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REVISION HISTORY

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1.0	Original Version	Jul 2005
1.1	Fixed formatting and typos	May 2008

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1. OVERVIEW

The 500FC-DA-HD Frame Controller with Distribution Amplifier card provides a single point of access to communicate with VistaLINK[®] enabled 500 series card. The 500FC-DA-HD provides a 10Base-T/100Base-TX Ethernet port and communication that is facilitated through the use of Simple Network Management Protocol (SNMP). The 500FC-DA-HD handles all SNMP communications between the frame (500FR) and the network manager (NMS), and serves as a gateway to individual cards in the frame. The 500FC-DA-HD also provides an RS-232 serial port at the card edge to set up the network addresses.

In addition the 500FC-DA-HD provides an on board reclocking distribution amplifier for HDTV and serial digital video signal at rates of 1.5 Gb/s and 143 Mb/s to 540 Mb/s. The DA features an auto-equalized input with eight reclocked outputs and has been designed for use as a SMPTE 292M (1.5 Gb/s), DVB-ASI or SMPTE 259M distribution product.

The 500FC-DA-HD is housed in the 500FR **exponent** Frame and must be installed in slot 1 of the frame.

Frame Controller Features:

- Complies with IEEE 802.3 100Base-TX and 10Base-T Ethernet standards
- 100 Mbps Fast Ethernet or 10 Mbps Ethernet data transfer, selected by auto-negotiation
- Full duplex or half-duplex operation, selected by auto negotiation
- RJ-45 connector for network cable connection
- Card edge RS-232 serial control port for configuration
- Front panel LEDs indicate module fault
- Rear panel LEDs indicate Ethernet link, activity and speed
- Provides frame/chassis status information through enabled hardware via VistaLINK[®] including frame status, card insertion/removal counters, and 500FC-DA-HD software version number

DA Features:

- Normal mode for SMPTE 259M (143 ⇒ 540 Mb/s) or SMPTE 292M (1.5 Gb/s) signals - autodetects correct bit rate
- Configurable for DVB-ASI and Non-Reclock mode using VistaLINK[®] control
- Fully hot-swappable from front of frame with no BNC disconnect required
- Independent isolated output drivers to ensure no cross channel loading effects (i.e. no need to terminate unused outputs)

