

DIGITAL

FCO

CATEGORY

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FIELD CHANGE ORDER

NUMBER: 9XXX-0005

APPLICABILITY: This FCO should be installed on all VAX 9000-2XX and 4XX systems with AMP and early production Woven Electronics cables. The cables are developing shorts and opens due to poor vendor assembly. Field spares should also be upgraded at this time.

PROBLEM & SYMPTOM: Failures of interconnect cables will cause intermittent system failures and initialization failures.

SOLUTION: Remove all AMP and early production Woven Electronics cables, replace with Woven cables with solid gray connectors and verify the functionality of the system with the new cables.

QUICK CHECK: Check part label for Woven as the Vendor name on the cable and that the cables have solid gray connectors. Ensure that the cables have solid gray ends, early production Woven cables have black and gray connectors.

PRE/COREQUISITE FCO:

N/A

MTTI HRS

8 hours

TOOL/TEST EQUIPMENT:

Field Service Tool Kit

Installation and Maintenance Guides (see page 2)

FCO PARTS INFORMATION

| FCO KIT NO. | DESCRIPTION OF CONTENTS | EQ KIT VARIATION APPLICABILITY |
|-------------|-------------------------|-----------------------------------|
| EQ-01618-01 | 9000-210 Cable Kit | |
| EQ-01618-02 | 9000-410 Cable Kit | |
| EQ-01618-03 | 9000-420 Cable Kit | |
| FA-04951-01 | FCO Document | |

FCO CHARGING INFORMATION

| WARRANTY/CONTRACT | | | | NONWARRANTY/NONCONTRACT | | | | |
|--------------------|-----------|----------|-----------|-------------------------|-----------|----------|-----------|---|
| ON-SITE | | OFF-SITE | | ON-SITE | | OFF-SITE | | MATERIAL ONLY |
| TRAVEL/ INSTALL | EQ KIT | INSTALL | EQ KIT | TRAVEL/ INSTALL | EQ KIT | INSTALL | EQ KIT | ORDER-ADMIN, HANDLING PKG, SHIPPING & EQ KIT |
| DEC | DEC | DEC | DEC | N/A | N/A | N/A | N/A | N/A |

APPROVALS

CSSE
Tom Collentine

FSHQ LOGISTICS
Dick Joseph

FS PRODUCT SAFETY
Robert Brister

| | | |
|-------------------------------|--|----------------------------------|
| CSSE MANAGER Dino Genova | This document is published on multiple media including hardcopy, Customer Services | FCO RELEASE DATE 21 June 1991 |
| MICROMEDIA Diane MacDonald | Microfiche Libraries, Customer Services CD-ROM and MDS Microfiche Libraries. | FCO REVISION A |
| POPULATION 600 | It is also available via TIMA. | PARTS AVAILABILITY June, 1991 |

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TOOL/TEST EQUIPMENT (Cont)

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VAX 9000 Model 200 Installation Guide EK-9200I-IN
VAX 9000 Model 400 Installation Guide EK-9400I-IN
VAX 9000 Family Maintenance Guide Volume 1 EK-KA901-MG
VAX 9000 Family Maintenance Guide Volume 1 EK-KA902-MG

