

QAM Transcoder Power & Control Module



Stock #	Model Name	Description
6238	QTPCM-4	QT Power & Control Module
6238 PF	QTPCM-4-PF	QT Power & Control Module with Program Filtering

We recommend that you write the following information in the spaces provided below.

Purchase Location Name:	
Purchase Location Telephone Number:	
Serial Number(s):	

The information contained herein is subject to change without notice. Revisions may be issued to advise of such changes and/or additions.

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This guide makes use of hyperlinks for the Table of Contents, some cross-reference linking between sections, and external hyperlinking to web addresses. This has been done to assist the reader in finding the information they are seeking in a much quicker way. In addition to hyperlinking, the Table of Contents also makes use of the bookmarking feature present in the Adobe Reader application.

Product and Documentation Updates

Download the latest User Manual (PDF) by visiting our website. Navigate to the product page by entering the full Model Name or Stock Number in the search field. Upon reaching the product page, the “User Manual” download link will be located beneath the product image. **Firmware Updates** are available under “Tech Support” in the “Resources” section of the website. General instructions for the FTP site, as well as updating your firmware, are provided on this page.

Returning Product for Repair (or Credit)

A Return Material Authorization (RMA) Number is required on all products returned to Blonder Tongue, regardless if the product is being returned for repair or credit. Before returning product, please contact the Blonder Tongue Service Department at 1-800-523-6049, Ext. 4256 or visit our website: www.blondertongue.com for further information.

Table of Contents

SECTION 1 — GENERAL & SAFETY INSTRUCTIONS	4
SECTION 2 — PRODUCT SUMMARY	5
2.1 REVISION HISTORY & REASON	5
2.2 PRODUCT APPLICATION & DESCRIPTION.....	5
2.3 PRODUCT SPECIFICATIONS	7
SECTION 3 — INSTALLATION & POWER-UP	8
3.1 UNPACKING	8
3.2 INSTALLATION	8
3.3 POWER-UP	8
SECTION 4 — COMMUNICATING WITH THE UNIT	9
SECTION 5 - CONFIGURING THE UNIT	9
5.1 ACCESSING THE UNIT VIA THE WEB BROWSER	9
5.2 “MAIN > STATUS” SCREEN.....	10
5.3 “MAIN > INPUT CONFIG” SCREEN.....	11
5.3.1 “MAIN > INPUT CONFIG” SCREEN - PROGRAM FILTERING.....	12
5.4 “MAIN > OUTPUT CONFIG” SCREEN	14
5.5 “MAIN > REFRESH” TAB.....	15
5.6 “NETWORK” SCREEN TAB.....	16
5.7 “ADMIN.HTML” HIDDEN SCREEN	17
5.8 “TIME” SCREEN	19
5.9 “EVENT LOG” SCREEN	20
5.10 “UPDATE” SCREEN	21
SECTION 6 — REMOTE SOFTWARE UPDATES.....	22
6.1 UPDATING THE SOFTWARE REMOTELY	22

Section 1 — General & Safety Instructions



The STOP sign symbol is intended to alert you to the presence of REQUIRED operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.



The YIELD sign symbol is intended to alert you to the presence of RECOMMENDED operating and maintenance (servicing) instructions.



The LIGHTNING flash symbol is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT.

NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

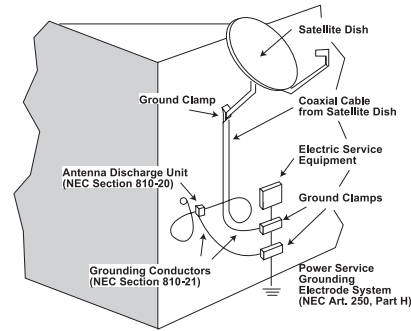
This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



You should always follow these Instructions to help ensure Against injury to yourself and damage to your equipment.

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature per Section 2.3.
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- Read all safety and operating instructions before you operate the unit.
- Retain all safety and operating instructions for future reference.
- Heed all warnings on the unit and in the safety and operating instructions.
- Follow all installation, operating, and use instructions.
- Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.
- Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- Do not operate the unit in high-humidity areas, or expose it to water or moisture.
- Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mounted equipment.
- Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.
- Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.
- The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

- Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:



- We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and the antenna. This will prevent damage caused by lightning or power line surges.
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
 - ☐ The power supply cord or plug is damaged;
 - ☐ Liquid has been spilled, or objects have fallen into the unit;
 - ☐ The unit has been exposed to rain or water;
 - ☐ The unit has been dropped or the chassis has been damaged;
 - ☐ The unit exhibits a distinct change in performance.
- When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.
- Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

Section 2 — Product Summary

2.1 Revision History & Reason

Release 2: Manual revision adds PF feature (#6223 PF/6238 PF) and uses firmware release v1.0.9pr2 (Current as of 4/22/19).

Release 2: Manual revision adds NPU feature (#6223) and uses firmware release v1.0.7.

Release 1: Instruction Manual for the QTPCM-4.

2.2 Product Application & Description

Application:

The **QTPCM-4** (QAM Transcoder Power Control Module) and **QTPCM-4-PF** (QAM Transcoder Power Control Module with Program Filter Support) provides control and monitoring of up to (4) **QTM-HD-4** (2 slot width), up to eight (8) **QTM-HD-Plus** (1 slot width) or a combination of both module types all housed in a QTRC rack chassis. Control and monitoring is accomplished via GUI-based web pages.

The QTPCM-4 will power up to four (4) **QTM-HD-4** (2 slot width) or four (4) **QTM-HD-4-NPU** (2 slot width); eight (8) **QTM-HD-Plus** (1 slot width); or a combination of modules all housed in a QTRC (stk# 6233A) rack chassis. The 3RU chassis, when fully loaded with four (4) **QTM-HD-4** or (4) **QTM-HD-4-NPU** and a QTPCM-4, will transcode sixteen (16) QPSK/8PSK satellite transponders to sixteen (16) QAM channels.

The **QTM-HD-4** contains (4) independent transcoders in a single module. Each transcoder accepts one (1) input in QPSK or 8PSK format and delivers (1) QAM channel output, therefore each **QTM-HD-4** module transcodes (4) satellite transponders to (4) QAM channels (54-864 MHz). An integrated satellite selector switch allows the operator to select any of the 4 inputs to any of the transcoders without the need for an external multi-switch.

The **QTM-HD-4-NPU** functions the same as the **QTM-HD-4**, but with a “Null Packet” feature that allows adding/removing null packets to/from the input stream.

The **QTM-HD-4-PF** functions the same as the **QTM-HD-4-NPU**, but with a “Program Filtering” feature that allows removal of program streams to fit in a 38.81 Mbps 256 QAM channel.

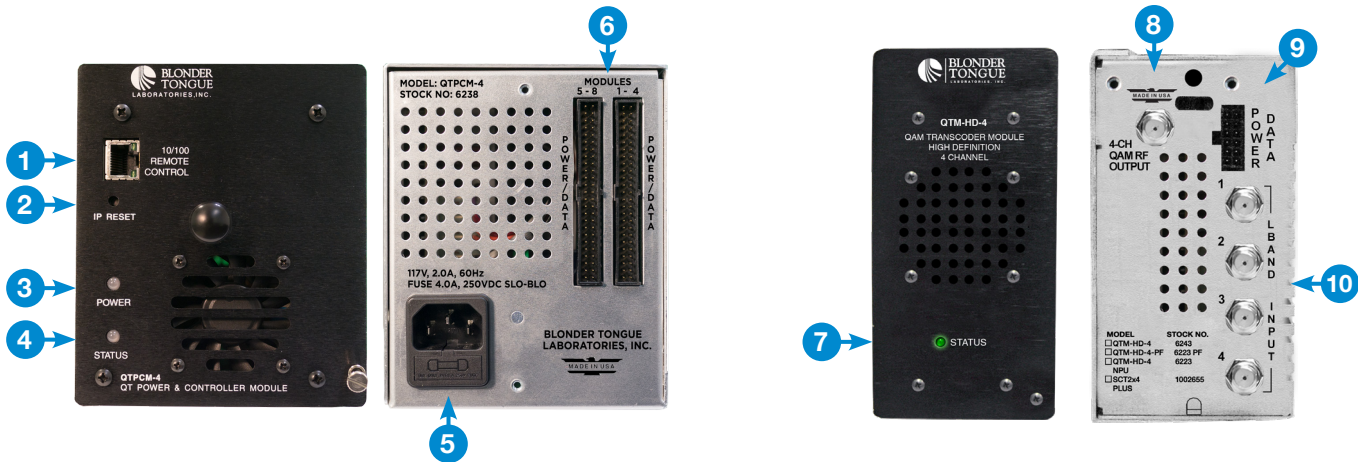
The **QTM-HD-Plus** features a single transcoder, accepting a QPSK or 8PSK input and delivering a single QAM channel output in the frequency range of 54-864 MHz. This module is typically used in applications requiring QAM 512/1024 modulation.

