DVISm

Patent Pending

DVISm - Mini Digital Video Insertion System

QUICK START GUIDE

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SAFETY

1. Safety

WARNING! FAILURE TO FOLLOW THE SAFETY PRECAUTIONS LISTED BELOW MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. PLEASE READ AND COMPLY WITH THE FOLLOWING:

WATER AND MOISTURE: Care should be taken to prevent entry of splashed or dripping water, other liquids, and physical objects through enclosure openings.

DAMAGE: Do not operate the device if damage to any components is suspected.

POWER SOURCES: Only connect the unit to a power supply of the type and capacity specified in the operating instructions or as marked on the device.

GROUNDING OR POLARIZATION: Electrical grounding and polarization means must not be defeated.

POWER CORD PROTECTION: Route power supply cord to prevent damage by external objects. Pay particular attention to the exit point from the device and plug.

FUSING: If your device is equipped with a fused receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

SERVICE: Do not attempt to service the device beyond procedures provided the operating instructions. All other servicing should be referred to qualified service personnel.

MODIFICATIONS: Modifications should not be made to the device or any of its components for applications other than those specified in the operating instructions.

SAFETY CODES AND REGULATIONS: The device should be installed and operated in compliance with all applicable local safety by-laws, codes and regulations.

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START-UP INSTRUCTIONS

2. Start-up Instructions

Figure 1: DVISm Unit

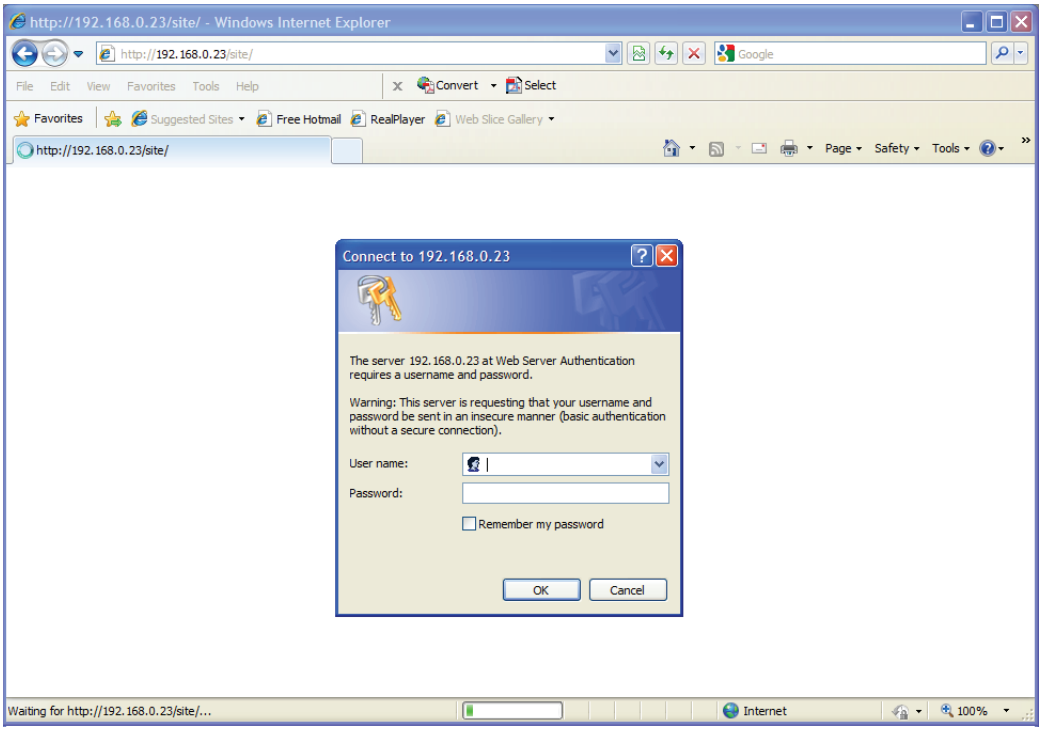
IMPORTANT: Do not connect the DVISm RF output signal to a network before reading these instructions and/or ensuring that the RF level of the output signal is set appropriately (see section 2.4, RF Output).

2.1 Set-up

Set-up of the DVIS unit requires a laptop or desktop PC running Microsoft® Windows® and with available Ethernet connection (called the “management computer” in the following procedures). Network parameters of the management computer must be set appropriately for access to the DVIS remote management interface. The following procedures assume that the network address for the DVIS/DVISm unit is set to the factory default setting (192.168.0.23). If the unit to be configured has a different network address, adjust the network parameters to suit.

1. Set the management computer’s Ethernet interface to a static IP address on the 192.168.0.x subnet.
    a) From the Control Panel, open **Network Connections** and select the connection associated with the Ethernet adapter to be used for connecting to the DVIS/DVISm (e.g., Local Area Connection).
    b) Right click on the connection and select **Properties**.
    c) Select **Internet Protocol (TCP/IP)** and click **Properties**.
    d) Click the selection box beside **Use the following IP address** to enter a check mark in the box.
    e) In the **IP address** field, enter 192.168.0.x (where x represents any number from 1-253 except 23).
    f) In the **Subnet mask** field enter 255.255.255.0.
    g) Click **OK** and then **OK** again in the previous window.
2. Connect the management computer’s Ethernet adapter to the DVIS/DVISm Ethernet port using a CAT5e crossover cable (supplied with the unit).
3. Connect the video source and audio source (if required), and turn these external sources on.
4. Connect the DVISm to the main power supply and switch the unit on. The green LED labelled POWER lights to indicate that the unit is on.
5. Allow the unit to boot for 90 seconds. While the unit is booting, the cooling fans may start to work, stop after few seconds, then start to work again.
6. On the management computer, open a web browser and enter **http://192.168.0.23/site** in the address field.

