

REV	CHANGE	ER NO.	DFTS	CHECK	AFTS	DATE
A	Initial Release	35 6408				

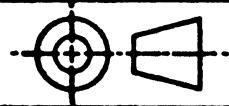
RECEIVED
JUL 27 1973

MC	REF NO.	PLANT LOC	DESCRIPTION	INTERPLANT USAGE (CODE)	REQD	NEXT ASSEMBLY
MANUFACTURING OPTION FOR USE ONLY AT PLANT SHOWN						REPLACES DWG
THIS DRAWING AND ANY ATTACHMENTS THERETO AND INFORMATION THEREON ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.				NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA	
CLASS	MODEL	PLANT	CLASS	MODEL	PLANT	CLASS: M53
M53	02	35				UNIT: Asynchronous Adapter
DRAWING OF THE ASSEMBLY			START:	FINISH:	NAME: Index, Field Print Package - 399	
SHEET NO			DFTS: <i>Jim Beed</i>	REV		
REV			CHKR: <i>Jim Beed</i>	315 - 0531025		
APPD: <i>Jim Beed</i>			DESIGNER: <i>Jim Beed</i>	A		
APPD:			APPD:	CODE:	COVER SHEET	SHEET 1 OF 2

ENGINEERING FILE

ITEM	REQD	SIZE	PART NO.	DESCRIPTION	PARTS LIST CHG. ER NO.	REMARKS
1	REF		315-0531025	Index, Field Print Package - 399		
2	REF		315-0531321	Logic Schematics		
3	REF		315-0523433	Adj. & Req. Specification		
4	REF		315-0531322	PIB		
5	REF		315-0523426	F01, Bell Data Set I/F Kit		
6	REF		315-0523427	F02, Bell Data I/F Kit		

THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA	315 - 0531025	REV A
	UNIT: Asynchronous Adapter		PARTS LIST	SHEET 2 OF 2
	NAME: Index, Field Print Package - 399			



(25,4)MM
1 INCH

315-0531321

FUNCTION	INPUT PIN	OUTPUT PIN	PAGE/ZONE	REMARKS
ACR.V	88		3-C5	AUTO/DIALER
CLA.GA		262	4-C6	TEST POINT
CNT1.GA		261	4-C2	TEST POINT
COPT2	58		7-B8	TEST POINT
COPT3	57		7-B8	TEST POINT
CRQ.V		96	3-C2	AUTO/DIALER
DINT.L		257	8-D5	TEST POINT
DINT.LA		250	8-D5	PROCESSOR
DLO.V	89		3-C5	AUTO/DIALER
DPR.V		95	3-C1	AUTO/DIALER
DSS.V	97		3-B5	AUTO/DIALER
EIABA		294	3-D4	MODEM/TERM
EIABB	289		3-C8	MODEM/TERM
EIACA		293	3-A7	MODEM/TERM
EIACB	288		3-D8	MODEM/TERM
EIACC	290		3-C8	MODEM/TERM
EIACD		295	3-D4	MODEM/TERM
EIACE	291		3-B8	MODEM/TERM
EIACF	287		3-D8	MODEM/TERM
EIA.SA		296	3-C4	MODEM/TERM

FUNCTION	INPUT PIN	OUTPUT PIN	PAGE/ZONE	REMARKS
EIASB	292		3-B8	ECHOPLEX
IPM.L		43	8-B5	TEST POINT
LS.G	55		3-B3,4-D5	HALF SPEED
LS.V		298	3-B1	TEST POINT
MR.V*	46		5-A5	MO5 POW SUP
OPM.L		258	5-A1	TEST POINT
OSC.GA		260	4-D5	TEST POINT
PINT.L		17	8-C1	TEST POINT
PINT.LA		249	8-C1	PROCESSOR
PND.V	90		3-B5	AUTO/DIALER
PWI.V	87		3-A8	AUTO/DIALER
RDA.Z		62	3-C6	MODEM/TERM
RDA.ZA		263	3-C6	MODEM/TERM
RDTTY.Z	56		8-D2	MODEM/TERM
RD1.V*		204	7-D1	PROCESSOR 2
RD2.V*		206	7-D1	PROCESSOR 2
RD3.V*		208	7-C1	PROCESSOR 2
RD4.V*		210	7-C1	PROCESSOR 2
RD5.V*		214	7-B3	PROCESSOR 2

FUNCTION	INPUT PIN	OUTPUT PIN	PAGE/ZONE	REMARKS
RD6.V*		218	7-B4	PROCESSOR 2
RD7.V*		221	7-B4	PROCESSOR 2
RD8.V*		224	7-B4	PROCESSOR 2
RRC.Z		63	3-B6	MODEM/TERM
RRC.ZA		64	3-B6	MODEM/TERM
RST1.L		42	5-C1	TEST POINT
SD.GA		259	8-C1	TEST POINT
SD1.V		91	3-A4	PROCESSOR 1
SD1.V*	203		5-B8	PROCESSOR 1
SD2.V		92	3-A4	PROCESSOR 1
SD2.V*	205		5-B8	PROCESSOR 1
SD3.V		93	3-D2	PROCESSOR 1
SD3.V*	207		5-B8	PROCESSOR 1
SD4.V		94	3-D2	PROCESSOR 1
SD4.V*	209		5-D5	PROCESSOR 1
SD5.V*	211		5-C5	PROCESSOR 1
SD6.V*	215		5-C5	PROCESSOR 1
SD7.V*	219		5-C5	PROCESSOR 1
SD8.V*	223		5-A8	PROCESSOR 1
SD9.V*	225		5-B5	PROCESSOR 1

5. REF DES NOT USED - A1,B1,C1,C45,
D1,E1,F1,G1,G3,H1,L1

4. +12 VOLT PIN: 52

3. -12 VOLT PIN: 51

2. +5 VOLT PINS: 1,2,201,202

1. GROUND PINS: 101,102,301,302

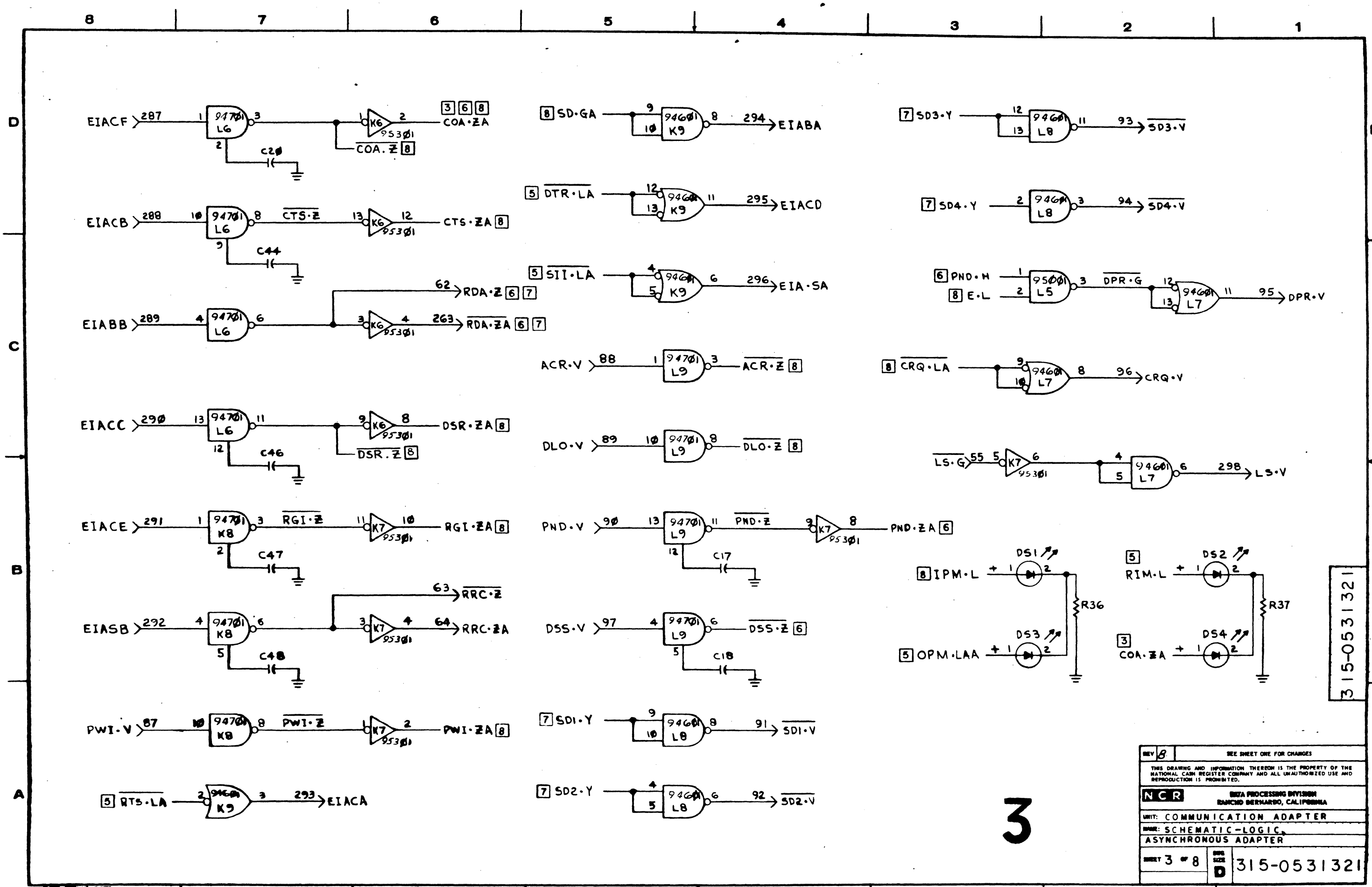
NOTES (UNLESS OTHERWISE SPECIFIED)

