



SOLUTIONS FOR ALL YOUR APPLICATIONS

Stock No.
6280
USER MANUAL

8VSB/QAM Transcoder

AQT8 IP

8x8VSB/QAM to IP

Status	Date	Document No.	Issue No.	Author
ACTIVE	April 14, 2014	651235300 A	1	BM



800-523-6049

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Document Number: 651235300 A

Printed in the United States of America.

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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

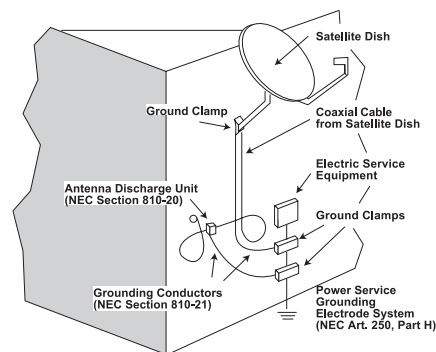
Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack 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 for further information.

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Section 2 — Product Summary

2.1 Revision History & Reason

This is the first issue of this Instruction Manual.

2.2 Product Application & Description

Application:

The AQT8-IP is designed for 8VSB/QAM channel processing applications providing streaming data across 8 IP addresses.

The unit accepts 8 RF inputs. Each RF input can contain up to 20 unencrypted programs.

The IP output can support up to 20 program streams selected from the RF inputs. Both SPTS and MPTS modes are supported. Each program can consist of 1 video & 3 audio elementary streams.

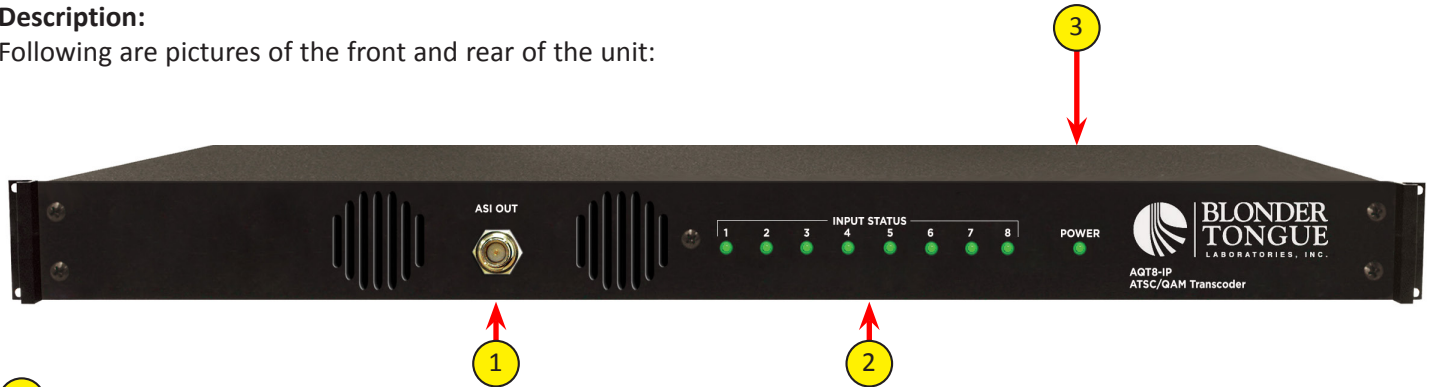
The AQT8 supports EAS program switching. All IP programs switch to the EAS program when the EAS trigger is activated.

Features:

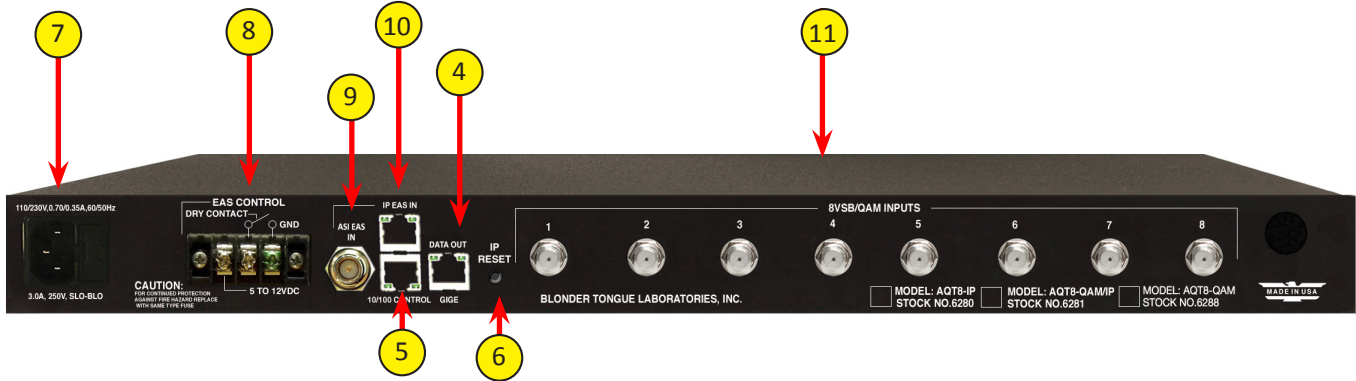
- Accepts 8 RF inputs in 8VSB/QAM format.
- Supports up to 20 programs on each input and 20 programs (total) on the 8 IP outputs.
- An IP output can be sent to the front panel ASI for in-service monitoring of a selected output.
- PSIP manipulation for SPTS
- Performs IP network de-jitter, PCR (Program 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
- Provides comprehensive GUI-based monitoring and control via standard Web Browsers.

Description:

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



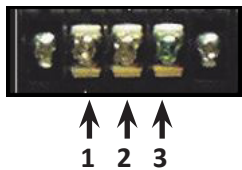
- 1 ASI OUT:**
For in-service monitoring of selected IP output address
- 2 Input STATUS LEDES # 1, 2, 3, 4, 5, 6, 7 and 8:**
LED is Off = input channel tuner not locked.
LED is Green = input channel tuner is locked.
- 3 POWER LED:**
LED is Green = AC power is detected.
LED is Off = indicates
 - (i) AC 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.
- 4 DATA OUT: (GIGE)**
RJ45 for 1000Base-T Ethernet (GigE) interface for IP DATA outputs.
- 5 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.
- 6 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)
- 7 INPUT POWER ASSEMBLY AND SWITCH:**
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.



8 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 activate EAS and override all the input programs (whether Component or Composite) with the EAS INPUT (see 9 and 10 below for details). The EAS program substitution is for IP outputs only.

