



DVIS

Patent Pending

DVIS - Digital Video Insertion System

QUICK START GUIDE

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START-UP INSTRUCTIONS

1. Start-Up Instructions

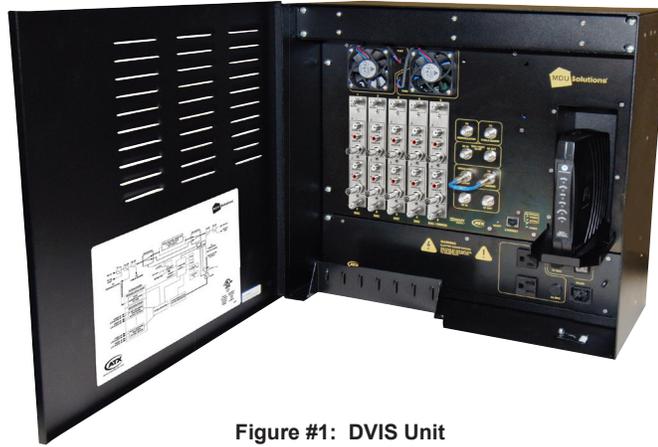
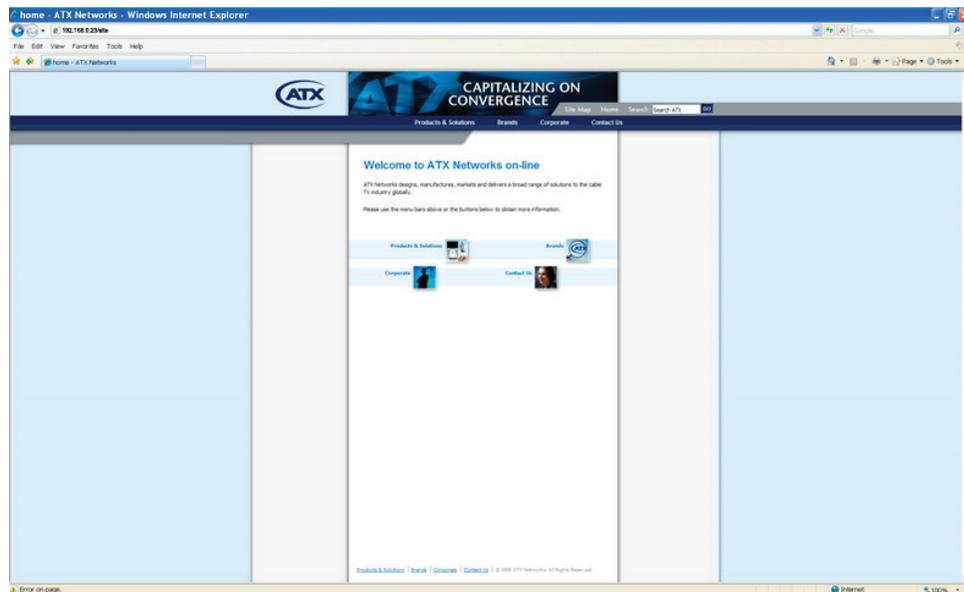
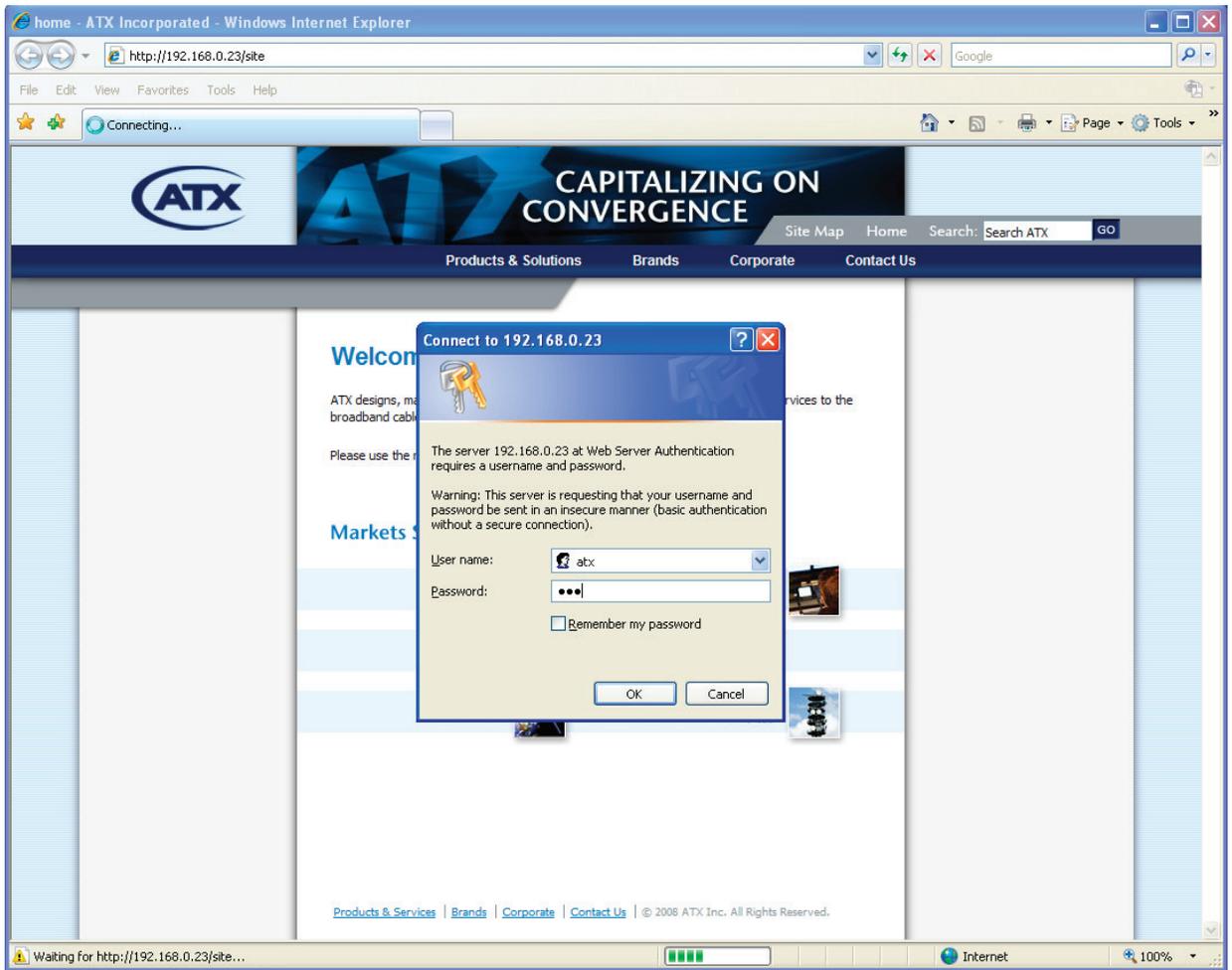