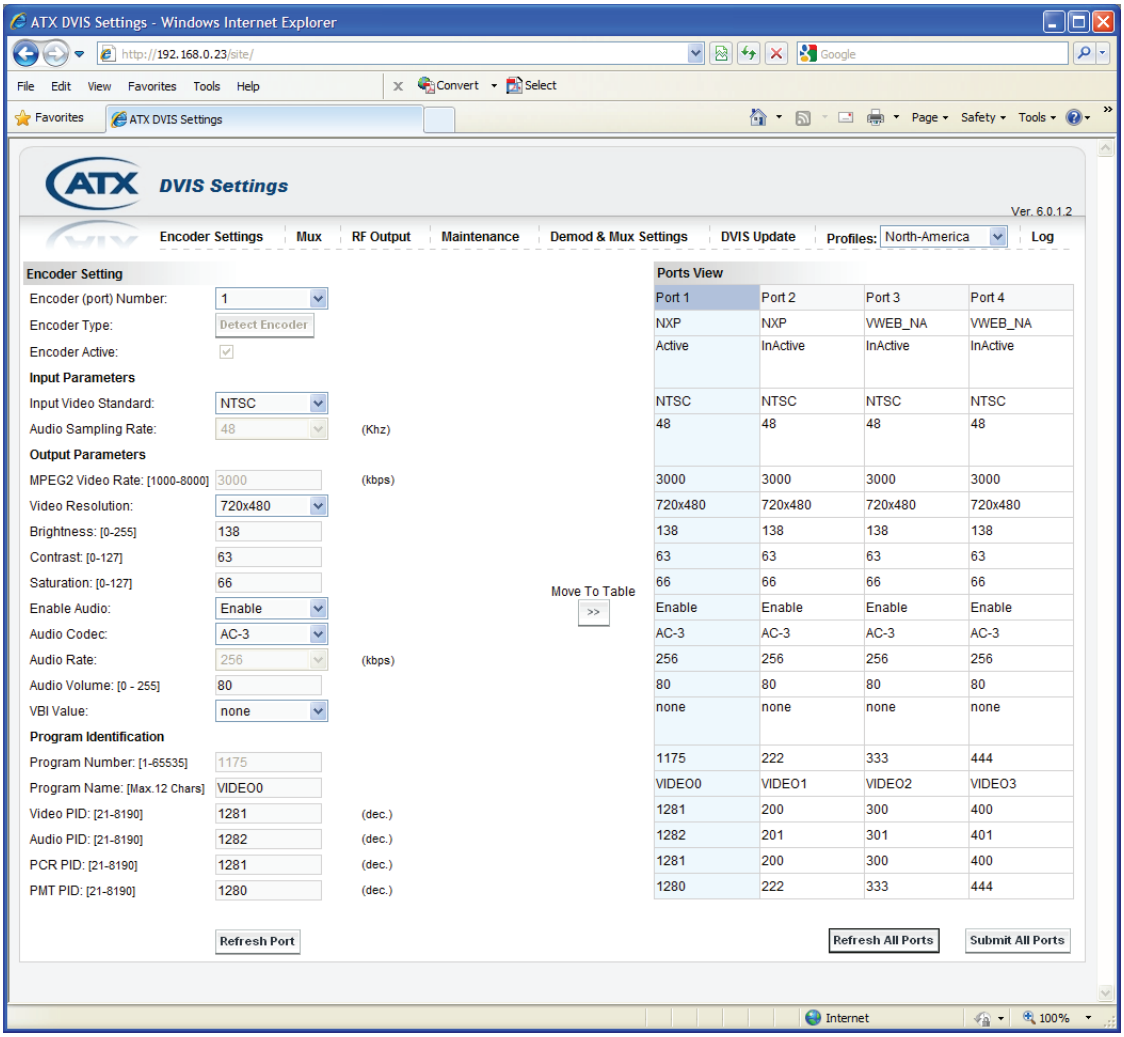
7. When the login screen appears, enter the **User name** and **Password** for the unit (the factory default for both of these fields is ‘atx’).



8. The DVIS GUI opens and displays the Encoder Settings screen, allowing further configuration.

2.2 Encoder Settings

The Encoder Settings screen allows setting video and audio parameters for MPEG encoding of applied baseband signals.



Ports 1, 2, 3, and 4 in this GUI correspond to slots 1 and 2 on the main unit front panel as follows:

Port 1: Slot 1 – Input A

Port 2: Slot 1 – Input B

Port 3: Slot 2 – Input A

Port 4: Slot 2 – Input B

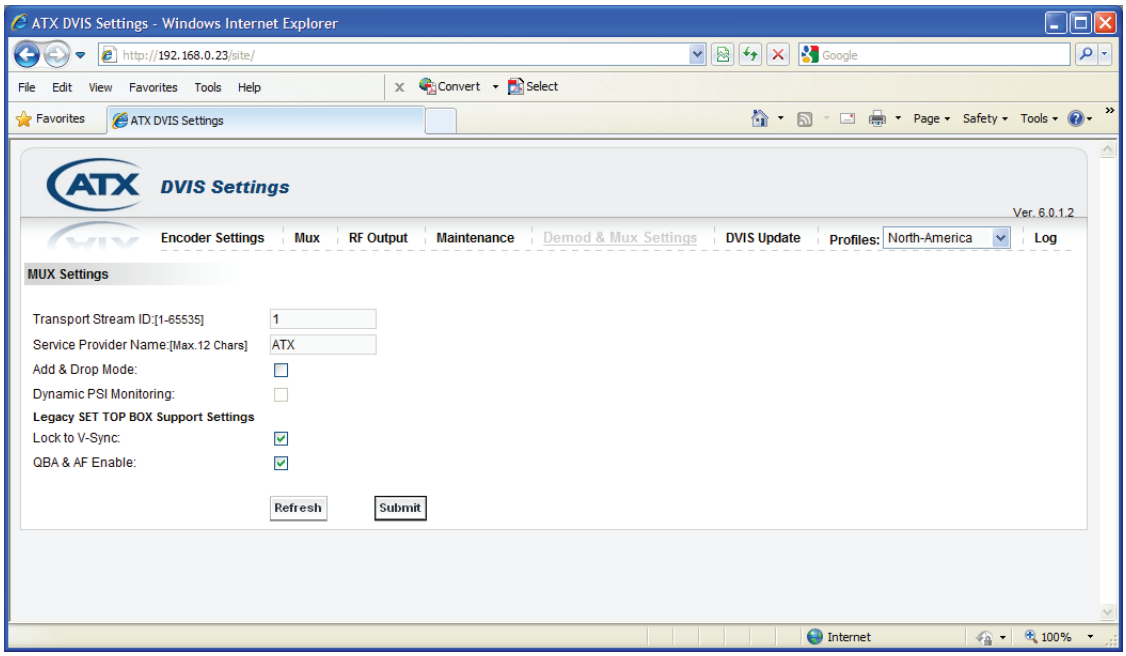
To change the settings for any port:

1. Type or select the appropriate port number in the **Encoder (port) Number** box.
2. Ensure that the **Encoder Active** checkbox is checked (required in order for the port to perform any encoding action) and change other settings as required (settings are self-explanatory). Where only certain values are allowed, the values are listed in a drop-down box. Settings that can not be changed from this screen are greyed out.
3. When all settings have been entered in the Encoder Setting section of this screen, click **Move to Table** to copy all parameters to the corresponding port in the Ports View section.
4. Enter settings for other ports in the same manner and copy to the Ports View section.
5. When all settings for all A/V ports are entered and transferred, click **Submit All Ports** to activate the new settings. If the settings are not activated and you open another GUI screen, the new settings will not be applied and will be lost. Each settings screen has to be executed on its own.

