-5 |
| List new MCFs that have just been transferred, whether applied or not. | 12-5 |
| Transfer the MCFs from the diskette to MOSS disk. | 12-6 |

Notes:

1. All MCFs transferred together on your disk are applied or restored together. You cannot apply or restore a MCF individually.
2. The group of MCFs applied or restored together is identified by the number of the last MCF in the group.

Selecting the MCF Function

The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES

- SELECT ONE OPTION (1 TO 2), THEN PRESS SEND ==>

    1 = MCF MANAGEMENT
      (UPGRADE OR RESTORE MICROCODE, LIST, HISTORY TABLE)

    2 = MCF FILE COPY FROM DISKETTE TO DISK

    EC LEVEL = XXXXXXXX

====>
F1:END      F3:ALARM
  
```

From the MCF selection screen, if you select option 1 (MCF Management) the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                   MCF MANAGEMENT
                   LAST APPLIED MCF = M198A 038

- SELECT ONE OPTION (1 TO 5) ==>

    1 = DISPLAY HISTORY TABLE
    2 = AUTOMATIC UPGRADE OF THE MICROCODE
    3 = AUTOMATIC RESTORE OF THE MICROCODE
    4 = LIST OLD MCF(S)
    5 = LIST NEW MCF(S)

====>
F1:END      F3:ALARH      F6:QUIT
  
```

Select an option. If you select option 2 or 3, you are requested to enter the date.

Displaying the MCF History Table

M C F SEND 1 SEND 1 SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                        MCF HISTORY                SCREEN 1/1

  A  HH/DD/YY                B  LEVEL

10/04/88  CODE UPGRADED TO LEVEL  M1V9A006
10/04/88  CODE UPGRADED TO LEVEL  M1V9A008
10/04/88  CODE UPGRADED TO LEVEL  M1V9A006
10/04/88  CODE UPGRADED TO LEVEL  M1V9A008
10/04/88  CODE UPGRADED TO LEVEL  M1V9A015

===>

F1:END      F3:ALARH      F6:QUIT
  
```

You cannot update the information displayed on this screen.

This screen gives the latest level of the microcode:

- A** Date when the last MCF was applied or restored.
- B** The level identified by the last MCF applied or restored.

Upgrading the Microcode

All MCFs are applied automatically as soon as you have selected the apply option.

■ ■

When all MCFs are applied, the message UPGRADE COMPLETED, PRESS SEND is displayed.

UPGRADE COMPLETED, PRESS SEND

When this message is displayed:

- **IML the MOSS.** This is a mandatory operation.
- **IML the scanners (MOSS IMS function).** This is a mandatory operation only if the MCF applies to scanners.

The MCF will be effective after the next IML of the MOSS and scanners.

The IML procedures are given on page 8-1.

If a MCF cannot be applied, a screen similar to the following one is displayed, telling you why the MCF was not applied.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
IDENTIFIER          UPGRADE OF MICROCODE          SCREEN 1/2

M198A001APPLIED
M198A002 APPLIED
M198A003 APPLIED
M198A004 APPLIED
M198A005 APPLIED
M198A006 APPLIED
M198A007 APPLIED
M198A008 NOT APPLIED: MCF DATA DOES NOT MATCH 'MODULE DATA'

-UPGRADE ABORTED, PRESS SEND
===>

F1:END      F3:ALARM

```

From the previous screen:

- Press SEND. All applied MCFs will be restored, but the MCF function will not be canceled.

If a disk error occurs while applying MCFs, the MCF function is canceled, the message DISK ERROR: MCF FUNCTION CANCELED is displayed, and MCFs are not restored. Restart the MCF function. If the problem persists, contact the personnel responsible for problem determination.

Restoring the Microcode

If you think that the most recently applied MCFs are incompatible with your applications, you may restore the microcode to the previous level. All the last-applied MCFs are restored automatically as soon as you select the Restore MCF option.

M C F SEND 1 SEND 3 SEND

When all the MCFs are restored, the message RESTORE COMPLETED, PRESS SEND is displayed. IML the MOSS and scanners. The IML procedures are given on page 8-1.

Listing Old MCFs

Old MCFs are those already applied in an earlier upgrade of the microcode. They can no longer be restored.

M C F SEND 1 SEND 4 SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
IDENTIFIER                OLD MCF(S)                SCREEN 1/1

M1V9A001 A ==> S COMMAND REJECT TO A V.25 CALL OUT.  A
M1V9A002 A ==> 200MS TIMEOUT FROM CCLID PROCESSING CAUSESUNEXPECTED
M1V9A003 A ==> CCU DIAG HG HH HI RUN ALL OK
M1V9A004 A ==> BYPASS SUPERBER LOGGING
M1V9A005 A ==> V.25 BIS CALLOUT DOES NOT TRANSMIT THE DIAL DIGITS
M1V9A006 A ==> C8, CC, CE PROBLEM WHEN RUNNING BURLOOP ASPIC ROUTINE
M1V9A007 A ==> UNLOCK AUTOBER
M1V9A008 A ==> DUMMY REFCODES INTERPRETATION LEAD TO NO MESSAGES
(A=APPLIED, OLD MCF(S) ARE ALWAYS APPLIED)
-TO SCAN AN MCF, ENTER S AGAINST IDENTIFIER
====>

F1:END      F3:ALARM   F5:BOTTOM  F6:QUIT      F8:FORWARD

```

From the previous screen you may:

Scan a MCF. To do so:

- Enter S against the MCF identifier, as shown on line A.
- Press SEND.

Listing New MCFs

New MCFs are those in the last group transferred or received with new diskettes, whether they are applied or not.

M C F SEND 1 SEND 5 SEND

The screen is similar to that shown under Displaying Old MCFs.

Transferring MCFs from Diskette to Disk

Make sure that MOSS is offline (or alone). If it is online, set it offline (page 23-13). To transfer MCFs, follow the procedures given below.

M C F SEND ■ 2 SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                    MCF FILE COPY

- MOUNT THE NEW DISKETTE THAT CONTAINS MCF FILE, THEN PRESS SEND

====>

F1:END      F3:ALARM      F6:QUIT
  
```

- If the MCF file of the diskette is empty or does not exist, the message:
FUNCTION CANCELED: THERE IS NO MCF FILE ON DISKETTE
is displayed and the function is canceled.
- If the physical size of the diskette is greater than that of the disk, the message:
FUNCTION CANCELED: DISKETTE SIZE GREATER THAN DISK SIZE
is displayed, and the function is canceled.
- If previous MCFs have not been transferred, the following message:
FUNCTION CANCELED: DISKETTE MCF NOT SEQUENTIAL WITH LAST DISK MCF
is displayed and the function is canceled.

1. Mount the secondary diskette containing the MCF.
2. Press SEND. The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                      MCF FILE COPY

      DISK INFORMATION                DISKETTE INFORMATION

EC NUMBER:          XXXXXXXX          EC NUMBER:          XXXXXXXX
LAST MCF NUMBER:   XXXXXXXX          LAST MCF NUMBER:   XXXXXXXX
LAST APPLIED MCF: XXXXXXXX

- PLEASE CONFIRM (Y OR N), THEN PRESS SEND ==>

===>

F1:END      F3:ALARM      F6:QUIT
  
```

From the previous screen:

Confirm the transfer:

- Enter Y.
- Press SEND.

3. When all MCFs are successfully transferred, the message MCF FILE COPIED ON DISK is displayed.
4. Apply the MCFs that are on the MOSS disk (page 12-4).
When all MCFs are applied, the message UPGRADE COMPLETED, PRESS SEND is displayed.
5. Press SEND.
6. IML MOSS in order to use the new microcode (page 8-1).

EC NUMBER: Is the EC level of the MOSS microcode.

LAST MCF NUMBER: Is the number of the last MCF on the file (disk or diskette).

LAST APPLIED MCF: Is the number of the last MCF applied on the MOSS disk file.

- If the EC levels of the diskette and of the MOSS disk are different, the message DISK AND DISKETTE EC NUMBERS ARE DIFFERENT is displayed. This message will be displayed until the correct diskette is mounted. To leave the function, type N or press F1.
- If the last MCF number of the diskette is lower than or equal to that of the MOSS disk, the message DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR is displayed. This message will be displayed until the correct diskette is mounted. To leave the function, type N or press F1.
- When a previous operation of applying or restoring MCFs cannot run to completion the message 'FUNCTION CANCELED: UPGRADE/RESTORE RECOVERY PENDING' is displayed, and the function is canceled. The MCF apply or restore operation which failed must be restarted and completed before transferring a new MCF file.
- To apply the MCFs that are on the MOSS disk, see "Upgrading the Microcode" on page 12-4.



Chapter 13. Machine Level Table (MLT)

Use the MLT function to display the modification level of the microcode and control programs. This function displays the following information:

- The control program version that is loaded in each CCU
- The control program load name (8 characters) for each CCU
- The control program load id (8 characters) for each CCU
- NCP level modifications
- EC level of microcode
- The last MCF applied.
- The date of the last MCF applied.

M L T SEND

The following screen is displayed:

```

----- mn/dd/yy hh:mm
FUNCTION ON SCREEN: MACHINE LVL TABLE

CONTROL PROGRAM LOADED ON CCU A: NCP          PETITB4  VER5REL2
VERSION: 04 LEVEL: 03 MODIFICATION: 01      A

CONTROL PROGRAM LOADED ON CCU B: NCP          RPETITB4 VER5REL2
VERSION: 04 LEVEL: 03 MODIFICATION: 01

EC LEVEL : A47004                            B

LAST APPLIED MCF : M198A038 ON 11/04/86      C

====>
F1:END F2:MENU2 F3:ALARM F4:MENU1

```

You cannot update the information displayed on this screen.

Note: Only CCU A is displayed for models 130, 150, 170, 210, and 310.

Use the following F keys when they are displayed on the screen. Press:

- F4 to display the Menu 1 functions .
- F6 to display the Rules screen.

A Control program identification. If no control program is loaded, NO CONTROL PROGRAM LOADED is displayed.

B Last EC level of microcode.

C Last-applied MCF and the date it was applied.



Chapter 14. Power Services (POS) - Models 210, 310, 410, and 610

You can select the Power Services (POS) function from Menu 1. It allows you to:

- Display power supply information
- Power up or power down a particular power supply
- Display airflow detector status.

Scheduled power on

Do not forget to set POWER CONTROL = 2 on the control panel of the 3745.

This will enable:

- The scheduled power on.
Scheduled power on is described in the *3745 Basic Operations Guide*.
- An automatic restart of the 3745 if the AC power is lost then restored.

The following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES
- SELECT ONE OPTION (1 TO 5, OR D), THEN PRESS SEND ==>

  1 = DISPLAY 3745              4 = DISPLAY 3746-L13
  2 = DISPLAY 3746-A11         5 = DISPLAY 3746-L14
  3 = DISPLAY 3746-A12         6 = DISPLAY 3746-L15

      D = DISPLAY AIRFLOW DETECTOR STATUS

====>
F1:END              F3:ALARM
  
```

Options 2 to 6 display screens only if the frames they refer to are installed.

Displaying Power Information for 3745 Frames

Select the appropriate option from the Power Services selection screen. If you select option 1, for example, the following screen is displayed for the 3745:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES
POWER INFORMATION: 3745
PS ID      STATUS  SUB-SYSTEM(S)  PS ID      STATUS  SUB-SYSTEM(S)
  1        UP      NOSS           8          UP      LA 1
  2        UP      CCU A         9          NOREPLY  LA 3 ,4
  3        UP      CCU B         10         UP      LA 5
  4        UP      CA 1          11         UP      LA 7 ,8
  -        -        -             12         UP      LIC-UNIT 1
  6        UP      CA 5          13         UP      -
  -        -        -

-ENTER UXX OR DXX TO POWER-UP OR POWER-DOWN PS ID XX ==>
====>
F1:END          F3:ALARM F4:HELP F6:QUIT F8:FORWARD
    
```

From the previous screen you may:

- Enter UXX to power up power supply XX
- Enter DXX to power down power supply XX.

An asterisk (*) at the right of the PS ID number denotes the presence of a LIC Type 5 or 6.

If while this screen is displayed a power supply for the 3745 gets a new status, the screen is automatically updated.

The help screen displays the meanings of the power supply statuses. See "Help Screen" on page 14-3.

The subsystems shown are the ones installed. If, for example, CA 8 is not installed, only CA 7 will be displayed.

When a power supply is not installed, a minus sign (-) is displayed in the status column and there is a blank in the subsystem column.

Confirming or Canceling a Power-Off Request

When you issue a power-off request for a CCU that is running, a channel adapter that is in the chain or a line adapter that is connected, you will get a warning/decision screen for each particular case. This will ask you to confirm or cancel the power-off operation by entering either Y or N.

After you confirm or cancel the power-off request, the Power Services Selection screen will be displayed again.

To display power information for the 3746-A11 and 3746-A12, or the 3746-L13 and 3746-L14, 3746-L15, select the appropriate option from the Power Services Selection screen. You will get screens similar to the 3745 screen.

Airflow Detector Status

To display the airflow detector status, select option D from the Power Services Selection screen.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES

                AIRFLOW DETECTOR STATUS

AIRFLOW ID : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
STATUS      : * * * * * * * * * * * * * * * *

AIRFLOW ID : 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
STATUS      : * * * * * * * * * * * * * * * *

STATUS MEANING : '*' AIRFLOW OK OR NOT PRESENT
                 'F' AIRFLOW AT FAULT

====>

F1:END          F3:ALARM          F6:QUIT
    
```

If the airflow detector is functioning or not present, the status will be indicated by an asterisk (*). If the airflow detector is faulty, the status will be indicated by 'F'.

Help Screen

To display the help screen, press F4.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES
                MEANING OF PS ID STATUSES

-      : POWER SUPPLY NOT INSTALLED
UP     : POWER SUPPLY IS UP
DOWN   : POWER SUPPLY IS DOWN DUE TO AN OPERATOR REQUEST OR AN AIR FLOW FAULT

OCFAULT : POWER SUPPLY IS DOWN DUE TO AN OVERCURRENT
PSFAULT : POWER SUPPLY IS DOWN DUE TO AN OVER OR UNDERVOLTAGE
THERMAL : POWER SUPPLY IS DOWN DUE TO A THERMAL FAULT

NOREPLY : UNKNOWN STATUS DUE TO NO REPLY FROM POWER SUPPLY CONTROL CARD
INTERKO : UNKNOWN STATUS DUE TO A BUS ERROR
MHIO ERR: STATUS VALUE IS UNKNOWN

====>

F1:END          F3:ALARM          F6:QUIT
    
```

The help screen displays the meanings of power supply statuses.



Chapter 15. Port Swap File (PSF)

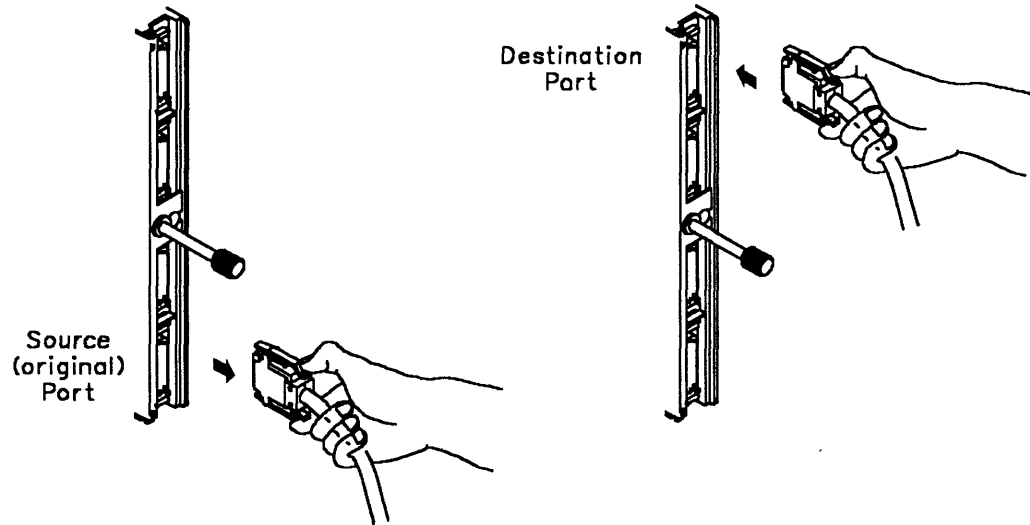
If a link to a port is unusable because of the failure of a line, LIC or line adapter, you may **logically** and **physically** switch that link from its original port to a spare one (destination port).

Use the Port Swap File function to **logically** switch the ports and to create or update the MOSS port swap file.

In this procedure:

- The **source port**, sometimes called original port, is the one from which the line is disconnected.
- The **destination port** is the one to which the line is reconnected.

Refer to the following figure.



The following table summarizes the recommended MOSS statuses before selecting a PSF option. You may display the port swap file at any time to verify the ports that are logically switched.

| PSF Options | MOSS Status | Go to page |
|---------------------|----------------------------|------------|
| Create a port swap | Online | 15-5 |
| Reset a port swap | Alone Online | 15-8 |
| Display a port swap | Alone Offline Online | 15-8 |

You can switch ports within the:

- TSS group. You can swap ports on line interface couplers (LIC)s of the same type, and on LICs of different types provided that these are compatible.
- HSS group.

- TRSS group. You can swap ports on token-ring interface couplers (TICs) type 1 or 2 connected to the same or to different token-ring adapters.
- ESS group. You can swap an ESS port only with another ESS port.

In any case, you must comply with the following port swapping rules.

- **General rules**

- The original port and the destination port must be connected to the same line adapter type, and for models 410 and 610 to the same CCU.
- A port swap cannot be made on a line being traced (internal or external trace).
- A port swap cannot be performed in an EP environment.
- The line parameters of the destination port must be the same as the ones of the source port.
- The line connected to the port to be swapped must be inoperative (deactivated). It must not be an autocalled line, or a line using a customer-implemented protocol unless the control blocks for LINES have been generated using COMPACB = YES in NCP system generation.
- The NCP SYSGEN parameters of the original port will be applied to the destination port which must not be defined in the NCP SYSGEN.
- Refer to Chapter 3, "Configuration Data File (CDF)" to check that swapped port CDF descriptions (clock and cable information) are the same.
- If any hardware configuration change is required (for example LIC change, a cable change), the configuration data file (CDF) must have been updated before making a port swap. See Chapter 3.
- Refer to the *3745 Connection and Integration Guide* to locate and identify boards, LICs, TICs and HSS ports on the machine.

- **Swapping TSS ports**

Two port swap situations can occur:

1. Swapping ports between LICs of same type (for instance: LIC1 to LIC1, or LIC3 to LIC3).
2. Swapping ports between LICs of different but compatible type (for instance: LIC1 to LIC3, or LIC1 to LIC5).

The following table summarizes the LIC type compatibility for port swapping.

| From/To | LIC1 | LIC3 | LIC4 | LIC5 | LIC6 |
|---------|------|------|------|------|------|
| LIC1 | Yes | Yes | | Yes | Yes |
| LIC3 | Yes | Yes | | | Yes |
| LIC4 | | | Yes | | |
| LIC5 | Yes | | | Yes | |
| LIC6 | Yes | Yes | | | Yes |

1. **Swapping ports between LICs of same type**

- General rules apply to this swapping (refer to page 15-2).

2. Swapping ports between LICs of different but compatible type

- From the PSF menu, when you select the option 'CREATE A PORT SWAP', the system prompts you with another screen on which you must select the option: **2 = SWAPPING PORTS OF COMPATIBLE TYPE**. Below this option you can read the following message:
MISUSE OF THIS FUNCTION MAY GIVE UNEXPECTED RESULTS. In this case there is no checking of the line parameters. It is obvious that performing this action requires a good knowledge of the affected network.
- Swapping ports between a LIC1 or a LIC3 (with local modem) and a LIC5 or a LIC6 (with integrated modem) implies that modem characteristics at both ends of the link are compatible.
- Check that the generated parameters are compatible with all the physical characteristics of the link. You may refer to the LID function to check these parameters.

Notes:

- a. Swapping ports from a LIC3 to a LIC1 or a LIC6 is only possible if the transmission speed on the LIC3 was previously limited to 128 kbps. The NCP source for this LIC3 cannot have HISPEED=YES.
- b. When swapping ports of different but compatible LIC types, a configuration change may be required at the remote end.

- **Swapping HSS ports**

- General rules apply to this swapping (refer to page 15-2).

- **Swapping TRSS ports**

Port swapping between two TICs connected to the same token-ring adapter or different token-ring adapters is allowed when the following conditions are met:

- The original port and the destination port must be connected to the same ring.
- The speed (4 or 16 Mbps) supported by the token-ring adapter of the destination port must be the same as the speed of the token-ring adapter of the source port.
- The appropriate level of NCP must be used.

- **Swapping ESS ports**

Port swapping between two connectors (J1 or J2) of the same or different Ethernet** LAN adapters (ELA) is allowed when the following conditions are met:

- The original port and the destination port must be connected to the same Ethernet type LAN.
- The appropriate level of NCP must be used.

Selecting Port Swap

The following screen is displayed

```
----- mm/dd/yy hh:mm  
FUNCTION ON SCREEN: PORT SWAP FILE  
  
- SELECT ONE PORT SWAP OPTION (1 TO 5) THEN PRESS SEND ==>  
  
  1 = CREATE A PORT SWAP  
  2 = RESET A PORT SWAP  
  3 = DISPLAY PORT SWAPS OF CCU-A  
  4 = DISPLAY PORT SWAPS OF CCU-B  
  5 = DISPLAY PORT SWAPS OF CCU-A AND CCU-B  
  
====>  
F1:END  F2:MENU2  F3:ALARM
```

Note: The previous screen is displayed for a model 410 or 610 with MOSS online.

Displayed options depend on the model and the status of the MOSS. For instance, for **Models 130, 150, 170, 210, and 310**, only options 1, 2, and 3 are available.

Creating a Port Swap

Swapping ports is done in two main steps: physical switching and logical switching with acknowledgment from the control program. It is recommended that you follow the procedure in this order:

1. The MOSS must be online.
2. If the line at the host is active, deactivate it.
3. Physically move the cable from the original port to the destination port.
4. If a hardware configuration change has been made (for example, a cable change), make sure that the configuration data file has been updated.
5. If a swap is performed between ports of a different but compatible LIC type, make sure that the parameters of the original and destination lines are the same (refer to 'Swapping TSS Ports' on preceding pages).
6. Select the port swap function.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE

- SELECT ONE OPTION (1 OR 2) THEN PRESS SEND ==>

  1 = SWAP PORTS OF SAME TYPE

  2 = SWAP PORTS OF COMPATIBLE TYPE
    (MISUSE OF THIS FUNCTION MAY GIVE UNEXPECTED RESULTS)

===>

F1:END F2:MENU2 F3:ALARM F6:QUIT

```

Enter 1 for port swap operation(s) between ports of the same type (TSS, HPTSS, TRSS).

Enter 2 for port swap operation(s) between ports of different but compatible types. For example, a port swap between a LIC type 1 and a LIC type 5. In this case, there is no checking of the functional line parameters.

Warning

When switching remote lines attached to ports on LICs of different types, operator intervention may be required at the remote site.

Swapping Ports of Same Type

[P] [S] [F] [SEND] [1] [SEND] [1] [SEND]

Swapping Ports of Different but Compatible Type

[P] [S] [F] [SEND] [1] [SEND] [2] [SEND]

Once you have selected the create option, the port swap file is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                        PORT SWAP CREATION ON CCU-A
PORT      ATTACHED TO  SWAPPED TO  PORT  ATTACHED TO  CCU
-----
80      LIC 41  TYPE 5                81  LIC 41  TYPE 5  A

- SWAP PORT ==> [A]   TO PORT ==> [B]
==>

F1:END  F2:MENU2  F3:ALARM                F6:QUIT
    
```

From the previous screen you may:

- Enter the decimal address of the original port in **A**.
- Enter the decimal address of the destination port in **B**.
- Press SEND. The Port Information screen is displayed (see next screen).

Note: For port swaps on HPTSS or TRSS lines, only the addresses of the source and destination ports are given.

Every time the CCU is re-initialized, all the ports that you have switched logically (listed in the port swap file) are switched again. The only way to stop a logical port swap is to reset the ports.

It may happen, at this time, that a switched port can no longer be switched logically. This is indicated in the port swap file by the message REFUSED BY CTL PGM followed by the reason for the refusal.

If you move any cable from one position to another, or change a LIC, you must update the configuration data file.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
PORT INFORMATION

  C          D          E
PORT: 80  ATTACHED TO CCU: A  SCANNER NUMBER: 10  LIC NUMBER: 41
                               SCANNER TYPE : TSS  LIC TYPE : 5

PORT: 81  ATTACHED TO CCU: A  SCANNER NUMBER: 10  LIC NUMBER: 41
                               SCANNER TYPE : TSS  LIC TYPE : 5

- PRESS SEND IF YOU WISH TO CREATE ANOTHER SWAP

- SWAP PORT ==> 80 TO PORT ==> 81
===> CREATE IS COMPLETE

F1:END  F2:MENU2  F3:ALARM          F6:QUIT

```

From the previous screen:

If the swap was successful, **CREATE IS COMPLETE** is displayed.

- Press SEND.
- Activate the lines.

If the port swap was not successful, an error message is displayed. You may request another port swap creation:

- Press SEND. The port swap file is updated.
- Enter the address of the next source port to be switched and the address of the new destination port.

Once you have created the required port swaps, you must ask the host operator to activate the lines for the newly swapped ports.

C Port addresses:

- The range of TSS port numbers is from 0 to 895.
- The range of HPTSS port numbers is from 1024 to 1039.
- The range of ESS port numbers is from 1056 to 1071.
- The range of TRSS port numbers is from 1088 to 1095.

D Scanner number and type (TSS, HPTSS, ESS, or TRSS) for each port:

- TSS scanner number is in the range from 1 through 32.
- HPTSS scanner number is in the range from 1 through 8.
- ESS scanner number is in the range from 1 through 8.
- TRSS scanner number can be 1, 2, 5, or 6.

E LIC number and type for each port, if the scanner type is TSS.

Resetting a Port Swap

[P] [S] [F] [SEND] [X] [SEND]

Note: The X value depends on options displayed on the screen shown on page 15-4. These options depend themselves on the model and the status of the MOSS.

To reset a port, you are prompted to enter the decimal address of the destination port (RESET PORT ==>) and that of the original port (TO PORT ==>). When you reset ports (swap back ports), the port swap file is updated. When the port is logically reset, activate the line.

The CDF must be updated using the CDF LA Update option (for example, if cables are swapped or the LIC changed).

Displaying Swapped Ports

Use the Display option to display the port swap file.

[P] [S] [F] [SEND] [X] [SEND]

Note: The X value depends of options displayed on the screen shown on page 15-4. These options depend themselves of the model and the status of the MOSS.

If you have two CCUs (for model 410 or 610) the following screen shows the port swap display for CCU-A and CCU-B.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
PORT SWAP CREATION ON CCU-A
  A      B      C      D
PORT    ATTACHED TO    SWAPPED TO    PORT    ATTACHED TO    CCU

  88    LIC 45  TYPE 5                90    LIC 46  TYPE 5    A
  80    LIC 41  TYPE 5                81    LIC 41  TYPE 5    A

- SWAP PORT ==>      TO PORT ==>
===>      END OF PORT SWAP FILE

F1:END  F2:MENU2  F3:ALARM                F6:QUIT
    
```

- A** The number of the original port.
- B** The number of the LIC to which the original is attached, if a TSS port.
- C** The number of the destination port.
- D** The number of the LIC of the destination port, if a TSS port.

Chapter 16. Passwords (PSW)

Use the PSW function to update and display the passwords as explained in the following table.

When the 3745 is initialized for the first time or after the hard disk has been formatted or restored, use the password update options to create your passwords.

| PSW Options | Go to page |
|--|------------|
| Update Management Password | 16-2 |
| Update Local Console Password | 16-3 |
| Update Remote Console Password | 16-3 |
| Update Maintenance Password | 16-4 |
| Display Passwords | 16-5 |
| Allow service personnel to have one-time access to the 3745 | 16-5 |
| Allow service personnel to have a permanent access to the 3745 | 16-5 |
| Deactivate Maintenance Password | 16-6 |
| Display/Reset/Update Logon Attempt Counters | 16-6 |
| Update Customer Identification | 16-7 |
| Update time out for remote console disconnection | 16-8 |

P S W SEND

The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS

- ENTER MANAGEMENT PASSWORD THEN PRESS SEND ==> IBM3745 (A)

AVAILABLE FUNCTIONS:

    UPDATE/DISPLAY/ACTIVATION/DEACTIVATION OF PASSWORDS

    DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS

    UPDATE CUSTOMER IDENTIFICATION

    UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION

====>

F1:END          F3:ALARM
  
```

Default password

- A** When you select the passwords function for the first time, the password is IBM3745. Then press SEND.

Once you have entered the management password, the following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
-SELECT ONE OPTION (1 TO 11), THEN PRESS SEND ==>

1 = UPDATE MANAGEMENT PASSWORD
2 = UPDATE LOCAL PASSWORD
3 = UPDATE REMOTE CONSOLE PASSWORD
4 = UPDATE MAINTENANCE PASSWORD
5 = DISPLAY PASSWORDS
6 = TEMPORARY ACTIVATION OF MAINTENANCE PASSWORD
7 = PERMANENT ACTIVATION OF MAINTENANCE PASSWORD
8 = DEACTIVATION OF MAINTENANCE PASSWORD
9 = DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS
10 = UPDATE CUSTOMER IDENTIFICATION
11 = UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION

====>

F1:END          F3:ALARM
  
```

Updating the Management Password

P S W SEND ■ PASSWORD SEND ■ 1 SEND

This password allows you to have access to the password function in order to modify or display all 3745 passwords.

If you forget the management password, contact your service representative for assistance.

Warning: All data not saved on the backup diskette set will be lost.

Updating the Local or Alternate Console Password

■ **PASSWORD** ■

This password allows an operator to have access to the local or alternate console.

Updating the Remote Console Password

■ **PASSWORD** ■

This password allows an operator to have access to the 3745 from the remote console.

When logging on the remote console, you cannot enter an incorrect password more than three times. If you do, the console is disconnected.

The logon attempt counters must be reset at the local console. The remote console password must differ from the maintenance password.

The following screen is an example of the display obtained once you have made the selection:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                   UPDATE XXX PASSWORD

-ENTER NEW MAINTENANCE PASSWORD, THEN PRESS SEND ==> xxxxxxx
  (5 TO 8 ALPHANUMERIC CHARACTERS)

====>
F1:END           F3:ALARM           F6:QUIT
  
```

xxxxxxx is the password you enter.

Each password is from five to eight alphanumeric characters (blanks not allowed).

You are invited to enter the new password. All default passwords are initially IBM3745 except for the maintenance password, for which there is no default password. **Update them as soon as the 3745 is initialized.**

When you have successfully updated a password, the following message is displayed: **PASSWORD HAS BEEN UPDATED.**

Updating the Maintenance Password

Use this option to create or update the maintenance password.

PASSWORD

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                    UPDATE REMOTE MAINTENANCE PASSWORD

-ENTER NEW MAINTENANCE PASSWORD, THEN PRESS SEND ==> XXXXX
  (5 to 8 ALPHANUHERIC CHARACTERS)

===>  PASSWORD HAS BEEN UPDATED

F1:END          F3:ALARM          F4:SPECIFY RSF MODEM TRAN. MODE
  
```

From the previous screen:

- Enter a new maintenance password.
- Press SEND.
- Press F4 to specify the RSF modem transmission mode. Enter either:
 - F (U.S.A. and Canada) for modem clock, 1200 bps or 2400 bps (V.22 bis), or
 - H for MOSS clock, 1200 bps only (V.23), then
 - Press SEND.
- The maintenance password that you have just created is not active. The service personnel cannot use it. To activate it, select option 6 or 7. Go to page 16-5.

This password allows the service representative to use the local, remote or RSF console in maintenance mode. The maintenance password must differ from the customer remote console password and the local customer password. Keep the maintenance password separate (from the other passwords) so as to avoid problems. The customer is responsible for this password.

Problems can occur if a console is inadvertently in Maintenance Mode. Functions that are intended only for the service representative are documented elsewhere.

Warning: No indication that maintenance mode is in effect is displayed on a console. Misuse can cause unpredictable or disruptive results. It is the user's responsibility to maintain all passwords consistent with site standards and good business practice.

Displaying Passwords

Use this option to display all passwords and the status of the maintenance password.

■ **PASSWORD** ■

A screen similar to the following is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
PASSWORDS ARE:

MANAGEMENT PASSWORD      =      xxxxxxxx
LOCAL    PASSWORD        =      xxxxxxxx
REMOTE CONSOLE PASSWORD  =      xxxxxxxx
MAINTENANCE  PASSWORD    = B      xxxxxxxx
MAINTENANCE PASSWORD STATUS = C

====>
F1:END          F3:ALARM    F6:QUIT
  
```

B If the maintenance password has not been defined yet, the following message is displayed here:

(NOT YET DEFINED)

and the maintenance password entry field will be blanked out.

C The maintenance password status can be: TEMPORARY, PERMANENT, or DEACTIVATED.

Temporary Activation of the Maintenance Password

Use this option to allow service personnel to have one-time access to the 3745.

■ **PASSWORD** ■

Once selected, the function is immediately performed and the following message is displayed:

MAINTENANCE PASSWORD HAS BEEN TEMPORARILY ACTIVATED

Permanent Activation of the Maintenance Password

Use this option to allow service personnel to have a permanent access to the 3745.

■ **PASSWORD** ■

Once selected, the function is immediately performed and the following message is displayed:

MAINTENANCE PASSWORD HAS BEEN PERMANENTLY ACTIVATED

Deactivating the Maintenance Password

Use this option to prevent service personnel from having access to 3745.

■ **PASSWORD** ■

Once selected, the function is immediately performed and the following message is displayed:

MAINTENANCE PASSWORD HAS BEEN PERMANENTLY DEACTIVATED

Displaying, Resetting, or Updating Logon Attempt Counters

Each time you enter an incorrect password, the attempt is recorded and a message is displayed on the initial password screen **A**. The message remains until you reset the counter of unsuccessful logon attempts.

The maximum number of unsuccessful logon attempts is 3 by default. When the count of unsuccessful logon attempts on a remote or RSF console is reached, that console is disconnected and the message UNAUTHORIZED ACCESS-TERMINAL DISCONNECTED is displayed. The local operator has to reset the counter before the disconnected console can be used.

You can display, reset or update this counter (for remote or RSF consoles only). Use the Display/Reset/Update Logon Attempt Counters option. The authorized counter value is from 1 to 99.

■ **PASSWORD** ■

A screen similar to the following is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                   DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS

11 UNSUCCESSFUL ATTEMPTS FOR LOCAL LOGGING
03 UNSUCCESSFUL ATTEMPTS FOR REMOTE LOGGING A
00 UNAUTHORIZED ATTEMPTS FOR MAINTENANCE LOGGING

-ENTER R TO RESET THE COUNTERS OR U TO UPDATE, THEN PRESS SEND ==>
(YOU CAN UPDATE ONLY THE REMOTE CONSOLE COUNTER)

====>

F1:END           F3:ALARM   F6:QUIT
    
```

To reset the counters, enter R followed by SEND. All counters are reset at once. The following message is displayed: COUNTERS HAVE BEEN RESET.

To update the counter value of the remote console, enter U followed by SEND.

The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
UPDATE COUNTER OF AUTHORIZED REMOTE CONSOLE LOGON ATTEMPTS

-ENTER THE NEW COUNTER VALUE, THEN PRESS SEND ==>

===>
F1:END          F3:ALARM   F6:QUIT
    
```

From the previous screen:

- Enter a counter value. It is an integer in the range 01 through 99.
- Press SEND.

The following message is displayed:

REMOTE CONSOLE LOGON COUNTER HAS BEEN UPDATED.

Updating the Customer Identification

Use this option to update the customer identification.

PASSWORD

```

CUSTOMER ID: xxxxxxxxxxxx          3745-XXX          SERIAL NUMBER:

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS

- ENTER CUSTOMER IDENTIFICATION (1 TO 16 CHARACTERS) ==>

===>
F1:END          F3:ALARM   F6:QUIT
    
```

From the previous screen:

From this screen:

- Enter the customer identification.
- Press SEND.

The following message is displayed:

CUSTOMER IDENTIFICATION HAS BEEN UPDATED.

The CUSTOMER ID is always displayed on the top left-hand corner of your screen.

Updating the Time Out for the Remote or RSF Console Disconnection

Use this option to set the time a remote or RSF console can be inactive. The time out must be set to a value from 05 to 30 minutes. The default time out is 30 minutes.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION

-ENTER THE NEW TIMEOUT IN MINUTES, THEN PRESS SEND ==>

====>

F1:END          F3:ALARM  F6:QUIT

```

You will see the message:

TIME OUT FOR REMOTE CONSOLE DISCONNECTION HAS BEEN UPDATED.

Chapter 17. Stand-Alone Link Tests (SAT)

General Description

The stand-alone link test (SAT) allows you to test an intermediate routing node (IRN) link between two IBM communication controllers. The IRN link is a SDLC leased or manually-switched line.

The two controllers are named "requester" and "responder". The definitions of requester and responder are independent of whether the controllers are channel-attached or link-attached.

The link test consists of two programs resident in the MOSS:

- Requester link test program (LTQ), for use in the requester,
- Responder link test program (LTS), for use in the responder.

The stand-alone link test will be simply called "link test" in the rest of this manual.

Table 17-1. Stand-Alone Link Test (SAT) General Description

| Stand-Alone Link Test (SAT) | |
|--|---|
| <p>The diagram shows two IBM communication controllers, labeled 'Requester' and 'Responder', connected by a link. Each controller is represented by a rectangular box with a central vertical section containing a small square and several horizontal lines. Below each box is the number '3745'. A line connects the right side of the Requester box to the left side of the Responder box, with a zigzag break in the middle to indicate a long distance.</p> | |
| Requester Controller | Responder Controller |
| <p>Is the controller that is selected by the operator to initiate the link test operations.</p> <p>It sends the data over the link, and expects responses from the responder.</p> <p>The requester link test program (LTQ), is always used and required in the requester.</p> | <p>Is the controller that is selected by the operator to receive the test frames from the requester and send them back.</p> <p>The responder link test program (LTS), may be run (using the MOSS LTS command) when NCP or CLDP are not loaded in the responder.</p> |
| <p>Note: The requester link test program (LTQ) should preferably be run only in the link-attached controller, as this mode causes the least disturbance to the network. However, the responder link test program (LTS) may be required if statistics are to be collected at the responder.</p> <p>When the link test program is running in both controllers, an operator must be present at both locations; if only the requester is running the link test, the operation of the responder can be unattended.</p> | |

Program Environment

When you decide to run the link tests, one of the following situations exists:

1. NCP is loaded and active in the responder.
2. NCP is loaded and inactive in the responder.
3. CLDP is loaded in the responder (IPL stopped at phase 4).
4. Neither NCP nor CLDP is loaded in the responder.

The actual situation is dependent on the status of the responder controller.

NCP is Loaded and Active in the Responder

| Table 17-2. LTQ and SAT in Requester, NCP Active in Responder | |
|---|--|
| Stand-Alone Link Test (SAT) | |
| | |
| Requester Controller | Responder Controller |
| <ol style="list-style-type: none"> 1 Define link IPL port. (See LKP function.) 4 Load the requester link test program (LTQ function). 5 Initiate the stand alone test (SAT function). 6 Enter the responder address 'FF'. 8 At receipt of the responder address, take decision to continue the test or not. 9 Analyse test results. | <ol style="list-style-type: none"> 2 NCP is active (if not, select the procedure on page: 17-4). 3 The line must be activated either by: <ul style="list-style-type: none"> • MONLINK=YES which is a parameter set at NCP generation. • Or a VTAM command from the host. 7 NCP returns its subarea number (expressed in hexadecimal value). |

Details of Actions When NCP is Loaded and Active in the Responder

- 1 The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test. Refer to Chapter 11, "Link IPL Ports (LKP)" on page 11-1.

Note: When defining the IPL ports, pay particular attention to the following:

Verify the parameters of the link (duplex or half-duplex, switched or nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

- 2 NCP is active therefore you do not need to load the link test program in the responder. NCP is capable of replying correctly to the SDLC test frame sent by the requester.

- 3 MONLINK = YES is a keyword belonging to the GROUP statements defined at NCP generation.

When MONLINK = YES the line is automatically activated by NCP. If MONLINK = NO the line must be activated by a VTAM command from the host.

- 4 Load the requester link test program (LTQ function). Refer to "Loading the Stand-Alone Link Test Program" on page 17-11

- 5 Use the MOSS SAT function to initiate the stand alone test.

- 6 When you perform the SAT function, a screen is displayed (see screen on page 17-12) on which you must specify one of the following responder addresses:

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 11-11).
- FF is the broadcast address and can be handled as follows:
 - In a point-to-point configuration, FF will cause the responder to return its subarea number. This can be useful if you do not know the responder subarea number.
 - In a multipoint configuration, FF will cause the responder subarea number to be returned from the first station that is able to respond.

- 7 NCP return to the requester the subarea number of the responder controller. The subarea number is expressed in hexadecimal value.

- 8 The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 17-13 to enter the test options.

Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN refer to the screen on page 17-13.

- 9 Analyse the results of the tests. Start on page 17-14.

Do not forget to restore the original contents of the IPL port information (LKP function).

NCP is Loaded and Inactive in the Responder

O

| Table 17-3. LTQ and SAT in Requester, NCP Inactive in Responder | |
|---|---|
| Stand-Alone Link Test (SAT) | |
| <p>The diagram shows two computer-like units, one labeled 'Requester' and one labeled 'Responder', connected by a horizontal line. Each unit is represented by a rectangle with internal components and is labeled '375' underneath. The line between them has a zigzag break in the middle.</p> | |
| Requester Controller | Responder Controller |
| <ol style="list-style-type: none"> 1 Define link IPL port. (See LKP function.) 4 Load the requester link test program (LTQ function). 5 Initiate the stand alone test (SAT function). 6 Enter the responder address 'FF'. 8 At receipt of the responder address, take decision to continue the test or not. 9 Analyse test results. | <ol style="list-style-type: none"> 2 NCP is inactive. 3 MONLINK = YES must be defined in NCP. (If MONLINK = NO, the stand alone test (SAT) cannot be run.) 7 The responder returns its subarea number (expressed in hexadecimal value). |

○

○

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○

Details of Actions When NCP is Loaded and Inactive in the Responder

- 1 The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test. Refer to Chapter 11, "Link IPL Ports (LKP)" on page 11-1.

Note: When defining the IPL ports, pay particular attention to the following:

Verify the parameters of the link (duplex or half-duplex, switched or nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

- 2 NCP is inactive, if MONLINK=YES in NCP, you do not need to load the link test program in the responder. The responder is capable of replying correctly to the SDLC test frame sent by the requester.
- 3 MONLINK=YES is a keyword belonging to the GROUP statements defined at NCP generation.

When MONLINK=YES the line must be activated by a VTAM command from the host.

If MONLINK=NO you cannot run the test, go to:

"CLDP is Loaded in the Responder (IPL Stopped at Phase 4)" on page 17-6.

- 4 Load the requester link test program (LTQ function). Refer to "Loading the Stand-Alone Link Test Program" on page 17-11.
- 5 Use the MOSS SAT function to initiate the stand alone test.
- 6 When you perform the SAT function, a screen is displayed (see screen on page 17-12) on which you must specify one of the following responder addresses:

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 11-11).
- FF is the broadcast address and can be handled as follows:
 - In a point-to-point configuration, FF will cause the responder to return its subarea number. This can be useful if you do not know the responder subarea number.
 - In a multipoint configuration, FF will cause the responder subarea number to be returned from the first station that is able to respond.

- 7 NCP return to the requester the subarea number of the responder controller. The subarea number is expressed in hexadecimal.
- 8 The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 17-13 to enter the test options.

Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN refer to the screen on page 17-13.

- 9 Analyze the results of the tests. Start on page 17-14.

Do not forget to restore the original contents of the IPL port information (LKP function).

CLDP is Loaded in the Responder (IPL Stopped at Phase 4)

| Table 17-4. LTQ and SAT in Requester, CLDP Loaded in the Responder | |
|---|--|
| Stand-Alone Link Test (SAT) | |
| | |
| Requester Controller | Responder Controller |
| <ol style="list-style-type: none"> 1 Define link IPL port. (See LKP function.) 4 Load the requester link test program (LTQ function). 5 Initiate the stand alone test (SAT function). 6 Enter the responder address 'FF'. 8 At receipt of the responder address, take decision to continue the test or not. 9 Analyze test results. | <ol style="list-style-type: none"> 2 Define link IPL port. (See LKP function.) 3 The responder is stopped at IPL phase 4. CLDP will act as responder. 7 The responder returns its SDLC controller address (defined in LKP common option screen). |

Details of Actions When CLDP is Loaded in the Responder (IPL Phase 4)

- 1** The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test. Refer to Chapter 11, "Link IPL Ports (LKP)" on page 11-1.

Note: When defining the IPL ports, pay particular attention to the following:

Verify the parameters of the link (duplex or half-duplex, switched or nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

- 2** Use the MOSS LKP function.
Refer to step **1** to define the link IPL port.
- 3** The responder is stopped at IPL phase 4. FF4 is displayed at the control panel.
- 4** Load the requester link test program (LTQ function).
Refer to "Loading the Stand-Alone Link Test Program" on page 17-11.
- 5** Use the MOSS SAT function to initiate the stand alone test.
- 6** When you perform the SAT function, a screen is displayed (see screen on page 17-12) on which you must specify one of the following responder addresses:
 - 00 indicates the other point in a point-to-point link.
 - 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 11-11).
 - FF is the broadcast address and can be handled as follows:
 - In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
 - In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.
- 7** Responder controller returns its SDLC controller address (defined in LKP common option screen).
- 8** The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 17-13 to enter the test options.

Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: ~~CREATE PERSONAL PATTERN~~ refer to the screen on page 17-13.

- 9** Analyze the results of the tests. Start on page 17-14.

Do not forget to restore the original contents of the IPL port information (LKP function).

Neither NCP nor CLDP is Loaded in the Responder

| Table 17-5. LTQ and SAT in the Requester, LTS and SAT in the Responder | |
|--|--|
| Stand-Alone Link Test (SAT) | |
| | |
| Requester Controller | Responder Controller |
| <ul style="list-style-type: none"> 4 Define link IPL port. (See LKP function.) 5 Load the requester link test program (LTQ function). 6 Initiate the stand alone test (SAT function). 7 Enter the responder address 'FF'. 9 At receipt of the responder address ('01' to 'FE') or '00' which is the defaulted address, take decision to continue the test or not. 10 Analyze test results. | <ul style="list-style-type: none"> 1 Define a link IPL port if not yet done. (See LKP function.) 2 LTS function to load the program. 3 Initiate the stand alone test (SAT function). 8 Responder controller return its SDLC controller address (defined in LKP common option screen). 11 Analyze test results. |
| <p>Note: When the link test program is running in both controllers, an operator must be present at both locations.</p> | |

Details of Actions When Neither NCP nor CLDP is Loaded in the Responder

- 1** The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test. Refer to Chapter 11, "Link IPL Ports (LKP)" on page 11-1.

Note: When defining the IPL ports, pay particular attention to the following:

- Verify the parameters of the link (duplex or half-duplex, switched or nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.
- If the responder is the link test program (LTS), verify that the IPL ports are defined identically at both ends of the link.

- 2** Use the MOSS LTS function to load the responder link test program.

The programs are resident in the MOSS, and can be run even when the control program cannot be loaded. This is particularly useful for link-connected controllers in cases where the control program cannot be loaded over the normal IPL link. Refer to "Responder Link Test Program" on page 17-17.

- 3** Use the MOSS SAT function to initiate the stand alone test.

- 4** Use the MOSS LKP function. Refer to step **1** above to define the link IPL port.

- 5** Load the requester link test program (LTQ function). Refer to "Requester Link Test Program" on page 17-11.

- 6** Use the MOSS SAT function to initiate the stand alone test.

- 7** When you perform the SAT function, a screen is displayed (see screen on page 17-12) on which you must specify one of the following responder addresses:

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 11-11).
- FF is the broadcast address and can be handled as follows:
 - In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
 - In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.

- 8** Responder controller returns its SDLC controller address (defined in LKP common option screen).

- 9** The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 17-13 to enter the test options.

Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN refer to the screen on page 17-13.

- 10** and **11** Analyze the results of the tests. Go to page 17-14 (LTQ function) and page 17-19 (LTS function).

Do not forget to restore the original contents of the IPL port information (LKP function).

SDLC Test Frame

The format of the SDLC test frame is shown below. Refer to *IBM Synchronous Data Link Control, General Information, GA27-3093* for further information on SDLC.

| | | | | | |
|---------------|---------|------------------|-------------|-----------------------------------|---------------|
| Flag X'7E' | Address | Control X'F3' | Information | Frame Check Sequence (2 bytes) | Flag X'7E' |
|---------------|---------|------------------|-------------|-----------------------------------|---------------|

Notes:

1. The address field contains the address of the responder to which the test frame is sent.
2. The information field (variable length in multiples of 8 bits) can be either of the default patterns, or the personal pattern (page 17-16).
3. The frame sent back by the responder should be identical with the frame sent by the requester.

Requester Link Test Program

Warning: Loading the link test program overwrites the control program.

Loading the Stand-Alone Link Test Program

1. Set the **MOSS alone**, refer to page 3-3.
2. Define the intermediate routing node (IRN) link as an IPL port in the IPL port information (LKP function).
3. For the models 410 and 610, make sure that a CCU which controls the line is selected. See the MSA. If a CCU is not selected, use the CSR function on menu 2 to select a CCU.

4. to load the program.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LD LINK TEST REQ

- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==> A

  1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
  2 = CCU-A
  3 = CCU-B

- SELECT AN IPL OPTION (1 TO 2) ==> B

  1 = NORMAL
  2 = STEP-BY-STEP

====>

F1: END F2: MENU2 F3: ALARM

```

5. For the models 410 and 610, choose the CCU to be IPLed **A**, then the IPL option **B**. The IPL starts.

The machine status area shows the progression of the loading process. If an error occurs during IPL Phase 3, the following message is displayed:

IPL PHASE 3 LINK TEST PROGRAM ABEND

6. Confirm your selection, then press SEND.
7. When LINK TEST PROGRAM LOADED is displayed in the MSA, press F1.

8. to initiate the SAT function.


```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
REQUESTER INITIALIZATION

- LINK ADDRESS ==>
  TSS: 0-895 HPTSS: 1024-1039

- RESPONDER ADDRESS (00 TO FF) ==>

===>

F1:END F2:MENU2 F3:ALARM
  
```

From the previous screen:

- Enter the link address and the responder address.
- Press SEND. The Requester Test Option screen is displayed when the initialization is successful (go to next page).

ADDRESS: The address of the port to which the link cable is connected.

RESPONDER ADDRESS: The address that is placed by the requester in the SDLC test frame.

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 11-11).
- FF is the broadcast address and can be handled as follows:
 - In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
 - In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.

Note: When the broadcast address FF is selected, the Requester Test Option screen is not displayed. All options are taken by default. Investigation mode and permanent test are forced, and an empty pattern is always sent to the secondary station.

The broadcast address FF is used only to retrieve the actual secondary controller address. As soon as it is retrieved, the user should begin another test with the actual address (not equal to FF).

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
REQUESTER          TEST OPTIONS

- ENTER PATTERN OPTION (0,1,2) ==> A
  0 = CREATE PERSONAL PATTERN
  1 = USE DEFAULT PATTERN NUMBER 1
  2 = USE DEFAULT PATTERN NUMBER 2

- ENTER COUNT OF TESTS (1 TO 99) OR P ==> B
  P = PERMANENT

- SELECT TEST MODE (I OR S) ==> C
  I = INVESTIGATION MODE (STOP ON ERROR)
  S = STATISTICAL MODE

====>

F1:END F2:MENU2 F3:ALARM

```

1. Select the pattern option **A**.

PATTERN NUMBER 0: go to page 17-16.

PATTERN NUMBER 1: 128 bytes from X'00' through X'7F'.

PATTERN NUMBER 2: 128 bytes from X'80' through X'FF'.

Both NCP and the responder link test program can buffer a full 128 bytes. Other responders may be limited to less than 128 bytes. For example, the CLDP is limited to 32 bytes and in this case, **use the option 0 (zero) to create a personal pattern that does not exceed 32 bytes.**

INVALID DATA RECEIVED will be displayed if the test message sent by the requester is longer than the limit.

2. Select the count option **B**. You have two possibilities:

- Enter a count from 1 to 99 as requested by the prompt message. Counting takes place from 1 to the count that you have entered.
- Enter P to select the permanent count. Counting takes place from 1 to 65535, and then wraps back to 0.

3. Select the mode option **C**.

INVESTIGATION MODE: The test stops on the first error detected and information relative to the error is displayed. SCF, LCS, and SES codes are explained on page 17-20. The test can be restarted (F4), and will then stop on the next error, if any.

When using the broadcast address (FF), the test stops and ADDRESS RECEIVED: XX is displayed (where XX is the address of the responder).

STATISTICAL MODE: Error counts are kept; an error does not stop the test (unless the error disables the line). The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds.

4. Press SEND to validate the selection. One of the following screens will be displayed, depending on the options that you entered:

- Investigation mode screen
- Statistical mode screen
- Personal pattern screen.

You can, at any time, stop the test by pressing the BREAK key and resume by pressing F4:CONTINUE.

The test stops when the specified count of tests is exhausted and COUNT OF TESTS EXHAUSTED - LINK TEST FUNCTION COMPLETED is displayed.

Investigation Mode Screen

This screen is displayed when you selected the investigation mode from the options screen. The test stops on the first error detected and the error data is displayed (see "Requester Error Screen Example," that follows).

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
                    REQUESTER      INVESTIGATION MODE      PERMANENT TEST

CURRENT COUNT:  NN

===>  PRESS BREAK TO STOP THE TEST

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE

```

The screen above shows the "permanent test" option selected in the first line. If you selected the count option, the first line appears as follows:

```
REQUESTER  INVESTIGATION MODE  TEST COUNT = xx
```

The link test function terminates when the specified count (if any) is reached. The following message is displayed in the message area:

```
COUNT OF TESTS EXHAUSTED - LINK TEST FUNCTION COMPLETED
```

The CURRENT COUNT is incremented from 1 to the user-specified count or, for a permanent test, from 1 to 65535, wrapping back to 0.

