_ FCO RF31T-O0001, Upgrade to fix data corruption problem

DIGITAL	FCO	CATEGORY [O]	PAGE 1 OF 15

FIELD CHANGE ORDER — NUMBER: RF31T-O001, RF35-O001 RF73-O001

APPLICABILITY:
All RF31T, RF35 and RF73 disk drives installed on VAX VMS and OpenVMS systems must be upgraded to minimum revision level of T387.

NOTE
ULTRIX based systems do not support these drives are, therefore, unaffected.

PROBLEM & SYMPTOM:
Engineering has become aware of a potential data corruption problem with the above mentioned disk drives. The problem manifests itself with applications that implement the IO$_WRITECHECK function. These drives may return incorrect data in certain circumstances. One Digital application known to implement this command is VOLUME SHADOWING for OpenVMS (PHASE II), (also known as Host Based Volume Shadowing, HBVS). Applications that are not Digitals may also implement this command. (Continued on Page 2)

SOLUTION:
Upgrade all RF31T/RF31T+, RF35/RF35+ and RF73 drives running on VAX VMS based systems to minimum T387 or to currently shipping Rev T392.
(Continued on Page 3)

QUICK CHECK:
Check for drive firmware revision of T387, minimum. (Continued on Page 3)

PRE/CO-REQUISITE FCO: None

MFIT HRS: .2

TOOL/TEST EQUIPMENT:
None

FCO PARTS INFORMATION

FCO KIT NO.	Qty	Dec Part #	Rev.	Description
EQ-01672-01	1	AQ-PVZA0-R1 B01		TK50 tape with code load programs and instructions
FA-05008-01	1	FA-05008-01	A01	FCO Document

FCO CHARGING INFORMATION (See Last Page)

APPROVALS

TECH. ENGINEER	ENG. BUSINESS MGR.	DSHQ LOGISTICS	DS PRODUCT SAFETY
Frank Fontaine	Dick Search	Joe Michalski	Bob Brister

PROBLEMS & SYMPTOMS: (Continued)

Invalidate cache after failed Compare -

If a Compare command failed, the first block of compared-against data was marked valid in the cache. A subsequent Read would pick up the cached data, not the on-disk data.

Allow Supplement Write Log modifier -

This modifier was ignored in previous versions. However, the ReUse modifier use to always cause a Supplement.

Also, the firmware now allows the Supplement Write Log modifier on Erase commands.

Allow Access NVR to request less than 32 bytes -

An Access NVR command which specified less than 32 bytes of data was rejected for an invalid command length.

Clear SeqNum field in all end messages.

Fixed in T387E

Controller memory error (EDC error)

Some cases of DSSI disk drives reporting an MSCP status of 012A (controller memory error) while reading are fixed by this release. The blocks reporting this error are reread several times. If the rereads are successful, the host computer does not see any error.

256-byte Compare corrupts cache.

If an application program issues a Compare command or a Read command with the Compare modifier (also called IO$_READCHECK and IO$_WRITECHECK), and

the size of the transfer is not an even multiple of 512 bytes, then a subsequent 512-byte read of the same data may report incorrect data.

ADDITIONAL FUNCTIONALITY

Code load on VAXclusters without rebooting

RFxx disks on which the NODENAME or UNITNUM parameters had been changed use to forget these parameters when new firmware was loaded. The code loader software could work around this on a single node, but not on a cluster. All nodes on the cluster had to reboot to see the disk again.

Now, the loader stores these parameters into nonvolatile RAM before loading, and the new firmware knows how to read the parameters and restore them before talking to the host.

This is the difference between T387 and T387A.

QUICK CHECK (Continued)

To check the firmware revison use the VMS Show Cluster command at the VMS prompt.

```
$Sho Cluster

View of Cluster from system ID 65534  node: DREAD     8-AUG-1992 10:20:32
```

SYSTEMS	MEMBERS	
NODE	SOFTWARE	STATUS
DREAD	VMS V5.4	
KB3958	RFX T387	
CX1231	RFX T387	
CX2576	RFX T387	

SOLUTION (Continued)

This FCO is the field implementation of the following option level ECOs. These ECOs allow implementation of T387 firmware.

