UCrypt® IP2Q

Patent Pending

UCrypt® Cable Gateways IP to QAM

QUICK START GUIDE

Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions. Specifications subject to change without notice.

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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:

SAFETY GROUND: The connection to earth of the supplementary grounding conductor shall be in compliance with the appropriate rules for terminating bonding jumpers in Part V of Article 250 of the National Electrical Code, ANSI/NFPA 70, and Section 10 of Part I of the Canadian Electrical Code, Part I, CSA C22.1.

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.

NOTE: a) For 115 VAC operation, use the power cord supplied for operation from a 115 VAC source.
b) For 230 VAC operation, use the power cord supplied for operation from a 230 VAC source.

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

POWER CORD PROTECTION: Care must be taken during installation to route or arrange the power supply cord to prevent and avoid the possibility of damage to the cord by external objects. Pay particular attention to the exit point from the device and plug.

POWER SUPPLY CORD ROUTING: The power supply cord shall not be attached to the building surface, nor run through walls, ceilings, floors and similar openings in the building structure.

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.

BATTERY REMOVAL AND REPLACEMENT: Disconnect power (AC or DC) from the equipment before battery removal and replacement. This is accomplished by unplugging the power cord from the power outlet. Replace the battery with Sony part No. CR2032 or exact replacement only.

CAUTION: Use of a different battery type may present a risk of fire or explosion.

BATTERY DISPOSAL: Recycle or dispose of batteries in accordance with the battery manufacturer's instructions and local/national disposal and recycling regulations. Please call 1-800-8-BATTERY or go to the website at www.call2recycle.org for information on recycling or disposing of your used battery.

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QUICK START GUIDE – READ ME FIRST

2. QUICK START GUIDE – READ ME FIRST

For detailed information on configuration, go to the ATX website (atxnetworks.com) in the Resources & Support section, User Documents sub-section to download the Installation & Operation Manual.

Summary of Product Functionality

This model has the following basic features and resources:

- Receives IP multicasts on a Gigabit Ethernet network.
- Allows flexible selection of desired programs from the IP multiplexes.
- Encrypts the programs with Pro:Idiom (if the Pro:Idiom option was ordered).
- Allows flexible assignment of selected programs to output QAM multiplexes.

This Quick Start Guide will take you through the steps required to get your UCrypt up and running if you have not done this before. Follow the steps below:

2.1 Install and Power Up

You may be doing this first setup in your lab so detailed installation details are not provided here. See the Installation and Operation Manual for installation details. You can get it from the ATX website (atxnetworks.com) in the Resource & Support section, User Documents sub-section. You will first need to get a user name and password from your ATX Networks support or sales representative and the contact numbers are on this same web page.

Refer to “Safety” on page 1-1 for a brief overview of mounting and powering information.

NOTE: *If the unit is to be mounted in a rack, it is essential to attach the rear mounting ears to mounting rails to provide support or alternately install the equipment on a well supported shelf.*

2.2 Connect the Cables

A PC with web browser and Ethernet network port will be required to configure the UCrypt. Establish a network connection with the supplied network cable. Connect the input ports to your GbE switch and QAM output to the RF distribution network. Refer to “Safety” on page 1-1 for more details about cabling.

2.3 Start the Management Interface

The software for configuring the UCrypt Management Interface is provided by a built in secure web server which presents configuration pages. You will connect with the secure web server at **HTTPS://192.168.0.23** which is the default address, and log in to access the Interface. The UCrypt will take about 90 seconds to boot up after applying power before you can begin configuration.

Refer to “Safety” on page 1-1 for basic setup instructions to connect to the Management Interface.

2.4 Change Network Settings

If it is necessary to change the network IP address to access this unit remotely on a network, that is done on the **System** configuration tab.

Refer to “Safety” on page 1-1 to change the IP addresses.

2.5 Optionally Import an Existing Configuration File

UCrypt supports mass deployment with an importable/exportable configuration file. If you have a previously exported configuration file to import, refer to “Safety” on page 1-1.

If you have no file to import skip to Step 2.1 below.

2.6 Select Programs for Processing

You first need to define the incoming multicast IP addresses and Ports which contain the incoming programs. Enter the IP address(es) and associated Port number(s) on the Input Ethernet View tab , click **Save** then click the **Detect Programs** button to read the Transport Stream(TS) PAT and PMT Tables. Only programs that are in the clear on the input may be selected to be processed by the UCrypt. Every detected program will have an accompanying drop down dialog box with 3 options:

- Filter
  - Program is ignored by UCrypt and not passed to the output.
- Passthrough
  - Program is passed to the output without encryption applied.
- Encrypt
  - Program is encrypted with Pro:Idiom® and passed to the output.

Refer to “Safety” on page 1-1 for a summary of steps to select programs.

2.7 Configure Output QAM Carriers

You need to specify the QAM output frequencies and Constellation size.

Refer to “Safety” on page 1-1 to setup QAM carriers.

2.8 Assign Programs to Output QAM Carriers

Finally, the programs that were selected on the Input Ethernet View are assigned to output QAM carriers. Pro:Idiom encryption is automatically done if that option was ordered.

Refer to “Safety” on page 1-1 to assign selected programs to output QAM multiplexes.

That’s it, you’re done

If you followed all the **Read Me First** directions, you should have programs on the QAM output channels that you configured. Use a standard TV to view programs that are in the clear and an appropriate Pro:Idiom compatible TV or STB with built-in Pro:Idiom to view encrypted programs. Download the full Installation & Operation Manual from the ATX website (atxnetworks.com) in the Resources & Support section, User Documents sub-section for more details than are presented here. Click the **Help** tab in the UCrypt to link to the manual to your Management Computer.

IMPORTANT CONFIGURATION INFORMATION

3. IMPORTANT CONFIGURATION INFORMATION

3.1 Support for Two Simultaneous Configurations.

As work on configuration progresses, changes will need to be made to multiple pages in the Management Interface. As work is completed on each page, the changes must be saved and there is a **Save** button conveniently located on every configuration page where configuration changes need to be saved. If changes are made and you navigate away from the page without saving, the changes may be discarded.

When you are satisfied that all configuration changes on the UCrypt are complete and correct, click the **Apply** button located by the save buttons on any page, they all do the same thing. There is no need to apply the configuration as you complete work on each page. You may **Save** your work as you go and **Apply** the configuration when completed.

3.1.1 Saved Configuration

This can be thought of as a work in progress and any changes can be made in the configuration without affecting how the UCrypt is currently working and providing services.

This saved configuration can be discarded at any time without affecting the working UCrypt configuration or can be Applied to the UCrypt, to make it the new working configuration. To discard your configuration changes browse to the **Configuration** tab and click the **Revert** button. The Revert action is not service affecting.

