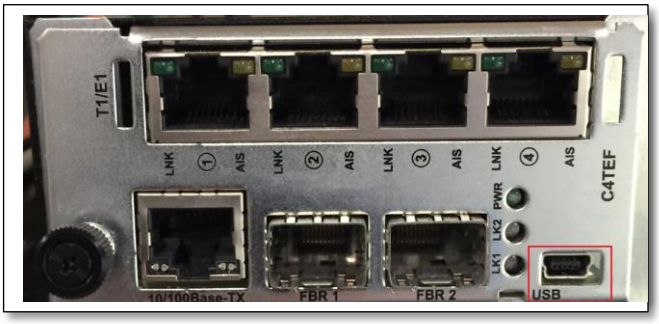
How to upgrade the FPGA on the C4TEF120

1. Open a HyperTerminal session using the mini-USB port on the local chassis unit: 57.6K baud, 8,none,1,none.
2. Hit ENTER to display the main menu:

```
Commands:
*** FPGA firmware CRC failure ***
l - Download FPGA firmware using XMODEM
o - Upgrade remote FPGA
p - Upgrade remote PIC
q - FPGA firmware version & status
```



Local Unit:

3. To check the current FPGA's revision type "q" at the prompt:

```
%q
Primary image:
Version - 0.2.3
CRC - ..........................PASSED

Backup image:
Version - 0.2.3
CRC - ..........................PASSED
```

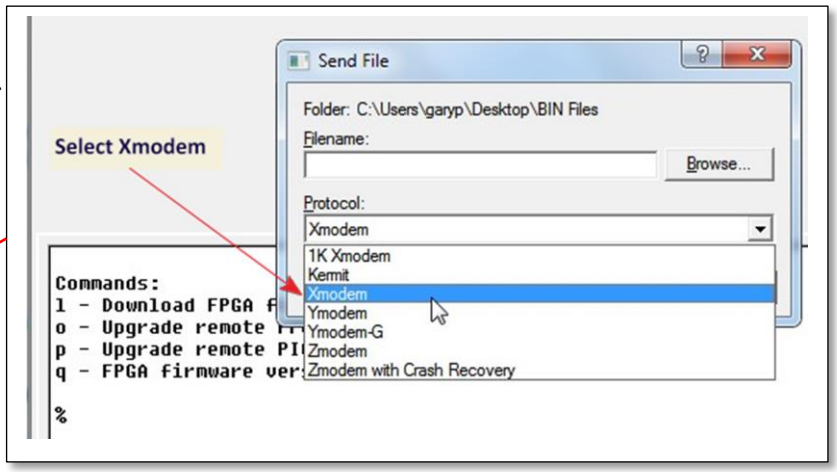
The current revision should be 0.2.3 on the Primary and Backup image.

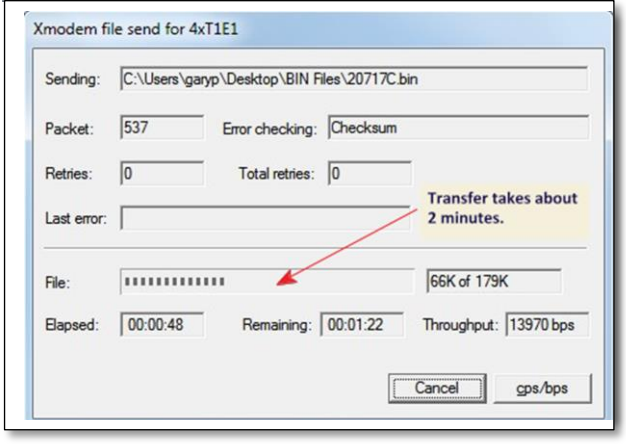
4. Chose "l" (The letter L) to download FPGA firmware using XMODEM. The FPGA bin file, 20717C.bin, should be downloaded from Transition's web site and stored in a folder on your PC. Use this location when browsing for the file in HyperTerminal.

The mini-USB console output is show below:

```
DOWNLOAD: LOCAL_MODE
DOWNLOAD: Pre-process FLASH, please wait
DOWNLOAD: Erasing backup image.............

DOWNLOAD: Start file download using XMODEM
```





```
DOWNLOAD: Version compare:
Current : 0.2.3
New     : 0.2.4
DOWNLOAD: Continue?(Y/N)
```

Type "Y" to copy the backup image to the primary image. Don't let the query time out or hit any other key or the download will cancel and you'll have to start over.

```
DOWNLOAD: Auto update remote disabled

DOWNLOAD: Post-process FLASH, please wait
DOWNLOAD: Do not interrupt or power cycle unit
DOWNLOAD: Erasing primary image.................

DOWNLOAD: Copying backup to primary.............................................
.........................#

DOWNLOAD: Restart FPGA
FPGA detected revision 0.2.4

DOWNLOAD: Complete
```

If the MMU's serial port is connected and HyperTerminal is open you'll see this message:

```
GP>
C4TEF120 3[15] Local fpga version changed from 03h to 04h

15:23:22:37 GP> _
```

The MMU only shows the last byte of the revision. The full revision is 1.0.2.4.

4. There are several ways to update the remote unit's FPGA.

a) Update the remote unit's FPGA from the mini-USBs console:

```
Commands:
l - Download FPGA firmware using XMODEM
o - Upgrade remote FPGA
p - Upgrade remote PIC
q - FPGA firmware version & status

%o

DOWNLOAD: Remote detected, starting download
DOWNLOAD: Validating backup image CRC - ..........................PASSED
................
DOWNLOAD: Sending file to remote
################################################################################
##############################################################
DOWNLOAD: Download complete, waiting for remote restart
................................................................................
........
DOWNLOAD: Remote upgrade complete

%
```

Choose "o" to upgrade the remote FPGA.