Figure #1: DVIS Unit

- 1) **IMPORTANT:** Do not connect the DVIS device's RF output signal to network before reading these instructions. The RF level of the output signal might be too high and in this guide it is explained how to change the RF output level.
- 2) Connect Laptop/PC with the DVIS device using provided Crossover Cat5e cable.
- 3) Connect Video and, if available, Audio sources and turn these external A/V sources ON.
- 4) Connect the DVIS device to the mains powering and switch the unit ON. A green LED labeled POWER will indicate that the unit is switched ON.
- 5) Fans may start to work and stop again after few seconds which is normal. During boot process fans will start to work again (this process takes around 30-40sec.)
- 6) Set appropriate network parameters in Laptop/PC in order to access the DVIS GUI.
Example: IP address 192.168.000.111
Subnet mask 255.255.255.0
- 7) Default DVIS IP address is 192.168.0.23
- 8) Open Internet Browser (e.g. Microsoft Internet Explorer, FireFox) and type in Address field:
192.168.0.23/site

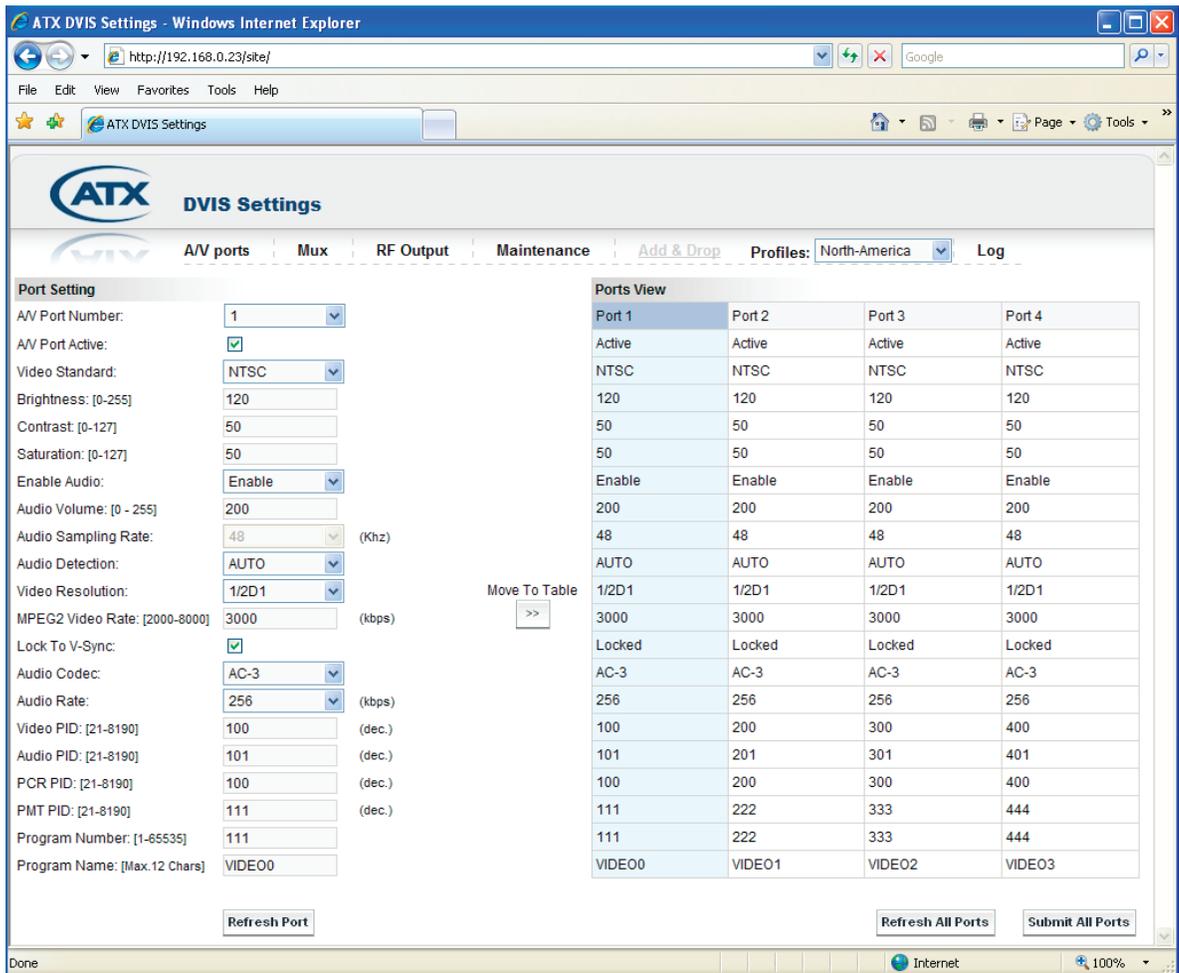


- 9) A new window will open and ask for username and password. Type in those fields following default values:
Username: atx
Password: atx



- 10) Now the DVIS GUI opens for parameter setting.

- 11) The first screen that opens is the following (it will show the appropriate number of Ports, which can be 4 or 8 or 10, depending on type of ordered unit):