3.1.2 Applied Configuration

This is the working configuration that the UCrypt is currently using to provide the desired services to the output and regardless of the changes made in the Management Interface as discussed above, changes do not take effect until the **Apply** button is clicked and the configuration is applied.

During configuration, while changes are being made, the saved configuration and the applied configuration differ by the changes that have been made and saved since last clicking **Apply**. After the Apply button is clicked, the saved configuration and the applied configuration are identical.

NOTE: *Clicking the Apply button will cause a service interruption while the UCrypt re-provisions itself with the new working configuration. It is best to make all changes necessary on all configuration pages and apply the changes when completed..*

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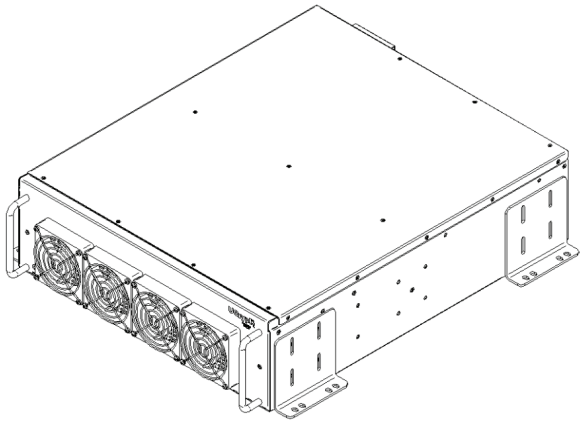
INSTALLATION SUMMARY

4. INSTALLATION SUMMARY

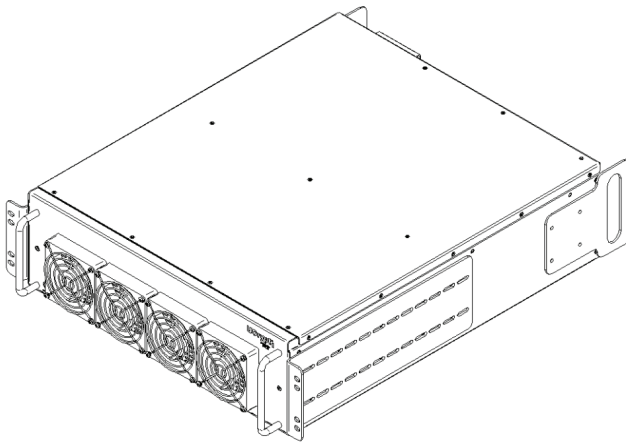
4.1 Mounting

NOTE: *If the UCrypt® unit is to be mounted in a rack, it is essential to attach the rear mounting ears of the unit to rear mounting rails to provide support or alternately install the equipment on a well supported shelf*

Rack mount brackets are provided with the UCrypt for mounting in a standard EIA 19" rack. Brackets are also provided for mounting the UCrypt to a vertical backboard for sites where no rack mounting facilities exist.



Panel Mount



Rack Mount

4.2 Equipment Safety Grounding

It is imperative that the UCrypt housing be connected to a permanent building ground in a manner that will ensure that the exposed metal parts are constantly connected to ground even when the power cord may be disconnected temporarily. A grounding lug is provided on the rear panel to conveniently effect such a connection. The following guidelines are provided to clarify the requirements for the installation to meet UL, CUL and CB standards. The use of the words "Ground" and "Earth" as well as "Grounding" and "Earthing" may be used interchangeably and in this context, have the same meaning.

1. The supplementary equipment grounding conductor is to be installed between the UCrypt rear panel ground connector and earth, that is, in addition to the equipment ground conductor in the power supply cord.
2. The supplementary equipment grounding conductor may not be smaller in size than the branch-circuit supply conductors or a minimum #14 AWG. The supplementary equipment grounding conductor is to be connected at the rear panel terminal provided, and connected to earth in a manner that will retain the earth connection when the power supply cord is unplugged. The connection to earth of the supplementary grounding conductor shall be in compliance with the appropriate rules for terminating bonding jumpers in Part V of Article 250 of the National Electrical Code, ANSI/NFPA 70, and Section 10 of Part I of the Canadian Electrical Code, Part I, CSA C22.1.
3. Termination of the supplementary equipment grounding conductor may be made to building steel, to a metal electrical raceway system, or to any grounded item that is permanently and reliably connected to the electrical service equipment earth.
4. Bare, covered or insulated grounding conductors are acceptable. A covered or insulated grounding conductor shall have a continuous outer finish that is either green, or green with one or more yellow stripes.

4.3 Ambient Environment

The UCrypt is designed to operate to specification in an ambient room temperature of 0°C to +50°C (+32°F to +122°F)

however it is recommended that it is installed in an environment that approximates normal room temperature to ensure proper long term operation.

4.4 Power Requirements

The UCrypt is designed with an autosensing switching type power supply which can operate on a wide range of input voltages from 115 VAC to 230 VAC. There is no need to configure the power supply to operate on any voltage in this range. The power cord provided with the UCrypt is a North American configuration with a NEMA 5-15 grounded plug for 115 VAC. If it is necessary to operate the UCrypt on 230 VAC, the installer must obtain an IEC cord with a NEMA 6-15 grounded plug for use in North America.

