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Product Information Note # 025

Subject: **Fibre Channel Option
Firmware Update**

Revision Date: **19 NOV 01**

Revision: **C**

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Introduction

This application note explains how to update the Qualstar Fibre Channel Option (FCO) firmware. The firmware is uploaded "inband" to the FCO using the Fibre Channel Interface on the rear of a Qualstar (Tape Library System) TLS.

System Requirements

The program requires a host computer (i386 or higher) running Windows NT 4.0 with a Fibre Channel Host Bus Adapter (HBA) connected to the FCO be updated. The upload application requires the Adaptec Advanced SCSI Programming Interface (ASPI) driver. Qualstar has licensed Adaptec's ASPI interface for use with its SCSI utility programs.

Obtain the Windows NT FCO Upload Programs

The Windows NT FCO upload program is available for use by Qualstar customers. Contact Qualstar Customer Service to obtain a copy of the FCO upload files. These files are contained in a self-extracting zip file UploadFCOutil.exe.

Program Installation

Obtain the Qualstar program UploadFCOutil.exe. Execute the program UploadFCOutil.exe to extract the ZIPed files:

- UploadFCO.exe - Qualstar's Fibre Channel Option upload program.
- Aspchk.exe - Adaptec's utility to verify the ASPI program interface.
- Aspiinst.exe - Adaptec's utility to install the ASPI program interface.
- load5017 fla - Current FCO firmware loader.
- r520r01 fla - Current FCO router firmware.

Execute the program aspchk.exe to verify the installation of the ASPI program interface. If the ASPI interface is not installed or incorrect, execute the program aspiinst.exe to install the latest APSI program interface.

UploadFCO – Program Execution

The UploadFCO console program is executed from a Windows NT command prompt or "DOS box". The program's command syntax:

```
Uploadfco <filename> [controller number]
```

Command Parameters:

filename - Filename of the new firmware update. These files have the file extension "fla".

controller number - Controller numbers are assigned by the program to FCO's connected to the host. This parameter is used to select an FCO when multiple systems are connected to the same Fibre Channel host. The control number parameter is optional. The program will prompt the user for a selection if one is required.

Example Command to update FCO firmware with file r520r01 fla :

```
Uploadfco r520r01 fla
```




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FIBRE CHANNEL ROUTERS:
Controller (0) : Chaparral xxxxxx
serial number : 005013B02591
firmware revision: Rxxx
target id : 255

Additional controllers will be listed if found

Controller (1) : Chaparral xxxxxx
serial number : 005013B06417
firmware revision: Rxxx
target id : 255

Upload operation completed.

Wait for TLS initialization to complete before
resuming operations.

Wait for third line of the TLS LCD display to clear, before restarting operations to the TLS library.

Update FCO router firmware (r520r01.fla)

The program uploadfco is executed from a Windows NT command prompt or "DOS box".

>Uploadfco r520r01.fla

Qualstar Fibre Channel Option Firmware Upload Utility v1.x
Initializing (CAPI 2.7) ...
Initialization Complete.

FIBRE CHANNEL ROUTERS:
Controller (0) : Chaparral xxxxxx
serial number : 005013B02591
firmware revision: Rxxx
target id : 255

Additional controllers will be listed if found

Controller (1) : Chaparral xxxxxx
serial number : 005013B06417
firmware revision: Rxxx
target id : 255

If more than one controller is located, the user is prompted for a controller selection number.

Enter the Controller Number (0-1) > 0



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The user is prompted to enter 'Y' to confirm the selected operation.

Upload Controller 0, Enter Y/N (default N)> Y

The program will begin the upload process. The following messages will be displayed.

