\_ FCO 63XMX-F003 Rev C, Secondary proc fails RDB test, parity errors

DIGITAI		FCO					CATEGORY PAGI [F] OF			
   FIELD (	CHANGE	ORDER				N	IUMBER:	63XM	1X-F003	
   APPLICA   systems   ECO's 7   NON-CON   be upgr      Thi	ABILIT whic C2011- VTRACT caded s sup	Y: Upg h exhil YA-MK0( /NON-W to Rev ersedes	grade all pit the p D1, T2011 ARRANTY ( . "AE01" s previou	T2011-YA problems of -YA-MK002 CUSTOMERS: for the T as revisio	A/-YC descri 2, T20 : It F2011- on, da	spares bed bel 11-YA-T is reco YA and ted 18	and any ow. Thi W003 an ommended "AD01" Februar	CPU s FC d T2 tha for y 19	J modules 20 incorpo 2011-YA-TV at T2011-Y T2011-YC. 991.	in prates W004. WA spares
PROBLEM   or ELKM   activit   excepti	4 & SY AP; 2) Cy; 3) Lon PC	MPTOM: Duplic Cache equals	l) Second cate Tag Tag Pari s MMG\$PAG	lary proce Parity Er ty errors GEFAULT+1(	essor rrors s and/ )E,MMG	intermi occur c or rela \$PAGEFA	ttently luring p ted bug NLT+91.	fai eric chec	ls RBD te ods of hea ks in whi	est 7 and/ avy XMI ich the
SOLUTIC   T2011-Y	)N: Re (A or	place d revisio	Eailing T on AD01 f	2011-YA/- For the T2	-YC mo 2011-Y	dule wi C.	th revi.	sion	n AE01 for	the
QUICK ( the -YA	CHECK: A and	Check 23-1921	ROM at 1 E9-00 for	loc. E16 ( the -YC.	(Conso	le Rom)	. Shou	ld k	be 23-188B	E9-00 for
   PRE/CO-   N/A	-REQUI	SITE FO	20:							MTTI HRS 1 Hr.
TOOL/TE	EST EQ	UIPMEN'	r: Field	l Service	Tool	Kit.				
				FCO PAF	RTS IN	FORMATI	ON			
   FCO KIT	F NO.		DESCF	RIPTION OF	F CONT	ENTS			EQ KIT N APPLICA	VARIATION ABILITY
EQ-01596  FA-04928	5-XX 3-01	See   FCO	Page 2. Document	-					N/Z	A
				FCO CHARC	GING I	NFORMAI	ION	I		
   WARR <i>I</i>	ANTY/C	ONTRAC	С		NONW	ARRANTY	/NONCON	TRAC		
   ON-SI	ITE	OFI		ON-SIT	ſE	OFF	-SITE		MATERIAI	L ONLY
  TRAVEL/   INSTALL	EQ KIT	    INSTAI	EQ   _L  KIT	TRAVEL/	EQ KIT	    INSTAL	L KIT	  ORI  PKG	DER-ADMIN, G,SHIPPINC	HANDLING G & EQ KIT
   DEC	DEC	   DEC	   DEC	CUS	CUS	CUS	   CUS	   	CUS	
   			I I	APPF	ROVALS		I	I		
CSSE FSH Ken Jackson Len			FSHQ LC Len Pel	OGISTICS llerin			FS PRODUCT SAFETY   Robert Brister			
CSSE MANAGER   1 Ric Grogan   c			This Doc on multi Hardcopy	cument is ple media 7, Custome	publi a incl er Ser	shed   uding   vices				

MICROMEDIA	Microfiche Libraries,	FCO REVISION
Diane MacDonald	Customer Services CD-ROM and	C
	MDS Microfiche Libraries.	
POPULATION		PARTS AVAILABILITY
1,450		January, 1991

		FCO	63	XMX-	F003
  d i g i t a l		PAGE	2	OF	8
_ _ _ _ _ _					

FCO Parts Information: (Continued from Page 1)

FCO KIT NO. CONTENTS

- EQ-01596-01 T2011-YA
- FA-04928-01 FCO Document
- EQ-01596-02 T2011-YC
- FA-04928-01 FCO Document
- EQ-01596-03 TK50 (Cache Exerciser Program P/N FA-04928-02