CABLING CONNECTIONS

5. CABLING CONNECTIONS

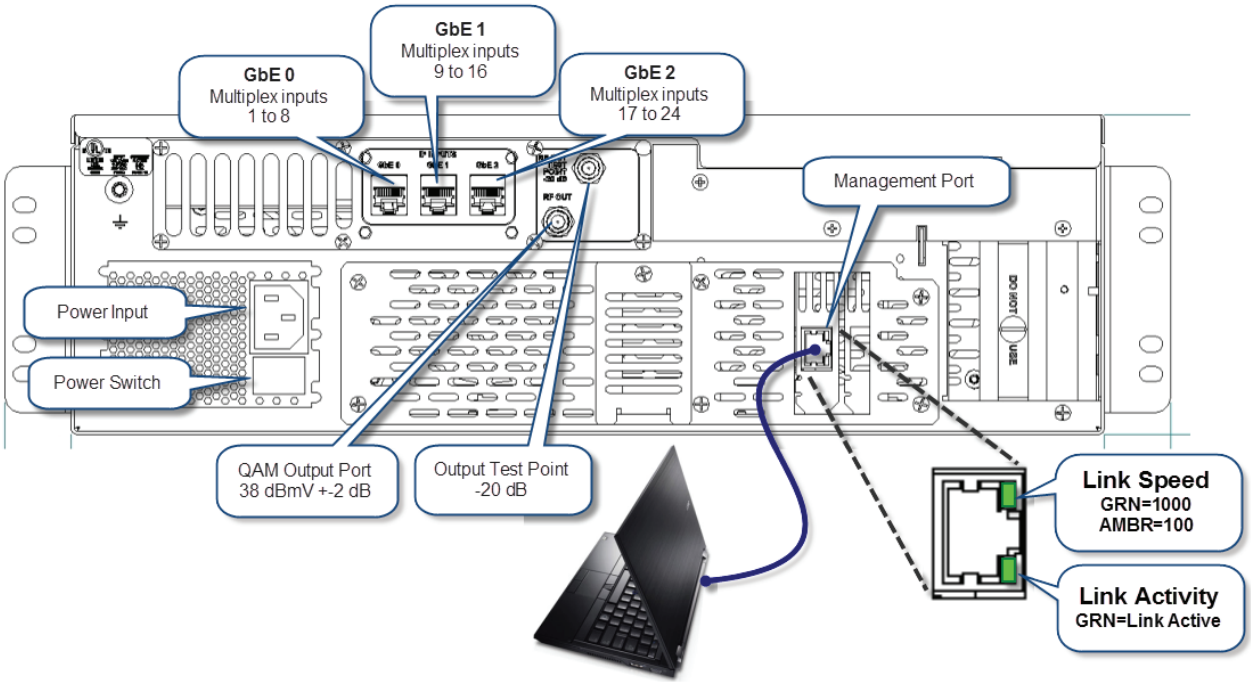
Ethernet

The IP multicasts presented to the UCrypt must be available on a GbE network switch or router and programs within the multicasts must be in the clear to be processed by the UCrypt. No encrypted multiplexes may be passed through this UCrypt. The input ports on the UCrypt are GbE only, autosensing. Use cables of Cat5e quality or better to connect the 3 input ports to available network switch ports. Each input port is a unique physical input and can be used to receive 8 multicasts of 38.8 Mb/s or an aggregate of 310 Mb/s of smaller size multicasts. If the UCrypt model is the 8 or 16 Output QAM capable models, then there is only a need to connect the GbE ports depending on the model. A single port may not be used for more than an aggregate total of 310 Mb/s. See table below:

UCrypt Models	38.8 Mb/s Multiplexes supported	Connect to GbE Ports
UC8IP and UC8PIP	Up to 8	GbE 0
UC16IP and UC16PIP	Up to 16	GbE 0 and 1
UC24IP and UC24PIP	Up to 24	GbE 0, 1 and 2

RF QAM

The QAM output RF level is fixed at +38 dBmV +/- 2 dB per digital carrier at the RF output port. Adjacent QAM carriers will be



UCrypt IP to QAM Rear Panel

equal in level. Connect the RF output to the distribution network with quality RG6 or RG59 type cables.

A crossover Ethernet Cable is provided with the UCrypt for connecting directly to the Management Computer.

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POWERING UP

6. POWERING UP

NOTE: *The factory default configuration is that all QAM outputs are disabled so no unintended output into the distribution network is possible.*

If the UCrypt has been pre-provisioned elsewhere, before powering the UCrypt, ensure that the network output cables are disconnected from the distribution network to avoid unintentional service outages if there are overlaps between the QAM output frequencies of the UCrypt and existing services on the network.

Apply power and turn on the rear panel switch below the power receptacle. Boot-up of the UCrypt will take approximately 90 seconds.

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MANAGEMENT INTERFACE

7. MANAGEMENT INTERFACE

7.1 Connect to the Management Interface

Minimum Management Computer Requirements

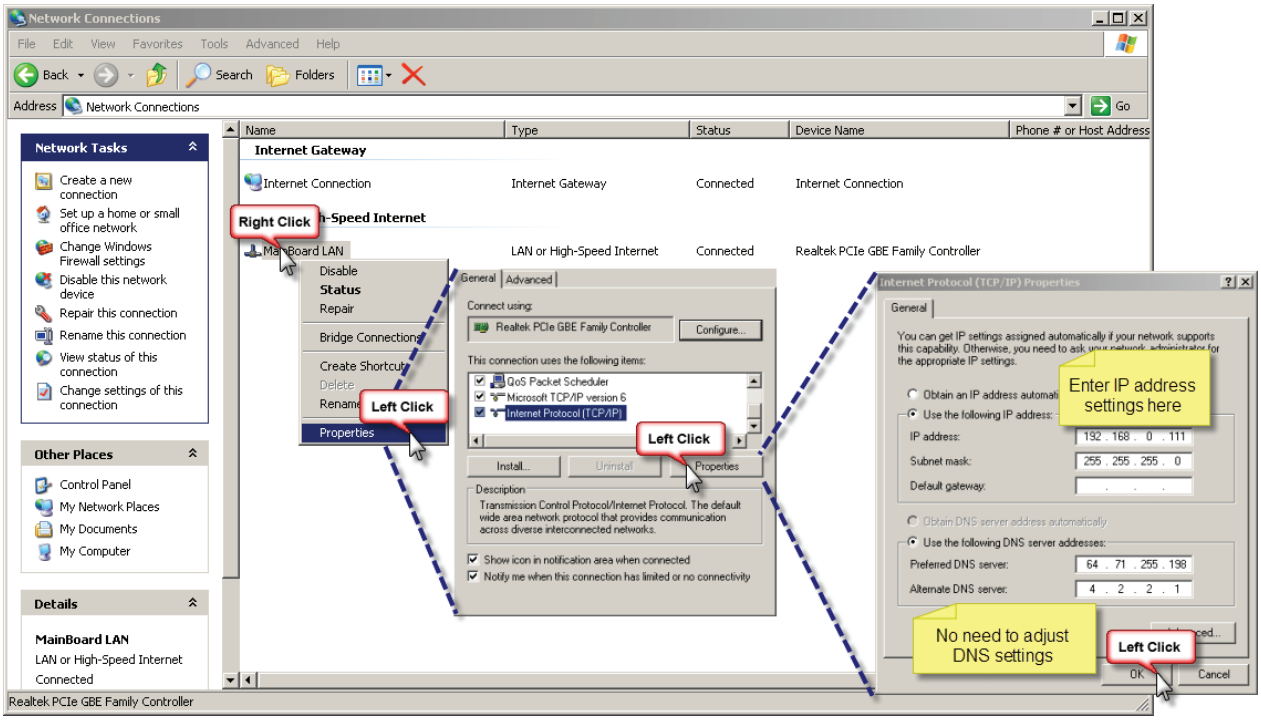
- Computer running Windows® or other OS
- Ethernet Network port available
- Web browser such as Internet Explorer®, Firefox® or similar
- Adobe Reader for reading this manual
- Notepad or text editor for capturing text and logs

7.2 Configure the Management Interface Network Port

Set-up of the UCrypt unit requires a laptop or desktop PC running Microsoft® Windows or other operating system with an available Ethernet network port and web browser software(called the “Management Computer” in the following procedures)

The Management Computer network port must be assigned an IP address in the same subnet as the UCrypt for access to the UCrypt Management Interface. The following procedures are for Microsoft Windows XP and a factory default IP address setting on the UCrypt of 192.168.0.23 subnet 255.255.255.0

- Connect the Management Computer’s Ethernet adapter to the UCrypt’s Ethernet port using a Cat5e network cable (supplied with the unit). Link lights should illuminate indicating that the cable connection is correct and working.
- Set the Management Computer’s Ethernet interface to a static IP address on the 192.168.0.x subnet, as described below:
  - From the Control Panel, open Network Connections and select the connection associated with the Ethernet adapter to be used for connecting to the UCrypt (e.g., Local Area Connection).