6. HIGHEST REFERENCE DESIGNATORS USED:
A9,B9,C49,CR2,D9,DS4,E9,F9,G9,
H9,J9,K9,L9,Q5,R40,S4,XY1.

CLASS	MODEL	PLANT	REV	RELEASE NO.	DFTS	DATE	CHECK	APPD
				B 35-07480		S.S. 5-11-74		
M53	02	35	A	35-07332				

CHANGES: (A) RELEASED TO PRODUCTION. (B) P/N FOR G9 WAS 953. (REF SHT 5, 6 PLACES)	INTERPLANT USAGE (CODE)	REF REQD	315-0531321 NEXT ASSEMBLY
MATERIAL:			
COATING:			

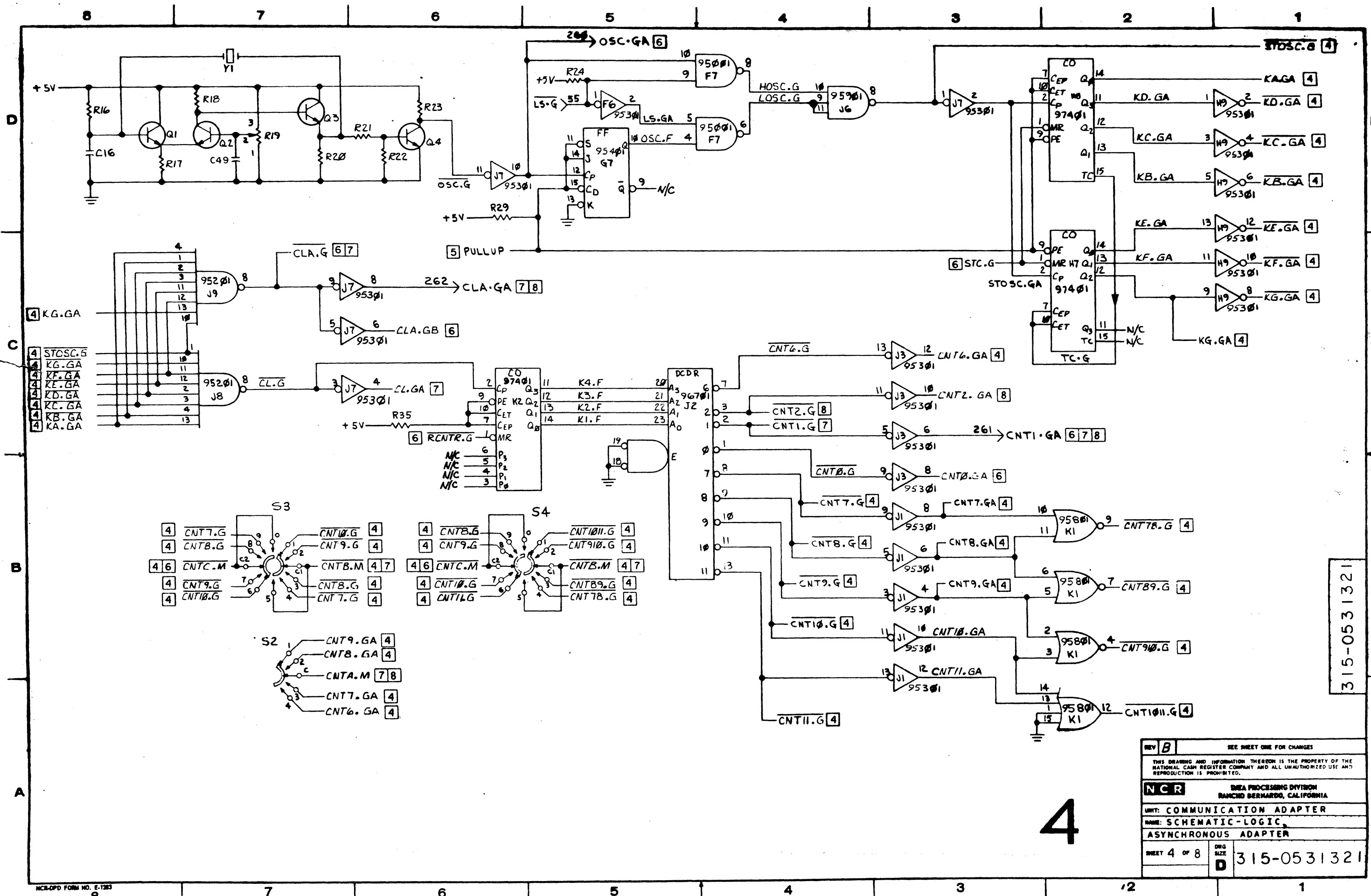
REPLACES DWG 315-0524911	THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.		
UNLESS OTHERWISE SPECIFIED, DIMENSIONAL LIMITS ARE: INCH NOMINAL .XX ±. .XXX ±.	CLASS: M53	UNIT: COMMUNICATION ADAPTER	
	START: 7/1/74	FINISH: 7/5/74	NAME: SCHEMATIC-LOGIC,
	DFTS: A.ZAPATA	ASYNCHRONOUS ADAPTER	
	CHKR: [Signature]	SHEET 1 OF 8	DWG SIZE B
	DESIGNER: J. CELLO	SCALE: NTS	315-0531321
	APPD: PJB	APPD:	CODE: -



3

315-0531321

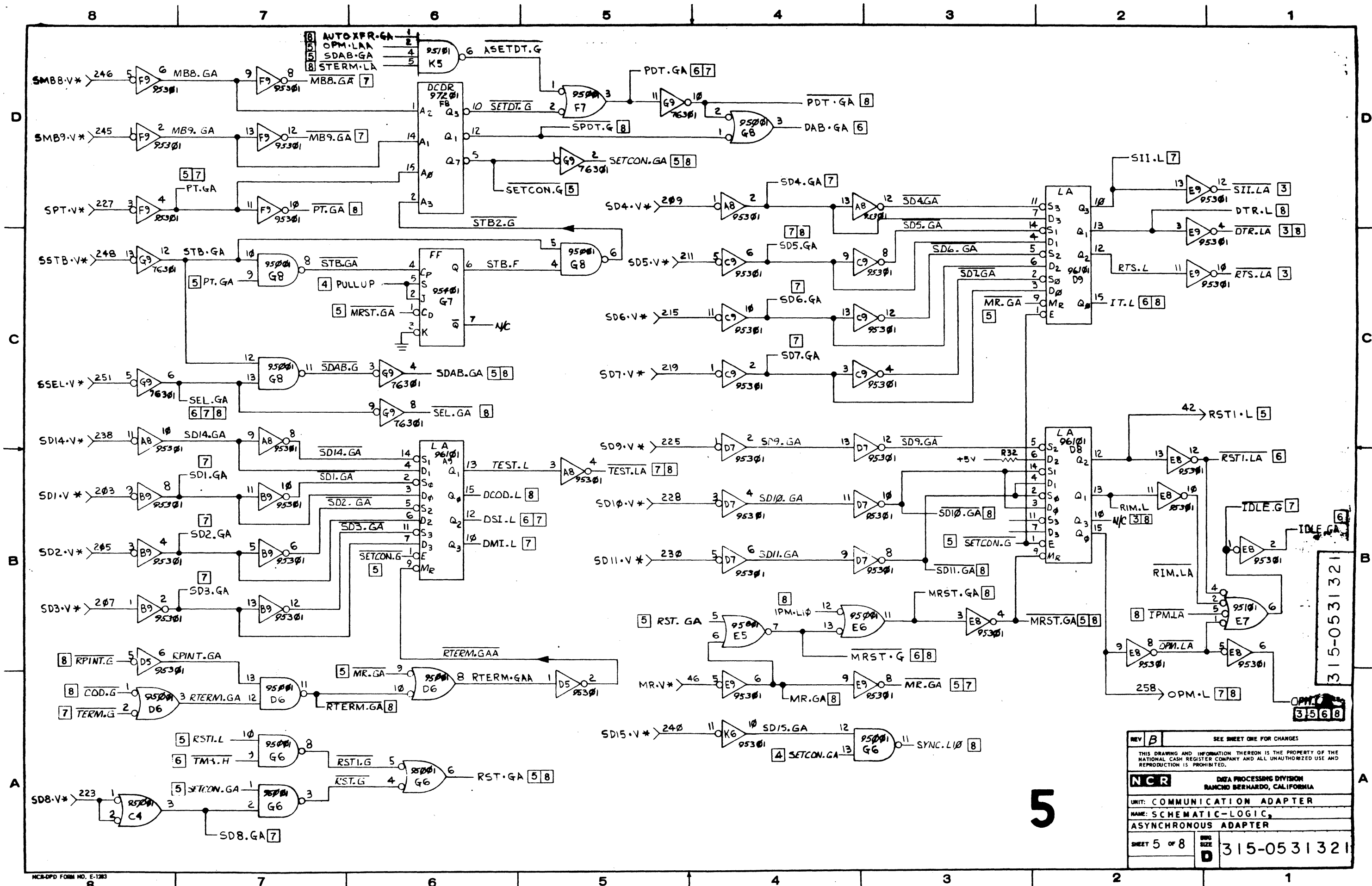
REV 8	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION SANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 3 OF 8	SIZE D 315-0531321