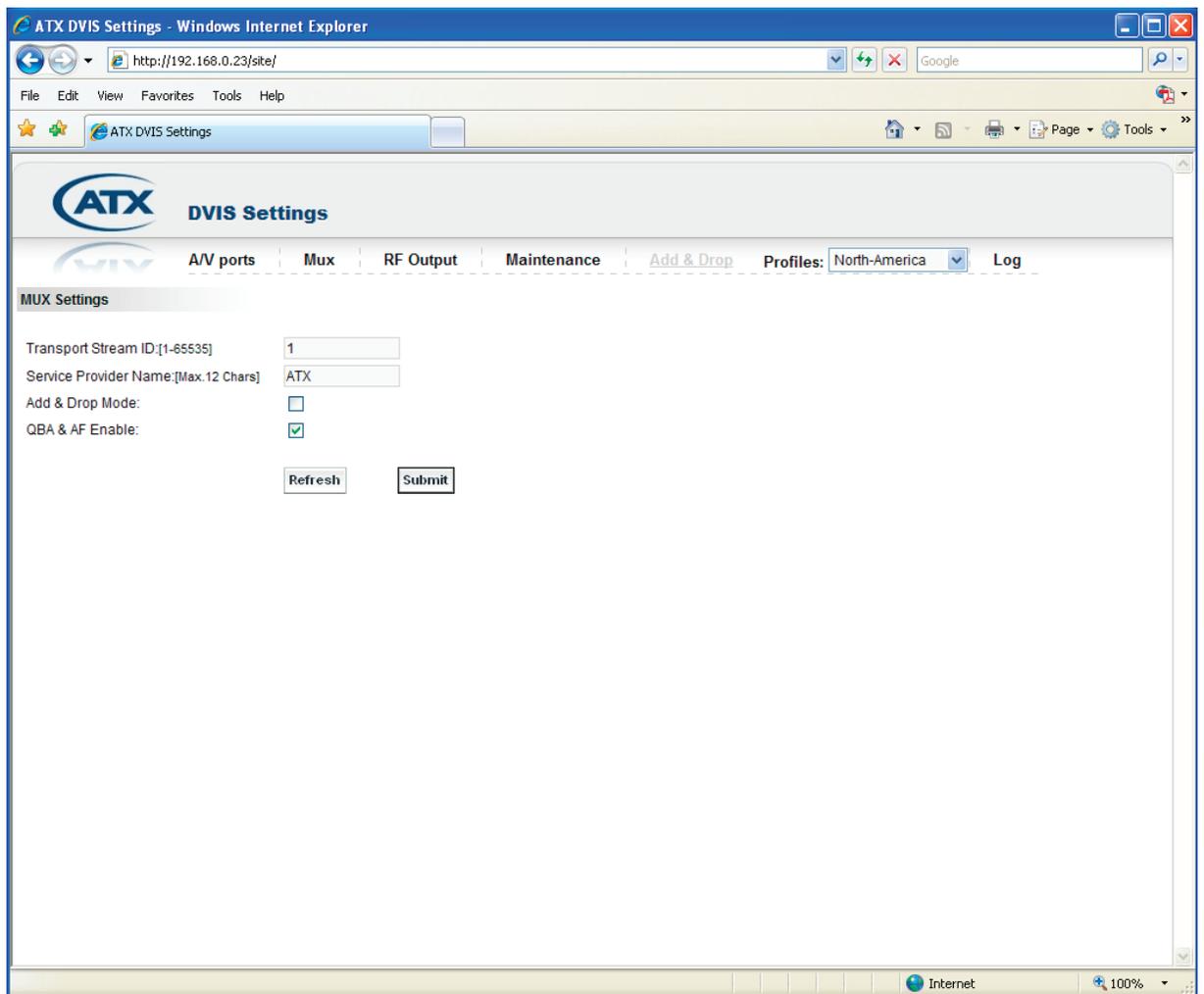
In this screen the Video and Audio parameters for MPEG encoding of applied baseband Video/Audio signals can be set. Ports 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 in the GUI correspond to slots 1, 2, 3, 4 and 5 on the main unit front panel as follows:

GUI	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8	Port 9	Port 10
Front Panel	Slot 1 – Input A	Slot 1 – Input B	Slot 2 – Input A	Slot 2 – Input B	Slot 3 – Input A	Slot 3 – Input B	Slot 4 – Input A	Slot 4 – Input B	Slot 5 – Input A	Slot 5 – Input B

In order to change settings for any port, the appropriate port has to be selected using pull-down menu “A/V port number”. The “A/V port Active” checkbox has to be checked in order for that port to perform any encoding action. All other settings are self-explanatory and where only a certain range of values is allowed this is indicated with allowed value ranges in brackets.

IMPORTANT: Once all settings are done in “Port Setting” section of this GUI screen, the button “Move to table” has to be pressed. Now all set parameters will be copied under Port 1 in “Ports View” section. Now it is possible to set also other Ports if necessary. Once all settings for all A/V ports are finished press “Submit All Ports”. If this button is not pressed and you open another GUI screen the A/V ports settings will not be applied by pressing a submit button in another screen. Each screen has to be executed on its own.

12) If you press “Mux” the following screen opens:

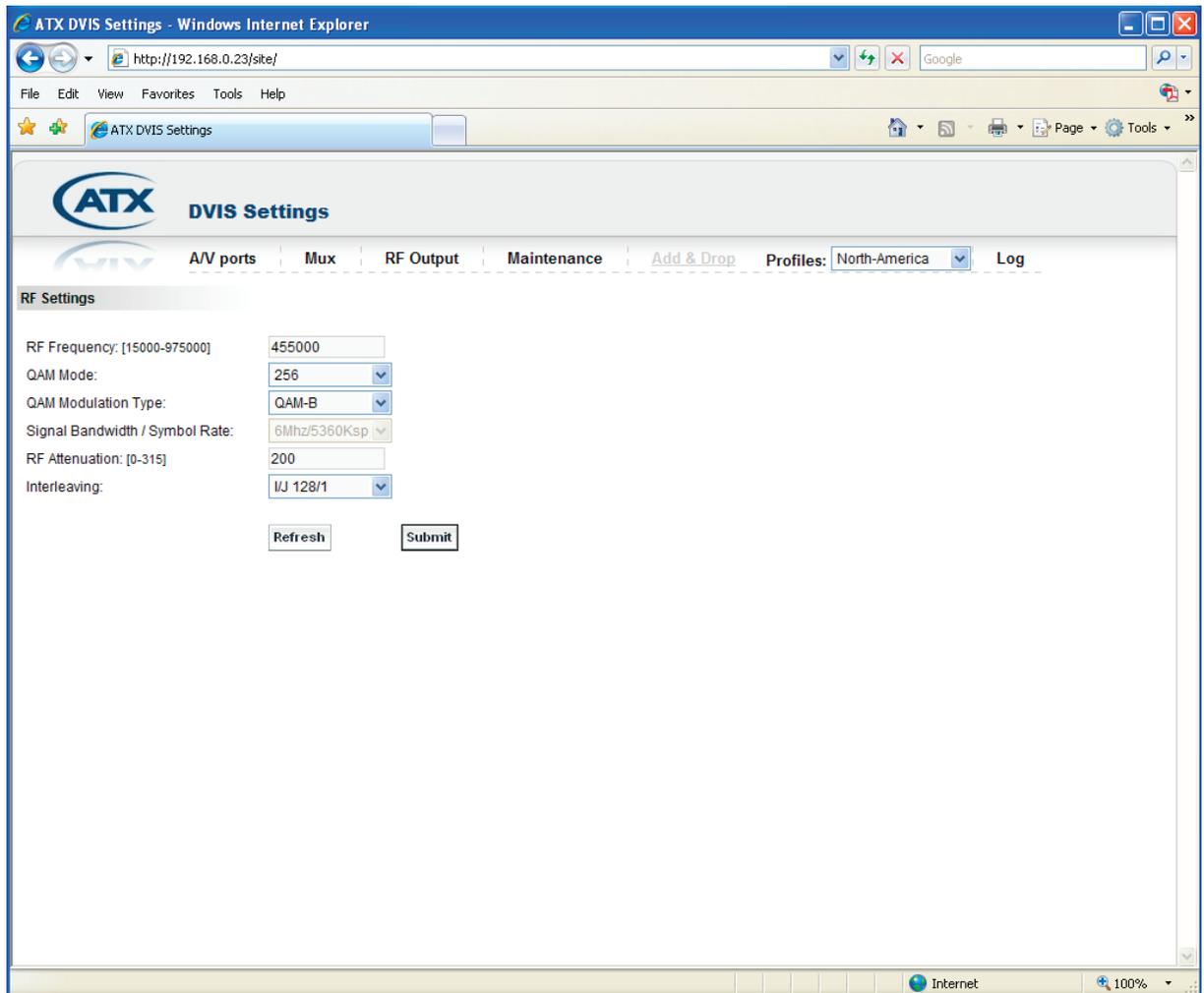


In this menu the Add/Drop multiplexing feature for incoming QAM streams can be enabled/disabled. When Add/Drop is enabled, certain parameters in DVIS GUI screens are not accessible, this will be indicated by such fields having grayed out parameter values. Please see step 15) for presentation of Add/Drop Menu and other GUI menus, showing what parameters are settable and what parameters are locked.

Also, QBA/AF processing of transport streams can here be enabled/disabled. Such QBA/AF processing is only required in situations when STBs receiving signals from DVIS are of a certain legacy type and require QBA/AF processing.

All settings in this screen have to be sent to the DVIS device by pressing “Submit”. If this screen is left without pressing “Submit”, the changed parameters and settings will not be applied.

13) If you press “RF Output” the following screen opens:



The RF frequency output range is 15 – 975 MHz, but the frequency has to be entered in KHz, without decimal points or commas. Example on the screen shows 455000, which means that selected frequency is 455 MHz.

The “QAM Mode” pull down menu allows selection of 64 QAM or 256 QAM mode when QAM Modulation Type is set to QAM-B.

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

RF Attenuation range is 0-31.5 dB, but attenuation value has to be entered as a value multiplied by 10. For example, if you want to attenuate the signal by 15 dB, you have to enter 150.

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

Once changes are made on this screen, the Submit button has to be pressed to apply these changes to the unit.

14) If you press “Maintenance” following screen opens:

The screenshot shows the ATX DVIS Settings web interface in Internet Explorer. The browser window title is "ATX DVIS Settings - Windows Internet Explorer" and the address bar shows "http://192.168.0.23/site/". The page has a navigation menu with tabs: "A/V ports", "Mux", "RF Output", "Maintenance" (selected), "Add & Drop", "Profiles: North-America", and "Log".

Maintenance

DVIS Status

Product ID:	DVIS-00000095
Version:	1.8-4.5-4.6-4.7
Temperature:	26 (C°)
Start Fans Above: [0 to 75]	10 (C°)
Fan A Status:	on
Fan B Status:	on
Remote Update Server:	192.168.0.55
Remote Server Port:	80
SNMP Server:	192.168.0.65
SNMP Port:	161
Schedule Remote Update:	<input type="checkbox"/>
Schedule Day:	Every day
Schedule Hour:	12:00 (HH:MM 00:00-23:59)

Buttons: Force Update, Board Time, Refresh, Submit

DVIS Network

! Any change to the network parameters triggers a system reboot.

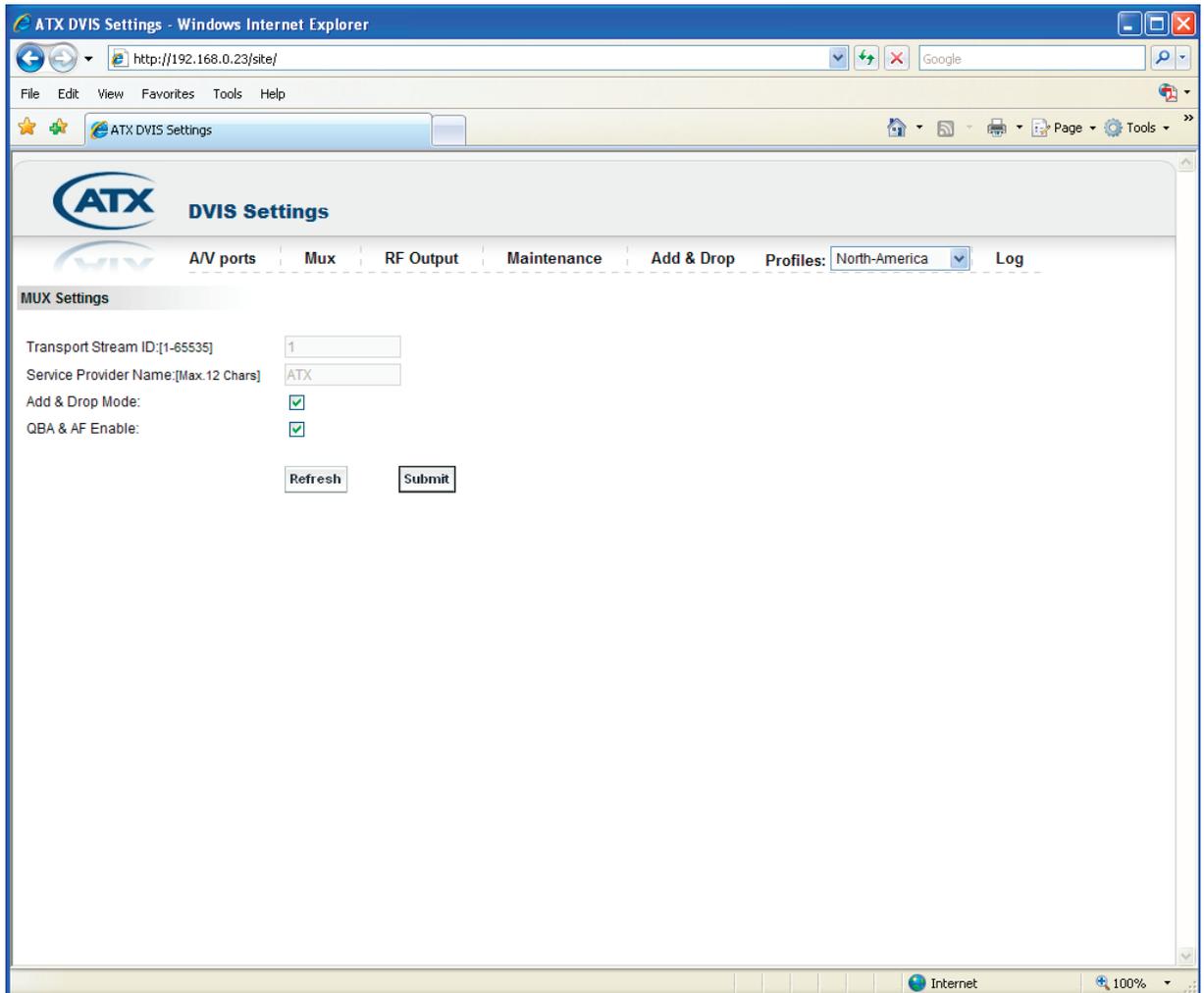
DNS IP Address:	192.168.0.1
IP Mask:	255.255.255.0
Static IP Address:	192.168.0.23
Default Gateway:	192.168.0.1
MAC Address:	00-50-C2-87-40-63
Notify Server URL:	
DHCP Enabled:	<input type="checkbox"/>