1. Press BREAK (ATTN) to stop the test.
2. Press F4 to continue the test, or press F1 to end it.

Note: When the broadcast address (X'FF') is used in the Link Test Initialization screen, the test stops and the following message is displayed, where XX is the address of the responder:

```
ADDRESS RECEIVED: XX
```

Requester Error Screen Example

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
REQUESTER          INVESTIGATION MODE      PERMANENT TEST

CURRENT COUNT

HARDWARE ERROR ON TRANSMIT

SCF:              LCS:              SES:

===>

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE

```

SCF, LCS, and SES are described on page 17-20.

Statistical Counters Screen

The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds. The screen has the following format:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
REQUESTER          STATISTICAL COUNTERS      TEST COUNT = NN

TEST FRAMES SENT OK           : NN
TEST FRAMES RECEIVED OK       :
INVALID ADDRESS FIELD RECEIVED :
INVALID CONTROL FIELD RECEIVED :
INVALID/TOO MUCH DATA RECEIVED :
COMMAND REJECT                 : A
HARDWARE ERROR ON TRANSMIT:   ON RECEIVE:
SCANNER ERROR ON TRANSMIT:    ON RECEIVE:
TRANSMISSION ERROR ON TRANSMIT: ON RECEIVE:
TIMEOUT ON TRANSMIT:          ON RECEIVE:

===>  PRESS BREAK TO STOP THE TEST

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE  F6:RULES

```

For the permanent test, the counters can count up to 65355, wrapping back to 0.

1. Press BREAK (ATTN) to stop the test.
2. Press F4 to continue the test, or F1 to end it.

A Is a count of the number of times that D2 is returned under LCS. This information is used only by the service representative.

Personal Pattern Screen

This screen allows you to create a personal pattern of up to 128 bytes.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
                    PERSONAL PATTERN

- ENTER PAIRS OF HEX CHARACTERS SEPARATED BY ONE BLANK
==> 00 01 02 04 08 10 20 40 80 AB AC AE CC CF DD EE <==
==> EE FF 24 48 88 8F <==
==> <==
==> <==
==> <==
==> <==
==> <==
==> <==

- ENTER 'C' WHEN PATTERN IS COMPLETE
===>

F1:END F2:MENU2 F3:ALARM F6:QUIT
    
```

From the previous screen you may:

1. Enter the pattern as pairs of hexadecimal characters, each pair separated by a single blank.
2. Enter C then press SEND to check the data for valid hexadecimal characters.
3. The investigation mode screen or the statistical counters screen is displayed, depending on the selected option. Return to step 7. The link test is started at this point.

Null Frame/Pattern

You can send a null (empty) data pattern. To do this, enter no hexadecimal characters, enter C, then press SEND. This may be useful if you wish to send an empty message consisting only of a header and a trailer.

The null pattern must be used if the responder is an IBM 3705 Communication Controller running NCP.

Responder Link Test Program

Warning: Loading the link test program destroys the control program.

Loading the Stand-Alone Link Test Program

1. Set the **MOSS** alone, refer to page 3-3.
2. If NCP is not loaded in the responder controller, define the intermediate routing node (IRN) link as an IPL port in the IPL port information (LKP function).
3. For the models 410 and 610, make sure that a CCU which controls the line is selected. See the MSA. If a CCU is not selected, use the CSR function on menu 2 to select a CCU.
4. to load the program.

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LD LINK TEST RESP

- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==> A

  1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
  2 = CCU-A
  3 = CCU-B

- SELECT AN IPL OPTION (1 TO 2) ==> B

  1 = NORMAL
  2 = STEP-BY-STEP

====>

F1: END F2: MENU2 F3: ALARM
```

5. For the models 410 and 610, choose the CCU to be IPLed **A**, then an IPL option **B**. The IPL starts.
The machine status area shows the progression of the loading process.
6. When LINK TEST PROGRAM LOADED is displayed in the MSA, press F1 to terminate IPL.
7. to initiate the SAT function.

Initialization Screen

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
RESPONDER          INITIALIZATION

- LINK ADDRESS      ==> A

TSS: 0-895  HPTSS: 1024-1039

===>

F1:END  F2:MENU2  F3:ALARM
    
```

1. Enter the link address **A**. The link address is the address of the 3745 port to which the link cable is connected.
2. Press SEND. When the initialization is successful, the initialization screen changes to:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
RESPONDER          INITIALIZATION

- LINK ADDRESS      ==> A

TSS: 0-895  HPTSS: 1024-1039

INITIALIZATION COMPLETED

- PRESS SEND TO START THE TEST

===>

F1:END  F2:MENU2  F3:ALARM
    
```

3. Press SEND.
4. The initialization screen is replaced by the statistical counters screen. The link test is started at this point.

Statistical Counters Screen

The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds. The screen has the following format:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
RESPONDER           STATISTICAL COUNTERS
TEST FRAMES RECEIVED OK      :
TEST FRAMES SENT OK         :
INVALID ADDRESS FIELD RECEIVED :
INVALID CONTROL FIELD RECEIVED :
MORE THAN 128 BYTES RECEIVED  :

HARDWARE ERROR      ON TRANSHIT:      ON RECEIVE:
SCANNER ERROR       ON TRANSHIT:      ON RECEIVE:
TRANSMISSION ERROR  ON TRANSHIT:      ON RECEIVE:
TIMEOUT             ON TRANSHIT:

===>  PRESS BREAK TO STOP COUNTER REFRESH

F1:END  F2:MENU2  F3:ALARM

```

When you press **BREAK (ATTN)**, the screen is frozen, but the test (and counter incrementation) continues.

1. If no error was detected, press **F4** to restart counter refreshing.
2. If at least one error was detected, press **F4** to restart counter refreshing, or press **F5** to display the last error that was detected (see "Responder Error Screen Example" that follows).

When you press **BREAK**, the screen is frozen, but the test (and counter incrementation) continues.

- If no error was detected, press **F4** to restart counter refreshing.
- If at least one error was detected, press **F4** to restart counter refreshing. SCF, LCS, and SES codes are explained on page 17-20.

The test stops when the specified count of tests is exhausted: the stand-alone link test functions is terminated.

Meanings of SCF, LCS, and SES Codes

The following list includes only transmission faults. For other values of these codes, consult your IBM service representative.

| SCF | LCS | SES | Meaning |
|-----|-----|-----|------------------------|
| xx | E2 | 00 | CTS dropped |
| xx | EE | 00 | DSR dropped |
| xx | F2 | 00 | CTS failed to rise |
| xx | F4 | 00 | DSR failed to rise |
| xx | F6 | 00 | Cable not installed |
| xx | F8 | 00 | DSR/CTS failed to drop |
| xx | E2 | 80 | Modem retrain |
| xx | ** | 40 | Abort line idle |
| xx | ** | 00 | Abort |
| xx | ** | 10 | CRC check |
| xx | ** | 08 | Flag off boundary |
| xx | ** | 01 | Early flag |

Where:

** may be any value.

xx is a byte whose bits have the following meaning:

| Bit | Meaning |
|-----|-------------------|
| 0 | Halt/abort |
| 1 | Service request |
| 2 | Overflow/underrun |
| 3 | Modem check |
| 4 | Data stored |
| 5 | End of message |
| 6 | Data received |
| 7 | Receive sequence |

Chapter 18. Switchback (SBK) - Models 410 and 610

Switchback is used **only** when you have a twin configuration in **twin-backup mode** and a fallback has been performed. You use this function from the MOSS console.

Messages

See Appendix A for a list of Switchback messages and other messages.

IPL phases are displayed in the fourth and seventh lines of the MSA (fields r to x) and

are explained in Appendix B.

After you select switchback, the following screen is displayed.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: SWITCHBACK

- SELECT THE SWITCHBACK PHASE (1, 2) ==>

    1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
    2 = PERFORM SWITCHBACK

====>

F1:END F2:MENU2 F3:ALARM

```

To enter the switchback phase:

1. If you want to request network deactivation, enter 1. An alert is sent to the host. Wait for confirmation before continuing with the switchback procedure.
2. Enter 2 to perform switchback. An IPL of CCU-X is automatic.

Note: CCU-X will either be CCU-A or CCU-B.

When switchback is complete, you will get the function selection rules screen. An automatic IPL is started.

If you try to perform switchback and some of the resources on the CCU to be switched are not deactivated, the following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN:          SWITCHBACK

WARNING:
SOME RESOURCES ON THE CCU TO BE SWITCHED ARE NOT DEACTIVATED
NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CANCEL OR FORCE THE SWITCHBACK: C=CANCEL, F=FORCE ==>
==>

F1:END  F2:MENU2  F3:ALARM

```

It displays the network address of the line that is not deactivated. You also have to ask the listed host operators to free up the resources.

You are requested to either cancel the switchback (C) or force the switchback even though resources are running (F).

The following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN:          SWITCHBACK

WARNING:
SOME RESOURCES ON THE CCU TO BE SWITCHED ARE NOT DEACTIVATED
NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CANCEL OR FORCE THE SWITCHBACK: C=CANCEL, F=FORCE ==>

PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
==>

F1:END  F2:MENU2  F3:ALARM

```

This screen requests you to confirm your decision to cancel or force the switchback by entering either Y or N.

When switchback is complete, a completion message appears in the MSA. Then you will get the Application Rules screen.

Chapter 19. Scanner Interface Trace (SIT)

Use the SIT function to collect the events that occur on a given line, as well as the checkpoint entries. These events are recorded TSS, ESS and HPTSS internal buffers, and can be sent to the MOSS via the CCU storage area dedicated to MOSS/TSS communication. The 3745 SIT is called internal SIT (I-SIT). The host SIT is called external SIT (E-SIT).

| SIT Options | Go to page |
|-------------------------------|------------|
| Start Internal Trace | 19-2 |
| Cancel Internal Trace | 19-2 |
| Freeze Internal Trace | 19-3 |
| Resume Internal Trace | 19-3 |
| Display CSP Status | 19-4 |
| Get I-SIT Buffer from Scanner | 19-4 |
| Display I-SIT Buffer or File | 19-5 |
| Erase I-SIT File | 19-5 |
| File I-SIT buffer onto Disk | 19-5 |

Main Differences between E-SIT and I-SIT

- For the E-SIT, the contents of the buffer are continuously sent to the host.
- For the I-SIT, the buffer normally works in wraparound mode and is transferred to the MOSS only on request. If you are in no wraparound mode, when the buffer is full, the trace is frozen (the trace is stopped but the buffer is not released).
- At the host, you can print the trace on 132 characters. This means hexadecimal and formatted data are visible at the same time.

On the MOSS console, you cannot display hexadecimal and formatted data at the same time (see "Displaying I-SIT Buffer or File" on page 19-5).

Restrictions

- The maximum buffer size is 8KB (1KB = 1024 bytes).
- Internal SIT trace is limited to 4 per scanner and 8 per CCU.
- External SIT trace is limited to 8 per CCU.
- For a mix of external and internal SIT traces the limit is 8 per NCP/CCU.
- A maximum of four traces per scanner can be started according to the line speed:
 - High-speed line (from 230 kbps for TSS and from 1.5 million bps for HPTSS): Only one trace in a buffer of 8KB.
 - Medium-speed half-duplex line (between 56 kbps and 65 kbps): Two traces maximum in two buffers of 4KB each.
 - Medium-speed duplex line (between 56 kbps and 65 kbps): One trace maximum in a buffer of 8KB.
 - Low-speed line: Four traces in four buffers of 2KB each.
- If an E-SIT is running for a given line, an I-SIT cannot be started on this line (and conversely).

How to use the host SIT and SIT field details are described in the *NCP, SSP, and EP Diagnosis Guide*, LY30-5591.

If a hardware configuration change has been made, for example, a cable change, you must update the configuration data file before using the SIT function.

S I T SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1071      ==>  A
- ENTER THE ACTION TO BE PERFORMED (S, C, F, R, D, G) ==>  B

      S: START INTERNAL TRACE
      C: CANCEL INTERNAL TRACE
      F: FREEZE INTERNAL TRACE
      R: RESUME INTERNAL TRACE
      D: DISPLAY CSP STATUS
      G: GET I-SIT BUFFER FROM SCANNER
WARNING: DURING I-SIT BUFFER TRANSFER EVENTS MAY BE LOST

===>

F1:END  F2:MENU2  F3:ALARM  F4:ISIT BUFFER HANDLING

```

Enter the address of the line **A**.

Enter S, C, F, R, D, or G, **B** depending on the required I-SIT procedure. Then press SEND.

Starting an Internal Trace

S I T SEND ■ Enter the address of the line to be traced. ■ SEND ■ S SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

START I-SIT SELECTED FOR LINE 32  RLN 0  IN SCANNER 9

- TRACE IN WRAP MODE (Y OR N)      ==>  Y
- CHECKPOINT TRACE (Y OR N)        ==>  Y
- ENTER DATA COUNT (0 TO 255 OR ALL) ==> ALL
- STOP TRACE ON ERROR (Y OR N)     ==>  N
- MAXIMUM AVAILABLE SIZE (Y OR N)  ==>  N

===>

F1:END  F2:MENU2  F3:ALARM  F6:QUIT

```

From the previous screen:

- After you have changed the default options (if necessary), press SEND.
- The SIT selection screen is displayed with I-SIT STARTED ON LINE xxxx SCANNER xx.

WRAP MODE: Allows you to trace in a wraparound mode or to stop the trace when the buffer is full.

CHECKPOINT: Allows you to record checkpoint entries.

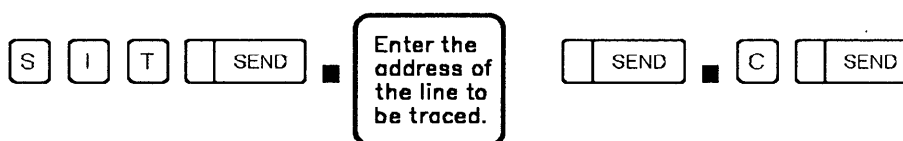
DATA COUNT: Is the size of the data record you want to trace (starting from byte 1).

STOP ON ERROR: Allows you to stop the trace after an error occurs.

SIZE: Is the size of the buffer you want for that trace. The default sizes according to the line speed are 2, 4 or 8KB. If you enter 'Y', the maximum available size will be taken.

Canceling an Internal Trace

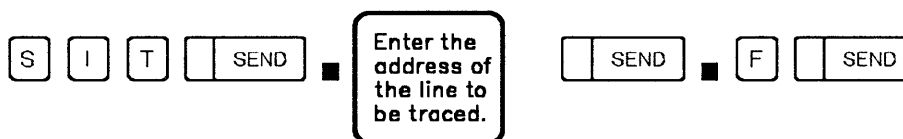
This option allows you to stop an active trace. The buffer is released and no longer available (its content is lost).



The trace will be stopped and the following message displayed: I-SIT CANCELED ON LINE xxxx SCANNER xx.

Freezing an Internal Trace

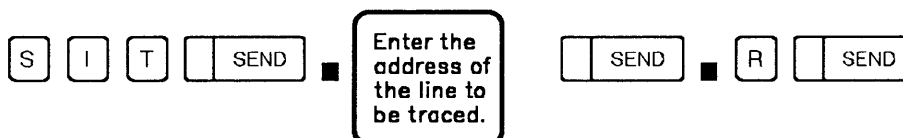
This option allows you to stop a trace temporarily. The buffer in use for that trace is not released, but the events occurring during the freezing time are lost.



The trace will be stopped and the following message displayed: I-SIT FROZEN ON LINE xxxx SCANNER xx.

Resuming an Internal Trace

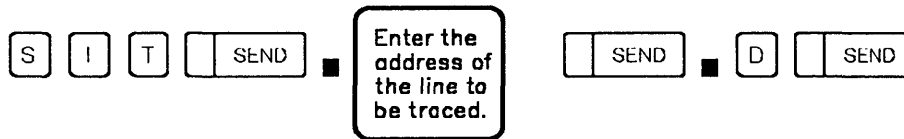
This option allows you to restart a trace stopped previously by a freeze action.



The trace will be restarted and the following message displayed: I-SIT RESUMED ON LINE xxxx SCANNER xx.

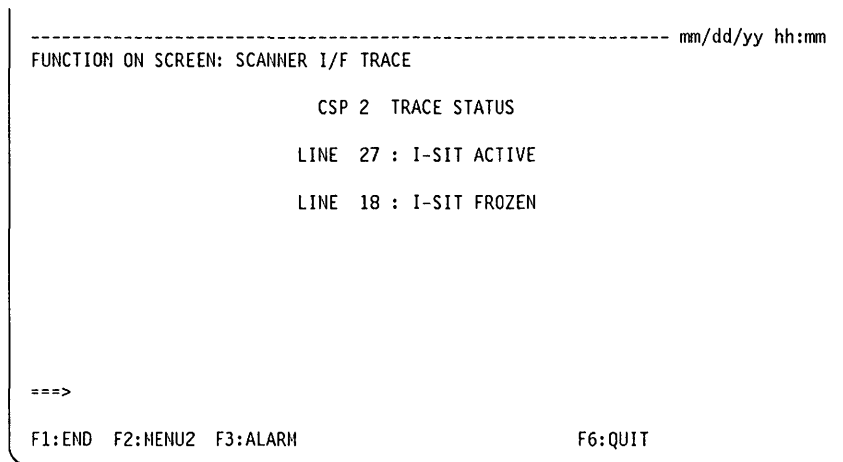
Displaying CSP Status

This option allows you to display the status of the active and frozen I-SIT(s) for a specific scanner.



The following screen will be displayed. The number of lines displayed depends on the number of I-SIT(s) active or frozen. If no SIT is active or frozen, the following message is displayed:

REQUEST IGNORED ON LINE xxxx SCANNER xx: NO I-SIT ACTIVE OR FROZEN.

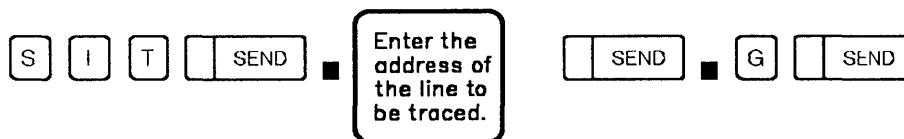


Getting I-SIT Buffer from Scanner

This option allows you to transfer the buffer attached to the selected line to the MOSS storage.

The following message is displayed:

I-SIT AVAILABLE FOR LINE xxxx SCANNER xx.



The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE
- ENTER THE ACTION TO BE PERFORMED (D, E, F) ==>

      D: DISPLAY I-SIT
      E: ERASE I-SIT DISK FILE
      F: FILE I-SIT ONTO DISK

====>

F1:END  F2:MENU2  F3:ALARM                F6:QUIT

```

From the previous screen:

If you press F4, you can:

- Display internal SIT from buffer or disk
- Erase internal SIT file from disk
- Save internal SIT buffer onto disk.

Displaying I-SIT Buffer or File

This option allows you to display the I-SIT in a format similar to the ACF/TAP one.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

If you press F4 before selecting the GET I-SIT BUFFER FROM SCANNER, you will display the I-SIT previously saved on the disk file (if any).

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE
- ENTER B, D TO DISPLAY THE REQUESTED I-SIT ==>

      B: LINE XXXX SCANNER XX I-SIT CONTAINED IN BUFFER
      D: LINE XXXX SCANNER XX I-SIT CONTAINED ON DISK

WARNING: DISPLAYING DISK I-SIT DESTROYS CURRENT BUFFER CONTENTS

====>

F1:END  F2:MENU2  F3:ALARM                F6:QUIT

```


Enter 'B' or 'D', according to what you want to display (buffer or disk), then press SEND.
The Display Event selection screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

DISPLAY I-SIT EVENTS

- ENTER A, I, C, S, P, X, R, E, O,      TO SELECT DISPLAY OPTION ==>
  A: ALL      EVENTS
  I: IOH      EVENTS
  C: CHECKPOINT EVENTS
  S: STATUS   EVENTS
  P: PARAMETER EVENTS
  X: XDATA    EVENTS
  R: RDATA    EVENTS
  E: SCF + SES + LCS :   ENTER HEX VALUE (6 DIGITS) ==>

====>

F1:END  F2:MENU2  F3:ALARM                      F6:QUIT

```

This screen allows you to select the events you want to display. Enter the option chosen, then press SEND.

The meaning of SCF, LCS and SES codes is given on page 22-19.

The Display Hexadecimal Data screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

LINE XXXX SCANNER XX      ENTER T FOR TRANSLATED DATA ==>
                           ENTER L FOLLOWED BY THE DATA TO LOCATE ==>

0001 PARM                  000036001007F59C0B58000004041F0B
0002 STAT SET MODE CMND COMPLETE  44010000C00003030000
0003 PARM                  010036001007F59C0B58000004041F0B
0004 STAT ENABLE  CMND COMPLETE  4402009EC00083830000
0005 IOH SET MODE          22100116
0006 CHKPT                A6B501A0
0007 XDATA                AA3232328244
0008 XDATA                C2C27F7F8344

====>

F1:END  F2:MENU2  F3:ALARM  F4:TOP  F5:BOTTOM  F6:QUIT      F8:FORWARD

```

From the previous screen:

- Enter 'T' then press SEND to display the data in translated form. The next screen is displayed.
- Enter 'L' followed by a string of 2, 4, 6, or 8 hexadecimal digits long to locate a string of hexadecimal data. This option is available only if you entered 'A' (for ALL EVENTS) on the preceding screen.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

LINE XXXX SCANNER XX          ENTER H FOR HEXADECIMAL DATA ==>

0001 PARM                      .....5.....
0002 STAT SET MODE CMND COMPLETE .....
0003 PARM                      .....5.....
0004 STAT ENABLE  CMND COMPLETE .....CC.....
0005 IOH SET MODE              ....
0006 CHKPT                     Y...
0007 XDATA                     ...B.
0008 XDATA                     BB"C.

===>

F1:END  F2:MENU2  F3:ALARM  F4:TOP  F5:BOTTOM  F6:QUIT          F8:FORWARD

```

Erasing I-SIT File

This option allows you to empty the I-SIT file from the disk when it exists.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

The following message will be displayed: DISK FILE IS NOW EMPTY.

Filing I-SIT Buffer onto Disk

This option allows you to file the I-SIT buffer onto the disk.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

If the disk file is empty, the buffer is written onto the disk and I-SIT SAVED ON DISK is displayed.

If the disk file is not empty, you are asked if you want to erase it before filing the buffer.

The following message is displayed:

DISK FILE IS NOT EMPTY, PRESS 'E' BEFORE SAVING.



Chapter 20. TRSS and ESS Interface Displays (TID/EID)

TRSS Interface Display (TID)

The token-ring subsystem (TRSS) allows connection to an IBM Token-Ring Network that uses the token-ring protocol. The TRSS in the 3745 is controlled by the NCP Token-Ring Interconnection (NTRI) function of NCP.

The hardware is based on a processor-driven card called the token-ring interface coupler (TIC) card, and on the token-ring multiplexer (TRM) card. The combination of a TRM and the associated TICs (up to two) is called a token-ring adapter (TRA). The combination of all the TRAs in the 3745 is called the TRSS. One token-ring network can be accessed by each TIC card.

Use the TID function to display information on the status and activity of a selected TIC. In addition, a function is provided that will allow an 'activate link' command to be performed at the host.

T I D SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TRSS INTERF DSPLY
                    TRA/TIC SELECT
- ENTER A DECIMAL LINE ADDRESS (1088 TO 1095) ==>

                    TRA#  LINE ADDRESS  TIC  CCU
                    1     1088 1089   YY  A
                    5     1092 1093   YY  B

- TYPE "A" TO ALLOW "ACTIVATE LINK" COMMAND ==>

====>
F1:END  F2:MENU2  F3:ALARM

```

The table containing the installed TRAs, TICs, corresponding line addresses and CCU will be filled in according to the configuration of the machine.

Allow Activate Link

The Allow Activate Link function is needed if:

1. An automatic TIC dump is requested by NTRI which causes the Activate Link (from the host) to be inhibited.
2. Before the automatic dump is completed, the MOSS goes down or is unable to complete the dump and does not re-enable the activate link.

To perform the Allow Activate Link function, enter the line number and an "A" in the space provided.

Successful completion of this function will allow the host operator to activate the token-ring network.

Token-Ring Interconnection Function

If you enter a valid line address, the following screen is displayed:

```

TRA 1 CONNECT      TIC 1 DISABLED A
-----
FUNCTION ON SCREEN: TRSS INTERF DSPLY
                    TOKEN-RING INTERCONNECTION
                    mm/dd/yy hh:mm

B  NODE ADDR:      xxxxxxxxxxxx  RING STATUS:
    GROUP ADDRESS:   xxxxxxxxxx  SIGNAL LOSS:
    FUNCTIONAL ADDR: xxxxxxxxxx  HARD ERROR:   ON  F
                                         SOFT ERROR:   ON  F
                                         TRANSMIT BEACON: ON  F
                                         LOBE WIRE FAULT: F

    IR: C
    BR:

    OPERATING SPEED: D
                                         AUTO REMOVAL ERROR 1: ON F
                                         REMOVE RECEIVED:  ON F
                                         COUNTER OVERFLOW:  ON F
                                         SINGLE STATION:   ON  F
                                         RING RECOVERY:
INITIALIZATION ERROR 11:  DMA BUS ERROR E
====>
F1:END  F2:MENU2  F3:ALARM      F5:REFRESH  F6:SELECT

```

- A** The machine status area (MSA) 4th line (for CCU-A) and 7th line (for CCU-B) contains the following information:
- TRA #
 - TRA mode (connect, disconnect, or unknown)
 - TIC ID (1-2)
 - TIC mode (idle, reset, initialized, open, closed, frozen or disabled).

Refer to "MSA Fields Definition (Token-Ring/TIC Information)" on page B-12 for detailed information.

- B** Node, group, and functional addresses of the token-ring (in hex). This is obtained from the TIC OPEN block (from NCP token-ring interconnection, NTRI).
- C** TRM activity information: A display of the IR and BR bits of the selected TRA and TIC (ON or blank). The IR bit indicates that an interrupt is pending from the selected TIC. The BR bit indicates that a data transfer request from the direct memory access (DMA) is pending for the TIC.
- D** Token-ring operating speed: 4 or 16 Mbps.
- E** A message indicating an error condition of the selected TIC, if one exists.

See the *3745 Problem Determination Guide* for the TID error messages and their descriptions.

- F** Token-Ring Status: Selected bits from the token-ring status block (from NTRI). The indicators are either ON or blank.

See the *3745 Problem Determination Guide* for the description of status indicators that are ON.

ESS Interface Display (EID)

Use the Ethernet** Interface Display (EID) function to display information on the basic characteristics of an ESS line (parameters) and, if the line is active, the flow characteristics (counters).

E I D SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

- ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....

==> ...
F1:END F2:MENU2 F3:ALARM

```

Displaying Line Parameters

If you enter a valid line address (1056 - 1071), and then press SEND, the parameters screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

- ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....

LINE xxxx xx IN ADAPTER x

ADAPTER TYPE : ESS
ESS UNIVERSALLY ADMINISTERED ADDRESS : xxxxxxxxxxxx
ESS LOCALLY ADMINISTERED ADDRESS : xxxxxxxxxxxx
ESS CURRENT ADDRESS : xxxxxxxxxxxx

COUNTER LIMIT FOR ALL OPERATIONS (HEX VALUE) : xxxxxxxx
COUNTER LIMIT FOR UNSUCCESSFUL OPERATIONS (HEX VALUE) : xxxxxxxx

====> ...
F1:END F2:MENU2 F3:ALARM F5:REFRESH F7:COUNTERS

```

Which shows the line parameters of the line address entered:

Adapter Type ESS

Universally Administered Address 6 bytes in hexadecimal form. This is the address assigned to the on the EAC card at time of manufacture. It can be displayed even when the line is not activated.

Locally Administered Address 6 bytes in hexadecimal form. If available, this address is provided by the control program sysgen. It is valid only when the line is activated.

Current Address 6 bytes in hexadecimal form. This shows the address currently used by the ESS, as specified in the control program sysgen.

Counters Limit 4 bytes in hexadecimal form. The limits are specified by the control program sysgen.

You may enter a new line address at the top of the screen, and the characteristics of that line will be displayed.

Pressing F7 will display the counters data for the line displayed.

Displaying Counters Data

The counters data for a given line can only be displayed by selecting F7 from the parameters screen. The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

- ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....

LINE xxxx xx IN ADAPTER x LINE ACTIVATED
CURRENT COUNTERS : EXCESS COLLISION (XMIT) : xxxxxxxx
                   TIME DOMAIN REFLECT. (XMIT) : xxxxxxxx
                   LATE COLLISION (XMIT) : xxxxxxxx
-----
TOTAL XMIT FRAMES LOST : xxxxxxxx NO BUFFER AVAILABLE (RCV) : xxxxxxxx
TOTAL RCVD FRAMES LOST : xxxxxxxx CRC ERROR (RCV) : xxxxxxxx
TOTAL XMIT FRAMES : xxxxxxxx FRAMING ERROR (RCV) : xxxxxxxx
TOTAL RCVD FRAMES : xxxxxxxx FRAME > 1518 BYTES (RCV) : xxxxxxxx
                   DEFERRED (XMIT) : xxxxxxxx
                   ONE RETRY (XMIT) : xxxxxxxx
                   MORE THAN ONE RETRY (XMIT) : xxxxxxxx

==> ...
F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS
    
```

From the previous screen

- To display the line parameters of this line, press F6.
- To display the line parameters of another line, enter the line number and press SEND.
- To display counter information of a line other than that displayed, enter the line number and press SEND, then press F7.

- Total XMIT Frames Lost** The total of the Excess Collision and Late Collision counters.
- Total RCVD Frames Lost** The total of the No Buffer Available, CRC Error, Framing Error and Frame > 1518 counters.
- Total XMIT Frames** The total transmitted frames, including the Total XMIT Frames Lost.

| | |
|----------------------------------|--|
| Total RCVD Frames | The total received frames, including the Total RCVD Frames Lost. |
| Excessive Collisions | This counter is incremented when a frame cannot be transmitted after 16 attempts because of collisions on the medium. |
| Time Domain Reflectometry | Associated with the Excessive Collisions counter, this is a 10-bit counter that starts when the transmission of a frame commences and counts until a collision is detected. When the apparent collision is a result of a fault on the medium, the Time Domain Reflect. gives twice the propagation time between the ESS and the fault, in units of 0.1 microseconds. |
| Late Collisions | The number of collision errors that occurred when a transmit frame was lost because the collision took place after the maximum time that should be required to detect a collision. |
| No Buffer Available | The number of receive congestion errors which occurred when the adapter was unable to receive a frame because its buffers were full. |
| CRC Error | The number of errors which occurred when a receive frame was discarded due to a problem detected by the cyclic redundancy check. |
| Framing Error | The number of errors due to a received frame not ending on a byte boundary. |
| Frame > 1518 Bytes | The number of errors that occurred when a receive frame was longer than the maximum allowed frame size for the media. |
| Deferred | This counter is incremented when the transmission of a frame is deferred because carrier was sensed on the media. |
| Retry | The number of frames that required one retry in order to complete successfully. |
| More Than One Retry | The number of frames that required more than one (2-16) retry attempt in order to complete successfully. |



Chapter 21. Time Services (TIM)

Use the TIM function to deal with the date and time, and the scheduled power-on, as explained in the following table.

| TIM Options | Go to page |
|---|------------|
| Set or modify the date and time | 21-2 |
| Set scheduled power-on day and time | 21-3 |
| Activate or deactivate the scheduled power-on | 21-3 |
| Display the scheduled power-on data | 21-3 |

A screenshot of a terminal window showing a date and time field. The field is represented by a dashed line followed by the text "mm/dd/yy hh:mm". A black arrow points from the text "date and time" to the right of the field. Below the field, there is a small "==" prompt.

T I M SEND

The following screen is displayed.

A screenshot of a terminal window showing the main menu for the TIM function. The screen displays the following text:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES
- SELECT ONE OPTION (1 OR 2), THEN PRESS SEND ==>
  1 = SET/MODIFY DATE AND/OR TIME
  2 = DISPLAY/UPDATE 'SCHEDULED POWER-ON' DATA

====>
F1:END          F3:ALARM
  
```

Setting or Modifying the Date and Time

Use this option to set or modify the date and time.

T I M SEND 1 SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES
- FILL IN APPROPRIATE FIELDS, THEN PRESS SEND

DATE (MM/DD/YY) ==>
TIME (HH:MM) ==>
DAY (1 TO 7) ==>

1= SUNDAY, 2= MONDAY, 3= TUESDAY, 4= WEDNESDAY
5= THURSDAY, 6= FRIDAY, 7= SATURDAY
====>

F1:END          F3:ALARM          F6:QUIT
  
```

From the previous screen you may:

- Set or modify the date. Separate month, day and year by a slash (/). Example: 11/23/89.
- Set or modify the time. Separate hours and minutes by a colon(:). Example: 08:45.
- Indicate what day of the week is the day you entered in the date field. Example: the 23rd of November 1989 is a Thursday, enter 5.
- Press SEND.

Displaying or Updating the Scheduled Power-On Data

Use this option to set the scheduled power-on (that is, to indicate the days and times), and to activate or deactivate the scheduled power-on option.

T I M SEND ■ 2 SEND

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES
                    SCHEDULED POWER-ON DATA
- FILL IN, MODIFY, OR BLANK APPROPRIATE FIELDS, THEN PRESS SEND

SUNDAY      (HH:MM)  ==>
MONDAY      (HH:MM)  ==>
TUESDAY     (HH:MM)  ==>
WEDNESDAY   (HH:MM)  ==>
THURSDAY    (HH:MM)  ==>
FRIDAY      (HH:MM)  ==>
SATURDAY    (HH:MM)  ==>

SCHEDULING ACTIVE (Y=YES, N=NO) ==>

==>

F1:END          F3:ALARM          F6:QUIT
  
```

From the previous screen you may:

- Set the time by entering the hours and the minutes separated by a colon (:) or blank out old information.
- Enter Y to activate the scheduling function or N to deactivate it. (If you do not have any hours to schedule, enter N.)
- Press SEND.
- **Do not forget** to set POWER CONTROL = 2 on the control panel of the 3745. This will enable:
 - The scheduled power-ON
 - An automatic restart of the 3745 if the AC power is lost then restored.

Refer to the *3745 Basic Operations Guide*.



Chapter 22. Wrap Test (WTT)

The wrap test function is a problem determination aid for communication problems. It loops known data patterns back to the transmission source at defined points in the transmission path, then compares the received data pattern with the transmission pattern to isolate the faulty area.

References are made to *default* patterns and *personal* patterns. These are described in Appendix C.

- The term *modem* refers to IBM 58xx, 78xx, or other modems that activate (when in test/loop mode) in response to 'data set ready' (DSR) or other interface signals as indicated in the CCITT V.54 recommendations.
- The term *cable* refers to NTT cables or other cables that have NTT-like wrap capabilities.

Two types of test may be made for the tailgate and modem:

- The data wrap test (see "Data Wrap Test Pattern Selection" on page 22-14)
- The control lead wrap test (see "Control Lead Wrap Test Pattern Selection" on page 22-15).

On some modems, other wrap tests, such as local analog wrap and remote digital wrap, are possible:

- Using the NetView* program installed
- At the modem level: Consult your modem documentation.

TSS Lines

The wrap can be made at three points:

1. **Inside the LIC.** This tests the communication path up to and including a large part of the addressed LIC.
2. **At the LIC tailgate.** This tests the whole of the LIC. You must physically replace the cable by a LIC wrap plug or a wrap cable. For **NTT cables only** (LIC types 1 to 4 only), a wrap plug is not used. Instead, turn the switch to the TEST position.
3. **Inside the modem (local loop-back).** This is possible with all modems corresponding to the V.24 interface using pin 18 as a 'Test' lead to cause a local loop-back ('Loop 3' in the V.54 recommendation).

HPTSS Lines

The wrap can be made at four points:

1. **Inside the high-speed scanner (HSS).** This tests the internal circuitry of the HSS.
2. **At the HSS tailgate.** This tests the whole HSS and communication path up to the tailgate. You must physically replace the cable by a HSS wrap plug.
3. **Inside the local modem (local loop-back).** This applies only to an HSS with the network channel terminal equipment (NCTE)/EIA-547 and X.21 interfaces. It tests the HSS and the communication path up to the local modem or NCTE.
4. **Inside the remote modem (remote loop-back).** This applies only to an HSS with the NCTE/EIA-547 and X.21 interfaces. It tests the HSS and the communication path up to the remote modem or NCTE.

Wrap Plug Identification

Refer to appendixes of *Problem Determination Guide*.

Wrap Test Requirements

Before you initialize a wrap test:

- NCP must be loaded and running.
- MOSS must be online (MOSS-ONLINE is displayed in the machine status area). The machine status area (MSA) is described in Appendix B.
- The CCU control program must be running (PROCESS and RUN are displayed in the machine status area).
- The scanner involved by the wrap test must be loaded. (To IML the scanner, refer to IMS function on page 8-2.)
- The configuration data file must have been updated after any hardware configuration change, for example, a cable change. Refer to MOSS CDF function in Chapter 3.
- The line must have been defined at control program generation time.

Ask the host operator to deactivate the line that you want to test.

Warning

1. When an automatic LIC wrap test is performed, all lines of the LIC must be deactivated.
2. Considering the load of a scanner, **a wrap test cannot be run on one line if the total weight of the other activated lines of this scanner is already 100%**. (For instance, on a low speed scanner, if only one line is activated for a 256 kbps transmission speed, the wrap test will not work on any other line of this scanner.) Refer to the *Connection and Integration Guide* for the line weight calculation.
3. You cannot initialize the wrap test function on a line that is being traced (line trace function) or tested (line test function).
4. When using an autocal unit:
 - Under NCP, wrap tests are not supported on the dialing line.
 - Under EP, you must select the control leads wrap type.
5. Before you start a tailgate wrap test, get the wrap plug from the installation coordinator.
For identification of LICs and wrap plugs, refer to the appendix of the *3745 Problem Determination Guide*.

LIC-Level Wrap (LIC1 to LIC4)

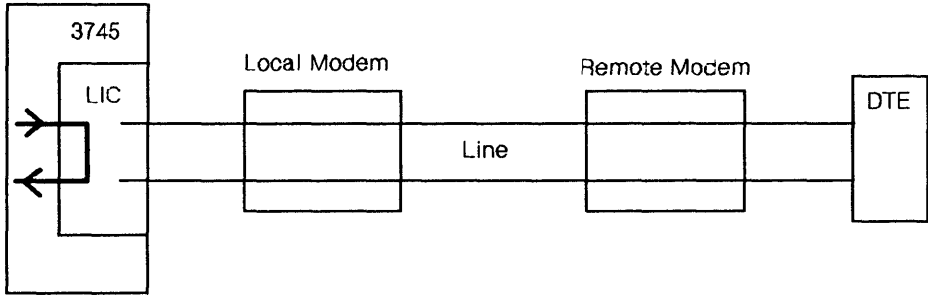


Figure 22-1. LIC-Level Wrap (LIC1 to LIC4)

This tests the LIC internally, whether or not a cable or LIC wrap plug is present. The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

LIC-Level Wrap (LIC5 or LIC6)

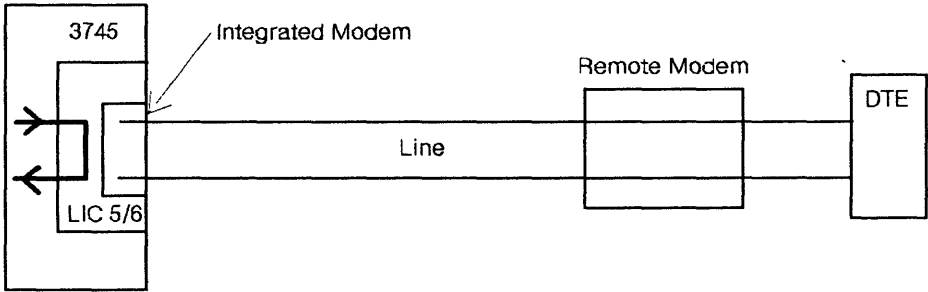


Figure 22-2. LIC-Level Wrap (LIC5 or LIC6)

This tests the LIC internally but does not test the integrated modem. The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

Tailgate Level Wrap (LIC1 to LIC4)

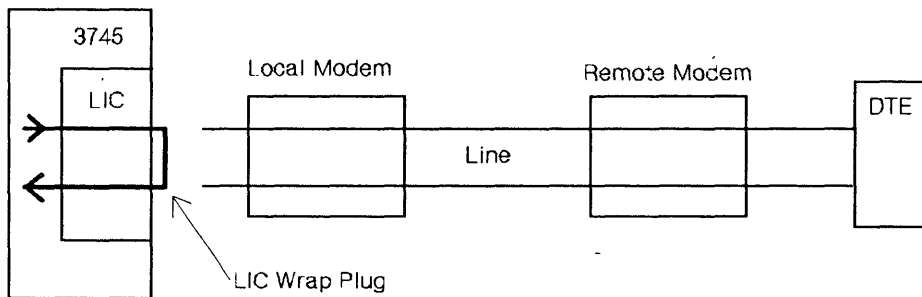


Figure 22-3. Tailgate Level Wrap (LIC1 to LIC4)

Wrap Plug Identification

Refer to appendixes of *Problem Determination Guide*.

A LIC wrap plug must be inserted into the position being tested in place of the cable to the DCE. The 3745 transmits a defined pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may use the LIC default patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

Tailgate Level Wrap (LIC5 or LIC6)

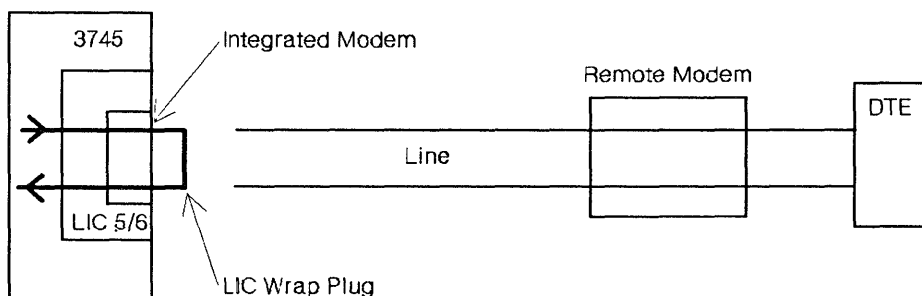


Figure 22-4. Tailgate Level Wrap (LIC5 or LIC6)

Wrap Plug Identification

Refer to appendixes of *Problem Determination Guide*.

A LIC wrap plug must be inserted either at the LIC or at the end of the cable. The 3745 transmits a defined pattern and verifies that the pattern is wrapped back correctly. The 3745 detects any discrepancy. You may use the LIC default patterns or create your own.

Note: It is invalid to run the tailgate wrap test with the 'CONTROL LEADS' option selected.

Warning

When unplugging the LIC cable to insert the wrap plug, unplug the LIC cable first from the telephone company end then from the LIC tailgate. When the wrap test is completed, plug the LIC cable at the LIC tailgate first.

NTT Cable-Level Wrap (LIC1 to LIC4)

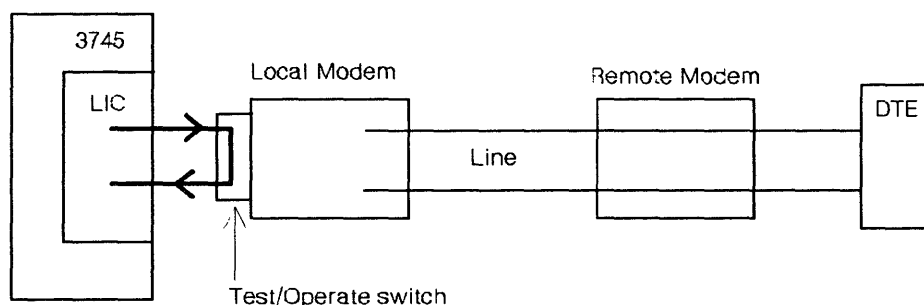


Figure 22-5. NTT Cable-Level Wrap (LIC1 to LIC4)

Using the NTT cable level wrap, the 3745 can verify the path up to, and including, the cable end. To perform the NTT cable level wrap, turn the Test/Operate switch to TEST. The switch is part of the cable.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined control lead pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may create your own control lead patterns.

Modem-Level Wrap (LIC1 to LIC4)

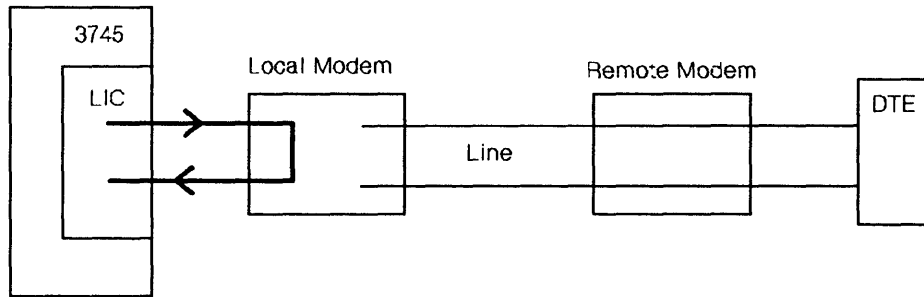


Figure 22-6. Local Modem Wrap Test (LIC1 to LIC4)

The modem-level wrap on the 3745 can verify the path after the cable end and within the modem.

Note: The remote modem wrap test is not applicable to a multipoint configuration.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined pattern on the control leads to the modem. The modem is controlled by these control leads and always reacts the same way to a given configuration of the control leads. The modem wraps the transmitted pattern back to the 3745 in order to determine the status of the modem (the modem may not react to invalid configurations of the transmitted control leads). The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

A modem-level control lead default pattern is provided only for the IBM 386x modems. The manner in which other modems wrap the control leads cannot be determined. Therefore, no default control lead patterns are provided for modems other than the IBM 386x modems. You must create your own control lead wrap patterns.

Note: Control lead default patterns are not valid for modem level wrap tests through a NTT cable.

Modem-Level Wrap (LIC5 or LIC6)

The modem level wrap on the 3745 can verify the path to the output of the integrated modem and the path after the cable end and within the remote modem.

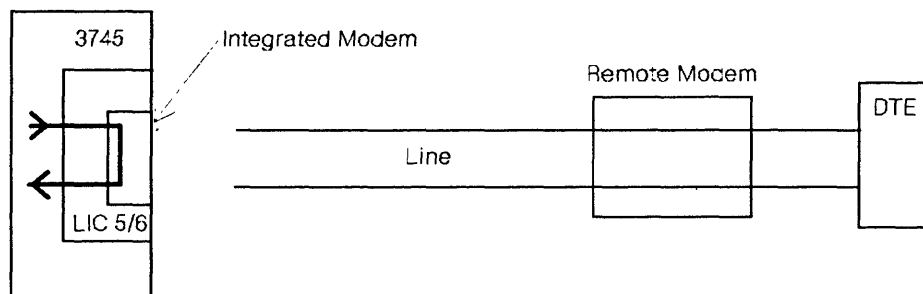


Figure 22-7. LIC-Internal Modem Wrap (LIC5 or LIC6)

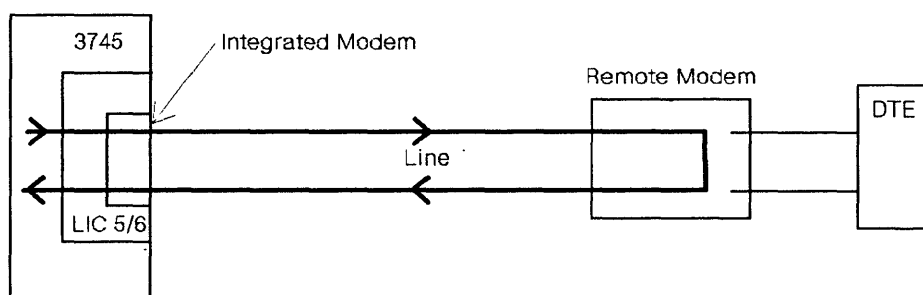


Figure 22-8. Remote Modem Wrap Test (LIC5 or LIC6)

Note: The remote modem wrap test is not applicable to a multipoint configuration.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined pattern on the control leads to the modem. The modem is controlled by these control leads and always reacts the same way to a given configuration of the control leads. The modem wraps the transmitted pattern back to the 3745 in order to determine the status of the modem (the modem may not react to invalid configurations of the transmitted control leads). The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

In addition, during a control lead wrap test, a self-test is started and the result, pass or fail, is returned in the least significant digit position of the received test pattern (1 = pass, 0 = fail).

Internal-Level Wrap (HSS)

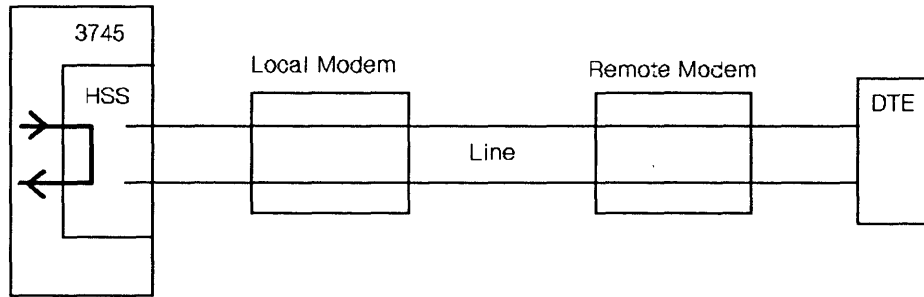


Figure 22-9. Internal-Level Wrap (HSS)

This tests the HSS internally, whether or not a cable or wrap plug is present. This test verifies the operation of the HSS with a V.35 or X.21 interface.

Data Wrap Test

The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

Control Lead Wrap Test

The 3745 transmits a defined pattern on the output control leads and verifies that the correct input control lead patterns are received. The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

Defaults control lead patterns are provided for X.21 and V.35 lines.

Tailgate Level Wrap (HSS)

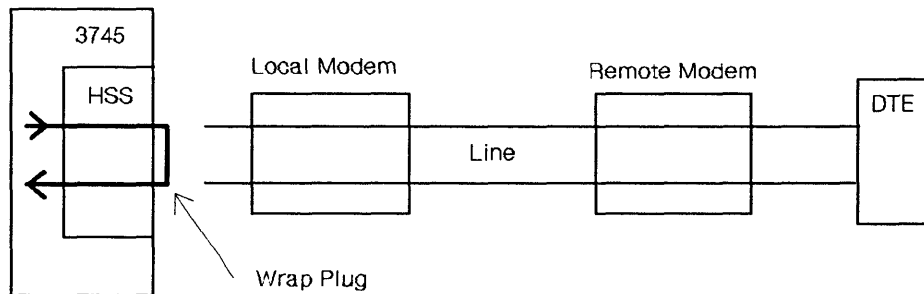


Figure 22-10. Tailgate Level Wrap (HSS)

Wrap Plug Identification

Refer to appendixes of *Problem Determination Guide*.

The tailgate level wrap test can be performed on an HSS with a V.35 or X.21 interface.

A wrap plug must be inserted into the position being tested in place of the cable to the DCE.

Data Wrap Test

The 3745 transmits a defined pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may use the default patterns or create your own.

Control Lead Wrap Test

The 3745 transmits a defined pattern on the output control leads and verifies that the correct input control lead patterns are received. The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

Defaults control lead patterns are provided for X.21 and V.35 lines.

Modem-Level Wrap (HSS)

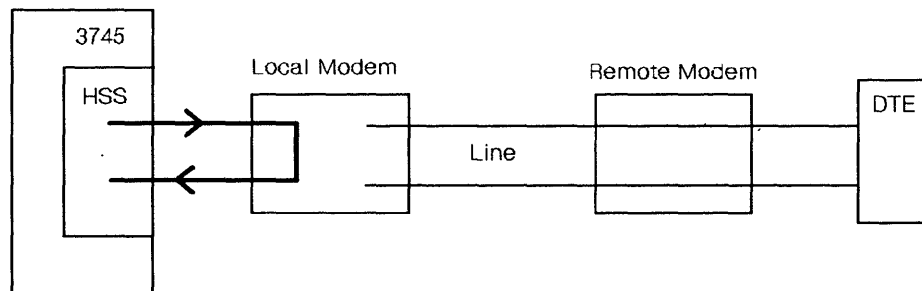


Figure 22-11. Local Modem Wrap Test (HSS)

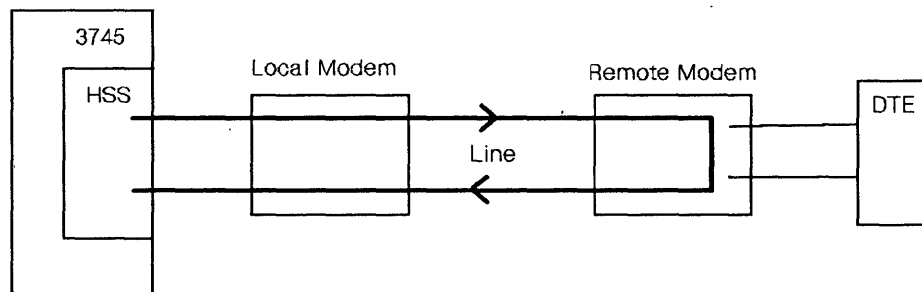


Figure 22-12. Remote Modem Wrap Test (HSS)

The modem-level wrap on the 3745 can verify the communication path from inside the HSS through the cable and within the local or remote network channel terminal equipment (NCTE).

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, HDLC data frame level).

There are two types of modem-level wraps possible on the HPTSS. One type is for the NCTE/EIA-547 or X.21 interfaces and the second is for the V.35 interface.

Data Wrap Test on NCTE/EIA-547 or X.21 interface: The data wrap test is controlled by the 3745 by supplying the modem with specific data patterns that set them into either local or remote loop-back. Once the 3745 verifies the loop-back state, the data wrap is performed. These wraps are selected on the wrap test initialization screen by WRAP LEVEL 1 or 5.

Data Wrap Test on V.35 Modems: It is possible to test a line up to the local or remote V.35 modem by using one of the following procedures:

- Local V.35 modem (Figure 22-11 on page 22-9)
 1. Put the local V.35 modem into **loop test 3** mode by setting the appropriate switch on the modem.
 2. On the wrap test initialization screen (page 22-13) select:
 - WRAP TYPE 1 (data)
 - WRAP LEVEL 4 (tailgate).
- Remote V.35 modem (Figure 22-12 on page 22-9)
 1. Put the remote V.35 modem into **loop test 4** mode by setting the appropriate switch on the modem.
 2. On the wrap test initialization screen (page 22-13) select:
 - WRAP TYPE 1 (data)
 - WRAP LEVEL 4 (tailgate).

Control Lead Wrap Test

The control leads option is not valid when selecting the modem-level wrap test on an HPTSS line.

