MICRO SYSTEMS

FIELD

BULLETINS

November 06, 1983

MICROSYSTEM PRODUCT FIELD BULLETINS

You have been selected to be on the mailing list of Microsystems Product Field Bulletin (MPFB). MPFB previously was known as the Early Warning TWX system. The idea is to start fresh, reissue all the old EWT's, add those that were to go into the system, and update the information contained in them.

The numbering scheme has also undergone a change. Instead of the old file system, all MPFB's will be in semi-chronological order, with two indexes used for quick reference. The "semi-chronological" order results from a functional grouping of the old MPFB's and chronologically adding all new MPFB's.

The first index is a table of contents. This gives a one line description of each MPFB, its number and the date it was submitted. The second index is designed to act as a cross-reference, signifying all MPFB's that relate to a particular product.

If you have any questions, information, MPFB's you would like to submit (or see), would like to add names to the mailing list; or would like to subtract your name from the list, please call Field Engineering, Tempe Operations at (602) 829-3100. Ask for the Microsystems Product Field Bulletin Coordinator.

I hope this proves to be an effective vehicle for disseminating information to those concerned.

This information is designed for use by Motorola Employees only. And is not to be transmitted to customers. Abuse may restrict the availability of future information.

Any suggestions on the format, the cross reference or other ideas that would make MPFB more useful to you, are encouraged.

Sincerely yours;
MPFB Coordinator

SK/kf

MICROSYSTEMS PRODUCT FIELD BULLETINS

UPDATE-(11/03/83)

Enclosed are a new round of Microsystems Product Field Bulletins (MPFB). The packet consists of an updated index and cross index to replace the earlier indexes, and MPFB's 0047-0066.

This information is designed for use to Motorola employees only. And is not to be transmitted to customers. Abuse may restrict the availability of future information.

If you have any questions, or suggestions on the format, or have any MPFB's you would like to submit (or see), please call Field Engineering, Tempe Operations at (602) 829-3100. Ask for the MPFB Coordinator.

Sincerely Yours,
MPFB Coordinator
SK/bd

Date: April 16, 1982   MPFB 0001

Product Type: CDC 300 MB Hard Disk   Contributed By: MQ

Contact: Hardware Specialist   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   CDC 300 HARD DISK INSTALL ON EXORMACS

    It has been brought to my attention that there are some questions
    concerning installation of the CDC 300 Mb Hard Disk on the EXORmacs. Here
    are a few things to check for when installing it;

****** NOTE : Remember, we are not responsible for installation of this disk,
              and we do not support the 300 Mb, but if you find yourself in
              this situation, then maybe these things will help.

                  1.) Should be set for 64 Sectors per track. Remember!!,
                       sector numbering is from 1-64, not 0-63... A06 board.
                  2.) If disk is daisy chained with another type there is a
                       switch to select this in the disk.
                  3.) If installing on a system that is running 2.1 VERSAdos,
                       it will work, but the new release of 3.0 VERSAdos is
                       designed for use with this drive, and will probably
                       work much better.

****** Note : The CDC F.E. will usually set up the drive and test it on a FTU,
              make sure you tell him what to set it up like, all you will have
              to do is connect the cables and initialize it...

Date: April 22, 1982   MPFB 0002

Product Type: 32-96 MB. Hard Disk   Contributed By: CH

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   CDC 300 HARD DISK CHANGES

        For Information only;

        You will find a few changes in the Hard Disks that you install in the
field from now on, they are as follows:

        There are no longer screws securing the Electronics Module under the
Disk Chassis, there are only two(2) screws in the hinge of the module. Also be
careful, the new Electronics Modules are being made of plastic, and the
Absolute filter has now got a Velocity sensor attached to the top of it. As of
now these are the only thing that have changed...

Date: April 15, 1983   MPFB 0003

Product Type: CMD DRIVE   Contributed By: PT

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

###

Symptom / Problem   BYPASSING THE CDC INTERLOCKS

        The interlocks have been changed in the new CDC CMD disk drives, and
there is a way around the interlocks of both disk drives for troubleshooting
purposes.

###
Solution / Fix

        The deckdown switch has been moved and redesigned. Instead of a
physical switch like the old ones have, the new deckdown switch is a magnetic
pickup switch and comes together when the deck is closed (this switch is
located on the bottom center of the deck). You can test the interlock circuit
by disconnecting the four wire plug going into the front panel board and
shorting pin 3 to pin 4 (of the plug).

**** NOTE ****   NO NOT ALLOW HEADS TO LOAD ON A DRIVE THAT HAS THE
                   INTERLOCKS REMOVED FROM THE CIRCUIT

Two other changes: (1) They moved the pack in place switch, from the left rear
of housing to the right side of the housing; (2) They added an air flow sensor
that detects the amount of air flow out of the absolute filter (and there is
what looks like a set screw in the air line between the abosolute filter and
the switch.)

Date: November 16, 1982   MPFB 0004

Product Type: EXORdisk II / III   Contributed By: TE

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   _x_ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   BYPASSING THE CDC INTERLOCKS

        Some customers are changing MDOS boot ROMS, to replace Parallel
Printer Drivers with Serial Printer Drivers. The last two (2) bytes (VERSION
NUMBER and DRIVE TYPE) must NOT be changed or the FORMAT command will fail.
This applies to all Floppy Disk units running under MDOS... Beware!! Its also
possible under XDOS...

1

Date: September 14, 1983   MPFB   0005

Product Type: HDS-400 on VERSAdos 4.21   Contributed By: MM

Contact: Software Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

##

Symptom / Problem   MULTI-DROP HDS-400 ON EXORMACS

        In an EXORmacs Multi-drop environment, each HDS-400 that is not in
transparent mode to the EXORmacs requires a separate copy of the program
'GHOST' to be resident in memory. The GHOST program requires approximately
100K bytes (decimal), including buffer areas. The newsletter refers to two
patches to help save space by: (1) reducing the size of the data area, and,
(2) allowing the executable portion of GHOST to be shareable.

>>>   CONTRARY TO THE NEWSLETTER only the first patch is applicable to the
released version of the GHOST software. The released GHOST program was linked
in such as way that program and data share the same segment.

        Future releases should have both these changes incorporated.

##
Solution / Fix

        (1) Reduce the size of the data area:
                =PATCH GHOST.LO
                11F58
                20   (was $60)
                .
                Q

        NOTE: The reference to two patches may have only been in early
               versions of the customer newsletter. Later versions included
               the above patch.

Date: October 15, 1983   MPFB 0006

Product Type: EXORmacs   Contributed By: RC & SK

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   EXORMACS BOARD REV LEVELS AS OF 10/15/83

        This should come in hand. Here is a list of the most up to date
EXORmacs Rev levels, as of 10/15/83...

        Debug - New Style A - P
                 Old Style Z - AS
        Mpu   - BA
        Mem   - (128K)   AR - AW
                 (256 & 512)   S
        Dim   - AP
        Uipc - AB - AM
        Mccm - BG - BH
        FDC   - BK

Date: June 4, 1982   MPFB 0007

Product Type: EXORmacs Debug Board   Contributed By: PT

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   MAINTENANCE DOCUMENTATION ERROR

        All of the maintenance manuals show the different types of ROM chips
that can be used on this board. However, there is no Pins 11 and 12;
therefore, only the TMS2716 chip can be used.
        Documentation will correct this problem in the new manuals.

Date: June 9, 1982   MPFB   0008

Product Type: M68KDM   Contributed By: MQ

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   _x_ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   KDM TO MCCM ON EXORMACS

        Beware... When connecting a KDM board to a MCCM port when under 3.0
VERSAdos, the new software is such that you will not be able to communicate
with the EXORmacs in transparent mode. Unless you do the following:

        1.) Jumper pins #4 and #5 together on one end of the RS-232 "D"
             Connector.

        2.) If using the M68KDM Users Guide, it will show how to enter the
             command to download from the EXORmacs. Don't enter it that way.
             Do it this way:

                 READ ;x=COPY FILENAME.MX,#CNxx

                 where xx = EXORmacs Port Number

Date: August 30, 1982   MPFB   0009

Product Type: EXORmacs W/ 3.0 VERSAdos   Contributed By: MQ

Contact: Hardware Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   KDM TO MCCM ON EXORMACS

     Beware... When installing VM11-2 Memory boards (512K) into the
EXORmacs Chassis, be sure to address the 512K board at 00000. Add any 128K ram
after all the 512K's. There is a problem with Bus Trap Errors when the 512K
boards are after the 128K's. Also, remember to remove the bus arbitration
jumpers in front of the 512K's.

Date: May 17, 1982   MPFB 0010

Product Type: VERSAdos 3.0   Contributed By: MM

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   VERSADOS 3.0 LIST UTILITY PATCH

        The VERSAdos 3.0 LIST command causes the first line of text to be
appended to the header line on each new page if the output was being sent to an
MCCM port. The following patch is found in an Addendum to M68000 VERSAdos
SYSTEM FACILITIES REFERENCE MANUAL, M68KVSP(A1).

****
Solution / Fix

```
        =PATCH LIST.LO
        M 0
        '042682 3'
        .
        M 1250;DI
          BSR.L  $13EE
        .
        M $13EE;DI
          MOVE.L $2F6(PC),D1
          PEA    $274(PC)
          SUB.L  (A7)+,D1
          RTS
        .
        Q
        =END
```

Date: May 17, 1982   MPFB 0011

Product Type: VERSAdos 3.0   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   VERSADOS 3.0 SPOOLER UTILITY PATCH

        Following are patches to: (1) eliminate the banner in the spooler
and, (2) eliminate the automatic form feed every time the printer is assigned.
These should be useful for those customers wanting to cut down on the amount of
paper being produced by VERSAdos 3.0

****
Solution / Fix

```
        =PATCH SPL.LO
        1B7E
        4E75            (WAS 41EC)
        .
        1DDE
        42804E75        (WAS 082C0005)
        .
        Q
        =PATCH VERSADOS.SY
        09900           (START OF .PRT)
        24E
        60              (WAS 66)
        .
        Q
        =END
```

Date: May 17, 1982   MPFB 0012

Product Type: 68K SYMBUG/A   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   68K SYMBUG PATCH

        Usage of the TASK command causes the task note level to be changed
unpredictably regardless of the note level specified in the command (if any).
The note level is usually changed to a value that cannot be displayed with the
STAT command. The result of the bug is usually that set breakpoints will not
be enabled at execution time. (This problem with 68K SYMBUG/A 2.00 is written
up in SPR #282).

****
Solution / Fix

```
        =PATCH SYMBUG
        M 44AA;DI
          CMP.B    #1,D0
          BEQ.S    **6
          MOVE.W   D2,28(A4)
          BSR      $3E94
          .
        Q
        =END
```

Date: August 30, 1982   MPFB 0013

Product Type: VERSAdos 3.0   Contributed By: MM

Contact: Software Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   VERSADOS 3.0 .FHS CALL TO RECEIVE LU PATCH

        The VERSAdos 3.00 '.FHS' call to receive Logical Units will not work
unless the task is a system task.

****
Solution / Fix

        =PATCH VERSADOS.SY
        0 $5800
        M 9FA;DI
          BNE.S *+$1A

          .
        Q
        =END

Date: September 1, 1982   MPFB 0014

Product Type: VERSAdos 3.0 SYSGEN   Contributed By: MM

Contact: Software Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   VERSADOS 3.0 SYSGEN CORRECTIONS

        The VERSAdos 3.0 SYSGEN file IOC.SA has several errors which are: (1)
you can't sysgen for 0 local printers on the debug board, (2) you can't sysgen
for two UDC's and, (3) you can't sysgen for the four local terminals sysgen
allows for.

        The following corrections to IOC.SA will correct these problems.
These patches refer to line numbers run on the standard IOC.SA file that has
had a listing made with the command,
        =LIST IOC.SA,#PR;L=1000
thus making a similar listing is required for these patches.