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EQ Kit Contents/Ordering chart

```

-----
EQ-01618-01    QUANTITY    9000-210
-----
17-01786-02      4      JXDI Buss Cable
17-01787-01      2      Clock Control Cable
17-01788-01      5      High Speed Signal/SCAN Cable
17-02958-01      1      SFM Cable
90-07032-00     20      Tie Wrap
90-08264-00      5      Tie Wrap Stick Block
FA-04951-01      1      FCO Document

EQ-01618-02    QUANTITY    9000-410
-----
17-01786-02      8      JXDI Buss Cable
17-01787-01      2      Clock Control Cable
17-01788-01      5      High Speed Signal/SCAN Cable
17-02958-01      1      SFM Cable
90-07032-00     20      Tie Wrap
90-08264-00      5      Tie Wrap Stick Block
FA-04951-01      1      FCO Document

EQ-01618-03    QUANTITY    9000-420
-----
17-01786-02      8      JXDI Buss Cable
17-01787-01      3      Clock Control Cable
17-01788-01      6      High Speed Signal/SCAN Cable
17-02958-01      1      SFM Cable
90-07032-00     20      Tie Wrap

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| Installation Procedure for JXDI Buss Cables..... | 4 |
| Installation Procedure for Clock Control Cables..... | 5 |
| Installation Procedure for High Speed Signal SJI Cables.. | 6 |
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FIELD INSTALLATION SYNOPSIS

1. Perform Normal Operating System Shutdown Procedures. Power Off the System, Disconnect Power and lock out the system from AC power source.

2. Audit the system interconnect cables for AMP or early production Woven Electronics cables. The cable part number tag attached to the cable will list the vendor name. Early production Woven cables can be identified by black and gray connectors ends, AMP cables will have all black connector ends. The correct Woven Electronics cables have solid gray connector ends and the vendor name WOVEN affixed to the part number tag. The cables should be replaced and tested in groups. Perform the following steps when AMP or early production Woven cables are present in the designated groups listed below.

It is very important to provide strain relief for the cables at the cable ends so that the cables do not pull loose. Particular attention to strain relief should be made at the SPU cardcage, XMI cardcage and the SCU planar.

SCAN CABLES INSTALLATION PROCEDURE

SCAN CABLES

| | | |
|------------|--------|--------|
| ----- | | |
| Cable Part | From | To |
| Number | Module | Module |
| ----- | | |

| | | |
|-------------|----------------------------|------------------|
| 17-01788-01 | SCAN Interface SCM J1C2 | CPU #0 Planar P1 |
| 17-01788-01 | SCAN Interface SCM J1D1 | MCM J2 |
| 17-01788-01 | SCAN Interface SCM J1D2 | SCU Planar P5 |
| 17-01788-01 | SCAN Interface SCM J1C1 | CPU #1 Planar P1 |

- a. Disconnect the SCAN cables (17-01788-01) from the scan controller module (SCM) in slot 1 of the service processor BI backplane. Remove the affected SCAN cables after disconnecting the opposite ends of the cables where they connect to the CPU(s), SCU and MCM.

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- b. Install the new Woven SCAN cables, ensure that adequate strain relief is provided for the cables by using the tie wraps and stick blocks. Test the CPU(s), SCU and MCM using the hardcore test, in addition ensure the system can be properly initialized.
- c. TEST/SCAN/LOG/TRACE/ISOLATION/CPU:N
TEST/SCAN/LOG/TRACE/ISOLATION/SCU
TEST/LOG/TRACE/ISOLATION/CLOCK
I/K

JXDI BUSS CABLES INSTALLATION PROCEDURE

```

| WARNING: This procedure may expose you to line voltage on the |
| Auxiliary Power circuit breaker (CB1) located in the lower   |
| rear section of the IOA cabinet, if the UPC is not properly  |
| shutdown and locked out. This voltage will be present even if |
| CB1 is in the off position.                                   |

```

JXDI BUSS CABLES

| Cable Part Number | From Module | To Module |
|----------------------|----------------|--------------|
|----------------------|----------------|--------------|

XJA0/XMI 0

| | | |
|-------------|----------------|-----------------|
| 17-01786-02 | SCU planar P1 | XMI 0 XJA0 J8D1 |
| 17-01786-02 | SCU planar P2 | XMI 0 XJA0 J8D2 |
| 17-01786-02 | SCU planar P14 | XMI 0 XJA0 J8E1 |
| 17-01786-02 | SCU planar P13 | XMI 0 XJA0 J8E2 |

XJA1/XMI 1

| | | |
|-------------|----------------|-----------------|
| 17-01786-02 | SCU planar P3 | XMI 1 XJA1 J8D1 |
| 17-01786-02 | SCU planar P4 | XMI 1 XJA1 J8D2 |
| 17-01786-02 | SCU planar P16 | XMI 1 XJA1 J8E1 |
| 17-01786-02 | SCU planar P15 | XMI 1 XJA1 J8E2 |

- a. For each XJA installed disconnect the four tie-wrapped JXDI bus cables from D1, D2, E1, and E2 on the XJA in slot 8 of the appropriate XMI backplane. Remove the affected JXDI cables after disconnecting the opposite ends of the cables where they are connect to the System Control Unit.

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- b. Install the new Woven JXDI bus cables and test them using the cable test program and the XJA macro diagnostic. Ensure all I/O devices are present.
- c. Ensure that adequate strain relief is provided for the cables by using the tie wraps and stick blocks.
- d. TEST/JXDI:X
I/K
SHOW CONFIG/IO
BOOT VDS and run the autosizer
DS>RUN EVCLB
Boot VMS show devices then run Shutdown

CLOCK CONTROL CABLES INSTALLATION PROCEDURE

Clock Control Cables

