



SOLUTIONS FOR ALL YOUR APPLICATIONS

Stock No.  
**6281**  
**USER MANUAL**

8VSB/QAM Transcoder

# AQT8-QAM/IP

8x8VSB/QAM to QAM/IP

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## 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.

## Safety Instructions

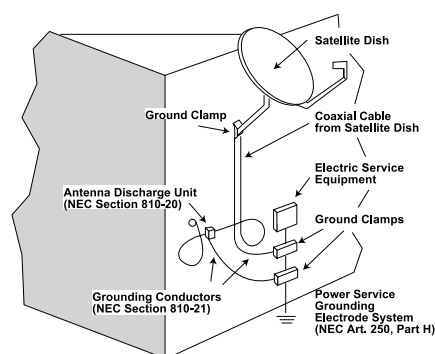


**YOU SHOULD ALWAYS FOLLOW THESE INSTRUCTIONS TO HELP ENSURE  
AGAINST INJURY TO YOURSELF AND DAMAGE TO YOUR EQUIPMENT.**

- 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.

## Safety Instructions - continued

- 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.

### 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](http://www.blondertongue.com) for further information.

## Related Products

Stock #	Model	Input	QAM Output	IP Output
6280	AQT8-IP	8VSB or clear QAM	Not Applicable	Customizable IP Output <ul style="list-style-type: none"> <li>• 8 IP outputs with EAS</li> <li>• Program selectable from input</li> <li>• 20 programs max</li> </ul>
6281	AQT8-QAM/IP	8VSB or clear QAM	<ul style="list-style-type: none"> <li>• Selectable 8 QAM Outputs (Default IP Mode with EAS*)</li> <li>• Pass-through Mode Output (Default RF mode w/o EAS and no program selection)</li> </ul>	Customizable IP Output <ul style="list-style-type: none"> <li>• 8 IP outputs with EAS*</li> <li>• Program selectable from input</li> <li>• 20 programs max</li> </ul>
6288	AQT8-QAM	8VSB or clear/encrypted QAM	Pass-Thru Mode Output <ul style="list-style-type: none"> <li>• 8 QAM outputs with EAS*</li> <li>• No program selection</li> <li>• One input maps to one output</li> </ul>	Pass-Thru IP Output <ul style="list-style-type: none"> <li>• 8 IP outputs with EAS*</li> <li>• No program selection</li> <li>• One input maps to one TS</li> </ul>

\* EAS stream will replace the input stream (clear or scrambled) and will remain unchanged. For example, if a clear EAS stream replaces a scrambled input stream - the output will be a clear EAS stream.

## Section 2 — Product Summary

### 2.1 Revision History & Reason

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The fourth edition reflects changes in unit operation when firmware is v1.0.8. This release added the capability for the QAM outputs to follow the IP streams or RF inputs (RF default mode). See section 6.8 #5 for more details.

The third edition of the manual removed the Event Log IP address and Port number display from the EAS webpage.

In the second edition of the manual the SNR Threshold table was added in Section 6.2.

### 2.2 Product Application & Description

---

#### Application:

AQT8-QAM/IP transcoder allows the user to create a line up from off-air and/or cable feeds for coax or IP distribution. The unit simultaneously transcodes up to eight (8) QAM/8VSB input channels to QAM (up to 8) and IP (up to 8) transport streams. When the QAM output selection is "Default RF" (Section 6.8, #5), the pass thru QAM outputs contain all programs (major and minor channels) residing in their respective input channel sources. The following MPEG-2 tables are maintained: PAT; PMT; PSIP; VCT; EIT and ETT. Alternately if "IP Default" or "IP#" output is selected, the QAM output will contain all programs (major and minor channels) and tables residing in the source IP stream.

The customizable IP output contains up to 20 programs with a combination of SPTS and/or MPTS across eight (8) IP addresses. MPEG-2 tables associated with each of the selected input programs (PAT, PMT, PSIP, VCT and MGT) are transferred to the IP outputs. This means the virtual channel numbers and program names on the IP outputs can be the same as their RF program input sources and the QAM output. Additionally, the AQT8 gives the user the ability to change the PID, Program #, Short Name, Major Ch., and Minor Ch. information to provide a customized IP or coax cable delivery solution.

The AQT8-QAM/IP features Emergency Alert System (EAS) program switching through either an ASI or IP format EAS input and terminal block contacts for triggering. EAS messaging is available on the IP and QAM outputs when the QAM Output Mode is set to "Default IP" or "IP#". There will be no EAS messaging on the QAM output channels when in the "RF Default" mode.

Comprehensive remote monitoring and control is accomplished using any standard Web browser via a rear-panel 10/100Base-T Ethernet connection.

#### Features:

- Accepts 8 RF inputs in 8VSB/QAM format.
- Supports up to 20 programs on each input and 20 programs (total) on the 8 IP outputs.
- In-service monitoring of a selected input and output.
  - An IP output can be sent to the front panel ASI for in-service monitoring of a selected output.
  - A -20 dB QAM RF test connector is provided on the front panel to monitor the units output.
- PSIP manipulation for SPTS
- Performs IP network de-jitter, PCR (Program Clock Reference) replacement, null packet insertion and deletion.
- Supports RTP/UDP protocols
- Supports ARP, IGMPv2, and ICMP protocols
- Supports EAS switching-based on contact closure trigger or +5 to +12 VDC input
- Provides comprehensive GUI-based monitoring and control via standard Web Browsers.

#### Important Operational Information:

1. There are no STT tables on the IP output.
2. There will be no CVCT/TVCT if the output TS has more than 3 programs.
3. Each input has a maximum of 20 programs.
4. The maximum total number of output programs is 20.

## 2.2 Product Application & Description (Continued)

### Description:

Following are pictures of the front and rear of the unit:



- 1 -20dB QAM RF TEST:**  
"F" female connector for RF QAM output signal, 20dB lower than the actual RF QAM output. Used for test purposes, without taking the unit out of service.
- 2 ASI OUT:**  
For in-service monitoring of selected IP output
- 3 Input STATUS LEDS # 1, 2, 3, 4, 5, 6, 7 and 8:**  
LED is Off = input channel tuner not locked.  
LED is Green = input channel tuner is locked.  
LED is RED = error detected in input stream  
LED blinks = corresponding QAM output is off or in CW mode
- 4 POWER LED:**  
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.
- 5 DATA OUT (GIGE):**  
RJ45 for 1000Base-T Ethernet (GigE) interface for IP DATA outputs.
- 6 CONTROL (10/100):**  
RJ45 connector for 10/100Base-T Ethernet interface for monitoring and configuring the unit via standard web browser. Only static IP address can be assigned to this interface. The factory default value is 172.16.70.1.
- 7 IP RESET:**  
When pushed and held for about 10 seconds, resets the IP address, Usernames, and Passwords to Factory default values as follows:  
IP address = 172.16.70.1  
Username = Admin (case-sensitive)  
Password = pass (case-sensitive)  
  
NOTE: Power must be reset for this to take effect
- 8 INPUT POWER ASSEMBLY AND FUSE:**  
IEC 14 power inlet plug – rated 110-230 VAC; 0.7/0.35; 60/50 Hz; equipped with Slo-Blo, 3.0A, 250 V Fuse.

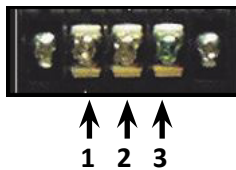




**9 EAS TRIGGER CONTACTS:**

Terminal strip to activate the EAS messaging feature in one of two the following ways:

- a) 5-12 VDC between terminals 1 & 3 shown below
- b) Dry Contact between terminals 2 & 3 shown below



**NOTE:** This feature activates EAS and overrides all the input programs with the EAS INPUT (see 10 and 11 below for details). When in "RF Default" mode, the EAS program substitution is for IP outputs only. EAS messaging is available on the IP and QAM outputs when the QAM Output Mode is set to "Default IP" or "IP#". There will be no EAS messaging on the QAM output channels when in the "RF Default" mode.

**10 EAS ASI IN:**

SPTS EAS input stream.



**It is recommended that EAS ASI or IP inputs should be SD with a TS bit rate of 3 Mbps max. Higher EAS TS bit rates can be used but they should not exceed the lowest bit rate program in all IP outputs.**

**11 EAS 10/100 IP EAS INPUT:**

SPTS EAS IP input.

**12 QAM Output:**

"F" female connector for QAM RF output. The unit is configured with 2 output modules; each module provides 4 adjacent QAM RF channels (24MHz-wide). The RF outputs of both modules are combined internally and presented on this QAM output connector.

**13 8VSB/QAM Inputs:**

These are the 8 RF inputs.

## 2.4 Product Specifications

### Input

<b>Connectors</b>	
<b>8VSB/QAM:</b>	"F" Female
<b>8VSB Mode</b>	<b>Standard:</b> ATSC Digital Television A/53E <b>Tuning Range:</b> UHF (Ch. 14-69), VHF (Ch. 2-13) <b>Data Rate:</b> 19.392 Mbps <b>Bandwidth:</b> 6 MHz <b>Power Level:</b> -20 to +20 dBmV <b>Impedance:</b> 75 Ω
<b>QAM Mode</b>	<b>Standard:</b> ITU-T J.83 - Annex A & B (64 and 256 QAM) <b>Tuning Range:</b> CATV Ch. 2-135 (STD, HRC, IRC) <b>Data Rate:</b> 38.8 Mbps (QAM 256); 26.97 Mbps (QAM 64) – Auto Detect <b>Bandwidth:</b> 6 MHz <b>Power Level:</b> -15 to 20 dBmV (@ QAM 256) -20 to 20 dBmV (@ QAM 64) <b>Impedance:</b> 75 Ω
<b>Emergency Alert System ASI</b>	<b>Connector:</b> 1x BNC Female <b>Standard:</b> DVB-ASI; EN 50083-9 (SPTS)
<b>IP</b>	<b>Connector:</b> 1x RJ45 <b>Standard:</b> 10/100Base-T <b>UDP/RTP:</b> Supported (user-selectable) <b>Transport Rate:</b> Single program (1 video and up to 3 audio) at 3 Mbps.
<b>Trigger</b>	<b>Connectors:</b> Terminal Block <b>Trigger Mechanism:</b> 5-12 VDC & Dry Contact Closure