Buttons: Change User&Password, Set Network

Here you can see some status information, set the temperature threshold for fan start and change IP address if necessary.

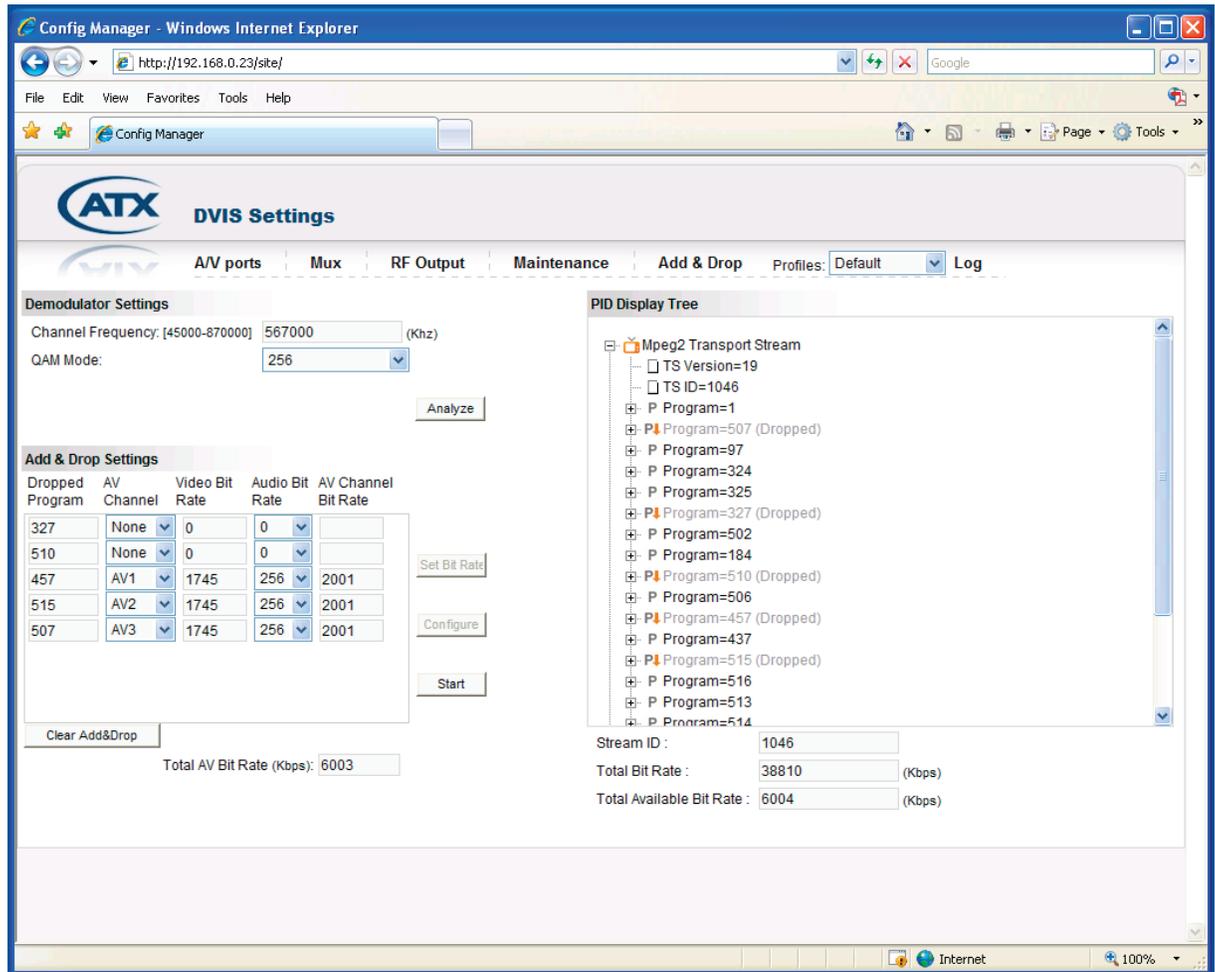
DHCP Client functionality can be turned on by checking “DHCP Enabled”.

- 15) When in Mux menu the Add/Drop checkbox is checked and "Submit" button is pressed, following screen will appear:



Now the Add/Drop menu is accessible, and as can be observed on previous pictures, this menu was previously grayed out, i.e. it was not possible to select the Add/Drop menu.

- 16) When now Add/Drop menu is selected, following screen appears (actually the below screen shows an example of an already analyzed incoming QAM channel, otherwise PID Display Tree and Add&Drop Settings fields are empty):



- 17) Analyzing incoming QAM and performing Add/Drop Multiplexing
- Enter Center Frequency of desired QAM channel. Frequency is entered in kHz.
 - Select correct QAM Mode
 - Press Analyze. This process may last longer depending on type of incoming QAM and necessary processing required. When analysis is finished the PID tree of tuned to QAM channel appears in the field "PID Display Tree".
 - "Program=" indicates MPEG Program Numbers. By pressing the "+" box in front of a program the display of Program Parameters is expanded, showing Video PID, Audio PID, PMT PID, and other parameters, and most importantly the Program Bit Rate
 - Highlight a desired program for Dropping by clicking it with the left mouse button. Now position the cursor again over that highlighted program and click the right mouse button. A drop down menu opens where the option "Dropped" can be selected – as shown on above picture.
 - By highlighting a "Dropped" Program and clicking the right mouse button, a drop down menu opens allowing the possibility to reactivate an initially dropped program.
 - Dropped Program Numbers appear in the table on the left side under "Dropped Program".

