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FCO

Level of Urgency

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Page 1

Of 8

FIELD CHANGE ORDER

Number: FCO DWBUA-R001

Applicability: Retrofit all DWBUA options on VAX 82X0/83X0/85X0/8700/8800s to Revision Level "B1".

This FCO incorporates the following ECOs:

ECO T1010-LK004 - New Part Revision "D1/D2" (This Rev never shipped.)

ECO T1010-LK005 - New Part Revision "E1/E2"

ECO T1010-LK008 - New Part Revision "F1-F6"

Field spares stock should also be upgraded.

| This revised FCO supersedes Rev. A released 22 June 1987. It has been
 || revised to correct step 15 on page 4, and step 13 on page 6.

Problem/Symptom:

See Page 2

Quick Check: E67 is 23-314F4-00

See Page 8

Compatibility/Prerequisite FCO: N/A

Est. Time to Install:

1 hr.

Special Tools or Test Equipment: Field Service Tool Kit

FCO Parts Information

Order by	Quantity:	Part Number:	Description:
FCO Kit#:			
EQ-01324-01	1	T1010	BUA Module, Min Rev "F1-F6"
EQ-01324-02	1	23-081L1-00 & 23-314F4-00	Microcode ROMS
FA-04604-02	1		FCO Documentation

EQ Kit Variation System/Option Applic: N/A

Approvals

CSSE Engineer Jim Powers	F.S. Product Safety Robert Brister	F.S. Logistics Ed Duggan
CSSE Manager Jan Sicard	F.S. Microfiche Libraries EP-FSNVX-LB VAX	Affected Population: 3,600/2,800
MicroMedia Pub.		Initial Kitting:

Ray LeBlanc

VAXnotes
STARS

3,600/2,800

Revision:
B

Hardcopy Publication:
6,000

FCO Release Date
14-AUG-87

Parts Availability:
August 1987

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FCO DWBUA-R001

PAGE 2 OF 8

Problems/Symptoms:

T1010-LK004 - New Part Rev "D1/D2"

1. Add a parity gate array. Micro code PROMS changed and jumper wires removed which allow the microbits to be shared.
2. BUA to send NOACK response to all unused register accesses on the BIA internal register space.
3. Change the BUA unibus interface to wait for the deassertion of SSYN before a requesting device asserts BBSY.
4. New Unibus sequence code makes NPR independent of data transfer transaction.
5. Microcode changes.
 - a. Idle loop in the BUA was updated to allow the BUA to ignore a short pulse on the MSYN that is more than 50 NSEC wide but is less than 500 NSEC.
 - b. DATIP service routine now waits for MSYN to be asserted after the DATIP is serviced for the following DATO(B) xfers and once MSYN is received it checks the next transfer is indeed DATO(B).
 - c. Remove the code from selftest #11 that initialized the HIMUX latch of the BUA gate array for simulation purpose only.
 - d. Selftest comments were changed to number all test in hexadecimal. The test numbers now correspond to those written into the IEN code.
 - e. Selftest #11 was changed to check for BCI_REQ twice. The BUA now waits for 3 cycles before checking the signal again.
 - f. Selftest was changed to allow unibus memory. Selftest now sizes address 1555H(H) and 2AAA8(H) and skips test 10 if memory is found.

T1010-LK005 - New Part Rev "E1/E2"

1. Current Ucode fails on systems configured with DMF32, BA11-K and BA11-A boxes. Ucode upgraded to allow for menu ordering.

T1010-LK008 - New Part Rev "F1-F6"

1. DWBUA drops address bit 0 when CPU does DATOB to high byte of a device register immediately after the DWBUA completes

- a OW WRITE to purge a buffered datapath.
- DWBUA responses with four ACKs to a IDENT request when processing a passive release, causing the next BI master to get an illegal confirmation error when it receives the fourth ACK.
- CORRECTION: Use new MASCON sequencer (E28) to:
- deassert DMSKOE_L sooner to allow bidirectional DMSK<3:0> lines to pass the BI command into the BUA Gate Array properly.
 - assert Send_ACK for 600 lnsec instead of 700 nsec.