9 EAS ASI IN:

SPTS EAS input stream.



EAS ASI or IP inputs should be SD with a transport rate of 3 Mbps max. Higher data rates can be used with a lower number of output programs as to not exceed the maximum allowable bit rate on the QAM output channel.

10 EAS 10/100 IP EAS INPUT FOR FUTURE USE:

SPTS EAS IP input.

11 8VSB/QAM Inputs:

These are the 8 RF inputs.

2.3 Product Specification

Input

Connectors	
8VSB/QAM:	“F” Female
8VSB Mode	<p>Standard: ATSC Digital Television A/53E Tuning Range: UHF (Ch. 14-69), VHF (Ch. 2-13) Data Rate: 19.392 Mbps Bandwidth: 6 MHz Power Level: -20 to +20 dBmV Impedance: 75 Ω</p>
QAM Mode	<p>Standard: ITU-T J.83 - Annex A & B (64 and 256 QAM) Tuning Range: CATV Ch. 2-135 (STD, HRC, IRC) Data Rate: 38.8 Mbps (QAM 256); 26.97 Mbps (QAM 64) – Auto Detect Bandwidth: 6 MHz Power Level: -15 to 20 dBmV (@ QAM 256) -20 to 20 dBmV (@ QAM 64) Impedance: 75 Ω</p>
Emergency Alert System ASI	<p>Connector: 1x BNC Female Standard: DVB-ASI; EN 50083-9 (SPTS)</p>
IP	<p>Connector: 1x RJ45 Standard: 10/100Base-T UDP/RTP: Supported (user-selectable)</p> <p>Transport Rate: Single program at 3 Mbps. Higher data rates can be used with a lower number of output programs as to not exceed the maximum allowable bit rate on the QAM output channel.</p>
Trigger	<p>Connectors: Terminal Block Trigger Mechanism: 5-12 VDC & Dry Contact Closure</p>

Output

IP:	<p>Connectors: 1x RJ45 (Rear-panel) Standard: 1000Base-T Ethernet (GigE) UDP/RTP: Supported (user-selectable) Address Assignment: 8x IPv4 addresses & port numbers (user-selectable)</p>
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General

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

Alarms/Monitoring/Control

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

Section 3 – Installation & Power-up

3.1 Unpacking

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 cross cable (QTY=1; see Section 5 for details)

3.2 Installation

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 up the unit, connect the line cord to a rear silk screen 110/230 VAC – 60/50 Hz outlet. Please note that the power inlet plug is also equipped with a fuse-holder and fuse (SLO-BLO, 3.0 Amp, 250V).

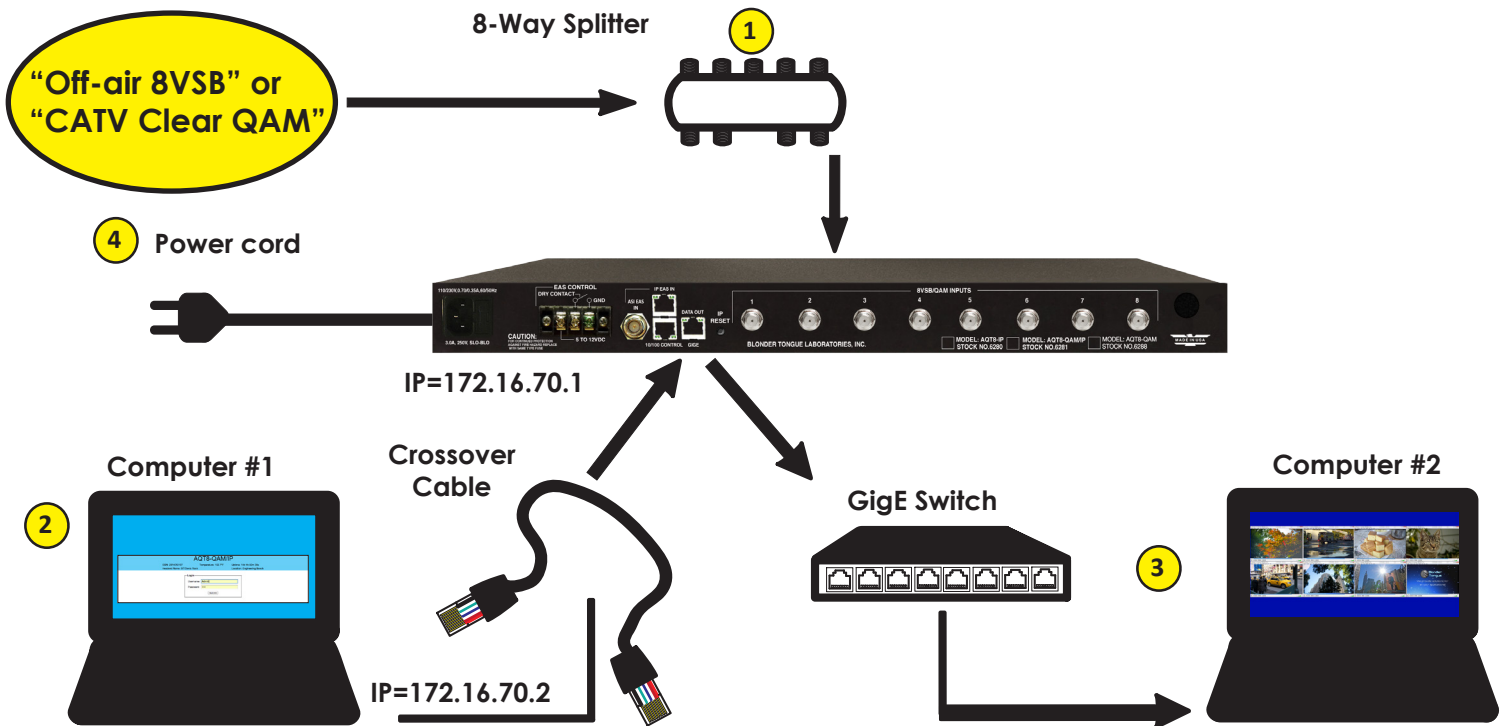


AQT8 and the GigE Switch are considered as elements of an integrated solution. When a power cycle or re-boot is deemed necessary for one element, it may be necessary to power cycle one or all of the other elements as well.