****
Solution / Fix

        (1) Following line: 1283   ENDC , add the following line
                                      ENDC

        (2) Change line: 1285   IFNE /NOLPRT-1 , to
                            1285   IFGT /NOLPRT-1

        (3) Change line: 1343   IFNE /NOLPRT-1 , to
                            1343   IFGT /NOLPRT-1

        (4) Delete line: 1346   ENDC

        (5) Change line: 1357   IFGT /NOLTERM-2 , to
                            1357   IFGT /NOLTERM-3

        (6) Change line: 1395   CCB 'CRD1',XTIPCA,254, ... , to
                            1395   CCB 'CRD2',XTIPCA,254, ...

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: September 3, 1982   MPFB 0015

Product Type: Data I/O System 29   Contributed By: CH

Contact: Software Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

###

Symptom / Problem   DATA I/O 29 PERSONNEL CONTACT

        If you run into a situation that a customer has a Data I/O Prom
Programmer System 29, and is experiencing problems, they should get in contact
with Steve Montgomery at 800-426-1045. Data I/O System 19 works ok. This in
regards to using the System 29 with the EXORmacs PP1 software (PROM Programmer

Date: September 14, 1982   MPFB   0016

Product Type: Data I/O System 29   Contributed By: MM

Contact: Software Specialists   Information Type: _x_ As Needed
        Field Engineering   ___ Mandatory
        Tempe Operations   ___ Information Only
        (602) 829-3100

****
Symptom / Problem   VERSADOS 2.1 & 3.0 HARDWARE INFO LOCATION

    Patch locations for the Multi-user Hard Disk version of Vdos 3.0 and Vdos
    2.1

Name	Vdos 2.1	Vdos 3.0	
CN00	15CBC	17376	For Terminal Hardware information, see
CN01	1572A	173F4	M68KSYSGEN(D2), pg 5-6, Example; To
Pr1	Debug	172F4	change terminal to 1200 baud, change
CN10	14F74	16F80	the zeros to $8E070050.
CN11	14FE2	16FFE	For 703 Centronics, the printer word
CN12	15050	1707C	should be Zeros, for B-600 models it
CN13	150BD	170FA	should be $80010A00.
Pr (mccm)	14EFE	16EFE	
&EET		11300	Used for security, see Facilities manual,
			M68KVSF(D1), Pg 5-10, for a description of
			what to do with &EET, in installing
			permanent security.

Note: &EET is taken from the last page of the SYSGEN listing, from the segment
named &EET and not the TASK &EET!!! This value may vary depending on what the
user has sysgenned.

Date: September 14, 1982   MPFB 0017

Product Type: VERSAdos 3.0 MCCM FIRMWARE   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****
Symptom / Problem   VERSADOS 3.0 MCCM 'FEATURES'

_____

VERSAdos 3.0 MCCM firmware has many "new" and customarily "undocumented"
features. These are:

1. The firmware strips out nulls, #00, even in image mode. (SPR 360)

2. The firmware considers $DE as an end of message terminator.

3. The firmware considers $8D as an end of message terminator from a TTY
    device.

4. The firmware inhibits the ASCII FILE TRANSFER program from working
    correctly MCCM-MCCM, or MCCM-HOST. (SPR 425)

5. If you output exactly 80 characters to an MCCM port, NO <cr><lf> is sent at
    the end of the line, even if the port was sysgened for a line length of 132
    characters. (SPR 320).

6. Console I/O of a data block greater than 32766 bytes will result in only
    the first character being sent out. (SPR 394).

****
Solution / Fix

_____

    If a customer has to transmit binary data through the MCCM he may want to
    get the source and modify it, or transmit everything in S-record format to
    avoid getting one of these early terminators.

Date: October 15, 1982   MPFB   0018

Product Type: VERSAdos 3.0 & Modems   Contributed By: MQ & MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100
****
Symptom / Problem   CHANGE MCCM PORT FOR MODEM HOOK UP

_____

        Many customers would like to add a modem to their EXORmacs with VERSAdos
    3.0. The following procedure may prove helpful.
****
Solution / Fix

_____

1. Use the current version of the MCCM card.
2. Move the appropriate jumpers on the MCCM card to the modem position:, i.e.
    block K7 for CN11 or CN21,
    block K8 for CN10 or CN20,
    block K9 for CN13 or CN23,
    block K10 for CN12 or CN22.
3. Some software information must now be modified to indicate the existence of
    the modem on that port and any change in the baud rate for that port. This
    can be done with a new SYSGEN or patches to VERSADOS.SY.
4. If resysgening: (a) the DCB for the device must be changed from an EXORterm
    ($1E) to a non-EXDRterm ($1F) (see page 5-3 of the sysgen manual
    M68KSYSGEN/D2). This parameter will have to be changed in the file IDC.SA,
    /6; (b) The sysgen hardware configuration must be changed to reflect any
    new baud rate, etc. This is the HWIFCNxx parameter in SYSCMD.SA and is
    described on page 5-6 of the Sysgen manual. For example, for a 300 baud
    modem the configuration information would be $84050350.
NOTE: You do not set the bits up for modem, VDOS talks to the modem as if it
        was a non-EXORterm terminal, the modem does the rest.
5. If patching VERSADOS.SY for the STANDARD 3.0 MULTI-HARD sysgen:
    for CN10   for CN11   for CN12   for CN13
    = PATCH VERSADOS.SY
    > 0 16200
    > D3A   DB8   E36   EB4
      1F   1F   1F   1F (was 1E)
      .   .   .   .
    > D80   DFE   E7C   EFA
      84050350   (Whatever you need for the hardware configuration
                        information, see item (4))
    > Q
6. Offsets into the control block via eyeballing:
    offset   contents   comments
      0   CNxx   Name of port in ASCII
      $20   1E   change to 1F, see item (4)
      $66   00000000   change to hardware config info

Date: October 15, 1982   MPFB 0019

Product Type: VERSAdos 3.0 Editor   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Symptom / Problem   VERSADOS 3.0 EDITOR HANG UP PATCH

    The VERSAdos 3.0 Editor will occasionally hang up the keyboard and not
    accept input. The Editor sends an I/O packet to the EXORterm to do output
    with input. The output portion contains several bytes of EXORterm 155
    control information, one of which is a byte to unlock the keyboard. The
    firmware in the EXORterm does not always get the keyboard unlocked before
    it starts waiting for keyboard input.

    The following patch is not a cure all, but should provide an improvement.

****

Solution / Fix

    The following patch will help in eliminating this problem by sending 2 null
    bytes with the output control bytes. This gives the firmware time to do
    the keyboard unlock before turning around for input.

```
=PATCH E.LO
M 0
  '082582P3'
.
M $AA8;DI
  DC.W $8EA6
  DC.W $D290
  DC.W 0
.
O $F00
M $16E6;DI
LEA $AA7-0(A5),A6
NOP
NOP
NOP
.
M $4040;DI
  LEA $AA8-0(A5),A6
.
M $4048;DI
  LEA $AAD-0(A5,A6
.
QUIT
```

Date: August 1, 1983   MPFB 0020

Product Type: MCCM General Information   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

##
Information   07.14.83mlm

MCCM General Information & Errata

When the MCCM receives a character, the character is first placed into a five
character queue. If another character is placed into this queue before the
first one was removed, then CTS (Clear to Send, RS-232 pin 5) is "dropped"
(logical zero) to tell the sender to wait momentarily. This occurs only if the
I/O request was an Image Read, Formatted Reads will allow the character to be
overwritten. If the sender does not wait, characters are continued to be saved
into the five character queue. Another task in the MCCM looks at the character
queue. Another task in the MCCM looks at the character queue and pulls the
characters out of it and into a 256 byte queue. When the 256 byte queue is
about half full, or the end of the line is encountered ($0D, $8D, $DE), the
MCCM does DMA to the 68000 memory. Note that all nulls ($00) are stripped as
they are received by the MCCM.

If the user is doing "Image Read/No Echo" (Image mode), no character is echoed,
except it appears, that a carriage return echoes a line feed - carriage return
(SPR 677). A major advantage to Image mode reads is that the MCCM will buffer
up characters between Image Read requests if the requests are made before the 5
byte buffer is full. In Formatted Reads, all characters between the completion
of one I/O request and the next I/O request are lost. Using Image mode reads
reduces the possibility of data loss; this feature was originally developed to
work with the Data I/O PROM Programmer software, PP1.

The MCCM does not have a 'real' X-ON/X-OFF feature. If it receives a control-W
it will continue sending characters until the end of the current record. Most
X-ON/X-OFF features allow you to pause within a record, but the MCCM was
designed for record oriented I/O and does not presently have this capability.
But, if the 2661's CTS line drops, RS-232 DTR (Data Terminal Ready), the 2661
will stop transmitting when its shift register is empty. Thus the MCCM will
stop transmitting after the current or next character has been transmitted.

If you output exactly 80 characters to an MCCM port, no line feed - carriage
return is sent at the end of the line, even if the port was sysgened for a 132
byte line.   This can cause problems for those users with serial printers (SPR
320).

When inputting records greater than 255 bytes in Format mode, the I/O request will terminate on the 255th character and a "EA" error, DATA OVERRUN, is returned to the requester (SPR 799). Inputting in Image mode is also limited to 255 bytes per record. (For example, enter "=COPY #,FILE", and type in 255 characters). The I/O request for input will hang on the 248th character if the terminal you request to do I/O from is not your default logon terminal.

Whenever you receive a VERSAdos IOS error code of "E8", CHECKSUM ERROR, the communications chip actually has encountered a framing error during data transmission.

If the user is doing Formatted Reads (Pascal, COPY command, etc.) each character is echoed, except that a carriage return echoes a line feed - carriage return. This is true unless the sender begins sending data as soon as the line feed character is received. In this case, the MCCM will echo a carriage return with the next record but no line feed (SPR 798 says a 0.157 second delay between receiving the line feed and sending the next block of characters will correct this, unverified SPR).

The MCCM can not keep up with full 9600 baud on all four serial ports. But revision 1.08 of the MCCM firmware will allow ONE of the serial ports to keep up with a full 9600 baud line if there is NO activity on any other MCCM port (including the printer port). The common error from trying to do full 9600 baud communication, and the MCCM not being able to keep up with it, is a DATA OVERRUN ERROR.

Date: August 1, 1983   ***CONFIDENTIAL***   MPFB 0021

Product Type: EXORmacs software (IPL)   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100
****

Information   03.22.83mlm

         RESETTING SECTOR 0 TO GET IT TO POINT TO IPL.SY

1. Do a directory of IPL.SY to locate where it is on the disk:
   =DIR 0.&IPL.SY;A
   DIR VERSION 111781 3   3/22/83   15:20:20
   SYS:0000..IPL.SY

		LOG	# OF				REC	KEY	FAB	DB	DATE	DATE
START	END	EOF	RECORDS	WC	RC	FT	LEN	LEN	LEN	LEN	CHANGED	ACCESSED
$42AC	$42CD	-	-	PP	PP	C	-	-	-	-	3/2/83	3/7/83
SIZE	34/$22											

   TOTAL SIZE   34/$22
   NUMBER FILES RETRIEVED =   1

2. Locate the start field and the total number of sectors for this version of
   IPL.SY. In the example above IPL.SY starts at $42AC and is $22 sectors
   long.

3. Do an interactive DUMP on the volume to change sector 0 of the disk. You
   may have to terminate the spooler and any printer tasks before you can have
   access to the volume.
   =DUMP #HD00;I
   >R 0   {Read sector zero into the change buffer}
   >M 16   {Begin changing at offset $16 in the change buffer}
    00 '.'?42<cr> {Change the Physical Sector Number to the one found in}
    00 '.'?AD<cr> {Step 2 PLUS ONE, bypassing Loader Info Block}
    00 '.'?<cr>   {Skip the next byte}
    00 '.'?21<cr> {Enter the length of IPL.SY, found in step 2, MINUS 1}
   >D   {Display the changes}
   SN=$0

```
00   53 59 53 20 00 00 00 00   00 01 00 81 00 00 00 8A   SYS .............
10   00 00 00 00 00 00 42 AD   00 21 00 00 00 00 00 00   ......B..!........
20   00 00 00 00 03 ED 20 20   20 20 20 20 20 20 20 20   ......
30   20 20 20 20 20 20 20 20   20 20 30 33 30 30 F4 F7                 0300..
40   0F 1E 2D 3C 4B 5A 69 78   87 96 A5 B4 C3 D2 E1 F0   ..-<KZix.........
50   0F 1E 2D 3C 4B 5A 69 78   87 96 A5 B4 C3 D2 E1 F0   ..-<KZix.........
60   F1 F2 F4 F8 F9 FA FC FE   FF 7F BF DF EF 6F AF CF   ...............o..
70   4F 8F 0F 07 0B 0D 0E 06   0A 0C 04 08 04 02 01 00   O................
80   00 00 00 00 00 00 00 00   00 00 00 00 00 82 00 08   .................
90   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
A0   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
B0   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
C0   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
D0   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
E0   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   .................
F0   00 00 00 00 00 00 00 00   45 58 4F 52 4D 41 43 53   ...........EXORMACS
```
   >W 0   {Write sector 0 back out to the disk}
   >Q   {Quite DUMP and try to boot up}

4. If IPL.SY's starting Physical Sector Number, $42AC in the example above, is too large to fit in a word value, then place it into a longword value starting at offset $41 in sector 0. If IPL.SY's length should ever be larger than one byte, then use the word starting at offset $18. (The example above is using only part of the actual fields.)