- viii) Under AV Channel there are pull down menus allowing to select what BaseBand port should be assigned to the dropped program. When configuration is finished, that locally connected A/V Baseband program will replace the dropped program in the output QAM.
 - ix) In order to perform a meaningful calculation what bitrate is available for insertion of locally encoded program there must be at least one AV channel assigned to a dropped program.
 - x) Press “Set Bit Rate”.
 - xi) The application is now analyzing the incoming stream in terms of how many bps are available to be allocated to the reinserted programs. This process may take longer or less long depending on type of incoming signals.
 - xii) When finished previous step there will be displayed bitrate values under Video Bit Rate.
 - xiii) Depending on type of incoming signals, the displayed Video Bit Rate might not be the proper or desired Video Bitrate for the inserted program. In that case click into such Video Bit Rate field and enter a desired Video Bit Rate manually.
CAUTION: The total TS bitrate cannot be higher than what is standardized for selected QAM Mode.
 - xiv) Select Audio Bit Rate and now the complete Program Bitrate (Sum of Video and Audio Bitrate) is displayed under “AV Channel Bitrate”.
 - xv) Press Configure.
 - xvi) Once the Configure process is finished press “Start” button.
 - xvii) Now at the RF OUT port the newly created QAM stream is available.
- 18) When in “Add & Drop Mode” the “A/V Ports” menu is opened following screen appears (it will show the appropriate number of Ports, which can be 4 or 8 or 10, depending on type of ordered unit):

The screenshot displays the ATX DVIS Settings web interface. The browser window title is "ATX DVIS Settings - Windows Internet Explorer" and the address bar shows "http://192.168.0.23/site/". The interface has a navigation menu with tabs: "A/V ports", "Mux", "RF Output", "Maintenance", "Add & Drop", "Profiles: North-America", and "Log". The "A/V ports" tab is active, showing a "Port Setting" form on the left and a "Ports View" table on the right.

Port Setting

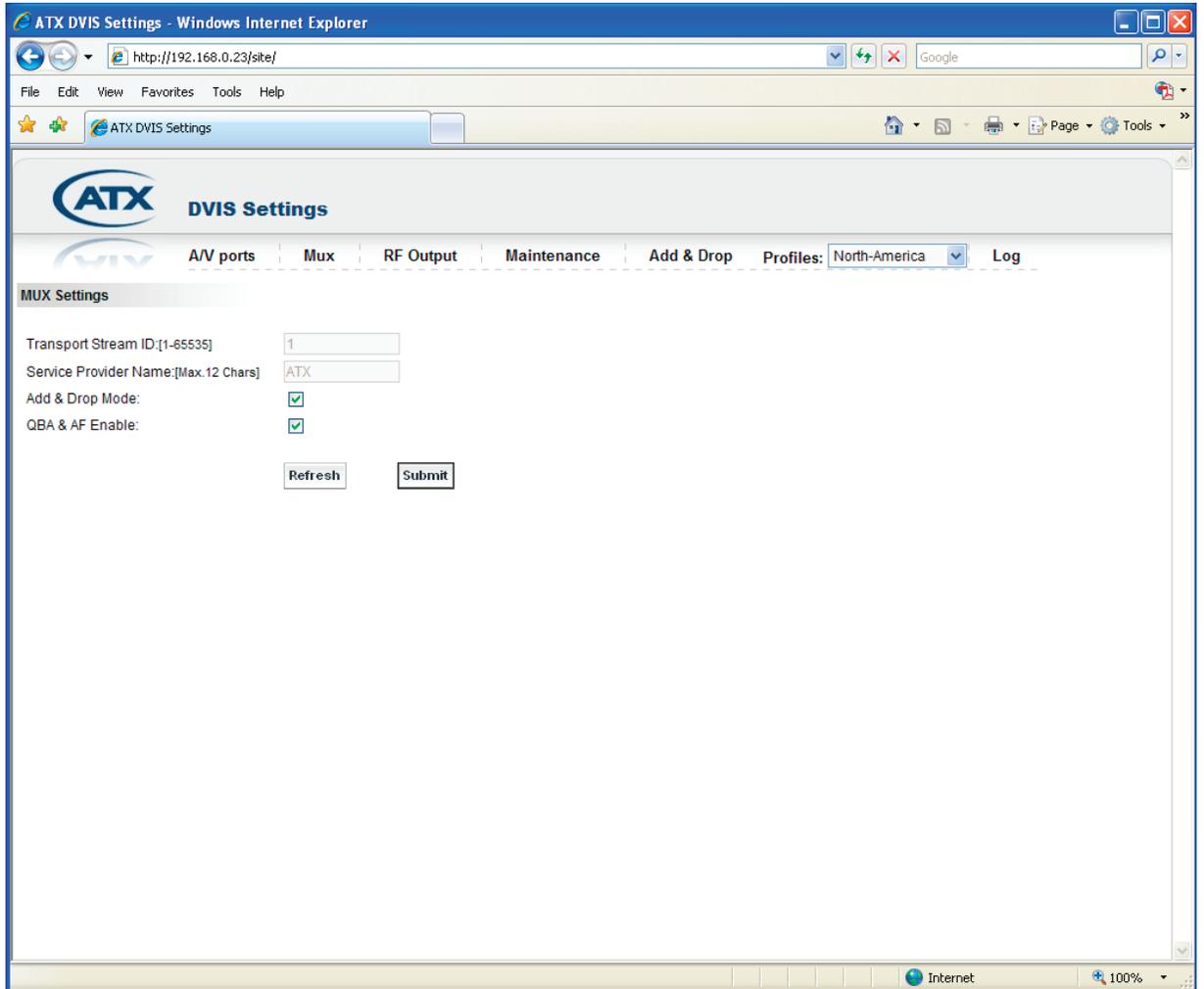
- AV Port Number: 1
- AV Port Active:
- Video Standard: NTSC
- Brightness: [0-255] 120
- Contrast: [0-127] 50
- Saturation: [0-127] 50
- Enable Audio: Enable
- Audio Volume: [0 - 255] 200
- Audio Sampling Rate: 48 (Khz)
- Audio Detection: AUTO
- Video Resolution: 1/2D1
- MPEG2 Video Rate: [2000-8000] 3000 (kbps)
- Lock To V-Sync:
- Audio Codec: AC-3
- Audio Rate: 256 (kbps)
- Video PID: [21-8190] 100 (dec.)
- Audio PID: [21-8190] 101 (dec.)
- PCR PID: [21-8190] 100 (dec.)
- PMT PID: [21-8190] 111 (dec.)
- Program Number: [1-65535] 111
- Program Name: [Max:12 Chars] VIDEO0