Section 4 - Quick Start Guide

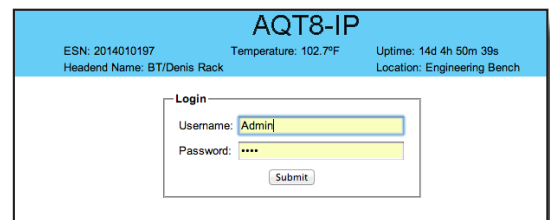
Step 1: Connect the Inputs

- 1 Up to 8 terrestrial 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 cross-over cable.
- 3 Connect computer #2 with an installed media player (VLC player or equivalent) through a GigE switch and then to the Data Out port on the unit.
- 4 Connect the power cord to the AQT8.



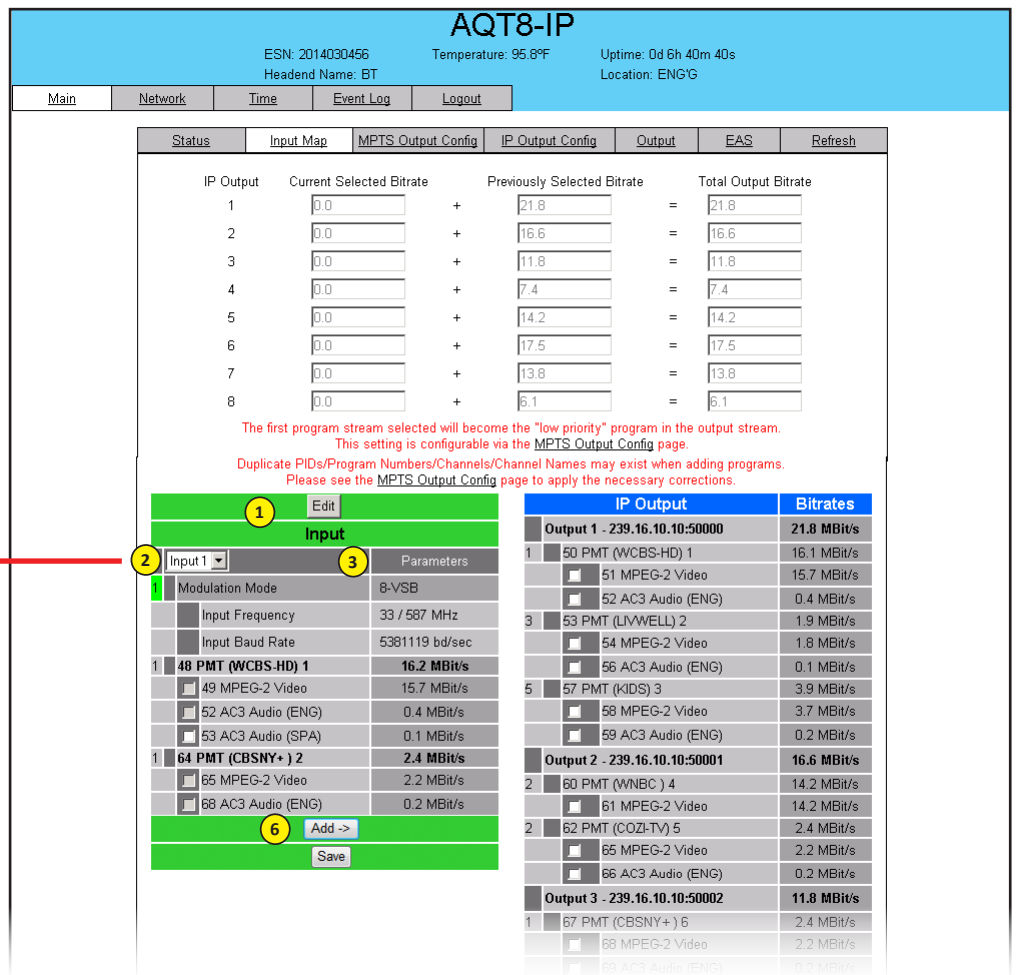
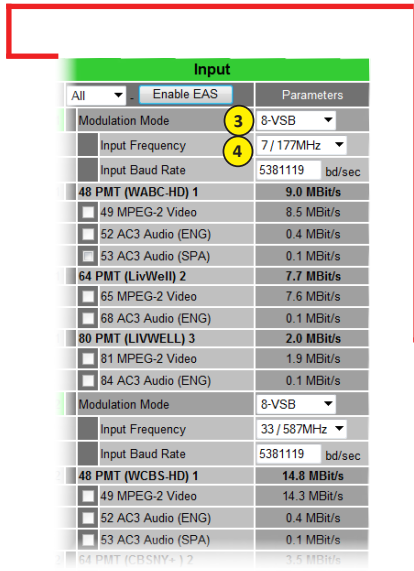
Step 2: Login

- 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".



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. Default is 8VSB. For clear-QAM inputs select “Auto QAM”.
- 4 Select desired channel input frequency.
- 5 Repeat mode and input settings for all inputs.
- 6 Press Save.



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



Go to the Status page:

- 1 >22 dB SNR for 8VSB; >33 dB for QAM 256 (Increase the RF input level as required to achieve the desired SNR).

The screenshot shows the AQT8-IP Status page. At the top, it displays ESN: 2014030456, Temperature: 96.0°F, Uptime: 0d 6h 50m 35s, and Location: ENG'G. Below this is a navigation menu with options: Main, Network, Time, Event Log, and Logout. The main content area has a sub-menu with: Status, Input Map, MPTS Output Config, IP Output Config, Output, EAS, and Refresh. The 'Status' sub-menu is selected, showing the 'Input Status' table. A yellow circle with the number '1' is placed over the SNR column header.

Input	SNR	RF Chan.	TS Rate (Mbps)	Actual Data Rate (Mbps)
1	25.6	33 / 587MHz	19.4	18.3
2	20.3	28 / 557MHz	19.4	17.2
3	24.0	7 / 177MHz	19.4	18.7
4	19.4	38 / 617MHz	19.4	18.3
5	16.4	13 / 213MHz	19.4	18.4
6	23.6	24 / 533MHz	19.4	17.4
7	17.5	36 / 605MHz	19.4	17.4
8	23.4	18 / 497MHz	19.4	17.8

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.
- 4 Click Save.