5. For more information see the VERSAdos Facilities Manual under the REPAIR utility.

Date: August 1, 1983   MPFB 0022

Product Type: EXORmacs software (CRASHANAL)   Contributed By: MM

Contact: Software Specialists   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****

Information   05.27.83mlm

ANALYZING A CRASHED VERSAdos ON VMC OR EXORmacs

If an EXORmacs based VERSAdos system crashes, the code 'AF' will appear in the
EXORmacs indicator lights. If a VMC 68/2 system crashes, the system will
simply hang up. In either case VERSAdos may have saved the cause of the crash
in memory before going down. This information can be useful in isolating
hardware or software problems, especially with sites that have regular crashes.

The following notes are meant to provide additional information to the Crash
Analysis procedure found in "M68000 REAL-TIME MULTITASKING SOFTWARE USER'S
GUIDE", M68KRMS68K, appendix I. The description found in the user's guide is
useful but lacks niceties such as the addresses of the mentioned routines for
standard configurations.

The following table assumes the site is using the "standard" RMS68K that was
released within the noted VERSAdos version.

	VERSAdos 3.0 EXORmacs	VERSAdos 4.1 EXORmacs	VERSAdos 4.1 VMC 68/2	VERSAdos 4.2 & 4.21 EXORmacs	VERSAdos 4.2 & 4.21 VMC 68/2
CRASHSAV	$600	$400	$800	$400	$800
EXCEPT	$14E6 to $1815	$14E6 to $1815	$1798 to $1AC7	$14E2 to $1811	$181E to $1B4D
TERM	$35D6 to $38BF	$380E $3B0D	$3AB8 to $3DB7	$380A to $3B1F	$3B3E to $3E53
PROGINT 2	$154A	$154A	$17FC	$1546	$1882
PROGINT 3	$154C	$154C	$17FE	$1548	$1884
PROGINT 4	$154E	$154E	$1800	$154A	$1886
PROGINT 5	$1550	$1550	$1802	$154C	$1888
PROGINT 6	$1552	$1552	$1804	$154E	$188A
PROGINT 7	$1554	$1554	$1806	$1550	$188C
PROGINT 8	$1556	$1556	$1808	$1552	$188E
PROGINT 9	$1560	$1560	$1812	$155C	$1898
PROGINT A	$1558	$1558	$180A	$1554	$1890
PROGINT B	$1554	$155A	$180C	$1556	$1892
COMINT	$12FC to $14B3	$136E to $14B3	$1620 to $1765	$136A to $14AF	$1640 to $1785

If you appear to get an exception in supervisor state (step 3) of M68KRM68K, appendix I) subtract 2 from PC2 before looking in the PROGINT table for the type of exception. For memory problems the address field, ADDR, will isolate the board with the apparent problem.

An alternative to analyzing a crash directly on the crashed machine is to get a memory dump and use the DUMPANAL facility later. To get a memory dump refer to the BD command of MACSbug and VMCbug. To use DUMPANAL refer to the "VERSAdos System Facilities Reference Manual", M68KVSF.

Date: August 1, 1983   MPFB 0023
Product Type: SYMBUG/A 2.00   Contributed By: MM
Contact: Software Specialists   .   Information Type: ___ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   _x_ Information Only
         (602) 829-3100

****
Information   05.27.83mlm

KNOWN BUGS/CAUTIONS WITH SYMBUG/A 2.00

1. Usage of the TASK command causes the task note level to be changed
    unpredictably regardless of the note level specified in the command (if
    any). The note level is usually changed to a value that cannot be
    displayed with the STAT command. The result of this bug is that set
    breakpoints may not be enabled st execution time.
                                                         (#282)

    The following patch corrects this problem:
        =PATCH SYMBUG
        M 44AA;DI
            CMP.B #1,DO   (WAS BSR.L $003E94)
            BEQ.S *+6   (WAS CMP.B #1,DO   )
            MOVE.W D2,28(A4)   (WAS BEQ.S $0044DE)
            BSR $3E94   (WAS MOVE.W D2,28(A4)

            .
        Q

2. Binary and decimal display options do not work.   (#307)

3. Relinking a program that had a "DB" file does not change the status of the
    "db" file if "-D" is specified. SYMBUG does not check revision information
    between the "DB" and "LO" files. Thus the user could reassemble and re
    link and end up with mismatching "DB" and "LO" files.   (#334)

4. When SYMBUG aborts with a 'MAP FULL ERROR' a second abort message is given
    when the next command is entered.   (#335)

5. SYMBUG may abort with a 'MAP FULL ERROR' when invoked because it does not
    have enough space allocated to hold the symbol table. This is especially
    true with programs utilizing large library routines such as PASCALIB.RO.
    To allocate more symbol table space follow the example below:
        =SYMBUG   (#526)
        MAXIMUM TASK COUNT (1 -> 19)? 19
        SYMBUG ? LOAD TAS
        SYMBUG ? ATTA TAS
        SYMBUG TASK? .....proceed as you normally would.....

If the maximum task count of 19 is not enough to eliminate the MAP FULL error the following patch may be applied to SYMBUG/A 2.0 to allow symbol table space for up to 99 tasks (be input to the MAXIMUM TASK COUNT question above).

```
=PATCH SYMBUG.LO
mm 4D7
39                  (Was 31, change maximum task count message)
.
MM 538
31                  (Was 30, change to revision 2.01)
.
MM 3BOE
E9                  (Was E3, used to allocate more table space)
.
MM 3AF1
63                  (Was 13. change maximum task count parameter)
.
Q
```

6. The disassembler cannot distinguish between symbolic operands and numeric operands, nor can it determine the difference between symbols of the same value.

(#367)

7. SYMBUG disassemblies BRA.S instructions as BT.S.   (#368)

8. SYMBUG disassemblies both ADD.B Dn/Dm and ADD.L Dn/Dm as ADD Dn, Dm.

(#401)

9. SYMBUG's assembler will justify ASCII characters to the left-most byte. The Resident Assembler justifies ASCII characters to a word boundary if it is one or two characters, or to a long word boundary if the string contains more than two characters.   (#413)

10. SYMBUG generates incorrect addresses for symbols defined by 'EQU *' in the second of two modules linked into the same section. The address generated is the correct offset but its base is the section base and not the module base.   (#429)

11. The first time SYMBUG is invoked on a file all symbolic references are correct. If SYMBUG is invoked again on the same file during the same session, any symbolic references may be off by one byte.   (#438)

```
    First Time:        Second Time:
    CLR.W    DOG       CLR.W    DOG+1
```

12. SYMBUG can't find the symbol file if it has been renamed (i.e., =RENAME <old-name>.*,<new-name>.*).   (#458)

13. SYMBUG will "lose" the symbols in the first module of a multi-module load module when invoked successively with the same number specified for TASK COUNT.   (#459)

14. If a BREAK is entered when SYMBUG is waiting for a response to "MAXIMUM TASK COUNT", the only way to exit the "WHAT?" question is to terminate the task from another terminal or power down the system.   (#482)

15. The STAT command causes any registers changed to revert to their previous
    values. The following sequence shows this problem   ($499)
        DF
        MS .A7 2800
        STAT
        DF   {A7 will have its previous value again}

16. SYMBUG's assembler does not correctly assemble CMPI.8 #$0D,1(A1).(#508)

17. The DE ECHO command does not work for MCCM printer devices.   (#525)
                                                                      (#533)
    To copy SYMBUG information to an MCCM printer, first output the data to a
    disk file and then COPY or LIST it to the line printer. When outputting to
    a disk file the following sequence should be observed:
        DE #FN
        DE FILE <file-name>   {The file must ALREADY exist and   }
                                  {the extension MUST be specified.   }
        DE ECHO   {Everything will be echoed to the file.}

18. Pascal programs in SYMBUG do not terminate normally, they terminate on a
    TRAP #14 before executing a TRAP #1. To better handle Pascal programs set
    the exception mask as follows: (#527)
        MS .SM 01FFBFE1

19. SYMBUG, and the task being debugged under SYMBUG, may both compete for
    access to the user's interactive device. When SYMBUG issues a prompt, and
    the user's task is also requesting input, the user must enter something
    (carriage return, go, etc.) so SYMBUG's ID request will complete and allow
    the user task's request to be processed.   (#625)

20. SYMBUG will abort with an 8010 error is the user enters into the one line
    assembler either: 1) an instruction using a hexadecimal number but leaving
    off the $, (i.e., MOVE.L #FFF,DO), or 2) an instruction referencing a label
    in another module specified without the module name (i.e., JMP BB where BB
    is in a separately assembled module).   (#625)

21. SYMBUG's disassembler disassemblies $B290 as CMP (AO),D1 when you should
    get
    CMP.L (AO),D1.   (#676)

22. When tracing, using the T instruction to trace each instruction, the
    instruction following any TRAP instruction is not displayed. If a TRAP
    instruction is traced using the T <count> command where <count> is greater
    than 7, the EXORmacs enters MACSbug. Typing 'G' on port #CNOO returns to
    VERSAdos.   (#686)

23. If the MM command is used in disassembly mode to patch a MOVEM instruction
    subsequent output of the DF and MD commands is corrupted.   (#687)

24. When using SYMBUG in for multitasking environment and a breakpoint is set
    in a foreground task, then the task stops but the breakpoint is not
    displayed. The breakpoint will be displayed if the task in which the
    breakpoint occurs is not the foreground task.   (#689)

25. If the name of a task is different from the first four characters of the
    load module, then the task is loaded by SYMBUG but its "DB" file is not
    found.   (#689)

26. If in the course of debugging a task the user lets the task run free, GO,
    and then stops it periodically, STOP <task-name> or the BREAK key, SYMBUG
    will eventually abort with a MAP FULL ERROR.   (#771)
                                                                   (#737)
27. The NOPAGE option has no effect on SYMBUG.   (#750)

28. None of the SYMBUG error messages are documented.   (#374)

Date: August 8, 1983   MPFB 0024
Product Type: SYMBUG/A 2.00   Contributed By: SK
Contact: Software Specialists   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

VDOS 4.1, 4.2, 4.21 MCCM DEVICE CONTROL BLK

This information applies to VERSAdos 4.1, 4.2 and 4.2.1 MCCM ports. The
information does NOT apply to the debug ports NOR does it apply to VERSAdos 3.0
or earlier.

The following is a procedure to modify the MCCM port parameters without having
to execute a SYSGEN. This procedure does not apply to configuration changes
to increase the number of ports available nor to increase the size of any of
the queues or tables existing for VERSAdos. Note that <c/r> = carriage return.

1. Locate the software/hardware configuration word to be changed for a
    particular port in the file VERSADOS.SY. The easiest way to do this is:

    Scan VERSAdos by entering SYSANAL and using the Memory Display command (MD)
    to dump memory to the screen. For example, type:
        =SYSANAL
        >MD 16000 4000
    This will dump VERSAdos from $16000 to $1A000. The user should look on the
    right-hand "ASCII—column" for the mnemonic of the port that is to be
    changed. For example (CN12). When it appears on the screen a <ctrl-W> is
    entered to temporarily stop the display. The address of the beginning of
    the mnemonic is recorded. That is, the address of the C in CN12 is
    recorded and used as the base for calculations into the Device Control
    Block for that port. After the base address has been recorded, hit the
    break key to get back to the command line in SYSANAL and type QUIT<cr> to
    exit SYSANAL.