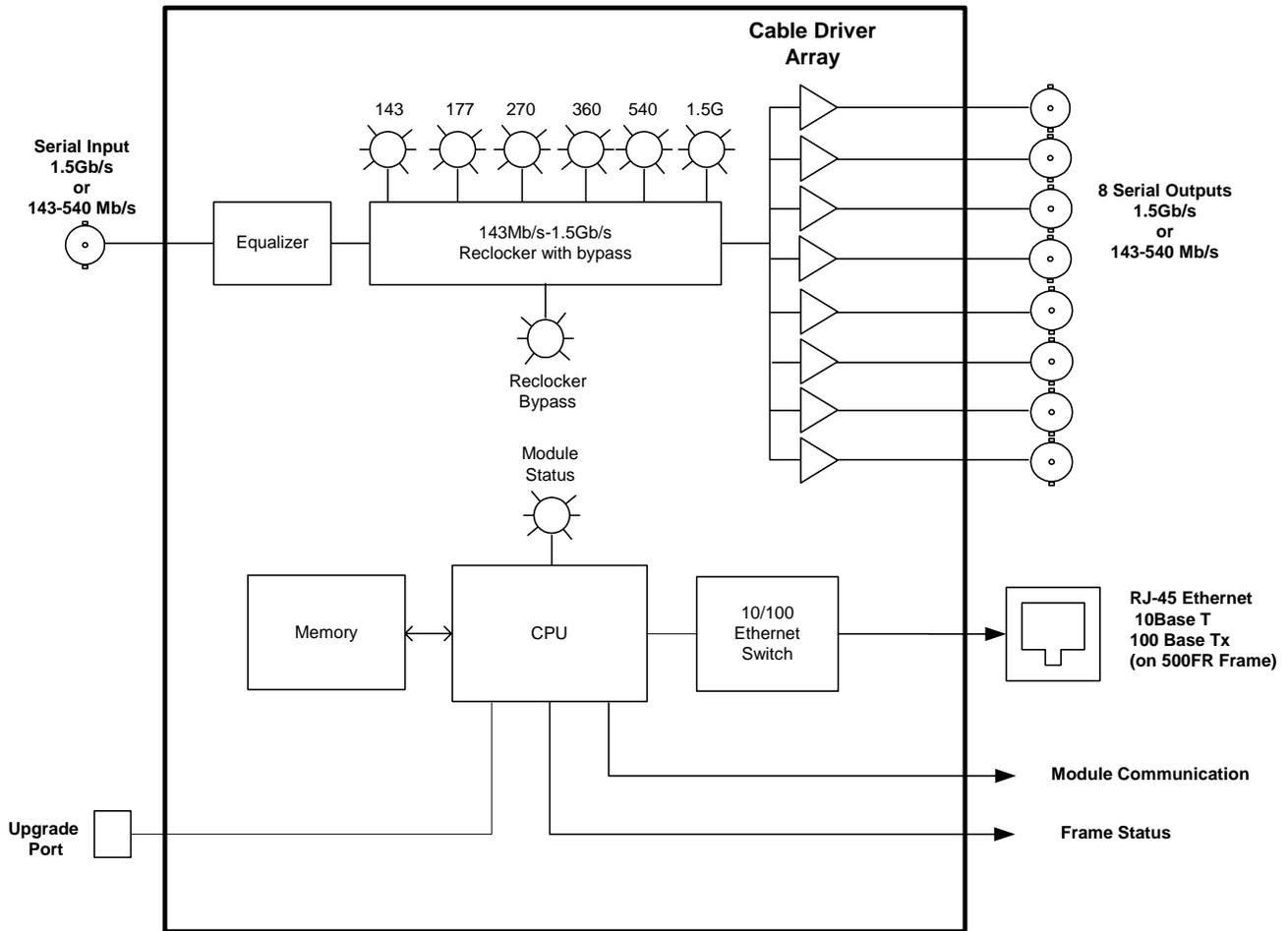


Figure 1-1: 500FC-DA-HD Block Diagram

2. INSTALLATION

The 500FC-DA-HD Frame Controller module can only be installed into slot 1 of the 500FR frame. Orient the module vertically such that the white card ejector is on the bottom. Align the card with the card guide corresponding for slot number 1. Carefully slide the module into the frame and press it completely into the rear panel connectors. Make sure that the connectors are fully seated in the rear panel.

The 500FC-DA-HD comes with a companion rear panel overlay that can be placed over the rear panel BNC connectors to identify their function.

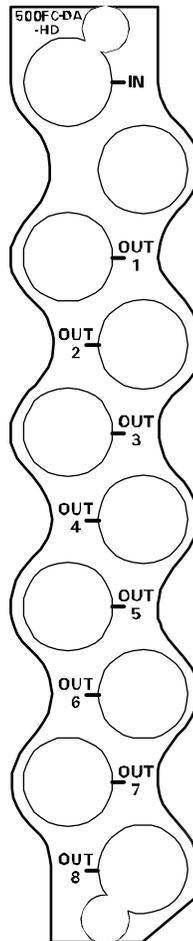


Figure 2-1: 500FC-DA-HD Rear Panel Overlay

2.1. DISTRIBUTION AMPLIFIER CONNECTIONS

IN: Input BNC connector for 10-bit serial digital video signals compatible with the SMPTE 259M, DVB-ASI or SMPTE 292M standard.

OUT 1 to 8: There are eight BNC connectors with reclocked serial component video outputs, compatible with the SMPTE 259M / DVB-ASI, or SMPTE 292M standard.