The screenshot shows the AQT8-IP IP Output Configuration page. At the top, it displays ESN: 2014030456, Temperature: 94.9°F, Uptime: 0d 2h 38m 41s, and Location: ENG'G. Below this is a navigation menu with options: Main, Network, Time, Event Log, and Logout. The main content area has a sub-menu with: Status, Input Map, MPTS Output Config, IP Output Config, Output, EAS, and Refresh. The 'IP Output Config' sub-menu is selected, showing the 'IP Output Configuration' table. A yellow circle with the number '3' is placed over the 'IP Output' column header, a yellow circle with the number '1' is placed over the 'Dest IP' column header, and a yellow circle with the number '2' is placed over the 'Encap.' column header. At the bottom, a yellow circle with the number '4' is placed over the 'Save' button.

#	IP Output	ASI Output	Dest IP	Encap.	Dest Port	Src. Port	Time to Live	Stuffing
1	Enable	<input type="radio"/>	239.16.10.10	UDP	50000	50000	128	Disable
2	Enable	<input type="radio"/>	239.16.10.10	UDP	50001	50001	128	Disable
3	Enable	<input type="radio"/>	239.16.10.10	UDP	50002	50002	128	Disable
4	Enable	<input type="radio"/>	239.16.10.10	UDP	50003	50003	128	Disable
5	Enable	<input type="radio"/>	239.16.10.10	UDP	50004	50004	128	Disable
6	Enable	<input type="radio"/>	239.16.10.10	UDP	50005	50005	128	Disable
7	Enable	<input type="radio"/>	239.16.10.10	UDP	50006	50006	128	Disable
8	Enable	<input type="radio"/>	239.16.10.10	UDP	50007	50007	128	Disable

Save

Go back to the Input Map page:

- 1** Select the Edit button at the top of the Input table.
 - 2** Put check marks next to desired programming.
 - 3** Select the output and click Add.
- Repeat for each output program. The unit supports 1 video and 3 audios or each program. Video starts streaming once added to the IP Output table.

AQT8-QAM/IP
ESN: 2014010197 Temperature: 102.5°F Uptime: 14d 4h 27m 27s
 Headend Name: BT/Denis Rack Location: Engineering Bench

Main | Network | Time | Event Log | Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	QAM	EAS	Refresh
IP Output	Current Selected Bitrate		Previously Selected Bitrate				Total Output Bitrate
1	0.0		15.6				15.6
2	0.0		14.5				14.5
3	0.0		2.2				2.2
4	0.0		1.6				1.6

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.

1 Edit

Input

2

Input 1	Parameters
Modulation Mode	8-VSB
Input Frequency	28 / 557 MHz
Input Baud Rate	5381119 bd/sec
<input checked="" type="checkbox"/> 48 PMT (WNBC) 3	16.2 MBit/s
<input type="checkbox"/> 49 MPEG-2 Video	15.7 MBit/s
<input type="checkbox"/> 52 AC3 Audio (ENG)	0.4 MBit/s
<input type="checkbox"/> 53 AC3 Audio (SPA)	0.2 MBit/s
<input checked="" type="checkbox"/> 64 PMT (COZI-TV) 4	0.9 MBit/s
<input type="checkbox"/> 65 MPEG-2 Video	0.7 MBit/s
<input type="checkbox"/> 68 AC3 Audio (ENG)	0.2 MBit/s

IP Output	Bitrates
<input checked="" type="checkbox"/> Output 1 - 224.40.50.60:50000	17.2 MBit/s
<input type="checkbox"/> 48 PMT (WNBC) 3	15.6 MBit/s
<input type="checkbox"/> 49 MPEG-2 Video	15.1 MBit/s
<input type="checkbox"/> 52 AC3 Audio (ENG)	0.4 MBit/s
<input type="checkbox"/> 53 AC3 Audio (SPA)	0.2 MBit/s
<input type="checkbox"/> 64 PMT (COZI-TV) 4	1.5 MBit/s
<input type="checkbox"/> 65 MPEG-2 Video	1.3 MBit/s
<input type="checkbox"/> 68 AC3 Audio (ENG)	0.2 MBit/s
<input checked="" type="checkbox"/> Output 2 - 172.16.70.2:50001	0.0 MBit/s
No PMTs Found	
<input checked="" type="checkbox"/> Output 3 - 172.16.70.2:50002	0.0 MBit/s
No PMTs Found	
<input type="checkbox"/> Output 4 - 172.16.70.2:50003	0.0 MBit/s

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

Confirm channel output on TV. Note the that TV will display the virtual channel numbers as set by the content provider and not those set in step 6.

Open the media player (VLC or equiv.). Enter IP addresses as as assigned in Step 7 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 cross 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 5.1) will appear.

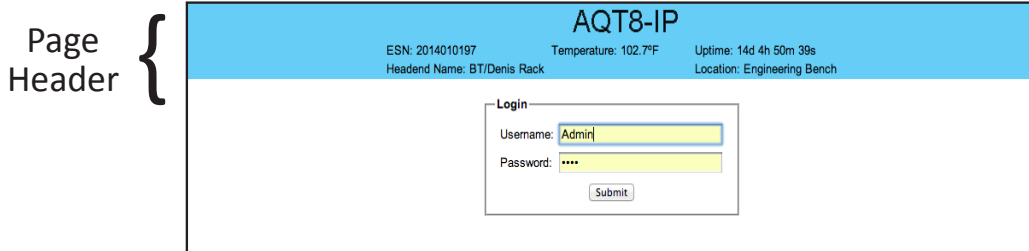


FIGURE 6.1 – "Login" Screen

- (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 = Admin (case-sensitive) Password = pass (case-sensitive)	- OR -	Username = Guest (case-sensitive) Password = pass (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, Stream Info (applicable to MPTS Mode only), QAM Config, Diagnostics, Mode, 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.

AQT8-IP

ESN: 2014030456 Temperature: 96.0°F Uptime: 0d 6h 50m 35s
Headend Name: BT Location: ENG'G

Main
Network
Time
Event Log
Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	EAS	Refresh
Input Status						
Input	SNR	RF Chan.	TS Rate (Mbps)	Actual Data Rate (Mbps)		
1	25.6	33 / 587MHz	19.4	18.3		
2	20.3	28 / 557MHz	19.4	17.2		
3	24.0	7 / 177MHz	19.4	18.7		
4	19.4	38 / 617MHz	19.4	18.3		
5	16.4	13 / 213MHz	19.4	18.4		
6	23.6	24 / 533MHz	19.4	17.4		
7	17.5	36 / 605MHz	19.4	17.4		
8	23.4	18 / 497MHz	19.4	17.8		