Ports View

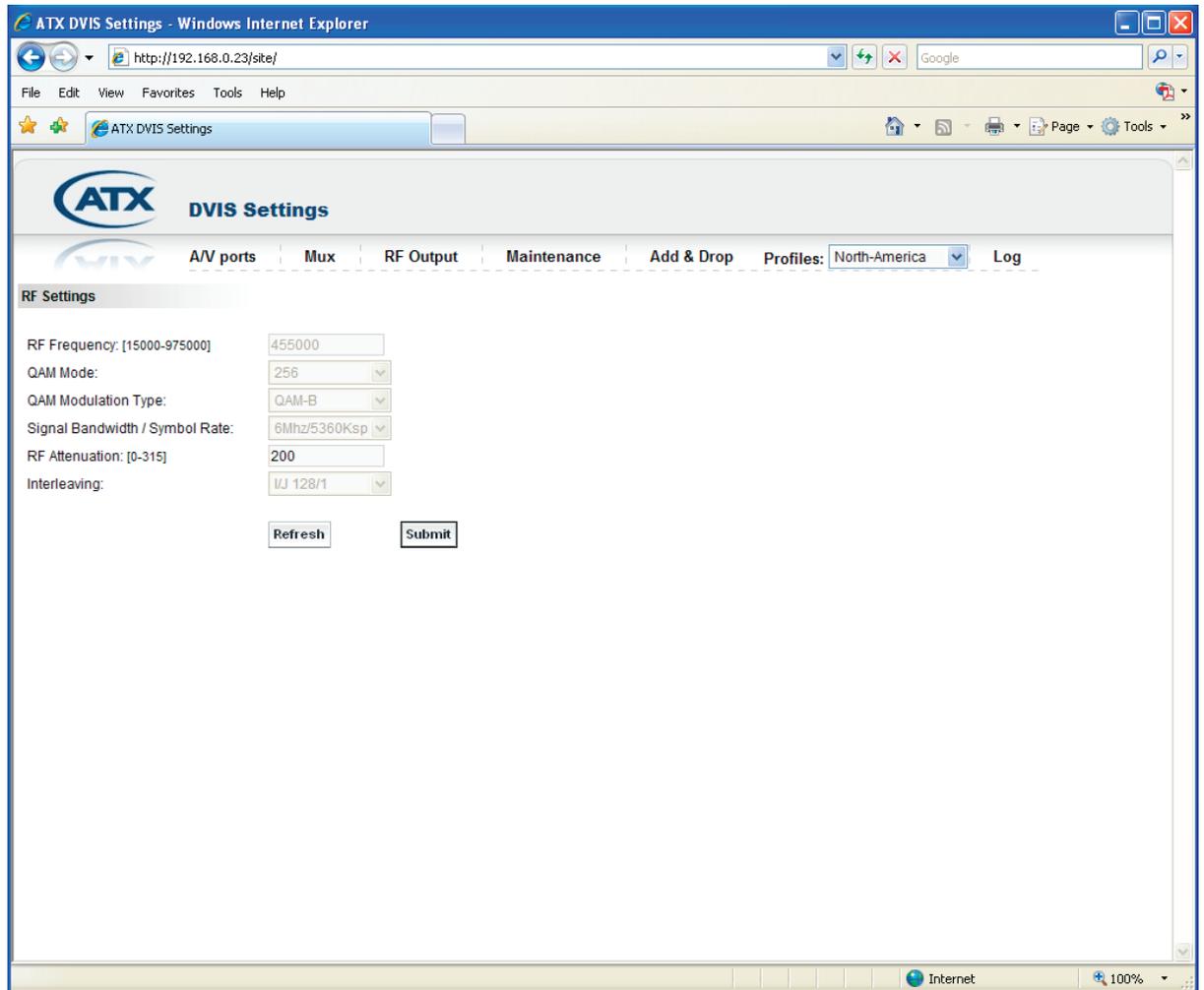
Port 1	Port 2	Port 3	Port 4
InActive	InActive	InActive	InActive
NTSC	NTSC	NTSC	NTSC
120	120	120	120
50	50	50	50
50	50	50	50
Enable	Enable	Enable	Enable
200	200	200	200
48	48	48	48
AUTO	AUTO	AUTO	AUTO
1/2D1	1/2D1	1/2D1	1/2D1
3000	3000	3000	3000
Locked	Locked	Locked	Locked
AC-3	AC-3	AC-3	AC-3
256	256	256	256
100	200	300	400
101	201	301	401
100	200	300	400
111	222	333	444
111	222	333	444
VIDEO0	VIDEO1	VIDEO2	VIDEO3

Buttons at the bottom: Refresh Port, Refresh All Ports, Submit All Ports.