2.2. ETHERNET CONNECTION

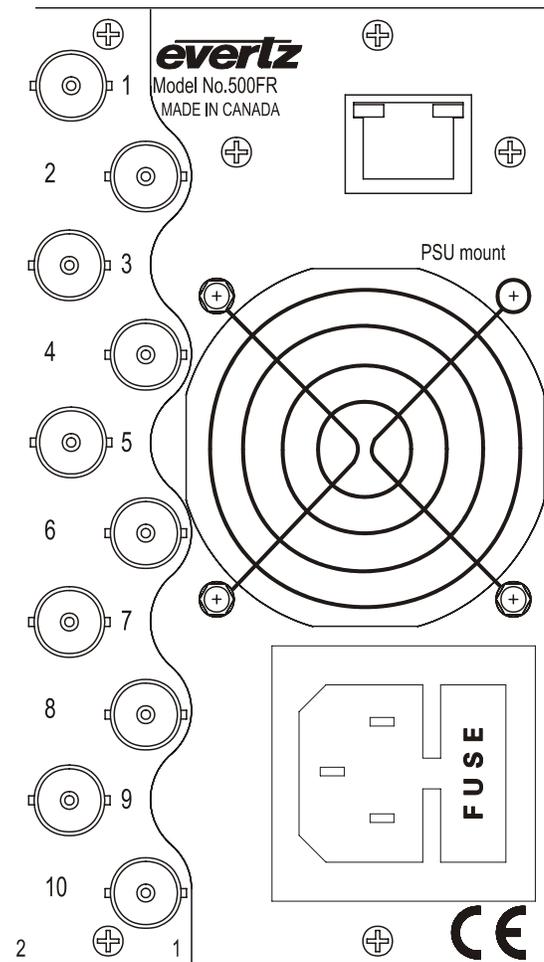


Figure 2-2: Ethernet Connector on 500FR Rear Panel

The 500FR has a RJ-45 Ethernet connector located on the rear panel on the side of the frame adjacent to slot 1. The 500FC-DA-HD is designed to be used with either 10Base-T (10 Mbps) or 100Base-TX (100 Mbps) also known as *Fast Ethernet*, twisted pair Ethernet cabling systems. When connecting for 10Base-T systems, category 3, 4, or 5 UTP cable as well as EIA/TIA – 568 100Ω STP cable may be used. When connecting for 100Base-TX systems, category 5 UTP cable is required. The maximum cable run between the 500FC-DA-HD and the supporting hub is 300 ft (90 m). The maximum combined cable run between any two end points (i.e. 500FC-DA-HD and PC/laptop via network hub) or stations is 675 feet (205 m). The cable must be “straight through” with a RJ-45 connector at each end. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of the 500FC-DA-HD and the other end into a port of the supporting hub.

The straight-through RJ-45 cable can be purchased or can be constructed using the pinout information in Table 2-1. A colour code wiring table is provided in Table 2-1 for the current RJ 45 standards (AT&T 258A or EIA/TIA 258B colour coding shown). Also refer to the notes following the table for additional wiring guide information.

Pin 1	Pin #	Signal	EIA/TIA 568A	AT&T 258A or EIA/TIA 568B	10BaseT or 100BaseT
	1	Transmit +	White/Green	White/Orange	X
	2	Transmit –	Green/White or White	Orange/White or Orange	X
	3	Receive +	White/Orange	White/Green	X
	4	N/A	Blue/White or Blue	Blue/White or Blue	Not used (required)
	5	N/A	White/Blue	White/Blue	Not used (required)
	6	Receive –	Orange/White or Orange	Green/White or Green	X
	7	N/A	White/Brown	White/Brown	Not used (required)
	8	N/A	Brown/White or Brown	Brown/White or Brown	Not used (required)

Table 2-1: Standard RJ45 Wiring Colour Codes

Note the following cabling information for this wiring guide:

- Only two pairs of wires are used in the 8-pin RJ 45 connector to carry Ethernet signals.
- Even though pins 4, 5, 7 and 8 are not used, it is mandatory that they be present in the cable.
- 10BaseT and 100BaseT use the same pins, a crossover cable made for one will also work with the other.
- Pairs may be solid colours and not have a stripe.
- Category 5 cable must use Category 5 rated connectors.

The maximum cable run between the 500FC-DA-HD and the supporting hub is 300 ft (90 m). The maximum combined cable run between any two end points (i.e. 500FC-DA-HD and PC/laptop via network hub) is 675 feet (205 m).

Devices on the Ethernet network continually monitor the receive data path for activity as a means of checking that the link is working correctly. When the network is idle, the devices also send a link test signal to one another to verify link integrity. The RJ-45 connector on the 500FR rear panel is fitted with two LEDs to monitor the Ethernet connection.