IP Output 1 - 239.16.10.10:50000

Input Number	Input Prog. #	Output Prog. #	Short Name	Selected Rate (Mbps)	Utilized/Allowed Rate (Mbps)
1	1	1	WCBS-HD	15.6	19.5 / 38.8
3	3	2	LIVWELL	1.9	
5	3	3	KIDS	2.0	

IP Output 2 - 239.16.10.10:50001

Input Number	Input Prog. #	Output Prog. #	Short Name	Selected Rate (Mbps)	Utilized/Allowed Rate (Mbps)
2	3	4	WNBC	14.0	16.6 / 38.8
2	4	5	COZI-TV	2.6	

IP Output 3 - 239.16.10.10:50002

Input Number	Input Prog. #	Output Prog. #	Short Name	Selected Rate (Mbps)	Utilized/Allowed Rate (Mbps)
1	2	6	CBSNY+	2.7	11.2 / 38.8
3	1	7	WABC-HD	8.6	

IP Output 4 - 239.16.10.10:50003

Input Number	Input Prog. #	Output Prog. #	Short Name	Selected Rate (Mbps)	Utilized/Allowed Rate (Mbps)
4	4	8	WNYW-SD	1.9	8.1 / 38.8
4	5	9	BOUNCE	2.0	
4	6	10	MundoFx	4.3	

IP Output 5 - 239.16.10.10:50004

Input Number	Input Prog. #	Output Prog. #	Short Name	Selected Rate (Mbps)	Utilized/Allowed Rate (Mbps)

FIGURE 6.2 - "Status" Screen

- 1 **Input:** indicates the physical RF input.
- 2 **SNR:** indicates the signal to noise ratio of the input RF channel. (≥ 22 dB is recommended)
Lights Green=Good, Yellow=Possible Tiling, Red = No Input.
- 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 interface.
- 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.
- 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 > Inputs" Screen

The "Main Input" screen (Figure 6.3) is a "user-configurable" screen where the following input source parameters can be configured:

AQT8-IP
ESN: 2014030456 Temperature: 95.8°F Uptime: 0d 6h 40m 40s
Headend Name: BT Location: ENG'G

Main
Network
Time
Event Log
Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	EAS	Refresh
	IP Output 8	Current Selected Bitrate	Previously Selected Bitrate 9	Total Output Bitrate 10		
	1	0.0	+	21.8	=	21.8
	2	0.0	+	16.6	=	16.6
	3	0.0	+	11.8	=	11.8
	4	0.0	+	7.4	=	7.4
	5	0.0	+	14.2	=	14.2
	6	0.0	+	17.5	=	17.5
	7 2	0.0	+	13.8	=	13.8
	8	0.0	+	6.1	=	6.1

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.

Edit

Input

1 Input 1
Parameters

3 Modulation Mode
8-VSB

4 Input Frequency
33 / 587 MHz

5 Input Baud Rate
5381119 bd/sec

1 48 PMT (WCBS-HD) 1
16.2 MBit/s

49 MPEG-2 Video
15.7 MBit/s

52 AC3 Audio (ENG)
0.4 MBit/s

53 AC3 Audio (SPA)
0.1 MBit/s

1 64 PMT (CBSNY+) 2
2.4 MBit/s

65 MPEG-2 Video
2.2 MBit/s

68 AC3 Audio (ENG)
0.2 MBit/s

Add ->
Save

6 IP Output

	IP Output	Bitrates
Output 1 - 239.16.10.10:50000		
1	<input type="checkbox"/> 50 PMT (WCBS-HD) 1	16.1 MBit/s
	<input type="checkbox"/> 51 MPEG-2 Video	15.7 MBit/s
	<input type="checkbox"/> 52 AC3 Audio (ENG)	0.4 MBit/s
3	<input type="checkbox"/> 53 PMT (LIVWELL) 2	1.9 MBit/s
	<input type="checkbox"/> 54 MPEG-2 Video	1.8 MBit/s
	<input type="checkbox"/> 56 AC3 Audio (ENG)	0.1 MBit/s
5	<input type="checkbox"/> 57 PMT (KIDS) 3	3.9 MBit/s
	<input type="checkbox"/> 58 MPEG-2 Video	3.7 MBit/s
	<input type="checkbox"/> 59 AC3 Audio (ENG)	0.2 MBit/s
Output 2 - 239.16.10.10:50001		
2	<input type="checkbox"/> 60 PMT (WNBC) 4	14.2 MBit/s
	<input type="checkbox"/> 61 MPEG-2 Video	14.2 MBit/s
2	<input type="checkbox"/> 62 PMT (COZLTV) 5	2.4 MBit/s
	<input type="checkbox"/> 66 MPEG-2 Video	2.2 MBit/s
	<input type="checkbox"/> 66 AC3 Audio (ENG)	0.2 MBit/s
Output 3 - 239.16.10.10:50002		
1	<input type="checkbox"/> 67 PMT (CBSNY+) 6	2.4 MBit/s
	<input type="checkbox"/> 68 MPEG-2 Video	2.2 MBit/s
	<input type="checkbox"/> 69 AC3 Audio (ENG)	0.2 MBit/s
3	<input type="checkbox"/> 70 PMT (WABC-HD) 7	9.4 MBit/s
	<input type="checkbox"/> 71 MPEG-2 Video	9.0 MBit/s
	<input type="checkbox"/> 72 AC3 Audio (ENG)	0.4 MBit/s
Output 4 - 239.16.10.10:50003		
4	<input type="checkbox"/> 73 PMT (WNYW-SD) 8	2.2 MBit/s
	<input type="checkbox"/> 74 MPEG-2 Video	1.9 MBit/s

7 <- Remove

Button is located at the bottom

FIGURE 6.3 - "Input" 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:

- 1 **Input #:** indicates the physical RF input interface. Selections are #1 through #8 to show only 1 input at a time or "ALL" to show all 8 inputs on the screen.
- 2 **Edit:** Click button to access modulation variables.
- 3 **Modulation Mode:** Select the appropriate modulation scheme to match the input. "Auto QAM" will determine the proper QAM setting automatically.
- 4 **Input Frequency:** Select the desired channel/frequency (center) for each input from the pull-down menu.
- 5 **Input Baud Rate:** Baud rate of the input RF signal. 8VSB defaults to 5381119 (Hz).
- 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 corresponding bit rate.
- 7 **Remove:** The user can remove any of the programs from the current list by selecting it and clicking the "Remove" button.

The top section in white indicates the following:

- 8 **Current Selected Bitrate:** indicates the bitrate of the programs.
- 9 **Previously Selected Bitrate:** indicates the total bitrate of the already selected programs.
- 10 **Total Output Bitrate:** indicates the total bitrate of the selected programs.