Module Features and Control/Upgrade Capability:

Stock #	Transcoder Module	Module Features	QTPCM-4 (6238)		QTPCM-4-PF (6238 PF)	
			Control	Upgrade	Control	Upgrade
6231	QTM ⁽¹⁾	1x QPSK Input; QAM 64 Output	Yes	No	Yes	No
6241A	QTM-HD ⁽¹⁾	1x QPSK/8PSK Input; QAM 256 Output	Yes	No	Yes	No
6278	QTM-HD-NPU ⁽¹⁾	1x QPSK/8PSK Input; QAM 256 Output; Null Packet Capability	Yes	No	Yes	No
6242A	QTM-HD PLUS ⁽¹⁾	1x QPSK/8PSK Input; QAM 512/1024 Output	Yes	No	Yes	No
6243	QTM-HD-4	4x QPSK/8PSK Input; QAM 256 Output;	Yes	Yes	Yes	No
6223	QTM-HD-4-NPU	4x QPSK/8PSK Input; QAM 256 Output; Null Packet Capability	Yes	Yes	Yes	Yes
6223 PF	QTM-HD-4-PF	4x QPSK/8PSK Input; QAM 256 Output; Null Packet & Program Filtering Capability	No	No	Yes	Yes

⁽¹⁾ These QTM modules are either no longer available for purchase or are only available in limited quantities. The modules have been included in this table to indicate compatibility with the Control/Monitoring features of the QTPCM modules.

2.2 Product Application & Description (continued)



QTPCM-4 Description:

- 1 **10/100 REMOTE CONTROL:** RJ45 connector for 10/100Base-T Ethernet interface for monitoring and configuring the unit. Only static IP addresses can be assigned to this interface. (Factory Default: 172.16.70.1)
- 2 **IP RESET:** When pushed and held for about 6 seconds, the Status LED will flash momentarily indicating the unit has defaulted to the original IP address, Username(s) and Password(s) as shipped from the Factory as shown below:

IP Address: 172.16.70.1

Username: Admin (case-sensitive)

Password: pass (case-sensitive)

(NOTE: QTPCM-4 must be power cycled for change to take effect.)
- 3 **POWER LED:** The power LED indicates the power of the unit as follows:

LED is Green = AC power is detected.

LED is Off = indicates (i) AC power is not connected, or (ii) AC power is connected but the power supply is defective. The unit must be sent to Blonder Tongue for repair for condition (ii).
- 4 **STATUS LED:** LEDs indicate the status of the unit as follows:

Solid Green: Ready (booted up)
- 5 **INPUT POWER:** IEC 14 power inlet plug - rated 105 to 240 VAC; 50/60 Hz; equipped with Slo-blo, 4.0 Amps, 250 V Fuse.
- 6 **POWER/DATA:** Multi-pin connector for module power and control cabling.

QTM-HD-4 Description:

- 7 **STATUS LED:** Provides user feedback based on the following LED conditions:

Solid Green ON: Indicates all transcoders in the module are locked to transponders.

Flash On/Off: Indicates one of the following:

 1. Output state of one or more transcoders is in OFF or CW Mode.
 2. One or more transcoders are not locked to transponders.
- 8 **4-CH QAM RF OUTPUT:** "F" connector for up to four (4) QAM RF outputs, 54-864 MHz.
- 9 **POWER/DATA:** Multi-pin connector for module power and control cabling from QTPCM-4.
- 10 **L-BAND INPUT:** "F" connectors for four (4) QPSK/8PSK satellite RF inputs 950-2150 MHz.

2.3 Product Specifications

QTM-HD-4 Module Input

Connector:	4x "F" Female
Standards:	QPSK & 8PSK (DVB-S, DVB-S2, DCII, LDPC/BCH, & Turbo FEC)
Symbol Rate (Variable)	
DVB-S:	Variable; 1-45 MSymbols/sec (Mbaud)
DVB-S2:	Variable; 5-33 MSymbols/sec (Mbaud)
8PSK Turbo:	Variable; 2-30 MSymbols/sec (Mbaud)
Frequency Range:	950-2150 MHz
Frequency Granularity:	1 MHz
Bandwidth:	Variable; ≤36 MHz
Capture Range:	± 5 MHz
Code Rate (Auto Detect)	
DVB-S:	1/2, 2/3, 3/4, 5/6, 7/8, DC II
DVB-S2 (QPSK):	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
DVB-S2 (8PSK):	3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Turbo FEC (QPSK):	1/2, 2/3, 3/4, 5/6, 7/8
Turbo FEC (8PSK):	2/3, 3/4, 5/6, 8/9
Forward Error Correction (FEC):	DVB / DigiCiper® II
Input Level:	-65 to -20 dBm
Impedance:	75 Ω
Return Loss:	Greater than 9 dB

QTM-HD-4 Module Output

Connector:	1x "F" Female (4x RF QAM Ch. Combined)
Modulation:	QAM 16, 32, 64, 128, and 256
Standard:	ITU-T J.83; Annex A and B
DVB Symbol Rate:	Variable; up to 7 MSymbol/sec (Mbaud)
Frequency Range:	54 to 864 MHz
Tuning:	CATV Channel Selectable (Ch. 2 to 135)
Channels' Bandwidth:	4x 6 MHz in any 42 MHz-wide span
RF Level:	+40 dBmV ±1 dB (100 dBμV ±1 dB)
RF Level Adj. Range:	+32 to +42 dBmV (1 dB increments)
Frequency Tolerance:	± 0.5 kHz @ 77°F (25° C)
Frequency Stability:	± 5 kHz over 32° to 122° F (0 to 50° C)
Amplitude Flatness:	± 0.25 dB (over 6 MHz channel)
Phase Noise:	-95 dBc (@ 10 kHz)
Spurious:	-60 dBc
Broadband Noise:	-70 dBc (@ +40 dBmV output level, 5.5 MHz bandwidth)
Impedance:	75 Ω
Carrier Suppression:	45 dB
Return Loss:	14 dB typical
Signal-to-Noise Ratio (SNR):	> 40 dB typical
MER:	> 39 dB typical
I/Q Phase Error:	Less than 1 degree
I/Q Amplitude Imbalance:	Less than 1%

General

Dimensions (W x D x H)	
QTM-HD-4 Module:	3.0 x 10.6 x 5.25 in. (38 x 270 x 134 mm)
QTPCM Module:	4.5 x 10.6 x 5.25 in. (114 x 270 x 134 mm)
QTRC Rack Chassis:	19 x 12.0 x 5.25 in. (483 x 305 x 134 mm)
Power:	105-240 VAC; 50/60 Hz
Power Consumption	
QTM-HD-4 Module:	21 W
Weight	
QTM-HD-4 Module:	1.7 lbs (0.77 kg)
QTPCM-4 Module:	5.0 lbs (2.27 kg)
Full-loaded Rack Chassis:	28 lbs (12.7 kg)
Operating Temperature:	32 to 122 °F (0 to 50 °C)
Storage Temperature:	-13 to 158 °F (-25 to 70 °C)
Operating/Storage Humidity:	0 to 95% RH @ 35 °C max, non-condensing

Alarms/Monitoring/Control

Indicators	
QTM-HD-4 Module:	Status (Green LED)
QTPCM-4 Module:	Power and Status (Green LED)
Remote Monitoring/Control:	GUI-based Menu via web browser

Section 3 – Installation & Power-up

3.1 Unpacking

You will find the following items in the box:

- QTPCM-4 (QTY=1)
- Power Cord with IEC C13 line socket and 3-pin Type B NEMA 5 plug (QTY=1)
- A hardware bag (item 741018800) containing the following:
Cable wire bracket (QTY=1)
- DC/Control cable harness (QTY=2)

3.2 Installation

The QTPCM-4 and QTM-HD-4 modules are designed to be installed into a QTRC chassis (shown below) and a standard 19-inch (483 mm) rack (EIA 310-D, IEC 60297, and DIN 41494 SC48D).