RF31T = RF31T_SH004
RF35 = RF35_SH008
RF73 = 76-07865_KB002

This FA document contains all the information needed to upgrade the affected drives.

FIELD APPLICATION DOCUMENT (FA), Continuation Page

FIRMWARE UPGRADE PRODECURE

This section regarding the firmware upgrade procedure is generic and will apply to all affected drives. EQ-01672-01 contains the FCO document and a TK50 tape cartridge with CSCPAT_1066013.A. This file contains all the necessary programs to upgrade RF31T/RF31T+, RF35/RF35+ or RF73 disk drives for both VAX/VMS and VMS Install Utility to install the file. The ex-exutables and upgrade instructions will be placed in SYS$COMMON:[SYSUPD], the release notes are placed in SYS$COMMON:[SYSHLP]. Below is an example of an installation.

```
$ mount sixirn$mua0: cscpat
%MOUNT-I-WRITELOCK, volume is write locked
%MOUNT-I-MOUNTED, CSCPAT mounted on _SIXIRN$MUA0:
$
$copy sixirn$mua0:cscpat_1066013.A []*
$
$ @sys$update:vmsinstal

 VAX/VMS Software Product Installation Procedure V5.5-2 It is

   14-JUL-1993 at 14:03.

Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]? yes
* Where will the distribution volumes be mounted: $1$dia1:[fontaine]
```

```
Enter the products to be processed from the first distribution volume set.
* Products: cscpat_1066013
* Enter installation options you wish to use (none):

The following products will be processed:

  CSCPAT_1066 V1.3

 Beginning installation of CSCPAT_1066 V1.3 at 14:05

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.

***** Processing RF_UPGRADE.VUG

       Your system will now be updated to include the following new
       and modified files:

     SYS$UPDATE:FIRMWARE_UPGRADE.TXT         [new]
    SYS$UPDATE:RF1C_T392_DEC.EXE            [new]
    SYS$UPDATE:RF31_T392_DEC.EXE            [new]
    SYS$UPDATE:RF35_T392_DEC.EXE            [new]
    SYS$UPDATE:RF5C_T392_DEC.EXE            [new]
    SYS$UPDATE:RF73_T392_DEC.EXE            [new]
           SYS$HELP:CSCPAT_1066013.RELEASE_NOTES   [new]



            FIELD APPLICATION DOCUMENT (FA), Continuation Page


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     |   |   |   |   |   |   |   |   |          FCO  RF31T-O001, RF35-O001,
     | d | i | g | i | t | a | l |   |               RF73-O001
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                                    IMPORTANT
       ------------------------------------------------------------
       In order to complete the necessary changes for this update to
       take effect read and review  SYS$UPDATE:FIRMWARE_UPGRADE.TXT.

Press RETURN to continue or Control-Y to abort ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 Installation of CSCPAT_1066 V1.3 completed at 14:08

Enter the products to be processed from the next distribution volume set.
* Products: exit
$
$ dir sys$update:rf*

Directory SYS$COMMON:[SYSUPD]
```

```
RF1C_T392_DEC.EXE;1                    RF31_T392_DEC.EXE;1
RF35_T392_DEC.EXE;1                    RF5C_T392_DEC.EXE;1
RF73_T392_DEC.EXE;1

Total of 5 files.
$
$ dir sys$help:cscpat*

Directory SYS$COMMON:[SYSHLP]

CSCPAT_1066013.RELEASE_NOTES;1
```

********** CAUTION **********

Before proceeding with the upgrade ENSURE that your customer has backed up the drives to be upgraded. This backup is a precautionary measure, the code load programs do not access the HDA. After a normal upgrade the data will not have to be restored, however there is one exception, RF73 ONLY.

If you have RF73 drives at T324 firmware level, these drives will need to be reinitialized and data restored after the microcode upgrade is complete. There was a change between T324 and later revisions which added one additional cylinder to the disk. In order to access this additional cylinder, a new BITMAP.SYS file needs to be created to include the added blocks. (A new bitmap file is created when the drive is reinitialized.)

****

DETERMINING DRIVE TYPE

To determine which RF31T or RF35 drive you have on your system do the following.