### Output

<b>IP:</b>	<b>Connectors:</b> 1x RJ45 (Rear-panel) <b>Standard:</b> 1000Base-T Ethernet (GigE) <b>UDP/RTP:</b> Supported (user-selectable) <b>Address Assignment:</b> 8x IPv4 addresses & port numbers (user-selectable)
<b>QAM</b>	<b>No. of Output Modules:</b> 2 Quad-QAM <b>Connector:</b> 1x "F" Female (rear-panel; for combined outputs) <b>Modulation:</b> QAM 16, 32, 64, 128, and 256 <b>Standards:</b> ITU-T J.83; Annex A and B <b>DVB Symbol Rate:</b> Variable; up to 7 MSymbol/sec (MBaud) <b>Frequency Range:</b> 54 to 1002 MHz <b>Tuning:</b> CATV Channel Selectable (CH. 2 to 158) <b>Channels' Bandwidth:</b> 2x 24 MHz (4x Adjacent 6MHz) <b>No. of Programs:</b> Variable (not to exceed 38.8 Mbps) <b>RF Level:</b> +40 dBmV, ± 1 dB increment <b>RF Level Adjustment Range:</b> +35 to +42 dBmV, 1 dB increment <b>Frequency Tolerance:</b> ± 0.5 kHz @ 77 °F (25 °C) <b>Frequency Stability:</b> ± 5 kHz over 32 to 122 °F (0 to 50 °C) <b>Amplitude Flatness:</b> ± 0.25 dB (over 6 MHz channel) <b>Phase Noise:</b> -98 dBc (@ 10 kHz) <b>Spurious:</b> -60 dBc <b>Broadband Noise:</b> -70 dBc (@ +35 dBmV output level, 5.5 MHz bandwidth) <b>Impedance:</b> 75 Ω <b>QAM Spectrum:</b> Inverted <b>Carrier Suppression:</b> 45 dB <b>Return Loss:</b> 14 dB typical <b>Signal-to-Noise Ratio (SNR):</b> 40 dB typical <b>MER:</b> 39 dB typical <b>I/Q Phase Error:</b> Less than 1 degree <b>I/Q Amplitude Imbalance:</b> Less than 1%
<b>ASI</b>	<b>Connector:</b> 1x BNC Female <b>Standard:</b> DVB-ASI; EN 50083-9

### General

<b>Dimensions (W x D x H):</b>	19.0 x 16.0 x 1.75 inches (483 x 363 x 44 mm)
<b>Power:</b>	110 /230 VAC 60/50 Hz
<b>Power Dissipation:</b>	50 W
<b>Weight:</b>	12 lbs (5.5 kg)
<b>Operating Temperature:</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temperature:</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensation
<b>Storage Humidity:</b>	0 to 95% RH @ 35 °C max, non-condensation

### Alarms/Monitoring/Control

<b>Local Monitoring:</b>	8 Channel LEDs 1x Power LED
<b>Local Control:</b>	1x IP Reset Button
<b>Remote Monitoring/Control:</b>	GUI-based menu via standard Web browser (1x RJ45 rear panel connector; 10/100Base-T)

**[This page is intentionally left blank]**

## Section 3 – Installation & Power-up

### 3.1 Unpacking

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You will find the following items in the box:

- AQT8 (QTY=1)
- Power Cord with IEC C13 line socket and 3-pin Type B NEMA 5 plug (QTY=1)
- Blonder Tongue part# 741021800 containing Ethernet cable (QTY=1; see Section 5 for details)

### 3.2 Installation

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The AQT8 is designed to be installed in a standard 19-inch (483 mm) rack (EIA 310-D, IEC 60297, and DIN 41494 SC48D). To install the unit, secure the unit's front panel to the rack by inserting four (4) machine screws, with cup washers, through the four (4) mounting holes in the front panel.



**Do not block the unit's air intake or air discharge openings.**



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

### 3.3 Power-up

---

To power the unit up, first connect the IEC line cord to the receptacle on the rear panel and then to a 120 VAC power outlet. The input power receptacle is equipped with a fuse-holder and fuse (SLO-BLO, 3.0 Amp, 250V).

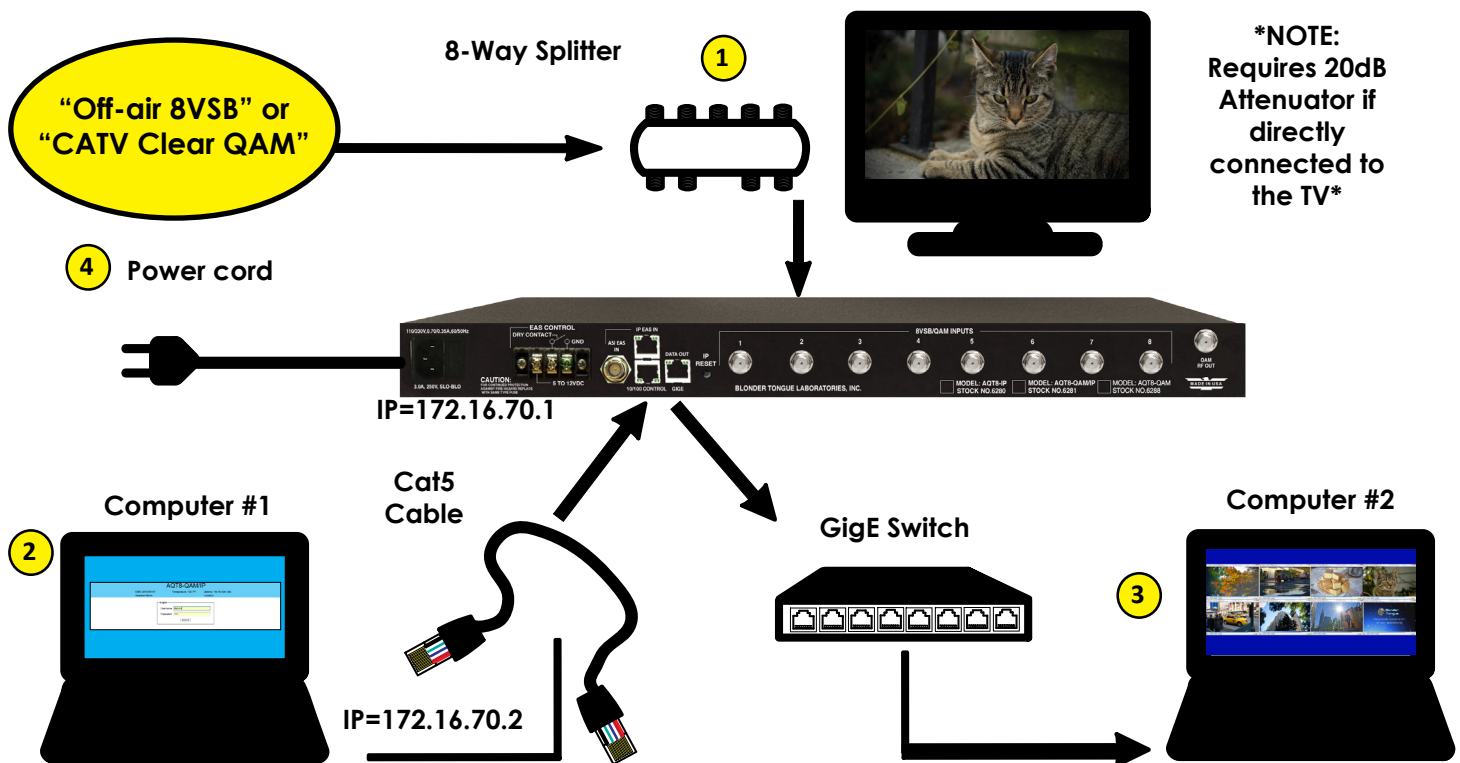


**AQT8 and the GigE Switch are considered as elements of an integrated solution. When a power cycle or re-boot is deemed necessary for one element, it may be necessary to power cycle one or all of the other elements as well.**

## Section 4 - Quick Start Guide

### Step 1 - Connect the Inputs

- 1 Up to 8 terrestrial and/or clear QAM inputs via an 8-Way Splitter are connected to the 8VSB/QAM Inputs.
- 2 Connect computer #1 with a web browser to the 10/100 CONTROL port directly using the supplied cable.
- 3 Connect computer #2 with an installed media player (VLC player or equivalent) to a GigE switch and then connect GigE switch to the Data Out port on the unit.
- 4 Connect the power cord to the AQT8.



### Step 2 - Login

- Assign 172.16.70.2 as the static IP address for computer #1.
- Enter 172.16.70.1 into your Browser to access the AQT8.
- Logon with Username: Admin and the password is “pass”.

AQT8-QAM/IP		
ESN: 2014010197	Temperature: 102.7°F	Uptime: 14d 4h 50m 39s
Headend Name:		Location:
<div style="border: 1px solid black; padding: 5px;"> <p>Login</p> <p>Username: <input type="text" value="Admin"/></p> <p>Password: <input type="password" value="****"/></p> <p style="text-align: right;"><input type="button" value="Submit"/></p> </div>		

### Step 3 - Select Inputs

Go to the Input Map page:

- 1 Select Edit at the top of the IP Output – Input table.
- 2 Change the input selection pull down to ALL.
- 3 Select Modulation Mode for all inputs. Default is 8VSB. For clear-QAM inputs select applicable modulation mode. If the RF input is not locked to an input or not used, select "Not Used" in the modulation mode box.
- 4 Click Save.
- 5 Select desired channel input frequency.
- 6 Repeat mode and input settings for all inputs.
- 7 Click Save.

### Step 4 - Verify inputs are locked

Verify the front panel LED lights are green for each input.



## Step 5 - Check SNR

Go to the Status page:

- >22 dB SNR for 8VSB; >33 dB for QAM 256 is recommended. (Increase the RF input level as required to achieve the desired SNR).

Input Status							Output Status	
Input	SNR	RF Chan.	TS Rate (Mbps)	Actual Data Rate (Mbps)	RF Chan.	Status		
1	32.2	33 / 587MHz	19.4	18.7	10 / On	Locked		
2	28.6	28 / 557MHz	19.4	17.2	11 / On			
3	30.4	7 / 177MHz	19.4	18.7	12 / On			
4	30.7	38 / 617MHz	19.4	18.3	13 / On			
5	25.4	13 / 213MHz	19.4	18.3	14 / On	Locked		
6	28.5	24 / 533MHz	19.4	17.4	15 / On			
7	28.0	36 / 605MHz	19.4	16.8	16 / On			
8	23.9	18 / 497MHz	19.4	17.8	17 / On			

## Step 6 - Configure QAM Output

Go to QAM page to setup output channels:

- Select the 1st channel for each set of QAM outputs.
- Ensure all outputs are enabled and CW mode is not selected.
- Output Selection allows user to select TS stream for each QAM output. Options are as follows:
  - IP Out 1 through IP Out 8
  - Default IP or Default RF: QAM1 gets TS from IP Out 1 or RF1 (input), QAM2 gets TS from IP Out 2 or RF2 (input), and so on.

(NOTE: When using any of the IP settings, the particular IP output must be "Enabled". See Step #8.)

- Select QAM modulation
- Click save.