315-0531321

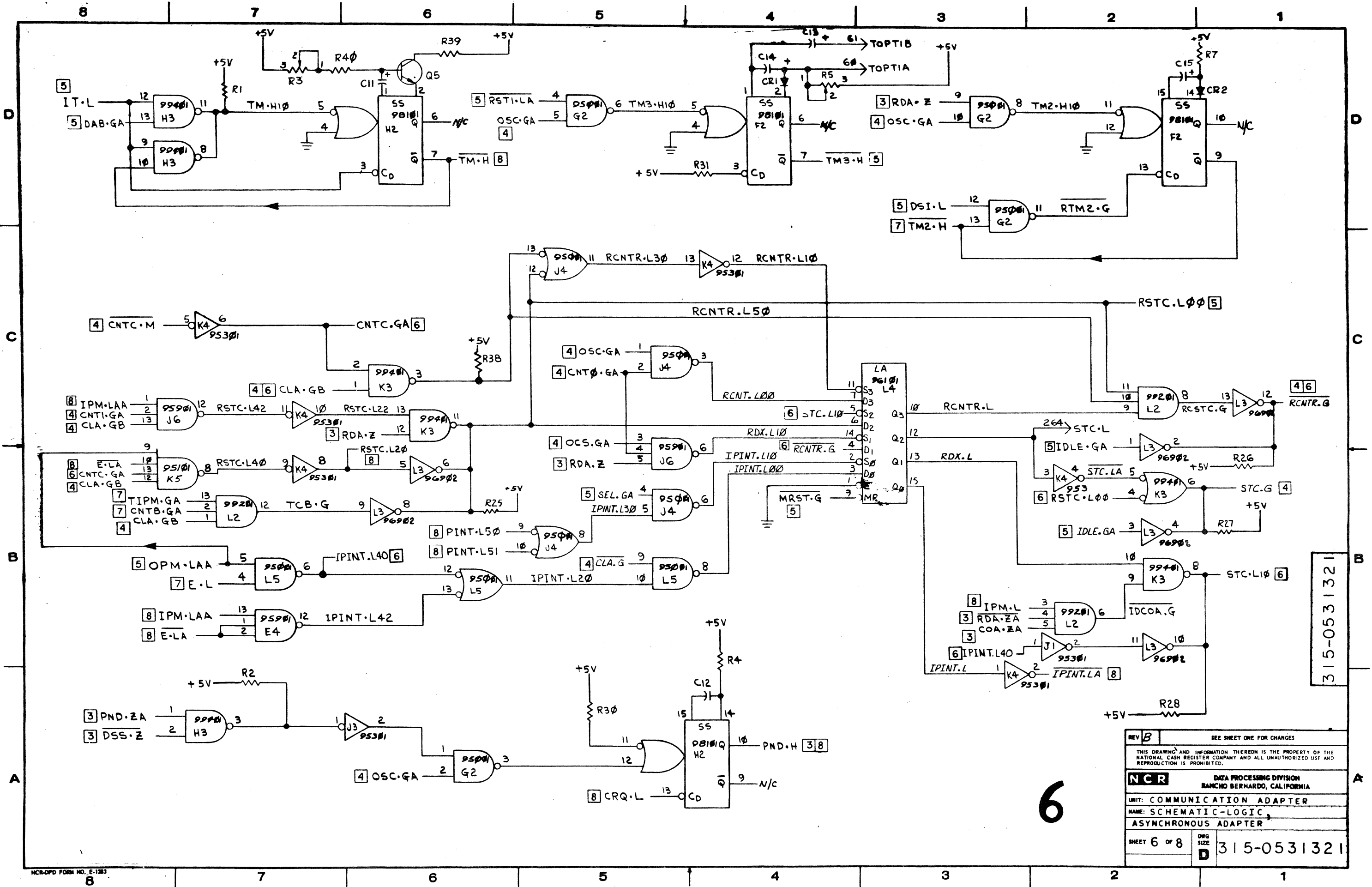
4

REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 4 of 8	DWG SIZE D 315-0531321



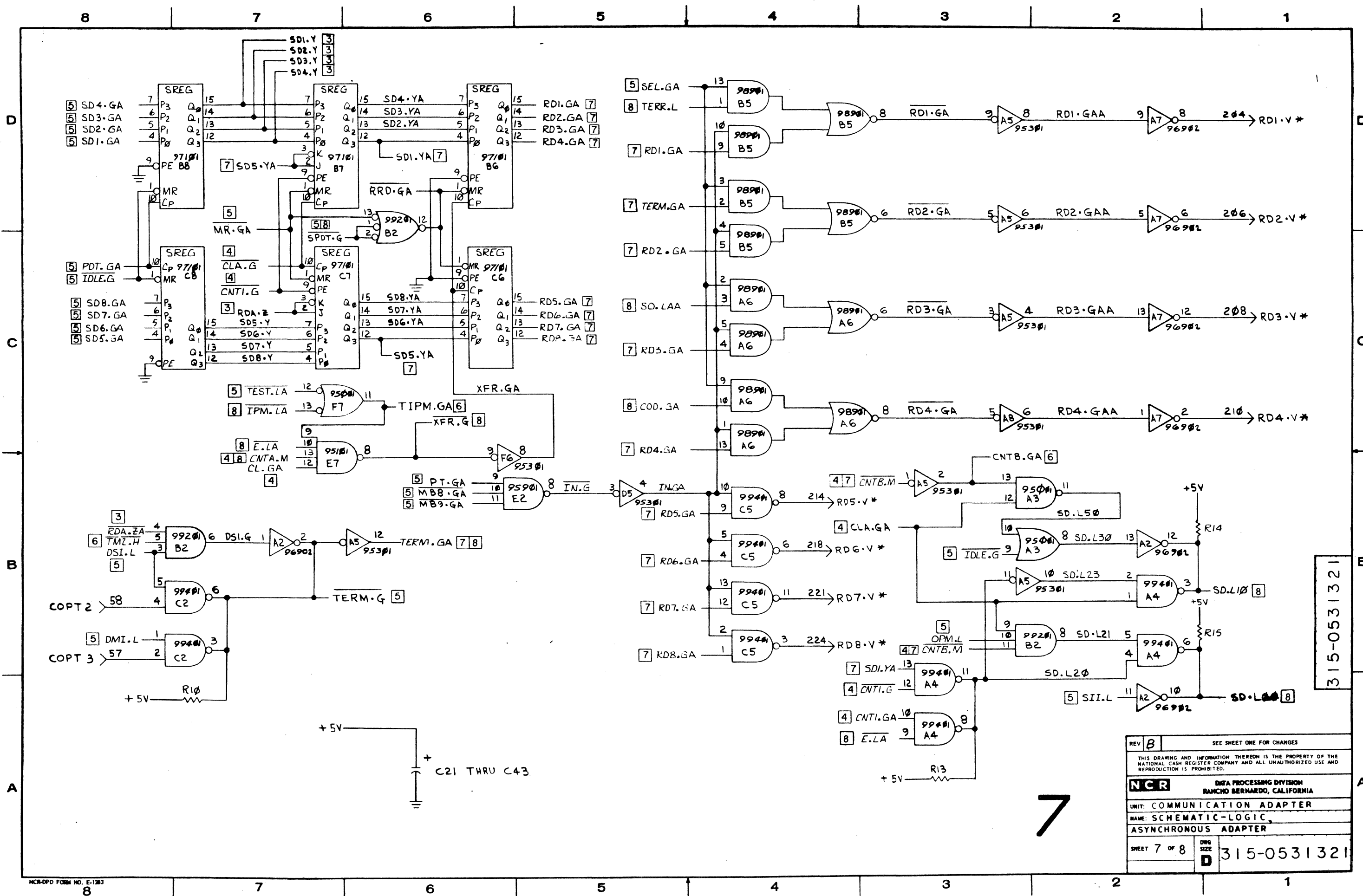
5

REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 5 of 8	SIZE D
315-0531321	



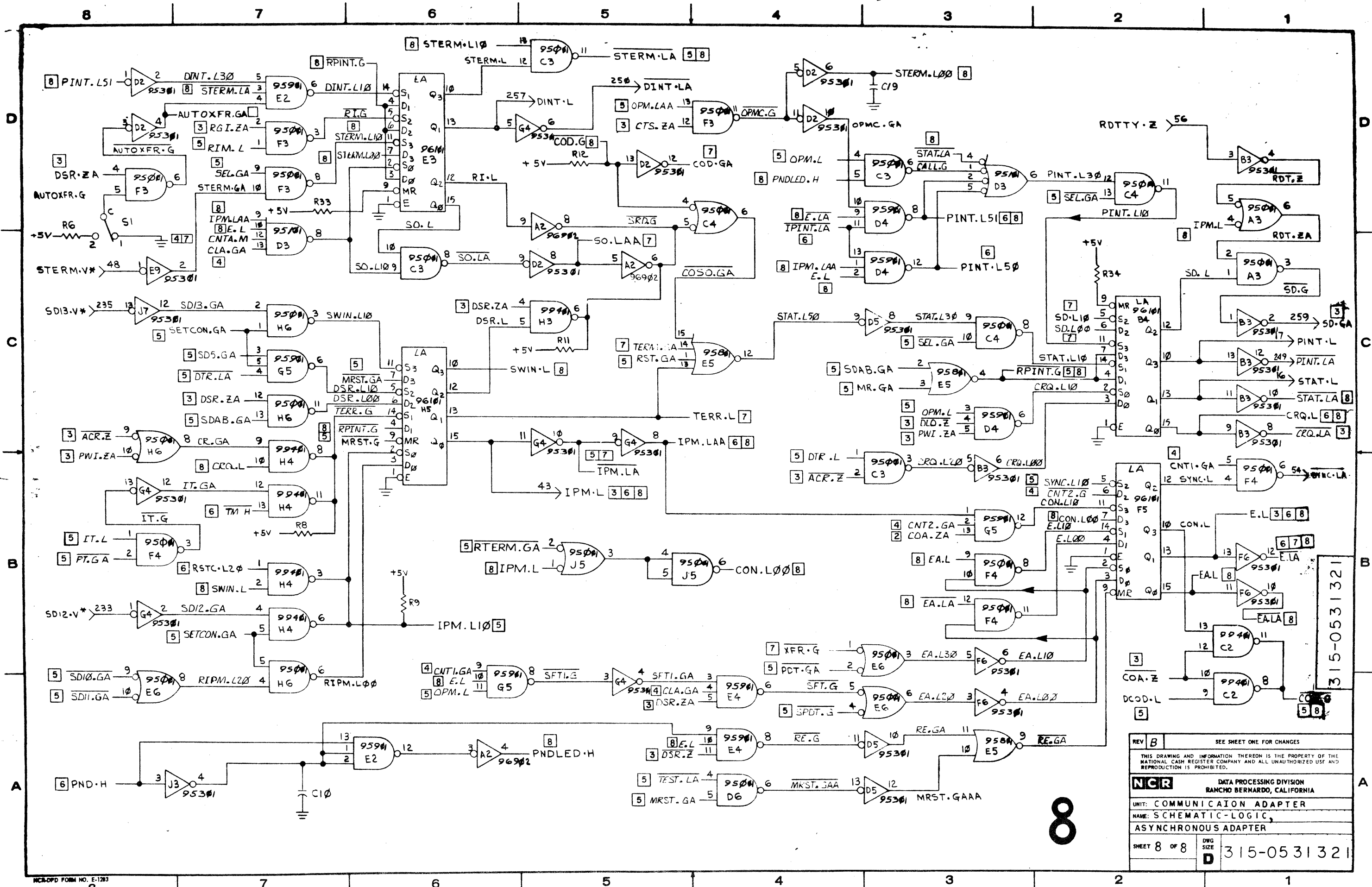
6

REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 6 OF 8	DWG SIZE D 315-0531321



REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA	
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 7 OF 8	DWG SIZE D
315-0531321	

7



REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATION ADAPTER	
NAME: SCHEMATIC-LOGIC, ASYNCHRONOUS ADAPTER	
SHEET 8 OF 8	DWG SIZE D 315-0531321

315 -0523433

REF: 315-0523430

THIS DRAWING REMAINS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION (NCR-ED), AND THE DISCLOSURE OR USE OF THE DESIGN AND MANUFACTURING INFORMATION CONTAINED THEREIN IS EXPRESSLY LIMITED BY CONTRACT. REPRODUCTION IS PROHIBITED WITHOUT THE PRIOR WRITTEN PERMISSION OF NCR-ED.