```

-----
Cable Part      From      To
Number          Module   Module
-----

```

| | | |
|-------------|-----------|--------|
| 17-01787-01 | CPU0 - P2 | MCM J5 |
| 17-01787-01 | CPU1 - P2 | MCM J4 |
| 17-01787-01 | SCU - P17 | MCM J6 |

- a. Disconnect the clock control (17-01787-01) From P2 of each CPU planar installed and P17 of the SCU planar. Remove the affected Clock control cables after disconnecting the cables where they connect to the MCM.
- b. Install the new Woven clock control cables and test them as follows. Ensure that adequate strain relief is provided for the cables by using the tie wraps and stick blocks.
- c. TEST/SCAN/LOG/TRACE/ISOLATION/CPU:X
 TEST/SCAN/LOG/TRACE/ISOLATION/SCU
 TEST/LOG/TRACE/ISOLATION/CLOCK
 I/K
 Boot VMS show devices then run Shutdown

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HIGH SPEED SIGNAL SJI CABLES INSTALLATION PROCEDURE

High Speed Signal SJI Cables

| Cable Part Number | From Module | To Module |
|----------------------|---------------------------|-----------------------------|
| 17-01788-01 | SJI interface SPM J3D2 | SCU Planar P7 |
| 17-02958-01 | SJI interface SPM J3D1 | SCU Planar P8 and SFM J3 |
| 17-01788-01 | SJI interface SPM J3E1 | SCU Planar P6 |

- a. Disconnect the three high speed signal cables for the SJI bus interface (17-01788-01, 17-02958-01) from slot 3 of the service processor module (SPM) in the SPU backplane. Remove the affected high speed signal cables after disconnecting the ends of the cables where they connect to the SCU planar and the SFM.
- b. Install the new Woven electronics high speed SJI signal cables. Ensure that adequate strain relief is provided for the cables by using the tie wraps and stick blocks. Test these cables and perform an over all system test. Initialize

the system and display the I/O configuration. Run all diagnostics and boot the operating system and run UETP For 2 hours as shown in Final System Test. Check the error log for errors at the completion of the UETP run

FINAL SYSTEM TEST

3. TEST/SCAN/LOG/TRACE/ISOLATION/CPU:X
TEST/SCAN/LOG/TRACE/ISOLATION/SCU
TEST/LOG/TRACE/ISOLATION/CLOCK
TEST/STRUCTURE/ALL/QUICK_VERIFY/SCU
TEST/STRUCTURE/ALL/QUICK_VERIFY/CPU:ALL
I/K
SHOW CONFIG/IO

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4. Run the VAX Hardcore Instruction test for each CPU present

```
I/K/B
SET BOOTSET/PRIMARY:X
@[console]clear_memory
LOAD [SYSMAINT]EVKAA
START/CPU:N 200
I/K/B
B VDS
```

Run the following macro diagnostics under VDS

```
EVSBA
EVKAQ
EVKAR
EVKAS
EVKAT
EVKAU
EVKAV
EVKAX
EWKMP
EVCLB
EVKAG !if VBOX present
EVKAH !if VBOX present
EVGAA !if CI present
EVGAB !if CI present
EVRLM !if KDM present
I/K
```

Boot VMS run UETP under full load for several hours with Device testing as well as load test.

5. Report this FCO activity on the LARS form in the "Fail Area/Module/FCO/Comments" column as follows: FCO 9XXX-0005

LARS

| CATEGORY O | USA | GIA | EUROPE |
|-------------------------------|-------------|-------------|-------------|
| Activity - | | | |
| (a)Contract and Warranty | W | U | Y |
| (b)IN-DEC Contract | K | | |
| Hardware Segment Code | 111 | | |
| Non Contract/Non Warranty | F | F | F |
| (b)RTD/Off-site Agreement | F | | |
| Product Line | 01 | | |
| DEC Option | 9000-XXX | 9000-XXX | 9000-XXX |
| Type of Call | M | M | M |
| Action Taken | D | D | I |
| Fail Area-Module-FCO-Comments | 9XXX-0005 | 9XXX-0005 | 9XXX-0005 |
| Material Used | EQ-01618-** | EQ-01618-** | EQ-01618-** |

- (a) Warranty Optimum, Warranty Standard and Warranty Basic (on-site) Agreements; * Note material (only) free of charge for all customers.
- (b) Applies to IN-DEC Area Only
- (c) RTD=Return to Digital or Off-site Agreements; If Field Engineer On-site, use Activity Code "F".

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