  - Right click on the connection and select Properties.

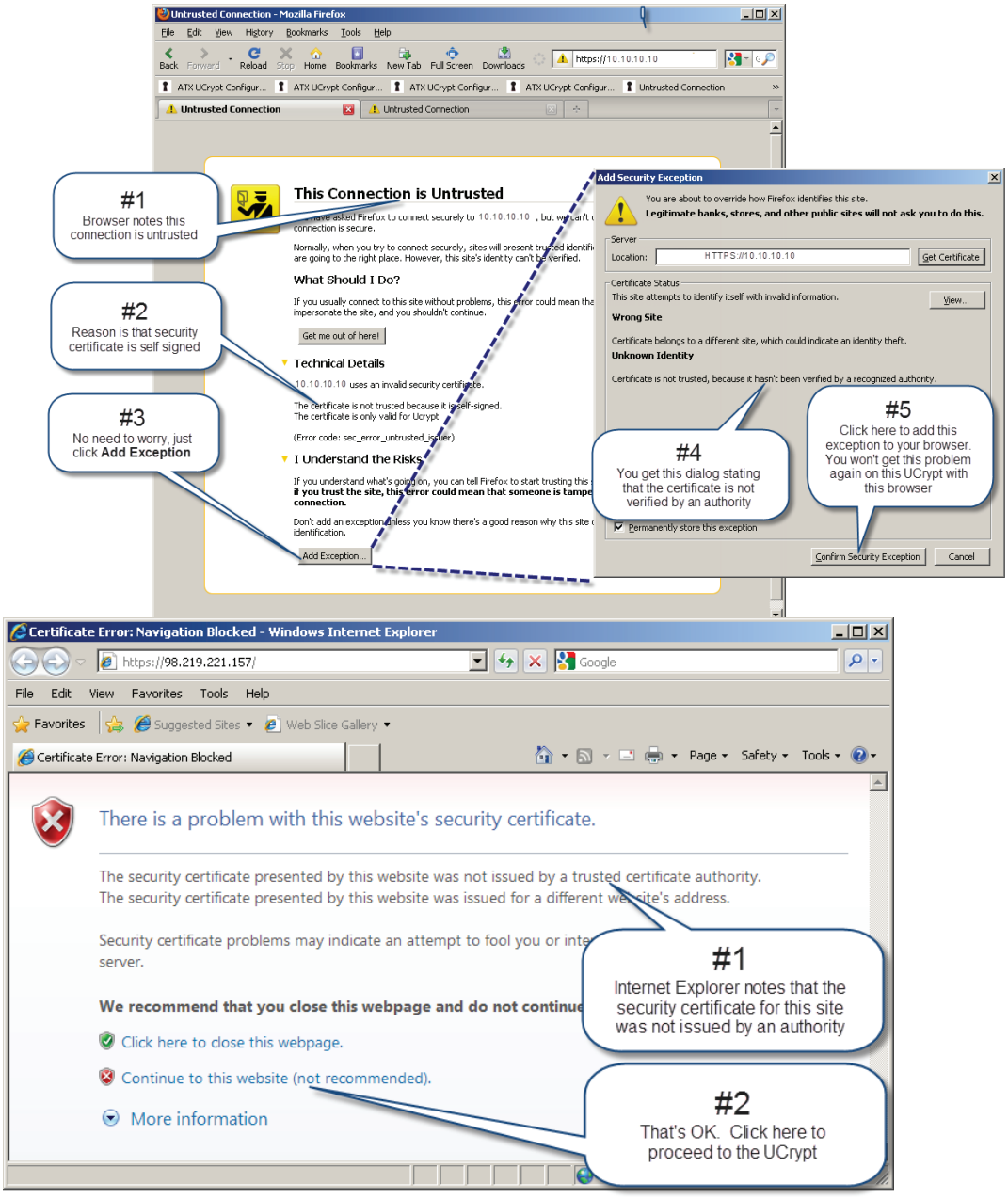
- Select Internet Protocol (TCP/IP) and click Properties.
- Click the selection box beside Use the following IP address to enter a check mark in the box.
- In the IP address field, enter 192.168.0.x (where x represents any number from 1-253 except 23).
- In the Subnet mask field enter 255.255.255.0.
- Click OK and then OK again in the previous window.

7.3 Log in to the Management Interface

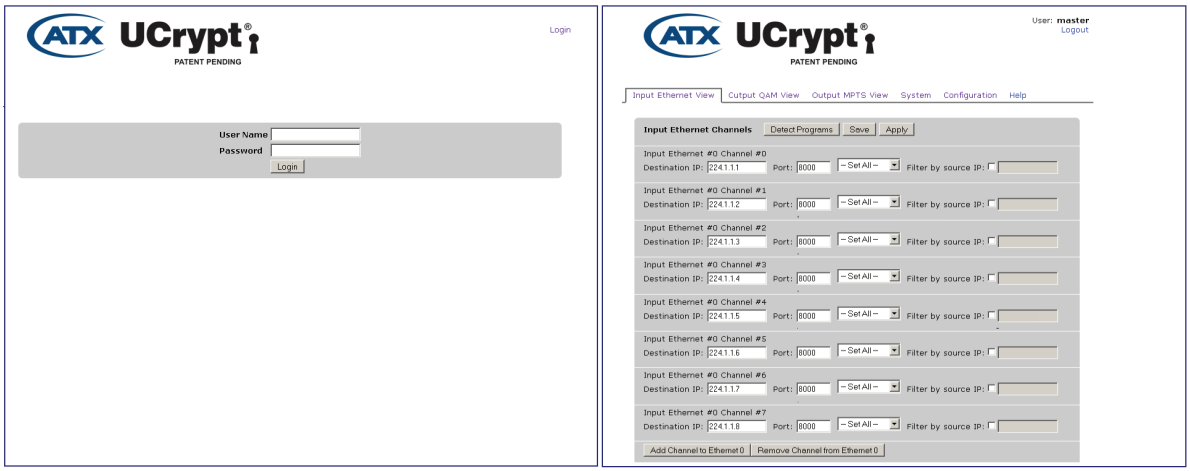
On the management computer, open a web browser and enter **https://192.168.0.23** in the address field.

