ATSC/QAM
Transmodulator

Stock #	Model Name	Description
6280B	AQT8-IP	8x8VSB/QAM Input and IP Outputs

Product Introduction

The **AQT8-IP** allows the user to create a custom IP output from off-air and/or QAM input sources. The unit accepts eight 8VSB off-air or QAM sources and simultaneously outputs these SPTS and/ or MPTS programs in IP. At the same time, the **AQT8-IP** can be configured in Pass Through mode, which directly maps the demodulated RF port content in MPTS format to IP output.

The **AQT8-IP** can accept encrypted QAM sources, and output the encrypted IP transport streams programs in MPTS or SPTS formats, while preserving the MPEG tables (PAT, PMT, PSIP, VCT, and MGT) from the source. The unit allows the user to change the PID, program number, short name, and major/minor channel (PSIP) information on any program.

The **AQT8-IP** features Emergency Alert System (EAS) program switching through either an ASI or IP format EAS input, and terminal block contacts for triggering EAS messages.
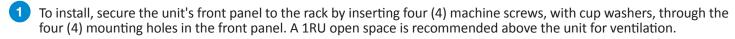
Before You Begin

Unpacking the Unit

You will find the following Items in the box:

- AQT8-IP Model (QTY=1)
- Power Cord with IEC C13 line socket and 3-pin Type B NEMA 5 plug (QTY=1)
- Blonder Tongue part# 515102875A - cross link Ethernet cable assembly (QTY=1)

Step 1: Setup and Install of the Unit

The AQT8 is designed to be installed in a standard 19-inch (483 mm) rack (EIA 310-D, IEC 60297, and DIN 41494 SC48D).

1 To install, 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. A 1RU open space is recommended above the unit for ventilation.

> **DO NOT BLOCK THE UNIT'S AIR INTAKE OR AIR DISCHARGE OPENINGS.**
>
> **Unit performance will be degraded without proper ventilation.**
> **Excessive heat will shorten the life of the unit.**

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

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

Step 2: Connecting to a PC/Laptop

ETHERNET ACCESS:

Local or remote communication with the unit is only possible through a GUI-based menu via web browser (Chrome or Firefox recommended). Before you can communicate with the unit, you must configure your computer's IP address to be in the same subnet as the unit's default IP address. To do so, follow these steps:

1 Connect one end of the Ethernet cable to the "**GbE Control**" port on the unit's rear-panel interface. Connect the other end of the Ethernet cable to your computer.

Step 2: Connecting to a PC/Laptop (continued)

2 The factory default IP address of the Control port is "**172.16.70.1**". In order to communicate with the Control port, you must first change your computer's IP address.

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

(a) On your computer, navigate to the "Network and Sharing Center".

(Note: It can be found using the search box in the Start Menu or for Windows 8.x, the Start Screen)

(b) Once open, click on "Change Adapter Settings" on left hand side of the window.

(c) Right-click on the "Local Area Connection", and then click on the "Properties".

(d) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol Version 4 (TCP/IPv4)".

(e) A dialog box entitled "Internet Protocol Version 4 (TCP/IPv4) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

IP address: **172.16.70.2**

Subnet mask: **255.255.255.0**

No need to enter a value for the Default Gateway.

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

Step 3: Login to the Unit

An Ethernet Cable should be connected between your PC and the "**GbE Control**" port on the unit. Open a Web browser (Chrome or Firefox recommended) and type **http://172.16.70.1** in to your web browser to view and configure your AQT8. Enter the username "**Admin**" and "**pass**" as the password and click [LOG IN].

Step 4: Basic Configuration

System Status

Once you are logged into the unit, you will be presented with the "**System Status**" page ("**Status**" tab):

This section provides status messages, temperature, and SNR status levels for the system and each RF Input. It displays the general health and unit information at a glance. The information is provided as a quick way to monitor the module or assist with troubleshooting issues that may arise.