2. The operating system VERSAdos is just the execution of a very elaborate
    program named VERSADOS.SY. So to change the operating system, we must make
    modifications to this program. Having determined the base address of the
    port to be modified, the PATCH utility can be used to modify the port.
    Before patching VERSADOS.SY, be sure to copy the file over onto another
    file, that is, type COPY VERSADOS.SY,SAVE.VERSADOS.SY;B. To determine the
    location to PATCH, add the start of the ports DCB (the address of C that
    was determined above) to the offsets defined below.

    For example, if we wanted to change the Baud rate of CN12 from 9600 to 300,
    and assuming the vanilla base address of $16BDA. First we find that the
    Baud rate information is located at offset $8A in the DCB, from the offset
    table below. We add $16BDA + $8A = $16C64. This is the address of the
    Baud rate information. Next we find the value that represents 300 Baud,
    from the Baud rate table below, and note that 300 Baud = $05. To Patch the
    Baud rate we type
        =PATCH VERSADOS.SY<c/r>
        >M $16C64<cr>
        >$16C64   OE   '.' 05<c/r>
        >$16C66   00   '.' .<c/r>
        >QUIT

3. Once VERSADOS.SY has been modified and written back to the disk, the system must be rebooted for the changes to take effect.

VERSAdos 4.1 and 4.2 MCCM CRTDCB (sample CRTDCB for CNxx)

```
016856 016835  0001 68EE 434E 3131   0000 0000 2E49 4F53   ..h.CN11.....IOS
016866 016866  0000 0001 0000 0000   0133 0000 0000 0000   ..........3......
016876 016876  C000 1E01 434F 4D31   0100 0000 0000 0002   ....COM1........
016886 016886  0004 E016 0000 0000   0000 0001 4F18 0001   ............O...
016896 016896  4F56 0000 0000 0000   0000 0001 4ED8 0000   OV..........N...
0168A6 0168A6  0000 0000 0000 0C00   0000 0000 0000 0000   ................
0168B6 0168B6  0000 0000 0000 0000   8011 0320 047C 5803   ............ ..X.
0168C6 0168C6  0000 0050 0000 0018   000D BBA0 000D BBA0   ...P............
0168D6 0168D6  1700 030F 1318 0DDE   0000 0D0A 0000 0E00   ................
0168E6 0168E6  0000 0000 0000 0000   0001 6986 434E 3132   ..........i.CN12
```

```
        **MCCM**                                  ***************************
OFFSETS FROM 'C' IN CNxx      (in bytes)          *4,2 A*VANILLA ADDRESSES *
-----------------------------------------         *       #CN10    $16AA2   *
-$ 4  4  Address of next DCB in linked list       *       #CN11    $16B3A   *
$  0  4  ASCII identification of this DCB (CNxx)   *       #CN12    $16BD2   *
$  4  4  Address of DCQ entry                      *       #CN13    $16c6A   *
$  8  4  Name of task making the request           **************************
$  C  4  Session of task making the request
$ 10  4  Address of Logical Unit Table
$ 14  2  Device attributes          (see Device Attributes Table)
$ 16  2  Write/Read protect codes
$ 18  2  'Device in use' flag
$ 1A  4  Write/Read counts
$ 1E  1  Device flag (device code)   (see Device Code Table)
$ 1F  1  Device flag (device status) (see Device Status Table)
$ 20  4  Channel identification      (see Channel Identification Table)
$ 24  1  Device number associated with the channel
$ 25  1  Task priority
$ 26  4  Current record number
$ 2A 23  Storage area for the IOCB being processed
$ 46  4  Logical address of IOCB in user's address space
$ 4A  1  Configuration coordination flag (0 --> at defaults)
$ 4B  1  Break count
$ 4C  1  Address of break service Logical Unit Table
$ 50  4  Break service address
$ 54  4  Device Buffer  Zone
$ 58  4  Device Buffer Zone
$ 5C  4  Device Buffer Zone
$ 60  4  Device Buffer Zone
$ 64  1  Space for status fields
$ 65  1  Space for status fields
$ 66  1  Space for status fields
$ 67  1  Space for status fields
$ 68  2  Attributes mask            (mask is ANDed with Attributes word)
$ 6A  2  Parameter mask
$ 6C  2  Attributes word            (see MCCM Terminal Attributes Word)
$ 6E  2  Number of characters per line (80 [$50] default)
$ 70  4  Number of lines per page     (24 [$18] default)
$ 74  4  Write timeout     (0 --> no timeout)
$ 78  4  Read timeout      (0 --> no timeout)
```

```
$ 7C  1  XOFF character          ($17 default --> Control W)
$ 7D  1  XON character           ($00 default --> any character)
$ 7E  1  Break equivalent character($03 default --> Control C, not app in MACs)
$ 7F  1  Discard output character ($0F default --> Control O)
$ 80  1  Reprint line character  ($13 default --> Control S)
$ 81  1  Cancel line character   ($18 default --> Control X)
$ 82  4  Read terminator         ($0DDE0000 default)
$ 86  4  End-of-Line string      ($0DDA0000 default)
$ 8A  1  Baud rate code     ($0E = 9600 Baud)   See Baud Rate Table
$ 8B  1  Null padding
$ 8C  1  Terminator class
$ 8D  1  Terminal type (0 = EXORterm 155, non-zero = anything else)
$ 8E,8F,90,91,92,93     Reserved
```

CHANNEL IDENTIFICATION TABLE		DEVICE ATTRIBUTES TABLE	
Value	Channel Type	Bit	Attribute
1	ACIA Device	0	Support Read
2	PIA A-Side Device	1	Supports Write
3	PIA B-Side Device	2	Support Binary
4	CRTC Device	3	Support Random
5	SSDA Device	4	Supports Image
6	ADCC Device	5	Supports Halt I/O
$10	Disk IPC	6	Supports Position Record
$11	MCCM IPC	7	Supports File Mark
$20	SASI on I/O Channel	8	Interactive Device
$22	Winchester on I/O Channel	9	Printer Device
$22	Floppy on I/O Channel	10	Supports Spooling
Printer Ports $50-5F		11	Supports write with CRC Check
$50	EXORmacs PIA	12-15	Reserved
$51	VM01 Parallel		
$52	RTTLIO Parallel		
Serial Ports $60-$6F			
$60	7201 A-Side on VM02		
$61	7201 B-Side on VM02		
$62	7201 A-Side on VM80		
$63	7201 B-Side on VM80		
$64	7201 A-Side on RSIO		
$65	7201 B-Side on RSIO		

BAUD RATE TABLE

Value	Meaning	Value	Meaning	Value	Meaning	Value	Meaning
$00	50 Baud	$04	150 Baud	$08	1800 Baud	$0C	4800 Baud
$01	75 Baud	$05	300 Baud	$09	2000 Baud	$0D	7200 Baud
$02	110 Baud	$06	600 Baud	$0A	2400 Baud	$0E	9600 Baud
$03	134.5 Baud	$07	1200 Baud	$0B	3600 Baud	$0F	19200 Baud

DEVICE CODE TABLE

Decimal	Hex	Meaning
30	$1E	EXORterm 155 terminal on MCCM
31	$1F	Modem or non-EXORterm terminal on MCCM
35	$23	EXORterm 155 on local Driver
36	$24	Modem or non-EXORterm terminal on local driver
40	$28	Hard disk - fixed platter (64 sectors/track)
41	$29	Hard disk - removeable platter (64 sectors/track)
50	$32	Floppy disk - single sided - single density
51	$33	Floppy disk - double sided - single density
55	$37	Floppy disk - double sided - single density
90	$5A	Low speed line printer on MCCM
91	$5B	High speed line printer on MCCM
95	$5F	Low speed line printer on local driver

DEVICE STATUS TABLE

Bit	Attribute
0	0 - Device offline
	1 - Device online
1	0 - Device not write protected
	1 - Device write protected
2	1 - Device status has changed
3	1 - Device busy for initialization
4	1 - Device busy for configuration
5	0 - No timer to be cancelled for this device
	1 - Timer to be cancelled for this device
6	1 - Ignore timer event for this device
7	Reserved

MCCM TERMINAL ATTRIBUTES WORD   (TCP$ATW) FOR VERSADOS 4.1 & 4.2 used in &EET
(default $0180)   (TERMINAL ATTRIBUTES MASK default $0470)
(* indicates default mask allows parameter)

BIT			
	0	TCP$CPY	1 means the terminal is a hardcopy device, not a CRT
	1	TCP$XCTL	1 means use XON/OFF to control terminal's transmission, not CTS
*2		TCP$BITS	1 means transmit and receive 7 bits/char rather than 8
*3		TCP$STPB	1 means follow each char sent with 2 stop bits rather than 1
*4		TCP$USEP	1 means parity should be checked and generated
*5		TCP$PRTY	1 means parity (if used) should be even rather than odd
*6		TCP$ECHO	1 means the driver should not echo characters
	7	TCP$TAHD	1 means the type-ahead feature should not be used
	8	TCP$TFUL	1 means filling the buffer on a read should terminate the read
	9	TCP$PNUL	1 means NUL char's should be considered data for image reads
*10		TCP$MODM	1 means the port is connected to a modem
	11	TCP$OFFH	
12-15		RESERVED	

DEBUG TERMINAL ATTRIBUTES MUST BE SET TO $9500. THE $9500 IS USED TO SET THE CONTROL REGISTER IN THE ACIA ON THE DEBUG CARD FOR .TTY.

Date: September 28, 1983

MPFB 0025

Product Type: 68K LINKER 1.4 - 1.6

Contributed By: MK

Contact: Software Specialists
          Field Engineering
          Tempe Operations
          (602) 829-3100

Information Type:
____ Mandatory
____ As Needed
_x_ Information Only

****

Symptom / Problem   LINKING A PROGRAM ON A NON-MMU SYSTEM
_____

As the number of 68000-based products offered by Motorola Microsystems
increases, so does the number of programs that users wish to port from one
product to another. One of the areas that can cause confusion is porting a
program from an MMU-based system to a non-MMU based system or vice versa. Here
are some hints on what to do to reduce the number of problems you may
experience.
****

Solution / Fix
_____

On an MMU-based system, such as the EXORmacs or the VME/10, four logical
segments are available for use by your program. These segments need not
inhabit contiguous memory. The code generated by your assembly language or
high-level language program need not be position independent. The linker is
used to group like sections together, for example:

```
     =LINK ,,TEST
     SEG CODE(R):8-14    /*read-write code segment*/
     SEG DATA:0-7        /*read-write data segment*/
     SEG DAT1:15         /*read-write data segment*/
     IN TEST             /*input file, given after segment defs*/
     END
```

On a non-MMU-based system, such as VME110 or VMC68/2, all logical addresses are
taken as physical addresses. In this case either the code must be written as
position independent, or the linker must assign physical addresses to the
segments. Physical addresses are assigned through use of the segment, SEG,
user command even though there is no MMU in the product. The user-specified
starting address given in the SEG command is interpreted as a physical address
instead of a logical address. For example:

```
     =LINK ,,TEST;S        /*S option*/
     SEG CODE:8-14 $10000  /*segment starting address*/
     SEG DATA:0-7,15
     IN TEST
     END
```

could be used for linking most programs that are not position independent.
The S option will allocate the segments contiguously. The first segment will
be loaded at $10000 in physical memory with the second segment immediately
following the first. NOTE: If no physical address was given the linker would
default the start address to zero (0), and it would also assume that the
resulting module would be position independent!

The linker can also be used to set up memory at different locations. For example, in an assembly language program, the code segment is to start at $1000 and the data segment is in four parts. Section 0 is to start $10000, section 1 at $12000, section 2 and $14000 and section 3 at $16000. Sections 4-7 and 15 are not used. This can be done as follows:

```
=LINK ,,TEST;S
SEG PROG(R):8-14 $1000
SEG DATA:0-3 $10000
SEG EMPT;4-7,15          /*these sections not used*/
START 1 $12000
START 2 $14000
START 3 $16000
IN TEST
END
```

Note that the S option is specified to assign contiguous memory locations. Note that five absolute addresses were assigned through the use of two SEG and three START user commands. The linker will only allow a total of four SEG user commands to be given per each invocation. The first segment will be loaded at absolute $1000 in memory. The second segment will be loaded at $10000 in memory. Within the second segment section 3 will be loaded at $16000 in memory, section 2 at $14000 in memory, section 1 at $12000 in memory, and section 0 at $10000.

