

# UCRYPT TROUBLESHOOTING GUIDE

## 1. Troubleshooting

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### 1.2 Required Test Equipment

In order to troubleshoot any potential UCrypt Device related issue, it is highly recommended to have ALL of the following equipment available in order to quickly and properly diagnose the root cause of any problem.

1. A Management Computer and Ethernet cable for connecting to the problem Device and viewing the Management Interface.
2. Remote connectivity to the unit if support from an ATX Networks support engineer is required.
3. A digital field meter for QAM level, MER and BER measurement.
4. An MPEG analyzer for viewing QAM based MPEG stream PSI information (and for potentially viewing video content if not Pro:Idiom encrypted).
5. A clear QAM TV (for clear QAM versions) or Pro:Idiom enabled TV (for Pro:Idiom enabled versions) in the same room as the equipment fed DIRECTLY from the output test point through appropriate attenuators.
6. Appropriate communication cable, PC based application or programming controller for Pro:Idiom enabled TV set virtual channel map troubleshooting and verification.
7. A set top box that can be connected to the input test point and the test TV for input program presence and quality verification.

### 1.3 Initial Assessment

For any reported outages or problems with a program being generated by the system at an installation premises, the following steps should be followed in order to isolate the potential cause of the issue:

1. Login to the Management Interface. This can be done by direct connection to the unit or remotely if the equipment is setup for remote access. Remote access prior to physically visiting the premises can determine whether a physical visit is necessary.
2. On the Channel View tab, note the color of the STATUS DOT for each program.
3. If the status dot for all programs is GREEN proceed to [“1.4 Premises & RF Troubleshooting”](#) on page 1.
4. If the status dot for one or more programs is YELLOW proceed to [“1.5 Internal Troubleshooting”](#) on page 3.

### 1.4 Premises & RF Troubleshooting

#### 1.4.1 No Video for a Particular Program on ALL Premise TVs

1. Log in and select **Output MPTS View**. Record the output EIA channel numbers and MPEG Program numbers for all output programs. The Export CSV button at the bottom of the Output MPTS view page can be used to obtain a copy of the list of all programs and their locations at the output.
2. Connect a digital field meter to the Output Test Point. Check the signal level and MER for the QAM carrier on each EIA channel as noted in step 1. The level at the 20 dB down test point should be between 15 and 20 dBmV and MER should be >36 dBmV.



**FYI:** A 15 to 20 dBmV level on Output Test Point corresponds to 35 to 40 dBmV on the RF OUT port.

3. If the levels or MER on valid output EIA channels at the Output Test Point are not as described above, contact an ATX Networks support engineer.
4. Connect an MPEG analyzer to the Output Test Point to view QAM based MPEG stream PSI information (and for potentially viewing video content if not Pro:Idiom encrypted).



**FYI:** If necessary, be sure to insert additional padding on the connection from the test point. Tune the MPEG analyzer to each output EIA channel as noted in step 1. Ensure the presence of each MPEG program number for each corresponding EIA channel. Ensure a valid (non zero) bit rate is present for each program. For each program that is not Pro:Idiom encrypted, verify video presence and/or quality using the MPEG analyzer.

5. If you do not see any programs noted in step 1 but all programs show a green status dot on the Channel View tab, call an ATX Networks support engineer.
6. Connect a Pro:Idiom enabled TV to the Output Test Point (You will probably require an extra 20 dB of padding on this connection). Using the appropriate communication cable and laptop application or using the on screen TV menu with a master controller, verify that the TV channel map as entered on the TV corresponds exactly to the EIA channels and MPEG program numbers as noted in step 1 for each program generated (refer to the manual for the specific TV being used and/or contact the appropriate support representative from the TV manufacturer if more information relating to TV functionality is required). Carefully perform this step as it is easy to enter an incorrect EIA channel number or MPEG program number in a long TV virtual channel map. Correct any virtual program map entries that are incorrect. Verify the presence of all programs on the TV connected to the output.
7. If results from the previous tests are OK, but no channels are being received by the TV, this is most likely an issue with the TV. Re-loading the channel map can sometimes rectify this situation. If you are dealing with Pro:Idiom encryption, trying to tune any available clear programs using a digital TV with a regular clear QAM tuner will further indicate if the problem resides with the specific TV or possibly the Pro:Idiom insert card. Removing the Pro:Idiom insert card and replacing it with a clear QAM tuner card may also be an option.

#### 1.4.1 No Video for a Particular Channel or on all Channels on Specific Premise TVs

If only specific premise TVs are exhibiting problems on some or multiple channels, but other premise TVs do not exhibit any issues with these channels, then is it very unlikely that it is a problem with the UCrypt Device. This symptom is most likely a problem with the transmission of signal to the room or the TV in the room where the problems are being experienced.