6.4 "Main > MPTS Output config" Screen

The "Main > MPTS Output Config" screen (Figure 5.4) is a "read and write" screen where the following output parameters are configured and displayed for each multiplexed MPTS output stream:

AQT8-IP

ESN: 2014030456 Temperature: 96.0°F Uptime: 0d 6h 53m 8s
 Headend Name: BT Location: ENG'G

Main
Network
Time
Event Log
Logout

Status	Input Map	MPTS Output Config	IP Output Config	Output	EAS	Refresh			
Multiplexed MPTS Output Configuration									
1	TS ID	2	TS Bitrate	3	Output Type	4	Modulation Mode	5	Out of Band
1	1		38800000		Terrestrial		QAM256		Disabled
2	2		38800000		Terrestrial		QAM256		Disabled
3	3		38800000		Terrestrial		QAM256		Disabled
4	4		38800000		Terrestrial		QAM256		Disabled
5	5		38800000		Terrestrial		QAM256		Disabled
6	6		38800000		Terrestrial		QAM256		Disabled
7	7		38800000		Terrestrial		QAM256		Disabled
8	8		38800000		Terrestrial		QAM256		Disabled

Oversubscription Configuration

Control	7	Occurrences	8	Time Window (Minutes)
Disable		5		1

IP Output Mapping

9	8VSB Input	10	PID	11	Program Number	12	Short Name	Major Ch.	13	Minor Ch.	14	15	Low Priority
Output 1 - 239.16.10.10:50000													
1	48 PMT (WCBS-HD)	50	1		WCBS-HD	2		2		1			<input checked="" type="radio"/>
	49 MPEG-2 Video	51											
	52 AC3 Audio (ENG)	52											
3	80 PMT (LIVWELL)	53	2		LIVWELL	2		2		2			<input type="radio"/>
	81 MPEG-2 Video	54											
	84 AC3 Audio (ENG)	56											
5	48 PMT (KIDS)	57	3		KIDS	2		3		3			<input type="radio"/>
	49 MPEG-2 Video	58											
	52 AC3 Audio (ENG)	59											
Output 2 - 239.16.10.10:50001													
2	48 PMT (WNBC)	60	4		WNBC	3		3		1			<input checked="" type="radio"/>
	49 MPEG-2 Video	61											
2	64 PMT (COZI-TV)	62	5		COZI-TV	3		3		2			<input type="radio"/>
	65 MPEG-2 Video	65											
	68 AC3 Audio (ENG)	66											

FIGURE 6.4 - "IP 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:** must 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:** must 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.
- 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 Enable and Disable. 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:

- 6 **Control:** removes a program from the output stream if the program causes the stream 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 in 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:** must 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:** must enter the minor channel number for the output program. The range is 1 to 99 Terrestrial and 1 to 999 for Cable.
- 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 output stream:

#	IP Output	ASI Output	Dest IP	Encap	Dest. Port	Src. Port	Time to Live	Stuffing
1	Enable	<input type="radio"/>	239.16.10.10	UDP	50000	50000	128	Disable
2	Enable	<input type="radio"/>	239.16.10.10	UDP	50001	50001	128	Disable
3	Enable	<input type="radio"/>	239.16.10.10	UDP	50002	50002	128	Disable
4	Enable	<input type="radio"/>	239.16.10.10	UDP	50003	50003	128	Disable
5	Enable	<input type="radio"/>	239.16.10.10	UDP	50004	50004	128	Disable
6	Enable	<input type="radio"/>	239.16.10.10	UDP	50005	50005	128	Disable
7	Enable	<input type="radio"/>	239.16.10.10	UDP	50006	50006	128	Disable
8	Enable	<input type="radio"/>	239.16.10.10	UDP	50007	50007	128	Disable

FIGURE 6.5 - "IP Output Config"

- 1 **IP Output:** allows operator to Enable/Disable the GigE output port.
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 Output stream which is present at the front panel.
- 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 Output stream. 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 is a "user-configurable" screen for the Output Mode. The Output Mode is selectable from 1 to 8x IP Outputs.

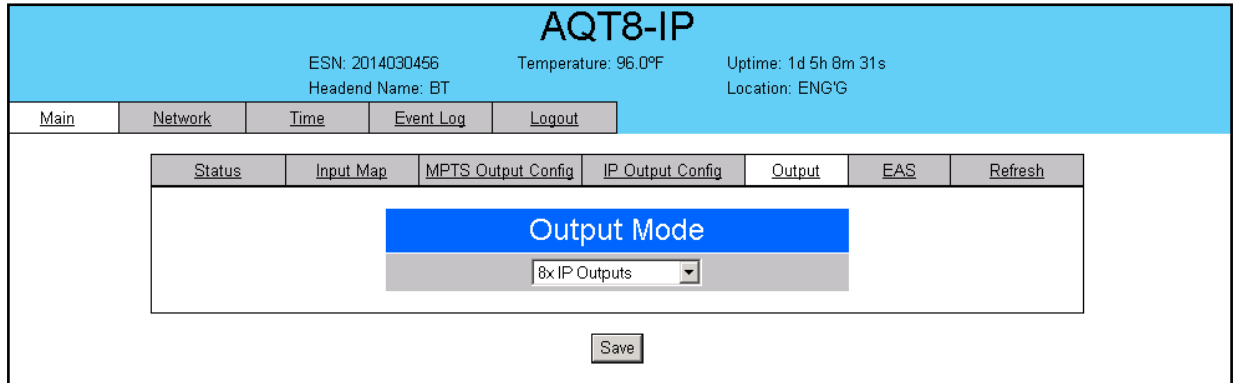


FIGURE 6.6 - "OUTPUT" Screen

6.7 "Main > EAS" Screen

The "Main > EAS" screen 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.