Starting Wrap Tests

W T T SEND

The Wrap Test Initial Selection screen is displayed:

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
      WRAP TEST INITIAL SELECTION

- SELECT ONE OPTION (1,2) ==>

    1 = AUTOMATIC WRAP TEST ON LIC UNIT
    2 = WRAP TEST AT ANY LEVEL

THEN PRESS SEND
====>

F1:END F2:MENU2 F3:ALARM
```

From the previous screen you may:

- Enter 1 to display the Automatic Wrap Test on LIC Unit screen.
- Enter 2 to display the Wrap Test Initialization screen. From this screen, you may start a test of a TSS or HPTSS line at the various possible wrap levels.

| WTT Options | Go to page |
|--|------------|
| Automatic Wrap Test on LIC | 22-12 |
| Non-Automatic Wrap Test: <ul style="list-style-type: none"> • Local Modem • Remote Modem • NTT Cable • LIC • Tailgate • Internal | 22-13 |

Automatic Wrap Test on LIC

W T T SEND ■ 1 SEND

1. Have all the lines of the LIC deactivated from the host.
2. Enter the address of the line you want to test.
3. Press SEND to start the wrap test.
4. After about 30 seconds, the wrap test ends, and one of the following messages is displayed:

WRAP TEST COMPLETED, THE LIC IS FAULTY.

WRAP TEST COMPLETED, THE LIC IS OK.

Non-Automatic Wrap Tests

Have the line you want to test deactivated from the host before starting.

W T T SEND ■ 2 SEND

The following screen is displayed.

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
WRAP TEST INITIALIZATION

- ENTER LINE ADDRESS (TSS: 0-895 HPTSS: 1024-1039) ==> A

- ENTER WRAP TYPE (1 or 2) ==> B
  1 = DATA
  2 = CONTROL LEADS

- ENTER WRAP LEVEL (1 TO 6) ==> C
  1 = LOCAL MODEM          4 = TAILGATE
  2 = NTT CABLE (TSS ONLY) 5 = REMOTE MODEM (HPTSS & DATA WRAP ONLY)
  3 = LIC (TSS & DATA WRAP ONLY) 6 = INTERNAL (HPTSS ONLY)
  LINE(S) TO BE TESTED MUST BE DISABLED/DEACTIVATED

==>
F1:END F2:MENU2 F3:ALARM F4:INITIAL SELECTION
```

To initialize the wrap test:

1. Deactivate, from the host, the line that you want to test.
2. Enter the line address you want to test at **A**.
3. Select the required option at **B**.

Note: The control leads option is not valid when requesting:

- a. Any wrap level for a TSS line connected to a LIC type 3.
- b. The local and remote modem wrap levels for an HPTSS line.

4. Select a wrap level at **C**, options 1 to 6.

Note: For HPTSS, the local and remote modem options are valid for lines operating with the NCTE/EIA-547 and X.21 interfaces only.

5. Press SEND to display the Wrap Test Pattern Selection screen.

From the previous screen:

If you select on line **B**:

- **Option 1:** Go in sequence.
- **Option 2:** Go to page 22-15

Data Wrap Test Pattern Selection

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP PATTERN SELECTION

LINE ADDRESS: 2      TYPE: DATA      LEVEL: LIC
LCD C: BSC EBCDIC   CNTRL PGM: NCP    LIC TYPE: 3

- TEST IN TRANSPARENT MODE (Y,N) ==> B
- EIB OR ITB MODE (Y,N)           ==> C

- SELECT ONE OPTION (1 TO 3)      ==> D
  1 = USE DEFAULT PATTERN
  2 = DISPLAY DEFAULT PATTERN
  3 = CREATE PERSONAL PATTERN

===>

F1:END  F2:MENU2  F3:ALARM  F5:CANCEL

```

From the previous screen:

If you select on line **D**:

- **Option 1:** Go to "Running Wrap Test" on page 22-16.
- **Option 2:** Go to "Default Patterns" on page C-1.
- **Option 3:** Go to "Personal Patterns" on page C-2.

LCD has been defined at control program generation. This code means:

3 = autocal C = BSC EBCDIC
 4 = start-stop 9/7 D = BSC ASCII
 6 = start-stop 10/8 E = BSC ASCII TRSP (transparent - EP only)
 9 = SDLC

B According to the LCD value, one of the following may be displayed:

- TEST IN TRANSPARENT MODE (Y,N) ==> To choose between transparent mode and non-transparent mode, when both modes are possible (in transparent mode, control characters are considered as data).
- TRANSPARENT MODE IS NOT SUPPORTED if you defined the line in emulation mode or in NCP-ASCII.
- ONLY TRANSPARENT MODE IS SUPPORTED if you defined the line in EP-ASCII (LCD=E).

C In BSC only, EIB or ITB MODE (Y,N) ==> is displayed.

In NCP, if you enter Y, ITBs will be taken as control characters and not as data in your own pattern (there is no ITB in default patterns).

In EP, if the line has been defined in ITB mode at generation, you must enter Y, otherwise enter N.

Control Lead Wrap Test Pattern Selection

If there is a default pattern available, the following screen is displayed after you have initialized a control lead wrap test:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP PATTERN SELECTION

LINE ADDRESS: 0      TYPE: CNTRL      LEVEL: MODEM
LCD 9: SDLC         CNTRL PGM: NCP    LIC TYPE: 3

                                E

- SELECT ONE OPTION (1 TO 3)  ==> D
  1 = USE DEFAULT PATTERN
  2 = DISPLAY DEFAULT PATTERN
  3 = CREATE PERSONAL PATTERN

====>

F1:END  F2:MENU2  F3:ALARM  F5:CANCEL

```

From the previous screen:

- If you select, on line **D**:
 - **Option 1:** Go to “Running Wrap Test” on page 22-16.
 - **Option 2:** Go to “Default Patterns” on page C-1.
 - **Option 3:** Go to “Personal Patterns” on page C-2.
- Press SEND.

Specific modem or cable information is displayed on line **E**.

For LCD meaning, go to Data Wrap Test Pattern Selection screen, page 22-14.

If there is no default pattern for the line that you selected, you have to create your own. The following screen is displayed:

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP PATTERN SELECTION

LINE ADDRESS: 0      TYPE: CNTRL      LEVEL: LOCAL MODEM
LCD 9 : SDLC         CNTRL PGM: NCP    LIC TYPE: 3

NO DEFAULT PATTERN

- PRESS SEND TO CREATE YOUR PERSONAL PATTERN

====>

F1:END  F2:MENU2  F3:ALARM  F5:CANCEL

```

From the previous screen:

When you press SEND, you are prompted to create your personal pattern. Go to "Personal Patterns" on page C-2.

Running Wrap Test

After you have selected to use the default pattern or after you have created your own pattern, the following screen is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP TEST START

LINE ADDRESS: 0      TYPE: CNTRL   LEVEL : LOCAL MODEM
LCD 9 : SDLC        CNTRL PGM: NCP   LIC TYPE: 3

- ENTER NUMBER OF WRAPS (1-255) OR P ==>
  P = PERMANENT WRAP

- SELECT APPROPRIATE TEST ON THE MODEM
  THEN PRESS SEND TO START THE WRAP

===>

F1:END F2:MENU2 F3:ALARM F5:CANCEL

```

From the previous screen:

Specify the number of wraps, then, if the wrap level **LEVEL:** is:

- LIC: Press SEND.
- LIC tailgate or HPTSS tailgate: Plug in the wrap plug or cable at the tailgate. Press SEND.
- NTT Cable: Set the Test switch on the cable to TEST. Press SEND.
- Modem: On IBM 386x modems, switch to the local loop-back test position (loop 3) or to the remote loop-back test position (loop 2).
On other modems, switch to the appropriate test position. Press SEND to start the wrap.

Note: In order to test a LIC type 3, it is necessary to reverse the LIC 3 wrap cable after the first test pass, then run the test again.

Wrap Test in Progress

The following screen is displayed:

- Once you have entered the number of wraps and pressed SEND, (from the preceding WRAP TEST START screen).

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                   WRAP TEST IN PROGRESS

LINE ADDRESS: 0      TYPE: CNTRL   LEVEL: LOCAL MODEM
LCD 9 : SDLC        CNTRL PGH: NCP   LIC TYPE: 3

- PRESS BREAK IF YOU WANT TO STOP WRAP

===>

F1:END  F2:MENU2  F3:ALARM
```

From the previous screen:

To stop the wrap before the end, press BREAK. This is the only way you can stop the wrap if you selected P = PERMANENT WRAP on the "WRAP TEST START" screen.

If you press BREAK to get control of the operator console, the following two F keys are displayed:

- F4 to return to previous state and continue the wrap test.
- F5 to stop the wrap test and display the Wrap Test Result screen.

Wrap Test Results

When the last wrap is completed or after you have stopped the wrap test, the following result screen is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
WRAP TEST RESULTS

LINE ADDRESS: 0          TYPE: CNTRL   LEVEL: MODEM
LCD 9 : SDLC           CNTRL PGM: NCP   LIC TYPE: 3

NBR OF WRAPS          NBR OF WRAPS          NBR OF WRAPS
TRANSMITTED: 010      RECEIVED: 010         INCORRECT: 010

  F
  G

- PRESS SEND TO DISPLAY FIRST INCORRECT PATTERN H

====> WRAP TEST COMPLETED

F1:END  F2:MENU2  F3:ALARM  F4:TEST INITIALIZATION

```

From the previous screen you may:

- Press SEND to display the first incorrect pattern, if any. Go to page 22-20.
- Press F4 to initialize another wrap test on any line.

F When the scanner detects an error, the following fields are displayed to give specific information on the error:

```

TRANSMIT: SCF=   LCS=   SES=
RECEIVE:  SCF=   LCS=   SES=

```

SCF, LCS and SES codes are explained on page 22-19.

G SCANNER AND/OR LINE TIME OUT is displayed when, for example:

- The wrap facility is not operational (Test/Operate switch not on TEST).
- The scanner does not operate normally.

H Is displayed only when there is an incorrect pattern.

Wrap Test End

The Wrap Test End screen is displayed when:

- The wrap test cannot be initialized. The reason for the abnormal termination is given in a message.
- You have canceled the test by pressing F5.

You may press F4 to initialize another wrap test on any line.

Meaning of SCF, LCS, and SES Codes

| SCF | LCS | SES | Meaning |
|-----|-----|-----|---|
| 4x | 00 | 00 | Buffer request |
| 0y | C0 | 00 | AIO error |
| 0y | C2 | 00 | Adapter interface check |
| 0y | C4 | 00 | Communication scanner error |
| 0y | C6 | 00 | Front-end scanner failing to answer |
| 0y | C8 | 00 | Front-end scanner internal error |
| 0y | CA | 00 | LIC driver check/ICC internal error |
| 0y | CC | 00 | LIC or scanner error |
| 0y | CE | 00 | LIC or ICC interface error |
| 0y | D0 | 00 | No interrupt from front end scanner, or receive text time out |
| 0y | D2 | 00 | Command rejected (wrong interface, invalid command) |
| 0y | D6 | 00 | Front-end scanner error reporting path check |
| 0y | D8 | 00 | Invalid level 2 interrupt |
| 0y | E2 | 00 | CTS dropped |
| 1x | EE | 00 | DSR dropped |
| 1x | F2 | 00 | CTS failed to come up |
| 1x | F4 | 00 | DSR failed to come up |
| 1x | F6 | 00 | No cable installed |
| 1x | F8 | 00 | DSR/CTS failed to drop |
| .x | FA | 00 | X.21 disconnect DCE clear received |
| .x | FB | 00 | X.21 disconnect DCE clear received + time out during clear |
| .x | 80 | 00 | Time out (nothing received) |
| 04 | 86 | 00 | X.21 timeout on proceed to select |
| 04 | 87 | 00 | X.21 timeout on proceed to select + time out during clear |
| .x | 88 | 00 | DLE-EOT disconnect sequence |
| 0x | 8A | 00 | Lost data |
| 04 | 9A | 00 | X.21 CPS error |
| 04 | 9B | 00 | X.21 CPS error + time out during clear |
| .x | E2 | 80 | Modem retrain |
| .x | * | 48 | Bad pad (BSC) |
| .x | * | 40 | Format exception (BSC) |
| 8x | * | 40 | Abort-line idle (SDLC) |
| 8x | * | 00 | Abort (SDLC) |
| .x | * | 10 | CRC check (SDLC or BSC) |
| .x | * | 08 | Flag off boundary (SDLC) |
| .x | * | 02 | DLE error (BSC) |
| .x | * | 01 | Length check (BSC) |
| .x | * | 01 | Early flag (SDLC) |

x = 0: halt or abort
 1: service request
 2: overrun or underrun
 3: modem check
 4: data stored
 5: end of message
 6: data transmitted
 7: receive sequence

y = 0 if NCP or character mode
 y = 4 if EP and normal mode
 * The displayed value is not significant.

Incorrect Data Wrap Pattern

A received pattern is considered as incorrect when it does not match the expected pattern. For the default pattern, the transmit and expected patterns are identical. When a pattern is not received:

- Under EP it is considered as incorrect.
- Under NCP it is considered as correct.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 0      DATA WRAP: INCORRECT PATTERN

EXPD: 33 33 33 33 33 33
RCDV: 22 33 44 55 66 33 44 44

===>

F1:END  F2:MENU2  F3:ALARM  F4:TEST RESULT  F7:BWD  F8:FWD

```

EXPD: Expected pattern.

RCDV: Received pattern.

The cursor shows the first error. The screen that is displayed does not necessarily show the beginning of the pattern but the portion that contains the difference.

To display all the expected and received data, press F8: FWD or F7: BWD.

If there is an incorrect pattern, make sure that it does not result from:

- An incorrect action when setting up the cable or modem for the wrap test.
- A personal pattern incorrectly entered.
- The selection of an inappropriate default pattern.

If it *does* result from one of these actions, restart the wrap test. If it *does not*, contact the service representative responsible for the defective equipment.

Note: When a solid error is detected, a BER (Type 11, ID A2, or B1) is recorded in the BER file, described in Chapter 6, Event Log Display (ELD).

Incorrect Control Lead Pattern

```
----- mn/dd/yy hh:mm  
FUNCTION ON SCREEN: WRAP TEST  
LINE ADDRESS: 0 CONTROL LEAD WRAP: INCORRECT PATTERN  
  
TRANSMITTED PATTERN: 00110000 00010000  
EXPECTED PATTERN: 00010000 00100000  
RECEIVED PATTERN: 00000000 00000000  
  
===>  
  
F1:END F2:MENU2 F3:ALARM F4:TEST RESULT
```

The control lead pattern bit definitions are listed under “Control Lead Bit Definition” on page C-7.



Menu 2 - MOSS Functions

Replace this page by the separator:

"Menu 2 - MOSS Functions"

Replace this page by the separator:

"Menu 2 - MOSS Functions"

Chapter 23. Menu 2 Functions

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Note: To set: **MOSS alone**, go to page 3-3.
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Menu 2 Screens

The following Menu 2 screens contain all the MOSS functions listed in alphabetical order.

Menu 2 Functions for Models 130, 150, and 170

```
----- mm/dd/yy hh:mm  
  
MENU 2  
  
AC/BT PARAMETERS.: ABP  CCU LV3 INTERRUPT: IL3  RESET CCU..... RST  
BYPASS CCU CHECK.: BCK  MOSS OFFLINE..... MOF  SET ADDR COMPARE.: SAC  
BYPASS IOC CHECK.: BIK  MOSS ONLINE..... MON  SET BRANCH TRACE.: SBT  
COND BRANCH TRACE: CBT  RESET ADDR COMP.: RAC  STOP ON CCU CHCK.: SCK  
CA INTERF DISPLAY: CID  RESET BRCH TRACE.: RBT  STOP ON IOC CHECK: SIK  
CCU NORMAL MODE..: CNM  RESET CCU CHECK...: RCK  SET I-STEP.....: SIP  
CCU STATUS.....: CST  RESET CCU/LSSD...: RCL  STOP CCU.....: STP  
DISPLAY/ALTER....: DAL  RESET IOC.....: RIO  START CCU.....: STR  
DATA EXCHANGE....: DEX  RESET I-STEP.....: RIS  
DISPLAY LONG.....: DLO  ENTER OFF TO LOG OFF  
  
====>  
  
F1:END F2:MENU2 F3:ALARM F5:MENU3 F6:RULES
```

Menu 2 Functions for Models 210, 310, 410, and 610

For models 210, 310, 410, and 610, use the CCU Selection and Release (CSR) function to select a CCU. The CCU selected will appear in the MSA.

```
----- mm/dd/yy hh:mm  
  
MENU 2  
  
AC/BT PARAMETERS.: ABP  DISPLAY LONG.....: DLO  RESET IOC(S).....: RIO  
BYPASS CCU CHECK.: BCK  MOSS OFFLINE.....: MOF  RESET I-STEP.....: RIS  
BYPASS IOC CHECK.: BIK  MOSS ONLINE.....: MON  SET ADDR COMPARE.: SAC  
CA INTERF DISPLAY: CID  RESET ADDR COMP.: RAC  SET BRANCH TRACE.: SBT  
CCU LVL3 INTERRUPT: IL3  RESET BRCH TRACE.: RBT  SET I-STEP.....: SIP  
CCU NORMAL MODE..: CNM  RESET CCU.....: RST  START CCU.....: STR  
CCU SEL/RELEASE..: CSR  RESET CCU CHECK...: RCK  STOP CCU.....: STP  
CCU STATUS.....: CST  RESET CCU/LSSD...: RCL  STOP ON CCU CHECK: SCK  
DATA EXCHANGE....: DEX  RESET CCU/LSSD...: RCL  STOP ON IOC CHECK: SIK  
DISPLAY/ALTER....: DAL  ENTER OFF TO LOG OFF  
  
====>  
  
F1:END F2:MENU1 F3:ALARM F5:MENU3 F6:RULES
```

Address Compare and Branch Trace Parameter Display (ABP)

Use the ABP function to display the parameters of the current Address Compare and Branch Trace functions.

[A] [B] [P] [SEND]

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: AC/BT PARAMETERS
ADDRESS COMPARE PARAMETERS      | BRANCH TRACE PARAMETERS
CURRENT VALUES                  | CURRENT VALUES

AC TYPE      = SINGLE           | CCU STOP    = NO
CCU ACTION   = LI-I             | WRAP MODE   = YES
MOSS ACTION  = NO               | STOP ON AC  = NO

ADDRESS 1    = 0907C8           | LOWER LIMIT = 00000
ADDRESS 1    = I                | UPPER LIMIT = 3FFFFFF

ADDRESS 2    =                  | TRACE LEVELS = 1 2 3 4 5
ADDRESS 2    =                  |

====>

F1:END F2:MENU1 F3:ALARM F4:RESTART AC F5:RESTART BT
    
```

From the previous screen you may:

- Press F4: RESTART AC, if there is no active address compare, to start an address compare using the displayed parameters.
- Press F5: RESTART BT, if there is no active branch trace, to start a branch trace using the displayed parameters.

For a description of the displayed values, refer to "Set Address Compare" page 23-16 and "Set Branch Trace" page 23-18.

Bypass CCU Check (BCK)

Use the BCK function to allow the CCU to continue to run when a check condition occurs. This function is immediately performed. MSA field j displays BYPASS-CCU-CHK.

[B] [C] [K] [SEND]

Bypass IOC Check (BIK)

Use the BIK function to let the CCU continue to run when an IOC-detected level-1 interrupt occurs (default). This function is immediately performed. MSA field i displays BYP-IOC-CHK.

[B] [I] [K] [SEND]

Conditional Branch Trace (CBT) Models 130, 150, and 170

Use the CBT function to set a branch trace that will be initiated by the control program. If a branch trace has not been defined, you will be asked to enter the branch trace options (page 23-18).

Channel Adapter Interface Display (CID)

Use the CID function to either enable or disable the channel adapters.

| ----- mm/dd/yy hh:mm | | | | | | |
|----------------------|----------------|-------------|------------------|---------------------|-----------------|-------------|
| CA INTERFACE DISPLAY | | | | | | |
| INTERFACE NUMBER | CHANGE E/D REQ | E/D REQUEST | INTERFACE STATUS | HOST OR SWITCH UNIT | CHANNEL ADDRESS | NSC ADDRESS |
| 1A | | - | - | | | |
| 2A | | - | - | | | |
| 3A | | - | - | | | |
| 4A | | - | - | | | |
| 5A | ==> | E | ENABLED | | | 40 |
| 5B | ==> | D | DISABLED | | | 41 |
| 7A | ==> | D | DISABLED | | | 42 |
| 8A | | - | - | | | |

- TYPE E OR D TO CHANGE THE ENABLE/DISABLE REQUEST, THEN PRESS SEND

F4:MOSS FUNCTIONS F5:UPDATE

From the previous screen:

To enable or disable a channel adapter:

- Press the Tab key until the cursor is at the appropriate CHANGE E/D REQ field.
- Enter E (enable) or D (disable).
- Repeat the procedure if there are several CAs to update, then:
- Press SEND.

The E/D REQUEST field is updated immediately. The INTERFACE STATUS field is updated if the CA is initialized. Otherwise, it is updated at the next IPL.

See following **required conditions to enable or disable a CA interface**.

Press **F5:UPDATE** to update HOST OR SWITCH UNIT and CHANNEL ADDRESS

Press **F8:FORWARD** (for models 210, 310, 410, and 610 only) to continue with the next screen and display the next CAs (9 to 16).

INTERFACE NUMBER: A and B next to the interface number indicate the type of interface.

The CID screen is also displayed immediately when the MOSS is powered on. You can request to *enable* or *disable* a channel interface, which links the channel adapter to the

host. If there is a two-processor switch (TPS), there are two interfaces: A and B. If there is no TPS, there is a single interface: A.

Required conditions to enable a CA interface

- The channel adapter must be physically connected to the host.
Any switching unit between the host and the 3745 must be correctly configured.
- There must be CLDP or NCP/EP running in the CCU.
 - When CLDP is loaded, FF4 is displayed at the control panel.
CLDP allows the enabling of all channel adapters that are defined in the CDF.
Once the loading of NCP starts, CLDP disables all channel adapters, except the one used for loading, until the control is given to NCP.
 - When NCP is loaded, 000 is displayed at the control panel.
NCP allows only the enabling of channel adapters that are defined in NCP.
- You must type E (enable) and press SEND.

Required conditions to disable a CA interface

- The channel adapter must be physically connected to the host.
Any switching unit between the host and the 3745 must be correctly configured.
- You must type D (disable) and press SEND.
 - When only CLDP is loaded, the disabling is immediate.
CLDP allows the disabling of all channel adapters that are defined in the CDF.
 - When NCP is loaded and running, the disabling is under control of the control program. The disabling is immediate as long as no channel operation is in progress.
 - When EP/PEP is loaded and running, the disabling may last several minutes. All lines must be stopped (under EP/PEP control) before the CA interface becomes disabled.

Three asterisks in the E/D REQUEST column, means that MOSS could not save or retrieve the information, because of a disk error. Issue the request again, by entering either E or D.

All enable or disable requests are saved on disk and automatically retransmitted when you perform an IML after a power off.

CCU Normal Mode (CNM)

Use the CNM function to leave instruction step mode and return to normal mode. The following CCU functions are reset and returned to default:

- Bypass IOC check
- Stop on CCU check
- Branch trace
- Address compare.

The function is performed immediately. PROCESS is displayed in field c of the MSA.

CCU Selection/Release (CSR) Models 410 and 610

Use the CCU Select/Release function to select either CCU-A or CCU-B.

The following screen is displayed.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CCU SEL/RELEASE

- SELECT ONE OPTION (1,2,3) ==>

  1 = CCU FUNCTIONS TO BE PERFORMED ON CCU-A
  2 = CCU FUNCTIONS TO BE PERFORMED ON CCU-B
  3 = RELEASE CCU PREVIOUSLY SELECTED IF ANY

====>

F1:END  F2:MENU1  F3:ALARM

```

Once you have selected a particular CCU, you can release it and select the other CCU.

CCU Status (CST)

Use the CST function to display the status of the CCU.

The CCU status is displayed in refresh mode. To stop refreshing, press the BREAK key. The CCU state may be:

RUN: Which indicates that instructions are being executed and data transferred.

WAIT: Which indicates that the CCU control program is in Wait state: No instruction is being performed.

STOP: Which indicates that the CCU is not running.

To stop the refresh, press BREAK. To exit from this function: then .

CCU statuses are documented under field h, in Appendix B.

Display/Alter (DAL)

Use the DAL function to:

- Display CCU storage, local store registers (LSR) and work registers, or
- Alter the CCU data being displayed.

To display input registers, use the Display Long function (page 23-11).



The following Display/Alter Function screen is displayed.

Display

After you have selected the DAL function, select the CCU data that you want to display.

You may display, on the same screen, any or all of the following CCU data:

- 16 bytes of CCU storage. Example: If you enter S1234, 16 bytes are displayed, starting from the byte at address 1234.
- 4 LSRs. Example: If you enter L6, four LSRs are displayed, starting from LSR6.
- 4 work registers. Enter only W to display the first four work registers, then press F8 to display the last four.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY/ALTER
- ENTER:  S FOLLOWED BY STORAGE ADDRESS  ==> W
          L FOLLOWED BY LSR NUMBER
          W (WORK REGISTERS)

S 001234  0000 0010 0000 0010 0000 0010 0010 0010
L 06     1F1BA2 000004 091EA8 000946
W 00     09223E 00000 00BBF2 03FDFF

====>

F1:END  F2:MENU1  F3:ALARM  F4:ALTER  F5:REFRESH  F6:STR  F7:BWD  F8:FWD
  
```

From the previous screen you may:

- Press SEND to re-display the current screen line.
- Press F4 to alter data (see page 23-8).
- Press F5 to refresh data every 500 ms. This allows you to view permanently the updated image of the data that you selected. To cancel the refresh, press BREAK.
- Press F6 to start the CCU without selecting the Start CCU function.
- Enter more CCU data (S, L, or W).

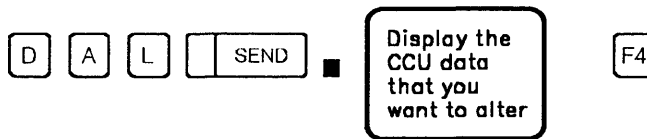
Once a line is displayed, you may display another one. To do so, enter another CCU data request.

Ten lines are available for display on the screen. When the screen is full, it wraps around. The latest displayed line (the current line) is highlighted.

Alter

To alter storage or LSRs, the control program may be either running or stopped, but *when you alter work registers, it must be stopped*. To stop the CCU, use the Stop CCU function (page 23-21).

To alter CCU data



Misuse of the Alter function may give unexpected results.

The addressed line is re-displayed on the line below and on the second line of the work area. The cursor is positioned at the first character that may be modified on that line.

1. Alter the data.
2. Press SEND.

The altered line moves below its original position and the re-displayed line. It becomes the third line of data indicated for that address. The screen is now in display mode.

Note: If you alter data and re-display it while the control program is running, the re-displayed data may not match what you altered. (That is, the system may have altered the data before you re-displayed it.)

Branch Trace Buffer Allocation

The branch trace buffer address and length are provided by the control program after the 3745 initialization. However, if you perform a branch trace before the control program is loaded, you have to allocate the branch trace buffer as follows:

1. Select the DAL function.
2. Enter L7C then press SEND to display the buffer length.
3. Press F4:ALTER.
4. Update LSR X'7C' with the buffer length. The maximum buffer length is X'FFF0'. The last digit of the buffer length must be 0.
5. Update LSR X'7D' with the buffer address + X'18'.
6. Press SEND.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY/ALTER
- ALTER DATA
      00FA00 00C310 00C310 FF000

L 7C  00FA00 00C310 00C310 FF000
L 7C  00FA00 00C310 00C310 FF000

====>  MISUSE OF ALTER MAY GIVE UNEXPECTED RESULTS

F1:END  F2:MENU1  F3:ALARM  F4:ALTER  F5:REFRESH  F6:STR  F7:BWD  F8:FWD

```

From the previous screen you may:

- Alter the data, as indicated in steps 4 and 5.
- Press F4: DISPLAY to cancel the alter request and return to display mode.
- Press F5: REFRESH to refresh data every 500 ms. This allows you to view constantly the updated image of the data selected. To cancel the refresh, press BREAK.
- Press F6: STR to start the CCU without selecting the Start CCU function.
- Press SEND, in alter mode, to re-display the selected CCU data once.
- F7: BWD to display the preceding 16 bytes of storage, four LSRs or four work registers.
- F8: FWD to display the next 16 bytes of storage, four LSRs or four work registers.

Data Exchange (DEX)

Use the DEX function to transfer to the CCU control program the information necessary to select and execute the following NCP functions and subroutines:

- Line test
- Dynamic store
- Display of storage
- Display of register
- Channel discontact
- Address trace
- Channel adapter trace.

See Chapter 24 for information on the NCP functions and subroutines.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DATA EXCHANGE
      DATA ==>          FUNCTION ==>    CCU LVL3 ==>

====>

F1:END  F2:MENU1  F3:ALARM  F4:LATEST DATA EXCHANGE VALUES

```

From the previous screen:

When you have specified DATA, FUNCTION, and CCU LVL3, press SEND. The information is then transmitted and you are prompted another time. When the screen is full, it wraps around.

You may also press F4 to display the contents of the CCU X'71' and X'72' input registers (values of the latest data exchange).

The values that you enter in the data exchange operands (DATA, FUNCTION and CCU LVL3) must not conflict with the control program requirements.

DATA: To provide data to the control program function, you enter a string of up to 6 hexadecimal digits, which is transferred to the CCU via the CCU X'71' input register (operator address/data entry register). For example, the string can be a storage address or a subroutine code.

If you do not enter a value, the last one entered is taken.

FUNCTION: To call the control program function to be performed. The function code is a decimal value from 1 through 16. This code is transferred to the CCU via the CCU X'72' input register (operator display/function select register).

The value 11 indicates that a storage address is being transferred. Letter S may be substituted for the value 11. In a similar manner, value 12 and letter R can be used to indicate a register address.

If you do not enter a value, the last one entered is taken.

CCU LVL3

Y: An Operator Level 3 Interrupt is requested to signal to the control program that the function specified in FUNCTION == > is to be performed.

N: An Operator Level 3 Interrupt is not requested and the function specified in FUNCTION == > will not be performed.

CCU LVL3 Default Value: When you use the data exchange function for the first time, the default value is Y; then it is replaced by the value that you entered in the previous data exchange.

Display Long (DLO)

Use the DLO function to display on the same screen, one of the following:

- 128 bytes of CCU storage. Example: If you enter S1234, 128 bytes are displayed, starting from the byte at address 1234.
- 16 LSRs. Example: If you enter L4, 16 LSRs are displayed, starting from LSR 4.
- All work registers. Enter only W to display all the work registers.
- CCU input registers from X'70' to X'7F'. Enter only I to display all CCU input registers from X'70' to X'7F'.

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY LONG
- ENTER:  S   FOLLOWED BY STORAGE ADDRESS   ==> I
          L   FOLLOWED BY LSR NUMBER
          W   (WORK REGISTERS)
          I   REGISTERS X'70' TO X'7F'
I 70     000000 000000 000000 000000
I 74     1F1992 000000 000000 000000
I 78     000000 000000 012E99 000000
I 7C     000000 000000 000000 000000

====>
F1:END  F2:MENU1  F3:ALARM  F5:BT BUFFER  F6:STR
```

From the previous screen you may:

- Press F5 to display the branch trace buffer (page 23-12).
- Press F6 to start the CCU.

Differences between the Display/Alter and Display Long Functions

| Function | Display/Alter | Display Long |
|--|---|--|
| Number of lines displayed | One | Several |
| Data displayed | One of the following: <ul style="list-style-type: none"> • 16 bytes of storage • Four LSRs, or • Four work registers | One of the following: <ul style="list-style-type: none"> • 128 bytes of storage • 16 LSRs • All work registers, or • All CCU input registers from X'07' to X'7F' |
| Alters data | Yes | No |
| Displays on same screen: <ul style="list-style-type: none"> • CCU storage • LSRs • Work registers | Yes | No |
| Uses Refresh command | Yes | No |

Displaying the Branch Trace Buffer

To display the branch trace buffer:

The first 128 bytes of the branch trace buffer are displayed. The contents of the first 24 bytes are:

| | |
|-------------|---|
| bytes 0-1 | Buffer length excluding header (maximum X'FFF0') |
| bytes 2-3 | Reserved |
| byte 4 | Branch trace options (x = insignificant bit): |
| xx1. ..x. | branch trace active |
| xx.1 ..x. | WRAP |
| xx.. 1.x. | BT STOP ON AC |
| xx.. .1x. | CCU STOP |
| xx.. ..x1 | MOSS interrupt requested (address compare function) |
| bytes 5-7 | Lower limit address. |
| byte 8 | Program level interrupt traced: |
| 01.. ..00 | level 1 |
| 0.1. ..00 | level 2 |
| 0..1 ..00 | level 3 |
| 0... 1.00 | level 4 |
| 0... .100 | level 5 |
| bytes 9-11 | Upper limit address |
| byte 12 | Reserved |
| bytes 13-15 | Address of the first branch trace entry (buffer address + X'18') |
| byte 16 | Reserved. |
| bytes 17-19 | Address + 8 of the last branch trace buffer entry used, when the branch trace was stopped |
| byte 20 | Reserved |
| bytes 21-23 | Address of the last branch trace buffer entry of the buffer. |

Each branch trace entry is eight bytes long and contains:

| | |
|-----------|--|
| byte 1 | Come-from program level interrupt (04 means level 4) |
| bytes 2-4 | Come-from address |
| byte 5 | Go-to program level interrupt |
| bytes 6-8 | Go-to address. |

CCU Level-3 Interrupt (IL3)

Use the IL3 function to request a CCU level-3 interrupt.

This function is performed immediately.

MOSS Offline (MOF)

Use the MOF function to set the MOSS offline (logical disconnection between MOSS and the control program). You cannot set MOSS offline while transferring a MOSS or scanner dump to the host, or when the CCU is stopped.

To set the MOSS **offline**:

- If the MOSS is **online**, use the MOSS offline functions:

- If the MOSS is **alone**, first IPL the 3745 (page 9-1), then select the MOSS online functions.

This function is performed immediately, and the following message is displayed:

MOSS OFFLINE IS IN PROGRESS.

When the function is performed, MSA field d displays MOSS-OFFLINE.

If you press the BREAK key while the MOSS Offline function is in progress, the following F keys are displayed:

- F4:IGNORE BREAK
- F5:QUIT

When F5 is pressed, the MOSS Offline operation is cancelled, the MOSS status stays online, even if the alarm B7 is already displayed. The alarm B7 must be ignored in this case.

MOSS Online (MON)

To set MOSS online:

- If MOSS is **offline**, use the MOSS Online function:

- If MOSS is **alone**, IPL the 3745 (page 9-1).

When the function is performed, MSA field d displays MOSS-ONLINE.

If you press the BREAK key while the MOSS Online function is in progress, the following F keys are displayed:

- F4:IGNORE BREAK
- F5:QUIT
- F6:STR (start CCU).

Reset Address Compare (RAC)

Use the RAC function to cancel the current Address Compare.

When the address compare is canceled, the Address Compare Parameter screen is displayed (see page 23-3) and AC is cleared from the MSA.

If you accessed RAC without having set address compare, you will get the message REQUEST IGNORED.

Reset Branch Trace (RBT)

Use the RBT function to cancel the current branch trace.

When the branch trace is canceled, the Branch Trace Parameter screen is displayed (see page 23-3) and BT disappears from the MSA if it was active.

If you accessed RAC without having set address compare, you will get the message REQUEST IGNORED.

Reset CCU Check (RCK)

Use the RCK function to reset the CCU CHECK condition. The CCU remains stopped. (HARDSTOP is displayed in MSA field h). To restart the CCU, press F6.

Once selected, this function is performed immediately.

Reset CCU/LSSD (RCL)

Use the RCL function to reset the entire CCU (LSSD, IOC, local store registers, 3745 storage). The channel adapter registers are not reset.

This function destroys the current state of the CCU control program.

The only way to restart the 3745 is to IPL it.

Reset IOC (RIO)

Use the RIS function to reset the IOC errors.

Once selected, this function is performed immediately.

Reset I-Step (RIS)

Use the RIS function to reset the control program to normal processing. MSA field c displays PROCESS.

Once selected, this function is performed immediately.

Reset CCU (RST)

Use the RST function to stop the control program processing and the cycle steal mechanism. MSA field h displays RESET.

Once selected, this function is performed immediately. The MOSS becomes **alone**.

The only way to restart the 3745 is to IPL it from the 3745 control panel. Refer to the *3745 Basic Operations Guide*, to perform the actions summarized below:

1. Set **Service Mode** to 0 and press **validate**.
 2. Set **Power Control** to 2 or 3 and press **validate**.
 3. Set **Function** to 0 and press **validate**.
 4. Press **Power On Reset**.
 5. Wait until either:
 - **FF4** is displayed if the control program is to be loaded from the host.
Ask the host operator to load the control program and wait until **000** is displayed. This means that IPL is complete and successful.
- or
- **000** is displayed if the control program is loaded from the disk. This means that IPL is complete and successful.

Set Address Compare (SAC)

Use the SAC function to force the CCU to perform a specific action whenever a storage address that you specified is detected during a specific storage access operation.

You can execute simultaneously an address compare and a branch trace. (See "Simultaneous Address Compare and Branch Trace" on page 23-19.)

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET ADDR COMPARE
                    ADDRESS COMPARE SELECTION

- ENTER ADDRESS COMPARE TYPE (S, D, T) ==> S A
  S = SINGLE
  D = DOUBLE
  T = TWO SINGLE
- ENTER CCU ACTION (I, S, N)           ==> I B
  I = LEVEL 1 INTERRUPT
  S = CCU STOP
  N = NO ACTION
- MOSS INTERRUPT (Y, N)                ==> N C
  N = NO
  Y = YES STOP

===>

F1:END F2:MENU1 F3:ALARM F4: LATEST SELECTED AC OPTIONS

```

From the previous screen:

- Enter the different AC parameters.
- Press SEND to display the next screen. It might be helpful to use the F4 key when you want to execute an address compare several times with the same or similar parameters.

A SINGLE: You will be requested to enter a unique storage address and one or more storage access operations. When the storage address is detected during any one of the storage access operations, the CCU action (selected on line **B**) is executed.

DOUBLE: You will be requested to enter two addresses: the first one must be a load or store instruction address; the second one a storage address to be accessed by the selected instruction. When both addresses are detected simultaneously, the CCU action (selected on line **B**) is executed.

TWO-SINGLE: You will be requested to enter two storage addresses and one or more storage access operations for each address. When either of the two addresses is detected during appropriate access operation, the CCU action (selected on **B**) is executed.

C MOSS INTERRUPT:

- If you enter Y, a MOSS level-1 interrupt is requested to display address compare results in MSA field k.
- If you enter N, address compare results are not displayed in the MSA.

If you select S (CCU STOP) on line **B**, address compare results are always displayed, whether you selected MOSS INTERRUPT ==> Y or N.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET ADDR COHPARE
                   SINGLE AC - NO CCU OPTION - NO HOSS INTERRUPT

- ENTER   STORAGE ADDRESS   (1 TO 6 DIGITS) ==> D

- ENTER 1 TO 4 STORAGE ACCESSES (L, S, C, I) ==> E
  L = LOAD
  S = STORE
  C = CYCLE STEAL
  I = INSTRUCTION

===>

F1:END F2:MENU1 F3:ALARM F4:LATEST SELECTED AC OPTIONS

```

From the previous screen:

Once you have entered all the parameters on the screen, press SEND. The address compare is then started. The term AC appears in the MSA field k. The Address Compare Parameter screen is displayed (see page 23-3) and remains displayed until you cancel the address compare (RAC function) or cancel the Set Address Compare function (F1).

- D** The storage address must be in the range of the CCU storage.
- E** **LOAD:** The selected action is performed after a load instruction has accessed the storage address that you selected.

STORE: The selected action is performed after a store instruction has accessed the storage address that you selected.

CYCLE STEAL: The selected action is performed after the cycle steal mechanism has accessed the storage address that you selected.

INSTRUCTION: The selected action is performed after the execution of the instruction for which you specified the address.

Notes:

1. To set a new address compare when the CCU stops because of a previous address compare (AC-STOP in MSA field h), you need not select the RAC function, but only the SAC function.
2. If, after a successful address compare (hit) with CCU STOP, you set another address compare at the same instruction address +2, +4, or +6, the address compare may be unsuccessful.
3. If you set a double address compare with storage access operation LOAD, the address compare may be successful on a store instruction that accesses the same data address when the store instruction immediately precedes or follows the load instruction. This is also true for a store instruction.

Address Compare Cancel

To cancel the address compare perform the Reset Address Compare function (see page 23-14). Pressing F1 does not cancel the address compare in progress but only the Set Address Compare function.

Set Branch Trace (SBT)

Use the SBT function to save in the branch trace buffer information about non-sequential instructions. For example, when a branch is executed or a new program level is entered. The information saved is: *come-from interrupt level, come-from address, go-to interrupt level, and go-to address.*

You can execute simultaneously a branch trace and an address compare. Refer to "Simultaneous Address Compare and Branch Trace" on page 23-19.

Note: Before executing a branch trace, make sure that the branch trace buffer is allocated. If it is not, allocate it. Refer to "Branch Trace Buffer Allocation" on page 23-8.

```

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET BRANCH TRACE

- ENTER Y FOR CCU STOP ON BT BUFFER FULL ==> N A
- ENTER Y FOR BT BUFFER WRAP ==> Y B
- ENTER Y FOR BT STOP ON AC ==> N C
- ENTER LOWER LIMIT ADDRESS (1 TO 6 DIGITS) ==> D
- ENTER UPPER LIMIT ADDRESS (1 TO 6 DIGITS) ==> D
- BLANK THE UNWANTED LEVEL INTERRUPT(S) ==> 1234 E