If this is the first time you have connected to this UCrypt with this Management Computer, you may get a warning of a security violation or error. This is due to the UCrypt having a self signed security certificate and is not a security threat but your browser identifies it as such. Simply accept the security exception and proceed to the login screen as shown next. Other browsers will typically respond in the same manner.

Warning For Firefox Browser:



After navigating the security warnings, you should be presented with the following screen, on the left, displaying the login window:



Screen display before login

Screen display after login

Enter the appropriate **User Name** and **Password** for the access level you require from the table below.

The master user is the only user that can perform configuration.

Default User Names, Passwords and Privileges				
Account User	**Modify UCrypt® Settings**	**Install Updates**	**Set Passwords**	**Default Password**
master	Yes	Yes	Yes	atx_ucrypt_master_password
admin	Yes	No	No	atx_ucrypt_admin_password
user	No	No	No	atx_ucrypt_user_password

When the login username and password are successfully entered, the screen on the right above will be presented.

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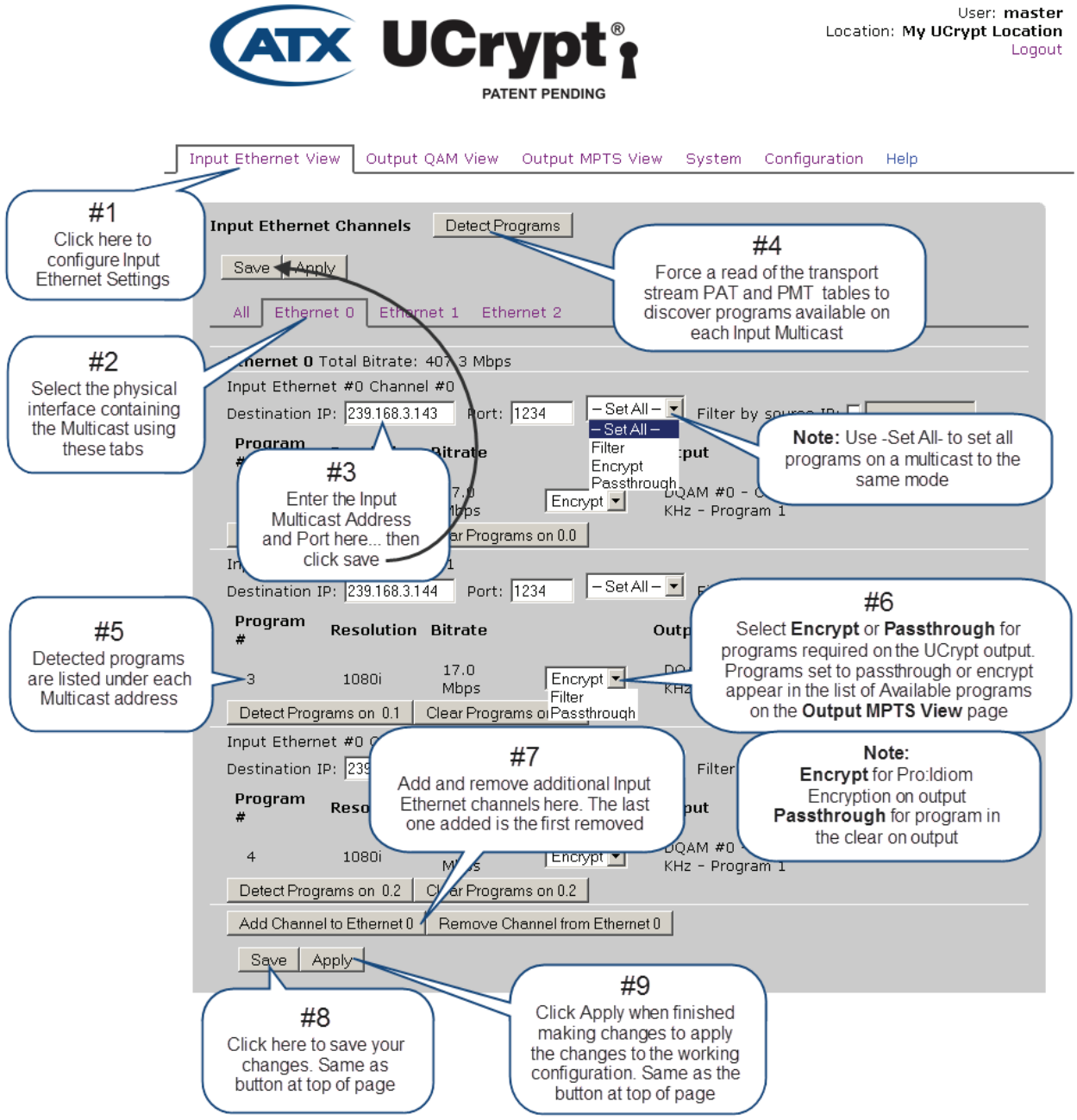
INPUT ETHERNET VIEW TAB - CONFIGURATION

8. INPUT ETHERNET VIEW TAB - CONFIGURATION

Define input multicasts and select programs from the transport streams for processing on the Input Ethernet View tab.



NOTE: *Clicking the Apply button will cause a service interruption while the UCrypt re-provisions itself with the new working configuration. It is best to make all changes necessary on all configuration pages and apply the changes when completed.*

For detailed information on configuration of this page, go to the ATX website (atxnetworks.com) in the Resources & Support section, User Documents sub-section to download the Installation & Operation Manual.