Servicing Feature:

It is recommended to disconnect AC power to the QTPCM-4 when installing or removing QTM modules. When replacing QTM Modules, simply disconnect the input and output cables along with the power supply/control cabling and remove the module from the chassis. Install a new “like” module and reconnect the cabling. The QTPCM-4 will automatically configure the new module with the same settings as the replaced module.



If the QTPCM-4 has to be replaced, remove power and all cabling on the rear of the unit. Replace the module and reconnect power and cabling. Once the new QTPCM-4 has booted up it will read the configuration settings from the transcoder modules, store them in memory and return to full system operation, without any further user interface.

3.3 Power-up

Connect the Power/Data cables 1-4 from the QTPCM-4 to the QTM-HD-4 modules. Connect the QTPCM-4 line cord to a 117 VAC, 60 Hz outlet. The “POWER” LED on the front panel will light up green.

After approximately 30 seconds, the “STATUS” LED will light up green, indicating the unit has booted and is ready for operation.



For safe and reliable operation, the ground pin of the power cord plug MUST be grounded properly.



The Status LEDs on the QTM Modules are on steady (green) except for OFF/CW or NOT LOCKED.



REMINDER: DISCONNECT AC POWER TO THE QTPCM-4 PRIOR TO INSTALLING OR REMOVING ANY QTM-HD-4 MODULES

Section 4 – Communicating with the Unit

Local or remote communication with the unit is only possible through a GUI-based menu via any standard web browser. Before you can communicate with the unit, you must configure the unit's IP address to conform with your existing IP network or LAN. To do so, follow these steps:

- 1) Plug one end of the Ethernet cross cable that is provided in the hardware bag to unit's rear-panel RJ45 interface marked "Control 10/100". Plug the other end of the cable to your computer.
- 2) The factory default IP address of the unit is **172.16.70.1**. To be able to communicate with the unit, you must first change your computer's IP address.

The following steps explain how to do this for a computer with **Windows 7, Windows 8.x** or **Windows 10** operating software:

- (a) On your computer, navigate to the "Network and Sharing Center".
(Note: Can be found using the search box in the Start Menu or for Windows 8.x, the Start Screen)
- (b) Once open, click on "Change Adapter Settings" on left hand side of the window.
- (c) Right-click on the "Local Area Connection", and then click on the "Properties".
- (d) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol Version 4 (TCP/IPv4)".
- (e) A dialog box entitled "Internet Protocol Version 4 (TCP/IPv4) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

IP address: **172.16.70.2**

Subnet mask: **255.255.255.0**

No need to enter a value for the Default Gateway.

Click **"OK"** to close the dialog box. Your computer is now ready to communicate with the unit.

Section 5 - Configuring the Unit

5.1 Accessing the Unit via the Web Browser

You must complete the steps described in Section 4 before proceeding as follows:

- (1) Open a web browser on your computer (Internet Explorer 7 or higher is recommended) and enter the following URL address (**http://172.16.70.1**). The "Login" Screen (Figure 5.1) will appear.

PAGE
HEADER {

QTPCM-4

ESN: 2015050780
Headend Name:

Temperature: 84.1°F

Uptime: 15d 0h 51m 24s
Location:

Login

Username:

Password:

Figure 5.1 - "Login" Screen

- (2) Enter the following case-sensitive factory-default Username and Password, and click on the "Submit" button.

NOTE: When logged in as Admin, the user has read and write permission. Only one Admin can be logged in at a time. When logged in as Guest, the user has only read permission. Up to four Guests can be logged in simultaneously.

Username = Admin (case-sensitive) Password = pass (case-sensitive)	- OR -	Username = Guest (case-sensitive) Password = pass (case-sensitive)
-------------------------------------------------------------------------------------	--------	-------------------------------------------------------------------------------------

5.1 Accessing the Unit via the Web Browser (continued)

Monitoring and configuration of the unit is achieved via a series of web pages as described in the Sections below. The following read-only information is displayed in a “**Page Header**” – in blue color – on top of each web page:

ESN: unit’s Serial number

Headend name: a user-defined field to make identification easier

Temperature: temperature of unit’s chipset.

Uptime: time elapsed since last time the unit was turned on

Location: a user-defined field to make identification easier

As shown in Figure 5.2, under the blue “**Page Header**” the following Primary tabs will appear:

- Primary tab “**Main**” includes the following sub-tabs: Status, Inputs, Encoder, Output, and Refresh.
- Primary tab “**Network**” doesn’t include any sub-tab.
- Primary tab “**Time**” doesn’t include any sub-tab.
- Primary tab “**Event Log**” doesn’t include any sub-tab.
- Primary tab “**Update**” doesn’t include any sub-tab.
- Primary tab “**Admin**” doesn’t include any sub-tab.
- Primary tab “**Logout**” doesn’t include any sub-tab.

Each Primary and sub-tab is described in the subsequent Sections.

5.2 “Main > Status” Screen

The “Main > Status” screen (Figure 5.2) is a “read-only” screen and displays Input and Output information for each connected transcoder module. The screen is automatically refreshed every 30 seconds.

In the section entitled “**Input**” within the green header, the following parameters about each input program in the TS are displayed:

- 1 **Input:** The first number indicates the module number (1-4), the letter indicates the transcoder designator (a-d), and the second number indicates the L-Band input (satellite 1 to 4) selected for it.
- 2 **Frequency:** L-Band center frequency of the transponder.
- 3 **Modulation:** indicates the modulation type of the input program.
- 4 **Input Status:** SNR of the transponder. The cell will be green when locked and red when not locked to the transponder.
- 5 **Input Baud Rate:** indicates the baud rate of the transponder being received.

In the section entitled “**Output**” under the blue header, the following parameters about each QAM output are displayed:

- 6 **QTM Module:** Main transcoder module number (1-4) with transcoder designator (a-d).
- 7 **Channel:** QAM RF output channel
- 8 **Output State:** indicates one of the following states for each Input:

NORMAL = normal QAM RF channel (GREEN Highlight)

OFF = QAM RF channel turned off (RED Highlight)

CW = this is a calibrated reference signal that replaces the Normal QAM output. It is used for measuring and setting the RF output signal level when only analog test instruments are available. Activating the CW mode on any transcoder (a-d) will affect all others (RED).

5.2 “Main > Status” Screen (continued)

Main	Network	Time	Event Log	Update	Logout		
Status		Input Config	Output Config	Refresh			
Input					QAM Output		
① Input	② Frequency	③ Modulation	④ Input Status	⑤ Input Baud Rate	⑥ QTM module	⑦ Channel	⑧ Output State
1a-1	1061 MHz	8PSK TURBO	SNR 11.2	21.50 Mbd/s	1-a	2	NORMAL
1b-1	1149 MHz	8PSK TURBO	SNR 11.6	21.50 Mbd/s	1-b	4	NORMAL
1c-1	1207 MHz	8PSK TURBO	SNR 11.4	21.50 Mbd/s	1-c	6	NORMAL
1d-1	1236 MHz	8PSK TURBO	SNR 10.8	21.50 Mbd/s	1-d	96	NORMAL
2a-1	1061 MHz	8PSK TURBO	SNR 11.2	21.50 Mbd/s	2-a	30	NORMAL

Figure 5.2 - “Main > Status” Screen

5.3 “Main > Input Config” Screen

The “Main > Input Config” screen (Figure 5.3a) is a “user-configurable” screen where the L-Band center frequencies, input source (satellite), and modulation tuning mode parameters can be configured. The QAM output section (blue header) is displayed as read-only information.