====>

F1:END F2:MENU1 F3:ALARM F4:LATEST SELECTED BT VALUES
    
```

From the previous screen:

- Enter the branch trace parameters.
- Press SEND.
- The branch trace is then started. BT appears in MSA field e (Appendix B). The Branch Trace Parameter screen is displayed (see page 23-3).
- If you press F4, you will get the latest branch trace values since the last IPL. It might be helpful to use the F4 key when you want to execute a branch trace several times with the same or nearly the same parameters.

A If you enter Y, the CCU stops when the buffer is full. See description for line **C** and the next table.

Option CCU STOP = > Y can interrupt your applications.

B If you enter Y, recording resumes at the wrap address when the buffer is full; if you enter N, the branch trace function is deactivated when the buffer is full.

- C** If you enter Y, the branch trace function is deactivated when a simultaneous address compare is successful, and the CCU stops if you entered Y on line **A**.
- D** Addresses of the lower and upper limits of CCU storage to be traced. These limits must be in the range of the storage. The lower limit address must be smaller than the upper limit address.

Note: A branch trace may be stored starting at the specified lower limit address minus 4 or 2.
- E** To blank an interrupt level, use the DEL CHAR key or override the corresponding number by a blank character (space bar).

| Table 23-2. Branch Trace Options | | |
|---|---|--|
| BT Options | When buffer is full | Action |
| CCU STOP=Y and WRAP=Y | CCU stops; BT remains active. (However, if an address compare is active, the CCU does not stop.) | Select function Start CCU to restart the CCU and to resume BT at the wrap address. |
| CCU STOP=Y and WRAP=N | CCU stops; BT is deactivated. | Select function Start CCU to restart the CCU. |
| Note: More information on CCU STOP is given under "Simultaneous Address Compare and Branch Trace." | | |

Branch Trace Buffer

The branch trace buffer is defined at control program generation time. Its address and length are provided by the control program to MOSS when the 3745 is initialized. The length is in local store register (LSR) X'7C', and the address of the first branch trace entry is in LSR X'7D'. The address of the next branch trace entry to be recorded is in LSR X'7B'.

To display the branch trace buffer, use the Display Long function. The buffer contents are given under "Displaying the Branch Trace Buffer" on page 23-12.

If you execute a branch trace before the control program is loaded, you must first allocate the branch trace buffer. To do so, refer to "Branch Trace Buffer Allocation" on page 23-8.

The branch trace buffer can be transferred to the host via a 3745 NCP dump. The procedure is described in *NCP Diagnosis Guide*,

Simultaneous Address Compare and Branch Trace

If you specify option CCU STOP in the branch trace when running simultaneously with the address compare, the option applies to the address compare function but not to the Branch Trace function. For example, if you execute these two functions simultaneously with CCU STOP for BT, the CCU stops if the address compare is successful, but will not stop upon reaching the end of the branch trace buffer.

Termination

To cancel the branch trace, select the RBT function (see page 23-14). Pressing F1 does not cancel the branch trace in progress but only the Set Branch Trace function.

The branch trace is automatically canceled when:

- The buffer is full and you specified NO WRAP (WRAP=N), or
- A CCU address compare is successful and you specified branch trace stop on address compare (BT STOP ON AC=Y).

Stop On CCU Check (SCK)

Use the SCK function to cancel Bypass CCU Check. The CCU stops when a CCU check condition occurs (default) on a CCU level other than 1.

Once selected, this function is performed immediately. MSA field j displays STOP-CCU-CHK.

To reset this function, use the BCK function.

Stop On IOC Check (SIK)

Use the SIK function to force the CCU to hardcheck when an IOC-detected level 1 interrupt occurs.

Once selected, this function is performed immediately. MSA field i displays STOP-IOC-CHK. To reset this function, use the BIK function.

Set I-Step (SIP)

Use the SIP function to set the control program to instruction-step mode. That is, the control program and the cycle steal mechanism stop after the current instruction has been executed. The next instruction is executed when the CCU Start function (STR) is selected (see page 23-21).

Once selected, this function is performed immediately. MSA field c displays I-STEP. When the current instruction has been executed, STOP-PGM is displayed in field h.

Note: In instruction step mode, if you modify the contents of the instruction address register (alter function on work register 0), the next instruction may not be the expected one.

Stop CCU (STP)

Use the STP function to stop the control program processing immediately after the current instruction has been executed. MSA field h displays STOP-PGM.

Stopping the CCU can interrupt your applications.

Once selected, this function is performed immediately. It requires no further action. To resume processing the control program, use the STR function.

Start CCU (STR)

Use the STR function to resume processing the control program. When the control program is in instruction-step mode, the STR function causes the execution of the next instruction. To set the control program in instruction-step mode, use the SIP function, described on page 23-20.

Once selected, this function is performed immediately. No further action is required. When the CCU is started, MSA field h displays RUN.

The STR function cannot be used to resume CCU processing if the CCU is in STOP mode because of a hard-check or a reset (MSA field h).



NCP/EP Functions - Control Program Procedures

Replace this page by the separator:

NCP/EP - CPP

Replace this page by the separator:

NCP/EP - CPP

NCP/EP Functions - Control Program Procedures

- Chapter 24. NCP and EP Functions**
- Chapter 25. Control Program Procedures (CPP)**



Chapter 24. NCP and EP Functions

Note: For a description of control program procedures, see Chapter 25, "Control Program Procedures (CPP)."

To execute any of the following NCP and EP functions, use the Data Exchange function described in this chapter. This function allows you to select and provide data to the NCP or EP functions and subroutines.

NCP functions are:

- Line Test
- Display of Storage
- Display of Register
- Channel Disconnect
- Address Trace
- Channel Adapter Trace.

EP functions are:

- Line Test
- Display of Character Control Block
- Line Trace (level 2, level 3) and Scanner Interface Trace
- Present Status on Channel
- Display of Storage
- Multi-Subchannel Line Access (MSLA)
- Channel Adapter Reset
- Sub-channel Switching.

The above NCP and EP functions are also used in the control program procedures.

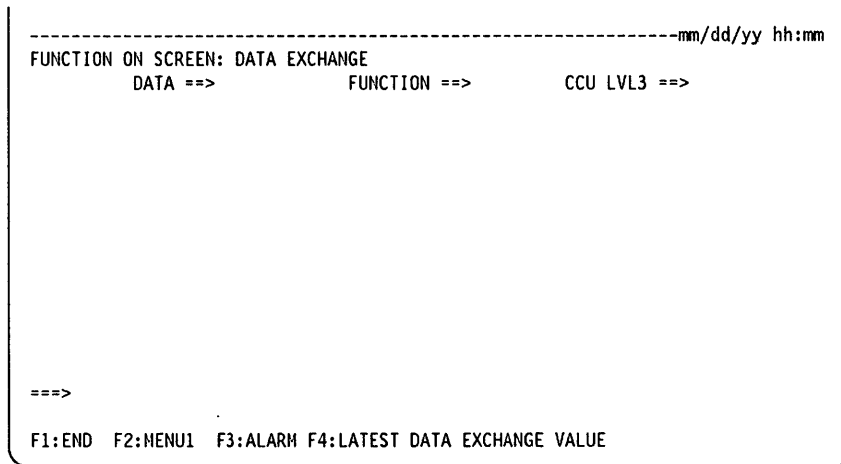
Data Exchange

Use the Data Exchange function to transfer to the CCU control program the information necessary to select and execute NCP or EP functions and subroutines.

Selection:



The following screen is displayed:



Press F4 to display the contents of the CCU input X'71' and X'72' registers (values of the latest data exchange).

The values that you enter in the Data Exchange operands (DATA, FUNCTION, and CCU LVL3) must not conflict with the control program requirements.

DATA == > xxxxxx

To provide data to the control program function.

xxxxxx is a string of up to 6 hexadecimal digits, which is transferred to CCU via the CCU X'71' input register (operator address/data entry register). For example, xxxxxx can be a storage address or a subroutine code.

If you enter 6 digits, the leftmost digit must not exceed 3.

If you do not enter a value, the last one entered is taken.

FUNCTION == > xx

To call the control program function to be performed.

xx is the function code. It is a decimal value from 1 through 16. This code is transferred to the CCU via the CCU X'72' input register (operator display/function select register).

The value 11 indicates that a storage address is being transferred. Letter S may be substituted for the value 11. In a similar manner, value 12 and letter R can be used to indicate a register address.

If you do not enter a value, the last one entered is taken.

CCU LVL3 == > Y or CCU LVL3 == > N

- Y: An Operator Level 3 Interrupt is requested to signal to the control program that the function specified in FUNCTION == > is to be performed.
- N: An Operator Level 3 Interrupt is not requested and the function specified in FUNCTION == > will not be performed.

If you specify CCU LVL3 == > N, the data exchange is treated as a no operation.
Re-enter with CCU LVL3 == > Y.

CCU LVL3 Default Value: When you use the data exchange function for the first time, the default value is Y. From then on, it is replaced by the value that you entered in the previous data exchange.

Every time you press SEND, the information that you entered or modified is transmitted and you are prompted another time. When the screen is full, it wraps around.

NCP Environment with Partitioned Emulation Programming

In an NCP environment *with partitioned emulation programming (PEP) extension*, you may execute either NCP functions or EP functions. Before executing any function, you have to switch control to either NCP or EP mode.

Switching Control to NCP Mode

| Table 24-1. Switching Control to NCP Mode | | |
|---|--|---|
| Step | Procedure | Comments |
| 1 | <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select the data exchange function. |
| 2 | DATA == > C FUNCTION == > 7 CCU LVL3 == > Y <input type="button" value="SEND"/> | To switch to NCP mode. If successful, MSA fields f and I display: f=X71:00000C I=X72:00000C |

Switching Control to EP Mode

| Table 24-2. Switching Control to EP Mode | | |
|--|--|--|
| Step. | Procedure | Comments |
| 1 | <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select the data exchange function. |
| 2 | DATA == > E FUNCTION == > 7 CCU LVL3 == > Y <input type="button" value="SEND"/> | To switch to EP mode. If successful, MSA fields f and I display: f=X71:00000E I=X72:00000E |

NCP - Line Test

Use the line test function to test NCP lines via the operator console. The function consists of an initialization subroutine, a series of test subroutines and an end-test subroutine.

Notes:

1. If a line is in use by the Line Test function, it is not available to the host.
2. If a line is in use, it is not available to the Line Test function. Therefore, the line must always be deactivated before the line test is initialized.
3. Always use subroutine X'50' to end all test functions, to ensure availability of the line to the host.

To run the EP Line Test function in a PEP environment, switch control to EP mode and use the EP Line Test function.

While the Line Test function is being performed, codes are displayed in MSA fields *f* and *l* to show normal processing indications and errors. These codes are described in Table 24-5.

All subroutine line tests are described in Table 24-4.

NCP and EP Functions

| Table 24-3. Line Test Procedure | | |
|---------------------------------|--|---|
| Step | Procedure | Comments |
| | In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter. | |
| 1 | <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="X"/> <input type="text" value="SEND"/> | To select data exchange function. |
| 2 | DATA == > 0x20xy FUNCTION == > 2 CCU LVL3 == > Y <input type="text" value="SEND"/> | To initialize the line test for the NCP line address xyz (hexadecimal) |
| 3 | If - MSA field I is X72:00FFFF, go to step 5. | |
| 4 | If - MSA field I is different from X72:00FFFF, an error occurred. | |
| 5 | DATA == > wxxyz FUNCTION == > 2 CCU LVL3 == > Y <input type="text" value="SEND"/> | w = variable xx = subroutine code yz = variables w, x, yz are explained in the next figure |
| 6 | If - MSA field I is X72:00FFFF, an error occurred. | |
| 7 | If - MSA field I equal to X72:00FFFF, go to next step. | |
| 8 | If - Another subroutine or more data characters to enter, go to step 5. | |
| 9 | If - No more subroutine or data, go to next step. | |
| 10 | DATA == > 05000 FUNCTION == > 2 CCU LVL3 == > Y <input type="text" value="SEND"/> | To end the line test function. |

DATA == > wxyy FUNCTION == > 2 CCU LVL3 == > Y

w, xx and yy values are given in the second, third and fourth columns of the following figure.

| Subroutine Name | w | xx | yy | Description |
|----------------------------|---|----|----|---|
| Initialization | w | 20 | yy | To accept the relative hexadecimal line number (wyy) of the line to be tested. This subroutine must be executed before any other line test subroutine because it collects all the information about the line and saves it in the LTS control block. It also initializes the fields in the LTS so that the test will run properly. |
| Enable | 0 | 40 | 00 | To issue a Setmode and Enable to the line. This subroutine is for leased lines only. Note: This subroutine is required on leased lines before any Transmit/Receive subroutine is attempted. |
| Auto-Answer or Manual Dial | w | 46 | yy | To issue a Setmode and Monitor Incoming Call to the line and to complete the connection when the terminal calls in or someone manually dials out. If w=0, the subroutine ends after the connection is established. If w=1, the Receive Mode subroutine (X'4A') is executed after the connection is established. (See note 3.) If w=2, the Transmit Buffer subroutine (X'4F') is executed after the connection is established. (See Note 3.) y and z are meaningful only if w=1 or 2. They are set the same as for subroutines X'4A' and X'4F'. Notes: 1. Subroutine X'46' is required on auto-answer and on manual dial lines before any other Transmit/Receive subroutine is attempted. 2. If a hardware ID is received from the device, it is saved in the LTSRID field upon completion of this subroutine and may be displayed using subroutine Display LTS (X'4C') with yy=46. 3. Subroutine X'46' may not be chained to Receive Mode (X'4A') or Transmit Buffer (X'4F') on a SDLC line because these two subroutines do not support SDLC. |
| Dial Digit Load | 0 | 47 | 0z | To load each dialed digit (z=0 to 9), one by one, into a data area to be used by the dial operate subroutine (X'48'). X'F' must be the last digit. It indicates the end of the dialed digits. The special characters X'A' to X'D' are also accepted. Notes: 1. To resume entering the dialed digits from the beginning, enter X'F'. 2. Only 15 digits may be entered if the line is X.21, because a special digit is inserted at the end. |

NCP and EP Functions

| Subroutine Name | w | xx | yz | Description |
|-----------------------------------|---|----|----|---|
| Dial Operate | w | 48 | yz | <p>To issue a Set mode and Dial to the line and to complete the connection using the digits entered with subroutine Dial Digit Load (X'47').</p> <p>If w=0, the subroutine ends after the connection is established.</p> <p>If w=1, the Receive Mode subroutine (X'4A') is executed after the connection is established. (See Note 3.)</p> <p>If w=2, the Transmit Buffer subroutine (X'4F') will be executed after the connection is established. (See Note 3.)</p> <p>y and z are meaningful only if w=1 or 2. They are set the same as for subroutines X'4A' and X'4F'.</p> <p>Notes:</p> <ol style="list-style-type: none"> Subroutine X'48' is required on auto-dial lines before any other transmit/receive subroutine is attempted. If a hardware ID is received from the device, it is saved in the LTSRID field upon completion of this subroutine and may be displayed using subroutine Display LTS (X'4C') with yz=46. Subroutine X'48' may not be chained to Receive Mode (X'4A') or Transmit Buffer (X'4F') on a SDLC line because these two subroutines do not support SDLC. |
| Receive Mode (BSC and Start-Stop) | 0 | 4A | yz | <p>Used to:</p> <ul style="list-style-type: none"> Monitor the line for incoming data, if the line is point-to-point. Poll the device if the line is multipoint. <p>Note: To transmit and receive data on SDLC lines, use subroutine SDLC Test Frame with Data (X'63'). Once data is received, an ACK is transmitted for each block of data received until EOT is received.</p> <p>If y=1, errors are ignored unless they are so severe that the scanner has disabled the line.</p> <p>If y=0, the subroutine quits if an error is received. A test code is displayed in MSA field I (Table 24-5).</p> <p>If z=1, the terminal is continuously polled or monitored until subroutine End Test (X'50') or End Function (X'5F') is selected.</p> <p>If z=0, the subroutine quits after it has received data followed by EOT.</p> <p>To display the last buffer of data received:</p> <ol style="list-style-type: none"> Use the Display LTS Address (X'4D') subroutine with yz=00 to get the address of the beginning of the received data buffer. The address will be displayed in MSA field I. Enter this address in the Display Long function 23-11 to display the received data buffer. The buffer is 256 bytes long. |
| Display LTS | 0 | 4C | yz | <p>To display in MSA fields f and I two halfwords of the line test control block (LTS) beginning at the displacement yz (hexadecimal).</p> <p>Note: The halfwords displayed begin on a halfword boundary. If an odd offset is entered, the low-order bit is ignored.</p> |
| Display LTS Pointer | 0 | 4D | 00 | <p>To display the address of the LTS pointer in MSA field I so that you may display the entire LTS by means of the CCU Display Long function. "Display Long (DLO)" on page 23-11.</p> |

Table 24-4 (Page 3 of 5). Subroutines Used When Performing an NCP Line Test

| Subroutine Name | w | xx | yz | Description |
|--------------------------------------|---|----|----|--|
| Transmit Buffer (BSC and Start-Stop) | 0 | 4F | yz | <p>To transmit the data that was loaded into the transmit buffer by means of the Load Transmit Buffer (X'51') subroutine.</p> <p>If y = 1, errors are ignored unless they are so severe that the scanner has disabled the line.</p> <p>If y = 0, the subroutine ends when an error occurs. An error code is displayed in MSA field I (Table 24-5).</p> <p>If z = 1, the data is transmitted continuously.</p> <p>If z = 0, the data is transmitted once and the subroutine is ended.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. You must first select subroutine X'67' to load addressing characters. 2. To transmit and receive data on SDLC lines, use the SDLC Test Frame With Data (X'63') subroutine. 3. If this is run as a continuous operation on a BSC line, the sequence will be STX-data-ETX. A comparable sequence will be sent for start-stop lines. |
| End Test | 0 | 50 | 00 | <p>To end the Line Test function and disable the line.</p> <p>Reinitialize the line (subroutine X'20') before it can be used again by the system.</p> |
| Load Transmit Buffer | 0 | 51 | yz | <p>To load the specified characters (yz), one by one, into the transmit buffer, to be used by the Transmit Buffer (X'4F') or SDLC Test Frame With Data (X'63') subroutine. The size of the buffer is that specified at system generation.</p> |
| Initialize Transmit Buffer Offset | 0 | 58 | yz | <p>To set an offset value (yz, normally equal to X'00') in the transmit buffer at which you wish to begin storing data.</p> <p>Note: If a value other than X'00' is used, data will be stored at that offset into the data area. Transmission of the data will always begin at the first buffer position (offset = zero).</p> |
| Disable | 0 | 5D | 00 | <p>To issue an X.21 DTE Clear Request or a Disable command to the line without ending the line test.</p> |
| End Function | 0 | 5F | 00 | <p>To end a subroutine without ending the line test. The subroutine is ended when MSA fields:</p> <p>f = X71:00005F I = X72:00FFFF</p> |
| Select Setmode Data Byte | 0 | 60 | 0z | <p>To select the Setmode data byte (z) that you want to change. There are 16 setmode bytes, so the value must be between X'0' and X'F'.</p> |
| Change Setmode Data | 0 | 61 | yz | <p>To change the Setmode data byte, specified in subroutine X'60', to the value yz.</p> <p>Warning: Invalid values may cause NCP to abend.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. You must first choose the Setmode data byte (subroutine X'60') before you change it (subroutine X'61'). 2. You must execute subroutines X'60' and X'61' once for each Setmode data byte that you want to change. 3. The Enable subroutine (X'40') always changes the Setmode data byte to its generated values. |

NCP and EP Functions

| Subroutine Name | w | xx | yz | Description |
|---|---|----|----|---|
| Test without Data (SDLC) | 0 | 62 | y0 | <p>To transmit an SDLC Test Frame continuously with no data and check the received frame.</p> <p>If y = 1, errors are ignored unless they are so severe that the scanner has disabled the line.</p> <p>If y = 0, the subroutine ends if there is an error. Subroutine X'50' or X'5F' must be used to terminate the function if there is no error.</p> <p>Note: You must first select subroutine X'67' to load addressing characters.</p> |
| Test Frame with Data (SDLC) | 0 | 63 | y0 | <p>To transmit an SDLC Test Frame continuously with the data stored in the buffer with the Load Transmit Buffer subroutine (X'51').</p> <p>If y = 1, errors are ignored unless they are so severe that the scanner has disabled the line.</p> <p>If y = 0, the subroutine ends if there is an error. Subroutine X'50' or X'5F' must be used to terminate the function if there is no error.</p> <p>Note: You must first select subroutine X'67' to load addressing characters.</p> |
| Hardware ID Exchange (BSC and Start-Stop) | 0 | 64 | yz | <p>To indicate whether a transmit hardware ID is required and/or a receive hardware ID is expected and if the line is a call-in or call-out line.</p> <p>Note: Subroutine X'64' is necessary only for BSC and start-stop switched lines that need hardware ID - EXCHANGE.</p> <p>If y = 0, call-out line.</p> <p>If y = 1, call-in line.</p> <p>If z = 1, a receive hardware ID is expected.</p> <p>If z = 2, a transmit hardware ID is required.</p> <p>If z = 3, a receive hardware ID is expected and a transmit hardware ID is required.</p> |
| Load Hardware ID (BSC and Start-Stop) | 0 | 65 | yz | <p>To load the hardware ID (yz), one byte at a time, to be used if a transmit ID is required by subroutine X'64'.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Subroutine X'65' must be specified if a transmit ID is required. 2. The data area contains enough space for a 3-byte hardware ID. |
| Load Polling Characters | 0 | 66 | yz | <p>To load the hexadecimal polling characters (yz), one by one, as they will be sent to the terminal for use by the Receive Mode (X'4A') subroutine.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Subroutine X'66' is required for subroutine X'4A' if the line is multipoint. 2. For subroutine X'4A' on BSC lines, the ENQ following the polling characters must also be supplied. 3. The data area allows room for 7 polling characters or 6 plus the ENQ character. |

Table 24-4 (Page 5 of 5). Subroutines Used When Performing an NCP Line Test

| Subroutine Name | w | xx | yz | Description |
|----------------------------|---|----|----|---|
| Load Addressing Characters | 0 | 67 | yz | <p>To load the hexadecimal addressing characters (yz), one by one, as they will be sent to the terminal by subroutines X'4F', X'62', and X'63'.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Subroutine X'67' is required for subroutine X'4F' if the line is multipoint. 2. For subroutine X'4F' on BSC lines, the ENQ character that follows the addressing must also be supplied. 3. The data area allows room for 7 addressing characters or 6 plus the ENQ character. Only the first character will be used by subroutines X'62' and X'63'. |

NCP and EP Functions

Table 24-5 describes each code displayed in the MSA field I when executing an NCP line test. The last two digits of field f indicate the function or subroutine code.

Note: If another function is being used while the line test function is running, fields f and I do not contain reliable information.

| Table 24-5. Line Test Codes | | |
|-----------------------------|-------------|---|
| MSA Field f | MSA Field I | Description |
| X71:0000xx | X72:000000 | Continuous function started. |
| X71:0000xx | X72:000001 | The line is not defined in the control program. |
| X71:0000xx | X72:000002 | The line test is already initialized. |
| X71:0000xx | X72:000003 | EP line. |
| X71:0000xx | X72:000004 | The line has user-written line control. |
| X71:0000xx | X72:000005 | The line is active (deactivate it before testing). |
| X71:0000xx | X72:000006 | A wrap test is in progress. |
| X71:0000xx | X72:000007 | A PEP switch is in progress. |
| X71:0000xx | X72:000008 | Line not associated with an LA attached and installed on this CCU. |
| X71:0000xx | X72:000009 | Line is associated with an LA that is not installed or not attached. |
| X71:0000xx | X72:00000A | Line is associated with an LA that is not operative. |
| X71:0000xx | X72:00000B | Line specified is out of valid range. |
| X71:0000xx | X72:000011 | The line test cannot be initialized. |
| X71:0000xx | X72:000012 | Invalid function. |
| X71:0000xx | X72:000013 | Another function is running. |
| X71:0000xx | X72:000014 | The line is not enabled. To enable it, use subroutine X'40'. |
| X71:0000xx | X72:000021 | The scanner is down. |
| X71:0000xx | X72:000022 | The function is invalid for switched lines. |
| X71:0000xx | X72:000023 | The Enable or Setmode failed. |
| X71:0000xx | X72:000024 | The function is invalid for leased lines. |
| X71:0000xx | X72:000025 | The function is invalid for SDLC lines. |
| X71:0000xx | X72:000026 | An error occurred on receive operation. |
| X71:0000xx | X72:000027 | An error occurred on transmit operation. |
| X71:0000xx | X72:000028 | The function is invalid for BSC and SS lines. |
| X71:0000xx | X72:000029 | Disable or X.21 DTE Clear Request failed. |
| X71:0000xx | X72:00002A | Change command failed. |
| X71:0000xx | X72:00002B | No hardware ID supplied. |
| X71:0000xx | X72:00002C | No polling character supplied. |
| X71:0000xx | X72:00002D | No addressing character supplied. |
| X71:0000xx | X72:00002E | No dialed digit supplied. |
| X71:0000xx | X72:00002F | No autodialed unit connected to the line. |
| X71:0000xx | X72:000030 | No Setmode byte selected. |
| X71:0000xx | X72:000031 | Severe error on receive. The line is disabled. |
| X71:0000xx | X72:000032 | Severe error on transmit. The line is disabled. |
| X71:0000xx | X72:000033 | The value specified in y (DATA = = > wxxyz) is invalid. |
| X71:0000xx | X72:000034 | The value specified in z (DATA = = > wxxyz) is invalid. |
| X71:0000xx | X72:000035 | The value specified in w (DATA = = > wxxyz) is invalid. |
| X71:0000xx | X72:000036 | The transmit buffer is empty. |
| X71:0000xx | X72:000041 | No function in progress. |
| X71:0000xx | X72:000042 | Buffer overflow. |
| X71:0000xx | X72:000043 | Dialed digit overflow. |
| X71:0000xx | X72:000044 | Invalid dialed digit entered. It must be a digit between X'0' and X'D'. |
| X71:0000xx | X72:000045 | Polling character overflow. |
| X71:0000xx | X72:000046 | Addressing character overflow. |
| X71:0000xx | X72:000047 | Hardware ID overflow. |
| X71:0000xx | X72:00FFFF | Function or subroutine successfully performed. |

NCP - Display of Storage

Use this function to display a 3745 storage halfword in MSA field I.

| Step | Procedure | Comments |
|------|--|---|
| | In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select data exchange function. |
| 2 | DATA == > xxxxxx FUNCTION == > S CCU LVL3 == > Y <input type="button" value="SEND"/> | To display storage address (function S or 11) MSA displays fields: f = storage address I = contents of the halfword at the specified address |
| 3 | If more values are displayed, go to step 2. | |
| 4 | If no more values are displayed, go to next step. | |
| 5 | DATA == > FUNCTION == > 6 CCU LVL3 == > Y <input type="button" value="SEND"/> | To stop the function. There is no need to enter values in DATA == > |

| MSA Field f | MSA Field I | Description |
|-------------|-------------|---|
| X71:xxxxxx | X72:00yyyy | xxxxxx = storage address |
| X71:000000 | X72:000000 | yyyy = storage halfword. Invalid address entered. |

NCP - Display of Register

Use this function to display 3745 register contents in MSA field I.

| Step | Procedure | Comments |
|------|--|---|
| | In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select data exchange function. |
| 2 | DATA == > 8002 FUNCTION == > 1 CCU LVL3 == > Y <input type="button" value="SEND"/> | To set on the Allow Additional Register Range bit (AARR) Table 24-9. To display general register address (Function R or 12). |
| 3 | DATA == > r0r0 FUNCTION == > R CCU LVL3 == > Y <input type="button" value="SEND"/> | Example: for register X'42' enter 4020. MSA displays fields. f = register address l = contents of registers |
| 4 | If - more values are displayed, go to step 3. | |
| 5 | If - no more values are displayed, go to next step. | |
| 6 | DATA == > FUNCTION == > 6 CCU LVL3 == > Y <input type="button" value="SEND"/> | To end the function. |
| 7 | DATA == > 2 FUNCTION == > 1 CCU LVL3 == > Y <input type="button" value="SEND"/> | To set off the AARR bit Table 24-9. |

| MSA Field f | Description |
|-------------|------------------------|
| X71:001080 | AARR bit is set on. |
| X71:009080 | AARR bit is still on. |
| X71:009000 | AARR bit is set off. |
| X71:001000 | AARR bit is still off. |

NCP - Address Trace

Use this function to start an address trace from the operator console. This function is available only if TRACE=YES is specified in the BUILD macro.

The trace can store up to four variables into a trace table. If you try to trace more than four variables, MSA fields f and l will display meaningless information.





You must specify, in an Address Compare function, (see page 23-3) one or two addresses and a level 1 interrupt (l) as CCU action.

When the level 1 interrupt occurs, the address compare checks if the storage access that you specified in the Address Compare function was detected in one of the specified program levels that you specified in the Address Trace function. If it was, it stores up to four variables into the trace table.

Each variable can be either two consecutive halfwords of storage or the contents of a general register.

| Step | Procedure | Comments |
|------|--|--|
| | In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter. | |
| 1 | <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> X <input type="checkbox"/> SEND | To select data exchange function. |
| 2 | DATA == > 8002 FUNCTION == > 1 CCU LVL3 == > Y <input type="checkbox"/> SEND | To set on the Allow Additional Register Range bit (AARR). |
| 3 | DATA == > 1 FUNCTION == > 1 CCU LVL3 == > Y <input type="checkbox"/> SEND | To start the Address Trace function. MSA displays fields: f= X71:000001 l= X72:000000 |
| 4 | DATA == > p FUNCTION == > 1 CCU LVL3 == > Y <input type="checkbox"/> SEND | To enter the program level to be traced. p is any combination of: 1... level 2 (enter 8) .1.. level 3 (enter 4) ..1. level 4 (enter 2) ...1 level 5 (enter 1) p must be within the range X'1' to X'F'. MSA displays fields: f= X71:000002 l= levels (p) |
| 5 | - To trace register data, go to step 9. | |
| 6 | - To trace storage data, go to next step. | |

NCP and EP Functions

| Step | Procedure | Comments |
|------|---|---|
| 16 | <p>Enter the address compare parameters.</p> <p>When the address compare is set, the count of interrupts processed is display in field f of the MSA.</p> | |
| 17 |  | To end the address trace and select the Data Exchange function. |
| 18 | <p>DATA == > FUNCTION == > 6 CCU LVL3 == > Y</p>  | To end the trace. There is no need to enter value in DATA == > |
| 19 | <p>DATA == > 2 FUNCTION == > 1 CCU LVL3 == > Y</p>  | To set off AARR bit. |
| 20 |  | To cancel the Address Compare function. |

Address Trace Table - Under NCP

To display the address trace table, do the following:

| Step | Procedure | Comments |
|------|--|--|
| 1 | <input type="button" value="F2"/> <input type="button" value="D"/> <input type="button" value="L"/> <input type="button" value="O"/> <input type="button" value="SEND"/> | To display Menu 2 functions. To select display long function. |
| 2 | Enter L46 then <input type="button" value="SEND"/> | To display the content of the local store register 46. The content of this register gives the address of the XDA (word direct addressable storage). |
| 3 | Add X'58' to the address found in L46 register. | |
| 4 | Enter S, then the new address, then <input type="button" value="SEND"/> | |
| 5 | At that new address, there is a 4-byte pointer to HWE. Add an offset of X'04' to the HWE pointer to get the 4-byte address of the address trace block (ATB). | |
| 6 | Enter S, then the ATB address, then <input type="button" value="SEND"/> | |
| 7 | The address trace block is then displayed. Add an offset of X'14' to the address trace block pointer to get the address of the last entry used. The address trace block is displayed in Figure 24-1 on page 24-20 and Table 24-12 on page 24-21. | |

NCP and EP Functions

| | | |
|---|---|--------------------|
| 0(0) | ATBPRMS Address of trace variable 1 | |
| 4(4) | Address of trace variable 2 | |
| 8(8) | Address of trace variable 3 | |
| 12(C) | Address of trace variable 4 | |
| 16(10) | ATBFRST Address of first entry in trace table (CXTATPF) | |
| | ATBPRCT* No. of variables in each trace entry | |
| 20 (14) | ATBPREV Address of last entry used in trace table (CXTAPL) | |
| | ATBCTL* Address trace control byte | |
| 24(18) | ATBLAST Address of last entry in trace table | |
| | ATBLVLS* Program level to be traced | |
| 28(1C) | ATBCNTR Number of interrupts processed | 30(1E) RESERVED |
| 32(20) | RESERVED | 34(22) ATBENTSZ |
| | Trace entry size | |
| * Indicates that a byte expansion follows | | |

Figure 24-1. Address Trace Block

| Table 24-12. Byte Expansion of Address Trace Block | | |
|--|--|--|
| Offset/Field Name Hex Value | Bit Pattern | Contents |
| 20(14) ATBCTL | xxxx.... xxxx | Address trace control byte activation: X'0' After trace activation: X'8' Level 2 X'4' Level 3 X'2' Level 4 X'1' Level 5 Address trace type variables (bit 4: Variable = 4... bit 7: Variable = 1) 1 = Register or displacement 0 = Storage |
| 26(1A) ATBLVLS | X'80' X'40' X'20' X'10' | Program levels to be traced Level 2 Level 3 Level 4 Level 5 |

NCP - Deactivate Channel Adapter Trace

Use this function to trace channel adapter level-3 interrupts.

This function is available only if CATRACE=YES is specified in the BUILD macro.

| Step | Procedure | Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--|--|--|----|----|-----------|---|---|-----------|---|---|-----------|---|---|-----------|---|---|--------------|---|----|--------------|---|----|----------------|---|----|----------------|---|----|-------------------|---|---|-------------------|---|---|---------------------|----|---|---------------------|----|---|------------------------|----|---|------------------------|----|----|--------------------------|----|----|------------------------|----|----|
| | In PEP environment with a line in NCP mode, first switch control to NCP mode. Refer to "Switching Control to NCP Mode" at the beginning of this chapter. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | <div style="border: 1px solid black; padding: 2px; display: inline-block;"> F2 ■ D E X SEND </div> | To select the data exchange function. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | DATA == > xxxx FUNCTION == > .9 CCU LVL3 == > Y <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;"> SEND </div> | xx = channel adapter identification (within the range X'00' to X'FF'. Only the following bits are valid: LA = Logical address PA = Physical address <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: right;">LA</th> <th style="width: 10%; text-align: right;">PA</th> </tr> </thead> <tbody> <tr><td>1... .. .</td><td style="text-align: right;">0</td><td style="text-align: right;">5</td></tr> <tr><td>.1.. .. .</td><td style="text-align: right;">1</td><td style="text-align: right;">6</td></tr> <tr><td>..1.</td><td style="text-align: right;">2</td><td style="text-align: right;">7</td></tr> <tr><td>...1</td><td style="text-align: right;">3</td><td style="text-align: right;">8</td></tr> <tr><td>.... 1... ..</td><td style="text-align: right;">4</td><td style="text-align: right;">13</td></tr> <tr><td>.... .1.. ..</td><td style="text-align: right;">5</td><td style="text-align: right;">14</td></tr> <tr><td>.... ..1.</td><td style="text-align: right;">6</td><td style="text-align: right;">15</td></tr> <tr><td>.... ...1</td><td style="text-align: right;">7</td><td style="text-align: right;">16</td></tr> <tr><td>.... 1... ..</td><td style="text-align: right;">8</td><td style="text-align: right;">1</td></tr> <tr><td>....1.. ..</td><td style="text-align: right;">9</td><td style="text-align: right;">2</td></tr> <tr><td>....1.</td><td style="text-align: right;">10</td><td style="text-align: right;">3</td></tr> <tr><td>....1</td><td style="text-align: right;">11</td><td style="text-align: right;">4</td></tr> <tr><td>.... 1... ..</td><td style="text-align: right;">12</td><td style="text-align: right;">9</td></tr> <tr><td>....1.. ..</td><td style="text-align: right;">13</td><td style="text-align: right;">10</td></tr> <tr><td>....1.</td><td style="text-align: right;">14</td><td style="text-align: right;">11</td></tr> <tr><td>....1 ..</td><td style="text-align: right;">15</td><td style="text-align: right;">12</td></tr> </tbody> </table> MSA field f indicates which of the channel adapter(s) has the trace functions active. Field f positions indicate the channel adapters. | | LA | PA | 1... .. . | 0 | 5 | .1.. .. . | 1 | 6 | ..1. | 2 | 7 | ...1 | 3 | 8 | 1... .. | 4 | 13 |1.. .. | 5 | 14 |1. | 6 | 15 |1 | 7 | 16 | 1... .. | 8 | 1 |1.. .. | 9 | 2 |1. | 10 | 3 |1 | 11 | 4 | 1... .. | 12 | 9 |1.. .. | 13 | 10 |1. | 14 | 11 |1 .. | 15 | 12 |
| | LA | PA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1... .. . | 0 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| .1.. .. . | 1 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ..1. | 2 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ...1 | 3 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1... .. | 4 | 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1.. .. | 5 | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1. | 6 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1 | 7 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1... .. | 8 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1.. .. | 9 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1. | 10 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1 | 11 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1... .. | 12 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1.. .. | 13 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1. | 14 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|1 .. | 15 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

To analyze the information stored in the channel adapter trace table, use one of the following:

- The Display Long function to display the CCU storage.
- Take an NCP dump. Refer to *SSP Diagnosis Reference*. The address and the format of the trace table is given in *NCP/EP Reference Summary and Data Areas*.

NCP Scanner Interface Trace (SIT)

The scanner interface trace procedure under NCP is documented in *IBM Advanced Communications Function for Network Control Program; Advanced Communications Function for System Support Programs: Diagnosis Guide, LY30-5591*.

EP - Line Test

The Line Test function is an optional function of the emulation program (EP), and is included during EP generation only if TEST=YES is specified in the BUILD definition statement.

Use this function to test a communication line via the operator console. The function consists of an initialization subroutine, a series of test subroutines and an end test subroutine. The CCB display function may be used to analyze the operation of a line.

Line test subroutines are described in Table 24-16. They do the following general tasks:

- Multiple line testing - Information about each line under test is stored in the CCB fields to allow concurrent testing of the communication lines.
- Line error checking - Data checks, feedback checks, dial errors and SCF errors are dynamically displayed in MSA fields f and l, with an option to stop any line if an error occurs.
- Data translation - Transmit and receive data is translated from line code to PDF code when communication lines with redundancy checking are tested. Lines without redundancy checking must be tested in no-translate mode, and the buffer data must be entered in PDF code.

Notes:

1. When a line is in use by the Line Test function, all system commands are rejected.
2. When a line is in use by the system, it is not available to the Line Test function.
3. Always use X'8F' to end all the line test subroutines, to ensure availability of the line to the host.
4. Leased lines initially enabled by the access method must be re-enabled with subroutine X'80' (Table 24-16 only.).

| Table 24-15. EP - Line Test | | |
|-----------------------------|--|---|
| Step | Procedure | Comments |
| | To test an EP line in PEP environment, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="F2"/> <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To display Menu 2 Functions and to select the data exchange function. |
| 2 | CA Selected, go to step 5. | |
| 3 | CA not selected, go to next step. | |
| 4 | DATA == > xx00 FUNCTION == > 2 CCU LVL3 == > Y | xx = channel adapter number (0-F) For CA error code, see Table 24-30 on page 24-41. |
| 5 | <input type="button" value="SEND"/> | |
| 6 | DATA == > xxyy FUNCTION == > 5 CCU LVL3 == > Y <input type="button" value="SEND"/> | xx = subroutine code yy = data xx and yy are described in 24-16. |
| 7 | Another line test or more data, go to step 6. | |
| 8 | No other line test and no more data to enter, go to next step. | |
| 9 | DATA == > 8Fyy FUNCTION == > 5 CCU LVL3 == > Y <input type="button" value="SEND"/> | To end the test yy = subchannel address. |
| 10 | DATA == > 80yy FUNCTION == > 5 CCU LVL3 == > Y <input type="button" value="SEND"/> | Only if the line is initially enabled by the host access method. yy = sub-channel address. |

To execute any of the subroutines described in Table 24-16, enter:

DATA == > xxyy FUNCTION == > 5 CCU LVL3 == > Y

xx and yy values are given in table 24-16.

| Subroutine Name | xx | yy | Description |
|--|--------------------------------|--|--|
| Load Transmit Buffer Buffer 1 Buffer 2 Buffer 3 Dial digit buffer | 00 01 02 03 | data character data character data character dialed digit | To load the data character into buffer 1, 2 or 3, or the dialed digit into the dial digit buffer. Perform this subroutine as many times as you have data characters to enter (maximum is 20 per buffer). After the last one, enter X'99' in the yy operand. The next buffer location (vv) is displayed in MSA field I: X71:000000 X72:0000vv |
| Load Receive Compare Character compare character 1 compare character 2 compare character 3 | 04 05 06 | compare character compare character compare character | To load a new receive compare character 1, 2 or 3. The old and the new receive compare characters are displayed in MSA field I. X'99' as compare character causes continuous transmission without any attempt to receive. The old (vv) and new (ww) characters are displayed in MSA field I: X71:000000 X72:00vvww |
| Swap Character Buffer 1 swap char. Buffer 2 swap char. Buffer 3 swap char. | 08 09 0A | swap character swap character swap character | To load a new swap character for buffer 1, 2 or 3. The old (vv) and the new (ww) swap characters are displayed in MSA field I: X71:000000 X72:00vvww If incoming data compares on the buffer swap character 1, 2 or 3, the associated buffer is transmitted unconditionally. |
| Change Character Buffer 1 Buffer 2 Buffer 3 Dial buffer | 0C 0D 0E 0F | position character position character position character position character | This subroutine is performed in two steps: 1. Specify the position of the character (yy) that you want to change in buffer 1, 2 or 3. 2. Enter the new character if the MSA field f displays X71:00FF00 and field I displays X72:000002. The old (vv) and new (ww) characters are displayed in MSA field I: X71:000000 X72:00vvww |
| Display Buffer buffer 1 buffer 2 buffer 3 dial buffer | 10 11 12 13 | buffer position buffer position buffer position buffer position | To display the buffer position indicated in yy (must be an even number). If the designated position is less than X'10', the 4 bytes of data beginning at the specified position are displayed in MSA fields f and I. If the position is equal to or greater than X'10', the last 4 bytes of the buffer are displayed. |

NCP and EP Functions

| Table 24-16 (Page 2 of 3). Subroutines Used When Performing a Line Test | | | |
|---|----|--------------------------|---|
| Subroutine Name | xx | yy | Description |
| Display Receive Compare Character | | | To display the receive compare character 1, 2 or 3 in the two middle positions of MSA field I: Field I = X71:000000 Field f = X72:00..00 |
| comp. char. 1 | 14 | N/A | |
| comp. char. 2 | 15 | N/A | |
| comp. char. 3 | 16 | N/A | |
| Display Swap Character | | | To display buffer 1, 2 or 3 swap character, in the two middle positions of MSA field I: Field I = X71:000000 Field f = X72:00..00 |
| buffer 1 | 18 | N/A | |
| buffer 2 | 19 | N/A | |
| buffer 3 | 1A | N/A | |
| Transmit Buffer | | | To transmit buffer 1, 2 or 3, until X'99' is recognized. The line is then set to receive mode. |
| buffer 1 | 20 | sub-channel address | |
| buffer 2 | 21 | sub-channel address | |
| buffer 3 | 22 | sub-channel address | |
| buffers 1 to 3 | 23 | sub-channel address | Use subroutine X'23' to chain buffers 1, 2, and 3 as one buffer. After transmission, the line is switched to receive mode. |
| Receive/Reply Using | | | To place the line in receive mode, and perform receive compare character checking. If a compare is found, the line is turned around to transmit buffers 1, 2, and 3. |
| Buffers 1, 2, 3 | | | |
| buffer 1 | 40 | sub-channel address | |
| buffer 2 | 41 | sub-channel address | |
| buffer 3 | 42 | sub-channel address | |
| buffers 1, 2, and 3 | 43 | sub-channel address | Use subroutine X'43' to chain buffers 1, 2, and 3 as one buffer. |
| Enable Line | 80 | sub-channel address | To enable the line (DTR is raised on LIC interface). |
| Modify CCB Field | | | This subroutine is performed in two steps: 1. Specify the sub-channel address. 2. Enter the new data. The old (vv) and new (ww) data is displayed in MSA field I: X71:000000 X72:00vvww |
| CCBOPT | 82 | s/chan addr. - new data | |
| CCBOPT2 | 83 | s/chan addr. - new data | |
| CCBSTMOD | 84 | s/chan addr. - new data | |
| CCBFLGB1 (BSC) or CCBSSC (S/S) | 85 | s/chan addr. - new data | The new data for CCBFLGB1 is the flag byte, and for CCBSSC it is the control byte. |
| CCBFLGB2 (BSC) | 86 | s/chan addr. - flag byte | |

| Subroutine Name | xx | yy | Description |
|--|----|---------------------|---|
| Stop on Line Error | 87 | FF or 00 | If yy = FF (on condition), the subroutine stops the tests on the line having errors. If yy = 00 (off condition), the subroutine displays the error but does not stop the test. |
| Translate for Buffer 1, 2 or 3 | 8C | FF or 00 | If yy = FF (no-translate mode), all data compare characters must be entered in PDF format. Data translation is not performed. If yy = 00 (translate mode), all transmit and receive characters are translated for TAI, TAIL, TTY1, and TTY2 devices. Other terminal types use no-translate mode. |
| Display Last Message in MSA Fields f and l | 8D | none | To display the most current message. When no display information has been saved since the last request of subroutine X'8D', MSA fields f and l contain all zeros. |
| End Test | 8F | sub-channel address | To end all testing and to disable the line. |

Level 2 and Level 3 Display Codes

Level 2 codes provide information about the line being tested (Table 24-17), and level 3 codes about the selected subroutine (Tables 24-18 and 24-19).

Level 2 display codes are not displayed automatically in MSA fields f and l. To display them while performing subroutines X'20', X'23', X'40', X'43', X'80', X'86' or X'8F', use subroutine X'8D' only when the first digit displayed in field f is 2 (X71:2.....).

In Table 24-17, lowercase letters in fields f and l have the following meanings:

xx = channel adapter number(0-F)

yy = sub-channel address

zz = first 6 bits of the SES

vv = SCF

ww = PCF

| MSA Field f | MSA Field l | Description |
|-------------|-------------|---|
| X71:01xxyy | X72:00FC00 | The test is accepted for the line whose sub-channel address is displayed in field f (yy). The line has been enabled if current subroutine is other than X'8F'. If subroutine is X'8F', the line will have been disabled and the test ended. |
| X71:02xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing CHANGE command. |
| X71:03xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing MONITOR INCOMING command. |
| X71:04xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing DIAL command. |
| X71:05xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing RAISEDTR command. |
| X71:06xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing ENABLE command for auto-answer or leased line. |
| X71:07xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing ENABLE command for auto-call line. |
| X71:08xxyy | X72:zzvwww | Line error on the line whose address is in field f (yy) while processing RESETD command. |
| X71:09xxyy | X72:00vwww | Data check on emulation mode line whose address is in field f (yy) while processing transmit. |
| X71:0Axxyy | X72:00vwww | Data check on emulation mode line whose address is in field f (yy) while processing receive. |
| X71:0Bxxyy | X72:zzvwww | Line error detected while transmitting. |
| X71:0Cxxyy | X72:zzvwww | Line error detected while receiving. |

Table 24-18. Level 3 Display Codes

| MSA Field f | MSA Field I | Description |
|---|-------------|---|
| X71:x0FF00 | X72:000001 | 'Monitor function for line errors' set. |
| X71:x0FF00 | X72:000002 | Enter new data character. |
| X71:x0FF00 | X72:000003 | Buffer-end (X'99') set. |
| X71:x0FF00 | X72:000004 | Translate-mode accepted. |
| X71:x0FF00 | X72:000005 | The line is enabled. |
| X71:x0FF00 | X72:000006 | Ending status presented. |
| X71:x0FF00 | X72:000007 | 'Stop-on-line error' set. |
| X71:x0FF00 | X72:000008 | 'No-translate mode' set. |
| X71:x0FF00 | X72:000009 | Test ended for the line. |
| x = 0: No level-2 display codes | | |
| x = 2: Use subroutine X'8D' to display level-2 codes. These codes are described in Table 24-17. | | |

Table 24-19. Level 3 Error Codes

| MSA Field f | MSA Field I | Description |
|---|-------------|---|
| X71:x0FFFF | X72:000000 | Invalid subroutine. |
| X71:x0FFFF | X72:000001 | Invalid buffer index. |
| X71:x0FFFF | X72:000002 | Invalid sub-channel address (sub-channel address is not associated with a line specified during EP generation). |
| X71:x0FFFF | X72:000003 | Line is active with a host command or error recovery. Line must be inactive for line test. |
| X71:x0FFFF | X72:000004 | Invalid subroutine for start-stop lines. |
| X71:x0FFFF | X72:000005 | Request cannot be performed because line is not operational. |
| X71:x0FFFF | X72:000006 | Subroutine X'8F' (END TEST) was issued for a line that is not in test mode. |
| x = 0: No level-2 display codes | | |
| x = 2: Use subroutine X'8D' to display level-2 codes. These codes are described in Table 24-17. | | |

EP/PEP - Display of Character Control Block (CCB)

Use this function to display a character control block (CCB) for any installed line. The selected CCB areas are displayed only once in MSA fields f and l. These fields also display information on the function progression (see Table 24-30).

| Table 24-20. EP/PEP - Display of Character Control Block (CCB) | | |
|--|---|--|
| Step | Procedure | Comments |
| | In PEP environment to display CCB area, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="F2"/> <input type="checkbox"/> <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select the data exchange function. |
| 2 | CA selected, go to step 5. | |
| 3 | CA not selected, go to next step. | |
| 4 | DATA == > 0x00 FUNCTION == > 2 CCU LVL3 == > Y | 0x = channel adapter number (0-F) For MSLA error code, see the last figure at the end of this chapter. |
| 5 | <input type="button" value="SEND"/> | |
| 6 | DATA == > xxyy FUNCTION == > 6 CCU LVL3 == > Y <input type="button" value="SEND"/> | xx = CCB area to be displayed (see next page) Display first CCB area X'38' to verify that CCBSUBCH is for the subchannel that you want to display. yy = subchannel address |
| 7 | To display another or the same area, go to step 6 | |
| 8 | If no more CCB areas to display, no other action is required. | |

Note: xx is the offset into the CCB of the 4 bytes to be displayed.

EP/PEP - Line Trace and Scanner Interface Trace (SIT)

Use this function to start or stop a trace on one or all defined lines as well as on the scanner interface. The line trace and SIT functions are documented in *Emulation Program for IBM Communication Controllers: Installation, Resource Definition, and Diagnosis*, SC30-3338.

The level-2, level-3, and scanner interface traces are EP optional functions. They are included at EP generation time unless LINETRC=NO is specified in the BUILD macro.

After deactivating the trace, you may get a storage dump of the 3745 using dump utility or dynamic dump utility program.

The line trace table in the storage dump is as follows:

- The line trace table pointer is in the upper part of the storage, after the EP load module.
- Look at the right-hand side of the dump for the 'START TRACE'. The trace table pointer area starts four fullwords below.
- Line trace table pointer area:
 - First word: Latest entry address in the trace table (this entry was written before terminating the line trace).
 - Second word: Address of the trace table beginning.
 - Third word: Address of the trace table upper limit.

The SIT buffer may be located as follows:

- The EP-TLNVT fields (beginning at X'840') contain SW pointer to the SIT control blocks in the order they were started.
- The SIT CCB contains pointers to the two SIT buffers at X'28' and X'2C'.
- The SIT data and buffer leader are described in *Advanced Communications Function for Network Control Program; Emulation Program: Reference Summary and Data Areas*.

Notes:

1. A trace can degrade EP performance.
2. To start a line or a scanner interface trace with the dynadump utility trace, the Trace Active bit must be off.
3. The format of the trace table entries is given in *NCP/EP Reference Summary and Data Areas*.
4. When you start a SIT, there may be a delay of up to 25 seconds in displaying the MSA fields.

NCP and EP Functions

| Table 24-21. EP/PEP - Line Trace and Scanner Interface Trace (SIT) | | |
|--|---|---|
| Step | Procedure | Comments |
| | In PEP environment with a line in EP mode, first switch control to NCP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="F2"/> <input type="checkbox"/> <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select the data exchange function. |
| 2 | CA Selected, go to step 5 | |
| 3 | CA not selected, go to next step | |
| 4 | DATA == > 0x00 FUNCTION == > 2 CCU LVL3 == > Y | 0x = channel adapter number (0-F) For CA error code, see the last figure at the end of this chapter. |
| 5 | <input type="button" value="SEND"/> | |
| 6 | DATA == > WXY0zz FUNCTION == > 4 CCU LVL3 == > Y <input type="button" value="SEND"/> | To start a trace. Values w, x, y, and zz are given on the next page. |
| 7 | DATA == > wxy1zz FUNCTION == > 4 CCU LVL3 == > Y <input type="button" value="SEND"/> | To stop a trace. Values w, x, y, and zz are given on the next page. |

The following gives the values that you need to start a trace.

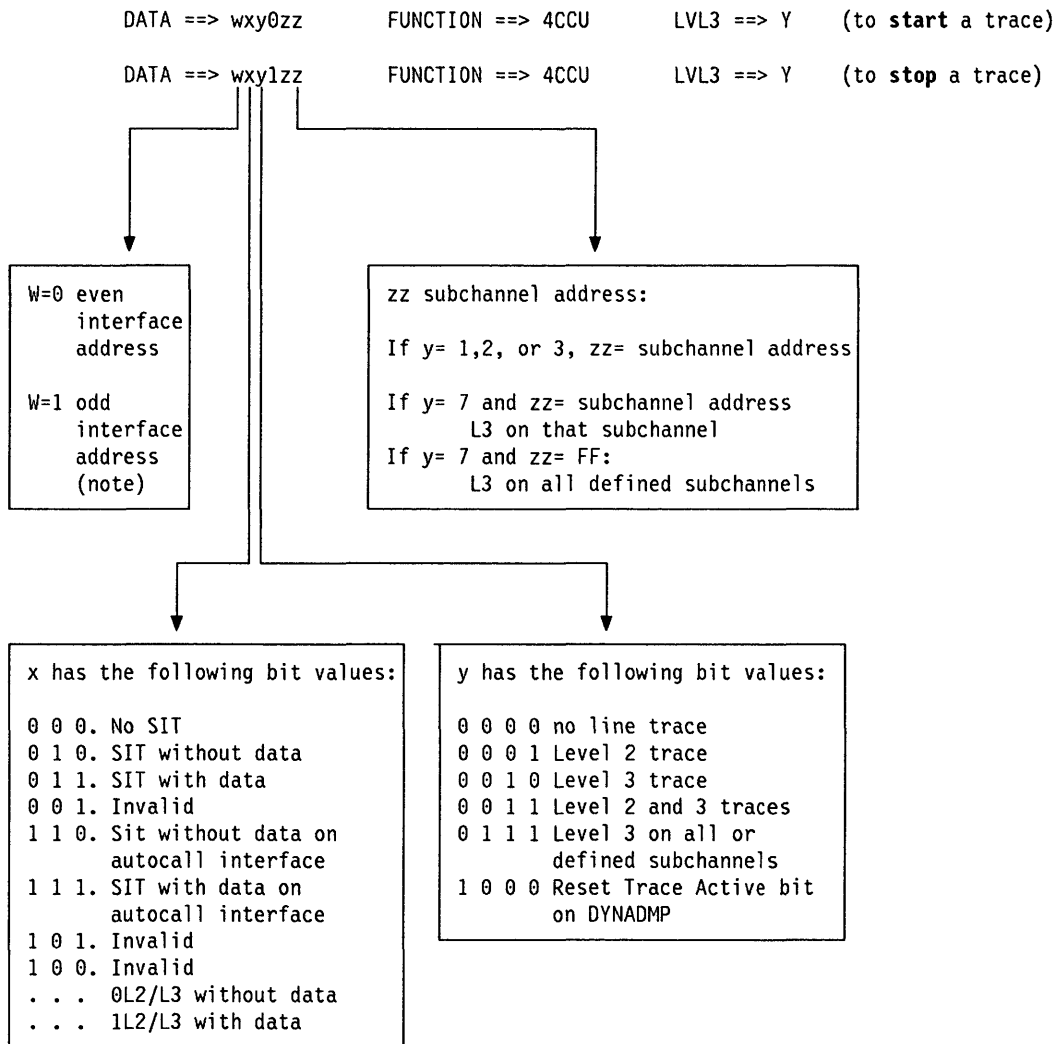


Figure 24-2. Required Parameters for Tracing

Note: If tracing online, w=0 will result in a trace of both transmit and receive.

If tracing during a Wrap Test, w=0 will result in tracing only the transmit address, and w=1 will result in tracing only the receive address. Both even and odd addresses may be traced simultaneously while performing a wrap.

| Table 24-22. Display Codes for Line Trace and Scanner Interface Trace | | |
|---|-------------|---|
| MSA Field f | MSA Field I | Description |
| X71:0000xx | X72:00yyzz | The trace request was successful. xx = number of active SITs yy = number of traced lines on level 2 zz = number of traced lines on level 3 |
| X71:00FFFF | X72:00FFFF | An invalid trace was rejected. |
| X71:004001 | X72:004001 | Unable to service the SIT request. |
| X71:004002 | X72:004002 | Line not available. |

EP/PEP - Present Status on Channel

Use this function to release dynamically a locked sub-channel without reinitializing the 3745 or the hosts. The sub-channel may have not been released because of an error condition. The ending status channel end (CE), device end (DE), and unit check (UC) are presented to the host for the selected sub-channel.

Notes:

1. Sense command X'04' from the host after ending status CE, DE or UC will receive Equipment check.
2. Make sure that the sub-channel that you are releasing is not in a valid operation. When bit 5 of CCBCMD is on, the sub-channel is not in a valid operation. To display CCBCMD use EP function Display of CCB.

| Table 24-23. EP/PEP - Present Status on Channel | | |
|---|--|--|
| Step | Procedure | Comments |
| | In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <div style="border: 1px solid black; display: inline-block; padding: 2px;"> F2 ■ D E X SEND </div> | To select the data exchange function. |
| 2 | DATA == > 3xyy FUNCTION == > 2 CCU LVL3 == > Y <div style="border: 1px solid black; display: inline-block; padding: 2px;">SEND</div> | x = logical channel adapter number (0-F) yy = sub-channel address For 'x' and 'yy' values, refer to the table on page 24-37. |

| Table 24-24. 3745 Channel Adapter Logical and Physical Addresses | | | | |
|--|----------------------|---------------|---|---------------------------------|
| Physical Address (PA) | Logical Address (LA) | | x and yy Values Required to Present Status on Channel | |
| | 210, 310, 410, 610 | 130, 150, 170 | X=(0 to F) | YY=(00 to FF) See note below |
| 1 | 8 | | 8 | |
| 2 | 9 | | 9 | |
| 3 | 10 | | A | |
| 4 | 11 | | B | |
| 5 | 0 | 0 | 0 | |
| 6 | 1 | 1 | 1 | |
| 7 | 2 | 2 | 2 | |
| 8 | 3 | 3 | 3 | |
| 9 | 12 | | C | |
| 10 | 13 | | D | |
| 11 | 14 | | E | |
| 12 | 15 | | F | |
| 13 | 4 | | 4 | |
| 14 | 5 | | 5 | |
| 15 | 6 | | 6 | |
| 16 | 7 | | 7 | |

Note: The sub-channel address (yy) is the one you can find in the PEP generation deck (from VTAM LST). It is defined in the ADDRESS keyword of the LINE statement.

Example: L072 LINE ADDRESS=(072,26-2)

072 is the line number
26 is the sub-channel address
2 is the CA logical address

| Table 24-25. MSA Fields f and I Values for Present Status on Channel | | |
|--|-------------|---|
| MSA Field f | MSA Field I | Description |
| X71:000000 | X72:000300 | Ending status CE, DE, UC presented to the host. |
| X71:00FFFF | X72:000301 | Rejected. |

EP - Display of Storage

Use this function to display two halfwords of storage in MSA fields f and l (Table 24-27).

| Step | Procedure | Comments |
|------|---|---------------------------------------|
| | In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <input type="button" value="F2"/> <input type="checkbox"/> <input type="button" value="D"/> <input type="button" value="E"/> <input type="button" value="X"/> <input type="button" value="SEND"/> | To select the data exchange function. |
| 2 | DATA == > xxxxxx FUNCTION == > 1 CCU LVL3 == > Y <input type="button" value="SEND"/> | xxxxxx = storage address |
| 3 | To display more halfwords, go to step 2. | |
| 4 | If - no more halfwords to display, no other action is required | |

| MSA Field f | MSA Field l | Description |
|-------------|-------------|---|
| X71:00FFFF | X72:00FFFF | Invalid address or function |
| X71:00xxxx | X72:00yyyy | xxxx = first storage halfword yyyy = second storage halfword |

EP/PEP - Channel Adapter Reset

Use this function to simulate a system reset from any attached channel if the access method terminates abnormally (abend) and you have to release the sub-channels and lines.

The Channel Adapter Reset function resets only the sub-channels and lines associated with the channel adapter that you specified, and has no effect on the normal operation of other channels.

| Table 24-28. EP/PEP - Channel Adapter Reset | | |
|---|--|---|
| Step | Procedure | Comments |
| | In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter. | |
| 1 | <input type="text" value="F2"/> <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="X"/> <input type="text" value="SEND"/> | To select the data exchange function. |
| 2 | DATA == > 1xyy FUNCTION == > 2 CCU LVL3 == > Y <input type="text" value="SEND"/> | x = channel adapter number (0-F) yy = 00 no status presentation yy = FF CE/DE/UC presented on all associated sub-channels |
| 3 | When the channel adapter is reset, the MSA displays the following: field f: X71: 000000 field l: X72:00010x or X72:00010x For other codes, see later in this chapter. | |

EP - Subchannel Switching (MSLA)

Use this function to switch sub-channel/line associations when the host access method does not issue disable commands. When a line is used with an access method that does not issue disable commands, the line cannot be accessed by another sub-channel via host-issued commands.

Criteria regulating sub-channel/line switching are as follows:

- The subchannels to which the line can be associated must be identified at generation time.
- The switch is performed only if the line does not have an active command other than ENABLE or PREPARE.

The sub-channel switching function does not change the physical state of the line. For example, an enabled line remains enabled.

| Step | Procedure | Comments |
|------|---|--|
| | In PEP environment with a line in EP mode, first switch control to EP mode. Refer to "Switching Control to EP Mode" at the beginning of this chapter | |
| 1 | <input type="text" value="F2"/> <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="X"/> <input type="text" value="SEND"/> | To select the data exchange function. |
| 2 | DATA == > 2xyy FUNCTION == > 2 CCU LVL3 == > Y <input type="text" value="SEND"/> | x = channel adapter number (0-F) yy = sub-channel address |
| 3 | When the switch is performed, the MSA displays the following: field f: X71: 000000 field l: X72:000202 or X72:000203 For other codes, see later in this chapter. | |

Table 24-30. MSLA and Select CA Function Error Codes

| MSA Field f | MSA Field I | Description |
|-------------|-------------|---|
| X71:00FFFF | X72:00FFFF | Invalid subroutine. |
| X71:00FFFF | X72:00CACA | Invalid channel adapter. |
| X71:00FFFF | X72:00CA00 | Requested CA not available. |
| X71:00FFFF | X72:000201 | Sub-channel entered outside the HI/LO range. |
| X71:00FFFF | X72:000202 | Non-MSLA USCCB or NCP line test function active for the line. |
| X71:00FFFF | X72:000203 | Line is currently active. |
| X71:00FFFF | X72:000204 | MSLA USCCB currently active. |
| X71:000000 | X72:00000x | Channel adapter x selected. (x = channel adapter number 0-F). |
| X71:000000 | X72:00000x | Channel adapter x selected. |
| X71:000000 | X72:00010x | Channel adapter x reset. |
| X71:000000 | X72:00010x | Channel adapter x reset. |
| X71:000000 | X72:000201 | Sub-channel is already using the line. |
| X71:000000 | X72:000202 | Successful switch. |
| X71:000000 | X72:000203 | Switch is performed - ENABLE or PREPARE aborted. |



Chapter 25. Control Program Procedures (CPP)

A control program procedure is a sequence of instructions that call and execute one or several IBM Network Control Program (NCP) or IBM Emulation Program (EP) functions to perform a specific task. For example, to install a ZAP in NCP, the NCP Dynamic Store function is called.

To create and run the control program procedures, you have at your disposal a series of tools, referred to as 3745 procedure tools.

Control program procedures are:

1. Pre-cataloged control program procedures. They are already cataloged in the 3745 disk and are available at any time to perform an appropriate task. The name of these procedures always starts with CP. You cannot erase or modify them, nor can you create a procedure whose name starts with CP. You can only display, copy and execute them. Pre-cataloged procedures are described later in this chapter under "Pre-cataloged Control Program Procedures" on page 25-16
2. Your own control program procedures that you create and catalog using the 3745 procedure tools.

This chapter:

- Describes the 3745 procedure tools that you use to run the control program procedures.
- Explains each step of the pre-cataloged procedures that you can execute and copy.
- Shows you how to create some control program procedures.

Note: Controlled Program Procedures dialogue directly with NCP and not with VTAM. This means that following some MOSS functions a Controlled Program Procedure may fail.

For example, after swapping ports from 'X' to 'Y' (without any physical moving of cables), in NCP and VTAM, information about ports and lines 'X' and 'Y' become different. Within NCP, the line 'X' is no longer recognized. Information about port 'X' is now transferred to port 'Y'. Within VTAM, only the line 'X' is recognized. If you start the pre-cataloged procedure 'CP01', on the line 'X' the procedure fails, as the line 'X' is no longer defined in NCP.

Printing Control Program Procedures

Control program procedures may be printed on a host printer. The transfer and print procedures are documented in the *NCP, SSP, and EP Diagnosis Guide*, LY30-5591.

Control Program Procedures (CPP)

The 3745 Procedure tools are listed in the following table:

| Table 25-1. 3745 Procedure Tools | | |
|----------------------------------|---|------------|
| Name | Use | Go to page |
| DIRECTORY | To list all control program procedures. | 25-3 |
| DISPLAY | To display a specific procedure. | 25-4 |
| CREATE/COPY | To create or copy a procedure. | 25-5 |
| ERASE | To erase a procedure that <i>you</i> created and cataloged. | 25-12 |
| MODIFY | To modify a procedure that <i>you</i> created and cataloged. | 25-13 |
| EXECUTE | To execute any cataloged procedure. | 25-14 |
| CATALOG | To catalog a procedure that you created, copied, or modified. | 25-15 |

You can create a procedure in *3745 storage*, then catalog it in a *procedure file* on the disk.

To display, modify or execute a procedure, you move it from the procedure file on disk into 3745 storage, unless a procedure with the same name is already in 3745 storage. In this case, the following two F keys are displayed, so you can select the appropriate procedure:

F4: To use a procedure from the disk file.

F6: To use a procedure from storage.

Both versions of the same procedure may be at different levels.

To exit from a 3745 procedure tool:

- Select another 3745 procedure tool displayed in the secondary menu, or
- Press F1. It will cancel *all* 3745 procedure tools and erase any procedure that may be in 3745 storage.

Displaying the Directory

Use DIRECTORY to display the directory, that is, the list of all cataloged procedures. The directory is updated automatically when you catalog a procedure.

C P P SEND 1 SEND

The following screen is displayed:

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY      |      NAME   TITLE                               DATE (HH/DD/YY)
2 DISPLAY        |
3 CREATE/COPY    |  A
4 ERASE          | 01  CP01   SDLC LINK TEST (NCP)                mm/dd/yy
5 MODIFY         | 02  CP02   3270 BSC POLL (NCP-EP)             mm/dd/yy
6 EXECUTE        | 03  CP03   2740 S/S POLL (NCP-EP)             mm/dd/yy
7 CATALOG        | 04  CP04   START ADDR TRACE (NCP)        mm/dd/yy
                 | 05  CP05   STOP ADDR TRACE (NCP)       mm/dd/yy
                 | 06  CP06   X.21 SWITCHED LINE TEST    mm/dd/yy
                 | 07
                 | 08
                 | 09
                 | 10
====>
F1:END  F2:MENU2  F3:ALARM                F8:FWD

```

You cannot update the information displayed.