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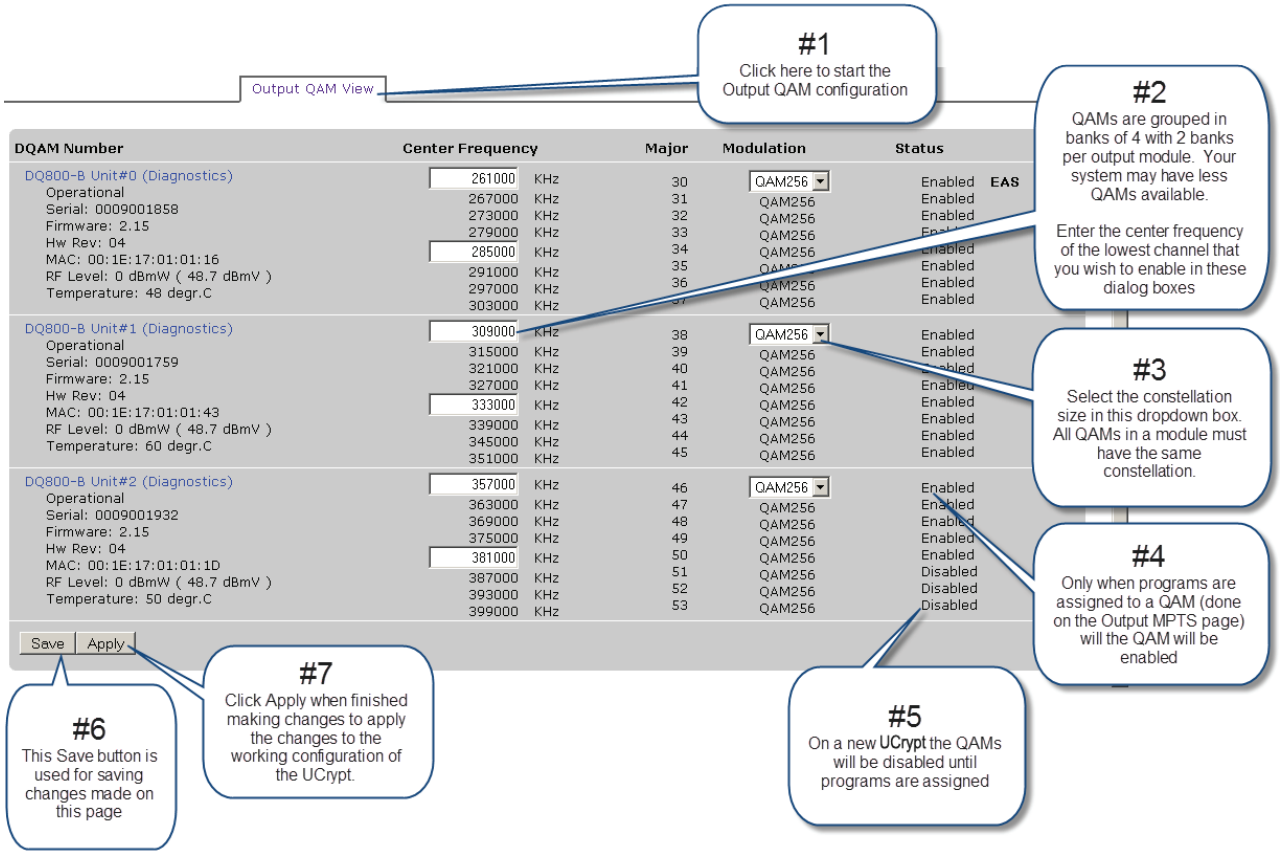
OUTPUT QAM VIEW TAB - CONFIGURATION

9. OUTPUT QAM VIEW TAB - CONFIGURATION

Configure Output QAM frequencies and constellation size on the Output QAM View tab.



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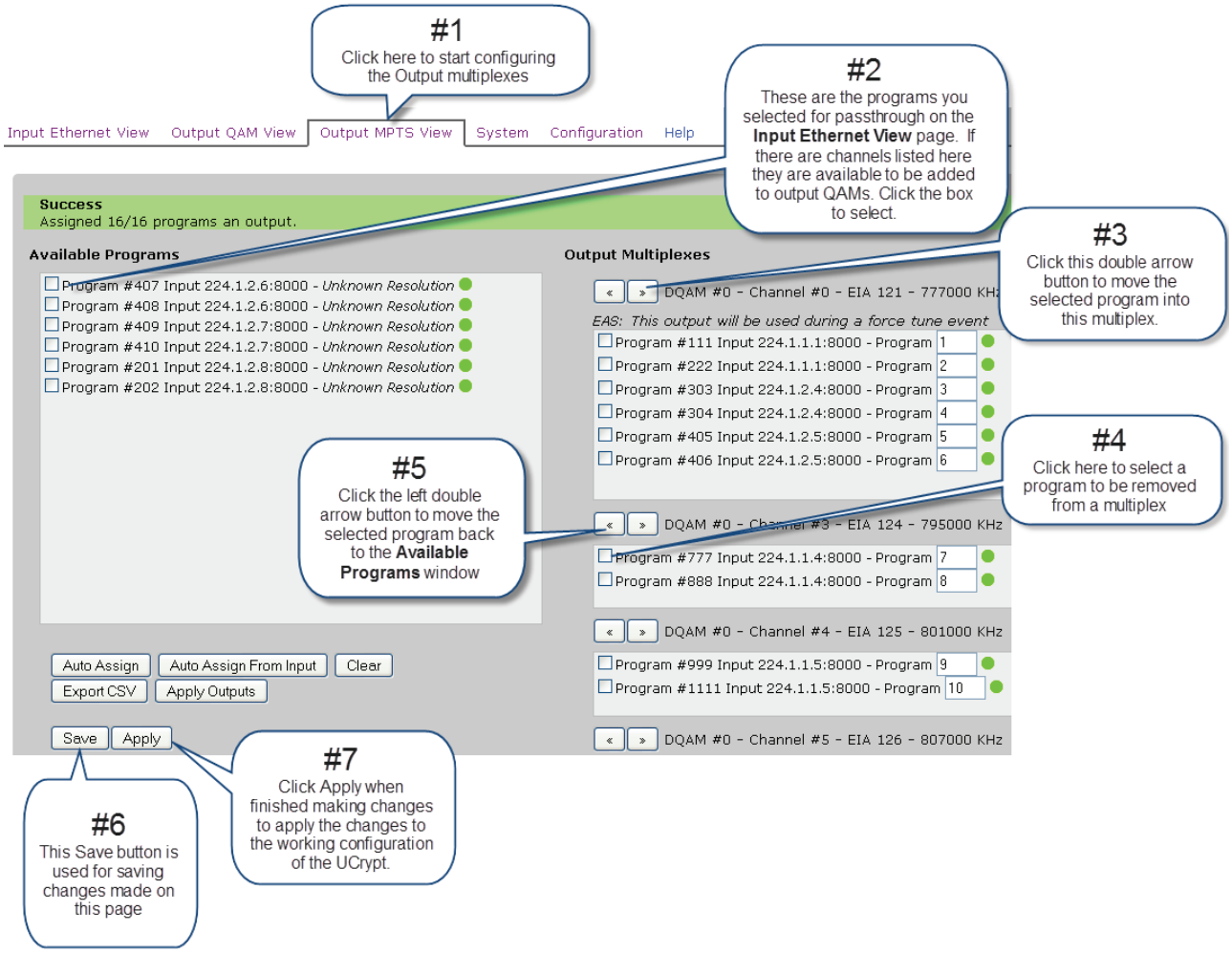
OUTPUT MPTS VIEW TAB - CONFIGURATION

10. OUTPUT MPTS VIEW TAB - CONFIGURATION

Configure output programs and multiplexes on the Output MPTS View tab.