Main	Network	Time	Event Log	Update	Logout			
Status		Input Config	Output Config	Refresh				
Input							QAM Output	
1 Input	2 Frequency	3 L-Band Input	4 Input Status	5 Auto	6 Input Baud Rate	7 Input Modulation	8 Channel	9 Output State
1a	<input type="text" value="1061"/> MHz	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	SNR 11.7	<input checked="" type="checkbox"/>	21.50 Mbd/s	8PSK TURBO	2	NORMAL
1b	<input type="text" value="1149"/> MHz	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	SNR 12.2		21.50 Mbd/s	8PSK TURBO	4	NORMAL
1c	<input type="text" value="1207"/> MHz	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	SNR 11.9		21.50 Mbd/s	8PSK TURBO	6	NORMAL
1d	<input type="text" value="1236"/> MHz	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	SNR 11.3		21.50 Mbd/s	8PSK TURBO	96	NORMAL

Figure 5.3a - “Main > Input Config” Screen - Auto

In the section entitled “Input” within the green header, the following parameters about each input program in the TS can be configured:

- Input:** Main transcoder module number (1-4) with transcoder designator (a-d).
- Frequency:** Enter the desired L-Band center frequency of the transponder in MHz.
- L-Band Input:** Select the desired satellite input for the transponder being tuned.
- Input Status:** Displays the SNR of the transponder. The cell will be green when locked and red when not locked to the transponder.
- Auto:** For each module, when the Auto box is checked (recommended), the unit will automatically search for the correct Input Modulation format of the transponder to lock on to. When unchecked, the unit is in manual mode and additional configurations MUST be made (see 6 and 7 for more information).



NOTE: The mode selected (Auto or Manual) on the “Input Config” screen will also be applied to the “Output Config” screen and vice versa.

5.3 “Main > Input Config” Screen (continued)

Input							QAM Output	
1	2	3	4	5	6	7	8	9
Input	Frequency	L-Band Input	Input Status	Auto	Input Baud Rate	Input Modulation	Channel	Output State
2a	1061 MHz	1 2 3 4	SNR 11.6	<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO	30	NORMAL
2b	1149 MHz	1 2 3 4	SNR 12.2	<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO	32	NORMAL
2c	1207 MHz	1 2 3 4	SNR 11.9	<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO	34	NORMAL
2d	1236 MHz	1 2 3 4	SNR 11.3	<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO	36	NORMAL

Figure 5.3b - “Main > Input Config” Screen - Manual

When the “Auto” checkbox is unchecked, the following parameters for each input program in the TS **MUST** be configured properly, otherwise the STATUS indicator on the front panel of the module will continuously blink indicating the transponder is not locked.

- 6 Input Baud Rate:** when Input is set on manual, the user **MUST** enter in the baud rate of the transponder.
- 7 Input Modulation:** when Input is in manual mode, the user **MUST** select the proper Input Modulation (Figure 5.3c). When choosing the modulation mode, the rate cannot be a mixture of different rates within the same QTM-HD module. The selected rates within each module should be either ALL 8PSK or ALL QPSK.

<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO
<input type="checkbox"/>	21.50 Mbd/s	QPSK DCII
<input type="checkbox"/>	21.50 Mbd/s	QPSK RSV
<input type="checkbox"/>	21.50 Mbd/s	8PSK TURBO
<input type="checkbox"/>	21.50 Mbd/s	QPSK TURBO
<input type="checkbox"/>	21.50 Mbd/s	QPSK DCII SQ
<input type="checkbox"/>	21.50 Mbd/s	DTV
<input checked="" type="checkbox"/>	21.50 Mbd/s	QPSK DCII SI
<input type="checkbox"/>	21.50 Mbd/s	LDPC

Figure 5.3c - Manual Mode



REMINDER: If not properly configured, the STATUS indicator on the transcoder module will continuously blink, indicating the transcoder is not locked.



Do not mix different input modulation rates within the same QTM-HD module. The modulation rate needs to be either ALL 8PSK or ALL QPSK per unit.

In the section entitled “QAM Output” within the blue header, the following read-only parameters are displayed:

- 8 Channel:** Displays the QAM RF output channel set under the “Output Config” screen (see Section 5.4).
- 9 Output State:** Displays the Output State set under the “Output Config” screen (see Section 5.4).



IMPORTANT: For each module, the total bitrate should NOT exceed 38.81 Mbps per QAM.

5.3.1 “Main > Input Config” Screen - Program Filtering

The “Main > Input Config” screen (Figure 5.3.1) provides additional configuration when at least one QTM-HD-4-PF (stk # 6223 PF) module is combined with a QTPCM-4-PF (stk # 6238 PF).

When a **QTM-HD-4-PF** module is connected to the **QTPCM-4-PF**, additional rows be shown under the first 5 columns beneath the “Input” section, providing program information along with a checkbox under the “Auto” column. These checkboxes allow the user to select programs to filter in (checked box) or out (unchecked box).

To use program filtering, the user should first select the desired programs by checking the boxes under the “Auto” column (see Figure 5.3.1, **10**). Once completed, click “Save”, at the bottom to apply any changes and pass the selected programs to output.

NOTE: Whenever the frequency has been changed on a PF module, the user will need to re-select the filtering boxes.

5.3 “Main > Input Config” Screen - Program Filtering (continued)

Input							QAM Output	
1 Input	2 Frequency	3 L-Band Input	4 Input Status	5 Auto	6 Input Baud Rate	7 Input Modulation	8 Channel	9 Output State
2a	933 MHz	1 2 3 4	SNR 9.0	<input checked="" type="checkbox"/>	22.00 Mbd/s	8PSK TURBO	50	NORMAL
2a	Service 65531	4078 PMT		<input checked="" type="checkbox"/>	10			
		4082 Unknown						
2a	Service 211	100 PMT		<input checked="" type="checkbox"/>				
		101 AVC/H.264 Video						
		102 AC3 Audio (ENG)						
		103 AC3 Audio (ENM)						
2a	Service 212	110 PMT		<input checked="" type="checkbox"/>				
		111 AVC/H.264 Video						
		112 AC3 Audio (FRE)						
		113 AC3 Audio (FRM)						
2a	Service 213	120 PMT		<input checked="" type="checkbox"/>				
		121 AVC/H.264 Video						
		122 AC3 Audio (FRE)						
		123 AC3 Audio ()						
2a	Service 214	130 PMT		<input checked="" type="checkbox"/>				
		131 AVC/H.264 Video						
		132 AC3 Audio (FRE)						
		133 AC3 Audio (FRM)						
2a	Service 215	140 PMT		<input checked="" type="checkbox"/>				
		141 AVC/H.264 Video						
		142 AC3 Audio (FRE)						
2a	Service 216	150 PMT		<input checked="" type="checkbox"/>				
		151 AVC/H.264 Video						
		152 AC3 Audio (FRE)						
		153 AC3 Audio (FRM)						
2a	Service 217	160 PMT		<input type="checkbox"/>				
		161 AVC/H.264 Video						
		162 AC3 Audio (FRE)						
		163 AC3 Audio (FRM)						
2a	Service 218	170 PMT		<input type="checkbox"/>				
		171 AVC/H.264 Video						
		172 AC3 Audio (FRE)						
		173 AC3 Audio (FRM)						
2a	Service 219	180 PMT		<input type="checkbox"/>				
		181 AVC/H.264 Video						
		182 AC3 Audio (FRE)						
		183 AC3 Audio (FRM)						

Figure 5.3.1 - “Main > Input Config” Screen - QTM-HD-4-PF



Remember to click on the **SAVE** button to apply the new values/configurations.