The video resolution options and Audio Codec available depend on the encoding card used and are displayed in the drop-down boxes for the particular card. NXP type cards encode 720x480, 480x480 and 352x480 video and both AC-3 and MPEG-1 audio. Vweb encoding cards can encode 720x480, 704x480, 544x480, 480x480, and 352x480 video but only AC-3 audio.

2.3 Mux Screen

In the Mux screen the Add/Drop multiplexing feature for incoming QAM streams can be enabled/disabled.



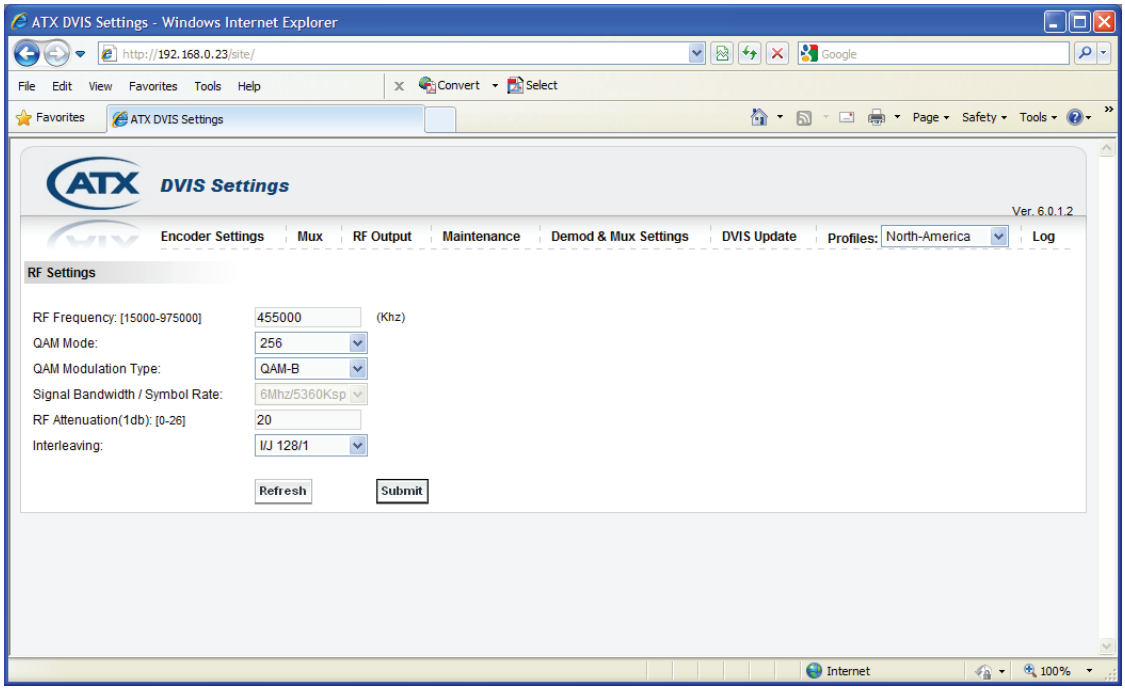
When Add/Drop is enabled, certain parameters in the DVISm GUI screens are not accessible; these fields are greyed out and inaccessible (Section 1.7, Demod & Mux Settings, shows which parameters are settable and which are locked).

QBA/AF processing of transport streams and lock to V-synch can also be enabled and disabled. QBA/AF processing and lock to V-synch are only required when DVISm signals are sent to certain legacy STBs.

When all settings have been completed, click **Submit** to activate the changes. If the settings are not activated and you open another GUI screen, the new settings will not be applied and will be lost. Each settings screen has to be executed on its own.

Settings that can not be changed from this screen are greyed out.

2.4 RF Output



The RF frequency output range is 15 to 975 MHz, entered in kHz without decimal points or commas. In the example above, a setting of 455 MHz is entered as 455000.

The QAM Mode drop-down box allows selection of 64QAM or 256QAM mode when QAM Modulation Type is set to QAM-B.