Controller is shutdown.
 Update Firmware Reply

It is very important not to power off the system until reprogramming is completed or until the program times out. Failure to wait can cause the Fibre Channel Option to lose its program contents.

```
*****
*
*                               !!! WARNING !!!
*
* Do not power off the system, reprogramming in progress
* Please wait, this will take a while ...
*
*****
```

After programming is completed, the program will rescan for controllers, and a list of routers will be displayed.

```
FIBRE CHANNEL ROUTERS:
Controller ( 0) : Chaparral VFS113
  serial number : 005013B02591
  firmware revision: R520
  target id : 255
```

Additional controllers will be listed if found

```
Controller ( 1) : Chaparral xxxxxx
  serial number : 005013B06417
  firmware revision: Rxxx
  target id : 255
```

Upload operation completed.

Wait for TLS initialization to complete before resuming operations.

Wait for third line of the TLS LCD display to clear, before restarting operations to the TLS library.



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Program Error Messages

1. Program upload canceled.

User entered a 'N' to cancel the program.

2. Couldn't find any controllers

No Fibre Channel Options are present or communication cannot be established.

3. Invalid router number specified.

The controller index provided is not valid. The index value must correspond to an item displayed in the FIBRE CHANNEL ROUTERS list.

4. Reprogrammed router has not responded.

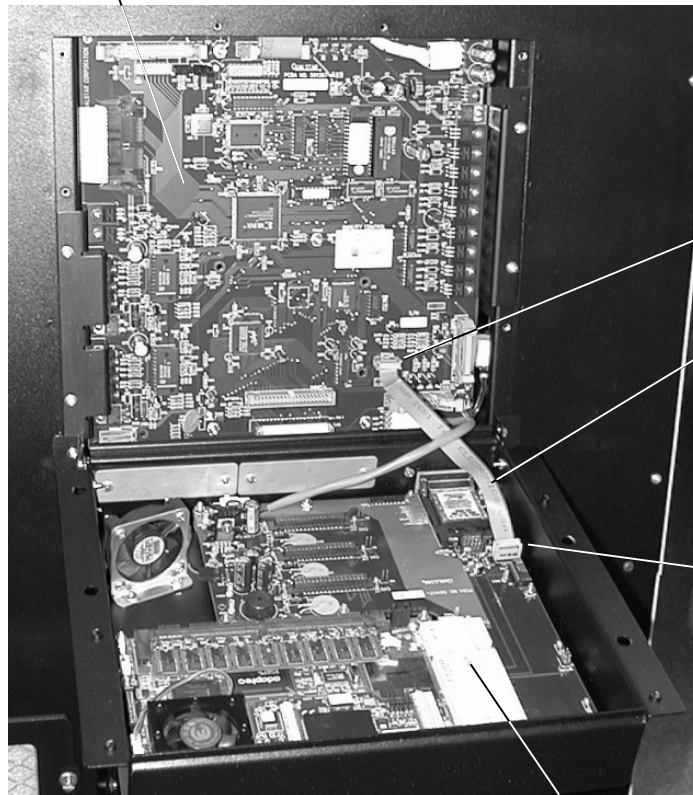
1. Power cycle TLS OFF/ON.
2. Wait for system to initialize.
3. Rerun "uploadfco" program, with no arguments to obtain router firmware revisions.
4. If firmware is not correct, re-attempt firmware upload.

The Fibre Channel Option failed to reestablish communications. This can occur on "warm" restarts of the FCO. Power cycle the TLS system, to perform a complete shutdown and "cold" restart.

Known Problems

1. The FCO with loader version 5016 and earlier, will not upload correctly with the TLS serial interface connected.
 - a) First power off the TLS, then disconnect the serial interface ribbon cable between the TLS executive PCBA and the FCO, then power on the TLS library. See Figure 1.

Executive PCBA



SERIAL Connector on
Executive PCBA

SERIAL Ribbon Cable
Note: Red edge of cable faces
the right as seen from the rear
of the TLS.

SERIAL Connector on
Fibre Channel Option

Fibre Channel Option

Figure 1 Executive PCBA and Fibre Channel Option

- b) Upload the program. See page 1 for instructions.
- c) Power off the TLS, then reconnect the serial interface cable between the TLS executive PCBA and the FCO.
- d) Power on the TLS.