The drive type can be determined from the SET HOST/DUP utility 'PARAMS'. To use the SET HOST/DUP utility, you must first install the FYDRIVER (the DUP class driver). To load the driver, issue the following commands:

```
      $ RUN SYS$SYSTEM:SYSGEN
      SYSGEN> CONNECT FYA0/NOADAPTER
      SYSGEN> EXIT
```

Then enter the PARAMS utility using the command below:

```
      $ SET HOST/DUP/SERVER=MSCP$DUP/TASK=PARAMS <node_name_of_disk>
```

And, at the PARAMS> prompt, issue the "STATUS CONFIG" command. It reports whether you have a RF31 or RF35, and the Apache revision. The Apache revision information can then be used to determine what type of RF31 or RF35 drive you have installed.

For example:

```
      PARAMS> STATUS CONFIG
      Configuration:
      Node TEST is an RF35 controller using Apache V1.1
Software RFX T329A built on  2-DEC-1991 17:48:29
Electronics module name is ZG14600907
```

NOTE: The revision of the Apache determines whether the drive is a RF31T+ or RF35+. For example:

Apache Revision	Driver Type	Loader Program To Run	
V1.0 or V1.1	RF31T	RF31_T392_DEC.EXE	RF31_T392_DEC_ALPHA.EXE
	RF35	RF35_T392_DEC.EXE	RF35_T392_DEC_ALPHA.EXE
V1.4	RF31T+	RF1C_T392_DEC.EXE	RF1C_T392_DEC_ALPHA.EXE
	RF35+	RF5C_T392_DEC.EXE	RF5C_T392_DEC_ALPHA.EXE
Not reported	original RF31	ROM Based, No Loader	

Note:

The RF31T and RF31T+ are cost-reduced versions of the RF31. The RF35+ is a cost-reduced version of the RF35.

The RF31T is the 3.5 inch form factor replacement for the 5.25 inch, half height RF31. The 5.25 inch RF31 does not exhibit this potential corruption problem.


```
   +---------------------------+   |
   |   |   |   |   |   |   |   |   |          FCO  RF31T-O001, RF35-O001,
```

DETERMINING STATE OF THE HISPEED PARAMETER

There are two ways of determining the state of the HISPEED parameter. There is only one way to set (= 1) the HISPEED parameter and that is using the "PARAMS" utility. Once set, the "WRITE" command must be issued before it will take affect. See Example 2.

1. This is the easiest way to determine if the HISPEED bit is set to a one. With the drive mounted, do a "sho dev/full" command, and look at Device Type or the Total Blocks. If the HISPEED bit set, as shown in the following command, the device type will be RFHxx.

```
 $ sho dev/full R5ATAA$DIA3:

Disk R5ATAA$DIA3:, device type RF35, is online, allocated, deallocate
   on dismount, mounted, file-oriented device, shareable, available to
   cluster, error logging is enabled.

   Error count                    0    Operations completed
   Owner process        "_LTA5007:"    Owner UIC
   Owner process ID        2020012D    Dev Prot    S:RWED,O:R
   Reference count                2    Default buffer size
   Total blocks             1664628    Sectors per track
   Total cylinders             2086    Tracks per cylinder
   Host name                "R5ATAA"    Host type, avail
```

2. To determine if you have the HISPEED bit set, connect the FYDRIVER then issue the SET HOST/DUP command as follows:

```
   $ RUN SYSGEN
   SYSGEN> CONNECT FYA0/NOADAPTOR
   SYSGEN> EXIT

   $ SET HOST/DUP/SERVER=MSCP$DUP/TASK=PARAMS <disk nodename>
   PARAMS> SHOW HISPEED
   Parameter     Current           Default        Type     Radix
   --------- ---------------  ----------------  --------  -----
   HISPEED                 1                 0   Boolean    0/1

PARAMS>SET HISPEED 1
PARAMS>WRITE
       Changes Require Controller Initialization, OK? [Y/(N)] Y
Initializing
```

If the current value is 1, the HISPEED parameter is set.

NOTE: When the HISPEED parameter is set to 1, the drive's storage capacity is cut by half. For example:

Device Type	Total Blocks	HISPEED Bit
RF31	744400	0
RFH31	372200	1
RF35	1664628	0
RFH35	832314	1
RF73	3585820	0
RFH73	1953955	1

Therefore, do not set HISPEED unless you want to reduce the total disk capacity.