A The first two characters are the procedure number. This number cannot be used to select the procedure. Its only purpose is to locate a procedure within the directory.

NAME and TITLE are those that you entered when creating the procedure.

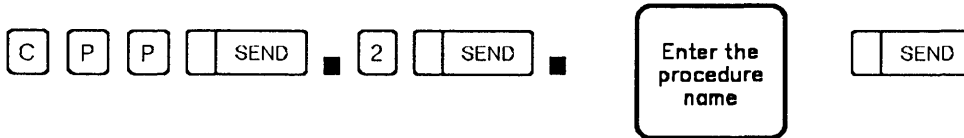
DATE is that given by the 3745 when you cataloged the procedure.

The directory is automatically updated when you catalog a procedure.

Control Program Procedures (CPP)

Displaying a Cataloged Procedure

Use DISPLAY to display a specific procedure.



From this screen you may:

- Press F4 to display a procedure that is already cataloged.
- Press F6:TO USE PROC FROM STORE - To display the procedure that is in the 3745 storage.
- Press F6:QUIT - To clear the displayed procedure and allow you to display another.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY      |          PW02 3270 BSC POLL (NCP-EP)
2 DISPLAY        |
3 CREATE/COPY    |
4 ERASE          | 001 DISP L= 19 M= **** GENERAL POLL TO 3270 (BSC) **
5 MODIFY         | 002 SETI D= 00000C F=07 I=Y
6 EXECUTE        | 003 GOTO T= 031 A= 00000 C= & B= 00000
7 CATALOG        | 004 DISP L= 12 M= CHANGE THE THREE 'F' BY THE NCP LINE
                  | 005 DISP L= 13 M= ADDRESS (HEX)
                  | 006 OSET D= 0F20FF F= 02 I= Y
                  | 007 GOTO T= 031 A= 0000FF C= B B= 00003
                  | 008 GOTO T= 012 A= 0000FF C= B B=000005
                  | 009 GOTO T= 014 A= 00FF00 C= B B=00FF00
                  | 010 DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION)

===>

F1:END  F2:MENU2  F3:ALARM          F6:QUIT
```

Creating or Copying a Procedure

Use CREATE/COPY to create a new procedure or to copy an existing one under another name.

The maximum number of procedures that you can create depends on the size of the procedures, but can never exceed 63, including the six pre-cataloged control program procedures. The maximum number of statements in a procedure is 255.

The following screen is displayed. Enter the name and title of the procedure.

Once you have entered the name and the title, press SEND

- If you want to copy an existing procedure under the name you just entered, continue as described under "Copying a Procedure" on page 25-6.
- If you want to create a new procedure under the name you just entered, press SEND a second time and continue as described under "Creating a New Procedure" on page 25-6.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY
2 DISPLAY
3 CREATE/COPY      - ENTER NAME OF PROCEDURE TO BE CREATED ==> A
4 ERASE           - ENTER TITLE (UP TO 24 CHAR) ==> B
5 MODIFY
6 EXECUTE
7 CATALOG

====>

F1:END  F2:MENU2  F3:ALARM

```

- A** The name is mandatory and must not exceed four characters. The first two characters must not be CP, which is reserved for pre-cataloged procedures.
- B** The title is optional, and must not exceed 24 characters. It may be used to give any information that would help you to identify the contents of the procedure.

Control Program Procedures (CPP)

Copying a Procedure

To copy a procedure:

1. Enter the name of the procedure that you want to copy.
2. Press SEND.
3. Modify the procedure if you wish.
4. Press F6.
5. Enter 7 and press SEND to catalog the procedure.

Creating a New Procedure

To create a new procedure:

1. Press SEND a second time to display the instructions.
2. Select one of the instructions on the screen by entering the first letter of the instruction (for example, O for OSET). For descriptions of the instructions and their operands, see following pages.
3. Press SEND.
4. Enter the appropriate operands when requested to do so.
5. When you have entered all the operands, press SEND.
 - If there is no error, select another instruction or press F4 to repeat the same instruction.
 - If there is an error, correct it, then press SEND.
6. When the procedure is complete, enter E. The End instruction must be the last one.
7. Once created a procedure may be:
 - Cataloged (see page 25-15)
 - Executed (see page 25-14)
 - Displayed (see page 25-4).

Cataloging, Executing, and Displaying Procedures

Once created, a procedure may be:

- Cataloged:

- Executed:

If you create, erase, modify, execute, or display *another* procedure before you catalog the procedure just created, the latter is lost.

- Displayed:

Set Immediate Instruction (SETI)

```
SETI D=xxxxxx F=xx I=x
```

Use the SETI instruction to call a control program function and provide data. The values that you enter in the SETI operands (D, F and I) must not conflict with the control program requirements.

D=xxxxxx

To provide data to the control program function. xxxxxx is a string of up to 6 hexadecimal digits, which will be transferred to the CCU via the CCU X'71' input register (operator address/data entry register).

If you enter no value, the last one entered is taken.

F=xx

To call the control program function to be performed. xx is the decimal value from 1 to 16 (or S for 11, R for 12) to be transferred to the CCU via the CCU X'72' input register (operator display/function select register).

If you enter no value, the last one entered is taken.

I=Y or I=N

To request an operator level 3 Interrupt to signal to the control program that the specified function is to be performed. If you enter no value, the last one entered is taken.

Operator Set Instruction (OSET)

```
OSET D=xxxxxx F=xx I=x
```

Use the OSET instruction every time you want to be prompted to call a control program function and/or enter data while executing a procedure. This allows you to enter, for example, a sub-channel number.

When the OSET instruction is read, you are invited to enter D, F and/or I operands. If you enter no operands and press SEND, the current OSET operands are transmitted unchanged to the CCU.

The OSET operands are the same as those for the SETI instruction.

Control Program Procedures (CPP)

GOTO, HALT, and WAIT Instructions

| | | | |
|-------------|--|-----|----------|
| T=xxx | A=xxxxxx | C=x | B=xxxxxx |
| Step number | Condition under which instruction GOTO, HALT, or WAIT is executed | | |

Instructions GOTO, HALT, and WAIT have the same format and operands.

T=xxx

xxx is the target step number. If you do not specify a step number, the next one is assumed.

A=xxxxxx or no value

xxxxxx is the hexadecimal value expected in the CCU X'71' output register. Enter no value if you expect no specific value in the CCU X'71' output register. The contents of the CCU X'71' output register are displayed in MSA field f (see Appendix B).

C=x

& means conditions A and B.

! means condition A or B.

A means that the value entered in the A = operand is to be compared to the X'71' output register contents masked by the value entered in the B = operand.

B means that the value entered in the B = operand is to be compared to the X'72' output register contents masked by the value entered in the A = operand.

If you enter an instruction with no condition (that is, no value in operands A, B, and C), the instruction is executed unconditionally.

B=xxxxxx or no value

xxxxxx is the hexadecimal value expected in the CCU X'72' output register. Enter no value if you expect no specific value in the CCU X'72' output register. The contents of the CCU X'72' output register are displayed in MSA field l.

GOTO Instruction

The GOTO instruction allows you to go to step xxx and execute it if the condition is fulfilled; otherwise the next step is executed.

GOTO with no value has no effect. The procedure continues in sequence.

HALT Instruction

The HALT instruction allows you to go to the step that you specified in operand T= and to stop before executing that step, if the condition is fulfilled. When a HALT instruction is encountered, the following screen is displayed. The current step is displayed on the function message line. To resume processing, do one of the following:

- Press SEND to execute the current step.
- Enter a step number. Then press SEND.
- Press F4 to request an additional SETI instruction.
- Press F5 to stop the function execution.
- Press F6 to change the execution mode. If the execution mode is step-by-step, it switches to continuous mode, and conversely. Then press SEND or any other displayed F key.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY |STEP BY STEP CU02 LINE TEST
2 DISPLAY | ENTER STEP NUMBER OR ==>
3 CREATE/COPY | PRESS F4 F5 F6 OR SEND (EXECUTE CURRENT STEP: 001)
4 ERASE |
5 MODIFY |
6 EXECUTE |
7 CATALOG |

|001 HALT T= 002 A= 00000005 C= B= 0000000F
|F4:EXECUTE SETI F5:STOP EXECUTION F6:CHANGE EXEC MODE

====>
F1:END F2:MENU2 F3:ALARM

```

WAIT Instruction

The WAIT instruction allows you to wait until the condition is fulfilled, and then to go to step that you specified in operand T=. To get control of the operator console, press the BREAK key. The following screen is then displayed: To resume processing, do one of the following:

- Press SEND to return to wait state.
- Enter a step number. Then press SEND.
- Press F4 to request an additional SETI instruction.
- Press F5 to stop the function execution.
- Press F6 to change the execution mode. If the execution mode is step-by-step, it switches to continuous mode, and conversely. Then press SEND or any other displayed F key.

Control Program Procedures (CPP)

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGH PROC
1 DIRECTORY      |STEP BY STEP      CU02 LINE TEST
2 DISPLAY        |ENTER STEP NUMBER OR ==>
3 CREATE/COPY    |PRESS F4 F5 F6 OR SEND (EXECUTE CURRENT STEP: 003)
4 ERASE
5 MODIFY
6 EXECUTE
7 CATALOG

|003 HALT T= 004 A= 0000003F C= B= 0000004F
|F4:EXECUTE SETI F5:STOP EXECUTION F6:CHANGE EXEC MODE

==>
F1:END F2:MENU2 F3:ALARM
```

LOOP Instruction

```
LOOP T=xxx N=xxx
```

When it reaches this instruction, the procedure loops from this step to that specified in the T operand, for the number of times that you indicated in the N operand minus 1 (because the LOOP instruction is located at the end of the loop block).

The value specified in the T operand must be smaller than the step number of the LOOP instruction.

If a GOTO or a HALT instruction is within the range of steps covered by the LOOP instruction and branches to a step outside this range, the LOOP instruction is ended and the GOTO or HALT instruction is executed.

Nested LOOP instructions may give unpredictable results.

DISP Instruction

```
DISP L=xxx M=message
```

The DISP instruction allows you to display on the line specified in the L operand, the message specified in the M operand.

This message informs you of the progression of the procedure or asks you to perform specific actions.

A message remains on the screen until a new one is displayed on the same line or until you clear it.

To clear a message, enter another DISP instruction on the same line (same operand L) with no character for the M operand.

```
DISP L= 15 M=
```

Notes:

1. You cannot enter messages longer than 40 characters.
2. You cannot specify more than 50 messages (DISP instructions) in a procedure. This number does not include DISP instructions with blank characters.

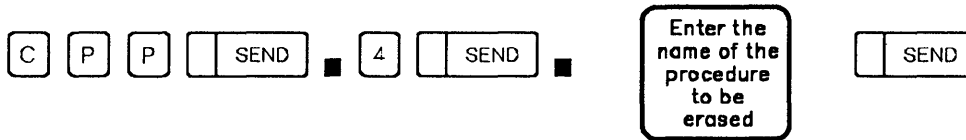
END Instruction

The END instruction indicates the end of the procedure. It must be the last instruction of the procedure. This statement cannot be modified or erased.

Control Program Procedures (CPP)

Erasing a Cataloged Procedure

Use ERASE to erase a cataloged procedure. The directory and the procedure file are automatically updated.

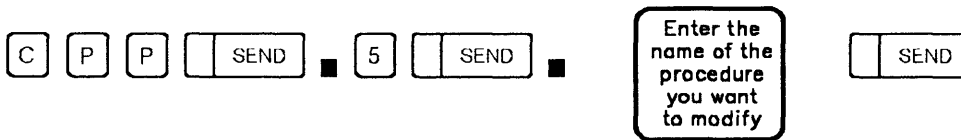


You cannot erase procedures starting with CP. You can erase *only* the procedures that *you* created and cataloged.

Modifying a Cataloged Procedure

Use MODIFY to delete, insert or modify one or several instructions in a procedure already cataloged, except procedures starting with CP. If you want to modify a pre-cataloged procedure (CP), you must first copy it under another name (see "Creating or Copying a Procedure" on page 25-5).

Note: Before selecting MODIFY, you must know the step number of the instruction(s) that you want to modify.



From this screen you may:

- Enter the step number **A** of the instruction that you want to delete or modify, or after which you want to insert a new instruction.
- Select the action: **B** delete, insert, or modify.
- Press SEND.

You may also:

- Press F4 to modify the procedure that is already cataloged.
- Press F6 TO USE PROC FROM STORE: to modify the procedure that is in the 3745 storage.

```

-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY      CU02 LINE TEST
2 DISPLAY        - ENTER STEP NUMBER ==> A
3 CREATE/COPY    - SELECT ACTION: D=DELETE I=INSERT M=MODIFY ==> B
4 ERASE
5 MODIFY
6 EXECUTE
7 CATALOG

====>

F1:END  F2:MENU2  F3:ALARM          F6:END MODIFY

```

The step you have just selected is displayed. If you selected the action:

- **DELETE:** The selected step is immediately deleted. You cannot delete the last step of a procedure, which is always END. If you attempt to do so, the message INVALID INPUT is displayed.
- **INSERT:** You have to enter one or more instructions. To insert a step before the first step, enter the step number 0. The maximum number of instructions allowed in a procedure is 255.
- **MODIFY:** You have to modify the displayed instruction or replace it by a new instruction. (You cannot modify the last step of a procedure, which is always END.)

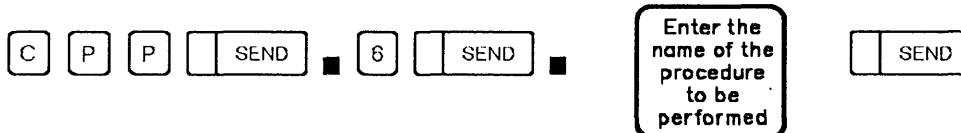
Control Program Procedures (CPP)

If you insert or delete one or several instructions, the T operands of the GOTO, HALT, WAIT, and LOOP instructions are automatically updated. Once the procedure is modified:

1. Press F6: END MODIFY, then
2. Catalog the procedure.

Executing a Cataloged Procedure

Use EXECUTE to execute a procedure that is cataloged or that you have just created or modified. The control program must be running and MOSS must be online.



Select a mode of executive:

- Step-by-step mode: The procedure stops before executing each step, which is displayed on the function message line.
- Continuous mode: The procedure is executed automatically.

You may also press, if displayed:

- F4 to execute the procedure that is already cataloged.
- F6 to execute the procedure that is in the 3745 storage.

```
-----mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
1 DIRECTORY      | CP04 START ADDR TRACE (NCP)
2 DISPLAY        | - ENTER EXECUTION MODE
3 CREATE/COPY    | S=STEP BY STEP C=CONTINUOUS ==>
4 ERASE
5 MODIFY
6 EXECUTE
7 CATALOG

====>
F1:END F2:MENU2 F3:ALARM
```

In either mode, when an OSET, HALT or WAIT instruction is encountered, the procedure stops and you are requested to take an action. These instructions are described under "Displaying Passwords."

While a procedure is being executed, the messages specified in the DISP instruction at creation time are displayed on the screen.

Cataloging a Procedure

Use CATALOG to catalog in the procedure file the procedure that you have created or modified in 3745 storage. The directory is updated automatically with the procedure name and title, and the date.

If you select the Terminate function before cataloging a procedure that you have just created or modified, the procedure is lost or the modifications are ignored.

| | | | | | | | | | |
|---|---|---|------|---|---|------|---|---|------|
| C | P | P | SEND | ■ | 7 | SEND | ■ | Enter the name of the procedure to be cataloged | SEND |
|---|---|---|------|---|---|------|---|---|------|

When the procedure is cataloged, the following message is displayed:

PROCEDURE x CATALOGED

Pre-cataloged Control Program Procedures

Pre-cataloged procedures are procedures already cataloged on the controller disk when you receive your 3745. The names of pre-cataloged procedures always start with CP. You cannot modify or erase them.

For each procedure the detailed description may help you if you want to create a similar procedure or to copy the procedure under a different name and modify it.

If an *unintentional* loop occurs while executing a control program procedure, perform the following:

1. Re-IML MOSS (see the *3745 Basic Operations Guide*)
2. Correct the control program procedure using the 3745 procedure tools described in this chapter, and
3. Execute the procedure again.

The pre-cataloged procedures are:

- CP01 - SDLC Test Frames (NCP only)
- CP02 - 3270 BSC General Poll (NCP/EP)
- CP03 - 2740 Start-Stop Poll (NCP/EP)
- CP04 - Start Address Trace (NCP only)
- CP05 - Stop Address Trace (NCP only)
- CP06 - X.21 Switched Line Test (NCP only)
- CP07 - Line Test End (NCP/EP)

Control program procedures use NCP or EP subroutines. Most of these subroutines are described in Chapter 24. The subroutine identifier is the:

- First two characters of the D operand of each SETI and OSET instruction if the D operand is four characters long.
- Second and third characters of the D operand of each SETI and OSET instruction if the D operand is five characters long.

These identifiers are listed in columns xx of Table 24-4 on page 24-7 and Table 24-17 on page 24-30.

Example: SETI D= 051F3 F= 2 I= Y
SETI D= 51F3 F= 2 I= Y

Then the subroutine Load Transmit Buffer is used.

When an error occurs while executing a pre-cataloged control program procedure, the procedure stops and the error code is displayed in field I of the MSA. These codes are documented under the appropriate functions, in Chapter 24.

CP01 - SDLC Test Frames (NCP)

Use this function to transmit SDLC test frames (command F3) from the 3745 to any SDLC link in your network.

| | | | | | | | | | |
|---|---|---|------|---|---|------|---|----------------------------------|------|
| C | P | P | SEND | ■ | 6 | SEND | ■ | Enter the procedure name CP01 | SEND |
|---|---|---|------|---|---|------|---|----------------------------------|------|

Detailed Description

| Table 25-2 (Page 1 of 2). CP01 Procedure | | |
|--|--|--|
| Step | Instructions | Comments |
| 3 | SETI D = 00000C F = 07 I = Y | Set NCP mode. |
| 4 | GOTO T = 029 A = 000000C = B = 000000 | If EP, go to step 29. |
| 5 | DISP L = 18 M = ****SDLC TEST-FRAMES TO SDLC LINK *** | Display on line 18 text in operand M. |
| 6 | DISP L = 14 M = CHANGE 'FFF' INTO THE NCP | Display on line 14 text in operand M. |
| 7 | DISP L = 15 M = LINE ADDRESS (HEX) | Display on line 15 text in operand M. |
| 8 | OSET D = 0F20FF F = 02 I = | Save line information in the LTS control block. |
| 9 | DISP L = 14 M = | Clear message displayed on line 14. |
| 10 | DISP L = 15 M = | Clear message displayed on line 15. |
| 11 | GOTO T = 029 A = 0000FF C = B B = 000003 | The line is an EP line, go to step 29. |
| 12 | GOTO T = 017 A = 0000FF C = B B = 000005 | The line is active, go to step 17. |
| 13 | GOTO T = 015 A = 00FF00 C = B B = 000000 | Errors, go to step 15. |
| 14 | SETI D = 004000 F = I = | Enable the line. |
| 15 | DISP L = 14 M = | Dummy message to increase delay. |
| 16 | GOTO T = 021 A = 00FF00 C = B B = 00FF00 | No error detected, go to step 21. |
| 17 | DISP L = 14 M = ERROR (SEE LINE TEST FUNCTION) | An error is detected during initialization. The error code is in MSA fields f and l. See Table 24-5 on page 24-12 in Chapter 24. |

Control Program Procedures (CPP)

| Table 25-2 (Page 2 of 2). CP01 Procedure | | |
|--|---|---|
| Step | Instructions | Comments |
| 18 | GOTO T = 030 A = C = B = | Go to step 30. |
| 19 | DISP L = 14 M = LINE IS ACTIVE: (DEACTIVE) | Display on line 14 text in operand M. |
| 20 | HALT T = 004 A = C = B = | Go to step 4 after the line is deactivated. |
| 21 | DISP L = 14 M = ERROR (SEE LINE TEST FUNCTION) | Same comment as STEP 015. |
| 22 | GOTO T = 030 A = C = B = | Go to step 30. |
| 23 | DISP L = 14 M = CHANGE 'AA' TO SDLC STATION ADDRESS | Display on line 14 text in operand M. |
| 24 | OSET D = 0067AA F = I = | Load addressing character. |
| 25 | SETI D = 006210 F = I = | Set SDLC test mode. |
| 26 | GOTO T = 026 A = 00FFFF C = B B = 000000 | No error, go to step 26. |
| 27 | GOTO T = 019 A = C = B = | Error, go to step 19. |
| 28 | DISP L = 14 M = TO END THE TEST, PRESS SEND | Display on line 14 text in operand M. |
| 29 | OSET D = 005000 F = I = | End the line test. |
| 30 | GOTO T = 031 A = C = B = | Go to step 31 (end). |
| 31 | DISP L = 14 M = INITIATED LINE IS SUPPORTED BY EP | Display on line 14 text in operand M. |
| 32 | HALT T = 031 A = C = B = | Halt. |
| 33 | END | End of procedure. |

CP02 - 3270 BSC General Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3745 to any IBM 3270 Information Display System in EBCDIC with BSC protocol. For a 3270 in ASCII, replace data in the D operands marked by an asterisk by appropriate data. To do so, copy and modify the procedure.

The CP02 procedure runs in EP environment as well as in an NCP or NCP/PEP environment.

Selection:

| | | | | | | | | | |
|---|---|---|------|---|---|------|---|-------------------------------|------|
| C | P | P | SEND | ■ | 6 | SEND | ■ | Enter the procedure name CP02 | SEND |
|---|---|---|------|---|---|------|---|-------------------------------|------|

Detailed Description

| Step | Instructions | Comments |
|------|---|--|
| 1 | DISP L= 19 M=**** GENERAL POLL TO 3270 (BSC)**** | Display on line 19 text in operand M. |
| 2 | SETI D= 00000C F=07 I=Y | Set NCP mode. |
| 3 | GOTO T= 030 A= 000000 C= B=000000 | If EP, go to step 30. |
| 4 | DISP L= 12 M=CHANGE 'FFF' INTO THE NCP | Display on line 12 text in operand M. |
| 5 | DISP L= 13 M=LINE ADDRESS (HEX) | Display on line 13 text in operand M. |
| 6 | OSET D= 0F20FF F=02 I= Y | Save line information in the LTS control block. |
| 7 | DISP L= 12 M= | Clear message displayed on line 12. |
| 8 | DISP L= 13 M= | Clear message displayed on line 13. |
| 9 | GOTO T= 033 A= 0000FF C= B B= 000003 | PEP line, go to step 33. |
| 10 | GOTO T= 014 A= 0000FF C= B B= 000005 | Line is active, go to step 14. |
| 11 | GOTO T= 016 A= 00FF00 C= B B= 000000 | Line is available, go to step 16. |
| 12 | DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION) | An error is detected during initialization. The error code is in MSA fields f and l. See Table 24-5 on page 24-12. |

Control Program Procedures (CPP)

| Table 25-3 (Page 2 of 4). CP02 Procedure | | |
|--|--|---|
| Step | Instructions | Comments |
| 13 | GOTO T= 027 A= C= B= | Go to step 27. |
| 14 | DISP L= 12 M= LINE IS ACTIVE IN NCP. (DEACTIVE) | Display on line 12 text in operand M. |
| 15 | GOTO T= 027 A= C= B= | Go to step 27. |
| 16 | DISP L= 12 M= CHANGE 'AA' TO CU-POLLADDRESS (TWICE) | Display on line 12 text in operand M. |
| 17 | OSET D= 0066AA F= I= | Load polling character. |
| 18 | OSET D= 0066AA F= I= | Load polling character. |
| 19 | SETI D= 00667F F= I= | Load all-device poll address. |
| 20 | SETI D= 00667F F= I= | Load all-device poll address. |
| 21 | SETI D= 00662D F= I= | Load ENQ character. |
| 22 | SETI D= 004000 F= I= | Enable the line. |
| 23 | SETI D= 004A11 F= I= | Continuous polling. |
| 24 | GOTO T= 026 A=0000FF C=B B=000000 | Go to step 26. |
| 25 | GOTO T= 012 A= C= B= | Go to step 12. |
| 26 | DISP L= 12 M= -----LINE TEST IS RUNNING----- | Display on line 12 text in operand M. |
| 27 | DISP L= 13 M= TO END THE TEST, PRESS SEND | Display on line 13 text in operand M. |
| 28 | OSET D= 005000 F= I= | End the line test. |
| 29 | GOTO T= 057 A= C= B= | Go to step 57. |
| 30 | DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION) | An error is detected. The error code is in MSA fields f and I. See Table 24-5 on page 24-12. (NCP) or Table 24-18 on page 24-31 and Table 24-19 on page 24-31 (EP). |
| 31 | OSET D= 008DAA F= I= | Display last message. |
| 32 | GOTO T= 054 A= C= B= | Go to step 54. |

| Table 25-3 (Page 3 of 4). CP02 Procedure | | |
|--|--|---------------------------------------|
| Step | Instructions | Comments |
| 33 | SETI D= 00000E F= 07 I= | Set EP mode. |
| 34 | DISP L= 13 M= CHANGE 'AA' TO CU-POLL ADDRESS (TWICE) | Display on line 13 text in operand M. |
| 35 | SETI D= 000037 F= 05 I= | Load EOT character. |
| 36 | SETI D= 0000FF F= I= | Load PAD. |
| 37 | SETI D= 000032 F= I= | Load SYN. |
| 38 | SETI D= 000032 F= I= | Load SYN. |
| 39 | SETI D= 0000AA F= 05 I= | Load to poll address. |
| 40 | SETI D= 0000AA F= 05 I= | Load to poll address. |
| 41 | SETI D= 00007F F= I= | Load all-device poll. |
| 42 | SETI D= 00007F F= I= | Load all-device poll. |
| 43 | SETI D= 00002D F= I= | Load ENQ character. |
| 44 | SETI D= 000099 F= I= | Load end-of-buffer. |
| 45 | SETI D= 000110 F= I= | Load ACK buffer 1. |
| 46 | SETI D= 000161 F= I= | Load ACK. |
| 47 | SETI D= 000199 F= I= | Load end buffer 1. |
| 48 | SETI D= 000437 F= I= | Load compare character EOT. |
| 49 | SETI D= 000903 F= I= | Load swap character ETX. |
| 50 | DISP L= 13 M= CHANGE 'AA' TO SUB-CHANNEL ADDRESS | Display on line 13 text in operand M. |
| 51 | OSET D= 0080AA F= I= | Enable line. |
| 52 | OSET D= 0020AA F= I= | Trasmit buffer. |
| 53 | GOTO T= 030 A= 200000 C= A B= 200000 | EP errors, go to step 30. |
| 54 | DISP L= 12 M= TO END THE TEST | Display on line 12 text in operand M. |

Control Program Procedures (CPP)

| Table 25-3 (Page 4 of 4). CP02 Procedure | | |
|--|---|--------------------------------|
| Step | Instructions | Comments |
| 55 | OSET D = 008FAA F = I = | End test and disable the line. |
| 56 | GOTO T = 030 A = 00FFFF C = A B = 00FFFF | Error, go to step 30. |
| 57 | END | End of procedure. |

CP03 - 2740 Start-Stop Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in a network working with the same protocol.

CP03 runs in EP environment as well as in an NCP or NCP/PEP environment.

Selection:

| | | | | | | | | | |
|---|---|---|------|---|---|------|---|-------------------------------|------|
| C | P | P | SEND | ■ | 6 | SEND | ■ | Enter the procedure name CP03 | SEND |
|---|---|---|------|---|---|------|---|-------------------------------|------|

Detailed Description

| Step | Instructions | Comments |
|------|---|--|
| 1 | DISP L= 19 M=**** S/S POLL TO 2740 WITH *** | Display on line 19 text in operand M. |
| 2 | SETI D= 00000C F=07 I=Y | Set control to NCP mode. |
| 3 | GOTO T= 030 A= 000000 C= B= 000000 | If EP, go to step 30. |
| 4 | DISP L= 12 M=CHANGE 'FFF' INTO THE NCP | Display on line 12 text in operand M. |
| 5 | DISP L= 13 M=LINE ADDRESS (HEX) | Display on line 13 text in operand M. |
| 6 | OSET D= 0F20FF F=02 I= Y | Save line information in the LTS control block. |
| 7 | DISP L= 12 M= | Clear message displayed on line 12. |
| 8 | DISP L= 13 M= | Clear message displayed on line 13. |
| 9 | GOTO T= 028 A= 0000FF C= B B= 000003 | PEP line, go to step 28. |
| 10 | GOTO T= 014 A= 0000FF C= B B= 000005 | Line is active, go to step 14. |
| 11 | GOTO T= 016 A= 00FF00 C= B B= 00FF00 | Line is active, go to step 16. |
| 12 | DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION) | An error is detected during initialization. The error code is in MSA fields f and l. See Table 24-5 on page 24-12. |
| 13 | GOTO T= 025 A= C= B= | Go to step 25. |

Control Program Procedures (CPP)

| Table 25-4 (Page 2 of 3). CP03 Procedure | | |
|--|---|---------------------------------------|
| Step | Instructions | Comments |
| 14 | DISP L = 12 M = LINE IS ACTIVE IN NCP. (DEACTIVE) | Display on line 12 text in operand M. |
| 15 | GOTO T = 025 A = C = B = | Go to step 25. |
| 16 | DISP L = 12 M = CHANGE 'AA' TO 2740 STATION ADDRESS | Display on line 12 text in operand M. |
| 17 | OSET D = 0066AA F = I = | Load the station address. |
| 18 | SETI D = 006640 F = I = | |
| 19 | SETI D = 004000 F = I = | Enable the line. |
| 20 | GOTO T = 019 A = 0000FF C = B B = 000023 | Error, go to step 19. |
| 21 | SETI D = 004A11 F = I = | Receive mode. |
| 22 | GOTO T = 024 A = 00004A C = & B = 000000 | Go to step 24. |
| 23 | GOTO T = 012 A = C = B = | Error, go to step 12. |
| 24 | DISP L = 12 M = -----LINE TEST IS RUNNING----- | Display on line 12 text in operand M. |
| 25 | DISP L = 13 M = TO END THE TEST, PRESS SEND | Display on line 13 text in operand M. |
| 26 | OSET D = 005000 F = I = | End the line test. |
| 27 | GOTO T = 041 A = C = B = | Go to step 41. |
| 28 | SETI D = 00000E F = 07 I = | Set EP mode. |
| 29 | SETI D = 008CFF F = I = | |
| 30 | SETI D = 00001F F = 05 I = | |
| 31 | DISP L = 13 M = CHANGE 'AA' TO 2740 ADDRESS (PDF-CODE) | Display on line 13 text in operand M. |
| 32 | OSET D = 0000AA F = I = | Load the station address. |
| 33 | SETI D = 000001 F = I = | Load EOA character. |
| 34 | SETI D = 000099 F = I = | Load buffer-end. |
| 35 | SETI D = 00047C F = I = | |

| Table 25-4 (Page 3 of 3). CP03 Procedure | | |
|--|---|---------------------------------------|
| Step | Instructions | Comments |
| 36 | DISP L = 13 M = CHANGE 'AA' TO SUB-CHANNEL ADDRESS | Display on line 13 text in operand M. |
| 37 | OSET D = 0080AA F = I = | Enable the line. |
| 38 | OSET D = 0020AA F = I = | Transmit buffer. |
| 39 | DISP L = 12 M = TO END THE TEST | Display on line 12 text in operand M. |
| 40 | OSET D = 008FAA F = I = | End the line test. |
| 41 | END | End the procedure. |

Control Program Procedures (CPP)

CP04 - Start Address Trace (NCP)

Use this procedure to debug TP problems by storing up to four register values or storage values in a trace table each time the address that you specified is accessed in a specific program level. To stop the address trace, use procedure CP05 or the CCU data exchange function.

To display the address trace table, use the procedure given under Address Trace Table in Chapter 24.

You can use procedure CP04 only in an NCP or NCP/PEP environment if TRACE=YES is specified in the BUILD macro.

Selection:

■ ■

Detailed Description

| Step | Instructions | Comments |
|------|--|--|
| 1 | SETI D= 00000C F=07 I=Y | Set NCP mode. |
| 2 | GOTO T= 026 A= 000000 C= & B= 000000 | If not NCP, go to step 26. |
| 3 | DISP L= 18 M=***START ADDRESS TRACE*** | Display on line 18 text in operand M. |
| 4 | SETI D= 008002 F=01 I=Y | Set on Allow Additional Register Range Bit (AARR). |
| 5 | SETI D= 000001 F=01 I=Y | Set Address Trace function in NCP. |
| 6 | DISP L= 13 M=ENTER DESIRED PGM LEVELS (1 - F) | Display on line 13 text in operand M. |
| 7 | OSET D= F= I= | Set program levels. Enter in D= the program level (s) to be traced (X'1' to X'F'). It can be any combination of: 1... level 2 .1.. level 3 ..1. level 4 ...1 level 5 |
| 8 | GOTO T= 019 A= 0FFFFF C= B B= 03FFFF | Error, go to step 19. |
| 9 | DISP L= 13 M=ENTER STORAGE-ADDR IN 'D' + S IN 'F' | Display on line 13 text in operand M. |

| Table 25-5 (Page 2 of 3). CP04 Procedure | | |
|--|---|---|
| Step | Instructions | Comments |
| 10 | DISP L= 14 M = OR REG.-ADDR: R0R0 IN 'D' + R IN 'F' | Display on line 14 text in operand M. |
| 11 | OSET D= F= I= | Enter in D= either the storage or the register address. (Enter the register address as r0r0: for register X'42' enter 4020) Enter in F= either S for storage or R for register. |
| 12 | GOTO T= 014 A= C= B= | Go to step 14. |
| 13 | GOTO T= 016 A= C= B= | Go to step 16. |
| 14 | LOOP T= 013 N = 004 | Four loops required to enter data. |
| 15 | GOTO T= 021 A= C= B= | All data entered, go to step 21 to continue. |
| 16 | DISP L= 13 M = IF MORE VALUES TO ENTER, PRESS SEND | Display on line 13 text in operand M. |
| 17 | DISP L= 14 M = IF MORE VALUES TO ENTER STEP == > 21 | Display on line 14 text in operand M. |
| 18 | HALT T= 009 A= C= B= | |
| 19 | DISP L= 13 M = INVALID PGM-LEVEL VALUE ENTERED | Display on line 13 text in operand M. |
| 20 | GOTO T= 006 A= C= B= | Go to step 06. |
| 21 | DISP L= 13 M= | Clear message on line 13. |
| 22 | DISP L= 14 M = *ALL POSSIBLE VARIABLES ARE ENTERED* | Display on line 14 text in operand M. |
| 23 | SETI D= F= 06 I= | |
| 24 | SETI D= F= 03 I= | Start the trace. |
| 25 | GOTO T= 028 A= C= B= | Go to step 28. |
| 26 | DISP L= 13 M = *CP04 ISN'T SUPPORTED BY EP* | Display on line 13 text in operand M. |
| 27 | HALT T= 031 A= C= B= | |
| 28 | DISP L= 13 M = ADDR: TRACE IS NOW ACTIVE, SET 'AC' WITH | Display on line 13 text in operand M. |
| 29 | DISP L= 14 M = LEVEL 1 INTERR. OPTION (CCU:SAC) | Display on line 13 text in operand M. |

Control Program Procedures (CPP)

| Table 25-5 (Page 3 of 3). CP04 Procedure | | |
|--|--|-------------------|
| Step | Instructions | Comments |
| 30 | HALT T= 031 A = C = B = | |
| 31 | END | End of procedure. |

CP05 - Stop Address Trace (NCP)

Use this procedure to stop an address trace. You can use procedure CP05 only in an NCP or NCP/PEP environment. You can execute CP05 only if you already executed procedure CP04 - Start Address Table.

Selection:

■ ■

Detailed Description

| Table 25-6. CP05 Procedure | | |
|----------------------------|--|--|
| Step | Instructions | Comments |
| 1 | SETI D= 00000 F=07 I=Y | Set NCP mode. |
| 2 | GOTO T= 009 A= 000000 C= B= 000000 | If EP; go to step 9. |
| 3 | DISP L= 18 M= ****STOP ADDRESS TRACE**** | Display on line 18 text in operand M. |
| 4 | SETI D= F=06 I= Y | Stop the Address Trace function. |
| 5 | SETI D= 000002 F=01 I=Y | Set off the Allow Additional Register Range(AARR) bit. |
| 6 | DISP L= 13 M= THE ADDRESS TRACE IS NOW STOPPED | Display on line 13 text in operand M. |
| 7 | DISP L= 14 M=CANCEL AC (FUNCTION RAC) | To cancel the Address Compare, select the RAC function. Note: This action is required only if you selected an Address Compare. |
| 8 | HALT T= 011 A= C= B= | Go to step 11 (end). |
| 9 | DISP L= 13 M= *CP05 ISN'T SUPPORTED BY EP* | Display on line 13 text in operand M. |
| 10 | HALT T= 011 A= C= B= | Go to step 11 (end). |
| 11 | END | End of procedure. |

Control Program Procedures (CPP)

CP06 - X.21 Switched Line Test (NCP)

Use this procedure to transmit test frames.

Selection:

■ ■ Enter the procedure name CP06

Detailed Description

| Table 25-7 (Page 1 of 5). CP06 Procedure | | |
|--|---|---|
| Step | Instructions | Comments |
| 1 | SETI D= 00000C F=07 I=Y | Set NCP mode. |
| 2 | GOTO T= 005 A= 000000 C= B= 00000C | If NCP; go to step 5. |
| 3 | DISP L= 18 M=CP06 CANNOT BE PERFORMED BY EP | Display message on line 18. |
| 4 | HALT T= 086 A= C= B= | EP mode, go to step 86 and halt. |
| 5 | DISP L= 18 M=****X.21 SWITCHED LINE TEST**** | Display name of the procedure on line 18. |
| 6 | GOTO T= 010 A= C= B= | Go to step 10. |
| 7 | DISP L= 16 M= | Clear message on line 16. |
| 8 | DISP L= 15 M= | Clear message on line 15. |
| 9 | DISP L= 14 M= | Clear message on line 14. |
| 10 | DISP L= 13 M=LINE ADDRESS SELECTION | Display message on line 13. |
| 11 | DISP L= 14 M=CHANGE THE 'FFF' INTO NCP | Display message on line 14. |
| 12 | DISP L= 15 M=LINE ADDRESS (HEX) | Display on line 15 text in operand M. |
| 13 | OSET D= 0F20FF F= 02 I= | Enable the line test. |
| 14 | DISP L= 14 M= | Clear message on line 14. |
| 15 | DISP L= 15 M= | Clear message on line 15. |

Table 25-7 (Page 2 of 5). CP06 Procedure

| Step | Instructions | Comments |
|------|--|---|
| 16 | GOTO T= 030 A= 00FF00 C= B B=00FF00 | No error detected, go to step 30. |
| 17 | GOTO T= 021 A= 0000FF C= B B= 000003 | EP line, go to step 21. |
| 18 | GOTO T= 023 A= 0000FF C=B B= 000005 | The line is active, go to step 23. |
| 19 | DISP L= 14 M= LINE INIT. ERROR, SEE X71/X72 IN MSA | An error is detected during the initialisation of the line. The error code is displayed in MSA field I. See Table 24-5 on page 24-12. |
| 20 | GOTO T= 024 A= C= B= | Go to step 24. |
| 21 | DISP L= 14 M= SELECTED LINE IS SUPPORTED BY EP | This message is displayed only in a PEP environment when the line is supported by EP. |
| 22 | GOTO T= 024 A= C= B= | Go to step 24. |
| 23 | DISP L= 14 M= LINE IS ACTIVE: DEACTIVATE IT FROM HOST | Display message on line 14. |
| 24 | DISP L= 15 M= ENTER STEP NUMBER 81 TO TERMINATE, OR | Display on line 15. |
| 25 | DISP L= 16 M= PRESS SEND TO SELECT ANOTHER LINE | Display message on line 16. |
| 26 | HALT T= 007 A= C= B= | Go to step 7 and halt. |
| 27 | DISP L= 16 M= | Clear message on line 16. |
| 28 | DISP L= 15 M= | Clear message on line 15. |
| 29 | DISP L= 14 M= | Clear message on line 14. |
| 30 | DISP L= 13 M= DIAL NUMBER LOADING (2 TO 15 DIGITS): | Display message on line 13. |
| 31 | DISP L= 14 M= REPLACE BY DIAL DIGIT | Display message on line 14. |
| 32 | OSET D= 00470E F= I= | Load one dial digit. |
| 33 | DISP L= 14 M= | Clear message on line 14. |
| 34 | GOTO T= 037 A= 00FF00 C= B B= 00FF00 | Go to step 37. |
| 35 | DISP L= 14 M= DIAL DIGIT ERROR, SEE X71/X72 IN MSA | Display message on line 14. |

Control Program Procedures (CPP)

| Table 25-7 (Page 3 of 5). CP06 Procedure | | |
|--|---|--|
| Step | Instructions | Comments |
| 36 | HALT T= 037 A= C= B= | Go to step 37 and halt. |
| 37 | DISP L= 14 M= IF ANOTHER DIGIT, PRESS SEND | Display message on line 14. |
| 38 | DISP L= 15 M= OTHERWISE, ENTER STEP NUMBER 43. | Display message on line 15. |
| 39 | HALT T= 038 A= C= B= | Go to step 38 and halt. |
| 40 | DISP L= 15 M= | Clear message on line 15. |
| 41 | DISP L= 14 M= | Clear message on line 14. |
| 42 | GOTO T= 031 A= C= B= | Go to step 31. |
| 43 | DISP L= 15 M= | Clear message on line 15. |
| 44 | DISP L= 14 M= | Clear message on line 14. |
| 45 | SETI D= 00470F F= I= | Indicate that the last digit has been entered. |
| 46 | DISP L= 13 M=SDLC STATION ADDRESS SELECTION | Display message on line 13. |
| 47 | DISP L= 14 M=REPLACE AA BY SDLC ADDRESS | Display message on line 14. |
| 48 | OSET D= 0067AA F= I= | Load addressing characters. |
| 49 | DISP L= 14 M= | Clear message on line 14. |
| 50 | DISP L= 13 M=DIAL OPERATE (SET MODE AND DIAL ISSUED) | Display message on line 13. |
| 51 | SETI D= 004800 F= I= | Issue a Set mode and Dial to the line and complete the connection using the digits entered on step 36. |
| 52 | DISP L= 17 M= | Clear message on line 17. This instruction is used to delay the dial operate test. |
| 53 | GOTO T= 062 A= 00FF00 C=B B= 00FF00 | No error detected, go to step 62. |
| 54 | DISP L= 14 M=DIAL OPERATE ERROR, SEE X71/X72 IN MSA | The error code is displayed in field I of the MSA. See Table 24-5 on page 24-12. |
| 55 | HALT T= 054 A= C= B= | Go to step 56 and halt. |

| Table 25-7 (Page 4 of 5). CP06 Procedure | | |
|--|---|--|
| Step | Instructions | Comments |
| 56 | SETI D = 004D00 F = I = | Display LTS pointer address in MSA field I. |
| 57 | DISP L = 14 M = USE CCU FNCT DLO TO DISPLAY LTS, SEE X72 | Select the display Long function to display the LTS block. The address of the LTS pointer is displayed in MSA field I. |
| 58 | HALT T = 073 A = C = B = | Go to step 75 and halt. |
| 59 | DISP L = 16 M = | Clear message on line 16. |
| 60 | DISP L = 15 M = | Clear message on line 15. |
| 61 | DISP L = 14 M = | Clear message on line 14. |
| 62 | DISP L = 13 M = SDLC TEST FRAME TRANSMISSION | Clear message on line 13. |
| 63 | SETI D = 006200 F = I = | Transmit on SDLC test frame to the station selected in step 48. |
| 64 | GOTO T = 069 A = 00FFFF C = B B = 000000 | No error, go to step 69. |
| 65 | DISP L = 14 M = TEST FRAME ERROR, SEE X'71/X72' IN MSA | The error code is displayed in field I of the MSA. See Table 24-5 on page 24-12. |
| 66 | HALT T = 065 A = C = B = | Go to step 67 and halt. |
| 67 | DISP L = 14 M = | Clear message on line 14. |
| 68 | GOTO T = 070 A = C = B = | Go to step 70. |
| 69 | SETI D = 005F00 F = I = | End the SDLC test frame transmission but not the line test. |
| 70 | DISP L = 13 M = X.21 DTE CLEAR REQUEST | Display message on line 13. |
| 71 | SETI D = 005D00 F = I = | Issue an X.21 DTE clear Request to the line without ending the line test. |
| 72 | GOTO T = 076 A = 00FF00 C = B B = 00FF00 | No error, go to step 76. |
| 73 | DISP L = 14 M = X21 DTE CLEAR ERROR, SEE X71/72 IN MSA | The error code is displayed in field I of the MSA. See Table 24-5 on page 24-12. |
| 74 | HALT T = 073 A = C = B = | Go to step 75 and halt. |

Control Program Procedures (CPP)

| Table 25-7 (Page 5 of 5). CP06 Procedure | | |
|--|---|--|
| Step | Instructions | Comments |
| 75 | DISP L = 14 M = | Clear message on line 14. |
| 76 | DISP L = 13 M = PRESS SEND TO TERMINATE OR ENTER STEP | Display message on line 13. |
| 77 | DISP L = 14 M = - 59 TO LOOP ON SAME STATION (IF DIALED) | Display message on line 14. |
| 78 | DISP L = 15 M = - 27 TO TEST A STATION ON SAME LINE | Display message on line 15. |
| 79 | DISP L = 16 M = - 7 TO TEST A STATION ON ANOTHER LINE | Display message on line 16. |
| 80 | HALT T = 079 A = C = B = | Go to step 85 and halt. |
| 81 | DISP L = 16 M = | Clear message on line 16. |
| 82 | DISP L = 15 M = | Clear message on line 15. |
| 83 | DISP L = 14 M = | Clear message on line 14. |
| 84 | DISP L = 13 M = | Clear message on line 13. |
| 85 | SETI D = 005000 F = I = | End the Line Test function. |
| 86 | DISP L = 18 M = | Clear procedure name displayed on line 18. |
| 87 | END | End of the CP06 procedure. |

CP07 - Line Test End (NCP/EP)

Use this function to end any active line test (if needed).

Selection:

■ ■

Detailed Description

| Table 25-8. CP07 Procedure | | |
|----------------------------|---|---------------------------------------|
| Step | Instructions | Comments |
| 1 | DISP L= 18 M=*** LINE TEST END (NCP/PEP) | Display on line 18 bit in operand M. |
| 2 | SETI D= 000000C F=07 I= Y | Set NCP mode. |
| 3 | GOTO T= 008 A= 00000C C= B=00000C | If NCP, go to step 8. |
| 4 | DISP L= 13 M=CHANGE 'AA' TO SUBCHANNEL ADDRESS | Display on line 13 text in operand M. |
| 5 | OSET D= 008FAA F=05 I= | End the line test. |
| 6 | DISP L= 13 M= | Clear message on line 13. |
| 7 | GOTO T= 012 A= C= B= | Go to step 12. |
| 8 | DISP L= 13 M= TO END THE FUNCTION, PRESS SEND | Display on line 13 text in operand M. |
| 9 | HALT T= 010 A= C= B= | Go to step 10 and halt. |
| 10 | DISP L= 13 M= | Clear message on line 13. |
| 11 | SETI D= 005000 F= 02 I= | End the line test. |
| 12 | DISP L= 18 M= | Clear message on line 18. |
| 13 | END | End of the procedure. |

Examples of Control Program Procedure Creation

The following pages show you how to create five control program procedures:

FE01 - Install a ZAP (NCP or NCP/PEP)

CE01 - Text to 3270 - BSC in EBCDIC (NCP)

CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

CE03 - Text to 2740 - start-stop (NCP)

CE04 - Text to 2740 - start-stop (EP, PEP)

These procedures use several NCP and EP subroutines. Most of these subroutines are described in Table 24-4 on page 24-7 and Table 24-17 on page 24-30. The subroutine identifier is the first two characters of the D operand of each SETI and OSET instruction.

Example:

```
SETI D= 0032 F= 5 I= Y  
Load Transmit Buffer 1 subroutine (X'00')
```

FE01 - Install a ZAP (NCP or NCP/PEP)

Create this procedure at ZAP installation in NCP.

Requirements:

- NCP with or without PEP
- BSC line protocol
- EBCDIC line code.

| Table 25-9 (Page 1 of 2). Install a ZAP (NCP or NCP/PEP) | | |
|--|---|---|
| Step | Procedure | Comments |
| 1 | <input type="text" value="C"/> <input type="text" value="P"/> <input type="text" value="P"/> <input type="text" value="SEND"/> <input type="text" value="3"/> <input type="text" value="SEND"/> | To select CREATE. |
| 2 | - ENTER NAME OF PROCEDURE TO BE CREATED == > | Enter FE01. |
| 3 | - ENTER TITLE (UP TO 24 CHAR) == > | |
| 4 | <input type="text" value="SEND"/> Twice | |
| 5 | If - NCP, go to step 9. | |
| 6 | If - NCP/PEP, go to next step. | |
| 7 | <input type="text" value="S"/> <input type="text" value="SEND"/> | SETI Instruction. |
| 8 | SETI D=C F=7 I=Y <input type="text" value="SEND"/> | In NCP/PEP environment, you have to switch to NCP mode. |
| 9 | To store - halfwords, go to step 20. | |
| 10 | To store - bytes, go to next step. | |
| 11 | <input type="text" value="F4"/> <input type="text" value="SETI D=3"/> F=1 I=Y <input type="text" value="SEND"/> | Byte mode. |
| 12 | <input type="text" value="F4"/> <input type="text" value="SETI D=xxxxx"/> F=2 I=Y <input type="text" value="SEND"/> | xxxxxx is the storage address right-justified |
| 13 | <input type="text" value="F4"/> <input type="text" value="SETI D=xx"/> F=3 I=Y <input type="text" value="SEND"/> | xx is the byte to be stored |
| 14 | If - more consecutive bytes, go to 13. | |
| 15 | If - no more consecutive bytes, go to next step. | |
| 16 | If - more non-consecutive bytes, go to step 12. | |
| 17 | If - no-more bytes, go to next step. | |

Control Program Procedures (CPP)

| Table 25-9 (Page 2 of 2). Install a ZAP (NCP or NCP/PEP) | | |
|--|---|---|
| Step | Procedure | Comments |
| 18 | If - no more data, go to step 29. | |
| 19 | If - more data but in halfwords, go to next step. | |
| 20 | <input type="text" value="F4"/> ■ SETI D=4 F=1 I=Y <input type="text" value="SEND"/> | Halfword mode. |
| 21 | <input type="text" value="F4"/> ■ SETI D=xxxxxx F=2 I=Y <input type="text" value="SEND"/> | xxxxxx is the storage address right-justified. |
| 22 | <input type="text" value="F4"/> ■ SETI D=xxxx F=3 I=Y <input type="text" value="SEND"/> | xxxx is the halfword to be stored. |
| 23 | If - more consecutive halfwords, go to step 22. | |
| 24 | If - no more consecutive halfwords, go to next step. | |
| 25 | If - more non-consecutive halfwords, go to step 21. | |
| 26 | If - no more halfwords to store, go to next step. | |
| 27 | If - more data but in bytes, go to step 11. | |
| 28 | If - no more data (all data stored), go to next step. | |
| 29 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 30 | L = 12 M = ZAP xxx IS NOW INSTALLED PRESS SEND TO END <input type="text" value="SEND"/> | To display on line 12 text in operand M = |
| 31 | <input type="text" value="O"/> <input type="text" value="SEND"/> | OSET Instruction. |
| 32 | SETI D= F=6 I=Y <input type="text" value="SEND"/> | To end the dynamic store function. Enter no value in D. |
| 33 | <input type="text" value="E"/> <input type="text" value="SEND"/> | To end the procedure. (Do not forget to catalog the procedure). |

CE01 - Text to 3270 - BSC in EBCDIC (NCP)

Create this procedure to transmit text messages from the 3745 to any 3270 with BSC protocol.