5.4 “Main > Output Config” Screen

The “Main > Input Config” screen (Figure 5.4a) is a “user-configurable” screen where the RF QAM channels, RF levels, and state are set for output. Information under the Input section (green header) is displayed as read-only.

Status		Input Config		Output Config		Refresh				
Input						QAM Output				
Input	Frequency	Modulation	Input Status	Auto	Input Baud Rate	QAM Mode	QAM Baud Rate	Channel (STD)	RF Level dBmV	Output State
1a-1	1061 MHz	8PSK TURBO	SNR 11.8	<input checked="" type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	2/57MHz	40	NORMAL
1b-1	1149 MHz	8PSK TURBO	SNR 12.2		21.50 Mbd/s	256A	5.590 Mbd/s	4/69MHz	40	NORMAL
1c-1	1207 MHz	8PSK TURBO	SNR 11.9		21.50 Mbd/s	256A	5.590 Mbd/s	6/85MHz	40	NORMAL
1d-1	1236 MHz	8PSK TURBO	SNR 11.4		21.50 Mbd/s	256A	5.590 Mbd/s	96/99MHz	40	NORMAL
2a-1	1061 MHz	8PSK TURBO	SNR 11.8	<input type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	30/261MHz	40	NORMAL
2b-1	1149 MHz	8PSK TURBO	SNR 12.3		21.50 Mbd/s	256A	5.590 Mbd/s	32/273MHz	40	NORMAL
2c-1	1207 MHz	8PSK TURBO	SNR 11.9		21.50 Mbd/s	256A	5.590 Mbd/s	34/285MHz	40	NORMAL
2d-1	1236 MHz	8PSK TURBO	SNR 11.4		21.50 Mbd/s	256A	5.590 Mbd/s	36/297MHz	40	NORMAL
3a-1	1061 MHz	8PSK TURBO	SNR 11.7	<input checked="" type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	70/501MHz	40	NORMAL
3b-1	1149 MHz	8PSK TURBO	SNR 12.3		21.50 Mbd/s	256A	5.590 Mbd/s	72/513MHz	40	NORMAL
3c-1	1207 MHz	8PSK TURBO	SNR 12.0		21.50 Mbd/s	256A	5.590 Mbd/s	74/525MHz	40	NORMAL
3d-1	1236 MHz	8PSK TURBO	SNR 11.4		21.50 Mbd/s	256A	5.590 Mbd/s	76/537MHz	40	NORMAL
4a-1	1061 MHz	8PSK TURBO	SNR 11.9	<input type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	129/825MHz	40	NORMAL
4b-1	1149 MHz	8PSK TURBO	SNR 12.3		21.50 Mbd/s	256A	5.590 Mbd/s	131/837MHz	40	NORMAL
4c-1	1207 MHz	8PSK TURBO	SNR 12.0		21.50 Mbd/s	256A	5.590 Mbd/s	133/849MHz	40	NORMAL
4d-1	1236 MHz	8PSK TURBO	SNR 11.5		21.50 Mbd/s	256A	5.590 Mbd/s	135/861MHz	40	NORMAL

Save

Figure 5.4a - “Main > Output Config” Screen

- Auto:** The Auto mode (recommended setting) searches for the correct output settings to match the input source. When not in Auto mode (check box unmarked), the user must manually select the proper QAM mode and baud rate for the input source from a series of drop-down boxes.

Note: If not properly configured the module will not provide the proper output.

- QAM Mode:** This is a read-only field when in Auto Mode. When in Manual mode, the drop down selections are: 64B, 256B, 16A, 32A, 64A, 128A or 256A.
- QAM Baud Rate:** This is a read-only field when in Auto Mode. When in Manual mode, user must enter the QAM Baud Rate in Mbd/S.
- Channel (STD):** Select the beginning desired Channel/Frequency on the first transcoder from its pull down menu. The remaining 3 transcoder sections on each module will display only channels within a 42 MHz bandwidth starting with the first channel selected. Channel/Frequencies that have already been selected are highlighted in RED to avoid duplications (Figure 5.4b).
- RF Level dBmV:** Pull down level selection. Range is 32 to 42 dBmV in 1 dB increments.

5.4 “Main > Output Config” Screen (continued)

1	2	3	4	5	6	
Auto	Input Baud Rate	QAM Mode	QAM Baud Rate	Channel (STD)	RF Level dBmV	Output State
<input checked="" type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	2/57MHz	40	NORMAL
	21.50 Mbd/s	256A	5.590 Mbd/s	3/63MHz	40	NORMAL
	21.50 Mbd/s	256A	5.590 Mbd/s	3/63MHz 4/69MHz 5/79MHz 6/85MHz	40	NORMAL
	21.50 Mbd/s	256A	5.590 Mbd/s	95/93MHz 96/99MHz	40	NORMAL
<input checked="" type="checkbox"/>	21.50 Mbd/s	256A	5.590 Mbd/s	32/273MHz	40	NORMAL

Figure 5.4b - “Main > Output Config” - Selected Channel/Frequencies

6 Output State: There are 3 available settings: Normal, Off and CW.

NORMAL = QAM modulated output is present. Changing any output to Normal mode changes all outputs of the same QTM-HD-4 module to normal mode.

OFF = Output is turned off. (No RF output present) Outputs for each channel can be turned on and off independently.

CW = Continue Wave (tone) is on, replacing the normal QAM output with a calibrated RF un-modulated signal. CW mode facilitates user level measurements when only analog test instruments are available. Changing any output to CW mode changes all outputs on the same QTM-HD-4 module to CW mode.



Remember to click on the **SAVE** button to apply the new values/configurations.

5.5 “Main > Refresh” Tab

The “Main > Refresh” tab can be clicked while you are on any of the following sub-tab screens: “Status”, “Input Config”, and “Output Config”. When clicked, it will update all relevant fields/parameters of the active screen as that information is retrieved from the QTPCM-4 in a real-time basis.

5.6 “Network” Screen Tab

The “Network” screen (Figure 5.6) is a user-configurable screen where the following parameters are configured or displayed:

Main	Network	Time	Event Log	Update	Logout
<div> <div>1</div> Ethernet 1 MAC Address: 00:14:39:00:61:3D </div> <div> <div>2</div> Software Version: 1.0.9 Prerelease 2 </div> <div> <div>3</div> FPGA1 Version: 1.5 </div> <div> <div>4</div> QTM Version (Module No 2): 6.3.7 </div> <div> <div>5</div> QTPCM-4 Serial Number: 2015050780 </div> <div> <div>6</div> Headend Name: <input type="text"/> </div> <div> <div>7</div> Location: <input type="text"/> </div> <hr/> <div> <div>8</div> Login Timeout (Minutes): 15 ▾ </div> <hr/> <div> <div>9</div> IP Address: 172.16.130.44 </div> <div> <div>10</div> Subnet Mask: 255.255.255.0 </div> <div> <div>11</div> Default Gateway: 172.16.130.254 </div> <div> <div>12</div> Event Log Destination: 172.16.70.2 </div> <div> <div>13</div> Event Log Destination Port #: 5387 </div> <hr/> <div>Save</div>					

Figure 5.6 - “Network” Screen

- 1 **Ethernet 1:** indicates the MAC Address of the “10/100 Control” Port
- 2 **Software Version:** indicates the software version of the QTPCM-4.
- 3 **FPGA1 Version:** Displays the current firmware version.
- 4 **QTM Version (Module No. 1 - 8):** displays the current firmware version of each installed Module.
- 5 **Serial Number:** indicates the serial number of the QTPCM-4.
- 6 **Headend Name:** a user-defined field to make identification easier
- 7 **Location:** a user-defined field to make identification easier
- 8 **Login Timeout (Minutes):** indicates the period of time before the unit logs itself out if there is no activity on the web screens. Options are: 5, 15, 30, or 60 minutes.
- 9 **IP Address:** Read-Only field. See section 5.7 for details.
- 10 **Subnet Mask:** Read-Only field. See section 5.7 for details.
- 11 **Default Gateway:** Read-Only field. See section 5.7 for details.
- 12 **Event Log Destination:** Read-Only field. See section 5.7 for details.
- 13 **Event Log Destination Port #:** Read-Only field. See section 5.7 for details.