AQT8-QAM/IP

ESN: 2014030443  
Headend Name:
Temperature: 105.9°F
Uptime: 5d 0h 7m 57s  
Location:

Main
Network
Time
Event Log
Logout

Status
Input Map
MPTS Output Config
IP Output Config
Output
QAM
EAS
Refresh

**RF Output Level**  
 40 dBmV

**QAM Module 1**

- Output Channel/Frequency: 50 / 381MHz, 51 / 387MHz, 52 / 393MHz, 53 / 399MHz
- Output Control: On, On, On, On
- CW Control:  Enable CW for QAM Module
- Output Select: Default IP, Default IP, Default IP, Default IP
- Output QAM Mode: 256B
- Output QAM Data Rate: 5.360500 Mbaud
- Output QAM Interleaver: 128-1
- Output QAM Alpha: 12%
- QAM Lock State: Lock

**QAM Module 2**

- Output Channel/Frequency: 54 / 405MHz, 55 / 411MHz, 56 / 417MHz, 57 / 423MHz
- Output Control: On, On, On, On
- CW Control:  Enable CW for QAM Module
- Output Select: Default IP, Default IP, Default IP, Default IP
- Output QAM Mode: 256B
- Output QAM Data Rate: 5.360500 Mbaud
- Output QAM Interleaver: 128-1
- Output QAM Alpha: 12%
- QAM Lock State: Lock

Save

## Step 7 - Configure Output

Go to the Output page:

- 1 Select number of IP outputs
- 2 Click Save.

ESN: 2014040600    Temperature: 93.7°F    Uptime: 0d 1h 40m 53s  
Headend Name:    Location:

Main   Network   Time   Event Log   Logout

Status   Input Map   MPTS Output Config   IP Output Config   Output   QAM   EAS   Refresh

**Output Mode**

1 4x IP Outputs

Input Status		Output Status
Input	RF Chan./Frequency	RF Channel/State
1	33 / 587MHz	10 / On
2	28 / 557MHz	11 / On
3	7 / 177MHz	12 / On
4	38 / 617MHz	13 / On
5	13 / 213MHz	14 / On
6	24 / 533MHz	15 / On
7	36 / 605MHz	16 / On
8	18 / 497MHz	17 / On

2 Save

## Step 8 - Configure IP Output

Go to the IP Output Config page:

- 1 Configure the IP address/port for each output stream. Coordinate with the IT System Administrator for required IP addresses.
- 2 Select the encapsulation RTP/UDP based on the receiving unit's capabilities.
- 3 Enable the IP Output.  
(NOTE: Must be enabled when QAM output control in Step 6 is set for IP)
- 4 Click Save.

ESN: 2014040600    Temperature: 93.5°F    Uptime: 0d 1h 40m 26s  
Headend Name:    Location:

Main   Network   Time   Event Log   Logout

Status   Input Map   MPTS Output Config   IP Output Config   Output   QAM   EAS   Refresh

**IP Output Configuration**

# IP Output	ASI Output	1 Dest. IP	2 Encap.	Dest. Port	Src. Port	Time to Live	Stuffing
1	Enable	239.10.10.10	UDP	50000	50000	128	Disable
2	Enable	239.10.10.10	UDP	50001	50001	128	Disable
3	Enable	239.10.10.10	UDP	50002	50002	128	Disable
4	Enable	239.10.10.10	UDP	50003	50003	128	Disable

4 Save



## Step 9 - Select Output

Go back to the Input Map page:

- 1 Click the Edit button at the top of the Input table.
- 2 Put check marks next to desired programming by clicking the appropriate box(s).
- 3 Select the output and click Add.
- 4 Repeat for each output program. The unit supports 1 video and 3 audios for each program. Video starts streaming once added to the IP Output table.

**AQT8-QAM/IP**  
ESN: 2014040600    Temperature: 93.8°F    Uptime: 0d 1h 39m 10s  
 Headend Name:    Location:

Main
Network
Time
Event Log
Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	QAM	EAS	Refresh																													
	<table style="width: 100%; border-collapse: collapse;"> <tr> <th>IP Output</th> <th>Current Selected Bitrate</th> <th></th> <th>Previously Selected Bitrate</th> <th></th> <th>Total Output Bitrate</th> </tr> <tr> <td>1</td> <td><input type="text" value="0.0"/></td> <td>+</td> <td><input type="text" value="17.9"/></td> <td>=</td> <td><input type="text" value="17.9"/></td> </tr> <tr> <td>2</td> <td><input type="text" value="0.0"/></td> <td>+</td> <td><input type="text" value="15.5"/></td> <td>=</td> <td><input type="text" value="15.5"/></td> </tr> <tr> <td>3</td> <td><input type="text" value="0.0"/></td> <td>+</td> <td><input type="text" value="12.1"/></td> <td>=</td> <td><input type="text" value="12.1"/></td> </tr> <tr> <td>4</td> <td><input type="text" value="0.0"/></td> <td>+</td> <td><input type="text" value="11.1"/></td> <td>=</td> <td><input type="text" value="11.1"/></td> </tr> </table> <p style="font-size: small; color: red; margin-top: 5px;">                     The first program stream selected will become the "low priority" program in the output stream.                      This setting is configurable via the <a href="#">MPTS Output Config</a> page.                      Duplicate PIDs/Program Numbers/Channels/Channel Names may exist when adding programs.                      Please see the <a href="#">MPTS Output Config</a> page to apply the necessary corrections.                 </p>			IP Output	Current Selected Bitrate		Previously Selected Bitrate		Total Output Bitrate	1	<input type="text" value="0.0"/>	+	<input type="text" value="17.9"/>	=	<input type="text" value="17.9"/>	2	<input type="text" value="0.0"/>	+	<input type="text" value="15.5"/>	=	<input type="text" value="15.5"/>	3	<input type="text" value="0.0"/>	+	<input type="text" value="12.1"/>	=	<input type="text" value="12.1"/>	4	<input type="text" value="0.0"/>	+	<input type="text" value="11.1"/>	=	<input type="text" value="11.1"/>			
IP Output	Current Selected Bitrate		Previously Selected Bitrate		Total Output Bitrate																															
1	<input type="text" value="0.0"/>	+	<input type="text" value="17.9"/>	=	<input type="text" value="17.9"/>																															
2	<input type="text" value="0.0"/>	+	<input type="text" value="15.5"/>	=	<input type="text" value="15.5"/>																															
3	<input type="text" value="0.0"/>	+	<input type="text" value="12.1"/>	=	<input type="text" value="12.1"/>																															
4	<input type="text" value="0.0"/>	+	<input type="text" value="11.1"/>	=	<input type="text" value="11.1"/>																															
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid white; border-radius: 50%; padding: 2px 5px;">1</span> <span>Edit</span> </div>																																				
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid white; border-radius: 50%; padding: 2px 5px;">2</span> <span>Input</span> </div>																																				
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid white; border-radius: 50%; padding: 2px 5px;">3</span> <span>IP Output</span> </div>																																				
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid white; border-radius: 50%; padding: 2px 5px;">4</span> <span>Add -&gt;</span> </div>																																				
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid white; border-radius: 50%; padding: 2px 5px;"></span> <span>Save</span> </div>																																				

## Step 10 - Perform channel scan on TV

Perform channel scan on TV. (CATV Digital - standard).

Confirm channel output on TV. Note that TV will display the virtual channel numbers as set by the content provider and not those set in step 6 when in default QAM mode. When in "Default IP" mode, channels will be as defined in the MPTS Output Config Tab.

## Step 11 - Confirm streaming programs

Open the media player (VLC or equiv.). Enter IP addresses as assigned in Step 8 and confirm programs are being streamed.

## Section 5 – 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 cable that is provided in the hardware bag to unit's rear-panel RJ45 interface marked "10/100 Remote Control". 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 XP** operating software:

- (a) On your computer, open the "Control Panel"
- (b) Double-click on "Network Connections"
- (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 (TCP/IP)".
- (e) A dialog box entitled "Internet Protocol (TCP/IP) 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. Now your computer is ready to communicate with the unit.

- OR -

The following steps explain how to do this for a computer with **Windows 7** operating software:

- (a) On your computer, open the "Control Panel"
- (b) Click on "Network and Internet"
- (c) Click on the "View network status and tasks"
- (d) Click on "Change Adapter Settings" on left hand side of the window
- (e) Right-click on the "Local Area Connection", and then click on the "properties".
- (f) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol Version 4 (TCP/IPv4)".
- (g) 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. Now your computer is ready to communicate with the unit.

## Section 6 – Configuring the Unit

### 6.1 Accessing the Unit via a Web Browser

You must complete the steps described in Section 5 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 6.1) will appear.

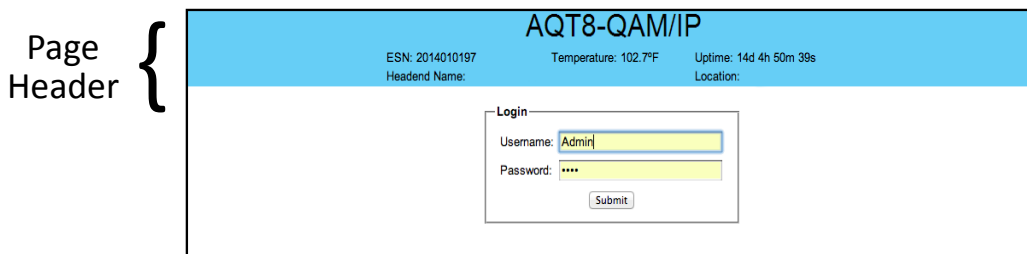


Figure 6.1 - "Login" Screen

- (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 = <b>Admin</b> (case-sensitive) Password = <b>pass</b> (case-sensitive)	- OR -	Username = <b>Guest</b> (case-sensitive) Password = <b>pass</b> (case-sensitive)
---	--------	---

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 6.2, under the blue "page header" the following Primary tabs will appear:

- Primary tab "**Main**" includes the following sub-tabs: Status, Input Map, MPTS Output Config, IP Output Config, Output, QAM, EAS, 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 "**Logout**" doesn't include any sub-tab.

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

### 6.2 "Main > Status" Screen

The "Main > Status" screen (Figure 6.2) is a "read only" screen and displays input and output information of each of the eight (8) channels.