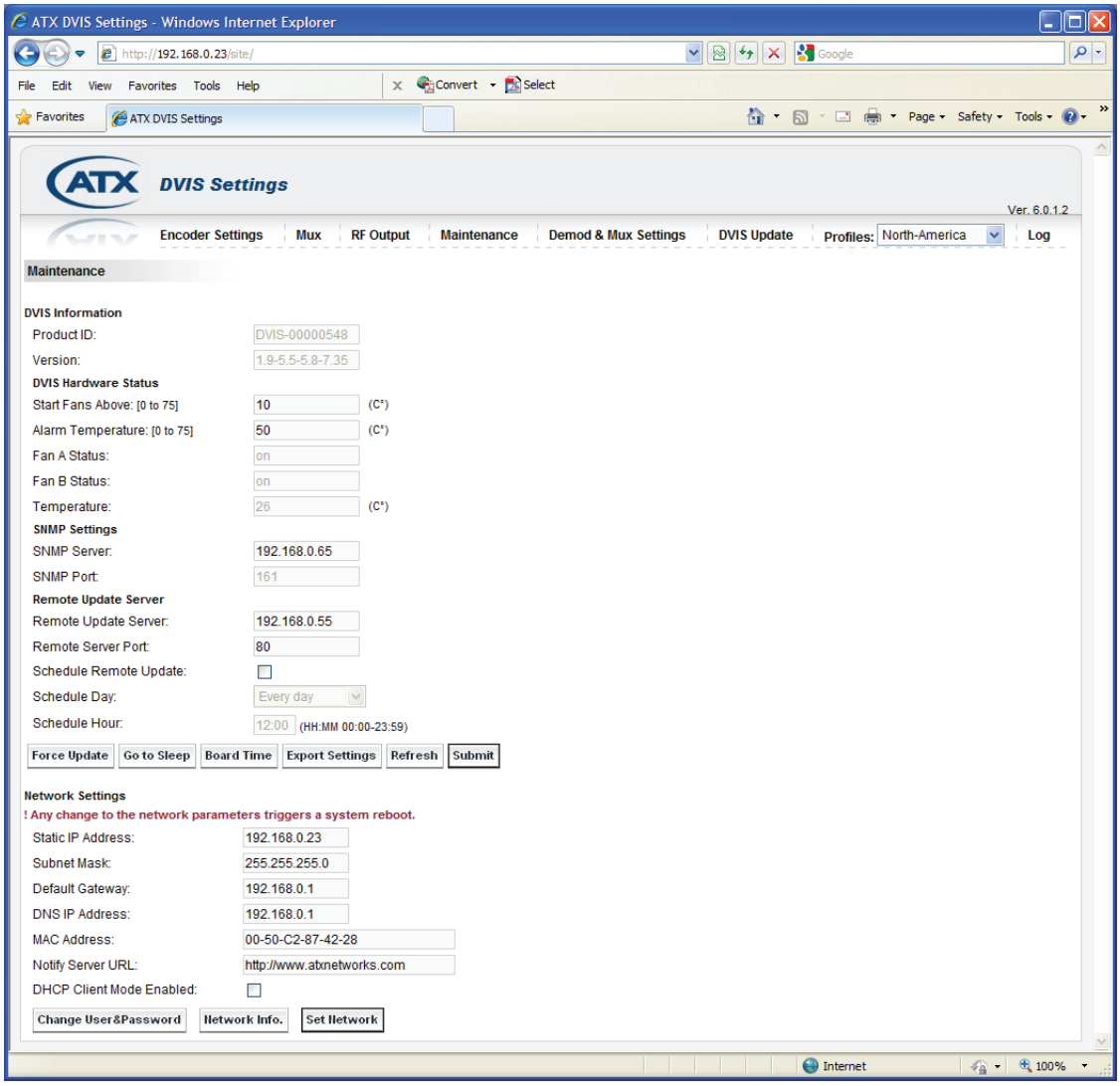
Signal Bandwidth & Symbol Rate are fixed to selected QAM-B settings as per the SCTE standard.

RF Attenuation range is 0-26 dB, entered as a whole number. For example, to attenuate the signal by 15 dB enter 15.

Interleaving should be left in its default mode, which is I/J 128/1.

When all settings have been completed, click **Submit** to activate the changes. If the settings are not activated and you open another GUI screen, the new settings will not be applied and will be lost. Each settings screen has to be executed on its own.

2.5 Maintenance

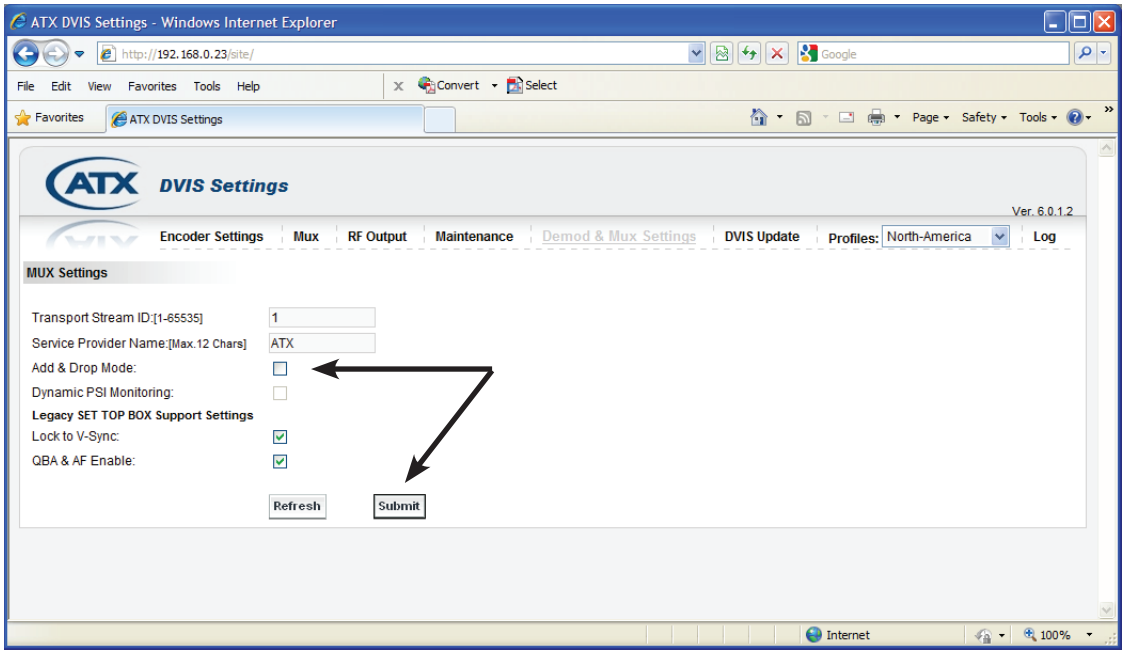


The Maintenance screen provides some status information, temperature threshold settings for fan start and alarm temperature, IP address setting, and DHCP Client control (check **DHCP Client Mode Enabled** to turn on).