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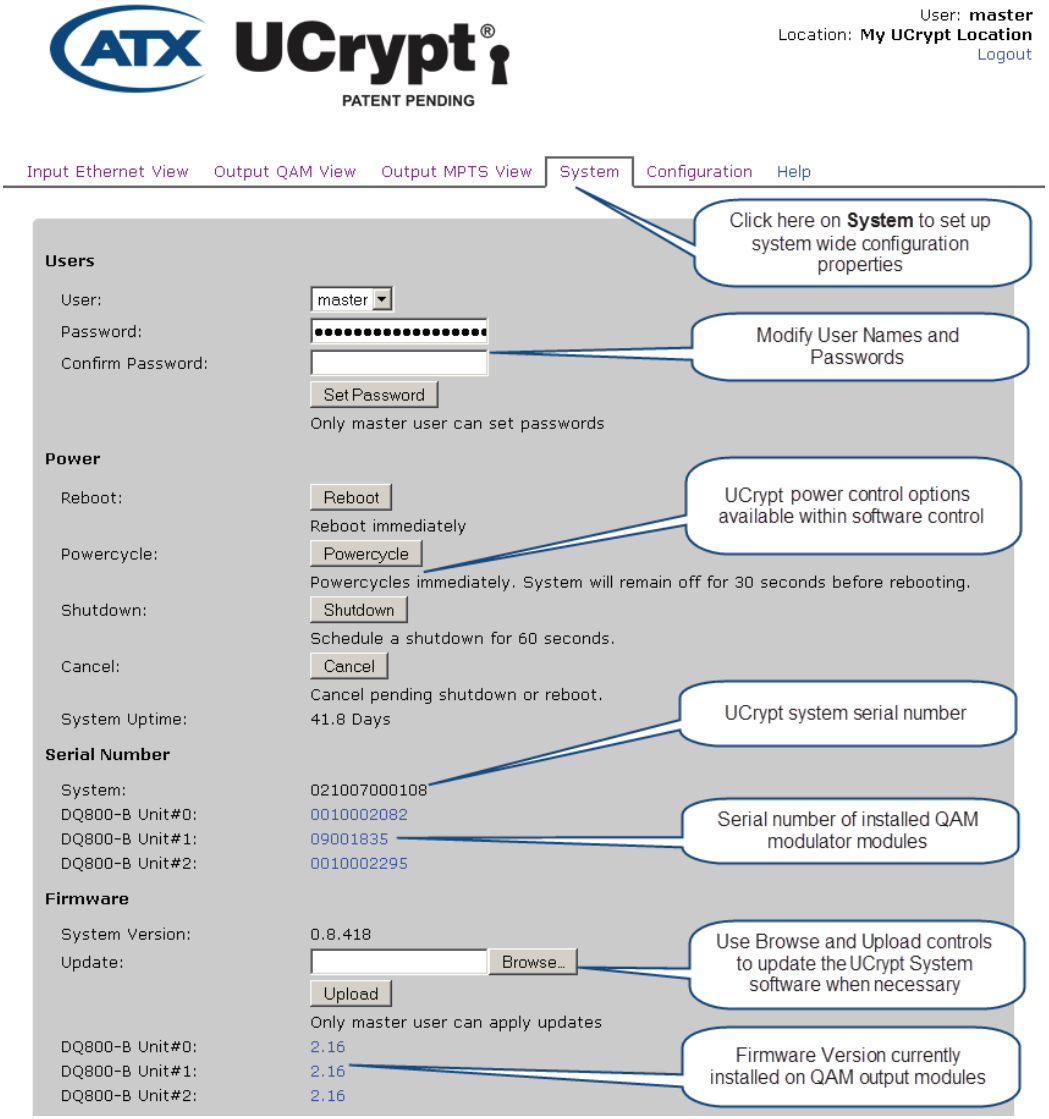
SYSTEM TAB - CONFIGURATION

11. SYSTEM TAB - CONFIGURATION

Access system wide configuration properties on the System tab.