10/100: This Amber LED is ON when a 100Base-TX link is last detected. The LED is OFF when a 10Base-T link is last detected (the LINK LED is ON). Upon power-up the LED is OFF as the last detected rate is not known and therefore defaults to the 10Base-T state until rate detection is completed.

LN/ACT: This dual purpose Green LED indicates that the 500FC-DA-HD has established a valid linkage to its hub, and it identifies whether the 500FC-DA-HD is sending or receiving data. This LED will be ON when the 500FC-DA-HD has established a good link to its supporting hub. This gives you a good indication that the segment is wired correctly. The LED will BLINK when the 500FC-DA-HD is sending or receiving data. The LED will be OFF if there is no valid connection.

2.3. SERIAL PORT CONNECTION

To connect the serial port for the module unit remove the module from the frame. Install the Upgrade cable provided (located in the vinyl pouch in the front of the manual binder) onto header J1 at the card edge. Re-install the module into the frame. This serial port is used to configure the network addresses for the module and also to upgrade the firmware in the module. See section 6 for more information.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standards:	SMPTE 292M, SMPTE 259M A, B, C, D (143 to 540 Mb/s) or DVB-ASI
Connector:	1 BNC per IEC 61169-8 Annex A
Equalization:	Automatic to 350m @ 270Mb/s, 140m @ 1.5Gb/s with Belden 1694A (or equivalent)
Return Loss:	> 15 dB up to 1.0 Gb/s > 10 dB up to 1.5 Gb/s

3.2. SERIAL VIDEO OUTPUTS

Number of Outputs:	8 Reclocked
Connector:	BNC per 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V ±0.5V
Rise and Fall Time:	200ps nominal
Overshoot:	< 10% of amplitude
Return Loss:	> 15 dB up to 1.0 Gb/s > 12 dB up to 1.5 Gb/s
Wide Band Jitter:	< 0.2 UI

3.1. ETHERNET

Network Type:	Fast Ethernet 100 Base-TX IEEE 802.3u standard for 100 Mbps baseband CSMA/CD local area network Ethernet 10 Base-T IEEE 802.3 standard for 10 Mbps baseband CSMA/CD local area network
Connector:	RJ-45

3.2. SERIAL COMMUNICATIONS

Standard:	RS-232
Connector:	9 Pin Female D connector on upgrade breakout cable (provided with 500FR)
Baud Rate:	57600
Format:	8 bits, no parity, 2 stop bits, no flow control

3.3. ELECTRICAL

Voltage:	+ 12VDC
Power:	5.5 Watts
EMI/RFI:	Complies with FCC Part 15 Class A and EU EMC directive

3.4. PHYSICAL

Number of slots:	1 (must be in slot 1 of 500FR)
-------------------------	--------------------------------

4. STATUS LEDS

The location of the status LEDs is shown in Figure 5-1.

4.1. MODULE STATUS LEDS

MODULE STATUS Upon power-up, and if disabled through the Frame MIB, only LED 2 will be ON (“green”) when the module is operating properly. When both LEDs 1 and 2 are enabled through the Frame MIB (VistaLINK[®]), both will flash alternatively.

RECLOCKER RATE: There are 6 LEDs that indicate the rate (143, 177, 270, 360 or 540 Mb/s, or 1.5 Gb/s) that the reclocker is currently using.

RECLOCKER BYPASS: This Green LED will be On when the reclocker rate is disabled by VistaLINK[®].