AQT8-IP

Uptime: 3d 1h 25m 51s
 Location: Engineering Bench

ESN: 2014010197

Temperature: 97.4°F

Headend Name: BT/Denis Rack

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

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

IP Information

1 Control Port MAC Address: 00:14:39:00:3D:50
 Control Port IP Address: 172.16.150.38
 Control Port Subnet Mask: 255.255.255.0
 Control Port Default Gateway: 172.16.150.254

GigE Port MAC Address: 00:14:39:00:3D:51
 GigE IP Address: 192.168.253.1
 GigE Subnet Mask: 255.255.255.0
 GigE Default Gateway: 172.16.70.254

Software Version: 1.0.0 Prerelease 25
 CPU Version: 1.6
 MUX Version: 1.3
 Unit Serial Number: 2014010197
 Headend Name: BT/Denis Rack
 Location: Engineering Bench

Event Log Destination: 172.16.70.2
 Log Destination Port #: 514

EAS Configuration

2 EAS Stream Source IP:
 EAS Stream Source Port:

3 EAS Source RTP / UDP: RTP UDP
 4 EAS Source IP / ASI: IP ASI

EAS Stream Info

Status	PID / Program	Bit Rate
EAS Enabled	32 / PMT 2 (Groupier)	4.5 MBit/s
	33 / MPEG-2 Video	4.1 MBit/s
	36 / AC3 Audio ()	0.4 MBit/s

EAS Testing Facilities

5 EAS Test Duration:
 EAS Test: 6

7 EAS Override:



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 **EAS IP address.**
- 2 **EAS IP Port.**
- 3 EAS IP protocol, options are **RTP&UDP.**
- 4 EAS source selection is **IP or ASI .**
- 5 Manual testing of EAS functionality. Test duration can be 1,5,10,15,30,45 or 60 seconds.
- 6 Press **Initiate EAS test** to begin streaming EAS source.
- 7 **Override** the external EAS trigger by either forcing enabled or disable.

6.8 "Main > Refresh" Screen

The "Main > Refresh" tab can be clicked while you are on any of the following sub-tabs screens: "Status", "Inputs", and "Output". 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.

6.9 "Network" Screen

The "Network" screen (Figure 6.9) is a user-configurable screen where the following parameters are displayed or configured:

The screenshot shows the "AQT8-IP" network configuration interface. At the top, it displays system information: ESN: 2014010197, Temperature: 102.7°F, Uptime: 14d 4h 18m 8s, and Location: Engineering Bench. Below this is a navigation bar with tabs for "Main", "Network", "Time", "Event Log", and "Logout". The "Network" tab is active. The main content area lists various network parameters, each with a numbered callout (1-15) and a corresponding value or input field. At the bottom, there is a "Save" button with callout 16.

Callout	Parameter	Value
1	Control Port MAC Address:	00:14:39:00:3D:50
2	GigE Port MAC Address:	00:14:39:00:3D:51
3	Software Version:	1.0.0 Prerelease 18
4	CPU Version:	1.10
5	MUX Version:	1.1
6	Unit Serial Number:	2014010197
7	Headend Name:	<input type="text"/>
8	Location:	<input type="text"/>
9	Login Timeout (Minutes):	15
10	Control Port IP Address:	172.16.150.38
11	Control Port Subnet Mask:	255.255.255.0
12	Control Port Default Gateway:	172.16.150.254
13	GigE Port IP Address:	192.168.253.1
14	Event Log Destination:	172.16.70.2
15	Log Destination Port #:	514
16	Save Button	Save

FIGURE 6.9 - "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 **Ethernet 2 MAC Address:** indicates the MAC Address of the “Data Out 1GigE” Port.
- 3 **Software Version:** indicates the software version of the unit.
- 4 **CPU Version:** indicates the current version
- 5 **MUX Version:** indicates the current version
- 6 **Unit Serial Number:** indicates the unit’s serial number.
- 7 **Headend Name:** a user-defined field to make identification easier.
- 8 **Location:** another user-defined field to make identification easier.
- 9 **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.
- 10 **Control Port IP Address:** see 10 of Section 6.10 for details.
- 11 **Control Port Subnet Mask:** see 11 of Section 6.10 for details.
- 12 **Control Port Default Gateway:** see 12 of Section 6.10 for details.
- 13 **GigE Port IP Address:** see 13 of Section 6.10 for details.
- 14 **Event Log Destination:** see 14 of Section 6.10 for details.
- 15 **Log Destination Port #:** see 15 of Section 6.10 for details.
- 16 **Click save to store changes**

6.10 "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 6.10 by typing the URL of the unit followed by a forward slash and Admin.html, for example:

http://172.16.70.1/Admin.html.

AQT8-IP
ESN: 2014010197 Temperature: 102.6°F Uptime: 14d 4h 25m 37s
Headend Name: BT/Denis Rack Location: Engineering Bench

Main Network Time Event Log Logout

Control Port MAC Address: 00:14:39:00:3D:50
GigE Port MAC Address: 00:14:39:00:3D:51
Unit Serial Number: 2014010197

1 Login: Admin
2 Current Password: ****
3 New Password:
4 Confirm New Password:
5 Guest Login: Guest
6 Current Guest Password:
7 New Guest Password:
8 Confirm Guest Password:

9 System Watchdog: Disabled

10 Control Port IP Address: 172.16.150.38
11 Control Port Subnet Mask: 255.255.255.0
12 Control Port Default Gateway: 172.16.150.254
13 GigE Port IP Address: 192.168.253.1
14 Event Log Destination: 172.16.70.2
15 Log Destination Port #: 514
16 Time Server IP: 172.16.70.2

17 Syslog Errors: Enabled Disabled
18 Syslog Informational: Enabled Disabled
19 Syslog Feedback: Enabled Disabled

Save

Figure 6.10

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 Subnet Mask is 172.16.70.254.
- 13 **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.
- 14 **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.
- 15 **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.
- 16 **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.
- 17 **Syslog Errors:** is to enable/disable forwarding error messages (in red font) to a Syslog. The factory default value is disabled.
- 18 **Syslog Informational:** is to enable/disable the unit to forward information messages (in blue font) to a Syslog. The factory default value is disabled.
- 19 **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.

6.11 "Time" Screen

The "Time" screen (Figure 6.11) 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 6.10 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 6.11 is selected "Yes".