RF Standalone Loader Program

PURPOSE:

The purpose of this program is to upgrade the firmware in an RFxx disk drive to T392.

OVERVIEW:

The new drive firmware is contained within the program image. There is a separate program for each of the RF drive types affected (i.e., RF31T, RF31T+, RF35, RF35+, RF73). If you should choose an incorrect program for your drive type, the program will return an error message and display the correct program filename on your screen. The list below indicates which loader should be used for each drive type:

Drive	Loader File
RF31T	RF31_T392_DEC.EXE RF31_T392_DEC_ALPHA.EXE
RF31T+	RF1C_T392_DEC.EXE RF1C_T392_DEC_ALPHA.EXE
RF35	RF35_T392_DEC.EXE RF35_T392_DEC_ALPHA.EXE
RF35+	RF5C_T392_DEC.EXE RF5C_T392_DEC_ALPHA.EXE
RF73	RF73_T392_DEC.EXE RF73_T392_DEC_ALPHA.EXE

During the upgrade, all loader programs will save the following drive parameters then restore them once the upgrade is complete:

- FORCENAM
- UNITNUM
- FORESEEN
- ALLCLASS
- NODENAME
- SYSTEMID

However, other drive parameters will be set back to their default value. For instance, the drive parameter 'HISPEED' will be set to the default value of 0 after the upgrade completes even if it was previously set to 1. To retain this value, you will have to use the DUP Utility PARAMS to manually reset it after running the loader program.

After the firmware is loaded, the drive will perform a 'long calibration' if the existing firmware revision level is T324. The calibration phase can require up to 20 minutes for a high capacity drive. By default the program will not wait for the drive to complete the final calibration. However, the drive will be unavailable until the process is done.

Restrictions

- The program must be run from a privileged account such as the system account.
- Copy the files from the tape or diskette to the privileged account.
- The process working set quota (WSQUOTA) must be set to 1024 or greater. Use the AUTHORIZE command 'SHOW user-spec' to determine the current working set quota. If it is not set correctly, use the following AUTHORIZE command to change the WSQUOTA value:

```
$ RUN SYS$SYSTEM:AUTHORIZE
UAF> MODIFY user=spec /WSQUOTA=value
UAF> EXIT
```

NOTE: You must log out and log back in for this change to take effect.

o The target disk drive must be dismounted unless the drive is a booted system disk connected to a non-KFQSA adapter.

o A booted system disk connected to a KFQSA adapter CANNOT be upgraded while mounted. These disks must be brought up as dismounted user disks to be upgraded.

o When upgrading the mounted system device, the system must be booted MIN. The SYSGEN parameter 'STARTUP_P1' must be set to "MIN" either by using the SYSGEN Utility or by performing a conversational boot.

o The FYDRIVER must be loaded. To determine if the FYDRIVER is loaded, issue the following command:

```
$ SHOW DEVICE FY
%SYSTEM-W-NOSUCHDEV, no such device available
```