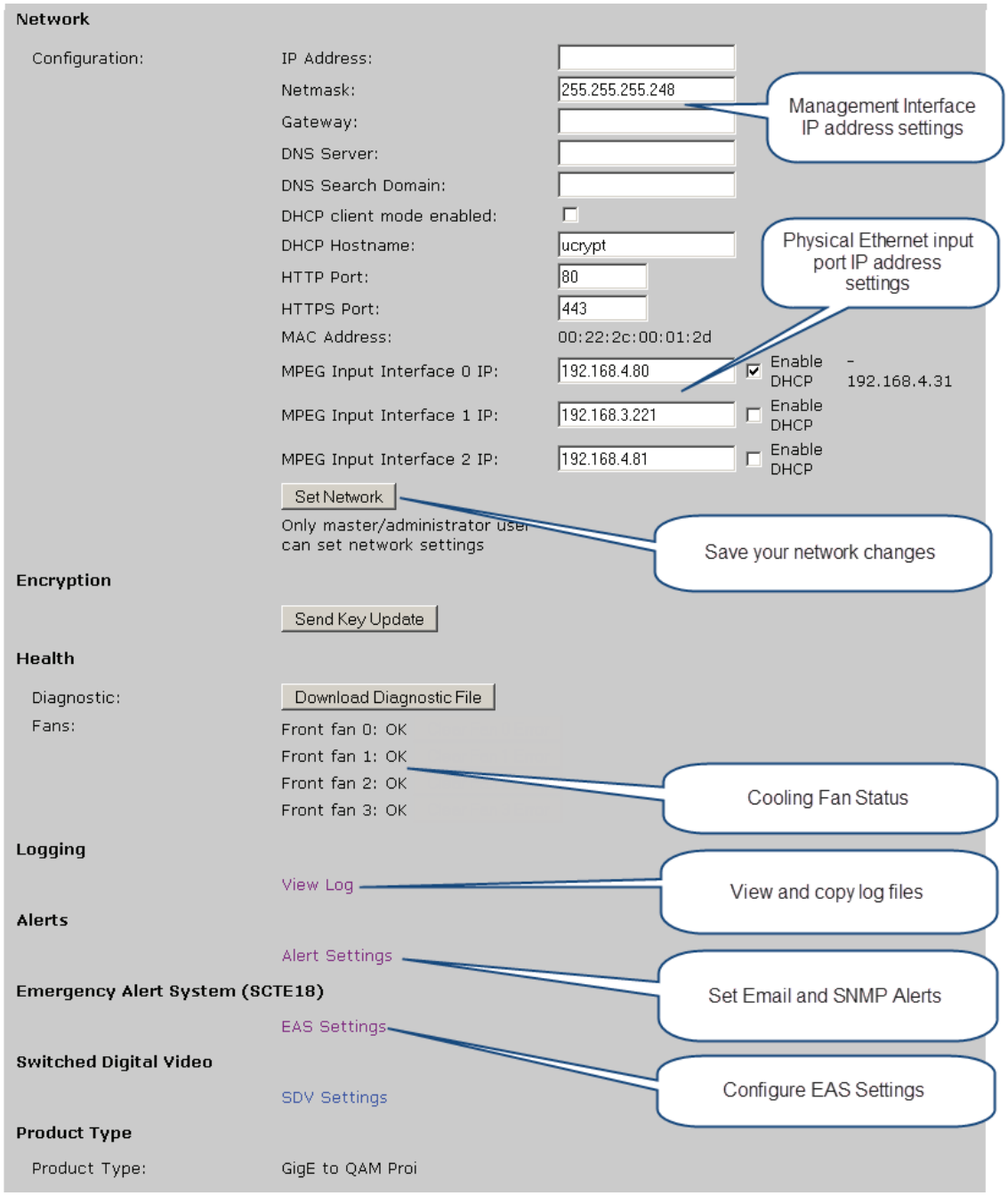


System Tab - Part 1

11.1 Default User Names and Passwords

Default User Names, Passwords and Privileges				
Account User	**Modify UCrypt® Settings**	**Install Updates**	**Set Passwords**	**Default Password**
master	Yes	Yes	Yes	atx_ucrypt_master_password
admin	Yes	No	No	atx_ucrypt_admin_password
user	No	No	No	atx_ucrypt_user_password

For detailed information on configuration of this page, go to the ATX website (atxnetworks.com) in the Resources & Support section, User Documents sub-section to download the Installation & Operation Manual.



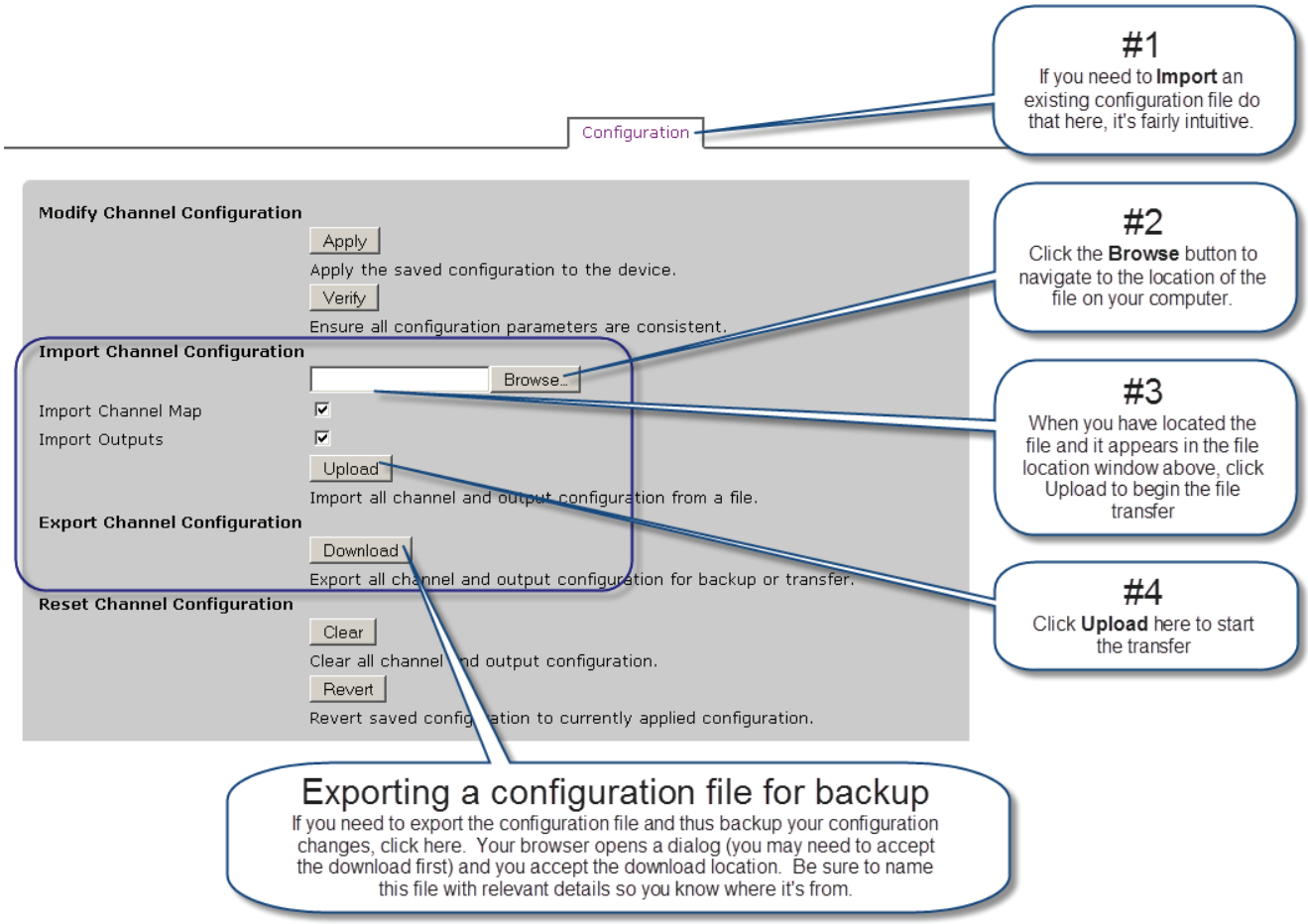
System Tab - Part 2

For detailed information on configuration of this page, go to the ATX website (atxnetworks.com) in the Resources & Support section, User Documents sub-section to download the Installation & Operation Manual.

CONFIGURATION TAB - CONFIGURATION

12. CONFIGURATION TAB - CONFIGURATION

Access Mass Deployment and Backup file utilities on the Configuration tab.



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SERVICE & SUPPORT

13. SERVICE & SUPPORT

13.1 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

13.2 Warranty Information

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

ISO
9001:15
REGISTERED

Rev. 11/19 (ANW0883)

ATX Networks
Tel: 289.204.7800 | Toll-Free: 866.YOUR.ATX (866.968.7289) | support@atx.com