The status messages for detected issues can indicate issues that need troubleshooting. Further information on error and other status messages can be obtained using the Event Log. To see a more in-depth log of event messages, click the "**Log**" tab located on the right side of the navigation menu at the top.
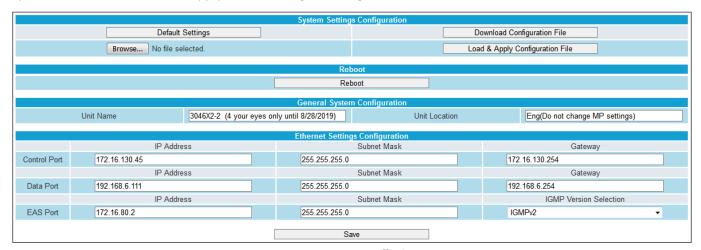
Step 4: Basic Configuration (continued)

System Status		
System Status		Ok
System Temperature		131.0°F / 55°C
System Uptime		1 days, 00:45:03
Model Number		AQT8-QAM/IP

Detected Issues		
No issues detected		

RF Input Status		
	Source	RF Channel	SNR
RF Input 1	Common	Ch. 36 / 605 MHz	SNR Ok : 33.3 dB
RF Input 2	Common	Ch. 13 / 213 MHz	SNR Ok : 30.1 dB
RF Input 3	Common	Ch. 26 / 545 MHz	SNR Ok : 31.6 dB
RF Input 4	Common	Ch. 11 / 201 MHz	SNR Ok : 26.4 dB
RF Input 5	Dedicated	Ch. 51 / 387 MHz	SNR Ok : 38.6 dB
RF Input 6	Common	Ch. 7 / 177 MHz	SNR Ok : 28.9 dB
RF Input 7	Dedicated	Ch. 53 / 399 MHz	SNR Ok : 38.2 dB
RF Input 8	Common	Ch. 24 / 533 MHz	SNR Ok : 27.9 dB

IP Output Status	
Link Status: 1000 Mb/S	Link Usage: 101.87 Mb/S (0%)
TS Source	Output IP:Port
RF Input 1	239.10.10.13:2001
TS 1	239.10.10.11:2001
MTS 1	239.10.10.14:2001

RF Output Status		
	TS Source	RF Channel
RF Output 1	RF Input 1	Ch. 2 / 57 MHz
RF Output 2	TS 1	Ch. 3 / 63 MHz
RF Output 3	MTS 2	Ch. 4 / 69 MHz
RF Output 4	RF Input 4	Ch. 5 / 79 MHz
RF Output 5	RF Input 5	Ch. 6 / 85 MHz
RF Output 6	RF Input 6	Ch. 7 / 177 MHz
RF Output 7	RF Input 7	Ch. 8 / 183 MHz
RF Output 8	TS 2	Ch. 9 / 189 MHz

System Information	
Serial Number	2019050624
Software Version	1.0.0.1_20190716
Firmware Version	1.4
Modulator Version	1.0

Status Page - Full View

System Settings

The "**System**" tab allows configuration of system settings including unit identification and Ethernet settings for the Control, Data, and EAS Ports. The user can also reboot the unit and upload/download configuration files. Once downloaded, the settings can be applied to the unit or the user can choose to set the unit back to the default factory settings with the click of a button.

The following Ethernet Settings can be changed: IP address, Subnet Mask, and Gateway. IGMP version is available for the EAS port. Click "**Save**" in order to apply new or changed settings.

System Settings Configuration		
Default Settings		Download Configuration File
Browse... No file selected.		Load & Apply Configuration File

Reboot
Reboot

General System Configuration			
Unit Name	3046X2-2 (4 your eyes only until 8/28/2019)	Unit Location	Eng(Do not change MP settings)

Ethernet Settings Configuration		
	IP Address	Subnet Mask	Gateway
Control Port	172.16.130.45	255.255.255.0	172.16.130.254
	IP Address	Subnet Mask	Gateway
Data Port	192.168.6.111	255.255.255.0	192.168.6.254
	IP Address	Subnet Mask	IGMP Version Selection
EAS Port	172.16.80.2	255.255.255.0	IGMPv2 ▼

Save

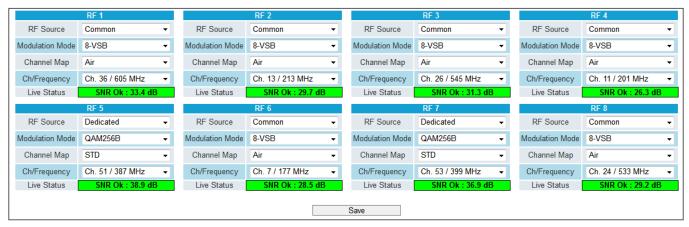**System Page - Full View**

⚠ **REMINDER:**
If the IP Address is changed, the procedure in Step 3 <u>must</u> be repeated using the new IP address in place of the default IP address in order to re-access the control panel.