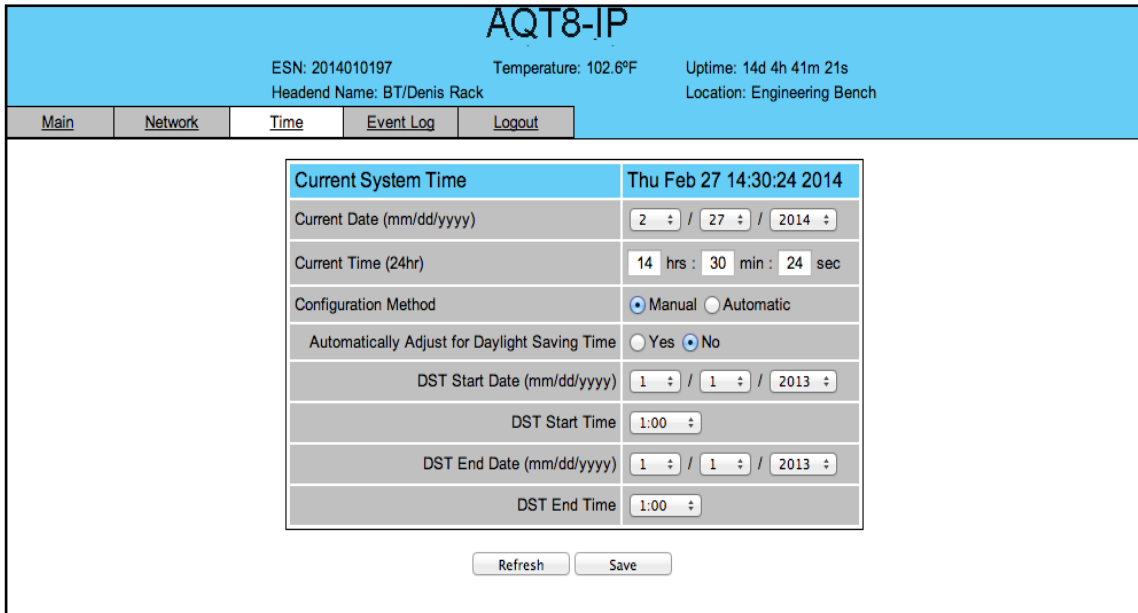


FIGURE - 6.11 - "Time" Screen

6.12 "Event Log" Screen

The "Event Log" screen (Figure 6.12) 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 6.10 for details). The lines are color coded as follows:

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

Figure 6.12

- 1 **Event Log Destination:** see of Section 6.10 for details.
- 2 **Log Destination Port:** see of Section 6.10 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 error log on the screen. 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.

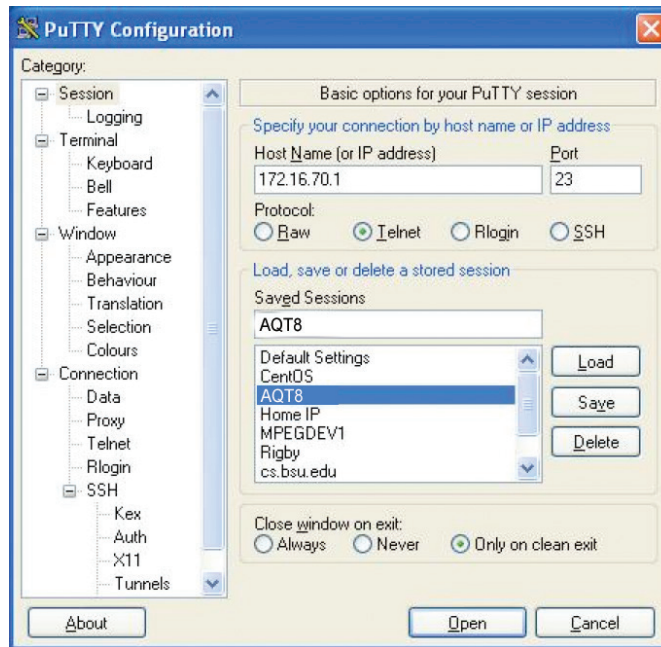
Telnet to AQT8:

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.

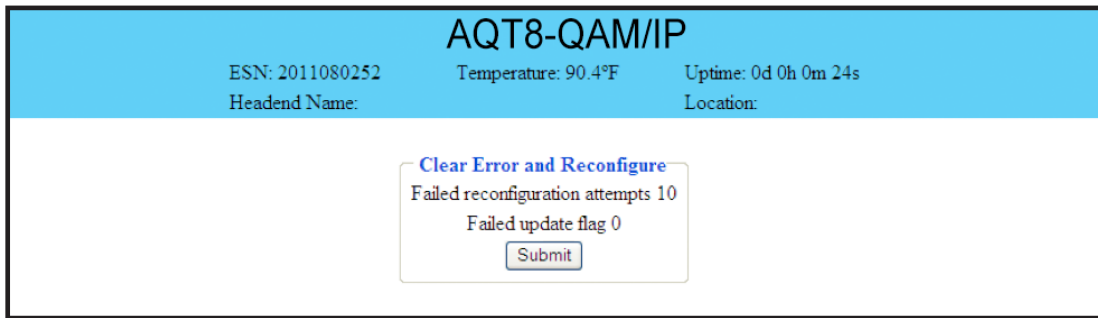


FIGURE 6.14

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) Reset switch 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 switch.

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 4 of Section 5.6 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 4 of Section 5.6 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 of Section 5.6 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 4 of Section 5.6 for details).

iv) Select Play.

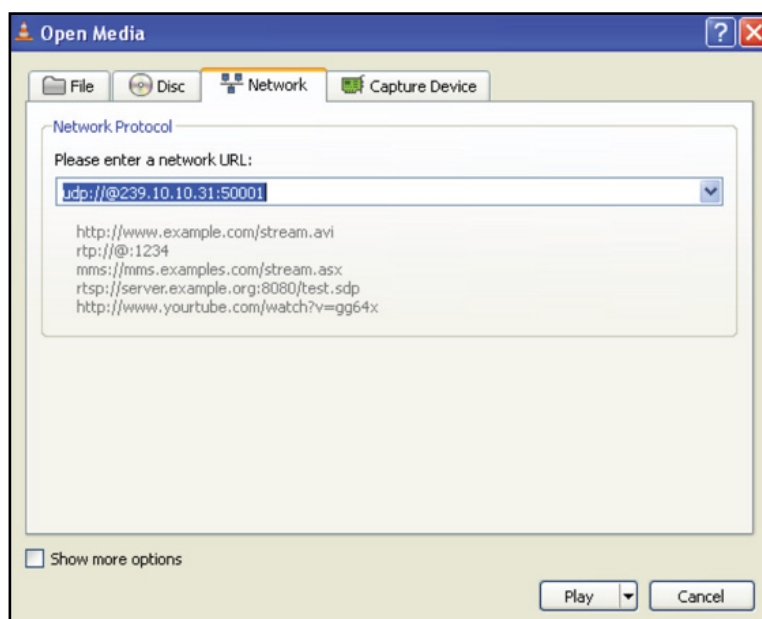


FIGURE 6.15

NOTES

NOTES

Limited Warranty

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