## FIELD INSTALLATION AND TEST PROCEDURE FOR 63XMX-F003

\_\_\_\_\_

* * *	* * * * * * * * * * * * * * * * * * * *	*
*	NOTE 1	*
*	Upon a scheduled site visit to remove and replace a failing	*
*	T2011-YA/-YC experiencing "Cache Tag Parity Errors" and/or	*
*	related "Fatal Bugchecks" in which the exception PC equals	*
*	MMG\$PAGEFAULT+10E,MMG\$PAGEFAULT+91, it is recommended that the	*
*	Cache Exerciser Program, EQ-01596-03, be invoked to test the	*
*	remaining T2011-YA modules remaining in the system to verify the	*
*	cache integrity. Only those modules which exhibit the problem	*
*	should be replaced. There is no need to replace all CPU modules	*
*	in a system. There are no compatibility problems between	*
*	revisions.	*
*	NOTE 2	*
*	It is recommended that an additional module be brought to the	*
*	customer site in the event the Cache Exerciser identifies an	*
*	additional failing CPU module.	*
* * *	* * * * * * * * * * * * * * * * * * * *	*
1.	Shut down the operating system using the approved methods, such as @SYS\$SYSTEM:SHUTDOWN for VMS. If using SHUTDOWN, answer all prompts accordingly.	

Here is a sample of a shutdown session:

\$ @sys\$system:shutdown

SHUTDOWN -- Perform an Orderly System Shutdown on node XXX

 \_\_\_\_\_\_
 \_\_\_\_\_
 FCO
 63XMX-F003

 | | | | | |
 |
 |
 PAGE
 3 OF

 | \_|\_\_|\_\_|\_\_|\_\_|\_\_|
 |
 PAGE
 3 OF
 8

How many minutes until final shutdown [0]: Reason for shutdown [Standalone]: Do you want to spin down the disk volumes [NO]? Do you want to invoke the site-specific shutdown procedure [YES]? Should an automatic system reboot be performed [NO]? When will the system be rebooted [later]: Shutdown options (enter as a comma-separated list): REMOVE\_NODE Remaining nodes in the cluster should adjust quorum CLUSTER\_SHUTDOWN Entire cluster is shutting down REBOOT\_CHECK Check existence of basic system files SAVE\_FEEDBACK Save AUTOGEN feedback information from this boot Shutdown options [NONE]: reboot, remove VMS will issue several messages indicating it is shutting down. VMS will issue: SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM 2. At this point type a Control-P to halt the primary processor. NOTE \* \* \* \_\_\_\_ INFORMATION IS TO BE RECORDED IN STEPS 3,5,7, AND 8 THAT WILL BE\* \* USED LATER ON IN THESE INSTRUCTIONS. 3. Move the lower key switch to the HALT position and record the original position.

- Enter INITIALIZE at the >>> prompt. This will reset the whole system and force all processors into console mode.
- 5. You should examine the console map to determine the location of each processor MODULE in your system. Record the location of each processor. The map denotes a processor by printing an uppercase letter P on the TYP line. Note which processors have been disabled from becoming the Boot Processor. The BPD line gives this information: an E indicates that the processor may be a Boot Processor, a D indicates that it may not.
- 6. Look at the console map and determine which nodes contain

processors then connect the terminal to the processor at the lowest node or to a processor specifically designated as the primary by entering -

>>> SET CPU n

where n is the node number

	—	—	—	—	—	
	!!					
ldli	al	i	t	a	11	
1 1		_	-			
	I — I	_				

FCO	63	XMX-	-F003		
PAGE	4	OF	8		

7. Enter the SHOW BOOT command, and record the saved boot specificactions. Here is a sample of the command output:

>>> SHOW BOOT
DEFAULT /XMI:E /BI:4 DU3D
R54A /R5:0000001/XMI:E/BI:4 DU4A
DIAG /R5:00000010/XMI:E/BI:4 DU15
R5 /R5:0000001/XMI:E/BI:4 DUD

If the SHOW BOOT command prints no information, that is okay. It means there was no stored boot specification.

8. Enter the <CTRL/3><DEL>SHOW SYSTEM SERIAL command, and record the system serial number. Here is a sample of the command output:

>>> \$^?SHOW SYSTEM SERIAL System serial number: AG83701988

9. If this is a multiprocessing system, invoke the Cache exerciser program to verify the cache tag ram integrity on the remaining CPU modules. Load the TK50 tape contained in EQ-01596-03 into the TK50/TK70 unit. At the console prompt >>> type B CSA1.