5. JUMPERS

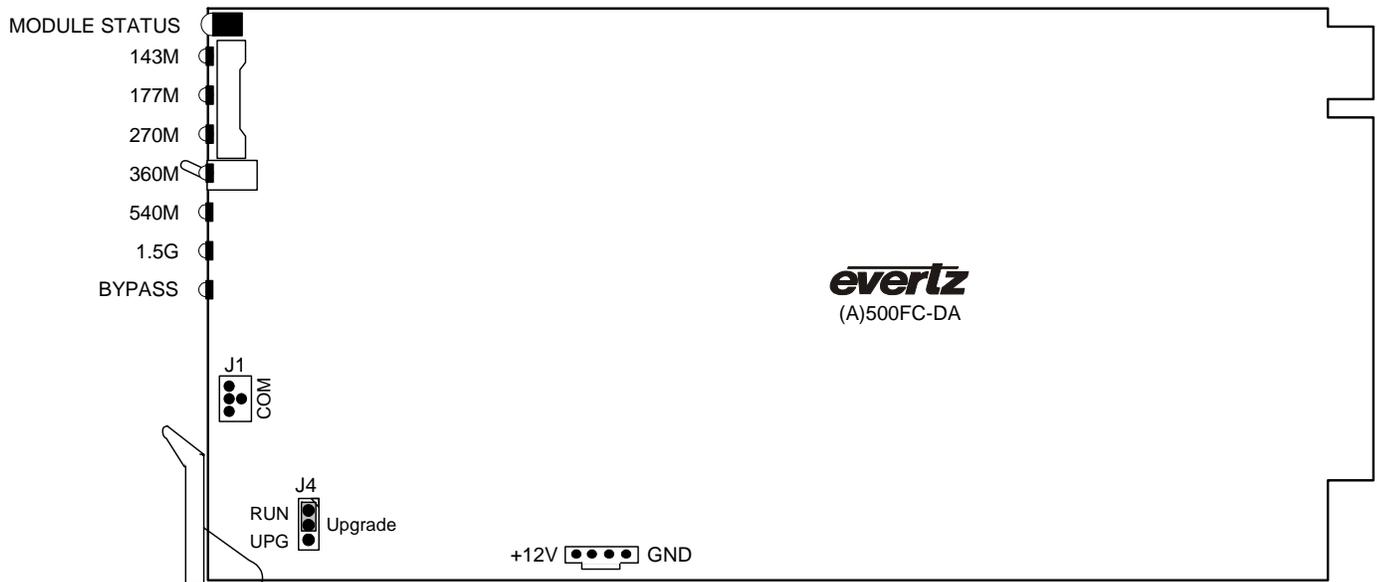


Figure 5-1: LED and Jumper Locations

5.1. CONFIGURING THE MODULE FOR FIRMWARE UPGRADES

UPGRADE: The UPGRADE jumper J4 located at the bottom edge of the module is used when firmware upgrades are being done to the module. For normal operation it should be installed in the *RUN* position. See the *Upgrading Firmware* section in the front of the binder for more information.

To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J4 into the *UPG* position. Install the Upgrade cable provided (located in the vinyl pouch in the front of this manual) onto the COM header J1 at the front edge of the card. Re-install the module into the frame. Run the upgrade as described in the *Upgrading Firmware* chapter in the front of the binder. Once the upgrade is complete, remove the module from the frame, move J4 into the *RUN* position, remove the upgrade cable and re-install the module. The module is now ready for normal operation.

6. CONFIGURING THE FRAME CONTROLLER

The 500FC-DA-HD Frame Controller is configured by connecting its serial port to a computer running a readily available terminal program such as HyperTerminal. The following procedure will guide you through each step of the configuration process.

You will need the following equipment in order to configure the 500FC-DA-HD Frame Controller:

- PC with available communications port. The communication speed is 57600 baud, therefore a 486 PC or better with a 16550 UART based communications port is recommended.
- “Straight-thru” serial extension cable (DB9 female to DB9 male) or (DB25 female to DB9 male)
- Terminal program such as HyperTerminal
- Special upgrade cable supplied with the 500FR frame. This cable is normally in the vinyl pouch at the front of this manual. (Evertz part #WA S76).

6.1. ESTABLISHING COMMUNICATION WITH THE FRAME CONTROLLER

6.1.1. Connecting the Computer to the Card Edge Serial Port

Connect the serial upgrade cable (Evertz part #WA S76) to the 2x3 header (J1) at the front edge of the 500FC-DA-HD card. Note that pins 1 and 5 on the header should be removed and pins 1 and 5 on the cable connector should also be plugged. If the cable is not keyed, make sure that you install it so that the cable is pointing towards the front of the frame when the module is installed. Pin 1 of the ribbon cable is brown and will be facing the top edge of the module (farthest from the card ejector) when the cable is correctly installed.