NOTE: F3-F6 were created with T1010-LK007 and are Pass 5 BIIC chip boards.

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FCO DWBUA-R001

PAGE 3 OF 8

II. VAX 82X0/83X0 - FIELD INSTALLATION AND TEST PROCEDURE FOR DWBUA-R001

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*****
*
*           C A U T I O N
*
*   The module, as all other VAX 8X00 modules,
*   contains electrostatic discharge sensitive
*   devices (ESDS).  The use of the new VELOSTAT
*   case is essential to prevent damage which may
*   not be noticed immediately.
*
*****

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- Shut down the system by executing the Shutdown Command Procedure.
\$ @SYS\$SYSTEM:SHUTDOWN
- Remove the processor cabinet front and rear doors.
- Turn the upper keyswitch on the console panel fully counterclockwise and set the main circuit breaker at the back of the BA32 box to the "OFF" (down) position.
- From the front of the CPU cabinet, fully extend the cabinet stabilizer leg.
- From the rear of the processor cabinet, release the BA32 box track lock.
- Slide the BA32 box out of the cabinet.

7. Remove the BA32 box top cover.
8. Put on the wrist strap found in the holding bag on the front base of the cabinet. Attach the other ground strap in the bag to the conductive package containing the T1010 module.
9. Open EQ-01324-01 kit and check that the T1010 is at revision F1-F6 by using the quick check. It should be part # 23-314F4-00. If the part number is incorrect return the module to the designated repair center for upgrade and discontinue this procedure.
10. Lift the lever of the VAXBI cardcage slot housing the T1010 module to be replaced. It should be found in cage 1 slot 2. Remove the module from the cardcage and place it on the open top half of the conductive package.
11. Check the revision of the module taken from the machine. If the T1010 module is at revision E1/E2, proceed to step 13. If the T1010 module is at revision C1/C2, proceed to step 12.

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FCO DWBUA-R001

PAGE 4 OF 8

12. Remove the revision F1-F6 module from the container. Install it in the same slot from which you removed the old module. Proceed to step 17.
13. If the T1010 module is at rev E1/E2, place it on the ESD conductive package.
14. Unplug ROM P/N 23-295F4-00 at location E67 on the T1010. Install new ROM P/N 23-314F4-00 in the same location. (See Figure 1, page 7)
15. Unplug ROM P/N 23-057L1-00 at location E28 on the T1010. Install new ROM P/N 23-081L1-00 in the same location. (See Figure 1, page 7)
16. Reinstall the T1010 module into the same slot you removed it from.
17. Return the lever of the VAXBI cardcage to the locked position.
18. Place the top cover on the BA32 box but do not secure it with the 14 screws.
19. Power up the CPU by turning on the Circuit Breaker on the back of the BA32 box to the ON (1) position and turning the upper keyswitch on the front console panel to ENABLE. The DWBUA self-test runs upon power up. Check that the yellow LED on the T1010 lights. If the LED does not light, try reseating the module.

20. Run two full passes of EVCBB, the DWBUA macrodiagnostic.

If there are problems either with self test or with EVCBB, refer to the DWBUA Unibus Adapter Technical Manual (EK-DWBUA-TM)
21. Secure the BA32 box's top cover.
22. Slide the BA32 box back into the cabinet making sure that cables are not harmed and retract the stabilizer leg.
23. Place the revision "C" T1010 module in the conductive container and return as soon as possible to the repair center for upgrade.
24. Replace the two ground straps in the bag on the cabinet floor.
25. Replace and latch the processor cabinet front and rear doors.
26. Bring up the Operating System and run UETP.
27. Update the Site Management Guide to reflect this FCO.
28. Report this FCO activity on the LARS form in the "Fail Area/Module/FCO/Comments" column as follows: FCO DWBUA-R001 (See page 8 for further instructions).