Step 5: Transcoder Configuration

RF Input

The "**RF Input**" tab allows set up of the RF Input information. Live Status shows whether or not the RF Input is locked (green background), with displayed SNR information, or "Not Locked" (red background). See below for examples.
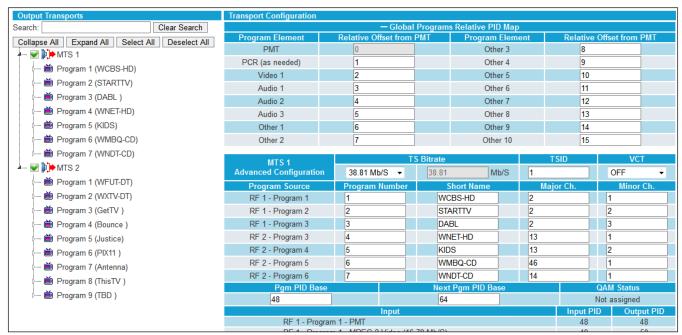
RF 1		RF 2		RF 3		RF 4	
RF Source	Common	RF Source	Common	RF Source	Common	RF Source	Common
Modulation Mode	8-VSB	Modulation Mode	8-VSB	Modulation Mode	8-VSB	Modulation Mode	8-VSB
Channel Map	Air	Channel Map	Air	Channel Map	Air	Channel Map	Air
Ch/Frequency	Ch. 36 / 605 MHz	Ch/Frequency	Ch. 13 / 213 MHz	Ch/Frequency	Ch. 26 / 545 MHz	Ch/Frequency	Ch. 11 / 201 MHz
Live Status	SNR Ok : 33.4 dB	Live Status	SNR Ok : 29.7 dB	Live Status	SNR Ok : 31.3 dB	Live Status	SNR Ok : 26.3 dB

RF 5		RF 6		RF 7		RF 8	
RF Source	Dedicated	RF Source	Common	RF Source	Dedicated	RF Source	Common
Modulation Mode	QAM256B	Modulation Mode	8-VSB	Modulation Mode	QAM256B	Modulation Mode	8-VSB
Channel Map	STD	Channel Map	Air	Channel Map	STD	Channel Map	Air
Ch/Frequency	Ch. 51 / 387 MHz	Ch/Frequency	Ch. 7 / 177 MHz	Ch/Frequency	Ch. 53 / 399 MHz	Ch/Frequency	Ch. 24 / 533 MHz
Live Status	SNR Ok : 38.9 dB	Live Status	SNR Ok : 28.5 dB	Live Status	SNR Ok : 36.9 dB	Live Status	SNR Ok : 29.2 dB

Save

RF Input Page

Multiplexing

The "**Cherry Picking**" tab and "**2:1 Multiplexing**" tab allow the user to set up the transport streams within the unit. The interface controls for both tab sections work very similar for each section but have their specific functions and restrictions.

The sub-tabs under each section are TS Select and TS Config. TS Select will allow the user to choose the programs to add to the TS or MTS. When TS selection has been completed, click on the TS Config tab to set up the transport stream configurations.
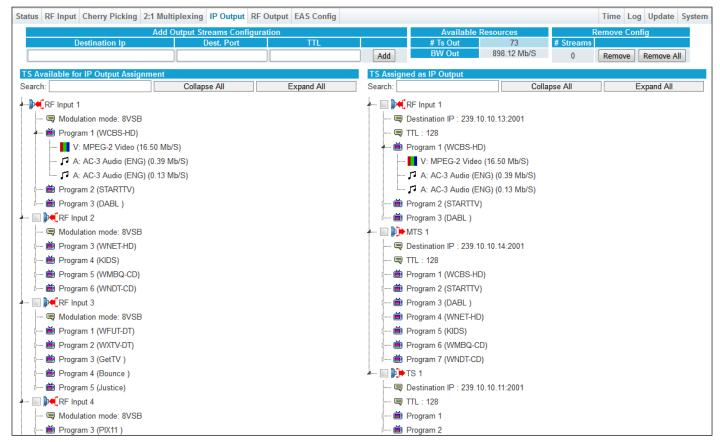
TS Select	TS Config	