NCR THE NATIONAL CASH REGISTER COMPANY
ELECTRONICS DIVISION
HAWTHORNE, CALIFORNIA

CLASS	EFFECTIVITY	ISSUE	DRAFTSMAN AND DATE	35 ER. NO	APPROVED AND DATE	UNIT NAME	C-692-700 ASYNCH ADAPTER		
692-700 35-		(A)	PRODUCTION	1498	<i>H. Young</i>	PART NAME	Adjustment and Requirement		
		B	9-22-72 <i>JLR</i>	4402	<i>H. Young</i>	Specification			
		C	<i>F.W.N.</i> 8-2-73	6628	<i>P. Bush</i> 8-2-73	DRAFTSMAN	DATE	DESIGNER	DATE
					<i>H. Young</i>	<i>H. Young</i>	8/11/71	<i>H. Young</i>	8/11/71
					<i>H. Young</i>	CHECKER	DATE	SCALE	
					<i>H. Young</i>	<i>H. Young</i>	8/11/71		
					<i>H. Young</i>	APPROVED	DATE		
					<i>H. Young</i>	<i>H. Young</i>	8/11/71	315 - 0523433	
					<i>H. Young</i>	APPROVED	DATE		
					<i>H. Young</i>	<i>H. Young</i>	8/11/71		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

TABLE OF CONTENTS

	<u>Page</u>
1. SCOPE.....	3
2. DEFINITION.....	3
2.1 Purpose.....	3
2.2 Speed of Operation.....	3
2.3 Data Sets.....	4
3. PHYSICAL DESCRIPTION.....	4
3.1 Options.....	4
3.2 Features.....	4
3.3 Reference Material.....	4
4. ENVIRONMENTAL REQUIREMENTS.....	4
5. POWER REQUIREMENTS.....	4
6. SYSTEM GROUND REQUIREMENTS.....	5
7. CONNECTING CABLE REQUIREMENTS.....	5
7.1 Scanner Cable (Interface Signalling Cable) Assembly.....	5
7.2 Data Set Cable.....	5
7.2.1 C-698-300 Data Set Cable (315-0522998)...	5
7.2.2 Bell Data Set Cable (315-0523421).....	5
7.2.3 In-House Cable (315-0523424).....	5
7.2.4 Auxiliary Data Set Cable (315-0523422)...	6
8. POWER SUPPLY REQUIREMENTS.....	6
9. MECHANICAL ADJUSTMENTS.....	6
10. ELECTRICAL ADJUSTMENTS.....	6
10.1 Oscillator Duty Cycle Adjustment Procedures.....	6
10.2 Interval Timer TM.H Adjustment.....	7
10.3 Conditional Mode Reset (Reset 1) One-Shot (TM3.H) Adjustment.....	7

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	
		NCR	The National Cash Register Company Electronics Division Hawthorne, Calif	SHEET 1 of 13

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

TABLE OF CONTENTS (Continued)

	<u>Page</u>
11. MAINTENANCE AIDS.....	8
11.1 Logically Disabling of the Adapter.....	8
11.2 Intra-Adapter (Diagnostic Mode) Turnaround Capability.....	8
11.3 Synchronization Pulses.....	9
11.4 Indicator Lamps.....	9
11.5 Test Points.....	10
12. PREVENTIVE MAINTENANCE.....	10
13. INSTALLATION INSTRUCTION.....	10
13.1 Adapter Option Implementation.....	10
13.1.1 Character Format and Code.....	10
13.1.2 Detect Space and Mark or Reverse Channel Option.....	11
13.1.3 TM3.H One Shot Time Range Option.....	12
13.1.4 Echoplex Option.....	12
13.1.5 Automatic Output Data Transfer Option....	12
13.2 Data Set Cable Installation.....	12
13.3 Disabling Automatic Dialing Feature.....	12

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	SHEET 2 OF 13	
		NCR The National Cash Register Company Electronics Division Hawthorne, Calif		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

1. SCOPE

This documentation defines the requirements for the C-692-700 Asynchronous Adapter and contains the adjustments required for proper operation.

2. DEFINITION

2.1 Purpose

The C-692-700 Asynchronous Adapter is used as an interface unit between various remote peripheral devices and/or data sets and the C-605 General Purpose Computer.

The C-692-700 Adapter will be capable of 2 or 4-wire half duplex operation on a multi-point or point-to-point switched or non-switched link. Any 5, 6, 7 or 8 transmission code will be accommodated.

When the Adapter is used as a first-level interface unit on the C-605 I/O bus, the Adapter will occupy one of the eight C-605 I/O ports. If the position scanner C-697-700 is used as a first-level interface unit on the C-605 I/O port, then the Adapter will occupy one of eight C-605 adapter cage I/O positions as a second-level interface unit.

2.2 Speed of Operation

Transmission rates are selectable at the time of installation. Only one transmission rate may be selected per Adapter. The rate of transmission used is determined by the type of peripheral device or communication medium.

Speed selection is made by changing the principal timing element, the crystal. Normally, the Adapter will be supplied with a 153.6 KHZ crystal for 1200 BPS transmission rate. If transmission rates other than 1200 BPS are required, the proper frequency of crystal should be supplied (refer to Drawing No. 315-0523436).

The Adapter has the capability of switching to a speed which is one-half the speed set at installation. A logic term LS.G¹ is provided at the backpanel (Pin No. 55) for connection of an external switching device (e.g. a toggle switch) which would then be used to activate and deactivate this function. Grounding of this pin will activate the function. If the Adapter is set to operate at 1200 baud, activation of the speed selection control will result in the Adapter dropping to 600 baud operation.

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	SHEET 3 OF 13	
		NCR The National Cash Register Company Electronics Division Hawthorne, Calif		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

2.3 Data Sets

Typical data set usable is the NCR Model C-698-300. Other similar Data Sets such as Bell 103 or 202 meeting the specification RS232C or CCITTV.24 might be used. Only these Data Sets employing an asynchronous (no clock) mode of operation may be used.

3. PHYSICAL DESCRIPTION

Each Adapter occupies one 14" x 11" printed circuit board (315-0523866) with approximately 86 ICS and 45 discrete components.

3.1 Options

This Adapter is a general purpose device. When it is installed, attention should be given to required adjustments (Paragraph 10.), option settings (Paragraph 13.) and backpanel connections (Paragraphs 7. and 13.).

3.2 Features

Refer to Drawing 315-0523425 (Index Feature Sheet).

F01	Bell Data Set Interface Kit	315-0523426
F02	In-House Interface Kit	315-0523427
F03	Automatic Dialing Feature	315-0523428

3.3 Reference Material

Refer to Drawing 315-0523430 for complete listing of material in the field print package.

4. ENVIRONMENTAL REQUIREMENTS

The C-692-700 Adapter has the same requirements as the C-605 which houses it.

5. POWER REQUIREMENTS

Uses DC power from the C-605 or C-605 Adapter cage (see Paragraph 8.).

ORIGINATOR	DATE	TITLE ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER		SPEC. NO.	REV
				315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	SHEET 4 OF 13	
		NCR		The National Cash Register Company Electronics Division Hawthorne, Calif	

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

6. SYSTEM GROUND REQUIREMENTS

System Ground is obtained from the C-605.

NOTE

The Adapter provides "logic ground" to the Data Set. It is important that C-605 and the Data Set be connected to the same AC distribution panel to insure proper operation.

7. CONNECTING CABLE REQUIREMENTS

7.1 Scanner Cable (Interface Signalling Cable) Assembly (315-0523423, 315-0523431, 315-0524410, 315-0524411)

This cable assembly is required when Adapter is used as a second-level interface unit. It is used to interconnect the Adapter to the first level scanner. These cables are called out with each C-697-700 scanner on its Field Print Package (315-0524403).

7.2 Data Set Cable

7.2.1 C-698-300 Data Set Cable (315-0522998)

This cable connects NCR C-698-300 modem to the adapter. This cable is called out with each C-698-300 modem on its P.I.B. drawing.

7.2.2 Bell Data Set Cable (315-0523421)

This cable connects the Adapter to the Bell Data Set. This one type of cable will suffice for all normally used Data Sets (103, 202, etc.) It has 14 leads of 24 GA wire, shielded, and jacketed. It is made in only one length, 50 feet. This cable is a feature kit (F01 315-0523426). It will be supplied only when Bell Data Set is used.

7.2.3 In-House Cable (315-0523424)

This cable is used to connect the Adapter to a terminal device in the In-House Modemless Operation. It provides all the necessary Data Set cable terms to the prospective units, (i.e., SD to RD, RTS to CTS, etc.) It is six feet in length, and will connect to the Adapter and to the 50 foot cable that comes with the terminal unit.