For further information and examples, refer to the SEG and START user commands in the linker manual, M68KLINK(D6), and Chapter 5 of the Pascal User's Guide, M68KPASC/D6.

Date: January 26, 1983   MPFB 0026

Product Type: MVME200 / 201   Contributed By: MK

Contact: Hardware Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ___ Information Only

###
Symptom / Problem   VME 200/201 ADDRESS DECODING PROBLEMS

    Boards will not work in the Executive mode due to error in address decoder
    ROMs in location U75. Bad ROMs are labeled B37, complete part number is
    51AW4000B37. Boards that have no label on them are probably all right,
    they were made in Austin before the product transferred.

###
Solution / Fix

    Parts can be programmed to correct the error by changing contents of
    location $7E from $0 to $F. Bad ROMs were on boards shipped in December,
    1982. New boards will have ROM number 51AW4000B42, which has the correct
    code.

Date: April 16, 1982   MPFB 0027

Product Type: EXORciser   Contributed By: CH

Contact: Software Specialists   Information Type:
           Field Engineering   ____ Mandatory
           Tempe Operations   _x_   As Needed
           (602) 829-3100   ____ Information Only

****
Symptom / Problem   MDOS 2MHZ FORMAT PATCH
_____

    User cannot format disk at 2MHZ under MDOS with an EXORdisk III disk
    controller or an Exordisk II controller. This is for both M6800 and
    M6809. This appears to only happen at 2MHZ and gives errors E8 and 38.

****
Solution / Fix
_____

    To alleviate this problem, you must patch MDOS file= FORMAT.CM version
    3.03, to perform retries. The procedure is included in addendum A2 for
    MDOS Manual M68MDOS3 (D2). For those of you who do not have this
    addendum, here is the data:

    Patch for MDOS09 (6809):

    Patch Format.CM

    139/7E,23,22
    24F/7E,23,22
    317/7E,23,22
    322/86,05,97,30,BD,E8,78,7E,21,3C
    32C,0A,30,26,F6,7E,20,FB
    Quit

    Patch for MDOS (6800):

    Patch Format.CM

    152/7E,23,60
    28E/7E,23,77
    362/7E/23/6D
    36D/86,05,97,30,BD,E8,78,7E,21,55
    376/7A,00,30,26,F5,7E,20,F4
    Quit

Date: April 16, 1982

MPFB 0028

Product Type: EXORciser

Contributed By: CH

Contact: Software Specialists
          Field Engineering
          Tempe Operations
          (602) 829-3100

Information Type:
___ Mandatory
___ As Needed
_x_ Information Only

###

Symptom / Problem   RLOAD for 6809 (3.10 or 3.11)

---

1.   FORTRAN common variables not resolved properly by Rload

2.   RLOAD gives multiple defined symbol errors in certain instances.

###

Solution / Fix

Use rev. 3.00 RLOAD until 3.20 is available, FORTRAN 3.20 and RASMO9 3.10
cannot be used until 3.20 RLOAD is available. Use prior versions of
FORTRAN and RASMO9.

Date: April 16, 1982   MPFB 0029

Product Type: EXORciser   Contributed By: CH

Contact: Software Specialists   Information Type:
           Field Engineering   ____ Mandatory
           Tempe Operations   ____ As Needed
           (602) 829-3100   _x_ Information Only

****

Symptom / Problem   10 WAYS TO CRASH 6809 WITH TRACE
_____

     On the 6809, tracing instructions of more than 15 cycles in the user map
     will cause the processor to crash. These instructions are:

     SWI   PULS
     SWI2   PSHS   :::: With 11 or 12 bytes pushed or pulled to/from the
     SW13   PULU   stack.
     IRQ   PSHU
     SYNC
     CWAI
****

Solution / Fix
_____

     The problem is that there is only a 32 cycle counter on the Debug board
     that is used in the switching of the map from User to EXEC for the NMI
     vector fetch. This counter runs out and the NMI is fetched for the user
     map. NOTE: Fix would be to set up NMI handler in user map to switch to
     NMI handler in EXEC map.

Date: September 9, 1982   MPFB 0030

Product Type: EXORset 35   Contributed By: AZ

Contact: Hardware Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   ___ As Needed
          (602) 829-3100   _x_ Information Only

\#

Symptom / Problem   EXORSET 35 HIGH TEMPERATURE WARNING

                 EXORset 35 power supply temperatures

     The power supply pass transistors can run exceptionally HOT! Tests show a
     temperature range from 60 Degrees C (140F) to 76 Degrees C (170F).
     CAUTION should be used when doing repairs in this area. Do not touch the
     transistors with arms or hands—burns could result.

\#

Solution / Fix

     No fix is necessary as this is normal operation, and depending on the load
     imposed by customer requirements will determine how hot they get.
     Temperatures mentioned above are with worst case loading conditions.

Date: November 5, 1982   MPFB 0031

Product Type: M68SETDS351   Contributed By: RW

Contact: Hardware Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ___ Information Only

\#

Symptom / Problem   EXORSET 35 MALFUNCTION CORRECTION
─────────────────────

    For no apparent reason the EXORSET35 may malfunction causing varied
    indications: System lockup during edit or assembly, drive errors, loss of
    screen sync, random characters on the screen, or possible keyboard
    unpredictable, etc.

\#

Solution / Fix
──────────────

    The FS repair depot has found that approximately 75% of the EXORSET35s in
    repair for this type of problem can be fixed by simple adjustment of
    either one or both phase lock loop circuits (one on the floppy disk
    control card, and the other on the main control board of the EXORSET35).

    Follow the well-documented instructions in the EXORSETDS35 User's Manual,
    pages 6-19 and/or 6-45.

Date: September 19, 1983   MPFB 0032

Product Type: VME/10 with VME400   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   ____ Mandatory
          Tempe Operations   _x_   As Needed
          (602) 829-3100   ____ Information Only

****

Symptom / Problem   REJUMPER VME400 ON VME/10
——————————————————

    When adding a VME400 to the VME/10 you must change the factory installed
    interrupt level jumpers from level 3 to level 4. Change jumpers on J5 to
    4-6, 10-12, and 16-18. VERSAdos is already sysgened for the VME400 as
    #CN01 and #CN02. (As sysgened only two terminals can be logged on atr
    once, 9100.VMES10.SYSCMD.SA parameter NOLOGONS is 2.)

****

Date: September 28, 1983   MPFB 0033

Product Type: SERSAdos on VM02   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   ____ Mandatory
          Tempe Operations   _x_   As Needed
          (602) 829-3100   ____ Information Only

###
Symptom / Problem   PATCH TO ALLOW BREAKPOINTS ON VM02
_____

     It is impossible to boot up VERSAdos on VM02 and then hit software abort
     and be able to use breakpoints. The bug massacres port #1 and well as
     port #0. (SPR 854)

     There is an ugly patch to put on the serial port driver to mess up the
     VMC/VERSA-bug RAM area to fool it so it doesn't massacre the serial ports
     on software abort. The patch varies with different versions of the bug
     and different versions of VERSAdos. The following applies to VMCbug 1.00
     and VERSAdos 4.20.

###
Solution / Fix
_____

     For VMCbug 1.00 running VERSAdos 4.20, you patch 4 NOPs in the CMPS driver
     (address calculated by adding the 3rd longword from the beginning of the
     driver to the address of the beginning of the driver) to a 'MOVE.L
     #$F70014,<ea>', where <ea> is the absolute address of serial port 2 on the
     bug's link map, symbol 'SER2'. In the above case the patch would be:
          address $6358 from 4E714E714E714E71 to 21FC00F7001%0660
                            NOP NOP NOP NOP   MOVE.L #$F70014,$660

     Note also that to set breakpoints you must patch the VERSAdos vector table
     !VCT and sest vector 4 to 0001. The following is an example:
          000010   4E73 4E75 4EB9 0000   0C7E 1256 4354 0000   NsNuN.....!VCT..
          000020   136A 0000 0C14 0100   0C14 0200 1546 0400   .j...........F..
          000030   154A 0500 154C 0900   155C 0A00 1554 0C00   .j...L.../...T..

     Vector 4 begins at address C2E, so in the above example you would change
     C30 from 154A to 0001. Note that when this is done SYMbug and DEbug
     breadpoints will no longer work, but VMC/VERSA-bug breakpoints will work.

     You should use boot halt to boot the patched version of VERSAdos, then set
     breakpoints, and then GO <address> dto begin program execution.

Date: October 13, 1983   MPFB 0034

Product Type: SERSAdos on VMO2   Contributed By: MK

Contact: Software Specialists   Information Type:
           Field Engineering   ___ Mandatory
           Tempe Operations   _x_ As Needed
           (602) 829-3100   ___ Information Only

****
Symptom / Problem   AF CRASH ON VERSADOS AT LOGON

    Using a VERSAdos 4.20 or VERSAdos 4.21 sysgen to support ;more than one
    MCCM may result in an operating system that will crash with an 'AF'
    abort. The abort will occur when the Periodic Activation Table is full.

    A possible scenario would be when VERSAdos is sysgened for 2 MCCMs and the
    7th MCCM user tries to log on. The task .IOS uses the Periodic Activation
    feature of RMS68K to keep track of timeouts on all VERSAdos I/O ports.

****
Solution / Fix

    In the ;9100.EXORMACS.SYSCMD.SA file change the size of the Periodic
    Activation Table, PAT from 1 to 3 pages. Then resysgen the operating
    system.

Date: October 17, 1983   MPFB 0035

Product Type: VERSAdos on VM02   Contributed By: CH

Contact: Software Specialists   Information Type:
          Field Engineering   ____ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ____ Information Only

###
Symptom / Problem   VERSADOS 4.1 INITIALIZE MEMORY REQUIREMENT

    When booting the EXORmacs with the HDS-400 software (VERSAdos 4.1), the
    new IPL.SY will give a "BD" display in the status lights. This is caused
    because memory is not initialized and should only happen on power up.

###
Solution / Fix

    The solution is to initialize memory from MACSbug. There are two easy
    ways to do this. The first is with the MACSbug BI command. The second is
    to use the front panel to run a self test by: Depressing both the RESET
    and SYSTEM TEST buttons (in that order), then releasing the SYSTEM TEST
    button and then releasing the RESET button.

Date: October 17, 1983   MPFB 0036

Product Type: VMC 68/2   Contributed By: MM/CH

Contact: Software Specialists   Information Type:
          Field Engineering   _x_ Mandatory
          Tempe Operations   ___ As Needed
          (602) 829-3100   ___ Information Only

###
Symptom / Problem   VMC 68/2 PROBLEMS AND SOLUTIONS
_____

        ***Several problems have been identified with the VMC 68/2 ***
           They are itemized below.

1.   When first installing a VMC system you MUST use the 'V' option on INIT to
     set a disk up for a VMC. If the 'V' option is not used, the resultant
     disk can not be booted. (The V option will set an IPL start address at
     $E00 in the VID that would be $0 otherwise. ENTER: INIT #HDxx;V).

2.   The User may have trouble getting VERSAdos to boot consistantly. This
     symptom is entering the BO command and nothing happens, even with several
     attempts. The problem appears to be with the AUTOLOGON feature. Until
     a permanent solution is found, the temporary fix is to either:
     a) Resysgen with the AUTOLOGON parameter changed from a 1 to a 0, or
     b) Patch VERSADOS.SY and change address $10601 from $01 rto $00.
        NOTE: This fix inhibits the Auto-long feature so a break must be issued
        in order to get the VERSAdos logon prompt.