500FC-DA-HD End			PC End	
2 row X 3 pin Berg	Pin	6 Conductor Ribbon Cable	9 pin D Female	Pin
Key	1	Blue		1
Rx	2	Green	Tx	2
Tx	3	Yellow	Rx	3
Tx Gnd	4	Orange	Gnd	5
Key	5	Red		
---	6	Brown		

Table 6-1: Serial Upgrade Cable (WA-S76)

6.1.2. Terminal Program Setup

1. Start the terminal program and configure the port settings of the terminal program as follows:

Baud	57600
Data bits	8
Parity	no
Stop bits	2
Flow Control	no

2. Install the 500FC-DA-HD card into the frame. After the card powers up the 500FC-DA-HD main menu appears in the terminal window. (For future reference, the 500FC-DA-HD software version is displayed prior to the main menu and should be quoted to Evertz service staff when required.) The 500FC-DA-HD menu for Network and SNMP Configuration is detailed in section 6.2.

For example:

```
A)500FC hardware build 1, S/N 180487476a.
display build is 2
Evertz model 500 FRAME CONTROLLER
Software version 1. 3  build 2

Running...

---- 500FC Main Menu ----

NOTE: In all menus, changes made will only take
effect if you select "Save and Exit"

(1) Network Configuration
(2) SNMP Configuration
(3) Engineering (this option should be used only under the supervision of
evertz tech support)

(X) Exit
>
```

3. If the prompt does not appear, the following is a list of possible reasons for failed communications:

- Defective Serial Upgrade cable.
- Wrong communications port selected in the terminal program.
- Improper port settings in the terminal program. (Refer to step 2 for settings).

6.2. CONFIGURING THE NETWORK SETTINGS

From main menu, three selections are available - *Network Configuration*, *SNMP Configuration* and *Engineering*.

- *Network Configuration* is used to set network IP addresses as well as broadcasting and routing instructions
- *SNMP Configuration* is used to identify up to five trap destination IP addresses.
- *Engineering* is a debug menu option and should only be used under the supervision of Evertz technical support staff.

```
---- 500FC Main Menu ----

NOTE: In all menus, changes made will only take
effect if you select "Save and Exit"

(1) Network Configuration
(2) SNMP Configuration
(3) Engineering (this option should be used only under the supervision of
evertz tech support)

(X) Exit
>
```

To choose one of the menu options, press the letter or number shown on the left and then press <Enter>. If you choose menu item 1 or 2 you will be presented with an additional menu. Choose menu items on these sub menus in the same way.

6.2.1. Exiting Setup Sub Menus

When you have completed changes within a sub-menu, press *s* to save the configuration to memory. After 30 seconds, a successful save of the configuration is acknowledged with a commit successful statement, and the user is returned to the main menu.

For example: (after pressing *s*<enter>)

```
----- 500FC Network Configuration -----  
  
-----  
ip address:          192.168.8.185  
netmask address:    255.255.255.0  
gateway:            192.16.8.11  
broadcast address: 255.255.255.255  
DHCP enabled: True  
-----  
  
(1) Set IP Address  
(2) Set Netmask  
(3) Set Gateway  
(4) Set Broadcast Address  
(5) Use DHCP  
  
(S) Save and Exit  
(X) Exit  
> s  
Saving network information ... please wait  
This process will take 30 seconds to complete...  
Saving complete
```

Press *x* if you made an error during configuration and want to exit the setup sub-menu without saving the new settings. In either case you will return to the main menu.

For example: (after pressing X<enter>)

```
----- 500FC Network Configuration -----  
-----  
ip address:          192.168.8.185  
netmask address:    255.255.255.0  
gateway:            192.168.8.11  
broadcast address: 255.255.255.255  
DHCP enabled: True  
-----  
(1) Set IP Address  
(2) Set Netmask  
(3) Set Gateway  
(4) Set Broadcast Address  
(5) Use DHCP  
  
(S) Save and Exit  
(X) Exit  
> x  
  
----- 500FC Main Menu -----  
  
NOTE: In all menus, changes made will only take  
effect if you select "Save and Exit"  
  
(1) Network Configuration  
(2) SNMP Configuration  
(3) Engineering  
  
(X) Exit  
>
```

At this point, the serial connector can be removed from the Frame Controller and the terminal program can be closed. An SNMP manager using the previously specified IP can now be initiated.