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FCO DWBUA-R001
PAGE 5 OF 8

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I. VAX 85X0/8700/8800 - FIELD INSTALLATION AND TEST PROCEDURE FOR DWBUA-R001

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*
*                               C A U T I O N                               *
*
*   The module, as all other VAX 8X00 modules,                          *
*   contains electrostatic discharge sensitive                           *
*   devices (ESDS). The use of the new VELOSTAT                          *
*   case is essential to prevent damage which may                       *
*   not be noticed immediately.                                          *
*
*****

```

1. Shut down the system by executing the Shutdown Command Procedure.

```
$ @SYS$SYSTEM:SHUTDOWN
```

After VMS shuts down, type ^P you will now be in console mode

PROMPT is >>>

At the console prompt type HALT (CR)

- Using the console command, power off the system,

>>>POWER OFF (CR)

If an 85X0, open the rear door and set CB1 on the H405-B to the OFF position. If an 8700/8800 open front left door and set CB1 to the OFF position.

- Use ALL ESD safety precautions to prevent D O A modules in upgrade kit.
- Hook static strap from 8800 to ESD case, hook the other ESD strap to wrist. Open air-flow slides in front of the card cage exposing area around slot containing the T1010 module. Open ESD container by breaking the ESD SEAL on the front of the case. Remove the T1010 module from the CPU slot and place it on the pink foam opposite the rev F1-F6 module (EQ-013324-01. (This is the temporary storage area until new module is installed.)
- Place the T1010 revision "F1-F6" ESD case, (EQ-01324-01), on the floor in front of the 8800, then using the hex key, open the doors of the 85X0/8700/8800.
- Check the revision of the T1010 module in the machine. If the T1010 module is at rev F1-F6, reinstall it in the same slot and proceed to step 15. If the module revision is revision C1/C2, proceed to step 7. If the module is at revision E1/E2, proceed to step 11.

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FCO DWBUA-R001

PAGE 6 OF 8

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- Remove the revision F1-F6 module from the container. Install it in the same slot from which you removed the old module.
 - Package the old rev module in the same ESD container and close.
 - Remove grounding cable from ESD container once closed.
 - Return the old T1010 module ASAP to designated repair center for upgrade and proceed to step 15.
 - If the T1010 module is at rev E1/E2, place it on the ESD conductive package..
 - Unplug ROM P/N 23-295F4-00 at location E67 on the T1010. Install new

ROM P/N 23-314F4-00 in the same location. (See Figure 1, page 7)

13. Unplug ROM P/N 23-057L1-00 at location E28 on the T1010. Install new ROM P/N 23-081L1-00 in the same location. (See Figure 1, page 7)
14. Reinstall the T1010 module into the same slot you removed it from.
15. Set Circuit Breaker CB1 on the 876-A or 405-B Power Controller to the ON (1) position. Close and latch cabinet doors.

Power up the CPU by typing the following command;

>>>POWER ON <CR> at the console.

16. Verify that the DWBUA passes self test by observing that the amber light is illuminated on the DWBUA (T1010) module.
17. Verify total CPU operation by running the following diagnostics, as follows:
 - a. Type SYSINIT.COM to initialize CPU.
 - b. Type @DIABOO to load Diagnostic Supervisor
 - c. Load and execute the following diagnostics:

EVKAA	EZKAX
EVKAB	EZCJA
EVKAE	EVCBB

18. Bring up the VMS Operating System and run UETP.
19. Update the Site Management Guide to reflect this FCO.
20. Report this FCO activity on the LARS for in the "Fail Area/Module/FCO/Comments" column as follows: FCO DWBUA-R001 (See page 8 for further instructions).

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FCO DWBUA-R001

PAGE 7 OF 8

