FIELD CHANGE ORDER

Number: DMB32-F001-DAS

Applicability: (1) Upgrade all DMB32’s (T1012) for systems exhibiting System/Process Page Table Entry Access Violations. (2) Upgrade the DMB32 (T1012) for those systems using the LP29 (2000 LPM) Printer. (3) Upgrade all other DMB32’s exhibiting Problem/Symptoms as noted on Page 2.

Problem/Symptom:

See Page 2 for Problem/Symptoms Section.

1) Verify E28 is part number 23-369E6-00.
2) Verify E29 is part number 23-370E6-00. 3) Verify DMB32 (T1032) is at rev. K1 or higher.

Compatibility/Prerequisite FCO: N/A  Est. Time to Install: 1.0 Hr.

Special Tools or Test Equipment: N/A

FCO Parts Information

<table>
<thead>
<tr>
<th>Order by</th>
<th>Quantity</th>
<th>Part Number</th>
<th>Description</th>
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<td>FCO Kit#:</td>
<td></td>
<td></td>
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<tr>
<td>EQ-01522-02</td>
<td>1</td>
<td>T1012-00 DMB32</td>
<td>(VAXBI COMM CONTROLLER)</td>
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<tr>
<td>FA-04822-02</td>
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<td>FCO Document</td>
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EQ Kit Variation System/Option Applic:

Approvals

<table>
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<tr>
<th>CSSE Engineer</th>
<th>F.S. Product Safety</th>
<th>F.S. Logistics</th>
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<tbody>
<tr>
<td>Lee Sondrini</td>
<td>Robert Brister</td>
<td>Joseph Michalski</td>
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<tr>
<td>CSSE Manager</td>
<td>F.S. Microfiche Libraries</td>
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<tr>
<td>Jonathan Lewis</td>
<td>EP-FSVDC-LB VAX</td>
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<td>MicroMedia Pub</td>
<td>VAXnotes</td>
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<td>Diane MacDonald</td>
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Affected Population: 724
Initial Kitting: 724
PROBLEM/SYMPTOMS (Continued from Page 1.)

1. Problem: Incorrect mask in Virtual to Physical address translation routine causing invalid access to System/Process Page Table Entries.
   Symptom: Print queues hang, (system logs LIA0 errors), system reboot required to free print queue), print jobs lost, async ports exhibit lost data, and sync port logs "Line Sync Lost" errors.

   Symptom: Unacceptable throughput of LP29 Printer.

3. Problem: Start of 68000 cycles not synchronized to start of VAXBI Master transactions.
   Symptom: 1) Intermittent EVDAK test 32 failures (hard error number 8).
   2) DMA errors which caused VMS/SNA to experience occasional automatic shutdown of the circuit with "Circuit Shutdown Forced, Device Inactive" error messages.

4. Problem: Async RX and TX split speed operation mis-matched.
   Symptom: Split speed operation requires transmit speed to be varied by changing receive speed and vice-versa.

5. Problem: First four receive sync characters discarded by DMB32 following a receive abort in GENBYTE or BISYNC mode.
   Symptom: Problem in GENBYTE protocol which caused time-out problem in customer written network applications.

6. Problem: PBUFFCT register not updated at the termination of a transfer.
   Symptom: PR.CHAR.CT field not updated with the number of characters left to transmit at the end of a DMA.

7. Problem: BIIC EXT Vector Bit clear after module reset, to conform to DEC STD 057.
8. Problem: Physical addressing of Page Tables not implemented as per functional specification.
Symptom: Valid bits set in Page Table Entries.

REWORK INSTRUCTIONS

IMPORTANT

1. Perform all necessary procedures to perform an orderly shutdown of the operating system. Power down the system to be worked on via the console switch. Locate the main breaker (CB1) on the cabinet power controller and set it to the "0" (OFF) position.

********************************************************************
*                      *** CAUTION ***                             *
*  To assure that AC power is removed from the unit, the AC power  *
*  cord must be disconnected.                                      *
********************************************************************

2. Gain access to the appropriate T1012 (DMB32) module to be reworked.

********************************************************************
*                      *** CAUTION ***                             *
*  DO NOT SLIDE ANY BA11 BOX OUT OF ITS CABINET UNLESS THE CABINET *
*  IS BOLTED TO AN ADJACENT CABINET OR THE STABILIZER LEGS ARE      *
*  EXTENDED. ONLY ONE CABINET IS ALLOWED TO HAVE AN OPTION OR BOX   *
*  PULLED OUT AT ANY ONE TIME.                                     *
********************************************************************

********************************************************************
*                      *** CAUTION ***                             *
*  THE DMB32 MODULE AS WELL AS THE EPROMS IN THIS FCO KIT, ARE      *
*  ELECTROSTATIC DISCHARGE SENSITIVE DEVICES. THE USE OF THE        *
*  VELOSTAT KIT IS ESSENTIAL TO PREVENT DAMAGE WHICH MAY NOT BE     *
*  NOTICED IMMEDIATELY.                                             *
********************************************************************

3. Remove the T1012 (DMB32) from the SPC slot.

4. Install the T1012 (DMB32) module (supplied in this EQ Kit) into the slot from which the below Revision T1012 was removed.
5. Reset CB1 on the cabinet power controller and power up the system using the console switch.

6. Ensure that the T1012 (DMB32) Diagnostic LED is on. This will indicate that the On-Board Diagnostics have completed satisfactorily.

7. Run the DMB32 standalone diagnostic EVDAK to verify correct operation of the module. Due to the firmware changes a patch is required for EVDAK revision 3.0 to run error free.

```
DS> LOAD EVDAK
DS> DEPOSIT C253 10068
DS> DEPOSIT/BYTE C24E 3F
DS> SAVE
```

If the patch is not installed the diagnostic will report the following error:

```
Test 25  Error 5
Printer Port DMA Start and Abort test Failed.
```

This problem will be resolved for VAX Diagnostic Release 34. EVDAK version 4.0 will no longer require the preceding patch.