6.2.2. Network Configuration

The *Network Configuration* menu has five network parameters that need to be configured. If the network is using a DHCP server, set the *DCHP* parameter to *yes* before proceeding to change the other parameters. When the DHCP setting is set to *yes*, the *IP Address*, *Netmask*, *Route*, and *Broadcast* addresses are automatically assigned and their corresponding menu items are disabled.

If the network is not using a DHCP server, set the *DHCP* parameter to *No* before proceeding to change the *IP Address*, *Netmask*, *Route*, and *Broadcast* addresses.

Table 6-2 gives a brief description of each menu item and what the parameter does. To choose one of the menu options, press the letter or number shown on the left and then press <Enter>. You will be prompted to enter the required parameter value. When you are done configuring the *Network Setup* menu items press X to return to the main menu. If you are unclear about how to configure your network, consult your network administrator.

IP Address	This control sets the unique IP address of the 500FC-DA-HD within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network. If connecting multiple frames (each with its own frame controller), take care not to use the same IP address for each frame.
Netmask	This menu item defines the “subnet mask” of the network. Specifically, this parameter outlines all the IP addresses that can communicate with the 500FC-DA-HD. This parameter can be set to 255.255.255.0 for a private network.
Route	The “Route” menu item identifies the IP address of the “gateway” (commonly referred to as the “firewall”). In the simplest sense the gateway could be the PC directly connected to the frame and running the network application software (i.e. VistaLINK® PRO). This gateway links to and communicates with other network gateways. In a private network, this gateway could be identified as 192.168.1.YYY
Broadcast	This menu item sets the “broadcast” IP address. For example, in a private network this parameter can be set to 192.168.1.255
Use DHCP	This setting allows the Frame Controller to automatically generate an IP address for the above parameters from a DHCP server during boot-up. If you are not running a DHCP server, set this parameter to “No” first before making any changes to other parameters.

Table 6-2: Menu Items and Descriptions



To communicate beyond the private (internal) network over the internet, all messages must be sent via the gateway (firewall). As a result, the firewall must be configured separately by the end-user to facilitate communication. Consult your network administrator if establishing a communication link beyond the private network.

For convenience and future reference, a chart is provided below to record IP addresses for this SNMP network. (Additional blank charts have also been added at the end of this manual.)

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

Once the *Network Configuration* parameters have been configured, exit the *Network Setup* by pressing *s* followed by the <Enter> key. Proceed to the *SNMP Setup* menu option by entering 2 followed by the <Enter> key at the Main Menu prompt.

6.2.3. SNMP Configuration

In the *SNMP Configuration* menu, two parameters are configured:

Trap Setup	This menu item identifies the destination IP addresses (the SNMP Manager or NMS) to which TRAPS are sent via SNMP. A maximum of five IP addresses may be entered.
Community Strings	Factory default “private” and “public” (No changes required. However, if these settings are made, the manager must have the identical settings, otherwise no communication will occur between the 500FC-DA-HD and manager.)

Once the *SNMP Configuration* parameters have been configured, exit *SNMP Configuration* by pressing *s* followed by the <Enter> key.

6.2.3.1. Community Strings

Community Strings are considered as “passwords” within SNMP, controlling the ability to read (“GET”) and/or read/write (“SET”) values to a specific destination. “GET” and “SET” messages include the community strings within their packets. By factory default, community strings are set to “public” and “private” respectively. If these settings are changed, the SNMP manager’s community string must agree with the “SET” string. Otherwise no communication will occur between the 500FC-DA-HD and manager.

For example:

```
---- 500FC Community Strings ----
Read-Only: |public|
Read-Write: |private|

(1) Set Read-Only Community String
(2) Set Read-Write Community String

(X) Exit
>
```

6.2.3.2. Trap Setup

“Trap Setup” allows the user to set IP addresses of SNMP Managers from which GETs and SETs are sent to the Frame Controller and to which TRAPS are returned. A maximum of five IP addresses can be stored in the Frame Controller. After selecting “Add...” or “Remove...”, IP addresses are entered one at a time.