Requirements:

- NCP line
- BSC line protocol
- EBCDIC line code.

| Step | Procedure | Comments |
|------|---|---|
| 1 | <input type="text" value="C"/> <input type="text" value="P"/> <input type="text" value="P"/> <input type="text" value="SEND"/> <input type="text" value="3"/> <input type="text" value="SEND"/> | To select CREATE. |
| 2 | - ENTER NAME OF PROCEDURE TO BE CREATED == > | Enter CE01. |
| 3 | - ENTER TITLE (UP TO 24 CHAR) == > | |
| 4 | <input type="text" value="SEND"/> Twice | |
| 5 | If - no display of title line, go to step 8. - display of title line, go to step. | |
| 6 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 7 | L=12 M=TEXT TO 3270 <input type="text" value="SEND"/> | To display the title. 'TEXT TO 3270' is an example of title line. |
| 8 | If - NCP environment, go to step 11. - PEP environment, go to next step. | |
| 9 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |
| 10 | SETI D=C F=7 I=Y <input type="text" value="SEND"/> | In PEP environment to switch to NCP mode. |
| 11 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP instruction. |
| 12 | L=15 M=CHANGE FFF TO NCP HEX LINE ADDRESS <input type="text" value="SEND"/> | To display on line 15 text in operand M= |
| 13 | <input type="text" value="O"/> <input type="text" value="SEND"/> | OSET instruction. |
| 14 | SETI D=0F20FF F=2 I=Y <input type="text" value="SEND"/> | To enter the NCP line address. |
| 15 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP instruction. |
| 16 | L=15 M=AA TO 3270 POLL ADDRESS TWICE <input type="text" value="SEND"/> | To display on line 15 text in operand M= |

Control Program Procedures (CPP)

| Table 25-10 (Page 2 of 3). CE01 - Text to 3270 - BSC in EBCDIC (NCP) | | |
|--|--|---|
| Step | Procedure | Comments |
| 17 | <input type="button" value="O"/> <input type="button" value="SEND"/> | OSET instruction. |
| 18 | SETI D=066AA F=2 I=Y <input type="button" value="SEND"/> | To enter 3270 CU poll address. |
| 19 | <input type="button" value="F4"/> <input type="button" value="SEND"/> | To repeat and transmit previous OSET instruction unchanged. |
| 20 | <input type="button" value="S"/> <input type="button" value="SEND"/> | |
| 21 | SETI D=0667F F=2 I=Y <input type="button" value="SEND"/> | To enter all-device = poll address (X'7F'). |
| 22 | <input type="button" value="F4"/> <input type="button" value="SEND"/> | To repeat and transmit previous SETI instruction unchanged. |
| 23 | SETI D=0662D F=2 I=Y <input type="button" value="SEND"/> | To enter inquiry character ENQ (X'2D'). |
| 24 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction. |
| 25 | L= 15 M= CHANGE AA TO CU-SELECTION ADDR TWICE <input type="button" value="SEND"/> | To display on line 15 text in operand M= |
| 26 | <input type="button" value="O"/> <input type="button" value="SEND"/> | OSET instruction. |
| 27 | SETI D=067AA F=2 I=Y <input type="button" value="SEND"/> | To enter 3270 CU-select address. |
| 28 | <input type="button" value="F4"/> <input type="button" value="SEND"/> | To repeat and transmit previous OSET instruction unchanged. |
| 29 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction. |
| 30 | L= 15 M= CHANGE AA TO DEVICE SELECTION ADDR TWICE <input type="button" value="SEND"/> | To display on line 15 text in operand M= |
| 31 | <input type="button" value="O"/> <input type="button" value="SEND"/> | OSET Instruction. |
| 32 | SETI D=067AA F=2 I=Y <input type="button" value="SEND"/> | To enter 3270 dev-select address. |
| 33 | <input type="button" value="F4"/> <input type="button" value="SEND"/> | To repeat previous and transmit OSET instruction unchanged. |
| 34 | <input type="button" value="S"/> <input type="button" value="SEND"/> | |
| 35 | SETI D=0672D F=2 I=Y <input type="button" value="SEND"/> | To enter enquiry character ENQ (X'2D'). |

| Table 25-10 (Page 3 of 3). CE01 - Text to 3270 - BSC in EBCDIC (NCP) | | |
|--|---|--|
| Step | Procedure | Comments |
| 36 | <input type="button" value="F4"/> ■ SETI D=5800D F=2 I=Y <input type="button" value="SEND"/> | To set transmit buffer offset X'00'. |
| 37 | <input type="button" value="F4"/> ■ SETI D=5127 F=2 I=Y <input type="button" value="SEND"/> | To enter ESC (X'27'). |
| 38 | <input type="button" value="F4"/> ■ SETI D=51xx F=2 I=Y <input type="button" value="SEND"/> | To enter text (first enter 3270 wcc character) xx = data byte of text. |
| 39 | If - more characters to enter, go to step 38. - no more characters to enter, go to next step. | |
| 40 | <input type="button" value="F4"/> ■ SETI D=4000 F= 2 I= Y <input type="button" value="SEND"/> | To enable the line. |
| 41 | <input type="button" value="F4"/> ■ SETI D=4A10 F= 2 I= Y <input type="button" value="SEND"/> | To poll the 3270 and monitor for response. |
| 42 | <input type="button" value="F4"/> ■ SETI D=4F10 F=2 I= Y <input type="button" value="SEND"/> | To transmit the message text. |
| 43 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction. |
| 44 | L= 15 M= TO END THE TEST PRESS SEND <input type="button" value="SEND"/> | To display on line 15 text in operand M= |
| 45 | <input type="button" value="O"/> <input type="button" value="SEND"/> | OSET Instruction. |
| 46 | <input type="button" value="F4"/> ■ SETI D=5000 F=2 I=Y <input type="button" value="SEND"/> | To wait for operator's response. |
| 47 | <input type="button" value="E"/> <input type="button" value="SEND"/> | End of procedure (do not forget to catalog the procedure). |

CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

Create this procedure to transmit a text message from the 3745 to any 3270 in your network.

Requirements:

- EP or PEP line
- BSC line protocol
- EBCDIC line code

Table 25-11 (Page 1 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

| Step | Procedure | Comments |
|------|---|---|
| 1 | <input type="text" value="C"/> <input type="text" value="P"/> <input type="text" value="P"/> <input type="text" value="SEND"/> <input type="text" value="3"/> <input type="text" value="SEND"/> | To select CREATE. |
| 2 | - ENTER NAME OF PROCEDURE TO BE CREATED == > | Enter CE02. |
| 3 | - ENTER TITLE (UP TO 24 CHAR) == > | |
| 4 | <input type="text" value="SEND"/> Twice | |
| 5 | If - no display of title line, go to step 9. | |
| 6 | If - display of title line, go to next step | |
| 7 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 8 | L=12 F=TEXT TO 3270 <input type="text" value="SEND"/> | To display the title. 'TEXT TO 3270' is an example of title line. |
| 9 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |
| 10 | SETI D=E F=7 I=Y <input type="text" value="SEND"/> | To switch EP mode. |
| 11 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |
| 12 | SETI D=0037 F=5 I=Y <input type="text" value="SEND"/> | To enter EOT character (X'37') into buffer 1. |
| 13 | <input type="text" value="F4"/> <input type="text" value="SETI D=00FF"/> F=5 I=Y <input type="text" value="SEND"/> | To enter PAD character (X'FF') into buffer 1. |
| 14 | <input type="text" value="F4"/> <input type="text" value="SETI D=0032"/> F=5 I=Y <input type="text" value="SEND"/> | To enter SYNC character (X'32') into buffer 1. |
| 15 | <input type="text" value="F4"/> <input type="text" value="SEND"/> | To repeat and transmit previous SETI instruction unchanged. |
| 16 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP instruction. |

| Table 25-11 (Page 2 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP) | | |
|--|--|--|
| Step | Procedure | Comments |
| 17 | L = 15 M = CHANGE AA TO CU-SELECT-ADDRESS <input type="checkbox"/> SEND | To display in line 15 text in operand M = . |
| 18 | <input type="radio"/> <input type="checkbox"/> SEND | OSET instruction. |
| 19 | SETI D = 00AA F = 5 I = Y <input type="checkbox"/> SEND | To enter CU-select test address into buffer 1. |
| 20 | <input type="checkbox"/> F4 <input type="checkbox"/> SEND | To repeat and transmit previous OSET instruction unchanged. |
| 21 | <input type="checkbox"/> D <input type="checkbox"/> SEND | DISP Instruction. |
| 22 | L = 15 M = CHANGE FF TO DEV-SELECT-ADDRESS <input type="checkbox"/> SEND | To display on line 15 text in operand M = |
| 23 | <input type="radio"/> <input type="checkbox"/> SEND | OSET Instruction. |
| 24 | SETI D = 00FF F = 5 I = Y <input type="checkbox"/> SEND | To enter dev_select address into buffer 1. |
| 25 | <input type="checkbox"/> F4 <input type="checkbox"/> SEND | To repeat and transmit previous OSET instruction unchanged. |
| 26 | <input type="checkbox"/> S <input type="checkbox"/> SEND | |
| 27 | SETI D = 002D F = 5 I = Y <input type="checkbox"/> SEND | To enter ENQ character (X'2D'). |
| 28 | <input type="checkbox"/> F4 ■ SETI D = 0099 F = 5 I = Y <input type="checkbox"/> SEND | To enter end-buffer 1 character. |
| 29 | <input type="checkbox"/> F4 ■ SETI D = 0102 F = 5 I = Y <input type="checkbox"/> SEND | To enter STX character (X'02') into buffer 2. |
| 30 | <input type="checkbox"/> F4 ■ SETI D = 0127 F = 5 I = Y <input type="checkbox"/> SEND | To enter ESC character (X'27') into buffer 2. |
| 31 | <input type="checkbox"/> F4 ■ SETI D = 01F1 F = 5 I = Y <input type="checkbox"/> SEND | To enter Erase/Write command (X'F1') into buffer 2. |
| 32 | <input type="checkbox"/> F4 ■ SETI D = 01C2 F = 5 I = Y <input type="checkbox"/> SEND | To enter WCC (X'C2') into buffer 2. |
| 33 | <input type="checkbox"/> F4 ■ SETI D = 01xx F = 5 I = Y <input type="checkbox"/> SEND | To enter text into buffer 2. xx = data byte of text (up to 15 characters). |
| 34 | If - more data bytes, go to step 33. | |
| 35 | If - no more data bytes, go to next step. | |
| 36 | <input type="checkbox"/> S <input type="checkbox"/> SEND | |

Control Program Procedures (CPP)

| Table 25-11 (Page 3 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP) | | |
|--|---|--|
| Step | Procedure | Comments |
| 37 | SETI D=0103 F=5 I=Y <input type="text"/> SEND | To enter ETX character (X'03') into buffer 2. |
| 38 | <input type="text"/> F4 ■ SETI D=0199 F=5 I=Y <input type="text"/> SEND | To enter end-buffer 2 characters. |
| 39 | <input type="text"/> F4 ■ SETI D=0861 F=5 I=Y <input type="text"/> SEND | To enter ACK 1 (X'61') or swap character 1. |
| 40 | <input type="text"/> F4 ■ SETI D=0970 F=5 I=Y <input type="text"/> SEND | To enter ACK 0 (X'70') or swap character 2. |
| 41 | <input type="text"/> D <input type="text"/> SEND | DISP instruction. |
| 42 | L=15 L=CHANGE AA TO SUB-CHANNEL ADDRESS | To display on line 15 text in operand M= |
| 43 | <input type="text"/> O <input type="text"/> SEND | OSET instruction. |
| 44 | SETI D=20AA F=5 I=Y <input type="text"/> SEND | To start the line test on sub-channel AA. |
| 45 | <input type="text"/> D <input type="text"/> SEND | DISP instruction. |
| 46 | L=14 M=TO END THE TEST, PRESS SEND <input type="text"/> SEND | |
| 47 | <input type="text"/> O <input type="text"/> SEND | OSET instruction. |
| 48 | SETI D=8FAA F=5 I=Y <input type="text"/> SEND | To wait for operator's display. |
| 49 | <input type="text"/> E <input type="text"/> SEND | End of procedure (Do not forget to catalog the procedure). |

CE03 - Text to 2740 - Start-Stop (NCP)

Create this procedure to transmit a text message from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in your network.

Requirements:

- NCP
- Start-stop line protocol
- EBCDIC line code
- 2740 with station control.

| Step | Procedure | Comments |
|------|---|---|
| 1 | <input type="text" value="C"/> <input type="text" value="P"/> <input type="text" value="P"/> <input type="text" value="SEND"/> <input type="text" value="3"/> <input type="text" value="SEND"/> | To select CREATE. |
| 2 | - ENTER NAME OF PROCEDURE TO BE CREATED == > | Enter CE03. |
| 3 | - ENTER TITLE (UP TO 24 CHAR) == > | |
| 4 | <input type="text" value="SEND"/> Twice | |
| 5 | If - no display of title line, go to step 9 | |
| 6 | If - display of title line, go to next step | |
| 7 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 8 | L=12 L=TEXT TO 2740 <input type="text" value="SEND"/> | To display the title. 'TEXT TO 2740' is an example of title line. |
| 9 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |
| 10 | SETI D=C F=7 I=Y <input type="text" value="SEND"/> | To switch to NCP mode. |
| 11 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 12 | L=15 L=CHANGE FFF TO NCP HEX LINE ADDRESS <input type="text" value="SEND"/> | To display on line 15 text in operand M= |
| 13 | <input type="text" value="O"/> <input type="text" value="SEND"/> | OSET Instruction. |
| 14 | SETI D=0F20FF F=2 I=Y <input type="text" value="SEND"/> | To enter NCP line address. |
| 15 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |

Control Program Procedures (CPP)

| Table 25-12 (Page 2 of 2). CE03 - Text to 2740 - Start-Stop (NCP) | | |
|---|---|--|
| Step | Procedure | Comments |
| 16 | SETI D=5800 F=2 I=Y <input type="text"/> SEND | To set transmit buffer offset (X'00'). |
| 17 | <input type="text"/> F4 ■ SETI D=511F F=2 I=Y <input type="text"/> SEND | To load circle c (X'1F') into transmit buffer. |
| 18 | <input type="text"/> F4 ■ SETI D=5137 F=2 I=Y <input type="text"/> SEND | To load circle C (X'37') into transmit buffer. |
| 19 | <input type="text"/> D <input type="text"/> SEND | DISP Instruction. |
| 20 | L=15 M=CHANGE AA TO 2740 ADDRESS <input type="text"/> SEND | |
| 21 | <input type="text"/> O <input type="text"/> SEND | OSET Instruction. |
| 22 | SETI D=51AA F=2 I=Y <input type="text"/> SEND | To enter 2740 station address. |
| 23 | <input type="text"/> S <input type="text"/> SEND | SETI instruction. |
| 24 | <input type="text"/> F4 ■ SETI D=5101 F=2 I=Y <input type="text"/> SEND | To load EOA character (X'01') into buffer. |
| 25 | <input type="text"/> F4 ■ SETI D=51xx F=2 I=Y <input type="text"/> SEND | To load data into buffer xx = data byte. |
| 26 | If - more data bytes, go to step 25 | |
| 27 | If - no more data bytes, go to next step. | |
| 28 | <input type="text"/> F4 ■ SETI D=4000 F=2 I=Y <input type="text"/> SEND | To enable the line. |
| 29 | <input type="text"/> F4 ■ SETI D=4F10 F=2 I=Y <input type="text"/> SEND | To start transmitting data. |
| 30 | <input type="text"/> D <input type="text"/> SEND | DISP Instruction. |
| 31 | L=15 L=TO END THE TEST PRESS SEND <input type="text"/> SEND | To display on line 15 text in operand M= |
| 32 | <input type="text"/> O <input type="text"/> SEND | OSET Instruction. |
| 33 | SETI D=5000 F=2 I=Y <input type="text"/> SEND | To wait for operator's response to stop the function. |
| 34 | <input type="text"/> E <input type="text"/> SEND | End of procedure (do not forget to catalog the procedure). |

CE04 - Text to 2740 - Start-Stop (EP, PEP)

Create this procedure to transmit a text message from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in your network.

Requirements:

- EP or PEP line
- Start-stop line protocol
- EBCDIC line code
- 2740 with station control.

| Step | Procedure | Comments |
|------|---|---|
| 1 | <input type="text" value="C"/> <input type="text" value="P"/> <input type="text" value="P"/> <input type="text" value="SEND"/> <input type="text" value="3"/> <input type="text" value="SEND"/> | To select CREATE. |
| 2 | - ENTER NAME OF PROCEDURE TO BE CREATED | ENTER CE04. |
| 3 | - ENTER TITLE (UP TO 24 CHAR) | |
| 4 | <input type="text" value="SEND"/> Twice | |
| 5 | If - no display of title line, go to step9 | |
| 6 | If - display of title line, go to next step | |
| 7 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 8 | L=12 L=TEXT TO 2740 <input type="text" value="SEND"/> | To display the title. 'TEXT TO 2740' is an example of title line. |
| 9 | <input type="text" value="S"/> <input type="text" value="SEND"/> | |
| 10 | SETI D=E F=7 I=Y <input type="text" value="SEND"/> | To switch EP mode. |
| 11 | <input type="text" value="F4"/> <input type="text" value="SETI D=001F"/> F=5 I=Y <input type="text" value="SEND"/> | To load circle c (X'1F') into buffer 1. |
| 12 | <input type="text" value="F4"/> <input type="text" value="SETI D=0037"/> F=5 I=Y <input type="text" value="SEND"/> | To load circle c (X'37') into buffer 1. |
| 13 | <input type="text" value="D"/> <input type="text" value="SEND"/> | DISP Instruction. |
| 14 | L=15 L=CHANGE AA TO 2740 ADDRESS <input type="text" value="SEND"/> | To display on line 15 text in operand M= |
| 15 | <input type="text" value="O"/> <input type="text" value="SEND"/> | OSET Instruction. |
| 16 | SETI D=0=00AA F=5 I=Y <input type="text" value="SEND"/> | To enter 2740 station address. |

Control Program Procedures (CPP)

| Table 25-13 (Page 2 of 2). CE04 - Text to 2740 - Start-Stop (EP, PEP) | | |
|---|---|--|
| Step | Procedure | Comments |
| 17 | <input type="button" value="S"/> <input type="button" value="SEND"/> | |
| 18 | SETI D=0001 F=5 I=Y <input type="button" value="SEND"/> | To load EOA character (X'01') into buffer 1. |
| 19 | <input type="button" value="F4"/> ■ SETI D=0099 F=5 I=Y <input type="button" value="SEND"/> | To load end-of-buffer 1 character. |
| 20 | <input type="button" value="F4"/> ■ SETI D=0116 F=5 I=Y <input type="button" value="SEND"/> | To load into buffer 2. |
| 21 | <input type="button" value="F4"/> ■ SETI D=01xx F=5 I=Y <input type="button" value="SEND"/> | To load text into buffer 2. Maximum number of bytes that can be loaded is 18. xx=data byte |
| 22 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction. |
| 23 | If - more data bytes (max.18), go to step 21 | |
| 24 | If - no more bytes, go to next step. | |
| 25 | <input type="button" value="F4"/> ■ SETI D=011F F=5 I=Y <input type="button" value="SEND"/> | To load CIRCLE C (X'1F') into buffer 2. |
| 26 | <input type="button" value="F4"/> ■ SETI D=0199 F=5 I=Y <input type="button" value="SEND"/> | To load end-of-buffer 2 character. |
| 27 | <input type="button" value="F4"/> ■ SETI D=081F F=5 I=Y <input type="button" value="SEND"/> | To enter the swap character 2 (X'1F'). |
| 28 | <input type="button" value="F4"/> ■ SETI D=0976 F=5 I=Y <input type="button" value="SEND"/> | To enter the swap character 2. |
| 29 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction. |
| 30 | L=15 M=CHANGE AA TO SUB-CHANNEL ADDRESS <input type="button" value="SEND"/> | |
| 31 | SETI D=20AA F=5 I=Y <input type="button" value="SEND"/> | To enable the line. |
| 32 | <input type="button" value="D"/> <input type="button" value="SEND"/> | DISP Instruction |
| 33 | L=14 M=TO END THE TEST PRESS SEND | To display on line 14 text in operand M= |
| | <input type="button" value="O"/> <input type="button" value="SEND"/> | OSET Instruction. |
| 34 | SETI D=8FAA F=5 I=Y <input type="button" value="SEND"/> | To wait for operator's response to end the function. |
| 35 | <input type="button" value="E"/> <input type="button" value="SEND"/> | End of procedure. (Do not forget to catalog the procedure). |

Appendixes, Abbreviations, Glossary, and Index

Replace this page by the separator:

Messages
Appendixes



Replace this page by the separator:



Messages
Appendixes



Appendixes, Abbreviations, Glossary, and Index

- Appendix A. Messages**
- Appendix B. Machine Status Area (MSA)**
- Appendix C. Default and Personal Patterns for
Wrap Tests**
- Appendix X. List of Abbreviations**
- Glossary**
- Index**



Appendix A. Messages

Function and operator control messages are displayed on line 22 of the operator console. They inform you of the progression of the function and indicate errors.

Messages are explained in the following pages in alphabetical order. Self-explanatory messages are not detailed.

```
CUSTOMER ID: xxxxxxxxxxxxxxxx 3745-XXX SERIAL NUMBER: nnnnnnn
-----
Machine Status Area
-----mm/dd/yy hh:mm

===> message area
alarm area
```

List of Messages

This summary lists the messages in alphabetical order with a reference to the page where they are described.

- 'ACTIVATE LINK' IS ALREADY ALLOWED FOR THIS TIC (page A-18)
- 'ACTIVATE LINK' IS NOW ALLOWED (page A-18)
- ADAPTER CONFIG STATUS IS INVALID (page A-18)
- ALL OR PART OF 'VERIFY DATA' IS OUTSIDE MODULE (page A-18)
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- CCU ALREADY IN PROCESS MODE (page A-20)
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- CCU WILL STOP ON IOC CHECK (page A-22)
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- CCU-A IS DOWN, MOSS IML HAS DETECTED CCU-B FAILURE (page A-22)
- CCU-A POWER BLOCK IS NOT UP AND CCU-B IS DOWN: CHECK CCU-A POWER (page A-22)
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Messages

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List of Messages (Causes and Actions)

'ACTIVATE LINK' IS ALREADY ALLOWED FOR THIS TIC

Cause: You selected a token-ring interface coupler that does not have its activate link inhibit indicator on.

'ACTIVATE LINK' IS NOW ALLOWED

Cause: The *activate inhibit indicator* for the TIC selected has been reset in the NCP control block. The TIC may now be activated from the host.

ADAPTER CONFIG STATUS IS INVALID

Cause: Self-explanatory.

Action: None.

ALL OR PART OF 'VERIFY DATA' IS OUTSIDE MODULE

Action: Verify the address of the data to be patched.

ALTERNATE CONSOLE CALLING

Cause: The alternate console operator is trying to log on.

Action: You may log off to allow the alternate console operator to log on.

ANSWER TONE MUST BE SET TO 'N'

Cause: The ANSWER TONE parameter is set to 'Y' while the SWITCHED LINE parameter is set to 'N'.

Action: When the SWITCHED LINE is set to 'N', the ANSWER TONE and RING INDICATOR parameters must be set to 'N'.

BEGINNING OF PORT SWAP FILE

Cause: Self-explanatory.

Action: None.

BOX OPERATING CHANGE SUCCESSFUL

Cause: Self-explanatory.

Action: None.

BT BUFFER INCORRECTLY DEFINED

Cause: The branch trace register address and/or length are destroyed.

Action: Restore the branch trace register address and/or length. Go to page 23-8. If the message appears again, contact the appropriate service representative.

BUFFERS NOT AVAILABLE: WRAP TEST STOPPED

Cause: The CCU control program stopped the wrap test because no more buffer space was available (control program overloaded).

Action: Select the Wrap Test function later.

BUFFERS TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED

Cause: The buffers are not available for the moment. The Wrap Test function is canceled.

Action: Select the Wrap Test function later.

CABLE DOES NOT EXIST

Cause: The cable for the specified port is not present.

Action: If the cable is plugged into the specified port, update the configuration data file.

CABLE ID NOT ACCESSED

Cause: The line is not active.

Action: Activate the line.

CABLE NOT INSTALLED

Cause:

1. The line that you specified is considered as not installed because there is no cable between the LIC and the modem, or
2. The configuration data file has not been updated after a cable change.

Action:

1. Enter the address of an installed line, or
2. If the cable is installed, update the configuration data file.

CABLE-ID IS NOT LOCAL ATTACHED

Cause: You have selected a direct-attached clocking for a TSS port but this port has external-attached clocking.

Action: Select the appropriate clocking.

CALL FAILURE

Cause: DCE on a link using a V.25 bis protocol reported one of the following call failure reasons:

- Engaged tone
- Forbidden call
- Local DCE busy
- Abort call
- Answer tone detected
- Ring tone.

Action: If a retry is not automatically performed by NCP, use a VTAM command to restart the calling procedure. If the problem persists, perform a problem determination on the link. If the failure is due to a forbidden call, the DCE must be suspected.

Messages

CANCEL I-SIT FAILED ON LINE xxxx SCANNER xxxx

Action: Try again.

CANCEL IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

CANCELED: TARGET VALUE > END STEP NUMBER

Cause: While performing the procedure, a GOTO, HALT, or WAIT target value greater than the step number of the END instruction was encountered.

Action: Correct the target value and execute the procedure x another time. See Chapter 25, "Control Program Procedures (CPP)."

CCU ALREADY IN I-STEP MODE

Cause: You selected the function Set I-Step and the CCU was already in instruction step mode.

CCU ALREADY IN PROCESS MODE

Cause: You selected the function Reset I-Step and the CCU was already in Process mode.

CCU CHECK RESET

Cause: The CCU check condition is reset.

Action: None.

CCU DOWN: CONTACT SERVICE PERSONNEL.

Cause: You cannot IPL a single CCU because the CCU is down.

Action: Contact the appropriate service representative to repair the CCU.

CCU FUNCTION NOT ALLOWED

Cause: When using the Menu 2 functions, you cannot use MCF.

CCU FUNCTION STILL PENDING

Cause: You tried to log off while a CCU function was pending.

Action: Perform or terminate the pending function.

CCU FUNCTIONS NOT ALLOWED

Cause: F2 is not allowed during Disk function.

CCU FUNCTIONS REFUSED

Cause: You selected the CCU functions before MOSS IML phase 2.

Action: Select the CCU functions after MOSS IML phase 2.

CCU FUNCTIONS REFUSED ON THE SELECTED CCU

Cause: Self-explanatory.

Action: None.

CCU IS NOT SELECTED: USE CSR FUNCTION

Cause: You have not selected a CCU.

Action: Use the CCU Select/Release (CSR) function to select a CCU.

CCU NOT IN THE RUN STATE (SEE MSA) - FUNCTION CANCELED

Cause: An error occurred that prevents the CCU from functioning correctly, or the CCU is stopped.

Action:

1. Re-IPL the link test program (if necessary) on the CCU.
2. Set the CCU to the run state (if necessary).
3. Restart the test.
4. If the error persists, contact the service representative.

CCU NOW IN I-STEP MODE

Cause: The CCU is set to instruction step mode.

CCU NOW IN NORMAL MODE

Cause: The CCU is set to normal processing. All CCU default options are set: for example, no address compare, no branch trace.

CCU NOW IN PROCESS MODE

Cause: The CCU is set to normal processing.

CCU POWER BLOCK IS NOT UP: CHECK IT FIRST

Cause: The CCU power block is either not present or not up.

Action: Check it with the POS function in order to set it UP.

CCU POWER BLOCK IS NOT UP: CHECK IT FIRST OR IPL SECOND CCU

Cause: The CCU power block is either not present or not up.

Action: Check it with the POS function in order to set it UP, or to IPL

CCU POWER BLOCKS ARE NOT UP: CHECK THEM FIRST

Cause: Both CCU power blocks are either not present or not up.

Action: Check them with the POS function in order to set them UP.

CCU STATE IS IN REFRESH MODE, PRESS BREAK TO STOP REFRESH

Cause: Self-explanatory.

Action: Press BREAK to stop refresh.

Messages

CCU WILL BYPASS CCU CHECK

Cause: The CCU will continue to run when a CCU check condition occurs.

CCU WILL BYPASS IOC CHECK

Cause: The CCU will continue to run when an IOC-detected level-1 interrupt occurs.

CCU WILL STOP ON CCU CHECK

Cause: The CCU will stop when a CCU check condition occurs.

CCU WILL STOP ON IOC CHECK

Cause: The CCU will stop (hardcheck) when an IOC-detected level-1 interrupt occurs.

CCU-A INIT ERROR. CALL SERVICE REPRESENTATIVE TO RUN DIAGS.

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

CCU-A IS DOWN AND CCU-B POWER BLOCK IS NOT UP: CHECK CCU-B POWER

Cause: CCU-A is down and CCU-B power block is either not present or not up.

Action: Check the CCU-B power block.

CCU-A IS DOWN, MOSS IML HAS DETECTED CCU-B FAILURE.

Cause: When CCU-B was IMLed errors were found and CCU-A is down.

Action: Contact the appropriate service representative.

CCU-A POWER BLOCK IS NOT UP AND CCU-B IS DOWN: CHECK CCU-A POWER

Cause: CCU-B is down and CCU-A power block is either not present or not up.

CCU-A POWER BLOCK IS NOT UP, MOSS IML HAS DETECTED CCU-B FAILURE

Cause: When CCU-B was IMLed errors were found and the CCU-A power block is either not present or not up.

CCU/MOSS ERROR - LINK TEST FUNCTION CANCELED

Cause: A hardware error occurred between the CCU and the MOSS.

Action:

1. Activate the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

CCU/MOSS ERROR: BT BUFFER NOT ACCESSIBLE

Cause: The length and address-of the branch trace buffer are not available because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 02.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: BT BUFFER NOT UPDATED

Cause: The branch trace parameters cannot be saved in the buffer header because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 02.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: DISK FUNCTION CANNOT BE PERFORMED: PRESS SEND

Cause: The Disk function cannot be performed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: FUNCTION CANNOT BE PERFORMED

Cause: The CCU interface was not disabled.

Action: Re-enter MCF.

CCU/MOSS ERROR: FUNCTION NOT PERFORMED

Cause: The function that you selected cannot be performed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: End the function, using the F1 key, and contact the appropriate service representative.

CCU/MOSS ERROR: INPUT X'71', X'72' REG NOT ACCESSIBLE

Cause: The registers cannot be accessed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: RESET CCU FUNCTION CANCELED

Cause: A physical error occurred when communicating with the CCU. The Reset CCU/LSSD function is canceled. A BER is created: type 01, ID 85.

Action: Select the Reset CCU/LSSD function another time. If the problem persists, contact the appropriate service representative.

CCU/MOSS ERROR: STEP NOT EXECUTED

Cause: A SETI or OSET instruction was not executed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: WORK REGISTERS CANNOT BE ALTERED

Cause: The CCU interrupt level cannot be accessed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: WRAP FUNCTION CANCELED

Cause: A physical error occurred when communicating with the CCU. The Wrap Test function is canceled. A BER is created: type 01, ID 85.

Action: Check that an IPL has been correctly performed on the CCU and that MOSS is online (MSA field d should display MOSS-ONLINE).

Select the Wrap Test function another time. If the problem persists, contact the appropriate service representative.

CDF ERROR xxxx IN yyyy: CONTACT SERVICE PERSONNEL

Cause: There is an unexpected error when calling a CDF access function. The access function and the code returned by CDF are specified in the message.

Action: Contact the appropriate service representative.

CDF ERROR: SOME POWER SUPPLY INFO CAN'T BE DISPLAYED

Cause: Some subsystem information may be missing on power supplies due to an error return code coming from the CDF access function.

Action: None.

CDF ERROR: SPECIFIED POWER SUPPLY CAN'T BE POWERED DOWN

Cause: An error occurred while accessing to CDF access function. Therefore the power supply cannot be powered down because the type is unknown.

Action: None.

CDF LA CHANGE ABORTED

Cause: The line adapter change could not be performed.

Action: Retry. If it is not successful, perform problem determination procedure for this line adapter.

CDF NOT ACCESSIBLE: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: A disk error has occurred while accessing the configuration data file.

Action: Contact the appropriate service representative.

CDF NOT CREATED: CREATE IT BEFORE REQUESTING DII

Cause: The configuration data file has not been created before requesting disk IPL information.

Action: End the function and perform a CDF create.

CDF NOT CREATED: WRAP FUNCTION CANCELED

Cause: The 3745 configuration data file has not been tested.

Action: Contact the appropriate service representative.

CDF NOT CREATED: CREATE IT BEFORE PERFORMING IPL

Cause: Self-explanatory.

Action: Create CDF before performing the IPL.

CHANGE REJECTED: A FALLBACK IS ACTIVE

Cause: Self-explanatory.

Action: None.

CODE ALREADY RESTORED

Cause: Self-explanatory.

Action: None.

CODE ALREADY UPGRADED

Cause: Self-explanatory.

Action: None.

COMMAND NOT ALLOWED FOR MOSS POWER SUPPLY

Cause: Power down of MOSS power supply has been requested.

Action: None.

COMMAND PERFORMED WITH ERROR: SEE STATUS

Cause: The command has been executed but the result is not the expected one due to a power subsystem error.

Action: See displayed status and press F4 for more information.

COMMAND REJECT RECEIVED DUE TO BUFFER OVERRUN

Cause: This message applies only to the requester. An overrun condition occurred at the responder.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

COMMAND REJECT RECEIVED DUE TO INVALID COMMAND

This message applies only to the requester. It is followed by two hexadecimal digits representing the invalid command code that was received by the responder and returned to the requester.

Cause: An invalid command (not X'F3' = TEST) was received by the responder.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the service representative.

COMMAND REJECT RETURNED BY SCANNER

Cause: A scanner hard stop error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function, then re-IML the scanner. If the problem persists, contact the appropriate service representative.

Messages

COMMAND SUCCESSFULLY COMPLETED

Cause: Self-explanatory.

Action: None.

COMMAND SUCCESSFULLY PERFORMED

Cause: The power supply status has been updated or the BER has been correctly logged.

Action: None.

CONTENTION, PLEASE REENTER

Cause: The command or data that you entered was incorrectly received.

Action: Re-enter all your input, even though it is still displayed on the screen.

CONTROL PROGRAM NOT READY: TRY LATER

Cause: Fallback has been aborted on mailbox exchange. Switchback is not allowed until the CP timer for fallback runs out (4 minutes).

Action: None.

CONTROLLER DATA UNAVAILABLE: FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The function is canceled.

Action: Select the function again time. If the problem persists, contact the appropriate service representative.

CONTROLLER IS DOWN: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: The CCU is down.

Action: Contact the appropriate service representative to repair the CCU.

COUNTERS HAVE BEEN RESET

Cause: Self-explanatory.

Action: None.

CREATE IS COMPLETE

Cause: Ports have been logically switched.

Action: Switch ports physically.

CUSTOMER IDENTIFICATION HAS BEEN UPDATED

Cause: Self-explanatory.

Action: None.

DATA MUST BE PAIRS OF HEX CHARS SEPARATED BY 1 BLANK

Cause: This message applies only to the requester. One of the following conditions occurred during data entry using the personal pattern screen:

1. The pairs of hexadecimal digits were not separated by a single blank.
2. More than one blank separated a pair of hexadecimal digits.
3. The hexadecimal digits were not entered in pairs.
4. One or more characters were outside the range X'0' through X'F'.

Action: Position the cursor at the error and correct it using the insert/delete keys, then press SEND.

DELAYED CALL

Cause: This message is reported by the DCE. Due to a network problem, the call must be delayed. A delayed timer value is given by the DCE.

Action: An automatic retry is done by NCP.

DELETE REFUSED: CCU OF SWAP NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

DESTINATION DISK(ETTE) ERROR: FUNCTION CANNOT BE PERFORMED

Cause: An error occurred when trying to copy patches from one disk(ette) to another.

Action: Press F1 to leave the function.

DESTINATION PORT ALREADY SWAPPED

Cause: The destination port has already been defined in another port swap.

DESTINATION PORT IS INVALID

Cause: The value of the destination port is invalid.

Action: Enter another value.

DESTINATION PORT IS MISSING

Cause: The input is incomplete, or the configuration data file has not been updated after a configuration change.

Action: Enter a value for the destination port. If you already entered the value for the destination port, update the configuration data file.

DIRECT-ATTACHMENT IS NOT AUTHORIZED FOR A LIC PORT 5 OR 6

Cause: You have tried to directly attach a LIC type 5 or 6.

Action: Select the appropriate clocking.

DISCREPANCY BETWEEN CDF AND SCANNER (MUX AND OR BYPASS)

Cause: Self-explanatory.

Action: None.

Messages

DISK AND DISKETTE EC NUMBERS ARE DIFFERENT

Cause: Self-explanatory.

Action: Try another diskette.

DISK DIRECTORY CAPACITY EXCEEDED: MOSS DOWN

Cause: Too many customer files. The capacity of the disk directory is exceeded.

Action: Contact the appropriate service representative.

DISK ERROR: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: An error has occurred while accessing the MOSS disk.

Action: Contact the appropriate service representative.

DISK ERROR: DIRECTORY MAY BE DAMAGED

Cause: A disk hardware error occurred when writing the directory. The directory may be damaged. Control program procedures may be lost. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: DIRECTORY NOT ACCESSIBLE

Cause: A hardware error occurred on the disk. The directory is no longer available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR DURING LOADING PROCESS

Cause: When you are loading information on the disk, there is a problem and the disk does not reflect the new information.

DISK ERROR DURING PORT SWAP PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR DURING READING PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR DURING WRITING PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR: FUNCTION CANCELED. PRESS SEND

Cause: A physical error occurred when accessing the diskette. The Disk function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the Disk function again. If the problem persists, contact the appropriate service representative.

DISK ERROR: FUNCTION NOT AVAILABLE

Cause: A hardware error occurred on the disk. The function that you selected is not available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: End the function, using the F1 key, and contact the appropriate service representative.

DISK ERROR: I-SIT NOT SAVED ON DISK

Action: Try again.

DISK ERROR: IML CANCELED

Cause: A hardware error occurred on the disk. The scanner microcode is not accessible. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Terminate the function, and contact the appropriate service representative.

DISK ERROR: MOSS DOWN

Cause: MOSS is down because a hardware error occurred when writing on the disk. MOSS is no longer available.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE CANNOT BE FILED/MODIFIED

Cause: A disk hardware error occurred when writing the procedure. The procedure cannot be cataloged or modified. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE FILE MAY BE DAMAGED

Cause: A disk hardware error occurred when erasing a procedure. The procedure file may be damaged. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE NOT AVAILABLE

Cause: A hardware error on the disk. The procedure that you selected is not available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: SAVE CANCELED

Cause: A disk error was detected while saving the disk onto the secondary diskette.

Action: Start another save from the beginning: primary and secondary diskettes. If the problem persists, contact the appropriate service representative.

DISK ERROR: THE DISK CONTENTS CANNOT BE DISPLAYED

Cause: Self-explanatory.

Action: None.

Messages

DISK ERROR: UNABLE TO LOAD ADAPTER DUMP MODULE

Cause: A disk error occurred while an automatic scanner dump was attempted.

Action: Contact the appropriate service representative.

DISK ERROR: UNABLE TO LOAD CCU IPL MODULE

Cause: A disk error occurred during an automatic 3745 initialization.

Action: Initialize the 3745 from the control panel or the operator console. If the 3745 initialization fails, contact the appropriate service representative. While waiting for service, set the 3745 to diskette mode.

DISK ERROR: UNABLE TO LOAD FUNCTION MODULE

Cause: A disk error occurred while selecting a 3745 function.

Action: Try again. If the problem persists, contact the appropriate service representative.

DISK ERROR WHILE CLOSING PORT SWAP FILE DISK ERROR WHILE OPENING PORT SWAP FILE DISK ERROR WHILE READING PORT SWAP FILE DISK ERROR WHILE WRITING PORT SWAP FILE

Action: Leave the Port Swap function and start again.

DISK ERROR WHILE OPENING FILE

Cause: Self-explanatory.

Action: None.

DISK FILE NOT FOUND

Cause: Self-explanatory.

Action: None.

DISK FILE NOW EMPTY

Cause: Self-explanatory.

Action: None.

DISK FORMATTING IN PROGRESS: PLEASE WAIT SEVERAL MINUTES

Cause: Disk is being initialized.

DISK FUNCTIONS CANNOT BE PERFORMED WHEN MOSS IS ONLINE

Action: Press F1 or F6.

DISK NOT INITIALIZED

Cause: Disk is not initialized.

Action: Perform disk initialization.

DISK NOT READY

Cause: A disk error occurred while selecting a 3745 function.

Action: Try again. If the problem persists, contact the appropriate service representative.

DISK STOPPED

Cause: There has been no access of the disk for 20 minutes.

Action: Press any key on the keyboard or request a function to trigger the disk access again.

DISK UNUSABLE: EC NOT INITIALIZED

Cause: During an EC install with IML from diskette, the disk does not contain a version of the microcode.

Action: Contact the appropriate service representative.

DISK(ETTE) ERROR: MCF FUNCTION CANCELED

Action: Re-enter MCF.

DISK/DISKETTE POWER SUPPLY ERROR

Cause: Start-Stop disk/diskette cannot be processed by power control.

Action: Follow the procedure when there is a power supply error.

DISKETTE BADLY INITIALIZED

Cause: The diskette is not formatted.

Action: Select the DIF function to format the diskette.

DISKETTE ERROR: FUNCTION CANCELED: PRESS SEND

Cause: A physical error occurred when accessing the diskette. The Disk function is canceled.

Action: Select the Disk function again. If the problem persists, contact the appropriate service representative.

DISKETTE ERROR: FUNCTION NOT AVAILABLE

Cause: The function that you selected is not available because of a hardware error on the diskette. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: End the function, using the F1 key, and contact the appropriate service representative.

DISKETTE ERROR: MOSS DOWN

Cause: MOSS is down because a hardware error occurred when writing to the disk. MOSS is no longer available.

Action: Contact the appropriate service representative.

Messages

DISKETTE ERROR: MOUNT A NEW ONE, THEN PRESS SEND

Cause: An error has been detected on the diskette that you mounted.

DISKETTE ERROR: REQUEST IGNORED

Cause: Your request cannot be performed because of a diskette error. A BER is created: type 01, ID 03 Alarm A4 or A5 is displayed.

Action: Retry. If the error persists, contact the appropriate service representative.

DISKETTE ERROR: RESET CCU FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The Reset CCU/LSSD function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the Reset CCU/LSSD function again. If the problem persists, contact the appropriate service representative.

DISKETTE ERROR: WRAP FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The Wrap Test function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the Wrap Test function again. If the problem persists, contact the appropriate service representative.

DISKETTE FUNCTIONS CANNOT BE PERFORMED WHEN MOSS IS ONLINE: PRESS SEND

Cause: Diskette functions cannot be performed when MOSS is connected to the CCU control program.

Action: Set MOSS offline as described on page 23-13.


DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR

Cause: Self-explanatory.

Action: None.

DISKETTE NOT READY

Cause: The diskette is not mounted, not correctly mounted (upside down), or the diskette engaging lever is not set correctly.

Action: Mount the diskette or set the diskette engaging level correctly. If it is not the cause,  .

DISKETTE UNFORMATTED

Cause: The diskette is not formatted.

Action: Select the DIF function to format the diskette.

DX FACILITY MUST BE SET TO 'N' IF YOU WANT HALF DUPLEX MODE

Cause: You selected half-duplex mode while DX FACILITY is set to 'Y'.

Action: Set DX FACILITY to 'N'.

DX FACILITY MUST BE SET TO 'Y' IF YOU WANT DUPLEX MODE

Cause: You selected duplex mode while DX FACILITY is set to 'N'.

Action: Set DX FACILITY to 'Y'.

E-SIT ALREADY ACTIVE ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

EC INSTALLATION FROM xxxxx DISKETTE IN PROGRESS

Cause: The EC primary, secondary, third, fourth, or fifth diskette is being copied onto the disk.

ENABLE COMMAND FAILED - LINK TEST FUNCTION CANCELED

Cause: The line cannot be enabled.

Action:

1. Check that the IPL port table has been correctly defined.
2. Check that the modem cable is correctly connected.
3. Check that the modem is powered on and operational.
4. If the link is a direct attachment, check that the responder is powered on and initialized.
5. If the error persists after the above operations, contact the service representative.

Note: The SCF, LCS and SES are also displayed for this type of error.

END OF PORT SWAP FILE

Cause: Self-explanatory.

Action: None.

ENTER YOUR SELECTION (A OR B)

Cause: You have entered a blank instead of A or B.

Action: Enter A or B.

ENTER YOUR SELECTION (Y OR N)

Cause: You have entered a blank instead of Y or N.

Action: Enter Y or N.

ERROR DETERMINING TRID MESSAGE MOSS/TIC ERROR FUNCTION CANCELLED

Cause: The TIC is not yet activated by NCP.

Action: Activate the TIC via NCP.

ERROR DURING CALL ACCESS FUNCTION

Cause: Self-explanatory.

Action: None.

Messages

ERROR DURING ERROR RECOVERY

Cause: An undefined error was detected during the error recovery. The scanner is not able to process the MOSS command. A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, contact the appropriate service representative.

ERROR DURING IPL PROCESS

Cause: The IPL file cannot be updated according to your request.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING LKP

Cause: You could not update the IPL nor could you change the link IPL ports file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING LKP AND PORT SWAP

Cause: You could not update the IPL nor could you change the link IPL ports or port swap files to their previous status.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING PORT SWAP

Cause: You could not update the IPL nor could you change the port swap file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING PORT SWAP PROCESS

Cause: You could not update the port swap file

Action: Contact the appropriate service representative.

ERROR DURING PORT SWAP PROCESS; WARNING LKP

Cause: You could not update the port swap file nor could you change the link IPL ports file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING THE LOADING OF A MODULE

Cause: The link IPL port file has been changed.

ERROR IN CDF DURING PORT SWAP PROCESS

Cause: Self-explanatory.

Action: None.

ERROR IN FRONT END SCANNER PROCESSOR

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function.

ERROR IN SCANNER DURING COMMAND PROCESSING

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: End the function, using the F1 key, and contact the appropriate service representative.

ERROR IN SCANNER: ICC/LIC FAILED OR IS NOT PRESENT

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function.

ERROR WHEN SENDING MBX IN PORT SWAP PROCESS

Cause: When MOSS is online, NCP refuses the deletion of the port swap.

ERROR WHEN WRITING CDF FILE ON THE DISK

Action: Retry. If the problem persists, contact the appropriate service representative.

ERROR WHILE ACCESSING POWER SUB-SYSTEM

Cause: An error occurred while getting scheduled power-on data from the power subsystem after option 2 was selected. A BER has been created.

ERROR WHILE SENDING REQUEST TO CTL PGM

Cause: There is an error while sending the mailbox to the control program.

ERROR WHILE TRANSMITTING DATA

Cause: An error occurred when transmitting the data to the power subsystem. Date and time have not been updated. A BER has been created.

ERROR WITH CDF: DISK ERROR

Action: Contact the appropriate service representative.

ERROR WITH CDF: ERROR ON SWAD OPERATION

Cause: There is a switch adapter (SWAD) error when CDF tries to access the switch information.

ERROR WITH CDF: INVALID INPUT

Cause: Self-explanatory.

Action: Correct the input.

ERROR WITH CDF: TIMEOUT ON REQUEST

Cause: There is a port swapping error because of an error in the CDF.

Messages

EXEC CANCELED ON OPERATOR REQUEST

Cause: You canceled the procedure by pressing F5 while the procedure was being executed.

EXEC CANCELED: OUTPUT X'71' REGISTER NOT ACCESSIBLE

Cause: The execution of the selected procedure is canceled because of a hardware error on the MOSS-to-CCU boundary when reading the output X'71' register. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

'EXPECTED DATA' CANNOT BE ENTERED AFTER 'Y'

Cause: You entered data in the EXPECTED area of the screen although you left the letter Y which means that the TRANSMIT and EXPECTED data are identical.

Action: Do one of the following:

- If TRANSMIT and EXPECTED data are identical, erase the EXPECTED data
- If they are different, replace Y by N.

FALLBACK NOT ALLOWED IN DUAL MODE (TWIN CONFIGURATION)

Cause: The 3745 is in twin-dual mode. The fallback function is not available.

Action: None.

FALLBACK NOT ALLOWED: SINGLE CCU INSTALLED

Cause: You have requested fallback but a single CCU is installed.

Action: None.

FALLBACK NOT AVAILABLE IN PRESENT CCU CONFIGURATION

Cause: Fallback is not allowed because:

- 3745 is in twin-standby mode. Either no CCUs are reset/ready or both CCUs are reset/ready.
- 3745 is in twin-backup mode. No CCU is running or one CCU already supports the whole configuration.

Action: None.

FALLBACK REFUSED: SELECTED CCU MUST BE RUNNING

Cause: You have requested fallback but the CCU specified to support all the resources is not running properly.

Action: Perform an IPL before requesting fallback.

FIELD MUST BE BLANK WHEN BYTE MULTIPLEXER CHANNEL = N

Cause: When the channel is not a byte multiplexer channel, you cannot have an ESC address.

FILE CHGxxxxx NOT FOUND ON xxxxxx: FUNCTION CANCELED, PRESS SEND

Cause: File CHGxxxxx cannot be found on the new EC diskette, or is no longer on the disk.

Action: Contact the appropriate service representative.

FILE CHGxxxxx SMALLER ON DISKETTE: FUNCTION CANCELED, PRESS SEND

Cause: The space allocated for the file CHGxxxxx on the new EC diskette is too small.

Action: Contact the appropriate service representative.

FILE NOT AVAILABLE ON DISK

Cause:

- The file is already opened, a disk operation is going on.
- You specified a wrong load module name.

Action: Restart the operation later on.

FILE NOT AVAILABLE ON DISKETTE

Cause: There is no load module on the diskette.

Action: Replace or regenerate another diskette.

FILE IN USE: RETRY LATER

Cause: BERs are currently being created.

FIRST STOP THE CCU

Cause: You cannot alter work registers if the CCU is not stopped.

Action: Stop the CCU and restart the Alter function.

FIRST TERMINATE FUNCTION ON SCREEN

Cause: Self-explanatory.

Action: Terminate function on screen.

FIRST TERMINATE SAME TYPE FUNCTION

Cause: Self-explanatory.


Action: Terminate same type function.

FORMAT COMPLETED

Cause: The disk initialization has been completed.

FRAME NOT INSTALLED OR DATA NOT ACCESSIBLE

Cause: Self-explanatory.

Action: This message is displayed when the power configuration table has not yet been created. In this case,  , this PS ID configuration table is created by the service representative.

Messages

FREEZE IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

FREEZE IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

FUNCTION CANCELED: DISK AND DISKETTE EC NUMBERS ARE DIFFERENT

Action: Try another diskette.

FUNCTION CANCELED: DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR

Cause: The last MCF number on the diskette is less than or equal to that on the MOSS disk.

Action: Check the diskette.

FUNCTION CANCELED: DISKETTE MCF NOT SEQUENTIAL WITH LAST DISK MCF

Cause: The MCF is not sequential with the last MCF resident on disk.

Action: Display the MCF history table to identify the last MCF applied and check.

FUNCTION CANCELED: FIRST MCF ON DISKETTE NOT SEQUENTIAL WITH LAST DISK MCF

Cause: The MCF that you are trying to apply is not sequential with the last MCF applied on disk.

Action: Display the MCF history table to identify the last applied MCF. You may have forgotten to apply previous MCFs.

FUNCTION CANCELED: THERE IS NO MCF FILE ON DISKETTE

Action: Transfer MCF file from another diskette, if any.

FUNCTION CANNOT BE PERFORMED WHEN MOSS IS ONLINE

Action: Set MOSS offline (page 23-13).

FUNCTION COMPLETED

Cause: The function that you selected has been performed.

Action: Do one of the following:

- Select another function from the same secondary menu, or
- End the function using the F1 key.

FUNCTION IN PROGRESS

Cause: The function that you selected is being performed.

FUNCTION IN PROGRESS: WAIT FOR COMPLETION BEFORE PRESSING F1

Cause: F1 does not function during the fallback and switchback process.

Action: Wait until the fallback or switchback process is completed before pressing F1.

FUNCTION NOT ALLOWED IN DISKETTE MODE

Cause: Self-explanatory.

Action: None.

FUNCTION NOT ALLOWED: CHECK CCU STATE

Cause: You selected a function that cannot be performed under the current status of MOSS.

Action: Either wait until the appropriate MOSS status is displayed in the MSA or change the MOSS status (see page B-2).

FUNCTION NOT AVAILABLE DURING IPL

Cause: You selected a function while initializing the 3745.

Action: Select the function once the 3745 initialization is completed.

FUNCTION NOT AVAILABLE IN DISKETTE MODE

Cause: No function can be selected in diskette mode.

Action: Contact the appropriate service representative.

FUNCTION NOT AVAILABLE: TRY LATER

Cause: The function that you selected is not available because a file is being transferred to the host.

FUNCTION NOT YET AVAILABLE

Cause: Self-explanatory.

Action: None.

FUNCTION TERMINATION NOT ALLOWED: COMPLETE FUNCTION

Cause: Self-explanatory.

Action: Complete the function.

HARDWARE ERROR ON RECEIVE

Cause: A cable or modem error occurred on receive.

Action:

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

Messages

HARDWARE ERROR ON TRANSMIT

Cause: A cable or modem error occurred on transmit.

Action:

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

I-SIT ACTIVE ON LINE xxxx SCANNER xx, BUT NO EVENTS RECORDED

Cause: Self-explanatory.

Action: None.

I-SIT ALREADY ON DISK, PRESS 'E' BEFORE SAVING

Cause: Self-explanatory.

Action: None.

I-SIT AVAILABLE FROM BUFFER FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT AVAILABLE FROM DISK FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT CANCELED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT FROZEN FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT NOT ALLOWED ON LINE xxxx: SCANNER xxxx TRACE COMPLETE

Cause: You cannot put more than four traces on a given scanner.

I-SIT NOT STARTED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT RESUMED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT SAVED ON DISK

Cause: Self-explanatory.

Action: None.

I-SIT STARTED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

IML FOR SCANNER xxxx COMPLETED: SCANNER IS CONNECTED

Cause: The scanner is operational and under control of the CCU control program. MSA field m displays SCANNER xxxx CONNECTED.

IML FOR SCANNER xxxx IN PROGRESS

Cause: The IML of scanner xxxx is being processed normally.

IML REQUESTED - TERMINAL DISCONNECTED

Cause: Self-explanatory.

Action: None.

IMMEDIATE FUNCTION FAILED

Cause: Self-explanatory.

Action: None.

INCOMING CALL

Cause: This message is reported by the DCE or the DTE due to a call collision (Incoming and Outgoing call at the same time). Priority is given to the incoming call.

Action: If a retry is not automatically performed by NCP, use a VTAM command to restart the calling procedure.

INCOMPATIBLE WITH DATA STREAMING

Cause: You have entered a value for a parameter that is incompatible with data streaming.

Action: If you enter a value for data streaming, do not enter a value for high-speed data transfer or byte multiplexer channel.

INCORRECT DISKETTE, IT MUST BE A PRIMARY AT SAME EC

Action: Mount the correct diskette.

Messages

INCORRECT DISKETTE, YOU MUST MOUNT THE IML DISKETTE

Cause: Self-explanatory.

Action: Mount the IML diskette.

INCORRECT MCF FILE: CONTACT SERVICE REPRESENTATIVE

Cause: Self-explanatory.

Action: Contact the appropriate service representative.

INCORRECT PASSWORD

Cause: You entered an incorrect password to have access to the Password Management function.

Action: Check the password and reenter.

INCORRECT PASSWORD - PLEASE REENTER

Cause: You entered an incorrect logon password.

Action: Enter the correct password.

- Local console password: The number of unsuccessful attempts is not limited.
- Remote console password: The number of unsuccessful attempts is limited to three. Then the remote console is disconnected.

INCORRECT PASSWORD - TERMINAL DISCONNECTED

Cause: You entered an incorrect logon password three times on the remote console. The remote console is disconnected.

Action: Check whether the password has been modified or if you still have access to the remote console.

If you obtain the new password, you have to reconnect the remote console.

INCORRECT VALUE FOR TIMER

Cause: You entered a value outside of the allowed range of 05 to 30.

Action: Enter a correct value (05 to 30).

INCORRECT VALUE FOR TIMER: ENTER INTEGER FROM 05 to 30

Cause: You entered a value out of the allowed range of 05 to 30.

Action: Enter an integer from 05 to 30.

INPUT CHECKSUM DOES NOT MATCH COMPUTED ONE

Action: Request the patch again.

INPUT MUST BE PAIRS OF HEX CHARACTERS SEPARATED BY BLANKS

Cause: You did not enter two hexadecimal characters at a time.

Action: Correct your input.

INPUT MUST BE 8 BINARY DIGITS

Cause: Either you entered fewer than eight digits, or the digits you entered are binary.

Action: All dots of the field in error must be replaced by zeros or ones.

INTF STANDARD NOT ACCESSED

Cause: Self-explanatory.

INVALID

Cause: This message is reported by the DCE when an invalid command is received from the DTE.

Action: Suspect an operator error or an NCP problem.

INVALID ADDRESS FIELD RECEIVED

This message is followed by:

1. Two hexadecimal digits representing the address field that was received, if they are not already displayed on the link test statistical counter screen.
2. By the number of each type of error.