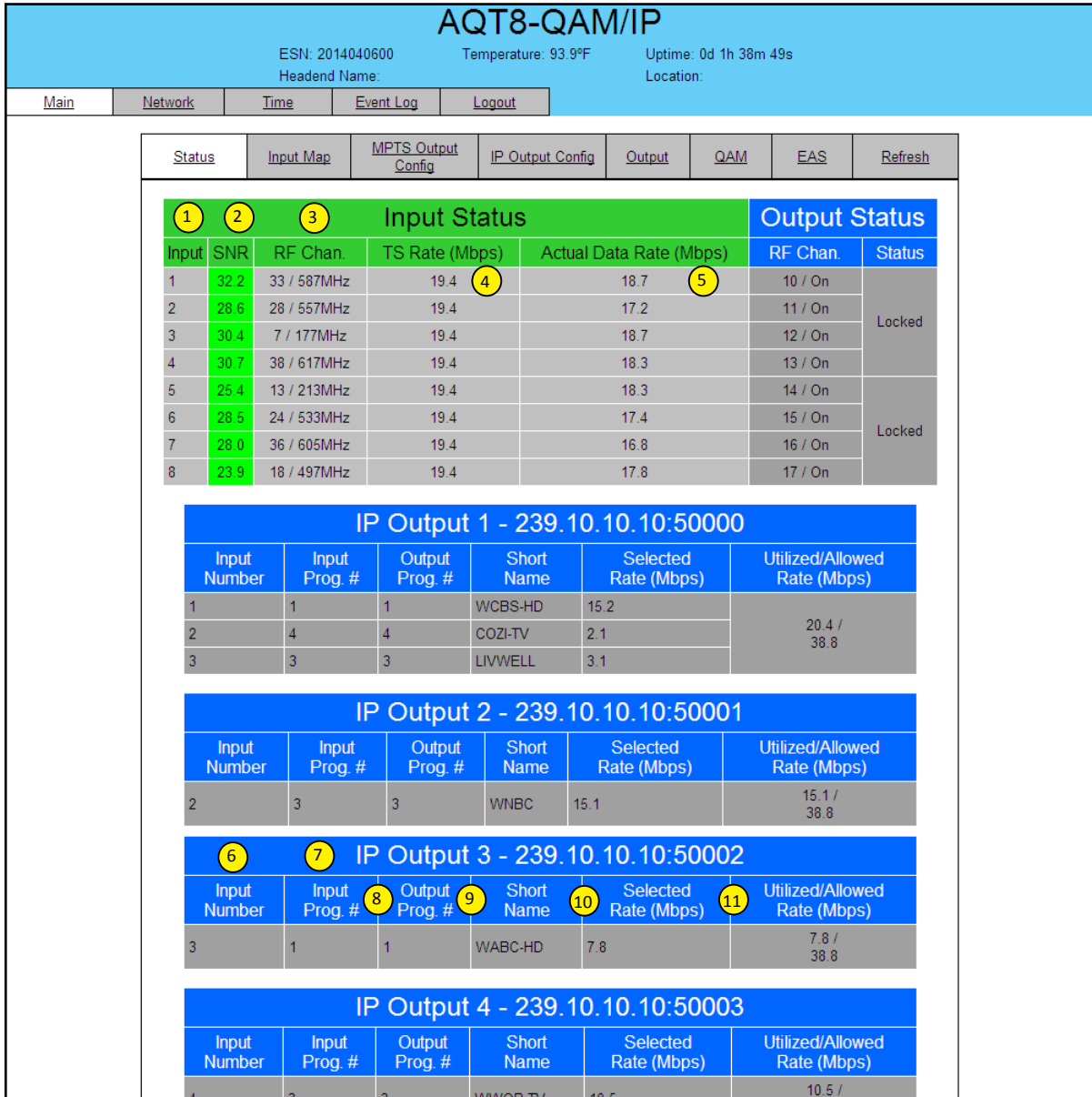


Figure 6.2 - "Main > Status" Screen

- 1 **Input:** indicates the physical RF input and Transport Stream (TS) status. If background is red, there is no TS detected or TS invalid.
- 2 **SNR:** indicates the signal to noise ratio of the input RF channel.  
Green=Good, Yellow=Possible Tiling, Red = Poor Input.

SNR (dB) Threshold			
Modulation	Red	Yellow	Green
Auto QAM	<28	=>28 & <31	=>31
QAM 256B	<28	=>28 & <31	=>31
QAM 64B	<22	=>22 & <25	=>25
QAM 256A	<28	=>28 & <31	=>31
QAM 128A	<25	=>25 & <28	=>28
QAM 64A	<22	=>22 & <25	=>25
QAM 32A	<19	=>19 & <22	=>22
QAM 16A	<16	=>16 & <19	=>19
8VSB	<15	=>15 & <17	=>17
16VSB	<28	=>28 & <31	=>31

- 3 **RF Chan. :** indicates the channel number and center frequency the port is tuned to.
- 4 **TS Rate (Mbps):** indicates the incoming transport stream rate as provided by the content provider.  
Maximum values allowed by relevant standards are:  
19.4 Mbps for over-the-air transmission.  
38.8 Mbps for transmission over cable.
- 5 **Actual Data Rate (Mbps):** indicates the actual input data rate received from the content provider.
- 6 **Input Number:** indicates the physical RF input the program is selected from.
- 7 **Input Prog.#:** indicates the program number selected by the user (the program number is assigned by the content provider).
- 8 **Output Prog.#:** indicates the user-selectable MPEG output program number - duplicates are not allowed within the same IP output.
- 9 **Short Name:** indicates the user-selectable name of the program - duplicates are not allowed. The program name may have up to 7 characters.
- 10 **Selected Rate (Mbps):** indicates the transmission rate of the corresponding output program.
- 11 **Utilized / Allowed Rate (Mbps):** indicates the total output rate of  
(i) the multiplexed MPTS, and  
(ii) the maximum allowed bitrate assigned by the user.

### 6.3 "Main > Input Map" Screen

The "Main > Input Map" screen (Figure 6.3) is a "user-configurable only" screen where the following input source parameters can be configured. This tab is only displayed when the output mode (see section 6.6) is active.

The first program stream selected will become the "low priority" program in the output stream. This setting is configurable via the [MPTS Output Config](#) page.

Duplicate PIDs/Program Numbers/Channels/Channel Names may exist when adding programs. Please see the [MPTS Output Config](#) page to apply the necessary corrections.

IP Output	Current Selected Bitrate	Previously Selected Bitrate	Total Output Bitrate
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0

Input	Parameters
1	Modulation Mode: 8-VSB
	Input Frequency: 33 / 587 MHz
	Input Baud Rate: 5381119 bd/sec
1	48 PMT (WCBS-HD) 1 : 2-1: 16.8 MBit/s
	49 MPEG-2 Video: 16.2 MBit/s
	52 AC3 Audio (ENG): 0.4 MBit/s
	53 AC3 Audio (SPA): 0.1 MBit/s
1	64 PMT (CBSNY+ ) 2 : 2-2: 1.6 MBit/s
	65 MPEG-2 Video: 1.4 MBit/s
	68 AC3 Audio (ENG): 0.2 MBit/s

IP Output	Bitrates
Output 1 - 239.10.10.10:50000	0.0 MBit/s
No PMTs Found	
Output 2 - 239.10.10.10:50001	0.0 MBit/s
No PMTs Found	
Output 3 - 239.10.10.10:50002	0.0 MBit/s
No PMTs Found	
Output 4 - 239.10.10.10:50003	0.0 MBit/s
No PMTs Found	

Figure 6.3 - "Input Map" Screen

The first program stream selected will become the "low priority" program in the output stream. This setting is configurable via the [MPTS Output Config](#) page.

Duplicate PIDs/Program Numbers/Channels/Channel Names may exist when adding programs. Please see the [MPTS Output Config](#) page to apply the necessary corrections.

IP Output	Current Selected Bitrate	Previously Selected Bitrate	Total Output Bitrate
1	0.0	15.2	15.2
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0

Input	Parameters
1	Modulation Mode: 8-VSB
	Input Frequency: 33 / 587MHz
	Input Baud Rate: 5381119 bd/sec
1	48 PMT (WCBS-HD) 1 : 2-1: 15.3 MBit/s
	49 MPEG-2 Video: 14.8 MBit/s
	52 AC3 Audio (ENG): 0.4 MBit/s
	53 AC3 Audio (SPA): 0.1 MBit/s
1	64 PMT (CBSNY+ ) 2 : 2-2: 3.2 MBit/s
	65 MPEG-2 Video: 3.0 MBit/s
	68 AC3 Audio (ENG): 0.2 MBit/s

IP Output	Bitrates
Output 1 - 239.10.10.10:50000	15.2 MBit/s
1	48 PMT (WCBS-HD) 1 : 2-1: 15.2 MBit/s
	49 MPEG-2 Video: 14.8 MBit/s
	52 AC3 Audio (ENG): 0.4 MBit/s
Output 2 - 239.10.10.10:50001	0.0 MBit/s
No PMTs Found	
Output 3 - 239.10.10.10:50002	0.0 MBit/s
No PMTs Found	
Output 4 - 239.10.10.10:50003	0.0 MBit/s
No PMTs Found	

Figure 6.3b - "Input Map" Screen

In the section under the green header, the user can select the programs to be included in the multiplexed MPTS output stream as follows:

Refer to figure 6.3:

- 1 **Input #:** Indicates the physical RF interface. Selections are: "Input 1" to "Input 8" (one at a time), or "All" to show all eight inputs on the screen.
- 2 **Edit:** Click "Edit" button to allow editing of the page.

Refer to figure 6.3b:

- 3 **Modulation Mode:** Select the appropriate modulation mode to match the input. If a RF input is not used or not locked to an input signal, select "not used".
- 4 **Input Frequency:** From the pull-down menu, Select the desired channel/frequency (center) for each input.
- 5 **Input Baud Rate:** Displays the input baud rate commonly used for the selected mode. This window can also be edited, allowing the user to enter and save any custom baud rate desired. Figure 6.3c shows the factory defaults.

AQT8 Input Baud Rate Factory Defaults	
Mode	Baud Rate (bd/sec)
8VSB, 16VSB	5381119
QAM256B	5360537
QAM64B	5056971
QAM256A	5000000
QAM128A	5333300
QAM64A	5000000
QAM32A	5000000
QAM16A	5589500

Figure 6.3c

- 6 In the section entitled "IP Output" under the blue header, the user can view the list of the programs present in each output stream, and the corresponding bit rate.



When output mode is disabled, "IP Output Config" tab and "MPTS Output Config" tab will not appear on web page. Must have at least 1 output enabled to use tabs.

- 7 **Remove:** The user can remove any of the programs from the current list by selecting them and clicking the "Remove" button.

The top section in white assists the user to estimate the IP bit rate for each IP output.

