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FIELD CHANGE ORDER	NUMBER: RZ57-F001
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APPLICABILITY: This FCO applies to RZ57-E Rev. "C01" and below on VS4000 Model 60, VS4000 VLC and VS4000 Model 90.

This FCO incorporates ECO SHR RZ57-E-SH001 and after installation brings RZ57-E up to Rev. level "D01". This kit may also be purchased by Alpha system customers who wish to upgrade and migrate RZ57s below Rev. level "D01" to Alpha platforms. For Alpha customers, this kit may be purchased from Digital Assisted Services (DAS) and installed by either the customer or by an MCS engineer on a per call basis. No charges for materials or labor required to upgrade Alpha customers should be charged to this FCO. Exceptional customer situations should be worked in consultation with the local account team.

PROBLEM & SYMPTOM: RZ57 disk drives with Rev. 5000 microcode and below configured with VS4000 Model 60, VS4000 VLC, and VS4000 Model 90 have experienced under certain conditions, a write fault that is not recovered properly, such that data is not written and not reported. A bug was discovered in the interrupt service routine (ISR) where the ISR does not properly initialize a variable necessary for the error recovery routine (ERR). When initialized to a specific two-byte word, the ERR exits without being implemented and without reporting an error to the host. This translates into a false recovery from a write-fault or, simply, data not being written.

SOLUTION: The firmware bug has been corrected with drive microcode Rev. 6000 which is RZ57 hardware Rev. "D01". Replace firmware EPROM on RZ57 below hardware Rev. "D01" configured with VS4000 Model 60, VS4000 VLC, and VS4000 Model 90.

QUICK CHECK: RZ57-E Rev. "C01" or below requires kit installation

PRE/CO-REQUISITE FCO: None	MFIT HRS	0.5
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TOOL/TEST EQUIPMENT: Standard tool kit and Velostat kit

FCO PARTS INFORMATION

FCO KIT NO.	DESCRIPTION OF CONTENTS		
	Qty	Dec Part #	Description
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EQ-01695-01	1	29-31520-01	Packaged Firmware, Rev. "D01"
	1	36-19209-04	Label, Wire Marker "D"
	1	36-19208-01	Label, Wire Marker "1"

FCO CHARGING INFORMATION (See Last Page)

APPROVALS

TECH. ENGINEER Lou McAdam	ENG. BUSINESS MGR. Lubbo Luken	DS LOGISTICS Mark Bittenbender	DS PRODUCT SAFETY Robert Brister
IDC PUBLISHING Brenda Rogers	PARTS AVAILABILITY March 1994	FCO REVISION: A A	FCO RELEASE DATE March 15, 1994

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INSTALLATION AND TEST PROCEDURE FOR FCO RZ57-F001

Installation Procedure:

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*****
*                               C A U T I O N                               *
* Before proceeding, make sure that all power to the RZ57 Disk      *
* drive and expansion box is off. (Turn the power switch to      *
* the off" position, and unplug the power cord from the outlet). *
* Use care when handling the drive.                                *
*****

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1. Use ALL ESD safety precautions to prevent DOA's on material in kit.

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*****
*                               C A U T I O N                               *
* The EPROM contained in this kit is an electrostatic              *
* discharge sensitive device (ESDS). The RZ57 drive itself        *
* contains electrostatic discharge sensitive devices (ESDS).      *
* The use of the Velostat Kit is essential to prevent damage      *
* that may not be noticed immediately.                             *
*****

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Setting up Velostat Kit

- a. Unfold the Velostat mat to full size (24" x 24")
- b. Attach the 15 foot ground cord to the Velostat snap fastener

on the mat.

- c. Attach the alligator clip end of the ground cord to a good ground on the cabinet.
- d. Attach the wrist strap to either wrist and the alligator clip to a convenient portion of the mat.
- e. After removing the RZ57 from the system enclosure, place it on the mat. Unpack the EPROM in this kit ONLY on the mat.

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The following RZ57 removal and replacement procedure applies to the SZ12 expansion box. Refer to system or sub-system maintenance documentation for removal and replacement procedures for other enclosures.

2. Shut off the power to the expansion box and unplug the expansion box power cord from the outlet.
3. Unscrew the four cover screws and remove the expansion box cover.
4. Remove the three screws that hold the shield to the main chassis and lift the shield up and off.
5. Remove the three drive mounting screws.
6. Remove the SCSI switch cable from the SCSI switch board.
7. Slide the drive halfway out of the expansion box and disconnect the power cable, data cable, and SCSI switch cable from the back of the drive. Remove the drive.
8. Once you have removed the drive from the system expansion box, orient the drive with module face up, and turn the drive so the front bezel is facing away from you.
9. Remove the EPROM located at U20 located directly behind SCSI connector (See Figure 1). To remove U20, insert a small screwdriver under the chip and pry gently up, first on one end and then on the other end of the chip. Be very careful to avoid excessive force, as this may damage the electronics PCB and other components