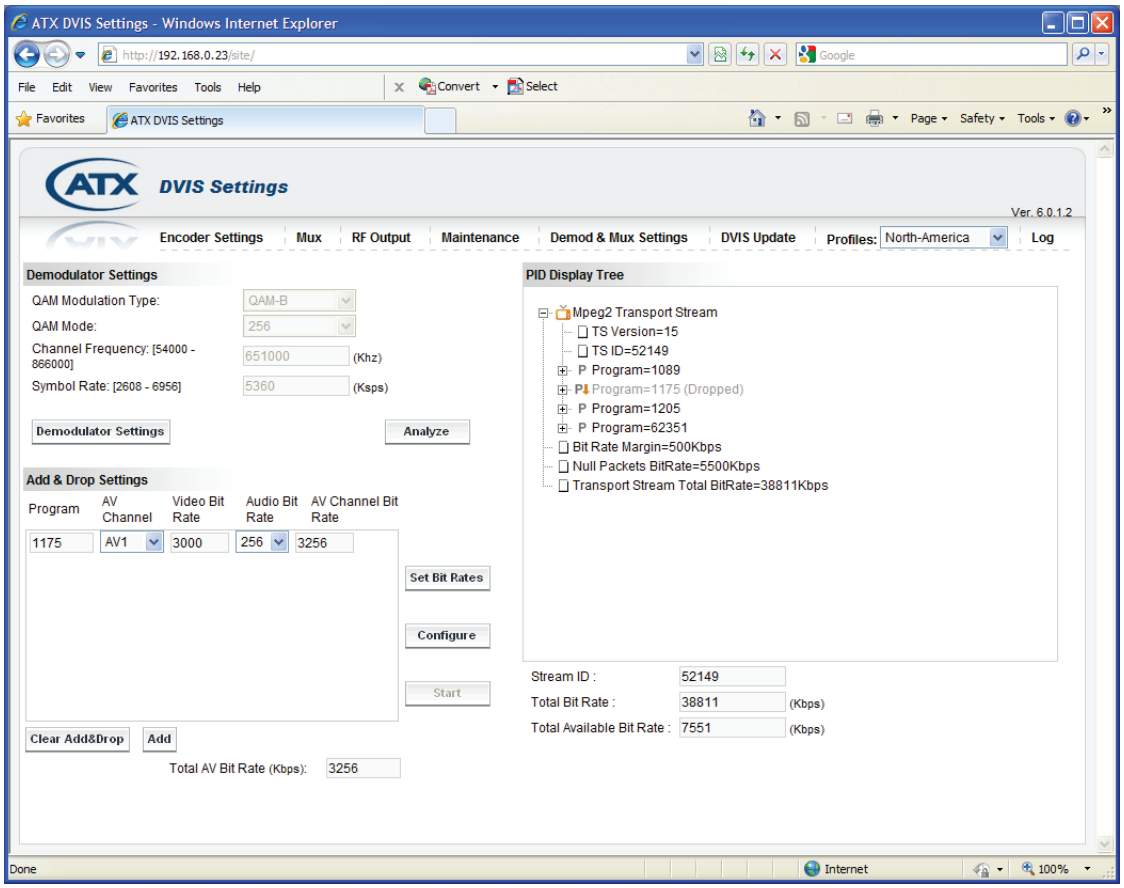
When all settings have been completed, click **Submit** to activate the changes. If the settings are not activated and you open another GUI screen, the new settings will not be applied and will be lost.

2.6 Demod & Mux Settings/Start-up

In order to access the Demod & Mux Settings screen, the **Add & Drop Mode** checkbox on the Mux screen must be enabled. To enable Add & Drop Mode, select the **Add & Drop Mode** check box then click **Submit**. To enable Dynamic PSI Monitoring, first enable Add & Drop Mode, then select the **Dynamic PSI Monitoring** checkbox and click **Submit**

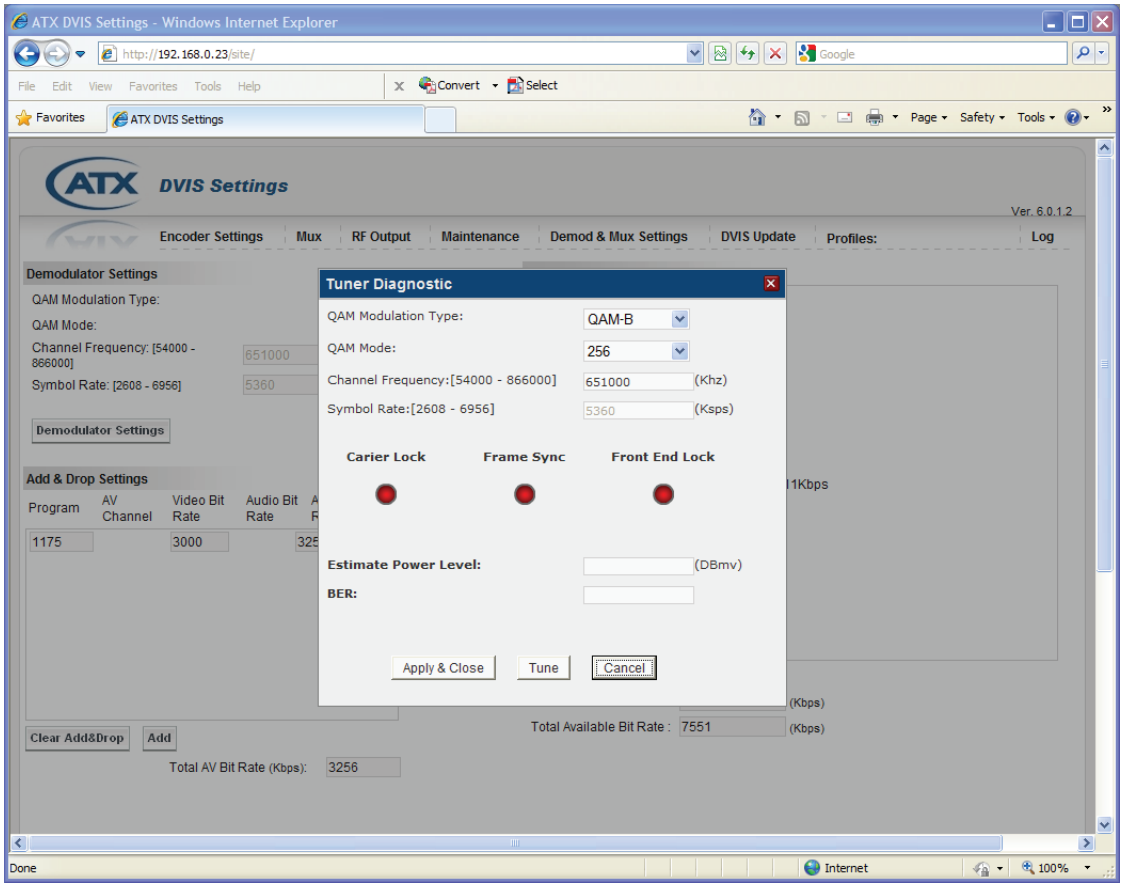


Click the Demod & Mux Settings tab to access the menu.