If a NOSUCHDEV message is returned, issue the following SYSGEN command to load the FYDRIVER:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> CONNECT FYA0/NOADAPTOR
```


o The RF73 model revision B and C must have a "FLASH Write Enable" jumper (J6) installed in order for their firmware to be upgraded. The jumper is located to the right of the DSSI Node address switches.

If the jumper is removed and an upgrade is attempted, the drive will go "Host Unavailable" and remain in this state until the power is recycled. During the upgrade, if your drive goes "Host Unavailable" and the FAULT light remains on "solid", do the following:

1. Cycle power to the drive (turn it off and on). The drive will run through a "Power On Self Test" and come online. At this point the drive is usable but the firmware has NOT been upgraded.

2. Contact your local Digital Field Service office and log a service call so that the jumper can be installed.

If the FAULT light is blinking, this means that the drive is

performing the long calibration described in the OVERVIEW section above. This calibration will take up 20 to 30 minutes to complete which is completely normal.

NOTE: These drives are shipped from manufacturing with the jumper installed. Therefore, this problem should be very rare.

Upgrade Procedure

- It is advisable to perform an Image BACKUP of your RF drive before running the loader program to safeguard your data in case a problem occurs. This should be done even if the drive is a member of a shadow set.

NOTE: It is NOT necessary to do a BACKUP restore after the upgrade completes unless you have a RF73 disk drive at a T324 firmware level. See next bullet for more information.

- If you have RF73 drives at a T324 firmware level, these drives will need to be reinitialized and data restored after the microcode upgrade completes. There was a change between T324 and later revisions which added one additional cylinder to the disk. In order to access this extra cylinder, a new BITMAP.SYS file needs to be created to include the added blocks. (A new bitmap file is created when the drive is reinitialized.)

To determine what the current revision level is on your RF73 drive, issue the DCL 'SHOW CLUSTER/CONTINUOUS' command.

- The drive must be dismounted from the system, unless it is the booted system disk on a non-KFQSA adapter. When upgrading the system disk, system activity must be at a minimum. On a multi disk system, an alternative is to boot from another disk and upgrade the target as a dismounted disk.

- Shadowed disks can be upgraded by removing one drive from the shadow set, upgrading that drive, mounting the upgraded drive back into the shadow set, and then allowing the shadow copy operation to complete. Once this is done, the other members can be removed and upgraded

using the same method. For more information on shadow sets and BACKUP, refer to the "VMS Volume Shadowing Manual", (AA-PBTVA-TE).

o Select the proper loader program for your disk drive. If the wrong program is selected, the upgrade will not take place and a message indicating which program should be run will be displayed.

o Run the program. The program can be run directly and will prompt you for the device to load. For example:

```
$ RUN RF73_T392_DEC.EXE
Device:
```

If a VMS foreign command is defined, up to three parameters can be parsed to the program. A foreign command is defined as follows:

```
$ LOAD_5C :== $your_disk:[your_acct]RFxx_T392_DEC.EXE
```

(Note: The dollar sign ($) must precede your disk specification.)

The command is then run as follows:

```
$ LOAD_5C R5ELAA$DIA1:  TRUE TRUE
```

The three command line parameters are

- Target disk drive to upgrade.

- Wait for final calibration flag (TRUE or FALSE). When this flag is set to TRUE, the program will wait until the final calibration completes. Otherwise, the program will print a message that the calibration is underway and the program will end. The default is FALSE.

- Log File Flag (TRUE or FALSE). This flag indicates whether the log file should be generated during the upgrade. The log file is named RFLOAD_target-name.LOG and it contains the current drive parameters along with system information. The default is TRUE.

o The loader can also be run in BATCH mode to upgrade a single or multiple drives. To do this, you must first create a command procedure with the appropriate commands. Then this command procedure must be submitted to BATCH using the DCL SUBMIT command.

For example:

```
! RF73.COM
 :
$RF73UPGRADE:==$SYS$COMMON:[SYSEXE]RF73_T392_DEC.EXE
$RF73UPGRADE $4$DIA78: TRUE TRUE
$EXIT
$!<EOF>
 :
$ SUBMIT RF73.COM
```

SAMPLE LOG FILE:

When the loader program is run, by default a log file is created. The following sample log file was created when upgrading a RF31T+ drive. Your output will be similar, but some differences are to be expected (for example, disk names).

NOTE: If your upgrade is performed on the console, then Virtual Circuit Closing messages may be seen during the upgrade. Also, when the program is waiting for host available, downloading, and calibration to complete, a series of "." will be printed to indicate that progress is being made.

SAMPLE LOG FILE

```
       $
       $ load_5c :== $SYS$SYSDEVICE:[FTS]RF5C_T392_DEC.EXE
       $
       $ load_5c $4$dia78: TRUE TRUE
RF73 Download Procedure (Rel. 3/17/93)
  Beginning RF Download procedure on _TWOTWO$DIA78:
  Opening log file RFLOAD__TWOTWO$DIA78.LOG.
  Waiting for HostAvailable.
  Comparing the firmware type to the drive type and apache chip revision
  Firmware and drive type match.
  ATTENTION: This drive may require an installed flash enable jumper
             to complete the upgrade.
  Enabling code load protocol in device..
  Firmware Version: Current T387A  Loading T392.
  CURRENT PARAMETER SETTINGS:
```