- 8 **Current Selected Bitrate:** indicates the bitrate of the selected programs to be added from the Input.
- 9 **Previously Selected Bitrate:** indicates the total bitrate of the already selected programs of each IP output.
- 10 **Total Output Bitrate:** indicates the total bitrate of all current and previously selected programs. Total bitrate should not exceed TS bitrate assigned in MPTS output config page, item 2, default is 38800000

To select programs for IP Output:

- 2 Step 1: Click the **edit** button
- 13 Step 2: Put check marks next to desired programming by clicking the appropriate box(s)
- 14 Step 3: Select the output
- 11 Step 4: Click **Add**
- 12 Step 5: Click **Save**

### 6.4 "Main > MPTS Output Config" Screen

The "Main > MPTS Output Config" screen (Figure 6.4) is a "read and write" screen where the following output parameters are configured and displayed for each multiplexed MPTS output stream. This tab is only displayed when the output mode (see section 6.6) is active.

## AQT8-QAM/IP

ESN: 2014010197  
Headend Name:
Temperature: 102.6°F
Uptime: 14d 4h 47m 27s  
Location:

Main
Network
Time
Event Log
Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	QAM	EAS	Refresh
<b>Multiplexed MPTS Output Configuration</b>							
1	2	3	4	5			
TS ID	TS Bitrate	Output Type	Modulation Mode	Out of Band			
1	1	38800000	Cable	QAM256	Disabled		
2	2	38800000	Cable	QAM256	Disabled		
3	3	38800000	Cable	QAM256	Disabled		
4	4	38800000	Cable	QAM256	Disabled		

Oversubscription Configuration		
6	7	8
Control	Occurrences	Time Window (Minutes)
Disable	2	1

IP Output Mapping						
9	10	11	12	13	14	15
8VSB Input	PID	Program Num	Short Name	Major Ch.	Minor Ch.	Low Priority
<b>Output 1 - 239.10.10.10:50000</b>						
1	48 PMT ()	48	1	WCBS-HD	2	1
	49 MPEG-2 Video	49				
	52 AC3 Audio (ENG)	52				
<b>Output 2 - 239.10.10.11:50001</b>						
2	48 PMT (WNBC)	48	3		0	0
	49 MPEG-2 Video	49				
	53 AC3 Audio (SPA)	53				
	52 AC3 Audio (ENG)	52				
<b>Output 3 - 239.10.10.12:50002</b>						
3	80 PMT (Movies!)	80	5	Movies!	5	2
	81 MPEG-2 Video	81				
	84 AC3 Audio (ENG)	84				
<b>Output 4 - 239.10.10.13:50003</b>						
8	96 PMT ()	96	6	Shop	31	4
	97 MPEG-2 Video	97				
	100 AC3 Audio (ENG)	100				

**Figure 6.4 - "Main > MPTS Output Config" Screen**

In the section entitled "MPTS Output Configuration", the user can select and configure the following parameters of the output:

- 1 **TS ID:** Enter the identification number for the Transport Stream (TS) output. The range is 1 to 65535. The TS ID assigned to each multiplexed MPTS output stream must be unique.



- 2 TS Bitrate:** Enter the bitrate for the multiplexed MPTS output. It is recommended to enter the following values based on the selections made in & below:

Output Type Modulation Mode Bitrate (bps)  
 Cable QAM 256 38800000  
 Cable QAM 64 26900000  
 Terrestrial 8VSB 19400000  
 Terrestrial 16VSB 38800000

- 3 Output Type:** Select the mode of transmission for the output. Possible options are Cable and Terrestrial. See Major and Minor channel settings (**13** & **14**) below.

**NOTE: The cable and terrestrial output tables are determined by different standards.**

- 4 Modulation Mode:** Select the modulation mode depending on the output type selected. Possible options are: Reserved, Analog, QAM256, QAM64, 8VSB, and 16VSB.

- 5 Out of Band:** An out-of-band (OOB) is a channel which is the combination of the forward and reverse OOB channels. When a cable virtual channel is flagged as being out-of-band, it is carried on the out-of-band channel. Possible options are Enabled and Disabled. When Enabled the AQT8, assigns the OOB bit in the TS packet and labels the TS as out-of-band.

**NOTE:** As per the ATSC and Cable standards, the Output Type, Modulation Mode and Out-of-Band fields are required to be assigned in the TS packet. Selecting the above three fields would allow the TS packets to be compliant with industry standards, but would not affect the input or output configuration of the AQT8-QAM.

In the section entitled “Oversubscription Configuration”, the user can select and configure the following parameters for all output streams. These settings allow the user to define rules when low priority streams may be removed in order to keep output bit rate within selected limits.

- 6 Control:** Removes a program from the output stream if the program causes the stream bitrate to exceed the user-assigned output bitrate. Possible options are Enable and Disable.

- 7 Occurrences:** Allows setting the threshold value for the number of times that a program is allowed to cause the output stream to exceed the user-assigned total output bitrate assigned in. Possible values are 2 to 10.

- 8 Time Window (minutes):** Allows setting the time frame. Possible options are 1 to 10 minutes.

**NOTE:** The “Oversubscription Configuration” feature works in conjunction with the “Low Priority” feature described below.

In the section entitled “IP Output Configuration”, the user can select and configure the following parameters for each output stream indicated by “Output # - IP Address:Port Number”, under gray header:

- 9 8VSB/QAM Input:** Indicates the list of programs selected by the user which are included in the output stream.

- 10 PID:** Indicates the PID value assigned to each elementary stream. PID (Packet Identifier) values are embedded by the content provider in the MPEG-2/H.264 stream to identify tables and programming packets.

- 11 Program Number:** Must enter a unique output program number for each program. PMT (Program Map Table) provides information on each program present in the transport stream such as program number, and the list of the elementary streams (audio, video or data).

- 12 Short Name:** Enter to change or add the short name of the channel. Up to 7 alphanumeric characters are allowed.

- 13 Major Channel:** Enter the major channel number for the output program. The range is 1 to 99 for Terrestrial and 1 to 999 for Cable.

- 14 Minor Channel:** The range is 1 to 99 Terrestrial and 0 to 999 for Cable. When “Output Type” #3 above is set to “CABLE” and a “0” is entered as the minor channel, the Major channel will be displayed as a one part channel number (ie: 550 major & 0 minor displayed on TV as 550). “0” is only valid with Cable (CVCT) and is not applicable to Terrestrial (TVCT).

- 15 Low Priority:** A program number marked as low priority will be removed from the output when it causes the output to exceed the total output bitrate assigned by user in **2** above.

This feature works in conjunction with the “Oversubscription Configuration” described in **6**, **7** & **8** above. By default the first program number in the ASI Input will be assigned as low priority. The user can select only one program number at a time in the output stream as low priority.

When the program marked as low priority is removed from the output stream due to violation of the Oversubscription Configuration (See **6**, **7** & **8** above for details), the message “Output Oversubscribed!” will appear on all screens.

### 6.5 "Main > IP Output Config" Screen

The "Main > IP Output Config" screen (Figure 6.5) is a "read and write" screen where the following parameters are configured and displayed for each IP Output configuration. This tab is only displayed when the output mode (see section 6.6) is active.

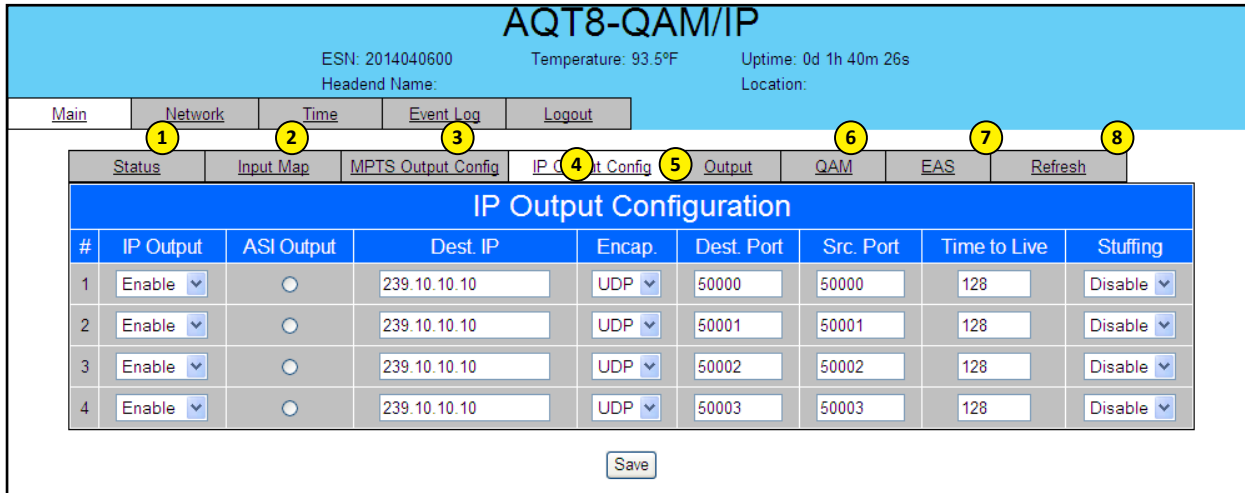


Figure 6.5 - "Main > IP Output Config" Screen

- 1 IP Output:** allows operator to Enable/Disable each IP Output.

**NOTE:** When 'IP Output' option is Disabled, on the "Main > Status" screen will be highlighted in red. (See Figure 6.3 for details)
- 2 ASI Output:** allows the operator to select the IP output which is present at the front panel ASI output
- 3 Destination IP:** allows user to assign the IP address of the receiving equipment.
- 4 Encapsulation:** There are two available options (RTP & UDP), the user must select the one that matches the protocol used by the receiving equipment.
- 5 Destination Port:** must enter the IP Port of the receiving equipment. The factory default value is 50000. The range is 1 to 65535.
- 6 Source Port:** must enter the IP Port of the equipment the the Input IP source is generated. The factory default value is 50000. The range is 1 to 65535. NOTE: Port number is recommended to be from 49152 to 65535 and unique for each IP output. Reason: Port 1-1023 and 1024-49151 are the Reserved Ports and the Registered Ports, respectively.
- 7 Time to Live:** is a limit setting on the time that an IP packet can exist in an IP network. The value is set by the sender of the packet, and reduced by every host on the route to packet's final destination. If the Time to Live reaches zero before the packet arrives at its final destination, then the packet is discarded. The purpose of this field is to avoid an undeliverable packet from circulating on an IP network perpetually. The range is 1 to 255. Factory default value is 128.
- 8 Stuffing:** Null packets are inserted to ensure that the TS bitrate assigned in **4** of Section 6.2 remains constant. Possible options are Enable and Disable. It is advisable to Disable stuffing when only GigE output is used to help reduce network traffic.



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

## 6.6 "Main > Output" Screen

The "Main > Output" screen (Figure 6.6) is a "user-configurable" screen for the Output Mode. The Output Mode is selectable from 1 to 8x IP Outputs or disabled.