The MMU shows the remote FPGA was updated.

```
15:23:32:31 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:33:01 GP>
```

```
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:33:12 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:33:23 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:33:35 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:33:46 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:35:14 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15])

15:23:35:25 GP>
C4TEF120: Remote fpga upgrade in progress.  (3[15

15:23:35:36 GP>
C4TEF120: Remote fpga upgrade completed. (3[15])
SNMP: ERROR trap condition, NMS not configured.
   Object ID [18/0x12] c4tef120LinkTbl.1.3.15
   Integer [1/0x1] 2/0x2
SNMP: Trap destination address not configured, trap not sent

15:23:35:47 GP>
SNMP: ERROR-CLEAR trap condition, NMS not configured.
   Object ID [18/0x12] c4tef120LinkTbl.1.3.15
   Integer [1/0x1] 1/0x1
SNMP: Trap destination address not configured, trap not sent

15:23:35:59 GP>
```

After upgrade the remote FPGA restarts. This causes a link trap followed by a link clear.

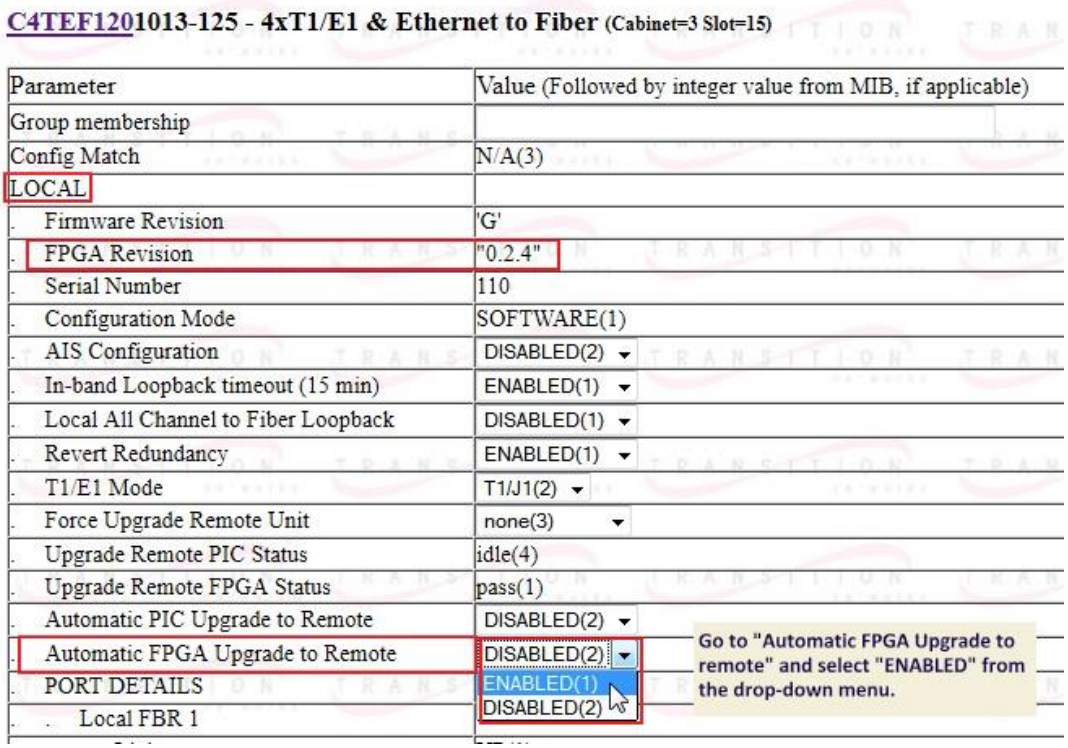
b) Update the remote unit's FPGA from the Web page:

C4TEF1201013-125 - 4xT1/E1 & Ethernet to Fiber (Cabinet=3 Slot=15)

Parameter	Value (Followed by integer value from MIB, if applicable)
Group membership	
Config Match	N/A(3)
LOCAL	
. Firmware Revision	'G'
. FPGA Revision	"0.2.4"
. Serial Number	110
. Configuration Mode	SOFTWARE(1)
. AIS Configuration	DISABLED(2)
. In-band Loopback timeout (15 min)	ENABLED(1)
. Local All Channel to Fiber Loopback	DISABLED(1)
. Revert Redundancy	ENABLED(1)
. T1/E1 Mode	T1/J1(2)
. Force Upgrade Remote Unit	none(3)
. Upgrade Remote PIC Status	forcePic(1)
. Upgrade Remote FPGA Status	forceFpga(2)
. Automatic PIC Upgrade to Remote	none(3)
. Automatic FPGA Upgrade to Remote	DISABLED(2)
. PORT DETAILS	DISABLED(2)

Go to "Force Upgrade Remote Unit and from the drop-down menu select "forceFpga(2)". The local unit's FPGA will be copied to the remote.

Go to the bottom of the page and click on "Save"



After choosing A*utomatic* or *Force*, the download begins and the console output looks the same:

```
DOWNLOAD: Remote detected, starting download
DOWNLOAD: Validating backup image CRC - ..........................PASSED
.................
DOWNLOAD: Sending file to remote
################################################################################
############################################################
DOWNLOAD: Download complete, waiting for remote restart
................................................................................
........
DOWNLOAD: Remote upgrade complete
```