ORIGINATOR	DATE	TITLE ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER		SPEC. NO.	REV
				315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	SHEET 5 OF 13	
		NCR		The National Cash Register Company Electronics Division Hawthorne, Calif	

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

This cable is a feature kit (F02 315-0523427). It will be supplied only when in-house operation is desired.

7.2.4 Auxiliary Data Set Cable (315-0523422)

This cable connects each Adapter to its associated automatic calling unit (801). It consists of 12 leads of 24 gauge wire, shielded and jacketed. This cable is a feature kit (F03 315-0523428). It will be supplied only when automatic dialing operating is desired.

8. POWER SUPPLY REQUIREMENTS

D.C. power is supplied by the C-605 power supply. The Adapter requires the following:

+5V	<2.0 Amps
+12V	0.1 Amps
-12V	0.1 Amps

9. MECHANICAL ADJUSTMENTS

None.

10. ELECTRICAL ADJUSTMENTS

There are three circuits that need monitoring and adjustment.

10.1 Oscillator Duty Cycle Adjustment Procedures

Turn C-605 power on.

Monitor Pin 260 (OSC.GA) on backpanel for one of the following:

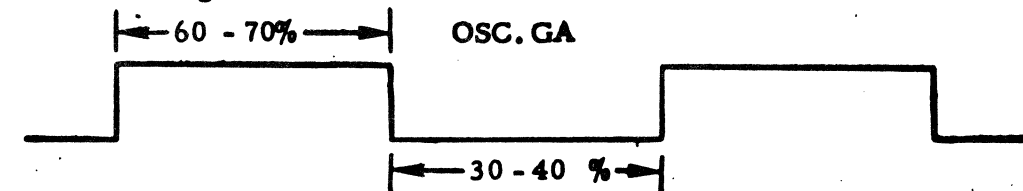
Frequency of Crystal in KHZ	Time per Cycle in μs	Transmission Rate in BPS	Remark
230.4	4.34	1800	
153.6	6.51	1200/600	Ref. Para. 2.2
128.0	7.81	1000	
38.4	26.04	300/150	Ref. Para. 2.2
25.6	39.1	200	
19.2	52.08	150/75	Ref. Para. 2.2
17.216	58.07	134.5	
14.08	71.02	110	
12.8	78.1	100/50	Ref. Para. 2.2

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	SHEET 6 OF 13	
		NCR The National Cash Register Company Electronics Division NewHome, Calif		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

If waveform is not present adjust the top pot, R19, fully counter-clockwise then adjust slowly clockwise until a square waveform matching the following is achieved.



NOTE

Adjustment is required each time a different crystal is installed. Turn the C-605 power off and then on again while monitoring oscillator output (pin 260). Oscillator must be self-starting.

10.2 Interval Timer TM.H Adjustment

The interval timer time range can be adjusted from 100 ms to 500 ms. Normally, the timer should be set up at 500 ms.

If other than 500 msec is desired, then adjust pot R3 clockwise to reduce the time interval, or counter clockwise to increase the time interval.

For timing setting, it is recommended to run a short program (listing in page 13) to turn on IT.L. A program interrupt is generated every time the interval timer times out. By displaying the signal PINT.L (Pin #17 on backpanel), the time interval between program interrupts is the timing of the interval timer. Correct timing can then be obtained by adjusting pot R3. Adjust Pot R-3 is the bottom pot.

10.3 Conditional Mode Reset (Reset 1) One-Shot (TM3.H) Adjustment

The conditional mode reset one-shot can be adjusted from 3.5 ms to 34 ms or from 26 ms to 266 ms (refer to Paragraph 13.1.13)

For TM3.H one-shot timing setting, it is recommended to run a short program (listing in page 13) to turn on Reset 1.L. The TM3.H one-shot is normally being retriggered. As Reset 1.L is set, the retriggering pulse on the input to the one-shot is inhibited, and the one-shot proceeds to time out. A program interrupt is generated when TM3.H one-shot times out. Sync the scope on RST1.L signal (Pin #42) and observe the pulse width. RST1.L resets when TM3.H times out, therefore the ON time of RST1.L denotes TM3's timing. Correct timing can then be obtained by adjusting pot R5. Adjust pot R-5 is the middle pot. Counter clockwise direction on pot increases the time interval and clockwise decreases the time interval.

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	SHEET 7 OF 13	
		NCR The National Cash Register Company Electronics Division NewHome, Calif		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

The timing for TM3.H should be set to equal at least one character time. In two wire half duplex operation, the timing should be set to equal one character time plus four bit-time to take care of the delay within the data set when transferring character. For example, if a character has eight data bits, one start bit and one stop bit, then the total character length is ten bits long. If two stop bits are being used, then the character length will be 11 bits. If the transmission rate is 1200 BPS, the character time will then be $(10 + 4) \times 0.833 = 11.7$ ms for a ten-bit character and $(11 + 4) \times 0.833 = 12.533$ msec for a eleven-bit character.

In four-wire half-duplex operation, the TM3.H timing can be set to equal to one character time only. Thus for a ten-bit character, the time interval can be set at $(10 \times 0.833 \text{ msec}) = 8.33$ msec.

TM3.H timing could be set longer than the above described. It would not affect the I/O operation but as a result, it would slow down the system I/O operation between each message. If the TM3.H timing is set short of the above mentioned, then the adapter will enter the idle mode before the complete character is sent out resulting in erroneous character transmission.

11. MAINTENANCE AIDS

The following facilities are added to the C-692-700 Adapter for maintenance services.

11.1 Logically Disabling of the Adapter

The Adapter can be logically disabled from the system by grounding Pin 17 (PINT.L) and Pin 257 (DINT.L) on backpanel.

11.2 Intra-Adapter (Diagnostic Mode) Turnaround Capability

The I/O character handling functions can be program-tested using the diagnostic turnaround test. The diagnostic mode is entered by turning on bit 14 in conjunction with the normal output and input sequence. A character is outputted followed by a conditional mode reset. The same character is retrieved when entering the input mode after the mode reset with a sample I/O command. The turnaround character can then be compared with the original transmitted character to verify adapter operation. An I/O diagnostic connector (315-0523429) is used in conjunction with the software.

ORIGINATOR	DATE	TITLE	ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	SPEC. NO.	315-0523433	REV	C
ENGINEER	DATE	APPROVAL	DATE	NCR	The National Cash Register Company Electronics Division Hawthorne, Calif	SHEET	8 OF 13

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

11.3 Synchronization Pulses

Some network testing operations require the availability of synchronizing pulses to provide specific referencing when using external test equipment. This synchronization pulse is provided in the C-692-700, under program control, and is available at Pin 54 on the backpanel.

The program can cause a pulse to be generated with a SYNC function (bit 15 = 1). The pulse will be generated, subsequent to activation of the SYNC function, with the START bit of the first input character or output character, depending on the mode the adapter is in at the moment. The pulse will be 1 bit-time in duration, being terminated with the first data bit of that character. At the end of each pulse, the function is automatically deactivated, thus not requiring program action to reset it. The function is completely independent of all other mode and conditions functions.

11.4 Indicator Lamps

There are four indicator lamps on the Adapter:

Top Lamp	Input Mode
2nd Lamp	Ring Indicator Monitor
3rd Lamp	Output Mode
Bottom Lamp	Carrier ON Detect

The lamps, when lit, will signify the following:

Input lamp is on when input latch is set.

Output lamp is on when output latch is set.

Ring indicator lamp is on when ring indicator latch is set.

Carrier lamp is on when incoming carrier is on.

ORIGINATOR	DATE	TITLE	ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	SPEC. NO.	315-0523433	REV	C
ENGINEER	DATE	APPROVAL	DATE	NCR	The National Cash Register Company Electronics Division Hawthorne, Calif	SHEET	9 OF 13

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

11.5 Test Points

The following twelve test points are available at backpanel location for troubleshooting aid:

Term	Backpanel Location
CLA.GA	262
CNT1.GA	261
DINT.L	257
PINT.L	17
IPM.L	43
OPM.L	258
RDA.ZA	263
SD.GA	259
STC.L	264
STAT.L	16
OSC.GA	260
RST1.L	42

12. PREVENTIVE MAINTENANCE

No preventive maintenance is required on this unit.

13. INSTALLATION INSTRUCTION

When the Adapter is used in conjunction with C-697-700 position scanner, refer to the adjustment and requirement specifications drawing (315-0524405) for the installation instructions.

For first-level operation, once the adapter is plugged into a particular C-605 I/O Port, the Adapter Port number is thus automatically assigned, and the Adapter position number will be zero.

13.1 Adapter Option Implementation

13.1.1 Character Format and Code

Three switches (SW2, SW3, SW4) are used to "program" the peripheral character size. A character may be 5, 6, 7, or 8 bits long (including parity bit if used) and it will have one or two stop bits.

Set up switches for one of the following:

Fully counterclockwise is position "1" on all three switches

Fully clockwise is position "4" for SW2 and position "5" for SW3 and SW4

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	SHEET 10 of 13
		NCR The National Cash Register Company Electronics Division Hawthorne, Calif		

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

Character Size	Number of Stop Bit	Position of		
		SW2	SW3	SW4
8	1	1	1	5
7	1	2	2	5
6	1	3	3	5
5	1	4	4	5
8	2	1	5	1
7	2	2	5	2
6	2	3	5	3
5	2	4	5	4

13.1.2 Detect Space and Mark or Reverse Channel Option

In four-wire operation, the Adapter can be made to monitor for a continuous "space" condition on the received data circuit from the modem, which lasts for approximately 145 ms in duration. Once the "space" condition is seen for 145 msec, a signalling alarm program interrupt request is generated. If it is desired to enter the input mode upon detection of a long "space" from the remote terminal, it must be determined that the long "space" signal has ended. Thus, the Adapter is also equipped to monitor for a marking condition on the received data circuit from the modem. When this condition occurs, a signalling alarm program interrupt will also be generated.

When space and mark input detections are desired, the following wiring configurations are to be added to the backpanel using 007-8953108 30 AWG option wire.