The screenshot shows the 'Main > Output' screen for AQT8-QAM/IP. At the top, system information includes ESN: 2014040600, Temperature: 93.7°F, Uptime: 0d 1h 40m 53s, and Headend Name/Location fields. Below this is a navigation bar with tabs: Main, Network, Time, Event Log, and Logout. The main content area has a secondary navigation bar with tabs: Status, Input Map, MPTS Output Config, IP Output Config, Output, QAM, EAS, and Refresh. The 'Output' tab is active, displaying an 'Output Mode' dropdown menu set to '4x IP Outputs'. Below this is a table with two columns: 'Input Status' and 'Output Status'. The 'Input Status' column has sub-columns 'Input' and 'RF Chan./Frequency'. The 'Output Status' column has sub-column 'RF Channel/State'. The table lists 8 inputs, each with its RF channel and frequency, and their corresponding output channels and states (all are 'On'). A 'Save' button is located at the bottom of the screen.

Input Status		Output Status
Input	RF Chan./Frequency	RF Channel/State
1	33 / 587MHz	10 / On
2	28 / 557MHz	11 / On
3	7 / 177MHz	12 / On
4	38 / 617MHz	13 / On
5	13 / 213MHz	14 / On
6	24 / 533MHz	15 / On
7	36 / 605MHz	16 / On
8	18 / 497MHz	17 / On

Figure 6.6 - "Main > Output" Screen



When output mode is disabled, "IP Output Config" tab and "MPTS Output Config" tab will not appear on web page. Must have at least 1 output enabled to use tabs.



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

## 6.7 "Main > EAS" Screen

The "Main > EAS" screen (Figure 6.7) is an EAS feature enabling all input program streams to be replaced by the input present on the ASI or IP input. This web page allows the user select between ASI and IP. For IP, the user also enters the address, port and protocol. Commands are available for manual test of the EAS mode.. This tab is only displayed when the output mode (see section 6.6) is active.

# AQT8-QAM/IP

ESN: 2014040600
Temperature: 93.5°F
Uptime: 0d 1h 41m 40s

Headend Name:
Location:

Main
Network
Time
Event Log
Logout

Status
Input Map
MPTS Output Config
IP Output Config
Output
QAM
EAS
Refresh

**1** → **IP Information**

Control Port MAC Address:	00:14:39:00:3F:FD
Control Port IP Address:	172.16.70.1
Control Port Subnet Mask:	255.255.255.0
Control Port Default Gateway:	172.16.70.254
EAS Port MAC Address:	00:14:39:00:3F:FE
EAS Port IP Address:	192.168.252.2
EAS Port Subnet Mask:	255.255.255.0
EAS Port Default Gateway:	192.168.252.254
GigE Port MAC Address:	00:14:39:00:3F:FF
GigE IP Address:	192.168.253.1
GigE Subnet Mask:	255.255.255.0
GigE Default Gateway:	192.168.253.254
Software Version:	1.0.5
CPU Version:	1.15
MUX Version:	1.11
Unit Serial Number:	2014040600
Headend Name:	
Location:	

**2** → **EAS Configuration**

EAS Group IP:	<input style="width: 80%;" type="text" value="229.1.2.3"/>
EAS Group Port:	<input style="width: 80%;" type="text" value="5000"/>

**3** → **EAS Source RTP / UDP:**     RTP     UDP

**4** → **EAS Source IP / ASI:**     IP     ASI

**5** → **EAS Stream Info**

Status	PID / Program	Bit Rate
EAS Enabled	48 / PMT 1 (Denis)	2.2 MBit/s
	49 / MPEG-2 Video	2.1 MBit/s
	50 / AAC Audio MPEG-2()	0.1 MBit/s

**EAS Testing Facilities**

69 / AC3 Audio ()	0.2 MBit/s
-------------------	------------

**6** → **EAS Testing Facilities**

EAS Override:

Figure 6.7 - "Main > EAS" Screen



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

The TS requirements for the EAS input are as follows:

- (1) The ASI input should be a single program input with (PMT[O]). If multiple programs are present in the EAS TS input, then program #1 (PMT(O) or first PMT) will be selected for EAS override. The other programs will be ignored.
- (2) If ASI input #1 thru #11 have multiple audios, then only the first Audio service is overridden with EAS Audio.

The front panel ASI Input LEOs will be flashing green when EAS is activated.

Upon removing the trigger mechanism the unit will return to its normal operation.

When EAS source = IP

- 1 IP information and software version of the unit.
  - 2 **EAS IP address:** user must enter EAS stream source IP address and port.
  - 3 EAS IP protocol, options are **RTP and UDP**.
  - 4 EAS source selection is **IP or ASI** . For IP use RJ-45 connection on rear of unit. For ASI use BNC connector on rear of unit.
  - 5 **EAS Stream info:** Provides stream information for EAS.
- 
- 6 **EAS Override:** overrides the external EAS Trigger and releases the forced trigger for testing purposes.



All IP programs will be replaced by EAS stream. When in RF pass-through mode - QAM channels will not have EAS messaging.

### 6.8 "Main > QAM" Screen

The "Main > QAM" screen (Figure 6.8) is "user-configurable" for assigning QAM parameters.

## AQT8-QAM/IP

ESN: 2014030443
Temperature: 105.9°F
Uptime: 5d 0h 7m 57s

Headend Name:
Location:

[Main](#)
[Network](#)
[Time](#)
[Event Log](#)
[Logout](#)

Status
Input Map
MPTS Output Config
IP Output Config
Output
**QAM**
EAS
Refresh

1

### RF Output Level

40 ▾ dBmV

**QAM Module 1**

<span style="background-color: yellow; border-radius: 50%; padding: 2px;">2</span> Output Channel/Frequency	50 / 381MHz ▾	51 / 387MHz ▾	52 / 393MHz ▾	53 / 399MHz ▾
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">3</span> Output Control	On ▾	On ▾	On ▾	On ▾
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">4</span> CW Control	<input type="checkbox"/> Enable CW for QAM Module			
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">5</span> Output Select	Default IP ▾	Default IP ▾	Default IP ▾	Default IP ▾
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">6</span> Output QAM Mode	256B ▾			
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">7</span> Output QAM Data Rate	5.360500 Mbaud			
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">8</span> Output QAM Interleaver	128-1			
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">9</span> Output QAM Alpha	12%			
<span style="background-color: yellow; border-radius: 50%; padding: 2px;">10</span> QAM Lock State	Lock			

**QAM Module 2**

Output Channel/Frequency	54 / 405MHz ▾	55 / 411MHz ▾	56 / 417MHz ▾	57 / 423MHz ▾
Output Control	On ▾	On ▾	On ▾	On ▾
CW Control	<input type="checkbox"/> Enable CW for QAM Module			
Output Select	Default IP ▾	Default IP ▾	Default IP ▾	Default IP ▾
Output QAM Mode	256B ▾			
Output QAM Data Rate	5.360500 Mbaud			
Output QAM Interleaver	128-1			
Output QAM Alpha	12%			
QAM Lock State	Lock			

Save

Figure 6.8 - "QAM" Screen

- 1 **RF Output Level:** Selects the QAM RF output level for the combined output. The range is 28 to 42 dBmV.
- 2 **Output Channel/Frequency:** Allows the user to assign an RF channel number to the RF QAM output of the Quad-QAM module (i.e. RF channel 54, as shown in Figure 6.8 "Module 2"). The remaining three RF QAM channels will be automatically assigned to the next higher adjacent channels (i.e. RF channels 55, 56 and 57). The range is NTSC channels 2 to 155.



The RF Channel number will be displayed on TV only if the source stream does not carry any virtual Channel number.

- 3 **Output Control:** Allows the user individually turn on/off each of the 4 QAM RF channels.
- 4 **CW Control:** Allows the user to switch the QAM output mode to CW (Continuous Waveform) which activates an analog carrier at the selected channel's center frequency comparable to the digital QAM output level. In CW mode all 4 channels on the QAM output module will be on regardless of the "Output Control" setting. CW mode is typically used when an analog signal level meter is used to measure the unit's output level during installation and servicing.

**NOTE:** CW carriers are at center frequency and NOT at analog video carrier frequency.

- 5 **Output Select:** Allows user to select TS stream for each QAM output. The options are: IP Out 1 through IP Out 8, default IP and default RF (pass-through). Default IP/RF means that QAM1 will get TS from IP Out 1 or RF 1 (input), QAM 2 will get TS from IP Out 2 or RF 2 (input, and so on)

**NOTE:** When using any of the IP settings, the particular IP output must be "enabled" see Section 6.5.

- 6 **Output QAM Mode:** Allows the user to select the desired QAM modulation mode. Possible options are: 64B, 256B, 16A, 32A, 64A, 128A, and 256A. For most applications in the USA, the recommended QAM modulation mode is 256B.
- 7 **Output QAM Data Rate:** Indicates the standard baud rate depending on the selected QAM mode, for example 5.360500 Mbaud for QAM 256B.
- 8 **Output QAM Interleaver:** Indicates the interleaver value for the selected QAM mode.
- 9 **Output QAM Alpha:** Indicates the Alpha value for the selected QAM mode.



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

- 10 **QAM Lock State:** indicates whether Quad-QAM module is working properly (locked) or not.

**NOTE:** The modules may take a few seconds to lock when QAM output parameters are changed.

## 6.9 "Main > Refresh" TAB

The "Main > Refresh" tab can be clicked while on any screen. When clicked, it will update all relevant fields/parameters of the active screen as that information is retrieved from the AQT8 in a real-time basis.