Cause: An invalid address field was received in the test frame.

Action:

1. Check that the responder address specified when you initialized the requester is correct.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

INVALID BOX OPERATING MODE WITH THE CCU CONFIGURATION

Cause: Self-explanatory.

Action: None.

INVALID CHANGE (MOSS NOT ALONE)

Cause: Self-explanatory.

Action: None.

INVALID CONFIGURATION IN THE CDF: CONTACT SERVICE PERSONNEL

Cause: The configuration and the mode are invalid in the CDF. This can happen when one of the following is performed:

- An EC install
- A power off/power on
- An IML from the disk
- A CDF create.

Messages

INVALID CONTROL FIELD RECEIVED

This message is followed by:

1. Two hexadecimal digits representing the control field that was received, if they are not already displayed on the link test statistical counter screen.
2. By the number of each type of error.

Cause: An invalid control field was received in the test frame.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

INVALID DATA RECEIVED

This message applies only to the requester.

Cause: The received data does not match the transmitted data, which is therefore displayed on a separate screen.

Action:

1. Examine the data to determine the character in error. The cursor is positioned in front of the first character that does not match.

Note: Up to 64 bytes can be shown on a screen, so two screens may be needed to display all the data. In this case, you can see which screen is displayed by looking at the bottom right-hand corner of the screen:

- If F8:FORWARD is displayed, you are looking at the first screen (first 64 bytes).
- If F7:BACKWARD is displayed, you are looking at the second screen (second 64 bytes).

2. Use F8 or F7 to switch between screens as required.
3. Press F4 to continue the test.

Notes:

1. If, in addition, too many bytes have been received, the error message is: INVALID DATA RECEIVED - TOO MUCH DATA RECEIVED.
2. The NCP and the Responder Link Test program can both buffer a full 128 bytes. Other responders may be limited fewer than 128 bytes; for example, the controller load/dump program (CLDP) is limited to 32 bytes. In this case, there will be an INVALID DATA RECEIVED message if the test message sent by the requester was longer than the limit.

INVALID DATA RECEIVED - TOO MUCH DATA RECEIVED

See message INVALID DATA RECEIVED Notes 1 and 2.

INVALID DATE

Action: Enter the date as requested.

INVALID FILE NAME

Cause: File does not exist.

Action: In diskette mode, the file might not be on the primary diskette. Enter the patch in disk mode.

INVALID INPUT

Cause: You did one of the following:

- You pressed SEND before entering the requested input on a screen.
- You entered one or more invalid characters.
- You entered an invalid value, for example, an address outside the specified range.
- You made a formatting error.

Action: Do one of the following:

- Correct the input, or
- Press one of the F keys displayed on the screen.

INVALID INPUT, ENTER A OR B

Cause: You have entered a character other than A or B when only A or B is expected.

Action: Enter A or B.

INVALID INPUT, ENTER Y OR N

Cause: You have entered a character other than Y or N when only Y or N is expected.

Action: Enter Y or N.

INVALID LCD: WRAP FUNCTION CANCELED

Cause: The control program transmitted an incorrect line control definition (LCD).

Action: Contact the control program service representative.

INVALID LIC NUMBER

Cause: You have entered a nonexistent LIC number.

Action: Enter the correct LIC number.

INVALID LINE ADDRESS

Cause: The line address that you entered is not within the correct range.

Action: Check the line address and re-enter.

INVALID MODULE NAME

Cause: The module does not exist.

Action: In diskette mode, the module might not be on the primary diskette. Enter the patch in disk mode.

INVALID PF KEY (See "UNDEFINED F KEY" page A-74)**INVALID SEL#**

Cause: The selection number (SEL#) that you entered is not between 0 and the maximum number of BERs in the BER file.

Action: Enter a correct BER selection number.

INVALID TIME

Action: Enter the time as requested.

Messages

IOC ERROR DURING ERROR RECOVERY

Cause: The scanner is not able to process the MOSS command. An IOC error was detected during the error recovery. A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, contact the appropriate service representative.

IOC RESET

Cause: A "reset tag" pulse is generated on the IOC bus.

IOC/SCANNER ERROR: FUNCTION NOT PERFORMED

Cause: A hardware error is detected either in the scanner or in the IOC bus. The MOSS command cannot be performed. A BER is created: type 01, ID 05.

Action: End the function, using the F1 key, and contact the appropriate service representative.

IOC/TRA ERROR: FUNCTION NOT PERFORMED

Cause: An IOC error occurred during an MIOH processing.

Action: Follow the general process for MIOH error.

IPL NOT ALLOWED ON SELECTED CCU: PERFORM A FALLBACK

Cause: The 3745 is configured in twin-standby mode and IPL is requested on the backup CCU. IPL is refused.

Action: Perform fallback to perform the IPL.

IPL NOT ALLOWED ON SELECTED CCU: PERFORM A SWITCHBACK

Cause: The selected CCU does not support the configuration, and the 3745 is configured in backup mode. All adapters are switched to the CCU that is not currently selected.

Action: Perform a switchback instead of an IPL.

IPL NOT ALLOWED, ENTER FBK TO COMPLETE FALLBACK

Cause: IPL is refused because the fallback was interrupted.

Action: Enter FBK to complete the fallback and then perform an IPL.

IPL NOT ALLOWED, ENTER SBK TO COMPLETE SWITCHBACK

Cause: IPL is refused because the switchback was interrupted.

Action: Enter SBK to complete the switchback and then perform IPL.

LEVEL INCOMPATIBLE WITH SELECTED LINE ADDRESS

Cause: The wrap test cannot be performed on this line at this level.

Action: Try another wrap level.

LIC ALREADY PRESENT

Cause: You have tried to add a LIC that already exists.

LIC DOES NOT EXIST

Cause: The LIC is not logically present in the CDF.

Action: If the LIC is physically installed, update the configuration data file.

LIC IS NOT PRESENT

Cause: The LIC is not physically present in the machine.

LIC IS STILL PRESENT

Cause: The LIC is still physically present in the machine.

LIC NOT INSTALLED

Cause: You entered a line address that corresponds to a LIC that is not installed, or the configuration data file has not been updated after a LIC change.

Action: Do one of the following:

- Enter a line address that corresponds to a LIC that is installed.
- If the line address is correct, update the configuration data file.

LIC NUMBER MANDATORY

Action: Enter a LIC number.

LINE ADDRESS DOES NOT BELONG TO AN INSTALLED SCANNER

Cause: The scanner referred to by the line address that you entered is not installed.

Action: Check the line address and re-enter.

LINE IS NOT ON THE CONNECTED CCU

Cause: You selected a line which is not on the CCU connected to MOSS.

Action: Retry after selecting the other CCU.

LINE NOT DISABLED/DEACTIVATED: WRAP FUNCTION CANCELED

Cause: You pressed SEND before disabling or deactivating the line.

Action: Select the Wrap Test function. Make sure that the line is disabled or deactivated before pressing SEND.

LINE NOT SYSTEM GENERATED: WRAP FUNCTION CANCELED

Cause: The line that you specified had not been defined at CCU control program generation time. The Wrap Test function is canceled.

Action: Select the Wrap Test function and specify a valid line address.

Messages

LINE NOT YET INITIALIZED

Cause: The control program has not yet requested the line initialization (SET MODE command).

Action: Activate the line at the host console and retry.

LINE SPEED MAY BE 230 KBPS OR ABOVE

Cause: Displaying the states of the data set leads for high-speed lines (230 kbps or above) may disturb the transmission of data.

Action: Do one of the following:

- Enter Y to display the lead states.
- Terminate the function.
- Press one of the displayed F keys.

LINE SPEED MAY BE 230 KBPS OR ABOVE: LEAD STATE NOT ACCESSIBLE

Cause: You tried to display the states of the data set leads for high-speed lines (230 kbps or above) but the scanner cannot provide the leads.

Action: Do one of the following:

- Terminate the function,
- Select another line, or
- Press one of the displayed F keys.

LINE TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED

Cause: You cannot perform, for the moment, wrap tests on the line that you specified. The Wrap Test function is canceled.

Action: Try again later.

LINE TEST ACTIVE: WRAP FUNCTION CANCELED

Cause: You tried to perform the Wrap Test function on a line that is being tested.

LINE TRACE ACTIVE: WRAP FUNCTION CANCELED

Cause: You tried to perform the Wrap Test function on a line that is being traced.

LINK DISABLED - LINK TEST FUNCTION CANCELED

Cause: An error occurred that disabled the link.

Action:

1. Determine the error condition from the display.
2. Restart the test in investigation mode and check the other error message.

LINK NOT DEFINED IN IPL PORT TABLE

Cause: The link being tested is not defined in the IPL port table.

Action:

1. Define the link as an IPL port for the CCU.
2. Re-IPL the link test program on the CCU.
3. Restart the test.

LINK TEST PROGRAM ABEND

Cause: A hardware error occurred during IPL phase 3.

Action:

1. Press the Power On Reset pushbutton to reset the 3745.
2. Re-IPL the link test program.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

LINK TEST PROGRAM NOT LOADED - FUNCTION CANCELED

Cause: You tried to select the Stand-Alone Link Test (SAT) function when the link test program was not loaded.

Action: Select the Load Link Test Requester (LTQ) function or Load Link Test Responder (LTS) function to load the link test program.

LOAD IN PROGRESS, FUNCTION NOT AVAILABLE

Cause:

- A load module is being transferred on the disk (issued by a MLM command from the host).
- A copy of the load module to the diskette is in progress.

Action: Wait for the end of the current operation and restart the function. Refer to DII function.

LOAD MODULE TOO BIG, CANNOT BE COPIED TO DISKETTE

Cause: The load module is greater than 1 Megabyte.

Action: Regenerate a smaller load module.

LOCAL CONSOLE CALLING

Cause: The local console operator is trying to log on.

Action: It is recommended that you log off. The local console operator can disconnect the remote, alternate or RSF console at any time.

LOCAL PASSWORD AND MAINTENANCE PASSWORD MUST BE DIFFERENT

Cause: Self-explanatory.

Action: Enter different local and maintenance passwords.

LVL3 INTERRUPT SENT TO CCU

Cause: A CCU level-3 interrupt is sent to the CCU.

MAINTENANCE PASSWORD HAS BEEN DEACTIVATED

Cause: The request to deactivate the maintenance password is successful.

Action: None.

Messages

MAINTENANCE PASSWORD HAS BEEN PERMANENTLY ACTIVATED

Cause: The request to activate permanently the maintenance password is successful.

Action: None.

MAINTENANCE PASSWORD HAS BEEN TEMPORARILY ACTIVATED

Cause: The request to temporarily activate the maintenance password is successful.

Action: None.

MANDATORY INPUT

Action: Enter the requested value.

MCF FILE COPIED ON DISK

Cause: Self-explanatory.

Action: None.

MCF FILE IS EMPTY

Cause: Self-explanatory.

Action: None.

MICROCODE DETECTED ERROR DURING COMMAND PROCESSING

Cause: The scanner microcode detected an error. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function, then re-IML the scanner. If the problem persists, contact the appropriate service representative.

MIXED COMMANDS ARE NOT ALLOWED

Cause: Self-explanatory.

Action: None.

MORE THAN 128 BYTES RECEIVED

Cause: This message applies only to the responder. The link test responder expects to receive up to 128 bytes of data, but more than 128 bytes were received. The extra data is ignored.

Action:

1. Press F4 to return to the responder statistical counters screen.
2. If the error persists, contact the appropriate service representative.

MOSS DOWN BECAUSE YOU SELECTED TERMINATE

Cause: You selected the Terminate function while the disk was being written. MOSS is no longer available.

Action: Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU FAILURE

Cause: During the IML, errors were found in a single configuration.

Action: None.

MOSS IML HAS DETECTED CCU-A AND CCU-B FAILURE

Cause: During the IML, errors were found for both CCU-A and CCU-B.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, CCU-B IS DOWN

Cause: During the IML, errors were found for CCU-A, and CCU-B is down.

Action: Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU-A FAILURE, CCU-B POWER BLOCK IS NOT UP

Cause: During the IML, errors were found for CCU-A, and the CCU-B power block is either not present or not up.

Action: Check the CCU-B power. Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU-A FAILURE, FALLBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-A. Fallback is not possible on CCU-A.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, SWITCHBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-A. Switchback is not possible on CCU-A.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, YOU MAY TRY ANOTHER OPTION

Cause: During the IML, errors were found and you cannot IPL CCU-A.

Action: Perform another action.

MOSS IML HAS DETECTED CCU-B FAILURE, FALLBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-B. Fallback is not possible on CCU-B.

Action: None.

MOSS IML HAS DETECTED CCU-B FAILURE, SWITCHBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-B. Switchback is not possible on CCU-B.

Action: None.

Messages

MOSS IML HAS DETECTED CCU-B FAILURE, YOU MAY TRY ANOTHER OPTION

Cause: During the IML, errors were found and you cannot IPL CCU-B.

Action: Perform another action.

MOSS IS NOT ONLINE: SET IT FIRST BY USING MOSS ONLINE FUNCTION

Cause: Fallback has been manually requested and the MOSS is not online. Switchback has been requested and the MOSS is offline.

Action: Set the MOSS online by using the MON function in Menu 2.

MOSS NOT ONLINE: WRAP FUNCTION CANCELED

Cause: The Wrap Test function is canceled because MOSS is not online.

Action: Set the MOSS online and restart the wrap test.

MOUNT CORRECTLY THE DISKETTE, THEN PRESS SEND

Cause: Self-explanatory.

Action: None.

MOUNTED DISKETTE IS NOT A xxxxx

Cause: You were requested to mount a primary, secondary, third, fourth, or fifth diskette, but the diskette that you mounted is not the correct one.

Action: Mount the correct diskette.

NCP TRSS SUPPORT NOT AVAILABLE: FUNCTION IGNORED

Cause: The function selected is not permitted if NCP does not support TRSS.

NCP/MOSS ERR.: FUNCTION CANCELED

Cause: A matching MOSS Interface Table (MIT) was not found for the selected TIC. NCP is set as not supporting TRSS. Since NCP is needed for the current function, it is canceled.

Action: Verify NCP generation.

NCP/MOSS ERR.: PRESS SEND TO CONTINUE

Cause: A matching MOSS Interface Table (MIT) was not found for the selected TIC. NCP is set as not supporting TRSS.

Action: Press SEND to continue the function. Verify the NCP generation.

NM NOT ALLOWED WHEN A CCU FUNCTION IS ACTIVE

Cause: You cannot select the CCU Normal Mode function if a CCU function has already been selected.

NO ANSWER FROM CCU CONTROL PROGRAM: WRAP FUNCTION CANCELED

Cause: The CCU control program does not respond to a MOSS request. A BER is created: type 01, ID 85.

Action: Check that MOSS is online (MOSS-ONLINE is displayed in MSA field c). If the control program supports the wrap tests, select the Wrap Test function and try again. If the problem persists, contact the appropriate service representative.

NO ANSWER FROM CONTROL PROGRAM: FUNCTION NOT PERFORMED

Cause: There was no answer from the control program when selecting the MOSS Online or MOSS Offline function.

Action: Check if the control program is running.

NO ANSWER FROM LINK TEST PROGRAM - FUNCTION CANCELED

Cause: The link test program did not reply within 2 minutes during initialization, or within 2 seconds if running.

Action:

1. Press the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program on the CCU.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

Note: The 2-minute time-out may occur during initialization on a dial-up line because the connection was not established.

NO ANSWER TO ERROR STATUS REQUEST DURING ERROR RECOVERY

Cause: The scanner is not able to process the MOSS command; it did not answer during error recovery. A BER is created: type 01, ID 05.

Action:

1. Perform a 3745 IPL from the operator console (see Chapter 8).
2. If the error persists, contact the appropriate service representative.

NO CCU AVAILABLE: CHECK CCU INFORMATION IN THE CDF

Cause: There is no CCU available according to the CDF information.

Action: Check the CCU information in the CDF.

NO CCU SELECTED - FUNCTION CANCELED

Cause: The link test program has been loaded but it is impossible to determine which CCU is selected.

Action:

1. Re-IPL the link test program on the CCU connected to the link in test.
2. Restart the test.
3. If the error persists, contact the service representative.

Messages

NO CONTROL PROGRAM BUFFER: FUNCTION NOT PERFORMED

Cause: No control program buffer is available to execute your request.

Action: Try later.

NO FUNCTION VALUE

Cause: You did not enter a function value in FUNCTION == > .

Action: Enter a function value in FUNCTION == > .

NO NEW MCF IN FILE

Cause: Self-explanatory.

Action: None.

NO OLD MCF IN FILE

Cause: Self-explanatory.

Action: None.

NO POWER SUPPLY INSTALLED

Cause: Power supplies are either installed or their status in the POS function is down.

Action: Check if the power supplies are installed. If they are installed, check that the power supply status in the POS function is up.

NO PROCEDURE TO CATALOG

Cause: You selected CATALOG but there is no procedure to catalog.

NO RECORD FOUND FOR THE SELECTED OPTION

Cause: Self-explanatory.

Action: None.

NO SCANNER ANSWER: CHECK CCU STATE AND IF NEEDED RE-IML CS

Cause: The scanner cannot answer MOSS commands because of the CCU or the scanner.

Action: Do one of the following:

- If the scanner is down and the CCU state is RUN (see MSA field g), re-IML the scanner then try again.
- If the CCU state is not RUN, perform a 3745 IPL from the operator console, re-IML the scanner, then try again.

NO SUPPORT FOR ALC LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on ALC lines. The Wrap Test function is canceled.

NO SUPPORT FOR AUTOCALL LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on autocal lines. The Wrap Test function is canceled.

NO SUPPORT FOR OEM LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on OEM lines. The Wrap Test function is canceled.

Action: None.

NO SWAP FILED

Cause: The Port Swap file is empty. This message is displayed when selecting the Port Swap function for the first time or when all switched ports have been reset.

NO TRA'S INSTALLED OR SWITCH ERROR: FUNCTION CANCELED

Cause: There are no token-ring adapters in the CDF, or the switch adapter is not initialized.

Action: Run CDF or run IPL to initialize the switch.

NO TRACE ACTIVE FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

NO VALID RECORDS FOUND

Cause: Self-explanatory.

Action: None.

NON-CCU FUNCTION STILL PENDING

Cause: You tried to log off while a Menu 1 function was pending.

Action: Perform or terminate the pending function.

NON-OPERATIONAL EP DUALCOM LINE: WRAP FUNCTION CANCELED

Cause: The line is equipped with the EP Dualcom feature. The Wrap Test function cannot be performed on such lines.

Action: Do not perform a wrap test on this line.

NOT IMLED: INVALID LA TYPE FOR IML

Cause: The selected line adapter is not a scanner.

Action: Enter a scanner number.

NOT INSTALLED

Cause: The appropriate adapter or port is not installed or does not exist on this model.

NUMBER OF LINK IPL PORTS IS GREATER THAN 8

Cause: Twin-standby mode with one CCU running supports a maximum of eight ports. You have more than eight ports.

Action: You must perform the Link IPL Ports function and delete the extra ports.

Messages

ONE LINE IS SWAPPED IN RANGE

Cause: You are about to delete a LIC that contains a swapped line.

Action: Reconsider before you delete the LIC.

ONLY ONE SCAN OR MODIFY ON SAME SCREEN

Cause: You can scan or modify only one patch at a time.

PASSWORD HAS BEEN UPDATED

Cause: The request to update the local or remote password is successful.

Action: None.

PASSWORD MUST BE AT LEAST FIVE ALPHANUMERIC CHARACTERS LONG WITHOUT BLANKS

Action: Reenter the password correctly.

PASSWORD REJECTED: PANEL SERVICE MODE IS NOT 0

Cause: You entered a customer password when the service mode was not set to 0.

Action:

1. Set the service mode to 0 from the control panel.
2. IML the MOSS from the control panel or from the operator console.

PATTERN MUST CONTAIN AT LEAST 4 PAIRS OF HEX CHARACTERS

Cause: Your pattern contains fewer than four pairs of hexadecimal characters.

Action: Enter at least four pairs of hexadecimal characters. When your pattern is complete, enter C, then press SEND.

PLEASE WAIT, IML IN PROGRESS

Cause: Self-explanatory.

Action: None.

PORT SWAP ALREADY EXISTS

Cause: Self-explanatory.

Action: None.

PORT SWAP CHECKING IN ERROR

Cause: Self-explanatory.

Action: None.

PORT SWAP CHECKING REFUSED: MOSS NOT ONLINE

Action: Put MOSS online and retry.

PORT SWAP NOT FOUND

Cause: Self-explanatory.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: COMMAND NOT PERFORMED

Cause: An error occurred when transmitting the command to the power subsystem. A BER has been created.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: NEW CONFIGURATION TABLE IGNORED

Cause: An error occurred while transmitting the confirmation to the power subsystem. The new configuration table is therefore not taken into account by the power subsystem. This message comes from the result of option C.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: OPTION NOT AVAILABLE

Cause: An error occurred while communicating with the power subsystem after option C has been selected. A BER has been created by Power Interface Control code.

Action: None.

POWER SUPPLY OF CCU-A IS NOT OPERATIVE. CALL SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

PRESS BREAK TO STOP

Cause: The Display function is in refresh mode.

PRESS SEND TO EXIT THE FUNCTION

Cause: You have not confirmed your selection. The screen is blank.

Action: Press SEND to return to Menu 1.

PRESSING F1 CAUSES MOSS DOWN & DISK DATA DESTROYED

Cause: Self-explanatory.

Action: Re-IML.

PROCEDURE IN STORAGE CANNOT BE EXECUTED

Cause: The selected procedure cannot be executed because it is not completely created or modified.

Actions:

- Creation: END must be the last instruction of the procedure.
- Modification: Once you have modified a procedure, do not forget to press F6.
- When creating a procedure, END must be the last instruction, or
- Once you have entered all the modifications, press F6.

PROCEDURE NAME ALREADY USED

Cause: The name of the procedure that you want to create is already used.

Action: Enter a procedure name that is not in the directory.

PROCEDURE NAME CANNOT START WITH CP

Cause: You cannot create, modify, erase, or catalog a procedure whose name starts with CP.

Action: If you want to modify such a procedure, you must copy it under another name and modify the copied procedure (see Chapter 5).

PROCEDURE NOT FOUND IN FILE

Cause: You selected a procedure that does not exist in the procedure file.

Action: Enter the name of an existing procedure.

PROCEDURE x CATALOGED

Cause: Procedure x is successfully cataloged. The procedure directory is automatically updated.

PROCEDURE x CREATED

Cause: Procedure x is created.

Action: You should catalog the procedure. However, before cataloging it, you may execute or modify it. The procedure just created will be lost unless you catalog it before you create, erase, modify, execute, or display **another** procedure.

PROCEDURE x ERASED

Cause: Procedure x is erased. The procedure directory is automatically updated.

PROCEDURE x MODIFIED

Action: You should catalog the procedure. However, before cataloging it, you may execute or modify it.

PROCESS REFUSED: UNKNOWN RETURN CODE FROM CTL PGM

Cause: The control program refused the port switching for a reason undefined to MOSS.

Action: Contact the appropriate service representative.

READ CHECKING IN PROGRESS: PLEASE WAIT SEVERAL MINUTES

Cause: Disk is being checked.

RECOVERY OF A CANCELED APPLY

Cause: When entering MCF after an apply was canceled, MCF tries to restore the apply part of the patch.

RECOVERY OF A CANCELED RESTORE

Cause: Self-explanatory.

Action: None.

RECOVERY OF A CANCELED UPGRADE

Cause: When entering MCF after a canceled upgrade, MCF restores all the patches applied in that previous upgrade.

Action: None.

REFRESH MODE: PRESS BREAK TO STOP REFRESH

Cause: Refresh mode is active.

Action: Press the break key to stop refresh.

REFUSED BY CTL PGM: ADAPTER TYPES MISMATCH

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: FALLBACK IN PROGRESS

Cause: Self-explanatory.

Action: Wait until the fallback is finished.

REFUSED BY CTL PGM: NEW LINE ADAPTER NOT INSTALLED

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: NEW PORT ALREADY DEFINED

Cause: The new port that you entered is not a spare.

Action: Enter a spare port.

REFUSED BY CTL PGM: OLD LINE ADAPTER NOT INSTALLED

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: OLD PORT IS A NON-COMPATIBLE NEO LINE

Cause: Ports cannot be switched because the line is an OEM line.

REFUSED BY CTL PGM: OLD PORT IS AN EP LINE

Cause: The Port Swap function cannot be performed in an EP environment.

REFUSED BY CTL PGM: OLD PORT IS NOT INACTIVE

Cause: The line for which you want to switch ports is still active.

Action: Deactivate the line at the host, then perform the Port Swap function.

REFUSED BY CTL PGM: OLD PORT IS UNIDENTIFIED

Cause: The original port that you entered is a spare.

Action: Enter a valid port then press SEND.

Messages

REFUSED BY CTL PGM: OLD PORT IS UNDEFINED

Cause: The original port that you entered is a spare.

Action: Enter a valid port.

REFUSED: CCU OF DESTINATION PORT NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

REFUSED: CCU OF SOURCE PORT NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

REFUSED: DIRECTORY IS FULL

Cause: You cannot catalog a procedure because the maximum number of cataloged procedures (47) is already reached in the directory.

Action: If you want to catalog a procedure, you must erase a procedure that is already cataloged (see Chapter 5).

REFUSED: ENABLED IS ALREADY REQUESTED ON BOTH INTERFACES

Cause: You have selected TCS mode and there are two interfaces.

Action: Select TPS mode.

REFUSED: EXTERNAL TRACE RUNNING ON DESTINATION PORT

Cause: A trace was started by the control program.

REFUSED: EXTERNAL TRACE RUNNING ON SOURCE PORT

Cause: A trace was started by the control program.

REFUSED: FILE SPACE EXCEEDED

Cause: You cannot catalog a procedure because there is not enough space in the procedure file.

Action: If you want to catalog a procedure, you must erase a procedure that is already cataloged to free some space in the procedure file (see Chapter 5).

REFUSED FROM CDF: NEW PORT LINE ADAPTER NOT INSTALLED

Cause: No LIC or cable is installed, or a cable other than the one for modem or direct attachment is installed.

Action: Contact the appropriate service representative.

REFUSED FROM CDF: OLD PORT LINE ADAPTER NOT INSTALLED

Cause: No LIC or cable is installed, or a cable other than the one for modem or direct attachment is installed.

Action: Contact the appropriate service representative.

REFUSED: INCOMPATIBLE CLOCKING

Cause: Self-explanatory.

Action: None.

REFUSED: INCOMPATIBLE LA TYPES

Cause: You have tried to swap a TSS port and an HPTSS port.

REFUSED: INCOMPATIBLE LIC TYPES

Cause: The LIC types for the original and new ports are of different types.

REFUSED: INTERNAL TRACE RUNNING ON DESTINATION PORT

Cause: A trace was started by the MOSS and the destination port cannot be swapped.

Action: Cancel the trace.

REFUSED: INTERNAL TRACE RUNNING ON SOURCE PORT

Cause: A trace was started by the MOSS and the source port cannot be swapped.

Action: Cancel the trace.

REFUSED: MAX NUMBER OF MESSAGES REACHED

Cause: You cannot enter another message (DISP) in the procedure because the maximum number of messages (50) is already reached.

REFUSED: MAX NUMBER OF STEPS REACHED

Cause: You cannot insert another step in the procedure because the maximum number of steps (255) is already reached.

REFUSED: MOSS IS NOT ONLINE

Cause: You cannot perform the port swap function when MOSS is not in MOSS-ONLINE status.

Action:

- If MOSS is in MOSS-OFFLINE status, set MOSS to MOSS-ONLINE status.
- If MOSS is in MOSS-ALONE status, initialize the 3745.

REFUSED: NEW PORT LIC NOT INSTALLED**REFUSED: NEW PORT MUX NOT INSTALLED****REFUSED: NEW PORT NOT INSTALLED****REFUSED: OLD PORT LIC NOT INSTALLED****REFUSED: OLD PORT MUX NOT INSTALLED****REFUSED: OLD PORT NOT INSTALLED**

Cause: Self-explanatory.

Action: None.

REFUSED: ONE LINE IS SWITCHED. OTHER ONE IS NOT

Cause: Self-explanatory.

Action: None.

Messages

REFUSED: PORT TRACE INFORMATION NOT ACCESSIBLE DUE TO CCU/MOSS ERROR

Cause: The CCU rejected the MOSS request to get the port trace information.

Action: Check if a line adapter is disconnected. If so, reconnect it.

REFUSED: PORTS ARE NOT ATTACHED TO THE SAME CCU

Cause: Self-explanatory.

Action: None.

REMOTE CONSOLE CALLING

Cause: The remote console operator is trying to log on.

Action: You may log off to allow the remote console operator to log on.

REMOTE CONSOLE LOGON COUNTER HAS BEEN UPDATED

Cause: You entered a new counter value.

Action: None

REMOTE CUSTOMER PASSWORD AND REMOTE MAINTENANCE PASSWORD MUST BE DIFFERENT

Action: Enter different customer and remote maintenance passwords.

REQUEST IGNORED

Cause: Your request cannot be accepted in the present environment.

Action: Check how to enter your request in the chapter describing the function that you are selecting.

REQUEST IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

REQUEST IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT ACTIVE OR FROZEN

Cause: No trace has started.

REQUEST REFUSED: WAIT FOR FALLBACK COMPLETION (SEE ABOVE)

Cause: You have requested to terminate while fallback is in progress. Your request is refused.

Action: Wait until you see the message FALLBACK COMPLETE before terminating the fallback.

REQUEST REJECTED : CCU-A RUNNING

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED : CCU-B RUNNING

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED: DISK UPDATING NOT AVAILABLE

Cause: Another task is using the control information file.

Action: Try again later.

REQUEST REJECTED: DUMP FILE DOES NOT EXIST

Cause: You have attempted to purge a dump that does not exist.

Action: Press SEND to refresh the screen and erase the error message.

REQUEST REJECTED: I-SIT BUFFER NOT CONSISTENT

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED : LA ARE CONNECTED

Cause: Line adapters are connected.

Action: None.

REQUEST REJECTED: NO ACTIVE LOAD MODULE ON DISK

Cause: You have attempted to set the automatic dump/load option but no active load module resides on the disk. The automatic dump/load option may be set only if an active load module resides on the disk.

Action: Press SEND to refresh the screen and erase the error message.

REQUEST REJECTED: NO I-SIT BUFFER AVAILABLE

Cause: Self-explanatory.

Action: None.

REQUESTED LINE ADDRESS IS INVALID FOR A TOKEN-RING

Action: Enter a valid line address.

RESET CCU CHECK IGNORED

Cause: You have tried to reset the CCU check condition but it was already reset.

RESET CCU COMPLETED

Cause: The immediate function CCU Reset is successfully completed.

Action: None.

Messages

RESET CCU FAILED

Cause: The CCU cannot be reset because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

RESET CCU NOT ALLOWED

Cause: The immediate function CCU Reset is not allowed while performing the CCU extend functions (for service personnel).

Action: None.

RESET IS COMPLETE

Cause: You switched port "b" back to port "a". The information in the Port Swap file about the switching from port "a" to port "b" has been removed.

RESTORE DISK FROM xxxxx DISKETTE IN PROGRESS

Cause: The disk is being restored from either the primary, secondary, third, fourth or fifth diskette.

RESTORE NOT AUTHORIZED FROM THIS DISKETTE: PRESS SEND

Cause: You cannot restore the disk from an EC diskette.

Action:

1. Perform an EC installation.
2. Mount the correct diskette.
3. Terminate the Disk function.

RESUME IGNORED

Cause: F5 (RESUME) does not work in this case.

RESUME IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

RESUME IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT FROZEN

Cause: Self-explanatory.

Action: None.

RING INDICATOR MUST BE SET TO 'N'

Cause: The RING INDICATOR parameter is set to 'Y' while the SWITCHED LINE parameter is set to 'N'.

Action: When the SWITCHED LINE is set to 'N', the ANSWER TONE and RING INDICATOR parameters must be set to 'N'.

RSF CONSOLE CALLING

Cause: The RSF console operator is trying to log on.

Action: You may log off to allow the RSF console operator to log on.

SCANNER CANNOT BE CONNECTED: MOSS IS NOT ONLINE

Action: Set MOSS online (see page 23-13) and restart the IML as follows.

SCANNER CONNECTION REJECTED BY CCU CONTROL PROGRAM

Cause: The scanner that you IMLed is not recognized by the CCU control program. The scanner is not operational. A BER is created: type 01, ID 05.

Action:

1. Terminate the function.
2. Contact the appropriate service representative.

SCANNER CYCLE STEAL TO/FROM CCU FAILED

Cause: The scanner is not able to exchange data with the CCU. The scanner recovery failed. The error is in the scanner (incorrect cycle steal parameters). A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, perform a 3745 IPL from the operator console.
3. If the error still persists, contact the appropriate service representative.

SCANNER ERROR ON RECEIVE

Cause: A scanner error occurred.

Action:

1. Press the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program on the CCU.
3. Restart the test.

If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

SCANNER ERROR ON TRANSMIT

Cause: A scanner error occurred.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Messages

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

SCANNER NOT INSTALLED

Cause: The line address that you specified corresponds to a scanner that is not installed.

Action: Check the line address and re-enter it.

SCANNER NOT OPERATIONAL - LINK TEST FUNCTION CANCELED

Cause: The scanner supporting the link to be tested is not operational.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

SEL# RANGE LIMITED TO n

Cause: To display a BER list, a BER index is built. This index has n entries. Any BER beyond this limit (n) cannot be displayed.

SELECTED PROCEDURE IS FROM STORAGE

Cause: The procedure that you have selected is already in storage because you have just created, displayed, or modified it. The procedure in storage and that in the procedure file may be at different levels.

Action: Do one of the following:

- Press F4, to use the procedure that is in the file, or
- Press F6, to use the procedure that is in storage.

SELECTED TIC NOT AVAILABLE: REQUEST REJECTED

Cause: The TIC you have selected is not shown as installed in the CDF.

SET MODE COMMAND FAILED - LINK TEST FUNCTION CANCELED

Cause: The scanner did not respond to a Set Mode command.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

SLOT CREATION REFUSED: LIC SPEED UNKNOWN DUE TO A CCU/MOSS ERROR

Cause: While the program was trying to read the LIC speed, a CCU/MOSS error occurred. This can happen when the MOSS is ONLINE or when PHASE 4 has not been passed.

Action: Check that MOSS is online and try again.

SOURCE AND DESTINATION PORTS HAVE THE SAME VALUE

Cause: The two addresses that you entered are the same.

Action: Enter the correct addresses then press SEND.

SOURCE DISK(ETTE) ERROR: FUNCTION CANNOT BE PERFORMED

Cause: An error occurred when trying to copy patches from one disk or diskette to another.

Action: Press F1 to leave the function.

SOURCE PORT ALREADY SWAPPED

Cause: You already switched port a to port b.

Action: None.

SOURCE PORT IS INVALID

Cause: Self-explanatory.

Action: Enter another value.

SOURCE PORT IS MISSING

Cause: Self-explanatory.

Action: Define the source port.

SPECIFIED POWER SUPPLY DOES NOT BELONG TO THIS FRAME

Cause: Self-explanatory.

Action: None.

SPECIFIED POWER SUPPLY IS ALREADY OFF

Cause: Self-explanatory.

Action: None.

SPECIFIED POWER SUPPLY IS NOT INSTALLED

Cause: Command Uxx or Dxx refers to supply block xx, which is not installed.

Action: None.

SPEED MUST BE BLANK WHEN DATA STREAMING = N

Cause: You have entered a value for the speed when data streaming is not supported.

Action: Enter a blank for the speed parameter.

SPEED MUST BE PROVIDED WHEN DATA STREAMING = Y

Cause: You have not entered a value for the speed when data streaming is supported.

Action: Enter a value for the speed parameter.

Messages

START CCU COMPLETED

Cause: The immediate function CCU Start is successfully completed.

Action: None.

START CCU FAILED

Cause: The CCU cannot be started because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

START CCU IGNORED

Cause: You are trying to start the CCU but it is already running.

START CCU NOT ALLOWED

Cause: You are trying to start the CCU but there is a CCU hardcheck or the CCU is reset.

Action:

- If there is CCU hardcheck, reset the CCU check condition, then start the CCU (see page 23-21).
- If the CCU is reset, IPL the CCU (see page 9-1).

START NOT ALLOWED ON LINE xxxx SCANNER xxxx: TRACE IS FROZEN

Cause: Self-explanatory.

Action: None.

STEP 255 MUST BE THE END STATEMENT

Cause: The next step is the last one allowed (255).

Action: You must enter the END instruction.

STOP CCU COMPLETED

Cause: The immediate function CCU Stop is successfully completed.

Action: None.

STOP CCU FAILED

Cause: The CCU cannot be stopped because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

STOP CCU IGNORED

Cause: You are trying to stop the CCU but it is already stopped.

STOP CCU NOT ALLOWED

Cause: The immediate function CCU Stop is not allowed while performing the CCU extended functions (service personnel only).

Action: None.

STOP IGNORED

Cause: F4 (STOP) does not work in this case.

STORAGE SIZE REQUEST FAILED FOR CCU-A. CONTACT SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

STORAGE SIZE UNKNOWN FOR CCU-A. CONTACT SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

SWITCH INCONSISTENCIES: CONTACT SERVICE PERSONNEL

Cause: The internal switch information is not compatible with the current 3745 configuration and mode.

Action: Contact the appropriate service representative.

SWITCHBACK HAS RESUMED

Cause: Self-explanatory.

Action: None.

SWITCHBACK IS CANCELED: PRESS F1

Cause: You have requested switchback, but either some lines on the CCU to be switched are not free, or some channel transmission groups are still in use over CAs being switched. Switchback is canceled.

Action: None.

SWITCHBACK NOT ALLOWED IN PRESENT CCU CONFIGURATION OR MODE

Cause: The 3745 is in single configuration, twin-standby mode, or in dual mode. The switchback function is not available in this configuration or mode.

Action: None.

SWITCHBACK NOT AVAILABLE IN PRESENT CCU CONFIGURATION

Cause: The 3745 is in twin-backup mode and the configuration is not switched to a single CCU.

Action: None.

TERMINAL DISCONNECTED

Cause: The remote operator console is disconnected for one of the following reasons:

- You have been inactive for a period of time exceeding the console disconnection timeout (see page 16-8).
- You entered OFF on the remote console.
- You have been disconnected by the local console operator.

Action: Try to log on (if the local console is logged on, you cannot log on at the remote console).

Messages

TERMINAL DISCONNECTED FOR ALTERNATE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the alternate console operator logged on to the console.

Action: You may log on at the local operator console.

TERMINAL DISCONNECTED FOR ALTERNATE CONSOLE

Cause: The logon panel is available at the alternate console. Immediately after the alternate console was logged off, the logon panel is available at the local console during 15 seconds. If the local operator does not log on at the local console within this period, the local console is disconnected.

Action: To log on at the local console, you may request use of the local console via the 3745 control panel. Refer to the *3745 Problem Determination Guide* or to the reference card located to the left of the 3745 control panel.

TERMINAL DISCONNECTED FOR LOCAL CONSOLE

Cause: The alternate or remote console is disconnected. The operator has forced the control of the local console from the 3745 control panel.

Action: Try to log on. If the local console is logged on, you cannot log on at the remote or alternate console. In this case, contact the local operator.

TERMINAL DISCONNECTED FOR REMOTE CONSOLE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the remote console operator logged on to the console.

Action: You may log on at the local operator console.

TERMINAL DISCONNECTED FOR RSF CONSOLE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the RSF console has been logged on.

Action: You may log on at the local operator console.

THE BUFFER AND THE DISK ARE EMPTY

Cause: Self-explanatory.

Action: None.

THE FILE IS EMPTY: NO BER DATA

Cause: The BER data no longer exists.

Action: None.

THE HISTORY TABLE IS EMPTY

Cause: Self-explanatory.

Action: None.

THE NAME OF THE PROCEDURE TO BE CATALOGED IS: xxxx

Cause: The name of the procedure to be cataloged does not match the name of the procedure that is in 3745 storage (just created or modified).

Action: Enter the name indicated in the message.

THERE IS NO ACTIVE FUNCTION TO END. PRESS SEND.

Cause: If you press F1 on either of the menu screens you receive this message.

THERE IS NO ALARM WAITING

Cause: If you press F3:ALARM while there is no alarm you receive this message. The message is automatically cleared after 10 seconds.

THIS CA CANNOT EXIST

Cause: Self-explanatory.

Action: None.

THIS CCU ALREADY SUPPORTS THE WHOLE CONFIG: PRESS F1

Cause: You have requested to perform a fallback of the whole configuration onto a CCU already supporting the whole configuration.

Action: None.

THIS LINE ADDRESS IS ALREADY A LINK IPL PORT

Cause: The line you specified is already defined as a link IPL port.

Action: Specify another line address.

THIS LINE IS NOT ATTACHED TO THIS CCU

Cause: The line you specified is not attached to the selected CCU.

Action: Select the correct CCU.

THIS LINE IS SWITCHED TO THIS CCU

Cause: The line address you specified is switched to the selected CCU, but it originally belongs to the other CCU.

Action: None.

TIMEOUT FOR REMOTE CONSOLE DISCONNECTION HAS BEEN UPDATED

Cause: You entered a new timeout for the remote console.

Action: None.

TIMEOUT OCCURRED - TERMINAL DISCONNECTED

Action: Log on the remote console again.

Messages

TIMEOUT ON RECEIVE

This message applies only to the requester.

Cause: A time-out occurred at the requester because no answer was received from the responder within the time-out period.

Action:

1. Check that the responder is correctly IPLed on the CCU.
2. Check, at the responder side, that the controller address is correctly defined in the IPL Port Common Options screen.
3. Check the modems, cables and the line.
4. If the error persists, contact the appropriate service representative.

TIMEOUT ON SENDING REQUEST TO CTL PGM

Cause: The control program is not responding.

TIMEOUT ON TRANSMIT

Cause: The scanner did not reply to a command sent from the link test program within the time-out period.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

TOO MUCH DATA RECEIVED

This message applies only to the requester.

Cause: More data than expected was received (extra data is ignored). However the received data *does* match the transmitted data.

Action:

1. Press F4 to continue the test.
2. If the error persists, contact the appropriate service representative.

TRA CANNOT BE SELECTED: CCU CONNECTION UNKNOWN

Cause: The switch is not initialized yet.

Action: Run IPL phase 1A.

TRA IS POWER DOWN, LINE CANNOT BE SELECTED

Cause: Self-explanatory.

Action: Bring up the power block.

TRA SELECTED IS NOT INSTALLED: REQUEST REJECTED

Cause: TRA selected is not present in the CDF.

TRANSMISSION ERROR ON RECEIVE

Cause: The scanner indicated a transmission error on receive.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

TRANSMISSION ERROR ON TRANSMIT

Cause: The scanner indicated a transmission error on transmit.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

UNABLE TO LOAD MODULE: FUNCTION CANCELED

Cause: The load module cannot be loaded.

Action: Contact the appropriate service representative.

UNABLE TO SET LINE TO WRAP MODE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on the line that you specified, for one of the following reasons:

- The scanner is not IMLed (refer to IMS function on page 8-2).
- The modem is not powered on.
- The modem is not set to the appropriate test position.
- There is a hardware error in the modem, cable, or scanner.

The error code is given in the line communication status (LCS) byte on the Wrap Test Result screen. A BER is created: type 11.

Action: Check if the line address is valid. If it is, check if the modem is powered on and set to the appropriate position. In any other case, contact the appropriate service representative.

UNAUTHORIZED ACCESS - TERMINAL DISCONNECTED

Cause: The remote console password has been deactivated.

Action: Contact the person responsible for password management.

Messages

UNDEFINED F KEY

Cause: You pressed an F key that is not displayed on the screen.

Action: Do one of the following:

- Press one of the F keys displayed on the screen, if any, or
- Enter requested input.

UNRECOVERABLE ERROR: PLEASE RE-FORMAT

Cause: Self-explanatory.

Action: None.

UPDATE OF THE CDF FILE SUCCESSFUL

Cause: Self-explanatory.

Action: None.

WARNING: ABEND PROCEDURE

Cause: Self-explanatory.

Action: None.

'VERIFY DATA' AND 'REPLACE DATA' HAVE DIFFERENT LENGTHS

Cause: Self-explanatory.

Action: None.

'VERIFY DATA' DOES MATCH 'MODULE DATA'

Action: Check the patch.

WARNING: AT LEAST ONE TARGET VALUE > END STEP NUMBER

Cause: While creating or modifying the procedure, you entered a GOTO, HALT or WAIT target value that is greater than the step number of the END instruction.

Action: Correct the target value before cataloging or executing the procedure.

WARNING: INCOMPATIBLE DSR INITIALIZATION PARAMETERS

Cause: The line protocols are not compatible.

Action: Press SEND to continue. The line protocols might not have been updated. Therefore, port switching may be possible. You may cancel the switch request by pressing F1.

WARNING: SWAP IS IN DELETED RANGE

Cause: If you delete the LIC you will delete the swap that is on one of the lines.

WRAP CONTROL LEAD AT LIC LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP CONTROL LEAD AT LOCAL MODEM LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP CONTROL LEAD AT REMOTE MODEM LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP FUNCTION CANCELED ON OPERATOR REQUEST

Cause: You canceled the Wrap Test function by pressing F5.

WRAP TEST CANCELED: FALLBACK IN PROGRESS

Cause: Fallback occurred.

Action: Retry after fallback.

WRAP TEST CANCELED: SCANNER AND/OR LINE TIME OUT, CALL FOR IBM SERVICE

Cause: There is no answer from the scanner. The wrap test cannot be performed on this LIC.

Action: Contact the appropriate service representative.

WRAP TEST COMPLETED. THE LIC IS FAULTY

Cause: The wrap has been performed the number of times that you specified. The test is now completed and the LIC is faulty.

Action: Replace the LIC. Refer to the *Line Interface Coupler and Cable Guide*.

WRAP TEST COMPLETED: THE LIC IS OK

Cause: The wrap has been performed the number of times that you specified. The test is now completed.

Action: If an incorrect pattern is indicated, press SEND to display it.

WRAP TEST IN PREPARE PHASE, PLEASE WAIT 30 SECONDS

Cause: This is the normal procedure for the automatic wrap test.

Action: None.

WRAP TEST STARTED, PLEASE WAIT 30 SECONDS

Cause: This is the normal procedure for the automatic wrap test.

Action: None.

WRAP TEST UNSUCCESSFUL, ERRONEOUS PATTERN(S) RECEIVED

Cause: The wrap has been performed the number of times that you specified. The test is now completed and unsuccessful.

Action: Press SEND to display the incorrect pattern. Perform the actions recommended by the *3745 Problem Determination Guide*.

Messages

WRAP TEST UNSUCCESSFUL, SOME DATA NOT RECEIVED

Cause: The wrap has been performed the number of times that you specified. The test is now completed and unsuccessful.

Action: Press SEND to display the incorrect pattern. Perform the actions recommended by the *3745 Problem Determination Guide*.

WRITE ERROR ON SECTOR 1 OR 2: CHANGE DISK

Cause: Self-explanatory.

Action: Change the disk.

WRITE PROTECTED DISKETTE

Cause: You tried to write on a protected diskette, or an unprotected diskette that was incorrectly inserted.

Action: Mount the diskette correctly.

xxxxx DISKETTE CHECKING IN PROGRESS

Cause: The xxxxx diskette is being checked.

xxxxx DISKETTE IS NOT THE ONE ALREADY CHECKED

Cause: The diskette that you mounted is not the xxxxx diskette that has just been checked.

Action: Mount the correct xxxxx diskette.

YOU MAY SELECT ANOTHER OPTION

Cause: When CCU-B was IMLed errors were found and CCU-A is down.

Action: Contact the appropriate service representative.

YOU MUST CANCEL OR FORCE THE SWITCHBACK

Cause: Self-explanatory.

Action: None.

YOU MUST CONFIRM YOUR SELECTION

Cause: Self-explanatory.

Action: None.

YOU MUST INITIALIZE THE CCU(S) BEFORE PRESSING F2

Cause: Self-explanatory.

Action: None.

YOU MUST NOW PERFORM AN IML FROM CONTROL PANEL NO OTHER ACTION IS POSSIBLE

Cause: The EC is correctly installed or the disk is correctly restored.

YOU MUST NOW PERFORM AN IML FROM DISK

Cause: Self-explanatory.

Action: Perform an IML from disk.

YOU MUST SAVE THE COMPLETE SET OF DISKETTES

Cause: Self-explanatory.

Action: Save the set of diskettes.

YOU MUST SELECT AN OPTION

Cause: Self-explanatory.

Action: None.

56 KBPS LIC(S)6 MISPLUGGED: PLUG IN ODD POSITION

Cause: One or several 56 kbps LIC6 are plugged in even position(s). They have been ignored by the CDF.

Action: Plug the LIC(s) in odd position(s). The affected LIC(s) will stay ignored by the CDF until you perform another LIC add/replace operation in the CDF.

Refer to the *3745 Connection and Integration Guide* to plug them at the right place.



Appendix B. Machine Status Area

You are permanently informed of the 3745 status by the information displayed in the machine status area (MSA).

| | | |
|---------------------|----------------------------|----------------|
| CUSTOMER ID: | 3745-XXX | SERIAL NUMBER: |
| line 2 | | |
| line 3 | | |
| line 4 | Machine Status Area | |
| line 5 | | |
| line 6 | | |
| line 7 | ----- mm/dd/yy hh:mm | |
| FUNCTION ON SCREEN: | | |

- **CUSTOMER ID:** Customer identification, permanently displayed (16 characters). To enter or modify the customer identification use the Password function (see page 16-7).
- **MACHINE TYPE:** This field displays the machine type and model: 3745-XXX.
After an IPL in diskette mode, the model number (xxx on the screen) may be:
 - 010 instead of 210, 310, 410, or 610 for models 210, 310, 410, or 610.
 - 090 instead of 130, 150, or 170 for models 130, 150, or 170.
- **SERIAL NUMBER:** Machine serial number of the 3745 (7 characters).
- Lines 2 and 3 are used for CCU A information.
- Line 4 is used for CCU A, IPL, scanner or token-ring/TIC information.
- Lines 5 and 6 are used for CCU B information.

For models 130, 150, and 170, these lines display the maximum 3745 configuration:

For 3745 model 130

MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS 5, 6, 7, 8
LINE ADAPTERS 1, 2, 3, 4

For 3745 model 150

MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS
LINE ADAPTERS 1, 3, 9

For 3745 model 170

MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS 5, 6, 7, 8
LINE ADAPTERS 1, 3, 4, 9, 10, 11, 12

For models 210, 310, 410, and 610, these lines are blanked out.

- Line 7 is used for CCU B, IPL, scanner or token-ring/TIC information, or displays dashes, date and time.

The MSA is updated every 500 ms.

In the next pages, each screen is followed by a grid. The grid areas, identified by a letter, correspond to the screen areas. The letter refers to the explanation following the picture.

If the message MAINTENANCE MODE appears in the MSA:



MSA Fields Definition (CCU Information)

```

CUSTOMER ID:                3745-410                SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE BT      X71:xxxxxx LAR:xxxxxx OP:xxxx  C:0
RUN      STOP-IOC-CBK STOP-CCU-CBK AC       X72:xxxxxx IAR:xxxxxx ILVL:xxxx Z:0

CCU-B      PROCESS MOSS ONLINE BT          X71:xxxxxx LAR:xxxxxx OP:xxxx  C:0
READY    BYP-IOC-CBK BYP-CCU-CBK AC       X72:xxxxxx IAR:xxxxxx ILVL:xxxx Z:0
----- 08/07/86 10:20
FUNCTION ON SCREEN:          FUNCTION PENDING:
    
```

Figure B-1. MSA Example with CCU Information

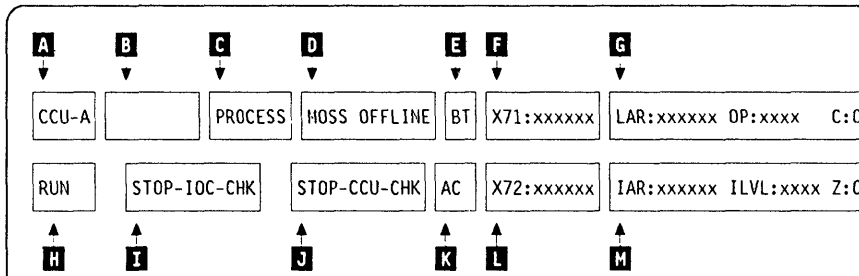


Figure B-2. Fields of the CCU Information in the MSA

This picture shows the breakdown of the CCU information fields in lines 2-3 (CCU A) or 5-6 (CCU B).

Field A CCU name: can be CCU-A or CCU-B.

Field B Indicates if the CCU is selected or not.

SELECTED The CCU has been selected by using the CSR function.
blank The CCU is not selected.

Field C Displays the CCU mode:

PROCESS Normal processing.
I-STEP Instruction step.

Field D Indicates whether MOSS is connected to the CCU control program:

MOSS-ONLINE MOSS is connected to the CCU control program.
MOSS-OFFLINE MOSS is not connected to the CCU control program.
MOSS-ALONE MOSS is operational while the CCU control program is not loaded or no longer operational.

To put MOSS alone, when it is online or offline, you may:

- Perform CCU **RST** function, or
- Perform the following actions:
 1. Power the CCU OFF, and wait for about 10 seconds.
 2. Power the CCU ON.
 3. Wait for the end of IML.

SERVICE-MODE MOSS is in maintenance mode (service personnel only).

The status of the MOSS after the different IMLs and IPLs is as follows:

| After | MOSS Status | Control Panel Hex Display |
|---------------------------------|--------------------------------|---------------------------|
| Initialization (general IPL) | MOSS ONLINE | X'000' |
| MOSS IML | MOSS OFFLINE if CP loaded | X'FEE' |
| CCU/Scanner IPL | MOSS ALONE if CP is not loaded | X'FEF' |
| Step by Step IPL | MOSS ONLINE | X'000' |
| Bypass Phase 1 IPL | MOSS ONLINE | X'000' |

Note: For a machine with two CCUs, the code displayed on the control panel reflects the last operation executed.

Field E Displays BT (highlighted) when the branch trace function is active.

Field F Updated each time an output X'71' instruction is executed, by the control program, for example, when using the CCU data exchange function or the control program procedures, or during 3745 initialization.

Output X'71' contents are buffered. If the buffers are overrun due to intensive output, some data may be lost; however, the last value in output will be displayed.

X71=xxxxxx Contents of CCU X'71' output register.

X71=ERROR Error when accessing the register. Register contents cannot be displayed.