The TS Config has a left-side column which enables the user to select the TS for configuration inclusion. The TS Config settings include: **TSID**, **VCT**, **Program Number**, **Short Name**, **Major Channel**, **Minor Channel**. The **Program PID base** and **Next Program PID Base** options can be toggled on when clicking the ➕ next to "Basic Configuration". In addition, are the Global Programs Relative PID Map settings which allow setup to offset numbers from the PMT.

Output Transports

Search: [   ] [Clear Search]
[Collapse All] [Expand All] [Select All] [Deselect All]

- ☑ MTS 1
  - Program 1 (WCBS-HD)
  - Program 2 (STARTTV)
  - Program 3 (DABL)
  - Program 4 (WNET-HD)
  - Program 5 (KIDS)
  - Program 6 (WMBQ-CD)
  - Program 7 (WNDT-CD)
- ☑ MTS 2
  - Program 1 (WFUT-DT)
  - Program 2 (WXTV-DT)
  - Program 3 (GetTV)
  - Program 4 (Bounce)
  - Program 5 (Justice)
  - Program 6 (PIX11)
  - Program 7 (Antenna)
  - Program 8 (ThisTV)
  - Program 9 (TBD)

Transport Configuration

— Global Programs Relative PID Map

Program Element	Relative Offset from PMT	Program Element	Relative Offset from PMT
PMT	0	Other 3	8
PCR (as needed)	1	Other 4	9
Video 1	2	Other 5	10
Audio 1	3	Other 6	11
Audio 2	4	Other 7	12
Audio 3	5	Other 8	13
Other 1	6	Other 9	14
Other 2	7	Other 10	15

MTS 1 Advanced Configuration	TS Bitrate		TSID	VCT
	38.81 Mb/S	38.81 Mb/S	1	OFF
Program Source	Program Number	Short Name	Major Ch.	Minor Ch.
RF 1 - Program 1	1	WCBS-HD	2	1
RF 1 - Program 2	2	STARTTV	2	2
RF 1 - Program 3	3	DABL	2	3
RF 2 - Program 3	4	WNET-HD	13	1
RF 2 - Program 4	5	KIDS	13	2
RF 2 - Program 5	6	WMBQ-CD	46	1
RF 2 - Program 6	7	WNDT-CD	14	1

Pgm PID Base	Next Pgm PID Base	QAM Status
48	64	Not assigned

Input		Input PID	Output PID
RF 1 - Program 1 - PMT		48	48

Cherry Picking - Configuration Settings (example)

Step 6: IP Output

The "**IP Output**" tab allows the user to add and configure up to x64 IP outputs (8vsb or QAM). In addition, it can also output x8 RF to IP pass thrus and x4 2:1 mux MTS. The IP Output can handle up to 1 GB of bandwidth.

IP Output - Configuration Settings (example)

Additional Configuration

In addition to the steps in this guide, further configuration of the unit is as follows:

EAS: This tab allows the user to configure the EAS settings for the unit. The EAS trigger is either by Dry contact closure or Voltage. The EAS source can be an IP or ASI input from the rear of the unit.

Time: This tab allows the user to set up the time settings for the unit and event log.

Log: This tab displays system log messages to assist in troubleshooting any issues.

Update: This tab provides a way for the user to update the firmware of the unit.

Admin: This page allows the user to change the login and password of the unit.

Troubleshooting

For technical support please contact us at 1-800-523-6049 between the hours of 8am and 5pm EST.

Please refer to the User Manual for more in-depth information about the unit.

Product and Documentation Updates

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

Returning Product for Repair (or Credit)

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