Remember to click on the **SAVE** button to apply the new values/configurations.

5.7 “Admin.html” Hidden Screen

This screen allows the user to change/modify the IP network parameters and Username and Password values for the unit. The user must be logged in to the unit as “Admin” to access the hidden screen (Figure 5.7).

The “Admin” screen is accessed by typing the URL of the unit followed by a forward slash and Admin.html (ex: <http://172.16.70.1/Admin.html>). The following parameters can be modified:

Ethernet 1 MAC Address:	00:14:39:00:61:3D
QTPCM-4 Serial Number:	2015040571
<hr/>	
1 Login:	<input type="text" value="Admin"/>
2 Current Password:	<input type="text"/>
3 New Password:	<input type="text"/>
4 Confirm New Password:	<input type="text"/>
5 Guest Login:	<input type="text" value="Guest"/>
6 Current Guest Password:	<input type="text"/>
7 New Guest Password:	<input type="text"/>
8 Confirm Guest Password:	<input type="text"/>
9 System Watchdog:	<input type="text" value="Disabled"/>
<hr/>	
10 IP Address:	<input type="text" value="172.16.70.1"/>
11 Subnet Mask:	<input type="text" value="255.255.255.0"/>
12 Default Gateway:	<input type="text" value="172.16.70.254"/>
13 Event Log Destination:	<input type="text" value="172.16.70.2"/>
14 Event Log Destination Port #:	<input type="text" value="514"/>
15 Time Server IP:	<input type="text" value="172.16.70.2"/>
<hr/>	
16 Syslog Errors:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
17 Syslog Informational:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
18 Syslog Feedback:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
<hr/>	
<input type="button" value="Save"/>	

Figure 5.7 - “Admin” Screen

- 1 **Login:** the Administrator’s login (10 characters maximum). This login allows the user to make changes to any area of the unit. Login is case sensitive. (Factory Default: “Admin”)
- 2 **Current Password:** the Administrator’s Current Password (10 characters maximum). The password is case sensitive and will not be displayed. (Factory Default: “pass”)
- 3 **New Password:** used only if the user wants to change the current Administrator's password. User must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
- 4 **Confirm New Password:** user must enter the same password as entered in 3 above. If the password entered in both 3 & 4 does not match, an error will be displayed.
- 5 **Guest Login:** the Guest login (10 characters maximum). This login allows the user to view the unit settings but does not allow any changes. Login is case sensitive. (Factory Default: “Guest”)

5.7 “Admin.html” Hidden Screen (Continued)

- 6 **Current Guest Password:** the current Guest Password (10 characters maximum). The password is case sensitive and will not be displayed. (Factory Default: “pass”)
- 7 **New Guest Password:** used only if the user wants to change the current Guest password. User must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
- 8 **Confirm Guest Password:** user must enter the same password as entered in 7 above. If the password entered in both 7 & 8 does not match, an error will be displayed.
- 9 **System Watchdog:** when Enabled, automatically reboots the unit if the operating system stops working. When Disabled, manual reboot is required in the case of above events. Options are: “Enabled” and “Disabled”.

NOTE: Consult your network administrator for appropriate network settings to conform with your existing IP network or LAN.
- 10 **IP Address:** the static IP address that is assigned to the 10/100 Remote Control Port. It allows the user to access the unit via the web interface. (Factory Default: “172.16.70.1”)
- 11 **Subnet Mask:** the Subnet Mask assigned to the Remote Control Port of the unit. It allows the user to determine which subnet the Control Port IP address belongs to. (Factory Default: “255.255.255.0”)
- 12 **Default Gateway:** the gateway address assigned to the Remote Control Port. It allows the user to access the unit from another network via the web interface. (Factory Default: “172.16.70.254”)
- 13 **Event Log Destination:** the IP address of the remote server, to which Syslog sends the activities recorded by the unit for monitoring and troubleshooting purposes. (Factory Default: “192.168.199.25”)
- 14 **Log Destination Port #:** the Event Log Destination port to which a duplicate of the error messages created by the unit can be forwarded for monitoring and troubleshooting purposes. (Factory Default: “514” - unmodifiable)
- 15 **Time Server IP:** the IP address for the Time Server from where the unit can obtain its clock reference (See Section 5.8 for details). (Factory Default: “129.6.15.28”)
- 16 **Syslog Errors:** options are “Enable” or “Disable”. When Enabled, the unit will forward error messages (in red font) to an SNMP syslog. (Factory Default: “Disabled”)
- 17 **Syslog Informational:** options are “Enable” or “Disable”. When Enabled, the unit will forward information messages (in blue font) to an SNMP syslog. (Factory Default: “Disabled”)
- 18 **Syslog Feedback:** options are “Enable” or “Disable”. When Enabled, the unit will forward feedback or confirmation messages (in green font) to an SNMP syslog. (Factory Default: “Disabled”)



Remember to click on the **SAVE** button to apply the new values/configurations.

5.8 “Time” Screen

The “Time” screen (Figures 5.8a and 5.8b) allows the user to set the current date and time for the QTPCM-4. To remain compliant with ATSC and cable standards, it is important to have the accurate date and time stamps. For this reason, it is recommended to use the “Automatic” option which allows the unit to automatically acquire time settings from a “Time Server” - the user must enter the IP address of the time server (see Section 5.7 for details).

The time server specified must support the Network Time Protocol (NTP) in order for automatic time acquisition to work properly. The unit will refresh the date and time settings from the Time server every 20 minutes.

	Current System Time	Thu Jan 1 00:31:48 1970
1	Time Zone	GMT 0:00
2	Configuration Method	<input type="radio"/> Manual <input checked="" type="radio"/> Automatic
3	Automatically Adjust for Daylight Savings Time	<input type="radio"/> Yes <input checked="" type="radio"/> No
4	DST Start Date (mm/dd/yyyy)	3 / 8 / 2012
	DST Start Time	2:00
	DST End Date (mm/dd/yyyy)	11 / 1 / 2012
	DST End Time	2:00
Refresh		Save

Figure 5.8a - “Time” Screen (Automatic Configuration Method settings)

- 1 **Time Zone:** The local time zone on Coordinated Universal Time (UTC) can be set. (Automatic Mode Only)
- 2 **Configuration Method:** Selects either Manual or “Automatic” Time Zone Settings.
- 3 **Automatically Adjust for Daylight Savings Time:** The user can apply the Daylight Savings (DST) automatically by selecting “Yes”. Selecting “No” does not provide any time changes from information entered under 4 .
- 4 **DST Settings:** User selectable start and stop dates and times for Daylight Savings Time. When “Automatically Adjust for Daylight Savings Time” is set to “Yes”, the time will be changed accordingly.

If an internet connection is not available, the date and time can be entered manually. The following two controls will be shown instead of “Time Zone”.

	Current System Time	Fri Jul 12 10:45:38 2019
5	Current Date (mm/dd/yyyy)	7 / 12 / 2019
6	Current Time (24hr)	10 hrs : 45 min : 38 sec
	Configuration Method	<input checked="" type="radio"/> Manual <input type="radio"/> Automatic

Figure 5.8b - “Time” Screen (Full time settings + Manual Configuration Method settings)

- 5 **Current Date (MM/DD/YYYY):** Date can be set with drop-down selections. (Manual Mode Only)
- 6 **Current Time (24hr):** the current time can be entered in 24 hour format: hours/minutes/seconds. (Manual Mode Only)



Remember to click on the SAVE button to apply the new values/configurations.