At initialization time, field 'F' displays:
X71=xyyyzz

where xx are the 3745 initialization flags with the following meaning:

- 01 Load/dump request detected on a link-attached 3745.
- 02 Load/dump request detected on a channel-attached 3745.
- 05 Dump in progress on a link-attached 3745.
- 06 Dump in progress on a channel-attached 3745.
- 09 Control program load in progress on a link-attached 3745.
- 0A Control program load in progress on a channel-attached 3745.
- 11 Remote Power Off (RPO) command is detected.
- 20 Control program loader/dump abend before a load/dump request detected on a channel- or link-attached 3745.
- 21 Control program loader/dump abend on a load/dump request detected on a link-attached 3745.
- 22 Control program loader/dump abend on a load/dump request detected on a channel-attached 3745.
- 25 Control program loader/dump abend on a link-attached 3745 dump.
- 26 Control program loader/dump abend on a channel-attached 3745 dump.
- 29 Control program loader/dump abend on a link-attached 3745 control program.
- 2A Control program loader/control program abend on a channel-attached 3745 control program.
- 40 Load dump request from disk.
- 44 Dump to disk in progress.
- 48 Control program load from disk in progress.
- 60 Control program loader/dump request from disk abend.
- 64 Control program loader/dump from disk abend.
- 68 Control program loader/control program from disk abend.

where yyzz indicate the IPL port address. This encoded address is displayed in decoded form in field V, preceded by CA or L (see field V in "MSA Fields Definition (IPL Information)" on page B-8).

except when xx = 00, in which case:

- yy indicates the link ports defined in the Link IPL port table.
- zz indicates the link IPL ports that are presently enabled.

Field **G** (and Field **M**)

Field 'G' is displayed, along with field 'M', when the CCU status is STOP X'70', STOP PGM, STOP BT, STOP AC, or HARDSTOP (see field H).

LAR=xxxxxx OP=xxxx C=x (field G)
IAR=xxxxxx ILVL=xxxx Z=x (field M)

LAR=xxxxxx Address of the last executed instruction.
OP=xxxx Last executed instruction.
C=x Value of the C-latch (0 or 1).
IAR=xxxxxx Address of the next instruction to be executed.
ILVL=xxxx Active CCU interrupt levels (1 to 4).
Z=x Value of the Z-latch (0 or 1).

CCU INTERRUPTS DISABLED (field G)
nothing displayed (field M)

No interrupts can be received from the CCU:

- During a MOSS IML from the control panel, just after power ON.
- While performing CCU IPL to avoid automatic CCU re-IPL in case of HARDCHECK (see field G).
- While mounting a new diskette (service personnel only).
- After a fallback.
- While performing some utility programs (service personnel only) to prevent interference with the utility program. All communications between the CCU and MOSS are delayed. For example, a BER generated by the control program is kept until the utility program ends and MOSS is back online.

CCU REGISTERS (in field G)
NOT ACCESSIBLE (in field M)

Appropriate registers cannot be read, so it is impossible to display LAR, OP, C, IAR, ILVL, and Z information.

Field **H**

CCU status:

DOWN A hardware error occurred on the CCU, and service personnel intervention is necessary.

HARDCHK The control program stopped on a hardcheck error. An automatic re-IPL is attempted. In certain cases however, (for example if the hardcheck occurs during a general IPL) there is no re-IPL.

HARDSTOP You selected the CCU check reset function to reset the CCU check condition. To restart, select the CCU Start function on the 3745 function menu or press F6=CCU START or F6=S if displayed on the screen.

IPL-REQ A CCU IPL was requested and is in progress.

PWR-DOWN The related CCU power supply is down.

READY The CCU is operational and can be used immediately (IML completed).

RESET The control program stopped since you initiated the RESET CCU function; to restart the CCU, perform an IPL.

RUN Instructions are being executed or data is being transferred.

STOP-AC The control program stopped because the address compare function that you initiated with CCU STOP (CCU ACTION = S) is successful.

STOP-BT The control program stopped because the branch trace function that you initiated with CCU STOP has become deactivated.

STOP-PGM The control program stopped because you initiated the CCU STOP or SET I-STEP function.

STOP-X70 The control program stopped on an output X'70' instruction executed by the control program.

Field I Shows whether the 3745 will stop on an IOC check.

BYP-IOC-CHK The system will not stop on an IOC check. (default or after a RESET IOC CHECK STOP).

STOP-IOC-CHK You initiated the SET IOC CHECK STOP function to force the system stop on an IOC check.

Field J CCU check mode:

BYP-CCU-CHK You initiated the SET BYPASS CCU CHECK function so the system will not stop on a CCU check.

STOP-CCU-CHK The system will stop on a CCU check (default or after the RESET BYPASS CCU CHECK function).

Field K Information on the CCU address compare (SAC) function:

AC (highlighted)

The address compare function is active. If you selected MOSS INTERRUPT=Y and/or CCU STOP=Y when defining the address compare, the following is displayed:

AC HIT (highlighted) A single- or double-address compare is successful.

AC HIT12 (highlighted) Two single-address compares are successful on the first and second address.

Field L Updated each time an output X'72' instruction is executed by the control program. For example, when using the CCU data exchange function, the control program procedures or the 3745 initialization.

Output X'72' contents are buffered. If the buffers are overrun due to intensive outputting, some data may be lost; however, the last value outputted will be displayed.

X72=xxxxxx Contents of CCU X'72' output register.

X72=00xxxx Control program load/dump (CLDP) abend code (refer to the IPL/IML chapter of the Maintenance Information Reference manual, SY33-2056, for abend codes list).

X72=ERROR Error when accessing the register. Register contents cannot be displayed.

Field M Field 'M' is displayed along with field g when the CCU is in the STOP state. (See field 'G' description).

MSA Fields Definition (Scanner Information)

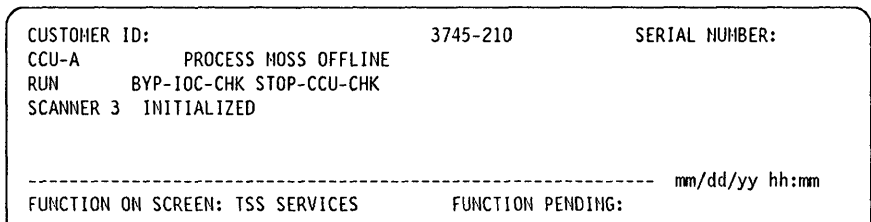


Figure B-3. MSA Example with TSS Information

Scanner information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

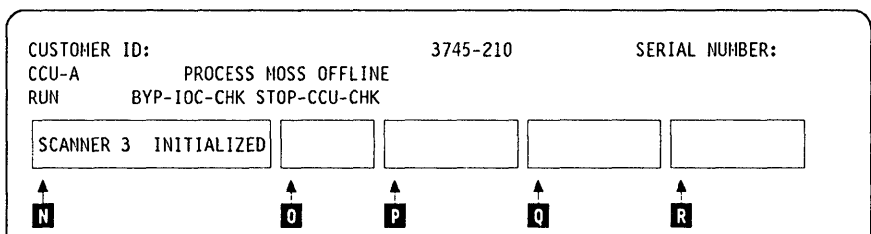


Figure B-4. Fields of the TSS Information in the MSA

This picture shows the breakdown of the scanner information fields in line 4 (CCU A scanners) or 7 (CCU B scanners).

Field N

Information on the selected scanner:

- **NO SCANNER SELECTED:** You selected a scanner function before selecting a scanner.
- **SCANNER XX yyyyyyyyyyy :** Where xx is the number of the selected scanner (1 to 32), and yyyyyyyyyyy is any of the following:
 - CONNECTED** The scanner is operational and under control of the CCU control program.
 - DISCTD-GO** Disconnected-go: You entered the GO command while in status DISCTD/STOP. The scanner remains disconnected but control code execution continues.
 - DISCTD-STOP** Disconnected-stop: The control code is no longer under control of the CCU control program, either after a STOP command or after a scanner address compare hit.
 - INITIALIZED** The control code is loaded and the front-end adapter is operational.
 - INOPERATIVE** The scanner is inoperative, or the CCU is not in RUN status.
 - RESET** You entered the RESET command, and you may initiate an IML or a DUMP.
 - UNKNOWN-MODE** The scanner is selected but it is impossible to identify its status.

Field O

Scanner option:

- DUMP** A dump is in progress.
- IML** A scanner IML is being started.
- SST abcde** One or more snapshot traces have been started (up to five).

The status of the traces is given in the following table:

| a b c d e | SST Field Meaning |
|-----------|-------------------|
| 1 | Trace 1 active |
| . 1 . . . | " 2 " |
| . . 1 . . | " 3 " |
| . . . 1 . | " 4 " |
| 1 | " 5 " |
| E | Trace 1 failed |
| . E . . . | " 2 " |
| . . E . . | " 3 " |
| . . . E . | " 4 " |
| E | " 5 " |

Fields **P**, **Q**, and **R** Service personnel only.

MSA Fields Definition (IPL Information)

```

CUSTOMER ID:                3745-210                SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE BT    X71:008000
RUN      BYP-IOC-CHK  STOP-CCU-CHK AC
IPL CCU-A PHASE 4      ENABLED CA xxxxxxxxxxxxxxxxx L xxxxxxxx

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN:                FUNCTION PENDING:
    
```

Figure B-5. MSA Example with IPL Information

CCU/scanner IPL information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

A short time after successful completion of the IPL, these lines are cleared and line 7 is filled by dashes plus the date and time.

```

CUSTOMER ID:                3745-210                SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE BT    X71:008000
RUN      BYP-IOC-CHK  STOP-CCU-CHK AC
IPL CCU-A PHASE 4      STOP  ENABLED CA xxxxxxxxxxxxxxxxx L xxxxxxxx
↑      ↑      ↑      ↑
S    T    U    V
    
```

Figure B-6. Fields of the IPL Information in the MSA

This picture shows the breakdown of the IPL information fields in line 4 (CCU A IPL) or 7 (CCU B IPL).

Field S IPL CCU-x (x can be A or B):
A CCU IPL is started.

Field T

- PHASE 1** Start of phase 1 (CCU test and initialization).
- PHASE 2** Start of phase 2 (load from the disk and start the control program dump loader (CLDP)).
- PHASE 3** Start of phase 3 (load and initialize the scanners).
- PHASE 4** Start of phase 4 (load/dump from the host or disk, and initialize the control program).
- SUSPEND** An automatic IPL has been requested on a CCU, while IPL was not yet completed on the other one. From a MOSS standpoint, the latter CCU is frozen, until the other reaches phase 3 or 4, depending on the moment the request was received.
All fields except 'F' and 'L' are frozen.

Field **U**

STOP The IPL stopped at the beginning of the phase indicated in field 'T' (step-by-step IPL), or on operator's request (F4=STOP) during that same phase.

Field **V**

Displays one of the following:

CA IPL DETECTED ON CA xx: The control program loading/dumping is started on a channel-attached 3745. xx is the channel adapter number.

CONTROL PROGRAM LOADED: The control program is loaded.

CP SAVE ON DISK IN PROGRESS: The control program save on disk is in progress.

DUMP IN PROGRESS ON CA xx: A control program dump is being taken on a channel-attached 3745. The progression of the dump is indicated in MSA field F which displays the control program storage addresses. xx is the channel adapter number.

DUMP IN PROGRESS ON L xxxx: A control program dump is being taken on a link-attached 3745. The progression of the dump is indicated in MSA field F which displays the control program storage addresses. xxxx is the decimal telecommunication line address.

DUMP ON MOSS DISK IN PROGRESS: A control program dump is being taken on the MOSS disk. The progression of the dump is indicated in MSA field F which displays the control program storage addresses.

ENABLED CA xxxxxxxxxxxxxxxx L xxxxxxxx: Indicates which channel adapters or link IPL ports are enabled. x can be Y, N, or U for channel adapters (CA). x can be Y or N for link IPL ports (L).

- In the CA field, Ys indicate which channel adapters are enabled, Ns which channel adapters are not enabled, and Us which channel adapters are unusable. The positions of the Ys, Ns, and Us give the channel adapter number.
- In the L field, Ys indicate which link IPL ports are enabled, and Ns which link IPL ports are not enabled. The positions of the Ys and Ns give the position of the Link IPL port in the link IPL port table.

FALLBACK CANCELLED: The 3745 fallback is cancelled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the FBK was requested from the console.
- The operator console switching from normal mode to test mode.

FALLBACK CHECK Fxx: The fallback ends abnormally. The check code (Fxx) is also displayed on the hex display of the control panel.

FALLBACK COMPLETE: The fallback is successfully completed.


FALLBACK COMPLETE + ERRORS: The fallback is complete although an error has been encountered. The 3745 should run normally.

FALLBACK IN PROGRESS: The fallback operation is in progress.

IPL CANCELLED: The 3745 initialization is cancelled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the IPL was requested from the console.
- The operator console switching from normal mode to test mode.
- Automatic MOSS re-IML during a CCU/scanner step-by-step IPL, or
- Two automatic MOSS re-IMLs during a CCU/scanner IPL.

IPL CHECK Fxx: The IPL ends abnormally. Most of the time the check code (Fxx) is also displayed on the hex display of the control panel.

IPL CHECK F1B CLDP ABEND xxxx: The IPL ends abnormally. xxxx is the hexadecimal CLDP abend code. 

IPL COMPLETE: The IPL is successfully completed.

IPL COMPLETE + ERRORS: The IPL is complete, although an error has been encountered. Alarm D1 is displayed. The 3745 runs with some restrictions.

IPL FROM MOSS DISK IN PROGRESS: The IPL from the MOSS disk is in progress.

IPL IN PROGRESS: The IPL operation is in progress. The progression of the IPL is indicated in MSA field F which displays the control program storage addresses.

LINK IPL DETECTED ON L xxxx: The control program loading/dumping is started on a link-attached 3745.

LINK TEST PROGRAM ABEND: A hardware error occurred at phase 3, while loading the stand-alone link test.

LINK TEST PROGRAM LOADED: The link test program is loaded.

LOAD IN PROGRESS ON CA xx: The control program is being loaded on a channel-attached 3745. The progression of the load is indicated in MSA field F where the CCU storage addresses are displayed. x is the channel adapter number.

LOAD IN PROGRESS ON L xxxx: The control program is being loaded on a link-attached 3745. The progression of the load is indicated in MSA field F where the CCU storage addresses are displayed. xxxx is the decimal telecommunication line address.

RPO DETECTED ON L xxxx: The remote power OFF (RPO) command is detected on telecommunication line xxxx. xxxx is the decimal telecommunication line address.

SCANNER(S) NOT IMLED: xxxxxxxx: Indicates that one or more scanners are not IMLED. xxxxxxxx consists of eight hexadecimal digits (32 bits). Each bit corresponds to a scanner (CS) number.

SWITCHBACK CANCELLED: The switchback operation is cancelled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the IPL was requested from the console.
- The operator console switching from normal mode to test mode.

SWITCHBACK CHECK Fxx: The switchback ends abnormally. The check code (Fxx) is also displayed on the hexadecimal display of the control panel.

SWITCHBACK COMPLETE: The switchback is successfully completed.

SWITCHBACK COMPLETE + ERRORS: The switchback is complete, although an error has been encountered. The 3745 should run normally.

SWITCHBACK IN PROGRESS: The switchback operation is in progress.

TEST CANCELLED: During IPL of the active CCU, and at IPL completion, the test of the standby CCU has been cancelled by pressing F1.

TEST CHECK Fxx: During IPL of the active CCU, and at IPL completion, the test of the standby CCU ends abnormally. The check code (Fxx) is also displayed on the hexadecimal display of the control panel.

TEST COMPLETE: During IPL of the active CCU, and at IPL completion, the test of the standby CCU has been successfully completed.

TEST IN PROGRESS: During IPL of the active CCU, and at IPL completion, the test of the standby CCU is in progress.

MSA Fields Definition (Token-Ring/TIC Information)

```

CUSTOMER ID:                3745-210                SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE
RUN      STOP-IOC-CHK STOP-CCU-CHK
TRA 1   DISCONNECT   TIC 1       OPEN       NCP TRS NOT AVAILABLE

----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TRSS SERVICES      FUNCTION PENDING:
    
```

Figure B-7. MSA Example with TRSS Information

Token-Ring information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

```

CUSTOMER ID:                3745-210                SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE
RUN      STOP-IOC-CHK STOP-CCU-CHK
TRA 1   DISCONNECT   TIC 1       OPEN       NCP TRS NOT AVAILABLE
  ↑     ↑           ↑           ↑           ↑
  W     X           Y           Z           ZZ
    
```

Figure B-8. MSA Fields definition (Token-Ring Information)

This picture shows the breakdown of the token-ring information fields in line 4 (CCU A) or 7 (CCU B).

Field W TRA number (1, 2, 5 or 6). Indicates that the TRA has been selected (TRS or TID function).

Field X TRA mode, updated after TRA selection

Note: If field F indicates CCU INTERRUPTS DISABLED, the TRA mode has no meaning.

The possible modes are:

CONNECT: The TRA is operational and is under NCP control. The control program handles all interrupts (except in the case of an MIOH error).

The PIO disable and the disconnect bits in the TRM level 1 error status are OFF.

DISCONNECT: The TRA does not run under the control of the control program but under the control of the MOSS microcode. MOSS handles all interrupts and PIOs to/from the TIC.

The PIO disable and the disconnect bits in the TRM level 1 error status are OFF.

UNKNOWN: A non-recoverable error occurred during the connection/disconnection process, or an MIOC/IOC error occurred while getting level 1 error status during TRA selection. Connect/disconnect may be re-tried.

Field **Y** TIC1 or TIC2

TIC n: Selected TIC number (1 or 2), updated after a TIC selection.

Field **Z** Current mode of the selected TIC, updated after a TIC selection or a refresh of the screen display.

The TIC must be in one of the seven following modes (as reported by the NCP):

IDLE: The TIC has not yet been reset by the NCP.

RESET: The TIC has been reset by the NCP but has not yet been initialized.

INITIALIZED: The TIC has been initialized but has not yet been open or disabled. Initialization parameters have been passed to the TIC by the NCP.

OPEN: The TIC has been inserted into the token-ring and is in normal operation. Open parameters have been passed, and receive and transmit operations have been started.

CLOSED: The TIC has been opened since initialization, but has since been closed (by the host).

FROZEN: An error was detected by the NCP and the following actions were taken by the NCP:

- Interrupts from this TIC are disabled.
- DMA from this TIC is disabled.
- The TIC is reset.

DISABLED: The associated TRA has been disconnected by MOSS. The NCP will send no PIO to this TIC.

(blank): There is no TIC mode if the NCP is not online.

The TIC mode is derived from the NCP MAC layer status obtained from the NCP. The following table gives the correspondence:

| Table B-1. TIC Mode and MAC Status | |
|------------------------------------|-------------|
| Medium Access Control (MAC) Status | TIC Mode |
| Idle | Idle |
| TIC resetting hard | Idle |
| TIC resetting soft | Idle |
| Initialization list transfer | Reset |
| Initialized | Initialized |
| Open started | Initialized |
| Receive initialization | Initialized |
| Transmit initialization | Initialized |
| Started | Open |
| Transmit in progress | Open |
| Close in progress | Open |
| Closed | Closed |
| Frozen | Frozen |
| Disconnected | Disabled |

IPL Problems (MSA Fields Definition)

Field **ZZ** NCP TRS NOT AVAILABLE

Indicates that:

- At the IPL of the NCP, the TRSS was not available and did not pass necessary TRSS information to MOSS, or
- An error has occurred when trying to access NCP control blocks needed by the TRSS services.

Several functions which depend upon the NCP will not be available.

Otherwise, the **ZZ** field is blank.

Appendix C. Default and Personal Patterns for Wrap Tests

Default Patterns

Default patterns are predefined wrap patterns that are ready for use. There are two types of default patterns: data and control lead.

Data Wrap Default Patterns

Data wrap default patterns are available according to line protocol, for example, SDLC, BSC, and SS for all LIC types. There is no restriction on whether the wrap is at cable or modem level. The available data wrap default patterns are listed below.

- SDLC/HDLC
- BSC NCP - EBCDIC non-transparent
- BSC NCP - EBCDIC transparent
- BSC NCP - ASCII non-transparent
- BSC EP - EBCDIC non-transparent
- BSC EP - EBCDIC transparent
- BSC EP - ASCII non-transparent
- BSC EP - ASCII transparent
- BSC EP character mode - EBCDIC non-transparent
- BSC EP character mode - ASCII non-transparent
- SS - 7 bits
- SS - 8 bits

Control Lead Default Patterns

Control lead default patterns are available:

- At LIC tailgate
- At modem level, only for IBM 386x and 58xx modems
- Inside the HSS
- At HSS tailgate.

To use the control lead default patterns at the modem level on modems other than an IBM 386x modem, be sure that the functions provided by your modem are strictly identical with those provided by the 386x and 58xx modems. If they are not, create your own personal pattern.

Note: The control lead default patterns are not valid for a NTT cable wrap test.

Personal Patterns

To create a personal pattern, select option 3 in the Wrap Test selection screen (see page 22-14 or 22-15).

- For personal **data** wrap pattern: see below.
- For personal **control lead** wrap pattern: see page C-6.

Personal Data Wrap Pattern

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 2      DATA WRAP: PERSONAL PATTERN
TRANSMIT PATTERN    COPY (Y,N)    EXPECTED PATTERN
                    Y
                    Y
                    Y
                    Y
                    Y
                    Y
                    Y
                    Y
                    Y
                    Y
- WHEN PATTERN COMPLETE ENTER C, THEN PRESS SEND ==> C
==>
F1:END  F2:MENU1  F3:ALARM      F6:QUIT  F8:FORWARD
```

- Enter the transmit pattern in **A**.
- If the two patterns are different, replace Y by N and enter the expected pattern in **B**.
If the two patterns are the same, leave the Y of each line unchanged and do not enter the expected pattern.
- Press **SEND** to transmit the pattern.
- Press **F8** to display an empty screen to enter more characters (up to 3 screens).
- When complete, enter **C** on line **C** then press **SEND**.

On page C-5, there is an example of a personal data wrap pattern.

You can enter your personal data wrap patterns the way you wish. The only *rules* that apply to creating your patterns are:

1. You must enter two hexadecimal characters at a time. Each pair of characters must be separated from the next by one blank (space bar).
2. Each transmit and expected personal data wrap pattern must not be shorter than 8 nor longer than 540 hexadecimal characters.
3. You cannot use *more than three screens* to enter your personal patterns. On a single screen, you cannot enter more than 180 characters for the transmit pattern and 180 characters for the expected pattern.

Contents of Personal Data Pattern

According to the line protocol, the pattern should start with a combination of the following characters:

- Transmit control byte **1**
- End-of-message (EOM) search argument **2**
- Padding character **3**
- Synchronization characters **4**

The following table tells you, by line protocol, which of these characters have to be entered before the data. These characters are transmitted but not expected.

If you entered Y on line **C** of the Data Wrap Test Pattern Selection screen (refer to 22-14):

- EIB OR ITB MODE == > Y

You have to follow the rules described under "EIB/ITB" **5**.

| Table C-1. Characters to be Entered before Data in Data Wrap Pattern | | | | |
|--|----------------------------|--------------------------------|------------------|--------------------------|
| Protocol Control Byte | Transmit Argument 1 | EOM Search Characters 2 | Padding 3 | Synchronization 4 |
| SDLC/HDLC | No | No | No | No |
| BSC (normal mode) | Yes | No | No | No |
| BSC (character mode) | No | Yes | Yes | Yes |
| Start-Stop | No | Yes | Yes | Yes |

1 Transmit Argument - NCP Transmit Control Byte

The NCP transmit control byte contains coded instructions to the scanner that specify the initial and final control characters to be used in a transmission. It also contains an indicator that specifies whether leading graphics are to be sent. The transmit control byte has the following format:

- 0-2: Initial control sequence (ICS)
- 3-6: Final control sequence (FCS)
- 7: Leading graphics are possible if this bit is 1, not possible if this bit is 0.

The following table explains all transmit control bytes (BSC ASCII and BSC EBCDIC). The first column gives, for each transmit control byte, the hexadecimal value that you must enter when you create your personal pattern. It is also the value displayed on the default data wrap pattern screen.

Wrap Test Patterns

| Hex Value | Meaning |
|-----------|--|
| 00 | Turn line around and monitor |
| 07 | Send ENQ, turn around, and receive response (ENQ may be in a data stream of leading graphics) |
| 0D | Send ACK-0, turn around, and receive |
| 0F | Send NAK, turn around, and receive |
| 1A | Send RVI, turn around, and receive |
| 1D | Send ACK-1, turn around, and receive |
| 1E | Send WACK, turn around, and receive |
| 26 | Send STX-ENQ (TTD), turn around, and receive |
| 32 | Send STX-data-ETX, turn around, and receive |
| 34 | Send STX-data-ETB, turn around, and receive |
| 46 | Send DLE-STX-data-DLE-ENQ, turn around, and receive |
| 48 | Send DLE-STX-data-DLE-ITB |
| 52 | Send DLE-STX-data-DLE-ETX, turn around, and receive |
| 54 | Send DLE-STX-data-DLE-ETB, turn around, and receive |
| 66 | Send SOH-data-ENQ, turn around, and receive |
| 72 | Send SOH-data-ETX, turn around, and receive |
| 74 | Send SOH-data-ETB, turn around, and receive |
| 80 | Send EOT, turn around, and monitor |
| 98 | Send EOT, turn around, and level 2 interrupt |
| 9C | Send DLE-EOT, turn around, and level 2 interrupt |

1 Transmit Argument - EP Transmit Control Byte

In non-transparent mode, the EP transmit control byte is X'00'. In transparent mode, the EP transmit control byte is X'40'.

2 EOM Search Argument

The EOM search argument is the copy of the last character of the pattern. It is transmitted but not expected in return. It tells the control program what the last expected character is.

3 Padding Characters

Padding characters are used to insert timing characters into the data stream. These characters can be used to accommodate the operation of some mechanical action at a station, or to prevent distortion to characters due to modem turnaround activity.

- For leading pad: X'55' or X'FF' in BSC character mode; X'FF' in start-stop
- For trailing pad: X'FF'.

4 Synchronization Characters

Synchronization characters are transmitted on the line but are not expected in return. They are:

- For BSC ASCII: X'16'
- For BSC EBCDIC: X'32'.

5 EIB/ITB

Apply the following rules if you entered EIB or ITB == > Y on the Data Wrap Test Pattern Selection screen:

- In NCP, the ITB character X'1F' must be immediately followed by X'00', in both the transmit and expected patterns.
- In EP:
 - ETB and ETX characters must be immediately followed by X'00' only in the expected patterns.
 - If the ITB characters are to be considered as control characters on the line being tested (system generation), the ITB characters must be immediately followed by X'00' in the expected patterns only.

Example of a Personal Data Wrap Pattern

Assume that you want to create a transmit pattern and an expected pattern, and the differences between them are: the transmit control byte (32), is transmitted but not expected; and 18 and 19 are expected instead of 16 and 17.

Transmit pattern: 32 00 05 07 0B 0C 0D 0F 11 12 13 14 15 16 17
 Expected pattern: 00 05 07 0B 0C 0D 0F 11 12 13 14 15 18 19

The following describes one way of creating your patterns. Enter one and only one blank (space bar) between each pair of hexadecimal characters.

1. Enter 32, press SEND, enter N, then press SEND twice.
2. Enter 00 05 07 08 0C 0D 0F 11, then press SEND three times.
3. Enter 12 13 14 15, then press SEND three times.
4. Enter 16 17, press SEND, enter N, press SEND, enter 18 19.
5. Enter C to indicate the pattern is complete then press SEND.

Personal Control Lead Wrap Pattern

The personal control lead wrap pattern consists of four control lead bytes. Each bit within the byte is represented on the screen by a period. When you create your pattern, replace each period by 0 or 1 to represent the logic level of that control lead.

The bit meaning is given under "Control Lead Bit Definition" on page C-7.

- Byte **A** contains a control lead pattern to be transmitted.
- Byte **C** contains the expected control lead pattern resulting from byte **A**.
- Byte **B** contains a control lead pattern to be transmitted.
- Byte **D** contains the expected control lead pattern resulting from byte **B**.

```
----- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 0      CONTROL LEAD WRAP: PERSONAL PATTERN

- ENTER TRANSMIT PATTERN ==>  A      B
                               .....
                               C      D
- ENTER EXPECTED PATTERN ==>  .....

====>

F1:END  F2:MENU2  F3:ALARM  F6:QUIT
```

From this screen enter the transmit and expected pattern:

1. Replace each period of byte **A** by 0 or 1, then press the Tab key.
2. Replace each period of byte **B** by 0 or 1, then press the Tab key.
3. Replace each period of byte **C** by 0 or 1, then press the Tab key.
4. Replace each period of byte **D** by 0 or 1, then press the Tab key.

Bit 0 is the leftmost bit in the byte.

Control Lead Bit Definition

LIC1 (EIA-232 or CCITT V.24)

| Transmit byte A or B | |
|------------------------------------|-------------------------------------|
| Bit | Meaning |
| 0 | Data terminal ready (DTR) |
| 1 | Request to send (RTS) |
| 2 | New sync. |
| 3 | Data signaling rate selector (DSRS) |
| 4 | Test control |
| 5 | Not used (always 0) |
| 6,7 | Not used (always 1) |

| Expected byte C or D | |
|------------------------------------|-------------------------------------|
| Bit | Meaning |
| 0 | Data set ready (DSR) |
| 1 | Ready for sending |
| 2 | Ring indicator (RI) |
| 3 | Receive line signal detector (RLSD) |
| 4 | Test indicator (TI) |
| 5 | Not used (always 0) |
| 6,7 | Not used (always 1) |

LIC1 (RS366 or CCITT V.25) - Autocall

| Transmit byte A or B | |
|------------------------------------|---------------------|
| Bit | Meaning |
| 0 | Digit signal 8 |
| 1 | Digit signal 4 |
| 2 | Digit signal 2 |
| 3 | Digit signal 1 |
| 4 | Call request |
| 5 | Digit present |
| 6,7 | Not used (always 1) |

| Expected byte C or D | |
|------------------------------------|------------------------|
| Bit | Meaning |
| 0 | Power indication |
| 1 | Data line occupied |
| 2 | Present next digit |
| 3 | Abandon call and retry |
| 4 | Call originator status |
| 5 | Not used (always 0) |
| 6,7 | Not used (always 1) |

HSS-V.35

| Transmit byte A or B | |
|------------------------------------|---------------------------|
| Bit | Meaning |
| 0 | Data terminal ready (DTR) |
| 1 | Request to send (RTS) |
| 2 | Not used |
| 3 | Not used |
| 4 | Modem test (TC) |
| 5 | Not synchro (MOUT) |
| 6 | - |
| 7 | - |

| Expected byte C or D | |
|------------------------------------|-------------------------------------|
| Bit | Meaning |
| 0 | Data set ready (DSR) |
| 1 | Clear to send (CTS) |
| 2 | Not used |
| 3 | Receive line signal detector (RLSD) |
| 4 | Test indicator (TI) |
| 5 | Receive data (RD) |
| 6 | - |
| 7 | - |

List of Abbreviations

| | | | |
|-----------------|---|--------------|---|
| abend | abnormal end of task | CEPT | Comite Europeen des Postes et Telecommunications (European Conference of Postal and Telecommunications Administrations). European service for very high-speed transmission at 2.048 Mbps. |
| ABP | branch trace parameter function | CI | calling indicator |
| AC | alternating current | CID | channel interface display function |
| ACF | Advanced Communications Function | CLIST | command list |
| ACF/VTAM | (Advanced Communications Function for the) Virtual Telecommunications Access Method | CLDP | controller load/dump program |
| ACR | abandon call and retry | CNM | communication network management |
| ACU | automatic calling unit | CNM | CCU normal mode function |
| ADDR | address | CP | control programs |
| AGC | automatic gain control | CPS | call progress signal |
| AIO | adapter-initiated operation | CR | call request |
| ASCII | American National Standard Code for Information Interchange | CRI | compare register immediate |
| BCD | binary-coded decimal notation | CRQ | call request |
| BCK | bypass CCU check function | CS | communication scanner |
| BER | box event record | CSP | communication scanner processor |
| BIK | bypass IOC check function | CSR | cycle steal request |
| BOM | box operating mode | CSS | control subsystem |
| bps | bits per second | CST | CCU status function |
| BSC | binary synchronous communication | CSU | channel service unit |
| BT | branch trace | CTS | clear to send |
| BTAM | Basic telecommunications access method | CW | control word |
| BTAM-ES | Basic telecommunications access method extended storage | DAL | display alter function |
| C | control | DC | direct current |
| CA | channel adapter | DCE | data circuit-terminating equipment |
| CAB | channel adapter board | DCI | direct current interlock |
| CADS | channel adapter drive switch | DDS | digital data service |
| CBT | conditional branch trace function | DEX | data exchange function |
| CCITT | Comite Consultatif International Telegraphique et Telephonique. The International Telegraph and Telephone Consultative Committee. | DFA | disk file adapter |
| CCU | central control unit | DIF | Disk Function |
| CD | carrier detector | DII | disk IPL information |
| CDF | configuration data file | DLE | data link escape character |
| CDS | configuration data set | DLO | data line occupied |
| CE | customer engineer | DLO | display long function |
| | | DMA | direct memory access |
| | | DMSW | direct memory access switch |
| | | DP | digit present |

Abbreviations

| | | | |
|----------|--|--------|---|
| DPR | digit present request | HLIR | high-level interrupt request |
| DRS | data rate select | HPTSS | high-performance transmission subsystem |
| DSC | distant station connected | HSB | high-speed buffer |
| DSR | data send ready | HSS | high-speed scanner |
| DSU | data service unit | I | indicator |
| DTE | data terminal equipment | ICC | interface control check |
| DTR | data terminal ready | ICF | internal clock function |
| DX | duplex | ID | identifier |
| EAC | Ethernet** adapter card | IDF | internal data file function |
| EBCD | extended binary-coded decimal | IEEE | Institute of Electrical and Electronics Engineers |
| EBCDIC | extended binary-coded decimal interchange code | IL3 | CCU level-3 interrupt function |
| EC | engineering change | IML | initial microcode load function |
| ECC | error checking and correction | IMB | in mailbox |
| EIA | Electronic Industries Association | IMS | scanner IML function |
| EIA 232D | EIA standard | INFO | information |
| EIB | error intermediate block | INTRPT | interrupt |
| EID | ESS interface display function | INOP | inoperative (line, DCE, or terminal) |
| ELA | Ethernet LAN adapter | I/O | input/output |
| ELD | event log display function | IOC | input/output control |
| ENQ | enquiry | IOSW | input/output switch |
| EOT | end of transmission | IPL | initial program load function |
| EP | Emulation Program | ITB | intermediate text block |
| EPO | emergency power-off | k | kilo, 1 000 |
| ESC | emulation sub-channel | KB | kilobyte; 1024 bytes |
| ESCH | highest emulation sub-channel | KBD | keyboard |
| ESCL | lowest emulation sub-channel | kbps | kilobits per second |
| ESS | Ethernet-type LAN subsystem | kHz | kilohertz |
| ETB | end-of-transmission block character | LA | line adapter |
| ETG | Ethernet tail gate | LAB | line adapter board |
| ETX | end-of-text character | LAN | local area network |
| FCC | Federal Communications Commission | LCD | line control definer |
| FCS | frame check sequence | LCS | line communication status |
| FES | front-end scanner | LIB | line interface coupler board |
| FESH | front-end scanner high-speed | LIC | line interface coupler |
| FESL | front-end scanner low-speed | LIPT | link IPL port trace |
| FRU | field replaceable unit | LID | line interface display function |
| ft | foot | LKP | link IPL port function |
| HCS | Hardware Central Service | LLIR | low-level interrupt request |
| HDLC | high-level data link control | LPDA | Link Problem Determination Aid |
| HDX | half-duplex | LR | load register (instruction) |
| hex | hexadecimal | | |

Abbreviations

| | | | |
|----------------|---|--------------|---|
| LSI | large scale integration | NRF | Network Routing Facility |
| LSS | low-speed scanner | NRZ-1 | non-return-to-zero change-on-ones recording |
| LSSD | level-sensitive scan design | NRZI | see NRZ-1 |
| LTQ | link test requester function | NS | new sync |
| LTS | link test responder function | NSC | native sub-channel address |
| LU | logical unit | NSI | Non-SNA Interconnection |
| m | meter | NTO | Network Terminal Option |
| MAC | MOSS adapter card | NTRI | NCP token-ring interconnection |
| MB | megabyte; 1 048 576 bytes | NTT | Nippon Telegraph and Telephone (Japanese PTT) |
| Mbps | megabits per second | OEM | original equipment manufacturer |
| MCA | MOSS console adapter | OEMI | original equipment manufacturer's information |
| MCF | microcode fix function | OLT | online test |
| MES | miscellaneous equipment specification | OS | Operating System |
| MIOC | MOSS input/output control | PAC | power analog card |
| MIOH | MOSS input/output halfword | PC | personal computer |
| MLM | multiple load module | PCSS | power control subsystem |
| MLT | machine level table function | PD | problem determination |
| MOF | MOSS offline function | PEP | partitioned emulation programming |
| MON | MOSS online function | PI | power indication |
| MOSS | maintenance and operator subsystem | PIO | program-initiated operation |
| MSA | machine status area | PKD | portable keypad display |
| MT | modem test | PLC | power logic card |
| MUX | multiplex function | P/N | part number |
| MVS* | Multiple Virtual Storage | PND | present next digit |
| MVS/XA* | Multiple Virtual Storage/Extended Architecture | POR | power-on reset |
| NAK | negative acknowledgment character | POS | power services |
| NB1 | digit signal 1 | PS | 1) power supply 2) personal system |
| NB2 | digit signal 2 | PSF | port swap function |
| NB4 | digit signal 4 | PSN | public switched network |
| NB8 | digit signal 8 | PSS | power subsystem |
| NCCF | Network Communications Control Facility | PSW | password function |
| NCP | (Advanced Communication Function for the) Network Control Program | PTF | program temporary fix |
| NCTE | network channel terminal equipment | PTT | Post Telephone and Telegraph Administration |
| NDF | NCP/EP definition facility | PUC | processor unit card |
| NEF | Network Extension Facility | PWI | power indication |
| NLDM | Network Logical Data Manager | PWS | password management |
| NMVT | network management vector transport | R | receive |
| NPM | NetView* Performance Monitor | RAC | reset address compare function |
| NPSI | X.25 NCP Packet Switching Interface | | |

Abbreviations

| | | | |
|----------------|---|-----------------|---|
| RAM | random access memory | SIP | set I-step function |
| RAS | reliability, availability, and serviceability | SIT | scanner interface trace function |
| RBT | Reset Branch Trace function | SL | serial link |
| RCK | Reset CCU Check function | SLSS | IBM System Library Subscription Service |
| RCL | Reset CCU/LSSD function | SNA | Systems Network Architecture |
| RD | receive data | SOH | start of heading |
| RECFMS | record formatted maintenance statistics | SS | start-stop |
| RECMS | record maintenance statistics | SSP | (Advanced Communication Function for the) System Support Programs |
| refcode | reference code | STP | stop CCU function |
| RFS | ready for sending | STR | start CCU function |
| REST | receive signal element timing | STX | start of text |
| RETAIN | Remote Technical Assistance Information Network | SYSGEN | system generation |
| RI | ring indicator | T | transmit |
| RIO | reset IOC function | TB | terminator block |
| RIS | reset I-step function | TC | test control |
| RLA | remote load activation | TCM | thermally-controlled module |
| RLSD | receive line signal detector | TCS | two-channel switch |
| RPO | remote power-off | TI | test indicator |
| RPQ | request for price quotation | TIC | token-ring interface coupler |
| RS | register-to-storage | TID | TRSS interface display function |
| RS 366 | EIA standard | TIM | time services function |
| RSF | remote support facility | TPS | two-processor switch |
| RST | reset CCU function | TRA | token-ring adapter |
| RTAM | Remote Terminal Access Method | TRID | token-ring interface display |
| RTS | request to send | TRM | token-ring multiplexer |
| RVI | reverse interrupt | TRSS | token-ring subsystem |
| s | second | TSET | transmitter signal element timing |
| SAC | set address compare function | TSO/VTAM | Time Sharing Option for VTAM |
| SAR | storage address register | TSS | transmission subsystem |
| SAT | stand-alone link test function | TTD | temporary text delay |
| SBT | set branch trace function | T1 | US service for very high speed transmissions at 1.536 Mbps |
| SCB | scanner control block | VM | Virtual Machine |
| SCK | stop on CCU check function | VM/SP | Virtual Machine/System Product |
| SCTL | storage control card | VM/XA | Virtual Machine/Extended Architecture |
| SDLC | synchronous data link control | VSE | Virtual Storage Extended |
| SES | secondary status | VSE/AF | Virtual Storage Extended/Advanced Function |
| SG | transmit data | VSE/SP | Virtual Storage Extended/System Product |
| SH/MPS | Short Hold mode/Multiple Port Sharing | | |
| SIK | stop on IOC check function | | |
| SIM | set initialization mode | | |

Abbreviations

| | | | |
|-------------------|--|-----------------|--|
| VSE/SP HPO | Virtual Storage Extended/System Product High Performance Option | V.35 | CCITT recommendation V.35 |
| VTAM | (Advanced Communication Function for the) Virtual Telecommunications Access Method | WACK | wait-before-transmitting-positive-acknowledgment character |
| V.22 bis | CCITT recommendation V.22 bis | WTT | wrap test function |
| V.23 | CCITT recommendation V.23 | XI | X.25 SNA Interconnection |
| V.24 | CCITT recommendation V.24 | X.20 bis | CCITT recommendation X.20 bis |
| V.25 | CCITT recommendation V.25 | X.21 | CCITT recommendation X.21 |
| V.28 | CCITT recommendation V.28 | X.21 bis | CCITT recommendation X.21 bis |
| | | X.25 | CCITT recommendation X.25 |

Abbreviations



Glossary

This glossary defines all new terms used in this manual. It also includes terms and definitions from the *IBM Dictionary of Computing*, SC20-1699.

alarm. A message sent to the MOSS operator console. In case of an error, a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error, a reference code identifies the nature of the error.

alone. Status of MOSS when the later is operational while the CCU control program is not loaded or no longer operational.

asynchronous transmission. Transmission in which each character is individually synchronized, usually by the use of start and stop elements. The start-stop link protocol, for example, uses asynchronous transmission. Contrast with *synchronous transmission*.

auto-answer. A machine feature that allows a DCE to respond automatically to a call that it receives over a switched line.

autoBER. A program that automatically analyzes a BER file.

automaint. A function that uses autoBER to isolate failing FRUs.

auto-call. A machine feature that allows a DCE to initiate a call automatically over a switched line.

availability. The degree to which a system or resource is ready when needed to process data.

Bell 212A. Bell recommendations on transmission interface.

binary synchronous communication (BSC). A uniform procedure, using a standardized set of control characters and character sequences, for synchronous transmission of binary-coded data between stations.

block multiplexer channel. A multiplexer channel that interleaves blocks of data. See also byte multiplexer channel. Contrast with *selector channel*.

box event record (BER). Information about an event detected by the controller. It is recorded on the disk/diskette and can be displayed on the operator console for event analysis.

Note: The word *box* is used instead of *controller* to contrast with the *network* in which the controller is only a component.

byte multiplexer channel. A multiplexer channel that interleaves bytes of data. See also block multiplexer channel. Contrast with *selector channel*.

central control unit (CCU). In the 3745, the controller hardware unit that contains the circuits and data flow paths needed to execute instructions and to control its storage and the attached adapters.

channel adapter (CA). A communication controller hardware unit used to attach the controller to a host processor.

channel interface. The interface between the controller and the host processors.

clear channel. Mode of data transmission where the data passes through the DCE and network, and arrives at the receiving communication controller (for example, the IBM 3745.) unchanged from the data transmitted. The DCE or network can modify the data during transmission because of certain network restrictions, but must ensure the received data stream is the same as the transmitted data stream.

command list. In the NetView program, a sequential list of commands and control statements that is assigned a name. When the name is invoked (as a command), the commands in the list are executed.

communication common carrier. In the USA and Canada, a public data transmission service that provides the general public with transmission service facilities. For example, a telephone or telegraph company (see also *Post, Telephone and Telegraph* for countries outside the USA and Canada).

communication controller. A communication control unit that is controlled by a program stored and executed in the unit. Examples are the IBM 3705, IBM 3725/3726, IBM 3720, and IBM 3745 models 130, 150, 170, 210, 310, 410, and 610.

communication scanner. See *line adapter*.

communication scanner processor (CSP). The processor of a scanner.

communication subsystem. The part of the controller that controls the data transfers over the transmission interface.

Glossary

configuration data file (CDF). A MOSS file that contains a description of all the hardware features (presence, type, address, and characteristics).

control panel. A panel that contains switches and indicators for the customer's operator and service personnel.

control program. A computer program designed to schedule and to supervise the execution of programs of the controller.

control subsystem. The part of the controller that stores and executes the control program, and monitors the data transfers over the channel and transmission interfaces.

customer engineer. See IBM service representative.

data circuit-terminating equipment (DCE). The equipment installed at the user's premises that provides all the functions required to establish, maintain, and terminate a connection, and the signal conversion between the data terminal equipment (DTE) and the line. For example, a modem is a DCE.

Note: The DCE may be a stand-alone equipment or integrated in 3745.

data host. A host running application programs only.

data terminal equipment (DTE). That part of a data station that serves as a data source, data link, or both, and provides for the data communication control function according to protocols.

direct attachment. The attachment of a DTE to another DTE without a DCE.

direct-current interlock (DCI). A mode of data transmission over an I/O interface to enable communication between data processing systems through a channel.

direct memory access (DMA). Mechanism permitting an adapter to access the storage without any control program interaction.

diskette. A thin, flexible magnetic disk, and its protective jacket, that records diagnostics, microcode, and 3745 files.

diskette drive. A mechanism that reads and writes diskettes.

diskette management. Also referred to as remote load activation. MOSS function which allows loading and activation of NCP or PEP on a remote communication controller through switched subarea links.

duplex transmission. Data transmission in both directions at the same time. Contrast with *half-duplex*.

EIA 232D, 336. EIA recommendations on transmission interface.

Emulation Program (EP). An IBM licensed program that allows a channel-attached communication controller to emulate the functions of an IBM 2701 Data Adapter Unit, an IBM 2702 Transmission Control, or an IBM 2703 Transmission Control, or an IBM 3705 Communication Controller.

error recovery. The process of correcting or bypassing the effects of a fault to restore a computer system to a prescribed condition.

Ethernet LAN adapter (ELA).** Line adapter for Ethernet-type network, composed of one communication scanner processor card (CSP), and one Ethernet adapter card (EAC).

Ethernet-type subsystem (ESS). The part of the controller that controls the data transfers over an Ethernet V2 or IEEE 802.3 local area network.

fallback. In twin backup mode, a state where the traffic of the failing CCU has been redirected to the second one.

In standby mode, a state where the traffic of the failing CCU has been redirected to the standby CCU after it is IPLed.

front-end scanner (FES). A circuit that scans the transmission lines, serializes and de-serializes the transmitted characters, and manages the line services. It is part of the scanner.

half-duplex. Data transmission in either direction, one direction at a time. Contrast with *duplex*.

hard-check. An indication that an error is due to a hardware failure.

high-performance transmission subsystem (HPTSS). The part of the controller that controls the data transfers over the high-speed transmission interface (speed up to 2 Mbps).

high-speed scanner. Line adapter for lines up to two million bps. It is composed of a communication scanner processor (CSP) and a front-end high-speed scanner (FESH).

high-speed transfer. A mode of high-speed data transmission over an I/O interface to enable communication between data processing systems through a channel.

hit. In cache operation, indicates that the information is in the cache storage.

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host*.

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to commence operation.

input/output control (IOC). The circuit that controls the input/output from/to the channel adapters and scanners via the IOC bus.

internal clock function (ICF). A LIC function that provides a transmit clock for sending data, and retrieves a receive clock from received data, when DCEs or direct-attached terminal do not provide those timing signals.

LIB. A line interface base which houses:

- One multiplexer
- Up to eight LICs.

line. See *transmission line*.

line adapter (LA). The part of the TSS, HPTSS, ESS, or TRSS that scans and controls the transmission lines. Also called *scanner* or *communication scanner*.

For the TSS the line adapters are low-speed scanners (LSSs).

For the HPTSS the line adapters are high-speed scanners (HSSs).

For the ESS the line adapters are Ethernet** LAN adapters (ELA).

For the TRSS the line adapters are token-ring adapters (TRAs).

line interface coupler (LIC). A circuit that attaches up to four transmission cables to the controller (from DTEs, DCEs, or telecommunication lines).

Link Problem Determination Aid (LPDA). A series of test commands executed by an IBM DCE to determine which of various network components may be causing an error in the network.

link protocol. The set of rules by which a logical data link is established, maintained, and terminated, and by which data is transferred across the link.

Logrec. Error logging file managed via the operating system.

low-speed scanner. Line adapter for lines up to 256 kbps. It is composed of as communication scanner processor (CSP) and a front-end low-speed scanner (FESL).

maintenance and operator subsystem (MOSS). The part of the controller that provides operating and servicing facilities to the user's operator and the IBM service representative.

microcode. A program that is loaded in a processor (for example, the MOSS processor) to replace a hardware function. The microcode is not accessible to the customer.

modem (modulator-demodulator). See DCE.

MOSS input/output control (MIOC). The circuit that controls the input/output from/to the MOSS.

multiplexer channel. A channel designed to operate with a number of I/O devices simultaneously. Several I/O devices can transfer records at the same time by interleaving items of data. See also *byte multiplexer*, *block multiplexer*.

multiplexing. The division of a transmission facility into two or more channels by allocating the common channel to several different channels, one at a time.

multipoint connection. A connection established among more than two data stations for data transmission. The connection may include switching facilities.

NetView*. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

NetView Performance Monitor (NPM). An IBM licensed program that uses VTAM to record performance data collected for various devices in a network.

network. See *user application network*.

Network Control Program (NCP). An IBM licensed program that provides communication controllers supports for single-domain, multiple domain, and interconnected network capability.

nonswitched line. A connection between systems or devices that does not have to be made by dialing. The connection can be point-to-point or multipoint. The line can be leased or private. Contrast with *switched line*.

offline. Status of MOSS when the later is not connected to the CCU control program.

Glossary

online. Status of MOSS when the later is connected to the CCU control program.

online tests. Testing of a remote data station concurrently with the execution of the user's programs (that is, with only minimal effect on the user's normal operation).

operator console. The IBM Operator Console that is used to operate and service the 3745 through the MOSS. A local console must be located within 7 m of the 3745. Optionally an alternate console may be installed up to 120 m from the 3745, or a remote console may be connected to the 3745 through the switched network.

owning host. A host which can IPL an 3745 and also run application programs.

partitioned emulation programming (PEP) extension. A function of a network control program that enables a communication controller to operate some telecommunication lines in network control mode while simultaneously operating others in emulation mode.

point-to-point connection. A connection established between two data stations for data transmission. The connection may include switching facilities.

Post Telephone and Telegraph (PTT). A generic term for the government-operated common carriers in countries other than the USA and Canada. Examples of the PTT are British Telecom in the United Kingdom, the Deutsche Bundespost in Germany, and the Nippon Telephone and Telegraph Public Corporation in Japan.

program temporary fix. A temporary solution or by-pass of a problem diagnosed by IBM as resulting from a defect in a current unaltered release of the program.

reliability. The ability of a functional unit to perform a required function under stated conditions, for a stated period of time.

scanner. See *line adapter*.

single. Configuration with one CCU.

selector channel. An I/O channel designed to operate with only one I/O device at a time. Once the I/O device is selected, a complete record is transferred one byte at a time. Contrast with *block multiplexer channel* and *multiplexer channel*.

service representative. See IBM service representative

serviceability. The capability to perform effective problem determination, diagnosis, and repair on a data processing system.

services. A set of functions designed to facilitate the maintenance of a device or system.

start-stop (SS) transmission. Asynchronous transmission in which a group of bits is (a) preceded by a start bit that prepares the receiving mechanism for the reception and registration of a character, and (b) followed by at least one stop bit that enables the receiving mechanism to come to an idle condition pending reception of the next character.

switchback. Operation to reset a twin backup configuration from fallback to initial state.

switched line. A transmission line with which the connections are established by dialing, only when data transmission is needed. The connection is point-to-point and uses a different transmission line each time it is established. Contrast with *nonswitched line*.

Synchronous Data Link Control (SDLC). A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. SDLC conforms to subsets of the Advanced Data Communication Control Procedures of the American National Standards Institute and High-Level Data Link Control (HDLC) of the International Standards Organization.

synchronous transmission. Data transmission in which the sending and receiving instruments are operating continuously at substantially the same frequency and are maintained, by means of correction, in a desired phase relationship. Contrast with *asynchronous transmission*.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information through a user application network. The structure of SNA allows the users to be independent of specific telecommunication facilities.

token-ring adapter (TRA). Line adapter for IBM Token-Ring Network, composed of one token-ring multiplexor card (TRM), and two token-ring interface couplers (TICs).

token-ring subsystem (TRSS). The part of the controller that controls the data transfers over an IBM Token-Ring Network.

transmission interface. The interface between the controller and the user application network.

transmission line. The physical means for connecting two or more DTEs (via DCEs). It can be nonswitched or switched. Also called a *line*.

transmission subsystem (TSS). The part of the controller that controls the data transfers over low- and medium-speed, switched and non switched transmission interfaces.

The TSS consists of:

- Low-speed scanners (LSSs) associated with
- LIBs
- Serial links (SLs).

TSST board. line adapter board for token-ring adapters.

twin. Configuration with two CCUs.

twin-dual. Mode of operation with two CCUs operating simultaneously in two distinct subareas.

twin-backup. Mode of operation identical to twin-dual with fallback capability.

twin-standby. Mode of operation with one CCU active and the other in standby, ready to take over.

two-processor switch (TPS). A feature of the channel adapter that connects a second channel to the same adapter.

user application network. A configuration of data processing products, such as processors, controllers, and terminals, for the purpose of data processing and information exchange. This configuration may use circuit-switched, packet-switched, and leased-circuit services provided by carriers or the PTT. Also called *user network*.

V.24, 25, 35. CCITT recommendations on transmission interfaces.

wrap test. A test that checks attachment or control unit circuitry without checking the mechanism itself by returning the output of the mechanism as input.

X.20 bis, 21, 21 bis, 21 native, 25. CCITT recommendations on transmission interfaces.



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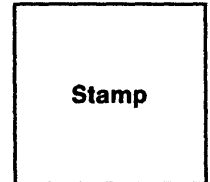
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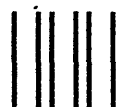
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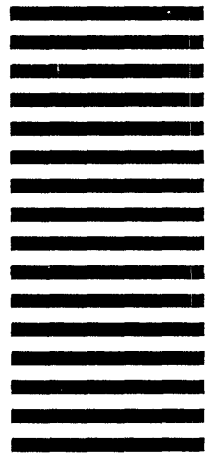


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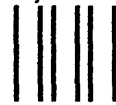
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