Example of a three processor system running the cache program follows:

FCO TAG VERIFICATION PROGRAM VERSION V1.3....

COPYRIGHT 1990, DIGITAL EQUIPMENT CORPORATION, ALL RIGHTS RESERVED

STARTING SECONDARY PROCESSOR @ NODE ID 03 STARTING SECONDARY PROCESSOR @ NODE ID 04

END OF PASS 000/

						~		~
CPU	04	TPE	SUMMARY:	THIS	PASS	0000	TOTAL =	00000
CPU	03	TPE	SUMMARY:	THIS	PASS	0000	TOTAL =	00000
CPU	02	TPE	SUMMARY:	THIS	PASS	0000	TOTAL =	00000

TYI	E ^P (TO \$	STOP THE PR	OGRAM)				
?02 PC	?02 external halt PC = ???						
Fai >>>	lure. (ret	flects the	^P)				
         d i g i  _ _ _ _	       t a 1  _ _ _			FCO PAGE	63 5	XMX- OF	F003 8

- 10. After running the Tag Verification Program, make note of all CPU modules which exhibited cache tag parity errors including the original failing module.
- 11. Before powering down the system, set the console terminal speed to 1200.

Do not worry if the console writes strange characters after issuing the command. This means your terminal is set to some baud rate other than 1200 baud.

 $\backslash$ 

ERRORS

/

- 12. Press the SETUP key on your terminal and set the baud rate of your terminal to 1200 baud. SAVE this setting. This allows you to issue console commands once the new T2011-YA/YC(s) are installed.
- 13. Power down the system by turning the upper key switch on the front control panel to the OFF position. Pull the circuit breaker on the AC power controller (H405) to the OFF position and unplug the system from the source.
- 14. Open the front cabinet door.

15. Remove the clear plastic cover in front of the XMI cage. \* CAUTION \* \* \* \* All VAX modules contain electrostatic discharge \* \* sensitive devices (ESDS). The use of an antistatic \* \* wrist strap attached to the cabinet is essential when \* when handling modules. 

- 16. Remove the failing T2011-YA/-YC module(s) from the cardcage and install the new T2011-YA/-YC(s) from EQ-01596-01 or -02 into the slot(s) from which the original module(s) were removed.
- 17. Re-install the XMI cardcage cover assembly and tighten retaining

	screw.	
	FCO 63XMX-F003	
d i  _ _	g i t a 1  PAGE 6 OF 8 _ _ _ _ _	
**	***************************************	* *
*	**NOTE 1**	*
*	THE NEW XMI BASED SYSTEMS HAVE NECESSITATED CHANGES TO THE	*
*	MODILIES ARE CYCLED INTO THE FIFLD AS ADD-ON ODTIONS SDARFS	*
*	OR DUE TO AN FCO, IT MAY RESULT IN VAX 6000 SYSTEMS HAVING	*
*	PROCESSOR MODULES WITH CONSOLE ROMS AT DIFFERENT REVISIONS IN	*
*	THE SAME SYSTEM.	*
*	_	*
*	YOU MAY SEE CONSOLE ROM MISMATCH MESSAGES PRINTED DURING	*
*	SYSTEM INITIALIZATION. THESE DO NOT IDENTIFY A PROBLEM. THESE	*
*	SHOULD BE CONSIDERED INFORMATIONAL FOR LISTING ROM REVISIONS.	*
*	*****	*
*	ייים ארחייי ארד איזגג איזגע איזאר איזערטער איזעגע איזעגעאיייטער איזעגע איזעגע איזעגע איזעגע איזעגע איזעגע איז	*
*	WITH MULTIPLE CPU SYSTEMS WHICH MAY CONTAIN MIXED VERSIONS OF	*
*	CONSOLE/DIAGNOSTIC ROMS. USE INSTEAD, "PATCH UPDATE UTILITY",	*
*	EVUCA.	*
* *	* * * * * * * * * * * * * * * * * * * *	* *
18.	Power on the system by setting the upper front panel keyswitch to ENABLE. Ensure Self Test is completed successfully on all T2011-YA/-YC modules. If some modules fail selftest, you may have to ensure the processor modules are seated correctly in the backplane. It is not uncommon to have to reseat the board once or twice.	h
19.	Move the lower key switch to the Update position and restore the system serial number and boot specifications recorded in Steps 7 and 8, to the T2011-YA/-YC(s) just installed. Do the following:	
	>>>SET CPU n	
	where n is the node number.	
20.	Enter the <ctrl 3=""><del>SET SYSTEM SERIAL command, using the s number you recorded in Step 8.</del></ctrl>	er

>>> \$^?SET SYSTEM SERIAL System Serial Number>>> AG83701988 Serial number read as: AG83701988

Following is a sample output from the command:

Update EEPROM? (Y or N) >>> Y ?73 System serial number updated.