3.   Trying to run a sysgen will result in an IOS error $0C, Insufficient
     system space, when the first link is attempted. To bypass this problem
     the :9100.VM02.SYSCMD.SA file should be edited so that MAXLU=10,
     MOFILES=20 and MODIFFIL=20. Then log on to user 9100 and invoke the
     sysgen with VM02.SYSGEN.CF ,,,,#NULL. Once you see that the chain file
     has invoked the sysgen command, hit break and stop the process. Next
     enter END to terminate the chain file. Finally, enter the following
     command line and sysgen should continue with no problems:
     SYSGEN VM02./5,,/7.

4.   If the system suddenly goes into VMCbug without notice, the problem may be
     in the Power Fail Monitor. If this happens often, the power fail ribbon
     cable can be disconnected. It is located by the power supply in the rear
     of the chassis.

5.   The fact that RMS68K source and object files are under user 9999, is not
     an error, they are supposed to be there.

6.   To allow more than one person to be logged on to the system at once, the
     parameter MOLOGONS in :9100.VM02.SYSCMD.SA must be changed and another
     SYSGEN be made.

Date: October 17, 1983   MPFB 0037

Product Type: Ascii File TRANSFER (2.0)   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   _x_ Mandatory
          Tempe Operations   ___ As Needed
          (602) 829-3100   ___ Information Only

****
Symptom / Problem   ASCII FILE TRANSFER (2.00) PROBLEM

     The 4.x release of VERSAdos, HDS and VMC 68/2, have an incorrect version
     of Ascii File TRANSFER. It must be changed in order for ULOAD to work.
     The source change and patch should be made to TRANSFER (version 2.00).

****
Solution / Fix

     In the source change line 1295 from
          SUB.L   #1, A2   to
          SUB.L   #1, A0   .

     To find the correct line enter
          =E TRANSFER.SA
          F 1295
          C /A2/A0/
          QUIT

     In the TRANSFER.LO module the following patch may be used:
          =PATCH TRANSFER.LO
          M 1ABE;DI
                SUBQ.L   #1,A0

          .
          Q

Date: October 17, 1983   MPFB 0038

Product Type: VERSAdos 4.1, 4.2, & 4.21   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ___ Information Only

****
Symptom / Problem   VERSADOS 4.X CHANGE NAME OF #PR TO #PR1

   NOTE: The VERSAdos 4.1, 4.2 and 4.21 release no longer refers to the
             MCCM printer as #PR. Instead, they revert back to VERSAdos 2.1
             nomenclature. The first MCCM printer port is named #PR1 and the
             DEBUG printer port #PR.

****
Solution / Fix

   The can be changed by editing IOC.SA and swapping #PR for #PR1 in the DCB
   for the first MCCM printer and swapping #PR1 for #PR in the DEBUG printer
   DCB.

Date: October 17, 1983   MPFB 0039

Product Type: VME/10 VERSAdos 4.25 UPLOADS   Contributed By: MM

Contact: Software Specialists   Information Type:
           Field Engineering   ___ Mandatory
           Tempe Operations   x As Needed
           (602) 829-3100   ___ Information Only

****

Symptom / Problem   VERSADOS 4.25 UPLOADS PROBLEM

    VME/10 VERSAdos 4.25 with a MVME400 board does not appear to make proper
    use of CTS/RTS. If the records being downloaded to the MVME400 are not
    padded with nulls information can be lost.

    For Example:
        Using the VME/10 UPLOADS command through a MVME400 in the VME/10 to a
        MVME400 port in a VME chassis with a MVME110, will result in the
        UPLOADS program becoming hung up.

    EXORterm 155 --- MVME110   VME/10 [CNSL] --- Console
                     MVME400   MVME400

                                        Boot VME/10 from console
     From VMEbug enter TM2 and BREAK...log onto VME/10
     Invoke uploads...UPLOADS TESTFILE.SA
     Hit control-A to return to VMEbug
     Enter command to dump memory to [port 2, such as...DU2 0 FFF
     When VMEbug prompt returns, enter transparent mode again...TM2
     UPLOADS is now in a hung state

    (To do the download successfully, apply the following port format command
    before doing the DUmp command.)

****

Solution / Fix

    To solve the above problem the port on the MVME110's MVME400 must be
    configured for at least $25 nulls sent after the carriage return.
    Use the PF2 or PF3 command to change this parameter for the needed port
    before doing the transfer.

    VMEbug 2.0 > PF2 <cr>   where <cr> is a carriage return
    STOP BITS=44? <cr>
    CHAR NULL=00? <cr>
    C/R NULL=00? 25<cr>

Date: October 17, 1983   MPFB 0040

Product Type: VERSAdos 4.2 UP SYSGEN   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ___ Information Only

****

Symptom / Problem   VERSADOS 4.2 NODEFVOLS = NOLOGNS

It needs to be documented that the sysgen parameter NODEFVOLS, number of
default volumes, must be at least as large as NOLOGNS, the number of log
ons. If it is not large enough users trying to log onto the other ports
will receive the error message:

     No CHANGE TO VOLUME, USER NUMBER, OR CATALOG

     and will not be able to get logged onto the system.

This is true of VERSAdos 4.2 and beyond and should be checked if a
customer can only log on a portion of his users onto the system.

****

Solution / Fix

     Update the parameter NODEFVOLS to the number of logons plus (at least) 4.

Date: October 18, 1983   MPFB 0041

Product Type: VERSAdos 4.21 HDS-400   Contributed By: MM

Contact: Software Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   _x_ As Needed
          (602) 829-3100   ___ Information Only

****
Symptom / Problem   ADDING MULTI-DROP HDS-400's on vdos 4.21

     The new release of HDS-400 software/firmware supports multi-drop operation,
     but several things need to be done in software to incorporate this
     enhancement.

****
Solution / Fix

1.   VERSAdos 4.21 must be sysgened for the number of HDS-400 multi-drop lines
     required. To do this: a) log on to 9100; b) edit the file
     9100.EXORMACS.SYSCMD.SA; c) change the sysgen parameter NOTNT to the
     number of multi-drop lines needed; d) quit the editor; e) run a sysgen for
     the multi-drop requirement by entering EXORMACS.SYSGEN.CF ,,,MULTI-
     HARD,#NULL f) log off of 9100; g) log on to 0; h) save the old version of
     VERSAdos by entering RENAME VERSADOS.SY,VDOS.SY ; i) copy down the new
     version COPY 9100..VERSALOS.SY,0..;B ; j) make change (2) below and k)
     reboot the system to see if it works.

2.   Some of the HDS-400 software also needs to be patched for multi-drop
     operation. To do these patches log on to user 0 and enter MULTIHDS.CF
     <arg>   where <arg> is the number of multi-drop lines (1, 2, 3 or 4).
     When the chain file is done all necessary patches will have been applied.

Date: October 19, 1983   MPFB 0042

Product Type: VERSAdos 4.1 and 4.2   Contributed By: MK

Contact: Software Specialists   Information Type:
           Field Engineering   ____ Mandatory
           Tempe Operations   ____ As Needed
           (602) 829-3100   _x_ Information Only

****
Symptom / Problem   SPOOLER PATCH FOR VERSADOS 4.1 & 4.2

    The following patch eliminates the banner in the spooler. It should be
    useful for those customers wanting to cut down on the amount of paper being
    produced by VERSAdos releases 4.1 and 4.2

****
Solution / Fix

    =PATCH SPL.LO
    1B80
    4E75   (WAS 41EC)
    .
    1DEO
    42804E75   (WAS 082C0005)
    .
    Q
    =END

Date: October 19, 1983   MPFB 0043

Product Type: Data I/O Interface on   Contributed By: MK
                EXORMACS (PP1 1.1)
Contact: Software Specialists   Information Type:
           Field Engineering   ___ Mandatory
           Tempe Operations   X_ As Needed
           (602) 829-3100   ___ Information Only

****
Symptom / Problem   DATA I/O 29 PROM CORRECTIONS
_____

The data I/O interface program on the EXORmacs, PP1.LO, is limited as the size
of PROMs (expects maximum size of 8K by 8), and is only designed to work with
the Data I/O System 17 or 19. Either the UNIpak or MOSpak may be used.
Further, any part number terminating with an alpha character, such as INT2732A,
is not understood by the program. The documentation in M68KDIOPP/D2 Section 1
Table 1-1 on page 4 gives the incorrect address locations for patching the
manufacturer's part tables. Correction given below.

The following patches will: 1) enable PROMs greater than 8K by 8 to be
read/programmed, 2) enable the INT2732A, INT27128, INT27256, and TMS74188A to
be programmed, 3) enable a DATA I/O 29A to be used instead of a DATA I/O system
17 or 19, and 4) correct an error message.
****
Solution / Fix
     Documentation correction: M68KDIOPP/D2 Table 1-1 on p. 4
          MCM - 14210/14218   MMI - 14352/1435A   74S - 1450A/14512
          INT - 1425E/14266   HM- - 143E8/143F0   27S - 145B0/145B8
          TMS - 1429C/142A4   B2S - 14466/1446E   FAR - 1462E/14636

     Patches to PP1.LO:
     =PATCH PP1.LO
     M 12151   (3) TO USE DATA I/O 29A
     12151/32 37   DON'T USE FOR DATA I/O SYSTEM 19!!!!
     .
     M 124E0   (1) TO PROGRAM/READ PROMS GREATER THAT
     124E0/3F 7F   8K BY 8
     .
     M 1320F   (4) TO CORRECT AN ERROR MESSAGE
     1320F/B6 B1   (STRICTLY OPTIONAL)
     .
     M 14251   (2A) TO USE INT 2732A
     14251/2A 20   (MUST ENTER PART NUMBER INT27320)
     .
     M 14277   (2D) TO USE TMS74188A
     14277/8A 80   (MUST ENTER PART NUMBER TMS741880)
     .
     M 1425E   (2C) TO ADD TO INTEL TABLE:
     1425E/00 1,2,71,28,40,0,35,51   INT27128
     14266/00 0,2,72,56,80,0,93,32   INT27256
     .
     Q
     =END

Date: January 4, 1983   MPFB 0044

Product Type: Contributed By: PK
Contact: Hardware Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   ___ As Needed
          (602) 829-3100   _x_ Information Only

****

Symptom / Problem   INCORRECT CHIP IN 68KDM
_____

    While running a program on the 68KDM the program appears to run away, or
    when reading data, the data is incorrect.

****

Solution / Fix

    Check U-83, it should be a 74S74 or a 54S74. On some boards, 7474 and 7479
    were used. The 7474 and 7479 caused a conflict between the refresh cycle
    and the data fetch cycle. Sometimes it would use the refresh address to
    fetch program data. In the event you find one of these boards, set it up
    through one of the Coordinators to exchange it.

Date: October 21, 1983   MPFB 0045

Product Type: VME/10 Show Demo   Contributed By: PK
Contact: Software Specialists   Information Type:
          Field Engineering   ___ Mandatory
          Tempe Operations   ___ As Needed
          (602) 829-3100   _x_ Information Only

****

Symptom / Problem   VME/10 GRAPHICS DEMO INSTRUCTIONS

    Lack of documentation on how to execute the VME/10 Graphics Demo.

****

Solution / Fix

1. After the system has been booted or reset, logon under the user number
    which contains the two demo files, SERVER.LO and VME10.LO.

2. To start the demonstration from VERSAdos, enter
          =@SERVER
    to start the background server task, followed by
          =VME10
    to start the foreground keyboard entry processor task.

3. The screen should display the Motorola logo over the function key
    definitions.

4. Depress F12 (function key 12) to clear the logo. The function key
    definitions will remain.

5. Select one of the following demos by depressing the associated function
    key:
          F1 -- VME/10 demo loop
          F2 -- HDS400 demo loop
          F3 -- 68000 logo blink
          F4 -- 68000 logo graphic slide
          F5 -- Random lines graphic slide
          F6 -- Colorfill cube graphic slide (black)
          F7 -- Colorfill cube graphic slide (white)
          F8 -- VME/10 uses slide
          F9 -- VME/10 intro slide
          F10-- Phoenix bird
          F11-- Motorola logo
          F12-- Clear screen (of graphics)

6. Types of demos by function key
   a. F1, F2, F3 — demos run continuously, changing display demos with function key definition display off.
   b. F4 thru F12 — demos run individual slides with function key definition display on.
7. To terminate a demo (by function key)
   a. F1, F2, F3 — while running depress the BREAK key and F12.
   b. F4, thru F12 — while running depress F12.