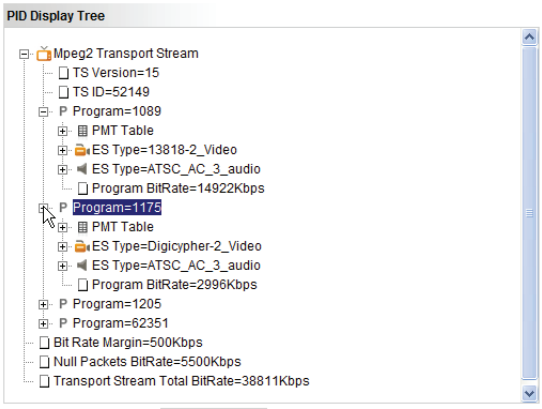
To analyze incoming QAM and perform Add/Drop Multiplexing:

1. Click **Demodulator Settings** to open the Tuner Diagnostic window.

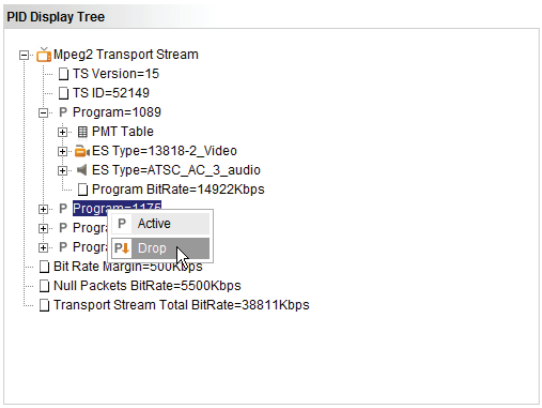


2. Select the QAM Modulation type and QAM mode. Enter the Center Frequency of the desired QAM channel (kHz).
3. For QAM-A/C mode enter the symbol rate. For QAM-B the rates are preset.
4. Click **Tune**. When the signal is tuned and locked, the Carrier Lock, Frame Sync, and Front End Lock indicators turn green and the Estimated Power Level and BER are indicated.
5. When properly tuned (all three indicators are green), click **Apply & Close** to apply the settings and return to the Demod & Mux Settings screen.
6. Click **Analyze** to analyze the selected QAM signal. A progress indicator displays the analysis time. Analysis can take more than a minute, depending on type of incoming QAM and the processing required. When the analysis is finished, the PID tree of the QAM channel appears in the PID Display Tree box.

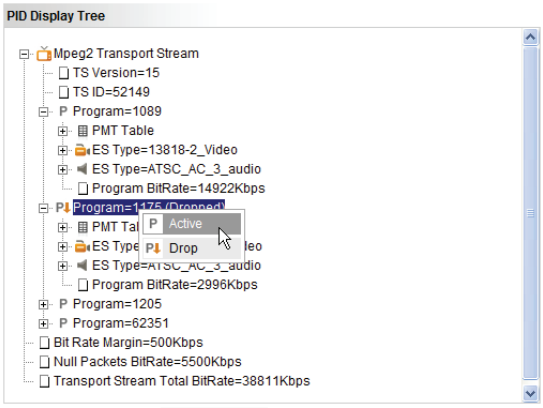
MPEG Program Numbers are indicated by "Program=" entries in the PID Display Tree. To expand the display of program parameters to show Program Bit Rate, Video PID, Audio PID, PMT PID and other parameters, click **+** in front of the tree entry.



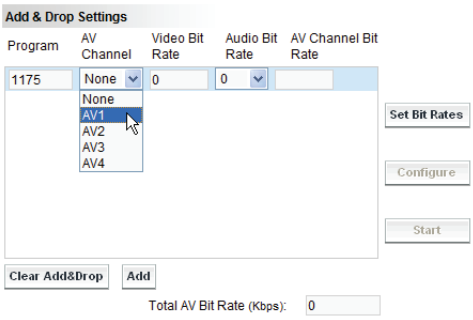
7. To drop a program, right-click the program in the PID Display Tree and select **Drop** from the drop-down list. The program is dropped from the processed stream and placed in the Add & Drop Settings box.



To reactivate a dropped program, right-click the program in the PID Display Tree and select **Active** from the drop-down list. The program is returned to the processed stream and removed from the Add & Drop Settings box.

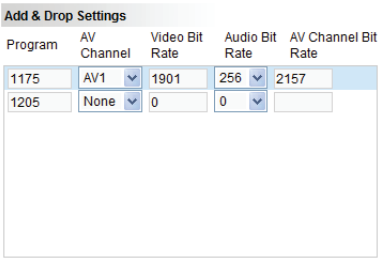


8. To insert a locally generated encoded program in the output QAM in place of the dropped program, select an encoder port to be assigned to the dropped program from the **AV Channel** drop-down list in the Add & Drop Settings dialog box.