Mark input: wire Pin 57 to Pin 62 (RDA. Z)

Space input: wire Pin 58 to Pin 59 (GND) to activate 150 msec continuous space detection

Both wires are to be added for this option.

In two-wire operation, where detect reverse channel on/off is desired, the following wiring configurations are required using 007-8953108 30 AWG option wire.

Reverse channel on: wire Pin 57 to Pin 64 (RRC. ZA)

Reverse channel off: wire Pin 58 to Pin 63 (RRC. Z/)

Both wires are to be added for this option.

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	SHEET 11 of 13
		NCR The National Cash Register Company Electronics Division Hawthorne, Calif		

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

13.1.3 TM3.H One Shot Time Range Option

Normally time range of this one shot can be adjusted from 3.5 ms to 34 ms for a transmission rate from 600 bps to 1800 bps (refer to paragraph 10.3).

If the adapter transmission rate is 300 bps or less, then hard wire from Pin 60 to Pin 61 on the backpanel. Use 30 AWG option wire (007-8953108). The time range of this one shot is now capable of being adjusted from 26 ms to 266 ms.

13.1.4 Echoplex Option

An Echoplex Option is provided with the Adapter to enable Datacom operation with teletypewriter terminals requiring this function. This option can be activated by hard-wiring Pins 56 (RDTTY.Z) and 62 (RDA.ZA) together on the backpanel using option wire 007-8953108.

13.1.5 Automatic Output Data Transfer Option

In systems in which the I/O programs are heavily burdened, it may be desirable to perform output data transfers automatically (on a message basis) via the C-605 data interrupt function, rather than character-by-character on a program interrupt basis. A one pole, two position rotary switch (SW-1) is provided in the Adapter to enable automatic output data transfer.

When the switch (SW-1) is at position one (last CCW position), the Adapter will perform program interrupt transfer. When the switch (SW-1) is at position two, the Adapter will perform automatic output data transfer.

13.2 Data Set Cable Installation (Refer to paragraph 7.2.)

The data set cable (315-0523421) is plugged onto pins 287 through 300 on the same port of C-605 backpanel.

13.3 Disabling Automatic Dialing Feature

If a system does not require Automatic dialing feature then the feature can be disabled by hard-wiring Pin 87 (PWI.V) to Pin 100 on the backpanel using 30 AWG option wire (007-8953108).

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	
		NCR The National Cash Register Company Electronics Division Newberry, Calif	12 of 13	

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS ± ; FRACTIONAL ± ; ANGULAR ±

PROGRAM FOR INTERVAL TIMER AND RESET 1 TIMING SETUP

PROGRAM IS SET UP FOR ADAPTER IN PORT "1" AND POSITION "0"

Program	0000	0803	0040	LD	A4	'0040'	I.T.
	0002	0603	0008	LD	A3	'0008'	
	0004	0613	0080	A LD	B3	'0080'	TANC Table
	0006	0601	0083	ST	A3	'0083'	
	0008	9981		B SET	A4	2	1
	0009	0813	0800	LD	B4	'0800'	
	000B	C700		BRLF		*+1	
	000C	0000	0000	WAIT1		0	
	000E	0803	0100	LD	A4	'0100'	RESET
	0010	0603	0013	LD	A3	'0013'	
	0012	C171		BR		A	
	0013	0003	CCCC	LD	A0	'CCCC'	200 msec
	0015	A07F		LOOP	A0	*	Delay
	0016	C171		BR		B	

NOTE: (1) Adjust Interval Timer start at location '0'
 (2) Adjust Conditional Mode Reset start at '000E'
 (3) If Adapter is to be located elsewhere, change Location 7 and 8 for proper port and position numbers

ORIGINATOR	DATE	TITLE	SPEC. NO.	REV
		ADJUSTMENT AND REQUIREMENT SPECIFICATIONS FOR C-692-700 ASYNCHRONOUS ADAPTER	315-0523433	C
ENGINEER	DATE	APPROVAL	DATE	
		NCR The National Cash Register Company Electronics Division Newberry, Calif	13 of 13	

REV	CHANGE	ER NO.	DFTS	CHECK	APPD	DATE
(A)	RELEASED TO PRODUCTION.	35-07332				
(B)	G9 REMOVED FROM ITEM 38; ADDED ITEM 61 (DWG OF ASSY "A" REV).	35-07480	S.S. 5-13-74	W.W.C. 5-13-74	R.P. 5-13-74	5-13-74
(C)	SHEET 2 ITEM 8 WAS 315-0529099, ITEM 9 WAS 315-0529095, ITEM 10 WAS 315-0529096, ITEM 11 REQD WAS 10; ADDED ITEM 62. (DWG OF ASSY "B" REV).	35-08565	S.M.K. 10/2/74	J.M. 10/16/74	P.J.B.	10-18-74
(D)	SHEET 5 ITEM 52 WAS 007-2501601.	35-09074	S.M.K. 10-2-74	J.M. 10/16/74	P.J.B.	10-18-74

M53-02-755
MODULES

						1			315-0523434		
MO	RFC NO.	PLANT LOC	DESCRIPTION			INTERPLANT USAGE (CODE)	REQD	NEXT ASSEMBLY			
MANUFACTURING OPTION FOR USE ONLY AT PLANT SHOWN							REPLACES DWG	315-0524912			
THIS DRAWING AND ANY ATTACHMENTS THERETO AND INFORMATION THEREON ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.						NCR DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA					
CLASS	MODEL	PLANT	CLASS	MODEL	PLANT	CLASS: M53			UNIT: COMMUNICATION ADAPTER		
M53	02	35				START: 2/1/74	FINISH: 2/4/74	NAME: BOARD-PLUGIN,			
						DFTS: A. ZAPATA			ASYNCHRONOUS ADAPTER		
DRAWING OF THE ASSEMBLY						CHKR: [Signature]			REV		
SHEET NO. 6 & 7			SIZE: D	DESIGNER: J. CELIO			315-0531322			D	
REV	A	B				APPD: P.	APPD:	CODE: 2-9045	COVER SHEET	SHEET 1 OF 7	

ITEM	REQD	SIZE	PART NO.	DESCRIPTION	PARTS LIST CHG. ER NO.	REMARKS
1	1	D	315-0524913	BOARD-PRINTED		
2	REF	D	315-0531321	SCHEMATIC-LOGIC		
3	REF	A	007-9999157	PERFORMANCE SPEC		
4	REF	A	007-9506300	ASSEMBLY SPEC		
5	REF	A	007-9502002	MARKING-GENERAL		
6	9	D	315-0520637	BUS BAR		
7	2	D	315-0520638	BUS BAR		
8	1	E	315-0529100	STIFFENER-P.C. BOARD	35-08565	
9	1	A	315-0529089	INSULATOR-CARD STIFFENER	35-08565	
10					35-08565	
11	5	A	007-6951204	RIVET-HOLLOW BRASS	35-08565	
12	1	A	007-7500001	SOCKET-CRYSTAL, PCB XY1		
13	2	A	007-2841010	EYELET-ROLLED FLANGE, BRASS		
14	7	A	007-1130124	CAPACITOR-0.1UF, 100V, ±20% C17,18,20,44,46,47,48		
15	1	A	007-1131525	CAPACITOR-560PF, 100V, ±20% C16		
16	2	A	007-1131532	CAPACITOR-2200PF, 100V, ±20% C10,19		
17	1	A	007-1156001	CAPACITOR-5UF, 20V, ±20% C12		
18	1	A	007-1157813	CAPACITOR-2.2UF, 6V, ±10% C14		
19	1	A	007-1157823	CAPACITOR-15UF, 6V, ±10% C13		
20	24	A	007-1158901	CAPACITOR-12UF, 6V+100%-20% C21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,49		
21	2	A	007-1159060	CAPACITOR-47UF, 6V, ±20% C11,15		

NCR	UNIT: COMMUNICATION ADAPTER	315-0531322	D
	NAME: BOARD-PLUGIN		
	ASYNCHRONOUS ADAPTER		
NCR PROPRIETARY		PARTS LIST	SHEET 2 OF 7

ITEM	REQD	SIZE	PART NO.	DESCRIPTION	PARTS LIST CHG. ER NO.	REMARKS
22	1	A	006-6020401	RESISTOR, 300Ω, ¼W, ±5% R27		
23	25	A	006-6020402	RESISTOR-1K, ¼W, ±5% R1,2,6,8,9,10,11,12,13, 14,15,23,24,25,26,28, 29,30,31,32,33,34,35, 38,40		
24	2	A	006-6020403	RESISTOR-1.1K, ¼W, ±5% R36,37		
25	3	A	006-6020415	RESISTOR-10K, ¼W, ±5% R7,18,22		
26	1	A	006-6020430	RESISTOR-6.8K, ¼W, ±5% R21		
27	2	A	006-6020447	RESISTOR-16K, ¼W, ±5% R4,39		
28	1	A	006-6020453	RESISTOR-390Ω, ¼W, ±5% R17		
29	1	A	006-6020489	RESISTOR-620Ω, ¼W, ±5% R20		
30	1	A	007-6700325	RESISTOR-360K, ¼W, ±5% R16		
31	1	A	007-6785254	RESISTOR VARIABLE-5K, .75 WATT, ±10% R19		
32	2	A	007-6785257	RESISTOR VARIABLE-50K, .75 WATT, ±10% R3,5		
33	5	A	007-1694601	CIRCUIT, INTEGRATED, (QUAD LINE DRIVER) K9,L7,L8*		*FEATURE ONLY
34	3	A	007-1694701	CIRCUIT, INTEGRATED (QUAD LINE RECEIVER) K8,L6,L9*		
35	15	A	007-1695001	CIRCUIT-TTL, NAND GATE (QUAD 2-INPUT) A3,C3,C4,D6,E6,F3,F4,F7, G2,G6,G8,H6,J4,J5,L5		
36	3	A	007-1695101	CIRCUIT-TTL, NAND GATE (DUAL 4-INPUT) D3,E7,K5		