5.9 “Event Log” Screen

The “Event Log” screen (Figure 5.9) is a “read and write” screen where the following parameters can be displayed or configured. The data in Event Log can be forwarded to an event log database through the Admin hidden configuration screen. (Section 5.7 for details)

The lines are color coded as follows:

Red font = error message

Blue font = informational message

Green font = confirmation or feedback message

Main	Network	Time	Event Log	Update	Logout
1	Event Log Destination:		172.16.70.2		
2	Event Log Destination Port #:		5387		
3	SNMP Destination Port #:		5388		
4	<input type="button" value="Clear Log"/>				
5	Lines to Display:		<input type="text" value="1000"/>		
6	<input type="button" value="Save Number of Displayed Lines"/>				
<p>Fri Jul 12 10:43:56 2019 : User logged in from 172.16.30.112.</p> <p>Thu Jun 27 10:03:08 2019 : User logged in from 172.16.30.109.</p> <p>Thu Jun 27 09:52:39 2019 : Power Up Started</p>					

Figure 5.9 - “Event Log” Screen

- 1 **Event Log Destination:** see 13 of Section 5.7 for details.
- 2 **Event Log Destination Port #:** see 14 of Section 5.7 for details.
- 3 **SNMP Destination Port #:** Optional for future release
- 4 **Clear Log:** allows the user to clear the records generated during unit’s boot-up process and operation afterward. The records are cleared if the unit loses power.
- 5 **Lines to Display:** allows the user to select the number of lines to be displayed. The unit supports up to 400 MB of data or approximately 65,000 lines. The range is 1 to 65,535.
- 6 **Save Number of Displayed Lines:** Saves changes made to 5 “Lines to Display”. Please note that this setting only affects the amount of lines shown on display and does not save to any file or database.

5.10 “Update” Screen

The update screen permits the user to easily apply firmware updates to QTM-HD-4 modules.

Note: This feature is only applicable for updating QTM-HD-4 modules. For information regarding QTM-HD and QTM-HD Plus firmware updates please contact the factory.

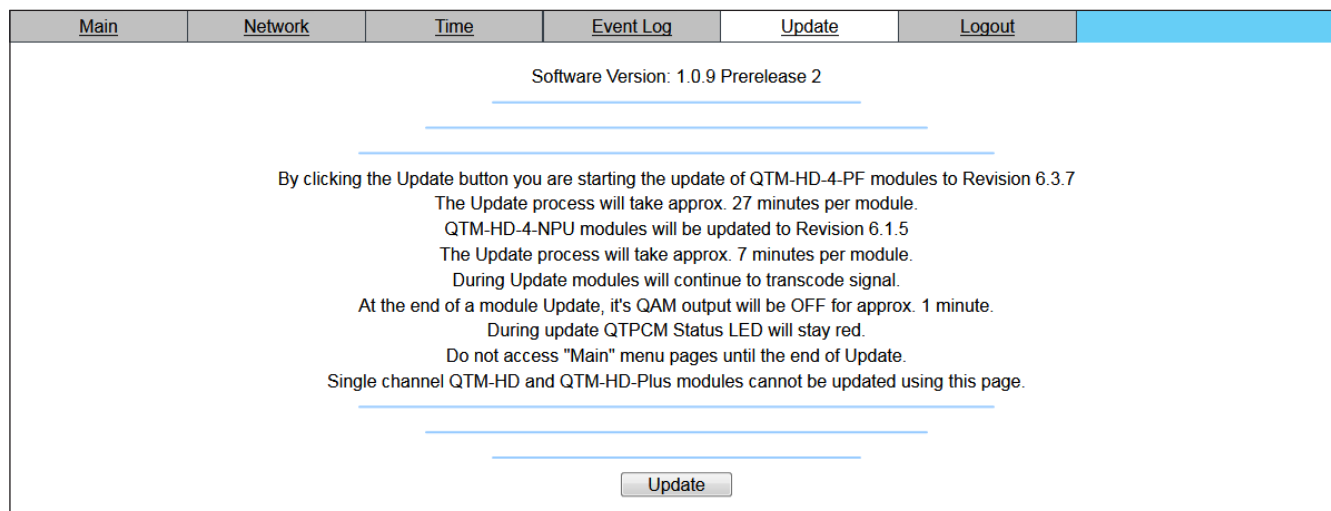


Figure 5.10 - “Update” Screen

The update information for each QTM-HD-4 unit resides within the QTPCM-4 module. **Important:** Prior to pressing the **UPDATE** button, be sure the QTPCM-4 module has the latest firmware release. Instructions on how to update the QTPCM-4 firmware can be found in Section 6.0, “**Updating the Software Remotely**”.



IMPORTANT NOTE ON UPDATING QTM-HD-4-PF (STK#6223 PF) MODULES:

Before starting the update process, ensure the input satellite signals of ALL PF modules are ABOVE 13 dB SNR. If the input signal is below 13 dB, the user should either disconnect the cable to remove the signal or tune to a frequency where there is no input signal.

Detailed Description of QTM-HD-4 Module Update Process:

1. The update will take approximately 7 minutes per module if the FPGA code does not require updating. With FPGA upgrade, time is approximately 27 minutes per module. Update page will indicate the appropriate time.
2. Updates are applied sequentially starting with Module 1.
3. During the update the modules will continue to transcode the input signals.
4. At the end of a module update, a soft reset is applied and the QAM output will be off for approximately one minute.
5. When all modules have been updated, the QTPCM-4 will update the webpages accordingly and document the activity in the "Event Log".
6. If the QTPCM-4 is unable to re-establish communication with one or more modules within 2 minutes, a hard-reset will be applied to those modules.
7. During the hard-reset, the QAM Output of the modules will be off for approximately one minute.
8. Application of the hard-reset will be documented in the "Event Log".

Section 6 — Remote Software Updates

6.1 Updating the Software Remotely

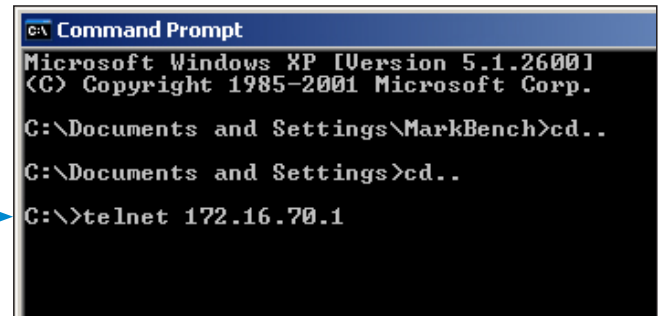
The QTPCM-4 requires 1 PROM to be updated for new revision changes. As referenced in Section 5.9 Update Screen, the QTPCM-4 firmware also contains the QTM-HD-4 updates. Once the QTPCM-4 has been updated following the procedure below, the QTM-HD-4 modules it serves can be updated as shown in Section 5.9.

To obtain the latest firmware revision, please visit our website or contact Technical Support (See Page 2)

Note: It is recommended to copy the EPCS_1_ver#.bin file to the root directory of your computer. (ie. My Computer > C:)

The updating procedure uses the Command Prompt application on your computer. For Windows, it can be found under Programs > Accessories > Command Prompt. All commands are case sensitive and file names must be entered exactly. The Command Prompt must be in the same folder as the EPCS file.

- 1 From the Command Prompt
Type: **ftp -A 172.16.70.1**
NOTE: there is a space between “ftp” and “-A” there is also a space between “-A” and the IP address
(The example assumes the default IP address. Use current IP address of the unit)
- 2 Type: **bin**
Press **ENTER**
- 3 Type: **put EPCS_1_ver#.bin** (NOTE: Use exact file name)
Press **ENTER**
- 4 Type: **bye**
Press **ENTER**
- 5 Telnet into the unit from the Command Prompt
Type: **telnet 172.16.70.1** (NOTE: Assumes default IP)
Press **ENTER**
- 6 Log into the unit.
Username: **Admin**
Press **ENTER**
- 7 Password: **pass**
Press **ENTER**
- 8 Type: **cd home/ftp**
Press **ENTER**
- 9 Type: **ls**
Press **ENTER**
- 10 Type: **epcs -e1 EPCS_1_ver#.bin** (NOTE: Use exact file name)
Press **ENTER**
 - a. Note there is a space between “epcs” and “-e1”
 - b. Note there is a space between “-e1” and the file name



```
CA Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\MarkBench>cd..
C:\Documents and Settings>cd..
C:\>telnet 172.16.70.1
```

The QTPCM-4 must be rebooted once the update has finished being applied to complete the update process.