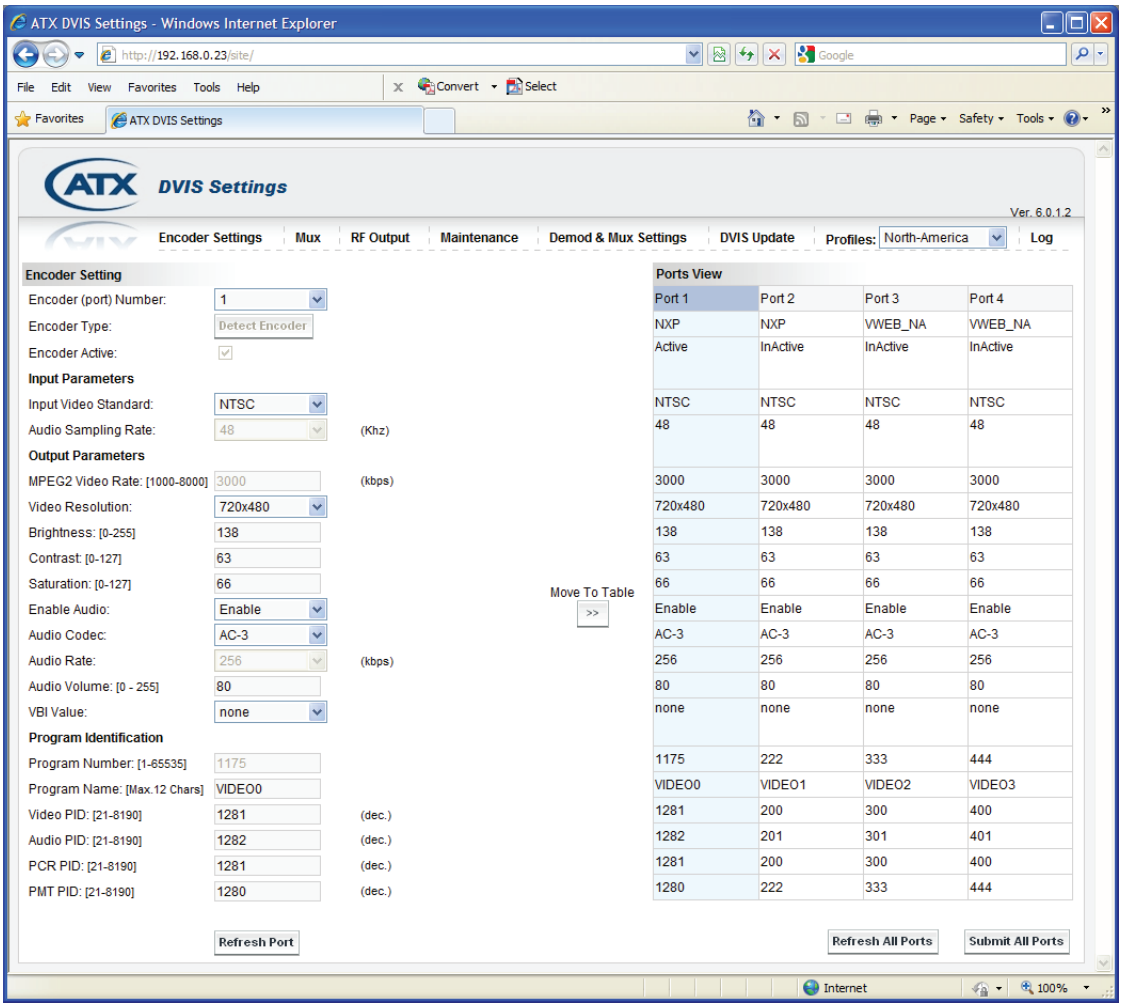
9. To calculate the available bit rate for program insertion, click **Set Bit Rates** (Note: there must be at least one AV channel assigned to a dropped program). The application analyzes the incoming stream to determine the available bps that can be allocated to the reinserted programs. This process may take a minute or more, depending on the type of incoming signals. A progress indicator displays the analysis time.
10. When the analysis is finished, the available bit rate for each inserted program is displayed in the Video Bit Rate column of the Add & Drop Settings box. If a different video bit rate is required for the inserted program, enter the new value in the Video Bit Rate column.

    CAUTION: The total Transport Stream bit rate cannot be higher than the total bit stream available for the selected QAM Mode.
11. Select the desired Audio Bit Rate. The complete program bit rate (the sum of the Video Bit Rate and Audio Bit Rate) is displayed as AV Channel Bit Rate.

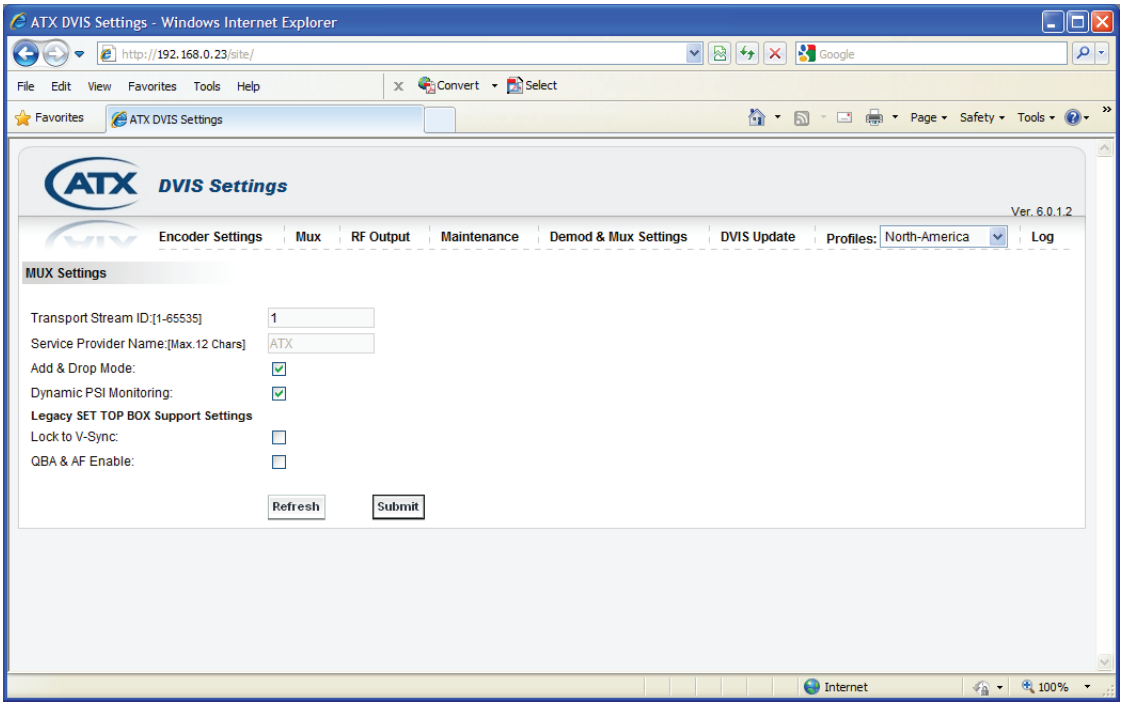


12. Click **Configure**.
13. When the configuration process is finished, click **Start**. The modified QAM stream is available at the RF Out port.

When the unit is operating in Add & Drop Mode, the Encoder Settings menu changes to show active ports as selected on the Demod & Mux Settings page. A number of the options are greyed out as they are set on the Demod & Mux Settings page.



Similarly, the Mux menu shows the status of Add & Drop Mode, Dynamic PSI monitoring, etc.; the RF Output menu shows output frequency, QAM Mode, etc.; and the Maintenance menu shows the status of the DVIS unit. Parameters that can not be changed are greyed out.