NCR	UNIT: COMMUNICATION ADAPTER	315-0531322	REV
	NAME: BOARD-PLUGIN		D
	ASYNCHRONOUS ADAPTER	NCR PROPRIETARY	PARTS LIST

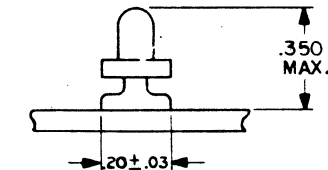
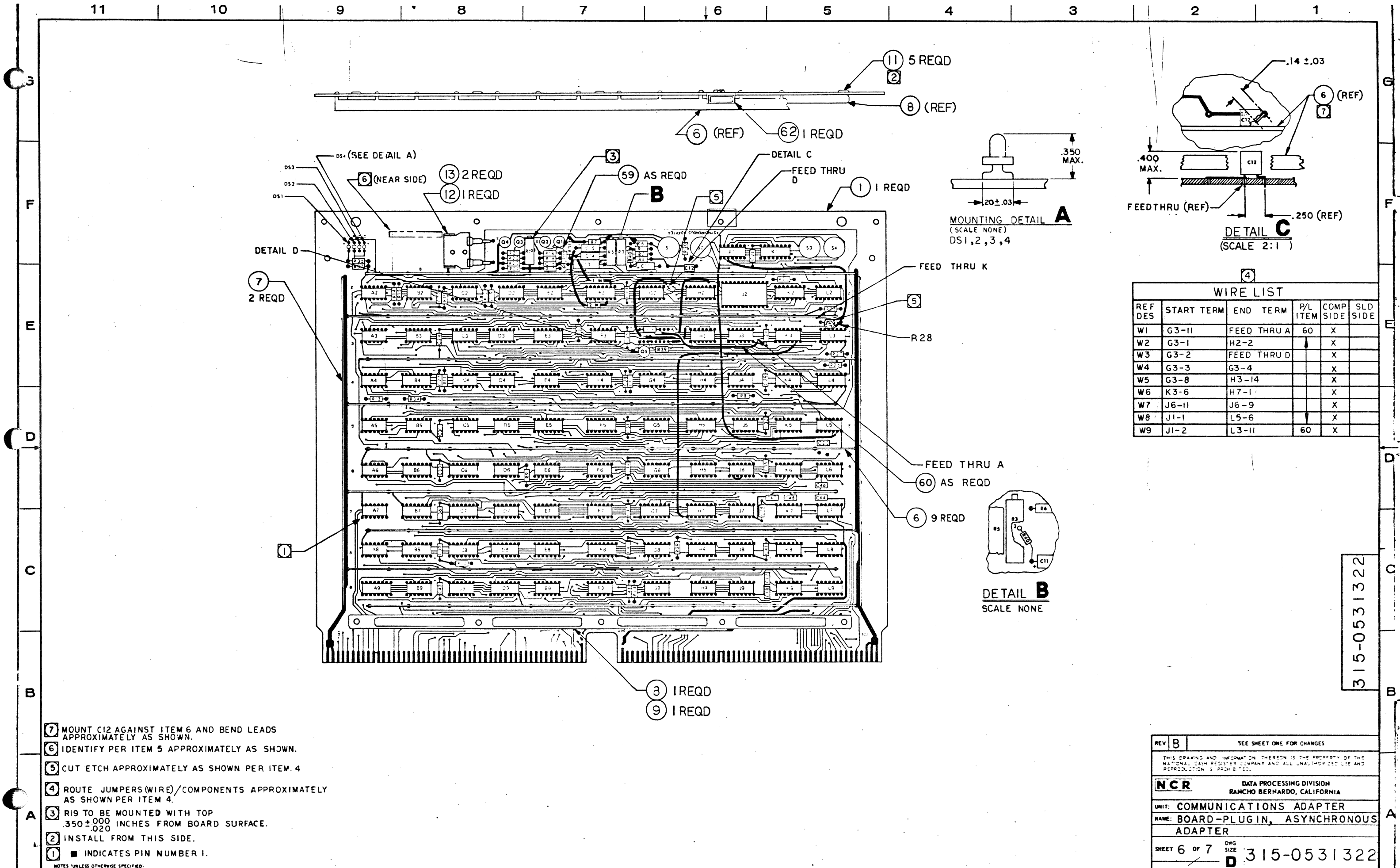
ITEM	REQD	SIZE	PART NO.	DESCRIPTION	PARTS LIST CHG. ER NO.	REMARKS
37	2	A	007-1695201	CIRCUIT-TTL, NAND GATE (SINGLE 8-INPUT) J8,J9		
38	20	A	007-1695301	CIRCUIT-TTL, HEX INVERTER A5,A8,B3,B9,C9,D2,D5,D7, E8,E9,F6,F9,G4,,H9, J1,J3,J7,K4,K6,K7	35-07480	
39	1	A	007-1695401	CIRCUIT-TTL, FLIP-FLOP (DUAL) G7		
40	2	A	007-1695801	CIRCUIT-TTL, NOR GATE (QUAD 3 2-INPUT 1 4-INPUT) E5,K1		
41	5	A	007-1695901	CIRCUIT-TTL, NAND GATE (TRIPLE 3-INPUT) D4,E2,E4,G5,J6		
42	8	A	007-1696101	CIRCUIT-TTL, 4-BIT LATCH A9,B4,D8,D9,E3,F5,H5,L4		
43	1	A	007-1696701	CIRCUIT-TTL, 1 OF 16 DCD J2		
44	3	A	007-1696902	CIRCUIT-TTL, HEX INVERTER (OPEN COLLECTOR) A2,A7,L3		
45	6	A	007-1697101	CIRCUIT-TTL, SHIFT REG (4-BIT) B6,B7,B8,C6,C7,C8		
46	1	A	007-1697201	CIRCUIT-TTL, 1 OF 10 DCD F8		
47	3	A	007-1697401	CIRCUIT-TTL, BINARY CO H7,H8,K2		
48	2	A	007-1698101	CIRCUIT-TTL, MULTIVIBRATOR (DUAL MONOSTABLE) F2,H2		
49	2	A	007-1698901	CIRCUIT-TTL, AND-OR-INVERT (DUAL) A6,B5		
50	2	A	007-1699201	CIRCUIT-TTL, AND GATE (TRIPLE 3-INPUT) B2,L2		

NCR	UNIT: COMMUNICATION ADAPTER	315-0531322	REV
	NAME: BOARD-PLUGIN		D
	ASYNCHRONOUS ADAPTER	NCR PROPRIETARY	PARTS LIST

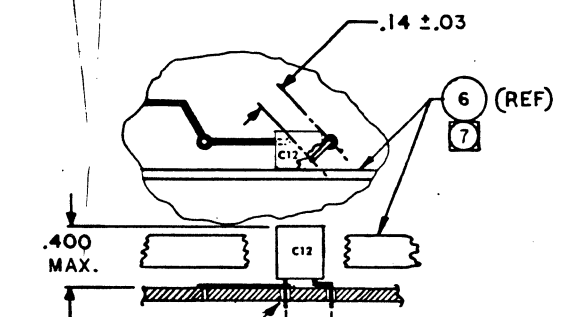
ITEM	REQD	SIZE	PART NO.	DESCRIPTION	PARTS LIST CHG. ER NO.	REMARKS
51	6	A	007-1699401	CIRCUIT-TTL, NAND GATE (QUAD 2-INPUT OC) A4,C2,C5,H3,H4,K3		
52	2	A	007-2502101	DIODE, SILICONE SWITCH CR1,2	35-09074	
53	4	A	007-2520502	DIODE-LIGHT EMITTING DS1,2,3,4		
54	1	A	007-7465501	TRANSISTOR, NPN SI Q5		
55	4	A	007-7465502	TRANSISTOR-NPN SI Q1,Q2,Q3,Q4		
56	1	A	007-7934202	SWITCH, ROTARY-PCB TYPE S1		
57	1	A	007-7934204	SWITCH, ROTARY-PCB TYPE S2		
58	2	A	007-7934215	SWITCH, ROTARY-PCB TYPE S3,S4		
59	A/R	A	007-8900809	TUBING, INSULATION		
60	A/R	A	007-9000001	WIRE-ELECTRICAL, INSULATED W1,2,3,4,5,6,7,8,9		
61	1	A	007-1676301	CIRCUIT TTL HEX INVERTER G9	35-07480	
62	1	C	315-0529082	TAB-SPACER, CARD	35-08565	

NCR	UNIT: COMMUNICATION ADAPTER	315-0531322	REV
	NAME: BOARD-PLUGIN		D
	ASYNCHRONOUS ADAPTER	NCR PROPRIETARY	PARTS LIST

11 10 9 8 7 6 5 4 3 2 1



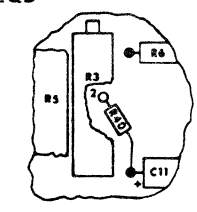
MOUNTING DETAIL A
(SCALE NONE)
DS1, 2, 3, 4



DETAIL C
(SCALE 2:1)

4

WIRE LIST					
REF DES	START TERM	END TERM	P/L ITEM	COMP SIDE	SLD SIDE
W1	G3-11	FEED THRU A	60	X	
W2	G3-1	H2-2		X	
W3	G3-2	FEED THRU D		X	
W4	G3-3	G3-4		X	
W5	G3-8	H3-14		X	
W6	K3-6	H7-11		X	
W7	J6-11	J6-9		X	
W8	J1-1	L5-6		X	
W9	J1-2	L3-11	60	X	



DETAIL B
SCALE NONE

- 7 MOUNT C12 AGAINST ITEM 6 AND BEND LEADS APPROXIMATELY AS SHOWN.
 - 6 IDENTIFY PER ITEM 5 APPROXIMATELY AS SHOWN.
 - 5 CUT ETCH APPROXIMATELY AS SHOWN PER ITEM 4.
 - 4 ROUTE JUMPERS (WIRE)/COMPONENTS APPROXIMATELY AS SHOWN PER ITEM 4.
 - 3 R19 TO BE MOUNTED WITH TOP .350 ± .000 INCHES FROM BOARD SURFACE. .020
 - 2 INSTALL FROM THIS SIDE.
 - 1 ■ INDICATES PIN NUMBER 1.
- NOTES UNLESS OTHERWISE SPECIFIED:

11 10 9 8 7 6 5 4 3 2 1

315-0531322

REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA	
UNIT: COMMUNICATIONS ADAPTER	
NAME: BOARD-PLUGIN, ASYNCHRONOUS ADAPTER	
SHEET 6 OF 7	DWG SIZE D 315-0531322

11

10

9

8

7

6

5

4

3

2

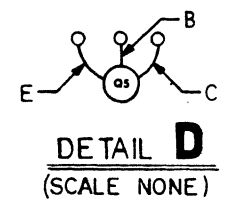
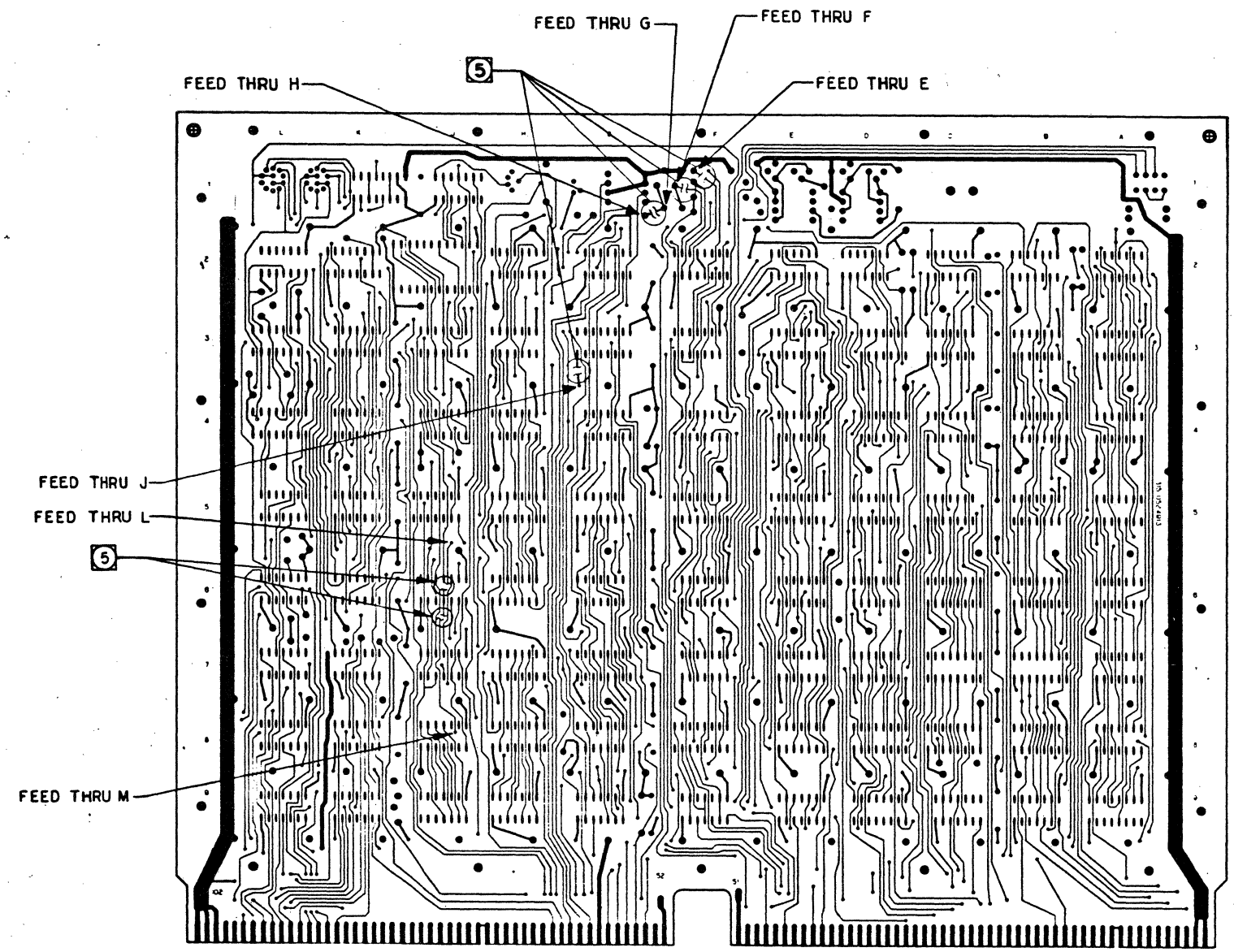
1

G
F
E
D
C
B
A

G
F
E

CONDUCTOR CUT LIST

CUT NO	CUT BETWEEN	COMP SIDE	SLD SIDE
1	H2-2	FEED THRU D	X
2	F2-2	FEED THRU F	X
3	F2-14	FEED THRU E	X
4	G3-8	FEED THRU J	X
5	FEED THRU G	FEED THRU H	X
6	L3-11	FEED THRU K	X
7	J6-11	FEED THRU L	X
8	J6-11	FEED THRU H	X



315-0531322

REV B	SEE SHEET ONE FOR CHANGES
THIS DRAWING AND INFORMATION THEREON IS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY AND ALL UNAUTHORIZED USE AND REPRODUCTION IS PROHIBITED.	
NCR	DATA PROCESSING DIVISION RANCHO BERNARDO, CALIFORNIA
UNIT: COMMUNICATIONS ADAPTER	
NAME: BOARD-PLUGIN, ASYNCHRONOUS ADAPTER	
SHEET 7 OF 7	DWG SIZE D 315-0531322

11

10

9

8

7

6

5

4

3

2

1

315 - 0523426

REF 315-0523425

I. Introduction to F01 Feature

This feature kit contains the necessary information to add Bell data set interfacing capability to the C-692-700 Adapter

II. Contents

- a) Page 2 - Parts List
- b) Page 3 - Installation Instructions

THIS DRAWING REMAINS THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY ELECTRONICS DIVISION (NCR) AND THE DISCLOSURE OR USE OF THE DESIGN AND MANUFACTURING INFORMATION CONTAINED HEREIN IS EXPRESSLY LIMITED BY THE TERMS OF PRODUCTION IS PROHIBITED WITHOUT THE PRIOR WRITTEN PERMISSION OF NCR

NCR THE NATIONAL CASH REGISTER COMPANY ELECTRONICS DIVISION HARTFORD, CALIFORNIA

REV	EFFECTIVITY	ISSUE	35 REV. 12	DATE	APPROVED AND DATE	UNIT NAME
C-692-700	35-	(A)	1498	8/10/71	R. Young	C-692-700 ASYNCH ADAPTER
		A	OVER-34215			PART NAME KIT FEATURE (BELL DATA SET INTERFACE KIT)
						DESCRIPTION DATE DRAWN DATE CHECKED DATE
					R. Young	8/10/71
					R. Young	8/10/71
					R. Young	8/10/71
					L. Young	8/10/71
						315 - 0523426

REV	QTY	DESCRIPTION	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
1	1	BELL DATA SET CABLE										

NCR DATA PROCESSING DIVISION

PARTS LIST - WIRING ASSEMBLY

EFFECTIVITY: C-692-700 1 & UP
C-692-700

DESCRIPTION: KIT FEATURE (BELL DATA SET INTERFACE KIT)

DATE: 8/10/71

PART ASSEMBLY: 315-0523425

FIELD EFFECTIVITY: 1 & UP

DATE: 8/10/71

APPROVAL: DATE DATE DATE DATE

RECEIVED OCT 23 1972

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.


TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS: .001 PRACTICAL ANGULAR

GENERAL DESCRIPTION OF FEATURE F01

If the C-605 housed C-692-700 Adapter is to be connected to a remote terminal via data sets, then the data set cable will have to be used. One end of the cable is plugged into the C-605 or adapter cable back-panel and the other end plugged into the Bell data set.

Instructions:

1. Remove adapter in-house cable (315-0523424) if present, from backpanel slot where the featured adapter is located.
2. Install Bell data set cable (315-0523421) Berg connector end in pins 287-300 of the slot where the featured Adapter is located.
3. Connect cannon-connector end of Bell data set cable to mating cannon connector of the Bell data set.

ORIGINATOR	DATE	TITLE	KIT FEATURE (BELL DATA SET INTERFACE KIT)	SPEC. NO.	REV
				315-0523426	A
ENGINEER	DATE	APPROVAL	DATE	 The National Cash Register Company Electronics Division Hawthorne, Calif.	
				SHEET 2 OF 2	

FIELD PRINT

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE NATIONAL CASH REGISTER COMPANY, ELECTRONICS DIVISION, AND SHALL NOT BE REPRODUCED, OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

TOLERANCES: Unless otherwise specified - DECIMAL DIMENSIONS: ; FRACTIONAL: ; ANGULAR: ;

GENERAL DESCRIPTION OF F02 FEATURE

If the C-605 housed M53-02-755 Adapter is to be connected to a terminal within 50-foot radius, it may not be necessary to use data sets. The in-house cable may be used instead. The terminal should come equipped with a 50 foot data set cable. This data set cable will be plugged into one end of the in-house cable. The other end of the in-house cable will be plugged into the terminal.


Instructions:

1. Remove adapter data set cable (315-0523421), if present, from backpanel from slot where adapter is featured.
2. Install in-house cable (315-0523424), Berg connector end, into backpanel, pins 287-300, in slot where featured adapter is located.
3. Connect cannon-connector end of in-house cable to mating cannon-connector of the remote terminal's data set cable.

NOTE:

If C-260 Thermal Printer is used, then:

1. Pull out jumper in connector P1-287 and tape.
2. Add jumper 315-0513221:
One end to P1-287 (EIACF) with sleeving off.
Other end to pin 52 (+12V).

ORIGINATOR	DATE	TITLE	KIT FEATURE (IN-HOUSE INTERFACE KIT)		SPEC. NO.	REV
					315-0523427	B
ENGINEER	DATE	APPROVAL	DATE		The National Cash Register Company Electronics Division Northboro, Calif	SHEET 2 of 2