To automatically reboot the unit use telnet and enter the following:

Type: **epcs -c** (NOTE: Space between “epcs” and “-c”)
Press **ENTER**

Powering off then on with the line cord IEC connector can also be done.

6.1 Updating the Software Remotely (Continued)

```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\MarkBench>cd..
1 -> C:\Documents and Settings>cd..
C:\>ftp -A 172.16.70.1
Connected to 172.16.70.1.
220- Welcome to the uClinux ftpd!
220 uClinux FTP server (GNU inetutils 1.4.1) ready.
331 Guest login ok, type your name as password.
230 Guest login ok, access restrictions apply.
Anonymous login succeeded for MarkBench@eng-MarkBench
2 -> ftp> bin
200 Type set to I.
3 -> ftp> put QTPCM_1_0_2_EPCS_1.bin
200 PORT command successful.
150 Opening BINARY mode data connection for 'QTPCM_1_0_2_EPCS_1.bin'.
226 Transfer complete.
ftp: 3380224 bytes sent in 1.48Seconds 2277.78Kbytes/sec.
4 -> ftp> bye
221 Goodbye.

C:\>_
```

```
Command Prompt
6 -> uClinux login: Admin
7 -> Password:
Blonder Tongue Laboratories, Inc.
QTPCM-4

8 -> Sash command shell (version 1.1.1)
/> cd home/ftp
9 -> /home/ftp> ls
QTPCM_1_0_2_EPCS_1.bin
10 -> /home/ftp> epcs -e1 QTPCM_1_0_2_EPCS_1.bin
EPCS interface detected.
Starting file download ...
EPCS_1 file detected, checking for matching device...
Device match.
EEPROM updated with 0x5

-----
QTPCM_1_0_2_EPCS_1.bin size: 3380224 bytes
EPCS_1 Pages Required: 13204
EPCS_1 Sectors Required: 13
-----

Erasing Sectors 0 to 12...
Erasing Sector 0 of 12
Erasing Sector 1 of 12
Erasing Sector 2 of 12
Erasing Sector 3 of 12
Erasing Sector 4 of 12
Erasing Sector 5 of 12
Erasing Sector 6 of 12
Erasing Sector 7 of 12
Erasing Sector 8 of 12
Erasing Sector 9 of 12
Erasing Sector 10 of 12
Erasing Sector 11 of 12
Erasing Sector 12 of 12
Writing Pages 0 to 13204...
Writing Page 0 of 13204
```


Extended Warranty Program

STANDARD TERMS & CONDITIONS OF THE EXTENDED WARRANTY

A. THE EXTENDED WARRANTY AGREEMENT (EWA)

If during the period following the expiration of the Blonder Tongue Manufacturers' Standard Warranty (Copy Included) the products which constitute the subject matter of the extended warranty, manifest any manufacturing or similar such defects then Blonder Tongue shall at its option repair or replace the product. It is emphasized that the extended warranty is in effect an extension of the Blonder Tongue Warranty and covers the items stipulated in Paragraph B to the exclusion of the terms in Paragraph C of this agreement. Eligibility to purchase EW is limited to 90 days following initial shipment on selected products of sufficient value.

The product/products included in this extended warranty agreement are listed in the invoice that accompanies the EWA. Term of the extension will be _____ year(s). Purchase Order is required for extended warranty coverage.

B. WHAT IS COVERED?

1. If a product has been determined to have failed, which falls within the Terms & Conditions of this EWA, Blonder Tongue Inc. may at its sole discretion repair, modify or replace its component parts that are defective at 100% coverage for parts and labor.
2. A loaner unit may be available on request; PO required.
3. Product is manufactured by Blonder Tongue.
4. Extended warranty period is up to and not to exceed 24 months and sold in increments of 12 months. Order # 9981 for 1 year and #9982 for 2 year extensions.
5. Return of repair or replaced product shipping costs for ground shipments.
6. Firmware upgrades at no charge with automatic notification.

C. WHAT IS NOT COVERED?

1. The warranty does not cover any defects caused by foreign objects /connection errors .
2. Use other than by the customer at the declared address appearing in this document.
3. Failure by the end user to comply with the manufacturers' instructions for installation, maintenance or use.
4. The use of accessories which have not been approved by Blonder Tongue.
5. The application and/or use of any incorrect or abnormal electrical supply to the product.
6. Any defect in wiring or electrical connections which does not form part of the product at the time of the original purchase.
7. Neglect, misuse, or willful abuse of the product.
8. Any repairs or attempted repairs of the product by any person other than Blonder Tongue Service Department.
9. Any modification of the product by any person other than Blonder Tongue Service Department.
10. Fire, flood, war, civil disturbance, industrial action, acts of God or any other causes beyond the reasonable control of Blonder Tongue.
11. Any defect caused by lightning strike or power surges.
12. Shipping costs to return products to Blonder Tongue for warranty service.
13. Blonder Tongue will not in any circumstances be liable for any consequential loss or damages suffered by the customer whether directly or indirectly related defect in the product to the extent permissible by law.
14. Repairs may not be effected without prior authorization from Blonder Tongue Laboratories.

D. GENERAL

1. The customer shall notify Blonder Tongue Laboratories in writing within ten days of any change of his or her address.
2. Customer must provide original **purchase receipt** and **serial number** to initiate extended warranty coverage.
3. The fee paid for the warranty is not refundable under any circumstances unless cancelled within seven days of purchase.
4. The customer shall take all reasonable precautions to maintain the product is maintained in good working order.
5. The warranty contract ceases to exist if the product is replaced or a credit is given to the customer. Any monies paid for the warranty contract are forfeited and not refundable. This is only applicable when the product is out of the manufacturer's warranty.
6. The extended warranty period as stated on the Extended Warranty Agreement shall be the governing period notwithstanding any additional supplier warranty on specific components.
7. The warranty shall in no way effect the terms and conditions of the sale agreement in terms of which the customer bought the product.
8. The extended warranty is limited to the terms and conditions herein contained
9. No agreement, varying, adding to, amended, deleting, or cancelling this warranty shall be effective unless given in writing (email is acceptable) and signed by or on behalf of both parties.
10. The cost of the extended warranty is 8% of the purchase price for a 1 or 2 year extension beyond the Blonder Tongue standard warranty. e.g. A product price of \$1000 will be \$80 for the 1st year (12 mos) and additional \$80 for 2 year (24 mos) extension for a total of \$160.
11. Warranty product return postage paid to:

Blonder Tongue Laboratories, Inc.
Attn: Warranty Service Dept.
1 Jake Brown Road
Old Bridge, NJ 08857

Contact Blonder Tongue at 800-523-6049 ext. 555 to order extended warranty service.

Limited Warranty

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing: (i) for a period of three (3) years from the date of original purchase for all stock hardware products (other than those specifically referenced herein below having a shorter warranty period); (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, test equipment and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers; (iii) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("**Non-Core Software**"); (iv) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (iii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("**Core Product Software**") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software.

Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media, such as CD-ROM disk, on which the software was originally delivered;

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to and ownership of all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("**Refurbished/Closeout Product**"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products. In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SET FORTH ABOVE SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY SELLER OR BY ANY OF SELLER'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF SELLER'S BROCHURES MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS SELLER IN ITS SOLE DISCRETION SHALL DETERMINE. SELLER SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM SELLER.

All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer. Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective. Seller's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by Seller shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of Seller. Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between Seller and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of Seller's standard terms and conditions of sale, including the limited warranty, is available from Seller upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties may also be available from Seller on request. (Rev 0713)



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