8. To return to VERSAdos after terminating a demo and clearing the graphics memory (depress F12), depress the following in sequence:

   ESC key —   the escape key, returns to VERSAdos with the background task still running. The prompt (=) will appear.

   BREAK key —   The break key, aborts the server task. The prompt (=) will appear.

                  (CAUTION: Failure to abort the server task with the break key will result in NEED TO REBOOT!!)

Date: October 22, 1983   MPFB 0046

Product Type: VERSAdos 4.25 DIsk Diagnostic   Contributed By: JV and MM
Contact: Hardware Specialists   Information Type:
           Field Engineering   ___ Mandatory
           Tempe Operations   _x_ As Needed
           (602) 829-3100   ___ Information Only

****
Symptom / Problem   VME/10 DISK DIAGNOSTICS PATCH

   The disk diagnostics for the VME/10, under VERSAdos 4.25, fail on drive 2
   when the R1WIN board (01-W3130B01) is modified to revision 'T' or revision
   'U' (the latest revision). The resident disk diagnostic will fail with
   'HEADER ID NOT FOUND'.   (SPR 871)

****
Solution / Fix

    The following chain file patches to the WDC user diagnostic test version
    092883 only. The version number will be displayed at the rightmost
    portion of the WDC user diagnostic test when booted up.

```
=PATCH WDC.SY
M 43AFE;DI               (Fix interrupt test for floppy drives)
 MOVE.L #32,$1A18        (was MOVE.L #32,$1A1C)
 MOVE.B #1,$19FO         (was MOVE.B #1,$19F6)
 .
'1'                      (change revision date)
'0'                      (was '0')
'2'                      (was '2')
'0'                      (was '8')
 .
Q
```

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: October 27, 1983   MPFB 0047

Product Type: EXORmacs and VMC with 50 Meg Lark   Contributed By DF

Contact: Hardware Specialists   Information Type: ──── As Needed
         Field Engineering   ─X─ Mandatory
         Tempe Operations   ──── Information Only
         (602) 829-3100

###
Symptom / Problem   50 MEG LARK DRIVES WITH 8 MEG CARTRIDGES

    Customers who order "50" Megabyte Lark Disk Drives (for EXORmacs or VMC)
    are receiving 8 Megabyte Lark Cartridges. The problem is that the "50"
    Megabyte Lark Drives use a 25 Megabyte Cartridge. The Marketing Bill of
    Material currently calls for 8 Megabyte, since 25 Megabyte is not being
    produced yet (with the software on it).

###
Solution / Fix

    Ship a scratch 25 Megabyte Lark Cartridge to the customer.

    To get the software off of the 8 Megabyte cartridge onto the 25 Megabtte
    cartridge, copy the software from the 8 Megabyte cartridge to the fixed
    media, then copy the software up to the 25 Megabyte cartridge.

Date: November 2, 1983   MPFB 0048

Product Type: VERSAdos 2.1,3.0,4.1,4.2,4.25   Contributed By MM & SK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem   DEBUGGING WITH MACSBUG

    Some customers may wish to debug their software on an EXORmacs (without a
    USE or RDS or HDS) in the M68000's supervisory mode. This is possible in
    MACSbug on the EXORmacs if you can load the program into memory with
    VERSAdos and then go to MACSbug for debugging.

    The following procedure for VERSAdos describes the process. To run in
    supervisory mode, the status register must be set up in MACSbug prior to
    program execution. NOTE that any exception processing will cause MACSbug
    to lose control of the program. Test exception processing routines by
    pushing data onto the stack and doing a jump indirect through the vector
    table.

****
Solution / Fix

    PROCEDURE
         1)   Make sure you are the ONLY user on the EXORmacs. (Use sessions)
         2)   Under VERSAdos, load your program, '=LOAD filename'.
         3)   Use SYSANAL to determine the location of your program in memory.
              Enter SYSANAL. Type TASK filename.
                   The program is loaded at the address determined by adding
                   the logical address to the Physical Offset.
                   The Logical address is in each segment under FR xxxxxxx
                   The Physical Offset is in each segment under (PO xxxxxx)
         4)   Move the program to where it expects to execute and start
              debugging. To move the segment, you can use the following
              program, setting up the registers as indicated.
              22D8 LOOP MOVE.L (A0+,(A1)+ ¦ A0=beg from address
              8089   CMP.L   A1,DC   ¦ A1=beg destination addr
              6EFA   BGT.S   LOOP   ¦ D0=ending destination addr + 1
              60FE END   BRA.S   END   ¦ hit RESET again to gain contrl

Date: November 1, 1983   MPFB 0049

Product Type: VME/10   Contributed By MK

Contact: Software Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem   ADDING MVME210 BOARD TO VME/10

    VERSAdos 4.15 will not recognize any additional memory added to it unless a
new sysgen is executed specifying the range of new memory, as detailed
below.

****
Solution / Fix

    The following procedure needs to be followed to add additional memory to
the VME/10 and have VERSAdos understand that it is there.
1.   Add a MVME210 board which is strapped to addresses in the range of
     $180000 through $DFFFFF, the address range to be used for the VMEbug
     memory boards. In this example I have strapped the addresses to cover
     the range $180000 through $1BFFFF.

2.   Modify SYS:9100.VME10.SYSCMD.SA to include two new parameters, MEMEND4
     and MEMEND5, to define a new partition of VERSAdos memory.
     MEMEND1 = $20000   Ceiling addr for part 0
     MEMEND2 = $20000   Floor addr for part 1
     MEMEND3 = $60000   Ceiling addr for part 1
     MEMEND4 = $180000   Floor addr for part 2   **add**
     MEMEND5 = $100000   Ceiling addr for part 2 **add**

3.   Modify SYS:9100.VMES10.IND.SA to expand the memory allocation table
     using the MTENTRY macro.
     MEMTABL   EQU   *
                MTENTRY RAM,$00000,/MEMEND1,MTYPO,PARTO,TOP
                IFNE   /MEMEND2
                MTENTRY RAM,/MEMEND2,/MEMEND3,MTYPO,PART1,BOTTOM
                ENDC
                IFNE   /MEMEND4   **add**
                MTENTRY RAM,/MEMEND4,/MEMEND5,MTYPO,PART2,TOP**add**
                ENDC   **add**
                MTEND
                DS.L   10
     ENDMEMT   EQU   *
                END

4.   Ensure that you are logged on under SYS:9100.&
     and then re-execute the sysgen command
       =VMES10.SYSGEN.CF <args>
     where <args> are as defined in the SYSGEN manual.

Date: October 26, 1983   MPFB 0050

Product Type: VERSAdos 4.2, 4.21 Linkers   Contributed By MM

Contact: Software Specialists   Information Type: ---- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   ---- Information Only
         (602) 829-3100

```
##########################################################################
```
Symptom / Problem   VERIFY DB ERROR ON SYMBUG UNDER VERSADOS 4.2

   SYMBUG/A 2.00 will sometimes abort with a VERIFY DB ERROR when using
   VERSAdos 4.20 and 4.21 Linkage Editors. The problem is the Linker will
   sometimes produce sectors containing only FFs.

```
##########################################################################
```
Solution / Fix

   The possible solutions are:
   1.   Go back to the Linkage Editor on VERSAdos 3.0.
   2.   Live with the problem and if you want symbol table information in
        SYMBUG/A 2.00 add or delete a symbol to your source program.
   3.   Wait for Linkage Editor 1.60 which should have the problem fixed and
        will be out with VERSAdos 4.3.
   4.   Use the following program to strip the .DB file of all sectors
        containing only FFs...which could be added to a user's link chain file
        to do the process automatically (see comments below).

```
program dbfix (input, output, ifile, ofile);
{ Rev 1.00         DBFIX - FIX .DB FILES FOR SYMBUG/A        10.26.83 mlm   }
{ This program is provided as is and is unsupported by Motorola.  Its main   }
{ purpose is to provide a means to correct potentially bad .DB files so      }
{ SYMBUG/A 2.00 will not abort with a VERIFY DB ERROR.  A future release of  }
{ the 68000 Linkage Editor should make this program obsolete.                }
{ The following chain file provides an example of how this program is used,  }
{ namely, DBFIX <input_db_filename>,<output_db_filename>.  The program       }
{ itself simply strips out sectors containing only FFs.  The following chain }
{ file is called as =DBFIX.CF <input_db_filename>, without an extension.     }
{        =DBFIX /1.DB,TEYP.DB                                                }
{        =DEL /1.DB              for example:  =DBFIX TEST<cr>               }
{        =RENAME TEYP.DB,/1.DB   will result in the file TEST.DB            }
{        =END                    having all FF sectors stripped out.        }
type    word    =    -32760..32760;
        sectors =    array [1..128] of word;
        str80   =    string[80];

var     ifile,ofile  :  file of sectors;
        buffer       :  sectors;
        i, pass, alloc, count  :  integer;
        options      :  str80;
```

```
       procedure num2str ( var num : integar; var str : str80 );
       const base = 10
       var   quot, remainder, b: integer;
             total             :   str80;
             select            :   string[20];
             singl             :   char;
begin
 select := '0123456789ABCDEF';
 b       := num;
 if ( b < 0 ) then b := -b;
 total  := '';
 quot   :=1;
 while (quot <> 0) do
     begin
     quot          := b div base;
     remainder     := b mod base;
     sngl          := select[remainder+1];
     total         := concat(singl,total);
     b             := quot
     end;
 str := total;
end;

begin
     pass          := 1;
     while (pass < 3 ) do
         begin
         count     := 0;
         reset ( ifile );
         if (pass = 2)
            then  begin
                  num2str ( alloc, options );
                  options := concat (';C=',options);
                  rewrite ( ofile, options );
                  end;
         while (not eof(ifile)) do
             begin
             buffer   := ifile@;
             get ( ifile );
             count    := count + 1;
             1 := 1;
             while ( ( i < 128) and (buffer[i] = -1) ) do
                 i := i + 1;
             if ( (i= 128) and ( pass = 1 ))
                 then  count := count - 1;
             if ( (i <> 128) and (pass = 2) )
                 then  begin
                       ofile@ := buffer;
                       put (ofile)
                       end;
             end;
         pass   := pass +1;
         alloc := count;
         end;
end.
```

Date: October 27, 1983   MPFB 0051

Product Type: EXORmacs & VM80   Contributed By PK

Contact: Hardware Specialists   Information Type: ---- As Needed
         Field Engineering   -X-- Mandatory
         Tempe Operations   ---- Information Only
         (602) 829-3100

****
Symptom / Problem   VM80 INTERRUPT ACKNOWLEDGE

    When running a VM80 in an EXORmacs, under the control of a 68KMPU Board,
    the system won't acknowledge any of the VM80's Interrupts.

****
Solution / Fix

    During an IACK cycle the 68KMPU Board asserts and ADDR modifier code of $37
    instead of the versabus standard $27; therefore, the VM80 board will never
    see an interrupt acknowledge. Engineering is presently working on this
    problem. A temporary fix might be to burn 1 bit into the prom at location
    U125. If you have the equipment you can change PROM location $C8 from $8
    to $C.

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: October 27, 1983   MPFB 0052

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: ---- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   ---- Information Only
         (602) 829-3100

****
Symptom / Problem   VME10 REWIRE

    Here are two more possible causes of soft errors.

****
Solution / Fix

    (1) The batteries have two plugs associated with them, P1 and P2. Follow
    the gray and black pair back to the power supply, this should be P1.
    Remove the black wire from the connector, tape it off, and then tie it back
    out of the way. Replace P1 with the gray wire still on the inside of the
    power supply.

    (2) Remove the green wire from TB1 on the front of the power supply, and
    connect it to the 24v return line on TB2.

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: October 27, 1983   MPFB 0053

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem   ONE ACKNOWLEDGE FOR 2 INTERRUPTS

    Interrupts vectoring to the wrong places.

****
Solution / Fix

    If you have an on-board interrupt and an off-board interrupt (of the same
    level) pending at the same time, the system could acknowledge both. With
    both interrupt sources putting their vector # on the bus at the same time
    the system vectors to an unknown address.

        Fix: Replace the PROM at location U218.