2.7 RF Output Connections

The encoded signal is supplied in QAM RF format at two RF outputs. MODULATOR OUTPUT provides a high level output directly from the QAM modulator. The signal from the QAM modulator also passes through a directional coupler and is combined with the incoming channel line-up to produce lower level output at RF OUT (approximately 20 dB level difference)

By default, the signal from RF OUT is used, which requires a jumper cable between the MODULATOR OUTPUT and TO COMBINING ports. If RF Attenuation is set to 0 dB in the RF Output screen, RF power levels are as follows:

MODULATOR OUTPUT: 58.5 ±1.5 dBmV

RF OUT: 36.5 +/- 1.5 dBmV

NOTE: It is strongly recommended that all unused RF ports on the DVISm front panel be terminated with 75 Ohm terminators when deploying the unit in the field.

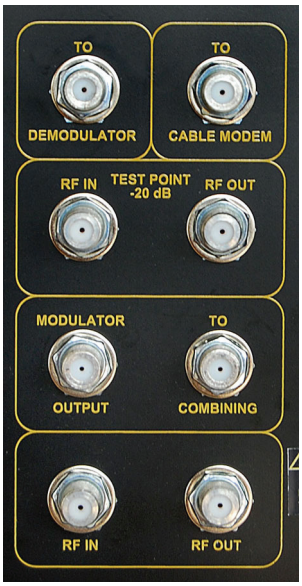


Figure 2: RF Outputs

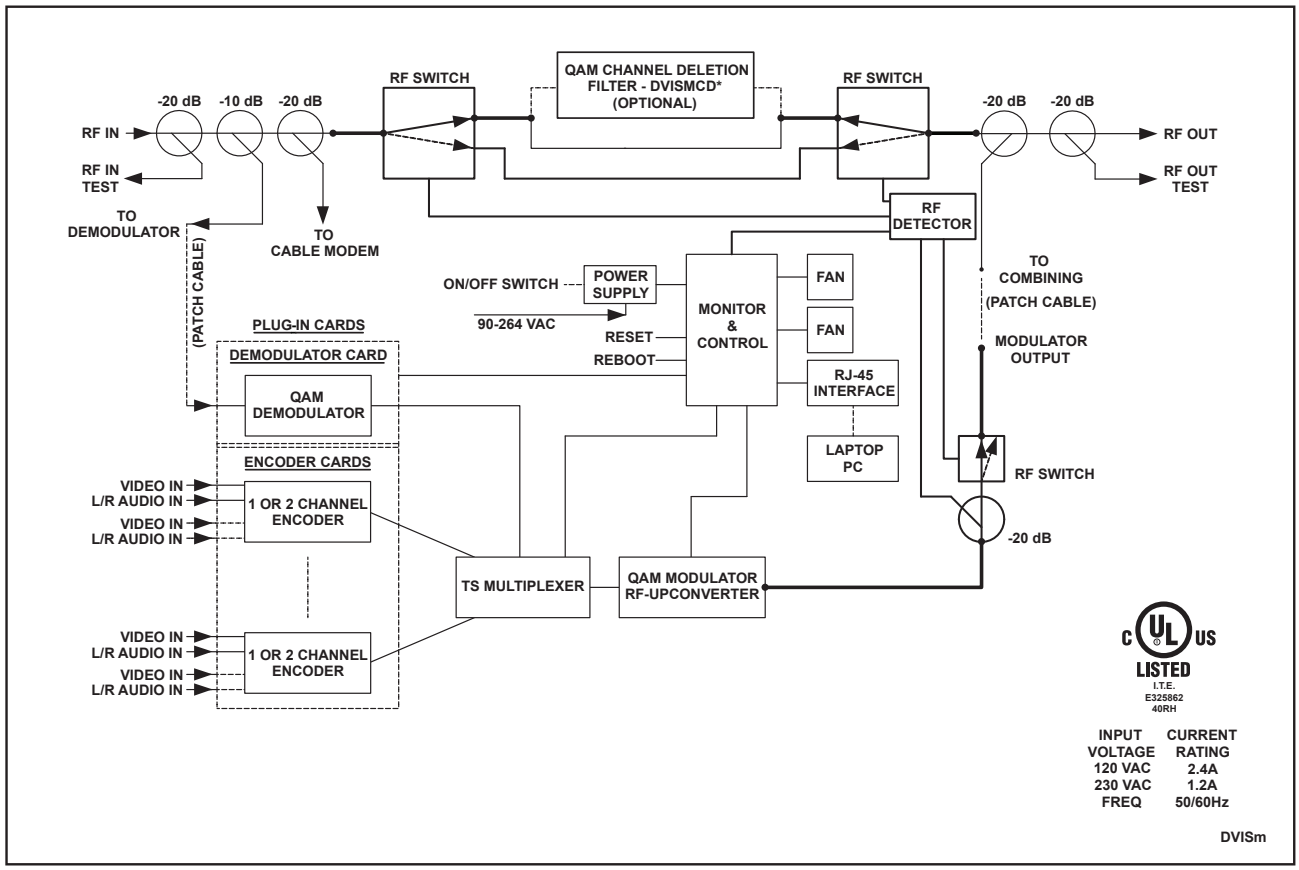


Figure 3: Functional Schematic

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SERVICE & SUPPORT

3. Service & Support

3.1 Contact ATX Networks

Please contact ATX Technical Support for assistance with any ATX products. Please contact ATX to obtain a valid RMA number for any ATX products that require service and are in or out-of-warranty before returning a failed module to ATX.

TECHNICAL SUPPORT

Tel: 289.204.7800 – press 1
Toll-Free: 866.YOUR.ATX (866.968.7289) USA & Canada only
Email: support@atx.com

SALES ASSISTANCE

Tel: 289.204.7800 – press 2
Toll-Free: 866.YOUR.ATX (866.968.7289) USA & Canada only
Email: insidesales@atx.com

FOR HELP WITH AN EXISTING ORDER

Tel: 289.204.7800 – press 3
Toll-Free: 866.YOUR.ATX (866.968.7289) USA & Canada only
Email: orders@atx.com
Web: www.atx.com

3.2 Warranty Information

All of ATX Networks' products have a 1-year warranty that covers manufacturer's defects or failures.

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