	FCO	63	XMX-	F003
  d i g i t a 1	PAGE	7	OF	8
_ _ _ _ _ _				

21. Now, enter the boot specifications you saved in Step 7, using the SET BOOT command. Here is sample output from the command:

>>> SET BOOT DEFAULT /XMI:E/BI:4 DU3D

It may be helpful to check the boot specification you just entered. Enter the SHOW BOOT command to check the boot specification or specifications. If your system contains more than one processor, entering the SET BOOT command causes the boot specification to be copied to all processors, so this command does not need to be repeated on each processor.

22. In Step 5 you recorded which of the CPUs were prevented from becoming primaries. You need to set that condition again.

>>> SET CPU [n] /NOPRIMARY

where n equals the node number.

- 23. Press RESET on the control panel or enter the INITIALIZE command and ensure the console prints no error messages.
- 24. Return the lower front panel keyswitch to the position you recorded in Step 3.
- 25. Run the Diagnostic Supervisor (VAX/DS) ELSAA.
- 26. Run EVSBA VAX Diagnostics Autosizer program.
- 27. If multiprocessors are present run EVUCA to patch ROMS. \* NOTE 1 \* EVUCA REQUIRES VAX DIAGNOSTIC SUPERVISOR (VAX/DS) VERSION 14.0 \* \* OR LATER AND BINARY FILE ELUCB.BIN BE PRESENT FOR VAX6000-3XX. \* \* NOTE 2 \* \* DO NOT USE "SAVE/RESTORE EEPROM" AND/OR "UPDATE ALL" COMMANDS \* \* \* WITH MIXED VERSIONS OF CONSOLE/DIAGNOSTIC ROMS. USE INSTEAD, \* "PATCH UPDATE UTILITY", EVUCA

		FCO	63XMX-	F003
d i g i t a 1		PAGE	8 OF	8
_ _ _ _ _				

28. Load and run the following diagnostics:

ELKAX	Functionality
ELKMP	Multiprocessor Exerciser
EVKAQ	Basic Instructions Exerciser Part I
EVKAR	Basic Instructions Exerciser Part II
EVKAS	Floating Point Instructions Exerciser Part I
EVKAT	Floating Point Instructions Exerciser Part II
EVKAU	Privileged Architecture Exerciser Part I
EVKAV	Privileged Architecture Exerciser Part II

- 29. Upon successful completion of the diagnostics, exit the VAX/DS.
- 30. Bring up the operating system.
- 31. Update Site Management Guide to reflect this FCO.
- Return the old Rev. T2011-YA(s)/-YC(s) in the ESD container for upgrading.
- 33. Report this FCO activity on the LARS form in the "Fail Area/ Module/FCO/Comments" column as follows: FCO 63XMX-F003.

LARS US	A	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
(c)RTD/Off-site Agreement	F		
Product Line	01		
DEC Option	63XX	63XX	63XX
Type of Call	М	М	М
Action Taken	D	D	I
Fail Area-Module-FCO-Comments	63XMX-F003	63XMX-F003	63XMX-F003
Material Used	EQ-01596-01/	EQ-01596-01/	EQ-01596-01/
	EQ-01596-02/	EQ-01596-02/	EQ-01596-02/
	EQ-01596-03	EQ-01596-03	EQ-01596-03

- (a) Warranty Optimum, Warranty Standard and Warranty Basic (on-site) Agreements.
- (b) Applies to INDEC AREA ONLY
- (c) RTD=Return to Digital or Off-site Agreements; If Field Engineer On-site, use Activity Code "F".

\^ 63XMX
\\63XMX
\\FCO\_DOCS
\\MAR
\\1991
\\T2011-YA
\\T2011-YC
\\JACKSON