        Old P/N : 51AW1940x16
        New P/N : 51AW1940x18

Date: November 1, 1983   MPFB 0054

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem   KEYBOARD INITIALIZATION ERRORS

   Keyboard Init errors during the power-up selftests, SCB.SY, and sometimes
   when loading VERSAdos.

****
Solution / Fix

   If you get a keyboard Init error, and you can still use the keyboard,
   chances are that the S/W or F/W is at fault. The reset line to the
   keyboard is S/W controlled and must be held low for a minimum of 3.0 usec.
   This problem has been patched out of VERSAdos 4.25, and has also been fixed
   by the new release of the SCB.SY diagnostic called SCM.SY; however, the
   power-up selftest still has this bug in it and will occasionally give you a
   K.B. Init error.

Date: November 1, 1983   MPFB 0055

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem

                          KEYBOARD TIMEOUT ERRORS

****
Solution / Fix

     Watch out for bad cables when you start getting the keyboard timeout
     error. Both the external and internal K.B. cables have some connectors
     that were poorly crimped. The best way to ohm out this problem is to take
     the VME/10 and the keyboard apart, and ohm from the connector on the inside
     of the keyboard to the connector on the VMEC1 board itself. This will
     ensure the integrity of the path from the keyboard to the system.

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: November 1, 1983   MPFB 0056

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

##
Symptom / Problem

                    VME/10 EMPTY SCREEN ON POWER-UP

    Sometimes, during the power-up sequence, the VME/10 fails to reset
    properly, and the system appears to be down. (There will be nothing on the
    screen.

##
Solution / Fix
 The mask in the MC68010 in some of the VME/10's has a bug in it. If it fails
to reset correctly, try giving it a hard reset by depressing the reset button,
tapping the abort button, and then releasing the reset button.

Date: November 1, 1983   MPFB 0057

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: ---- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

###
Symptom / Problem

             SHIPPING MICROPOLIS = FLOPPY DISK DRIVES

###
Solution / Fix
 The micropolis floppies were designed to be shipped without a shipping
diskette in. They built in a switch that won't allow the heads to load if
there wasn't a floppy in the drive. Damage and/or misalignment to the head can
result if you use one.

Date: November 1, 1983   MPFB 0058

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: ___ As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****
Symptom / Problem   JITTERY VME/10 MONITERS

              THE DISPLAY IS JITTERY AND UNSTABLE.

****
Solution / Fix

                        TWO POSSIBILITIES
(1) In the factory, the monitors are adjusted when they are warm, so in some
    cases they become more stable as they warm up.

        Fix : If this problem exists, the horizontal adjustment is on the
hairy edge and a slight adjustment should get rid of the warm up time.

(2) After warm up the display stays unstable.

        Fix : If boards were added in the back of the VME/10 the drain on the
5v supply has increased and the 24v supply is starting to give us some
trouble. Again, adjust the horizontal pot in the monitor.

<u>MICROSYSTEMS PRODUCT</u>
<u>FIELD BULLETIN</u>
CONFIDENTIAL

Date: November 1, 1983   MPFB 0059

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: ---- As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   ---- Information Only
         (602) 829-3100

****
Symptom / Problem   VME/10 SCREEN PROBLEM

    On some monitors the characters are so far to the right or left that they
    appear to wrap around behind the screen, and are displayed backwards.

****
Solution / Fix

    In most cases you can adjust this out with the horizontal pot.

Date: November 1, 1983   MPFB 0060

Product Type: MVME110   Contributed By PK

Contact: Hardware Specialists   Information Type: ——— As Needed
         Field Engineering   -X- Mandatory
         Tempe Operations   ——— Information Only
         (602) 829-3100

****
Symptom / Problem   SPURIOUS INTERRUPT TO VME110 BOARD

    Spurious interrupts from the I/O channel. Intermittently the VME110 board
    receives an unsolicited interrupt from the I/O channel.

****
Solution / Fix

    The resistor pack at location R17 which terminates the INT1-INT4 lines, on
    some VME110, was installed backwards and doesn't provide enough noise
    immunity. Pin 1 of R17 should go to ground and pin 8 should go to +5v.
    Power down the equipment and verify this with an ohmmeter.

Date: November 1, 1983   MPFB 0061

Product Type: VME10   Contributed By PK

Contact: Hardware Specialists   Information Type: ─── As Needed
         Field Engineering   ─X─ Mandatory
         Tempe Operations   ─── Information Only
         (602) 829-3100

\#

Symptom / Problem   BUS ERROR ON VMEBUS

    Trying to talk to boards on the VMEBUS results in a bus error.

\#

Solution / Fix

    This problem was determined to be a bad decoder prom in location u287. A
    new prom has been generated and the part #'s are as follows:

        old p/n   51   aw4000B40
        new p/n   51   aw4000B51

Date: November 1, 1983   MPFB 0062

Product Type: VME10   Contributed By PK

Contact: Hardware Specialists   Information Type: ---- As Needed
         Field Engineering   --- Mandatory
         Tempe Operations   -X- Information Only
         (602) 829-3100

****

Symptom / Problem   KEY TO BATTERY BACKUP ON VME/10

    The battery backup connector in the VME/10 isn't keyed very clearly.

****

Solution / Fix

    To assure the battery is connected correctly to the VMEC1 board check to
    see that the red wire goes to pin 1.

MICROSYSTEMS PRODUCT
FIELD BULLETIN
CONFIDENTIAL

Date: October 27, 1983   MPFB 0063

Product Type: EXORmacs   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   --- Mandatory
         Tempe Operations   -X- Information Only
         (602) 829-3100

****
Symptom / Problem   VME/10 CHASSIS DOCUMENTATION ERROR

    In the chassis user's manual on page 7-13 there is a pin-out of the debug
    printer cable for the EXORMACS. This pin-out is reversed. It should read
    as follows:

****
Solution / Fix

    It also says all odd # pins are ground. Not true. All even # pins are
    ground.

REAR PANEL	P3	P2
49	49	18
47	47	20
45	45	22
43	43	24
41	41	26
39	39	28
37	37	30
35	35	32
33	33	34
31	31	36
29	29	38
27	27	40
25	25	42
23	23	44
21	21	46
19	19	48
17	17	50
15	15	52
13	13	54
11	11	56
9	9	58
7	7	60
5	5	62
3	3	64
1	1	66

<u>MICROSYSTEMS PRODUCT</u>
<u>FIELD BULLETIN</u>
CONFIDENTIAL

Date: November 3, 1983   MPFB 0064

Product Type: EXORset 110   Contributed By CD & AZ

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   --- Mandatory
         Tempe Operations   -X- Information Only
         (602) 829-3100

****
Symptom / Problem   EXORSET 110 KEYBOARD PROBLEM

    The Hyphen and underline key functions are transposed (lower case only).

****
Solution / Fix
There is no contemplation fix to alter this transposition at this time. Just
be aware of the condition, and appraise your customers accordingly.

    Ref: Main Controller Module, U-125, I.C. SC80241P
         Part Number 51W9615G83

Date: November 3, 1983   MPFB 0065

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: --- As Needed
         Field Engineering   --- Mandatory
         Tempe Operations   -X- Information Only
         (602) 829-3100

****
Symptom / Problem   GROUNDS ON VME/10

    One thing to try when getting excessive soft errors.

****
Solution / Fix
In some of the VME/10's the AC and DC grounds are not isolated. The check out
procedure is as follows:

    Connect an ohmmeter from the top of the Winchester drive (DC ground) to the
    chassis (AC ground). This should read as an open. (To get good continuity
    on top of the wini, connect the ohmmeter to any screw holding the top to
    the wini.)

Date: November 3, 1983   MPFB 0066

Product Type: VME/10   Contributed By PK

Contact: Hardware Specialists   Information Type: -X- As Needed
         Field Engineering   ---- Mandatory
         Tempe Operations   --- Information Only
         (602) 829-3100

****
Symptom / Problem   FLOPPY DISK LOOPING IN VME/10

    Floppy hangs in a harmonic loop which results in soft errors.

****
Solution / Fix

    Try adjusting the PLL as follows:

    1.   Connect a freq counter to E5 on the RWIN1 board.
    2.   Attach a shorting clip to u100 (clip shorts pin 12-16 and pin 11-8(
    3.   Adjust c54 until the frequency is between 7.4 and 7.5 Mhz.
    4.   If you cannot achieve this window adjust it to the lowest possible
          frequency, not to exceed 7.8 Mhz.

MPFD

FIELD BULLETIN
CONFIDENTIAL

Date: November 11, 1983   MPFB 0067

Product Type: VME/10   Contributed By: MM

Contact: Software Specialist   Information Type: _x_ As Needed
         Field Engineering   ___ Mandatory
         Tempe Operations   ___ Information Only
         (602) 829-3100

****

Symptom / Problem   WRITING TO VME/10 ON BOARD RAM

    Setting bit 5 in control register 2, at address $F19F09, allows the VMEbus
    to write to VME/10 on board RAM. This is useful when you have something
    like a VME110 that wants to write to VME/10 memory. The problem is that
    you must write to the register while in Supervisory mode of the MC68010
    chip. If you write to it from User mode, such as from a user program under
    VERSAdos, the change appears to have taken place (if you then read the
    register you get what you wrote to it) but it in fact hasn't. Engineering
    is aware to the problem and will probably be fixing it later on, the
    problem appears to be in U216.

****

Solution / Fix

    The following program allows a VERSAdos program to change the byte at
    $F19F09 while in Supervisory mode by using some Field Service Standard
    Practice Mysticism. We claim the timer interrupt vector for one timer
    tick, process the interrupt ourself, and restore the timer vector when
    done. Please keep the program as it is as several things present need to
    be there in order to work, such as the ORG to put the program into one MMU
    segment, the PC relative addressing in the SERVICE routine, etc.

```
          ORG      $1000
START     LEA      STACK,A7             SET UP STACK
          LEA      GTSEG,A0             ALLOCATE VECTOR TABLE TO PROGRAM
          MOVE.L   #1,D0
          TRAP     #1
          BNE      ABORT
          LEA      RCVSA,A0             RECEIVE SEGMENT ATTRIBUTES W/ PHYS ADDR
          MOVE.L   #9,D0
          TRAP     #1
          BNE      ABORT
          MOVE.L   #$130,A0             SAVE CURRENT TIMER VECTOR
          MOVE.L   (A0),SAVEIT
          MOVE.L   PHYS,D1
          ADD.L    #SERVICE-START,D1    CALCULATE PHYSICAL SERVICE ADDRESS
          MOVE.L   D1,(A0)              STUFF ADDRESS INTO VECTOR TABLE
          MOVE.L   #0,FLAG
WAIT      MOVE.L   FLAG,D0
          BEQ.S    WAIT                 SEE IF SERVICE ROUTINE IS DONE
```

```
EXIT       MOVE.L   #15,D0    RETURN TO VERSADOS
           TRAP     #1
ABORT      MOVE.L   D0,A0                     ABORT, BAD RETURN CODE FROM VERSADOS
           MOVE.L   #14,D0
           TRAP     #1
SERVICE    MOVE.L   A0,-(A7)                  SAVE A0 ON SYSTEM STACK
           MOVE.B   #$B4,$F19F09              DO THE MOVE TO THE CONTROL REGISTER NOW
           LEA      FLAG(PC),A0               SET CONTROL FLAG FOR SETUP TASK
           MOVE.L   #$FF,(A0)
           MOVE.L   #$130,A0
           MOVE.L   SAVEIT(PC),(A0)           RESTORE TIMER INTERRUPT VECTOR
           MOVE.L   (A7)+,A0                  RESTORE A0
           RTE
FLAG       DC.L     0
SAVEIT     DC.L     0
GTSEG      DC.L     0,0,$01000800
           DC.L     'MARK'
           DC.L     $130
           DC.L     1023-$130-1
RCVSA      DC.L     0,0,$4000000,0
           DC.L     RCVSA,0,SEGMENT
SEGMENT    DC.L     0
           DC.L     0
           DC.W     0
           DC.L     0,0
PHYS       DC.L     0                         PHYSICAL ADDRESS OF THIS SEGMENT
           DCB.L    50,0
STACK      DC.L     0
           END      START
```

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