## 6.10 "Network" Screen

The "Network" screen (Figure 6.10) is a user-configurable screen where the following parameters are displayed or configured:

**AQT8-QAM/IP**

ESN: 2014040600      Temperature: 94.1°F      Uptime: 0d 1h 34m 19s  
Headend Name:      Location:

Main    Network    Time    Event Log    Logout

- 1 Control Port MAC Address: 00:14:39:00:3F:FD
- 2 EAS Port MAC Address: 00:14:39:00:3F:FE
- 3 GigE Port MAC Address: 00:14:39:00:3F:FF
- 4 Software Version: 1.0.3
- 5 CPU Version: 1.14
- 6 MUX Version: 1.7
- 7 Unit Serial Number: 2014040600
- 8 Headend Name:
- 9 Location:
- 10 Login Timeout (Minutes): 15
- 11 Control Port IP Address: 172.16.70.1
- 12 Control Port Subnet Mask: 255.255.255.0
- 13 Control Port Default Gateway: 172.16.70.254
- 14 EAS Port IP Address: 192.168.252.2
- 15 EAS Port Subnet Mask: 255.255.255.0
- 16 EAS Port Default Gateway: 192.168.252.254
- 17 GigE Port IP Address: 192.168.253.1
- 18 Event Log Destination: 172.16.70.2
- 19 Log Destination Port #: 514

EAS Group IP: 239.10.10.10  
EAS Group Port: 1234

20 Save

Figure 6.10 - "Network" Screen



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



- 1 **Ethernet 1 MAC Address:** indicates the MAC Address of the “Remote Control 10/100” Port.
- 2 **EAS port MAC address:** indicates the MAC address of the EAS port.
- 3 **Ethernet 2 MAC Address:** indicates the MAC Address of the “Data Out 1GigE” Port.
- 4 **Software Version:** indicates the software version of the unit.
- 5 **CPU Version:** indicates the current version
- 6 **MUX Version:** indicates the current version
- 7 **Unit Serial Number:** indicates the unit’s serial number.
- 8 **Headend Name:** a user-defined field to make identification easier.
- 9 **Location:** another user-defined field to make identification easier.
- 10 **Login Timeout (Minutes):** indicates the period of time before the unit logs itself out if there is no activity on the web screens. Values are 5, 15, 30, or 60 minutes.
- 11 **Control Port IP Address:** See 10 of Section 6.11 for details.
- 12 **Control Port Subnet Mask:** See 11 of Section 6.11 for details.
- 13 **Control Port Default Gateway:** See 12 of Section 6.11 for details.
- 14 **EAS Port IP Address:** See 13 of section 6.11 for details
- 15 **EAS Port Subnet Mask:** See 14 of section 6.11 for details
- 16 **EAS Port default gateway:** See 15 of section 6.11 for details
- 17 **Gige Port IP Address:** See 16 of Section 6.11 for details.
- 18 **Event Log Destination:** See 17 of Section 6.11 for details.
- 19 **Log Destination Port #:** See 18 of Section 6.11 for details.
- 20 **Click save to store changes**

### 6.11 "Admin.html > Diagnostics" Hidden Screen

To change/modify the IP network parameters, as well as the Username and Password values for the unit, you must be logged in to the unit as "Admin" to access a hidden screen shown in Figure 6.11 by typing the URL of the unit followed by a forward slash and Admin.html, for example:

<http://172.16.70.1/Admin.html>.

Figure 6.11 - "Admin.html > Diagnostics" Hidden Screen

The following parameters can be modified:

- 1 **Login:** is the Administrator's login (10 characters maximum). This login allows the user to make changes to any area of the unit. The factory default Login is "Admin". Login is case sensitive.
- 2 **Current Password:** is the Administrator's Current Password (10 characters maximum). The factory default password is "pass". Password is case sensitive and will not be displayed.

- 3 **New Password:** used only if the user wants to change the current Administrator's password. Must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
- 4 **Confirm New Password:** must enter the same password as entered in above. If password entered does not match, an error will be displayed.
- 5 **Guest Login:** is the Guest login (10 characters maximum). This login allows the user to view the unit settings but does not allow any changes. The factory default Guest Login is "Guest". Login is case sensitive.
- 6 **Current Guest Password:** is the Current Guest Password (10 characters maximum). The factory default Guest password is "pass". Password is case sensitive and will not be displayed.
- 7 **New Guest Password:** used only if the user wants to change the current Guest password. Must enter a new password (10 characters maximum). Password is case sensitive and will not be displayed.
- 8 **Confirm Guest Password:** must enter the same password as entered above. If password entered does not match, an error will be displayed.
- 9 **System Watchdog:** automatically resets unit's Operating System if or when it is required. Possible options are Enabled and Disabled.
- 10 **Control Port IP Address:** is the static IP address that is assigned to the unit. It allows the user to access the unit via the web interface. The factory default IP address is 172.16.70.1.
- 11 **Control Port Subnet Mask:** is the Subnet Mask address of the unit. It allows the user to access the unit from another network via the web interface. The factory default Subnet Mask is 255.255.255.0.
- 12 **Control Port Default Gateway:** is the gateway address of unit. It allows the user to access the unit from another network via the web interface. The factory default Control Port Gateway is 172.16.70.254.
- 13 **EAS Port IP Address:** Is the static IP address assigned to the gigabit ethernet (GigE) Port. The factory default EAS Port IP address is: 192.168.252.2 .
- 14 **EAS Port Subnet Mask:** is the subnet mask address of the EAS port. The factory default EAS subnet mask is 255.255.255.0 .
- 15 **EAS Port Default Gateway:** Is the gateway address of the EAS Port. The factory default EAS Gateway is 192.168.252.254.
- 16 **GigE Port IP Address:** is the static IP address assigned to the Gigabit Ethernet (GigE) port. The factory default value is 192.168.253.1.
- 17 **GigE Port Subnet Mask:** is the subnet mask address of the GigE port. The factory default GigE subnet mask is 255.255.255.0 .
- 18 **GigE Port Default Gateway:** Is the gateway address of the GigE Port. The factory default GigE Gateway is 192.168.253.254.
- 19 **Event Log Destination:** is the IP address of the remote server, to which Syslog sends the activities recorded by the unit for monitoring and troubleshooting purposes. The factory default value is 172.16.70.2.
- 20 **Log Destination Port #:** is the Error Log Destination port to which a duplicate of the error messages created by the unit can be forwarded for monitoring and troubleshooting purposes. The factory default value, which cannot be modified, is 514.
- 21 **Time Server IP:** is the IP address for the Time Server from where the unit can obtain its clock reference (See Section 5.11 for details). The factory default value is 172.16.70.2.
- 22 **Syslog Errors:** is to enable/disable forwarding error messages (in red font) to a Syslog. The factory default value is disabled.
- 23 **Syslog Informational:** is to enable/disable the unit to forward information messages (in blue font) to a Syslog. The factory default value is disabled.
- 24 **Syslog Feedback:** is to enable/disable the unit to forward feedback or confirmation messages (in green font) to a Syslog. The factory default value is disabled.



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

## 6.12 "Time" Screen

The "Time" screen (Figure 6.12) allows you to set the current date and time for the AQT8-QAM. 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" - you must enter the IP address of the time server (see Section 6.11 for details). The time server specified must support the Network Time Protocol (NTP) in order for automatic time acquisition to work properly. The unit would refresh the date and time settings from the Time server every 20 minutes. If, however, an internet connection is not available, the date and time can be entered manually. The unit is capable of adjusting the Day Light Saving (DST) time settings automatically, provided the "Automatically Adjust for Daylight Savings Time" in Figure 6.12 is selected "Yes".

AQT8-QAM/IP																			
ESN: 2014040600	Temperature: 94.1°F																		
Headend Name:	Uptime: 0d 1h 38m 5s																		
Location:																			
<a href="#">Main</a>   <a href="#">Network</a>   <a href="#">Time</a>   <a href="#">Event Log</a>   <a href="#">Logout</a>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #00AEEF; color: white;"><b>Current System Time</b></td> <td style="text-align: right;">Tue May 27 14:44:35 2014</td> </tr> <tr> <td>Current Date (mm/dd/yyyy)</td> <td style="text-align: right;">5 / 27 / 2014</td> </tr> <tr> <td>Current Time (24hr)</td> <td style="text-align: right;">14 hrs : 44 min : 35 sec</td> </tr> <tr> <td>Configuration Method</td> <td style="text-align: right;"><input checked="" type="radio"/> Manual <input type="radio"/> Automatic</td> </tr> <tr> <td>Automatically Adjust for Daylight Saving Time</td> <td style="text-align: right;"><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>DST Start Date (mm/dd/yyyy)</td> <td style="text-align: right;">1 / 1 / 2013</td> </tr> <tr> <td>DST Start Time</td> <td style="text-align: right;">1:00</td> </tr> <tr> <td>DST End Date (mm/dd/yyyy)</td> <td style="text-align: right;">1 / 1 / 2013</td> </tr> <tr> <td>DST End Time</td> <td style="text-align: right;">1:00</td> </tr> </table>		<b>Current System Time</b>	Tue May 27 14:44:35 2014	Current Date (mm/dd/yyyy)	5 / 27 / 2014	Current Time (24hr)	14 hrs : 44 min : 35 sec	Configuration Method	<input checked="" type="radio"/> Manual <input type="radio"/> Automatic	Automatically Adjust for Daylight Saving Time	<input type="radio"/> Yes <input checked="" type="radio"/> No	DST Start Date (mm/dd/yyyy)	1 / 1 / 2013	DST Start Time	1:00	DST End Date (mm/dd/yyyy)	1 / 1 / 2013	DST End Time	1:00
<b>Current System Time</b>	Tue May 27 14:44:35 2014																		
Current Date (mm/dd/yyyy)	5 / 27 / 2014																		
Current Time (24hr)	14 hrs : 44 min : 35 sec																		
Configuration Method	<input checked="" type="radio"/> Manual <input type="radio"/> Automatic																		
Automatically Adjust for Daylight Saving Time	<input type="radio"/> Yes <input checked="" type="radio"/> No																		
DST Start Date (mm/dd/yyyy)	1 / 1 / 2013																		
DST Start Time	1:00																		
DST End Date (mm/dd/yyyy)	1 / 1 / 2013																		
DST End Time	1:00																		
<input type="button" value="Refresh"/> <input type="button" value="Save"/>																			

Figure 6.12 - "Time" Screen

### 6.13 "Event Log" Screen

The "Event Log" screen (Figure 6.13) 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 (Section 6.11 for details). The lines are color coded as follows:

- Red font = error message
- Blue font = information message
- Green font = confirmation or feedback message

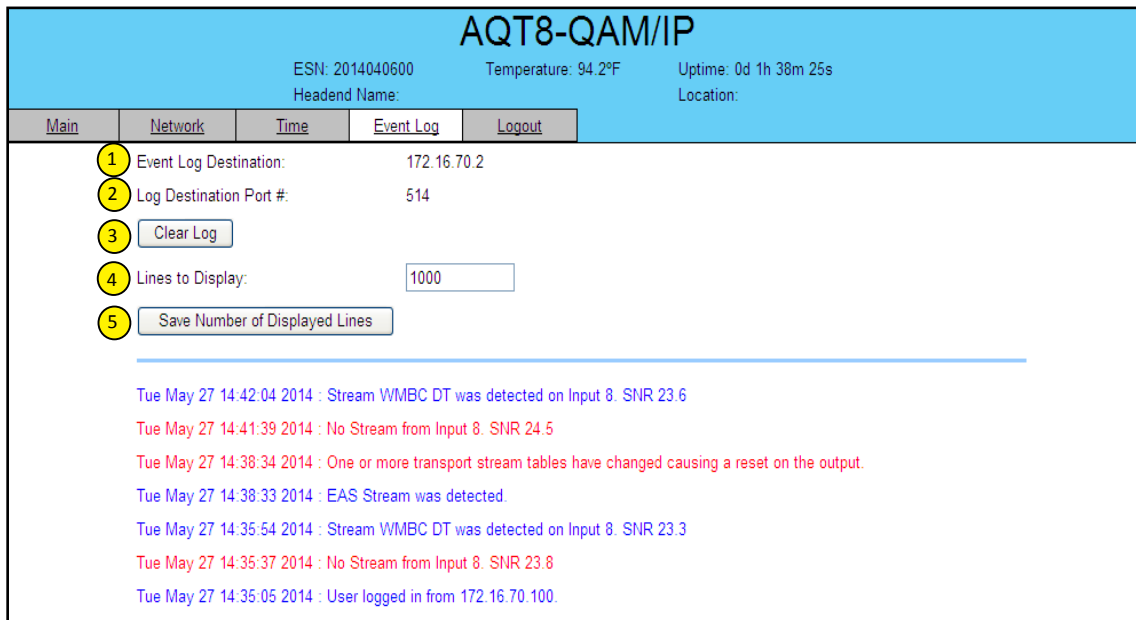


Figure 6.13 - "Event Log" Screen

- 1 **Event Log Destination:** see of Section 6.11 for details.
- 2 **Log Destination Port:** see of Section 6.11 for details.
- 3 **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.
- 4 **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.
- 5 **Save Number of Displayed Lines:** allows the user to save the number of displayed lines on the error log. Please note that the error log would be saved only on the screen and not on any database.