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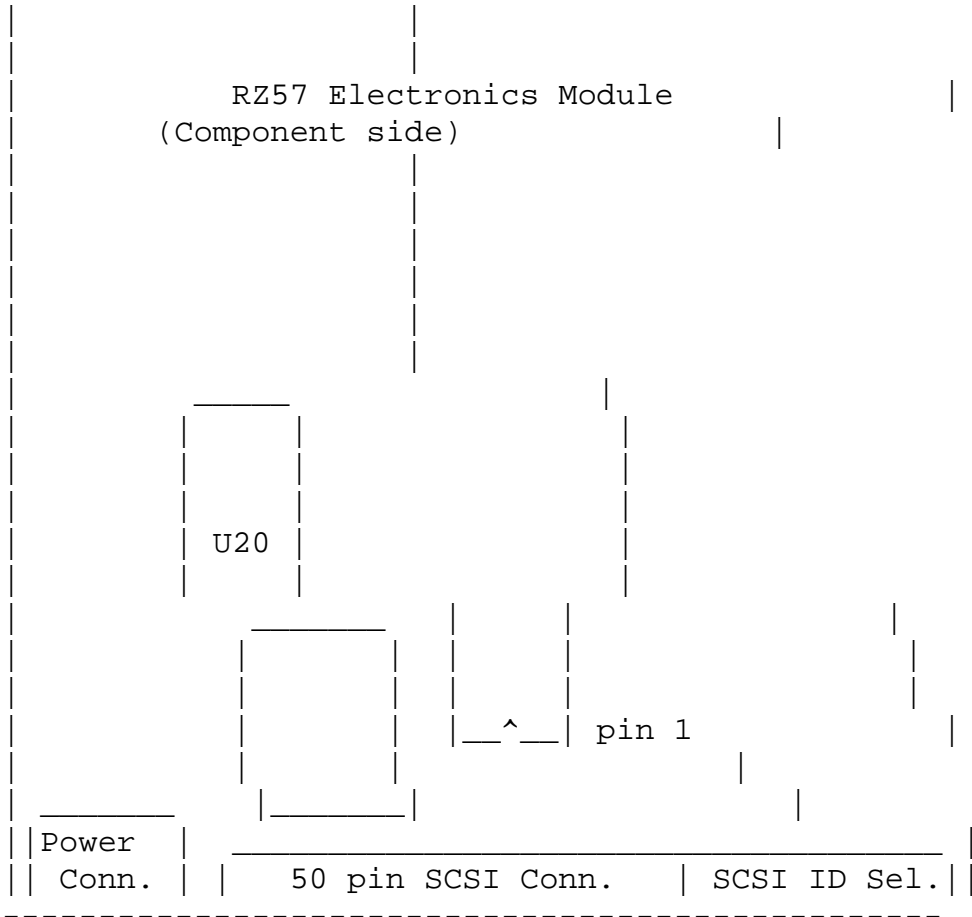
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>>> FIGURE 1 <<<



NOTE: Be very CAREFUL that all chip pins are straight and properly positioned in the PCB socket when inserting the new EPROM chip at U20. This is important to avoid bending or otherwise damaging pins on the replacement EPROM.

10. Install the EPROM from FCO Kit EQ-01695-01

NOTE: Be sure that the EPROM chip is orientated correctly in the socket. Observe and note the position of the notch and/or Pin 1 marker on the chips, and be sure to insert the new chip with the same orientation as the old.

11. After you have installed the new EPROM update the drive revision level with the wire markers supplied in the kit.

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12. Reverse the above procedure to re-install the RZ57 drive back in the expansion box. It is imperative that the SCSI switch cables and data cables are re-installed the same way in which they were removed.
13. Test the RZ57 drive by using the system diagnostics. Perform the power-up test and self-test diagnostics.

NOTE: This EQ kit may also be purchased by Alpha system customers who wish to upgrade and migrate RZ57s below Rev. level "D01" to Alpha platforms. For Alpha customers, this kit may be purchased from logistics and installed by either the customer or by an MCS engineer on a per call basis. None of the cost of materials or labor associated with the upgrade for Alpha system customers should be writtem off against this FCO. Exceptional customer situations should be worked in consultation with the local account team.

Only RZ57 disk devices at or above device Rev. level "D01" (Rev. 6000 microcode) should be installed or supported on Alpha system platforms.

14. Report this FCO activity on the LARS form in the "Fail Area/Module/FCO/Comments" column as follows: FCO RZ57-F001

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LARS

	USA	APA	EUROPE
Activity -			
(a)Contract	W	U	K
Warranty	W	U	W
(b)IN-DEC Contract	K	U	A
Non Contract/Non Warranty	F	F	F
(c)RTD/Off-site Agreement	F	U	F

Hardware Segment Code	111	111	111
Product Line	031/001	031/001	031/001
DEC Option	RZ57-E	RZ57-E	RZ57-E
Option ID	X	N/A	N/A
Type of Call	M	M	M
Action Taken	D	D	I/V
Fail Area-Module-FCO-Comments	RZ57-F001	RZ57-F001	RZ57-F001
Material Used	EQ-01695-01	EQ-01695-01	EQ-01695-01

(a,b)Material Used EQ-01695-01

*(a,b)Unique EQ Number EQ-01695-01

(c) Labor ONLY reporting if customer should order EQ from DAS.

If customer wants FS to provide Material and Labor and the "Event" is customer billable, FS should not use EQ kits but rather piece parts from stock.

* Used for Authorized FCO audits and multiple use EQs.

Note: NO AUDIT TIME AUTHORIZED FOR THIS FCO log call using Activity 'K', Type of Call 'T', Action Taken 'M' and Product Line 031 or 001

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	CUS	CUS	CUS	CUS	CUS