```
    System ID:          ( SYSTEMID )  0000000007859
    Node Name:          ( NODENAME )  TWOTWO
    Allocation Class:   ( ALLCLASS )  4
    Force Unit Number:  ( FORCEUNI )  0
    Unit Number:        ( UNITNUM  )  78
    Force Name:         ( FORCENAM )  0
  DEFAULT PARAMETER SETTINGS:
    System ID:          ( SYSTEMID )  0409313201673
    Node Name:          ( NODENAME )  R4TTFA
    Allocation Class:   ( ALLCLASS )  0
    Force Unit Number:  ( FORCEUNI )  1
    Unit Number:        ( UNITNUM  )  0
    Force Name:         ( FORCENAM )  0
   Storing params into drive NVR ...
  Closing log file.
  Checking if power-up calibrations are in progress.
  Resetting device before attempting load.
  Waiting for HostAvailable......
  Download code to device............
  Waiting for HostAvailable............
  Waiting for completion of power-up calibrations..
  Firmware rev successfully updated to T392.
  Disabling code load protocol in device..
%LOAD-S-COMPLETE, Load Completed
       $
```


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STATUS MESSAGES:

The following are the status messages returned by the loader program.

RETURN CODES - SUCCESS

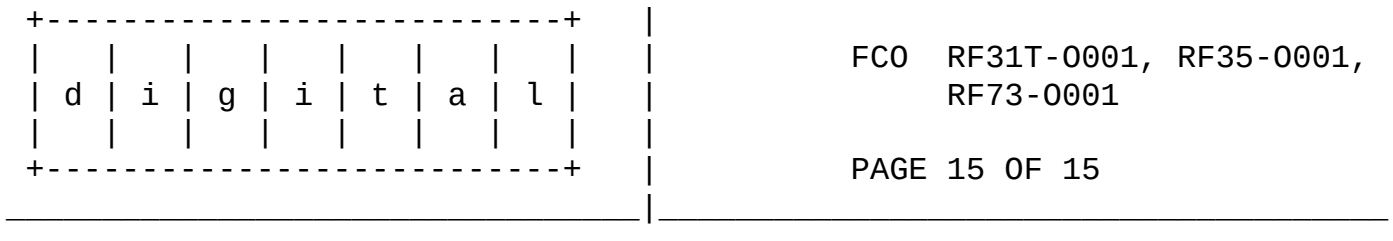
LOAD-S-COMPLETE, Load Completed

RETURN CODES - WARNING AND ERROR

LOAD-W-PROGQUIT, Program Stopped by User
LOAD-E-NOTDONE, Load was not Done

RETURN CODES - FATAL

LOAD-F-NOFYDEVICE, Unable to assign FYA0 (DUP class device)
LOAD-F-NORFDEVICE, Unable to assign specified RF device name
LOAD-F-BADRCVLENS, Conflicting data lengths in DUP_Receive
LOAD-F-UNKDUPMSG, Unknown DUP message type received
LOAD-F-BADROMINDEX, ROM Table index is out of range
LOAD-F-BADPEEKPOB, unexpected POB type was received after peek
LOAD-F-BADSTARTPOB, unexpected POB type was received after start
LOAD-F-BADGETDVI, Bad status returned from SYS$GETDVI
LOAD-F-FOPENERR, Unable to open specified image file
LOAD-F-BADCHECKSUM, Checksum in specified image is bad
LOAD-F-DEVMISMATCH, Device Type in Drive doesn't match that of image to be loaded
LOAD-F-HOSTNOTAVAIL, Device failed to become hostavailable
LOAD-F-DEVMOUNTED, Device is currently mounted, dismount and start again
LOAD-F-BADLOCKMODE, Unknown WS Lock Mode was passed
LOAD-F-SYSKFQSA, Mounted system disk on KFQSA can not be upgraded



LARS

	USA	GIA	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		031
DEC Option	XXXXX	XXXXX	XXXXX

Option ID	X	N/A	N/A
Type of Call	M	M	M
Action Taken	D	D	I/V
Fail Area-Module-FCO-Comments	RF*-O001	RF*-O001	RF*-O001
Material Used	EQ-01672-01	EQ-01672-01	EQ-01672-01

NOTE: * means either RF31T-O001, RF35-O001 or RF73-O001

(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".

FCO CHARGING INFORMATION (Y)									
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	

\\FCO_DOCS
\\RF31T
\\FA-05008-01
\\EQ-01672-01