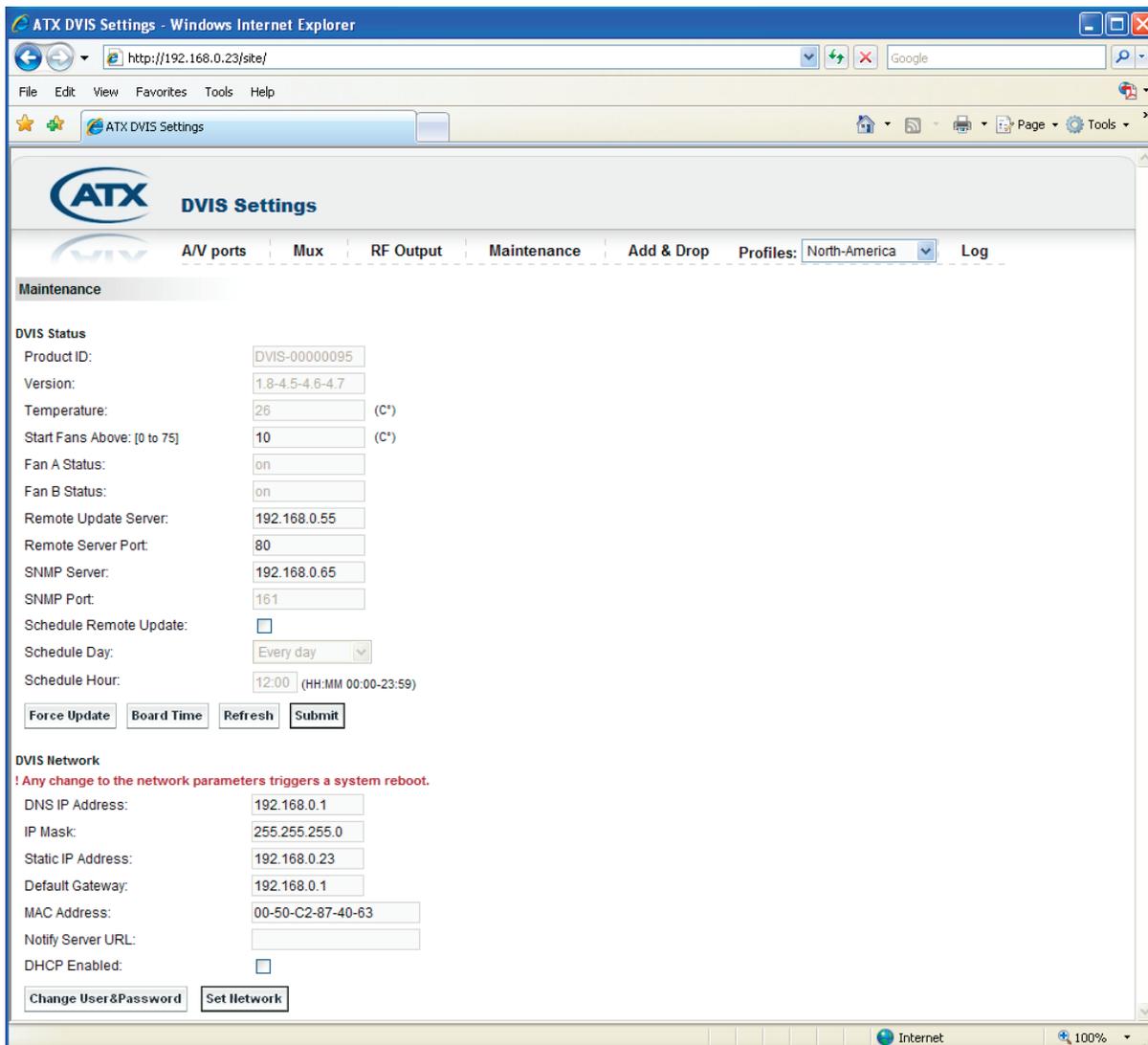
19) When in Add/Drop Mode the Mux menu is opened following screen appears:



20) When in Add/Drop Mode the RF Output menu is opened following screen appears:



21) When in Add/Drop mode the Maintenance menu is opened following screen appears:



- 22) The unit has 2 RF outputs from which the encoded signal can be used in QAM RF format. One output is labeled “MODULATOR OUTPUT” which is the higher level output as the signal comes directly from the QAM modulator, and the other is labeled “RF OUT” which is the lower level output as the signal from the QAM modulator is passed through a directional coupler to be combined with an incoming channel line up as shown on below functional schematic of the DVIS unit.

The level difference between these two outputs is approx. 20 dB. By default, the “RF OUT” output is used and in order to obtain a signal the jumper cable between “MODULATOR OUTPUT” and “TO COMBINING” ports must remain in place. If in the GUI screen “RF Output” the RF Attenuation is set to 0 dB, then following RF power levels are present at both RF outputs:

MODULATOR OUTPUT: 58.5 +/- 1.5 dBmV

RF OUT: 36.5 +/- 1.5 dBmV

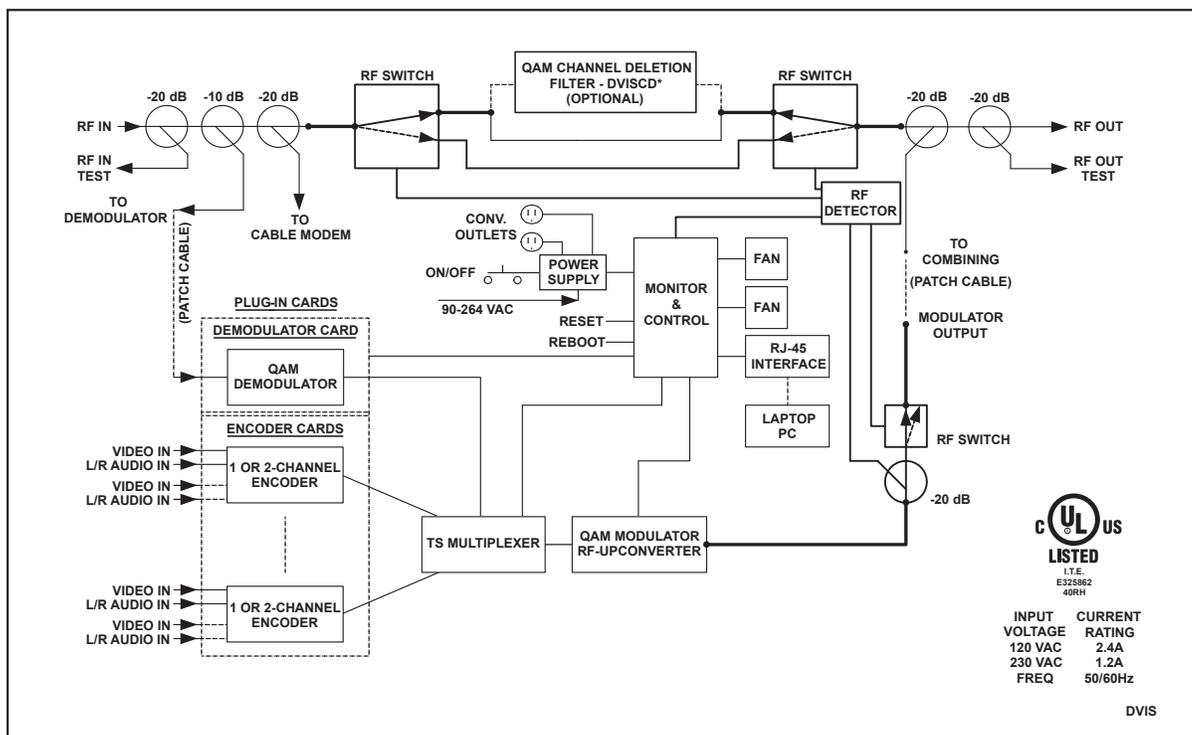


Figure #2: Functional Schematic

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SERVICE & SUPPORT

2. Service & Support

2.1. 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

2.2. Warranty Information

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

2.3. Safety

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The device should be connected to a power supply only of the type described in the operating instructions or as marked on the device.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of the device is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the device.

SERVICING: The user should not attempt to service the device beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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.



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