## Appendix A: Updating the Software Remotely

### General background:

There are two different PROMs that need to be programmed in AQT8. They are called PROM1 and PROM2. Please note not every software update requires both PROMs to be programmed. However, program both PROMs unless you get a written notice with Release notes to do otherwise.

The total procedure takes about 10 minutes if you follow the steps below.

Step 1: FTP two files from your PC to AQT8.

Step 2: a) Update PROM1 with the specific command line.

b) Update PROM2 with the specific command line.

### Step 1 : FTP two Files to AQT8:

FTP both files (EPCS\_1\_ver#.bin and EPCS\_2\_ver#.bin) into the AQT8 server board (there are many ways to do this).

- NOTE:** a) The EPCS\_1\_ver#.bin is to program PROM1 and EPCS\_2\_ver#.bin is to program PROM2.  
b) all the commands are case sensitive  
c) It is recommended to copy the EPCS\_1\_ver#.bin and EPCS\_2\_ver#.bin files in the root directory. i.e, My Computer > C:

From a command (DOS) prompt (you must be in the same folder as the EPCS files) enter:

**ftp -A 172.16.70.1**

At the FTP prompt enter the following commands:

{Please ensure that you have entered the “bin” command to confirm that you are FTPing the files as binary files.}

**bin**

**put EPCS\_1\_ver#.bin**

**put EPCS\_2\_ver#.bin**

**bye**

The above four commands may be automated by entering them in an ASCII text file (called ftpcmd, recommended but can be any name) and executing the following:

**ftp -A -s:ftpcmd 172.16.70.1**

You can place the ftp command above in a batch file (.bat) then double click on the .bat file to perform the entire download process.

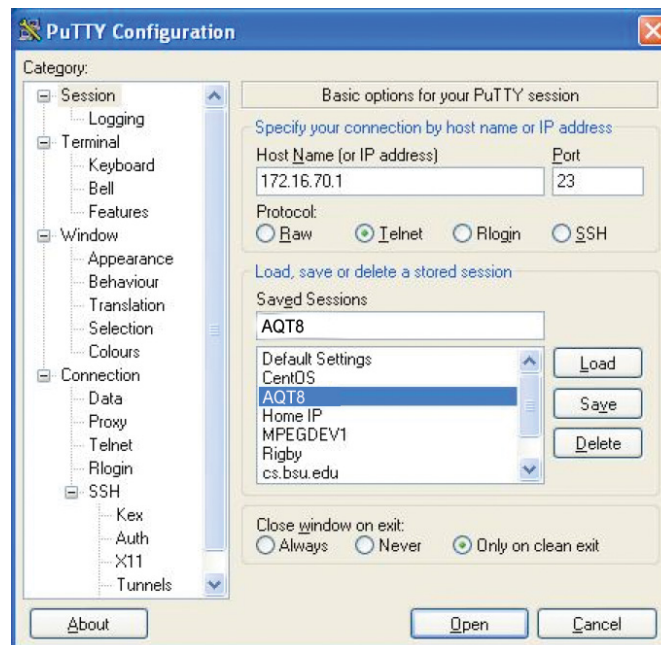
### **Telnet to AQT8:**

There are two ways to telnet to the AQT8:

- (1) Use Command line and type in “ telnet IP address “ for example “telnet 172.16.70.1”
- (2) Use the Terminal program such as Putty to telnet.

Use a terminal program such as Putty to telnet into the server board (can use Linux, DOS prompt, Putty, etc)

You can save your configurations so it's very quick and easy to telnet into the board again.



After you telnet into the server board you must login into the unit with the following credentials:

Username = **Admin** (case-sensitive)

Password = **pass** (case-sensitive)

Then cd to the /home/ftp directory where the EPCS\_x.bin files have been placed.

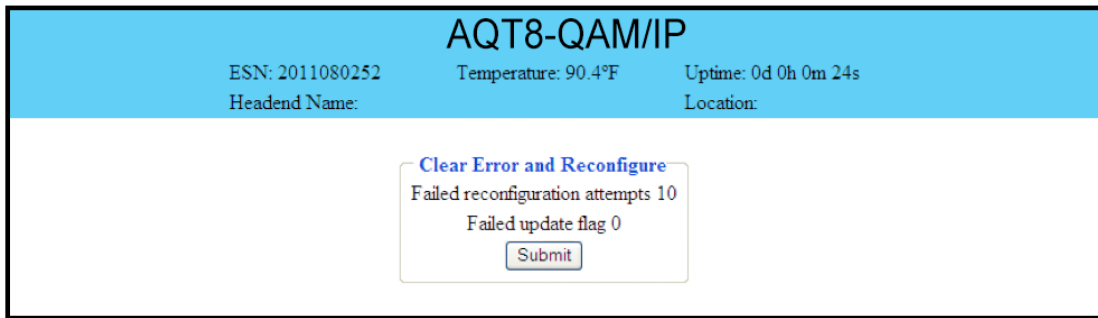
```
cd home/ftp
```

```
ls
```

**Step 2: Update PROM1 and/or PROM2:**

Now you can use the field update utility (epcs) to program the EPCS PROMs. This is a custom utility that resides in AQT8.

**Warning:** Care should be taken at this time, if miss spelled characters or letters are typed by accident, or you have missed to type the bin command in Step 1, this could cause the AQT8 Flash memory to be corrupted. The AQT8 will try to reload the OS using the corrupted file ten (10) times before it displays the following screen. You can recover from this situation by repeating the procedure all over again from Step 1 above.



**FIGURE 6.14**

Ready: Please read the rest of this page once before typing the commands.

Update FPGA1 by programming EPCS1:

**epcs -e1 EPCS\_1\_ver#.bin**

Update FPGA2 by programming EPCS2: (if necessary)

**epcs -e2 EPCS\_2\_ver#.bin**

**NOTE:** Both EPCS PROMS can be programmed concurrently using two different terminal sessions (logins). If you get errors during programming then **DO NOT TURN OFF THE AQT8**, just repeat the epcs commands again.

The server board should now configure itself on power-up.

Two choices to reset the AQT8:

- (1) Unplug and reconnect power cable in the back of the unit.
- (2) Use Telnet and type "epcs -c" this will automatically reboot the AQT8 without a need for resetting with power connector.



## Appendix B: Viewing the IP output on a VLC Media player

To view the IP output from the AQT8 on a VLC Media player in a computer or laptop, the procedure is divided into two steps:

Step 1: Change the IP address of the computer

Step 2: Using the VLC Media Player

**NOTE:** Step 1 needs to be followed only if an unicast IP address is assigned in the “Destination IP” field on the “Main > IP Output Config” screen (see 3 of Section 6.5 for details). If multicast IP address is used, then go to Step 2.

### Step 1: Change the IP address of the computer

i) Change the IP address of the computer to match the “Destination IP” updated on the “Main > IP Output Config” screen (see 3 of Section 6.5 for details and see Section 5 for instructions to change IP address of a computer).

### Step 2: Using the VLC Media Player

i) Open VLC Media Player.

ii) Select **Media** → **Open Network Stream**.

iii) Under the “**Network Protocol**” field, enter the network address using any one of the formats depending on the “Encapsulation” selected on the “Main > IP Output Config” screen (see 4 of Section 6.5 for details):

**rtp://@<ip address>:<port no.>**  
eg: rtp://@239.10.10.31:50001

or

**udp://@<ip address>:<port no.>**  
eg: udp://@192.168.253.100:50055

**NOTE:** For uni-cast, the <ip address> will be the IP address of the computer. For multicast, the <ip address> will be the multicast address assigned under the “Destination IP” on “Main > IP Output Config” screen (see 3 of Section 6.5 for details).

iv) Select Play.

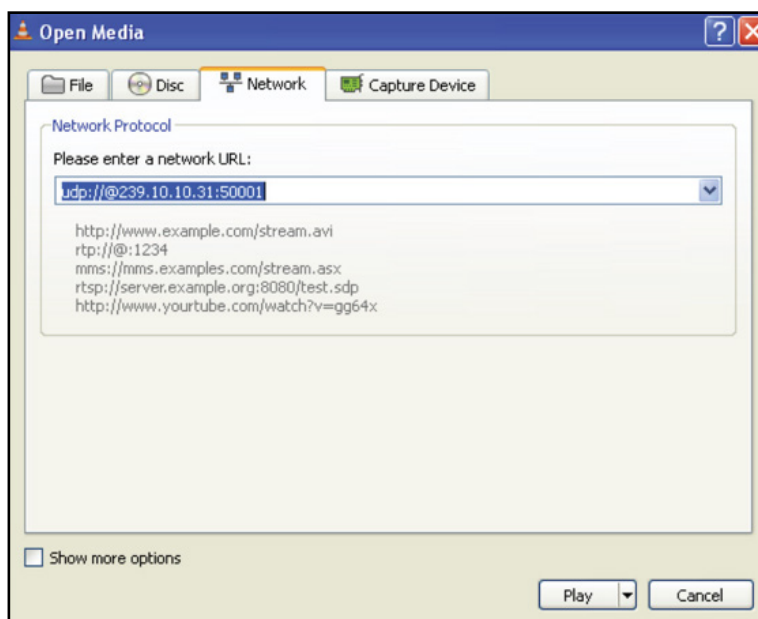


FIGURE 6.15

**Notes**

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# 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 in directly 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 1<sup>st</sup> 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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