<i>Add Trap Destinations</i>	Add a SNMP Manager IP address to the TRAP distribution list.
<i>Remove Trap Destinations</i>	Remove a SNMP Manager IP address from the TRAP distribution list. For example, selecting this option reveals the list of IP addresses with the prompt to remove one from the list: Trap #1: 192.168.1.76 Trap #2: 192.168.8.140 Trap #3: 192.168.8.112 Remove trap # > 3

7. UPGRADING THE FRAME CONTROLLER FIRMWARE

The 500FC-DA-HD Frame Controller facilitates communication between the SNMP-enabled (VistaLINK®) cards residing in a frame, and the SNMP Manager (or NMS). Frequently, new cards or new features for existing cards are added to the VistaLINK® product family. In both cases, a new Management Information dataBase (“MIB”) exists. Subsequently, the 500FC-DA-HD should also be upgraded with the latest information (“image”) to maintain the most up-to-date monitoring and control capabilities.

The 500FC-DA-HD Frame Controller firmware is upgraded by setting the module to upgrade mode as described in section 5.1. You will then follow the procedure outlined in the *Upgrading Firmware* section in the front of the binder for more information.

7.1.1. Downloading Upgrade Files

1. Download the 500FC-DA-HD firmware file from the web site (www.evertz.com – Downloads link, Firmware Downloads link, 500 Series). Save the file to the hard drive.
2. Unzip the downloaded file and store it in a selected sub-directory. Record the location of the stored file.

7.1.2. Setting the 500FC-DA-HD Frame Controller to Upgrade Mode

The *UPGRADE* jumper J1 located at the front of the module is used when firmware upgrades are being performed on the 500FC-DA-HD Frame Controller module. For normal operation a jumper is set in the *RUN* position, or by default, remains without a jumper. To upgrade the firmware in the module unit pull it out of the frame. Move Jumper J1 into the *UPGRADE* position as described in section 5.1.

7.1.3. Upgrade Procedure

Follow the procedure outlined in the *Upgrading Firmware* section in the front of the binder.

8. VISTALINK® REMOTE MONITORING/CONTROL

8.1. WHAT IS VISTALINK®?

VistaLINK® is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. VistaLINK® provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through VistaLINK® PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, VistaLINK® enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

There are 3 components of SNMP:

1. An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz VistaLINK® Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz VistaLINK® enabled products.
2. Managed devices (such as 500FC-DA-HD), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK® enabled 500 series modules reside in the 3RU 500FR MultiFrame and communicate with the manager via the 500FC VistaLINK® frame controller module, which serves as the Agent.
3. A virtual database, known as the Management Information Base (MIB), lists all the variables being monitored, which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the VistaLINK® network, see section 6.

8.2. VISTALINK® MONITORED PARAMETERS

The following parameters can be remotely monitored through the VistaLINK® interface.

Parameter	Description
Input Video Rate	Indicates the detected video bitrate
Video Locked	Indicates whether or not there is a video lock.
Card Type	Indicates version of the module (500FC-DA-HD)

Table 8-1: VistaLINK® Monitored Parameters

8.3. VISTALINK® CONTROLLED PARAMETERS

Parameter	Description
Bypass Select	Sets the reclocker mode. If 'none', the reclocker is never bypassed. If 'auto', the reclocker is auto-bypassed when the PLL is not locked. If 'force', the reclocker is always bypassed
DVB select	Sets the auto locking to DVB/ASI or 177Mb/s mode

Table 8-2: VistaLINK® Controlled Parameters**8.4. VISTALINK® TRAPS**

Trap	Description
Card Removal	Triggers when one of the cards in slots 2 to 16 is removed
Frame Status	Triggers when the Frame Status LED for the Frame goes Off
Upgrade Failed	Triggers when the firmware upgrade of a module fails

Table 8-3: VistaLINK® Traps

9. ADDITIONAL IP ADDRESS TABLES

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

Frame Controller Parameters	IP Address
Hostname	
IP Address	
Netmask	
Route	
Broadcast	

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