Some things to check if there are problems in specific rooms, but above steps do not help resolution of problems:

1. Check the RF level at the TV – it should be within range of the tuner for that particular TV (refer to the TV specifications for exact tuner level requirements, but probably 0 to +10 dBmV will suffice). If the RF level is insufficient, you may need to troubleshoot the level somewhere in the premises distribution network.
2. Check the MER at the TV – ideally it should be >36 dBmV. If the MER at the TV in question is much lower than the measured MER for that EIA channel at the equipment output test point, check the premises distribution network for any potential causes (taps, connectors, levels feeding amps, etc.).
3. Check the channel map of the TV with issues. Using the appropriate communication cable and laptop application or using the on screen TV menu with a master controller, verify that the TV channel map as entered on the TV corresponds exactly to the EIA channel number and MPEG program number as generated by the UCrypt (refer to the manual for the specific TV being used and/or call the appropriate support representative from the TV manufacturer if more information relating to TV functionality is required). Carefully perform this step as it is easy to enter an incorrect EIA channel number or MPEG program number in a long TV virtual channel map. Correct any virtual program map entries that are incorrect.
4. Check the TV itself. Re-loading the channel map can sometimes rectify a problem with the TV even if the channel map is correct. If you are dealing with a TV with a Pro:Idiom insert card, removing the Pro:Idiom insert card and tuning and clear QAM channels with the original clear QAM insert card will further indicate if the problem resides with the TV or the Pro:Idiom insert card. Tuning to the various EIA channels and ensuring presence of clear QAM programs with an MPEG analyzer is a very good way to ensure signal and content is present at the room and therefore isolate the issue to the TV. Trying an alternate or clear QAM TV in the same location is also a good test to isolate the problem to a specific TV. If the above troubleshooting steps appear to be indicating that the problem has to do with the TV, contact the appropriate support representative from the TV manufacturer for further information on how to troubleshoot the TV.

## 1.5 Internal Troubleshooting

If the initial assessment shows that status dot on the 'Channel View' page is yellow for one or more programs, this indicates a potential problem with the program due to issues with CableCARD module entitlement, input RF, presence of program on plant feed and/or receipt of program PSI information from the cable TV plant feed.

Ensure that the latest version of the system firmware is installed. If it is not, contact ATX Networks support and update the system firmware. Obtain ATX update procedure [ANW1198 UCrypt Firmware Update Instructions](#) for complete update guidance.

The following sections describe various error conditions that may appear for specific programs being processed by the unit, why the error condition has occurred and steps to take to resolve the issue.

### 1.5.1 CableCARD™ Related Error Conditions

Log in, select **CableCARD View** and scroll down to the corresponding CableCARD board and tuner for the program in question. If there is an error message showing **CableCARD not Authorized** or **CableCARD not Entitled**, check the 'Conditional Access' page to verify which part of the CableCARD module provisioning process is missing (card authorization or program entitlement).

#### Resolution:

Repeat any necessary CableCARD module authorization steps and/or re-send a hit or refresh to the CableCARD module to rectify the issue. Verify that CableCARD Devices are entered and associated properly with a valid account in the billing system (and not just DAC/DNCS) so that automatic billing system rectification does not cause de-authorization or de-entitlement of CableCARD Devices.

### 1.5.1 Input RF Signal Related Error Message

Log in, select **CableCARD View** and scroll down to the corresponding CableCARD board and tuner for the program in question. If there is a yellow bar across the top of the tuner box with the description '**Tuner not locked**', check the input level and MER of the QAM at the input test point. The RF level at the input test point should be in the range of -15 to -10 dBmV (or +5 to +10 dBmV on the actual input feed). MER should be >35 dBmV. Select the **Tuner Diagnostics** hyperlink for the tuner in question to ensure the RF level as reported by the tuner shows between -5 and +10 dBmV (Note that this reported value does not correspond to the RF level at the input as there are several loss and gain stages internally within the equipment before the RF signal reaches the tuner). The input level should be adjusted so that all tuners show between -5 and +10 dBmV as reported by the tuners. The SNR as reported by the tuner should be >32 dB (Note that this is an SNR measurement at the demodulator and not an MER measurement for the QAM itself so this value will not be the same as an MER measurement with a field meter). For an overall summary of signal level and SNR reported by all the tuners, select the **All Tuner Diagnostics** hyperlink at the bottom of the CableCARD View tab.



**FYI:** If you have checked RF signal level and MER directly at the UCrypt input for the QAM frequency in question and they are within specification but the error message persists, ensure you have remote login connectivity to the unit and call an ATX Networks support engineer with the IP address and login information.

### 1.5.1 MPEG Stream Information Related Error Message

Log in, select **CableCARD View** and scroll down to the corresponding CableCARD board and tuner for the program in question.

1. If a message **Failed to find program in PAT** or **Failed to add program – PMT not found** appears below the program in question, this indicates a problem with the PSI information in the QAM for that program.

#### Resolution:

Check for the presence of the incoming channel with an MPEG analyzer or STB off the input feed test point. If the program is present on the input stream, and on the EIA channel and MPEG number shown in 'Program Details' view, further investigation of the actual PAT and PMT being sent out on this QAM may be necessary to determine the cause of the issue.

2. If a message **Failed to add program – timed out** appears below the program in question, this indicates a problem with receipt of PSI information for this program. This condition could be a result of any number of external or internal causes (tuner lock problems at time of 'Apply', PSI information not present in the stream, or an error from the CableCARD module while passing the stream to the UCrypt system, etc.).

#### Resolution:

Check for the presence and/or location of the incoming channel with an MPEG analyzer or STB off the input feed test point. If the program is present on the input stream, and on the EIA and MPEG number shown in Program Details

view, ensure you have remote login connectivity to the equipment and call an ATX support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the error. Once this is done, steps to potentially resolve this condition include the following:

- a) Select **Refresh** on the Program Details page.
- b) Select **Apply** on the CableCARD View page.
- c) Reboot or power cycle the unit.

### 1.5.1 Internal CableCARD™ Communication Error

If **Unknown** appears under either the bitrate or resolution or **CableCARD technical error** appears for the program in question, this may indicate an internal CableCARD module communication error.

#### Resolution:

Ensure that the latest version of the system firmware is installed. If it is not, contact ATX Networks support and update the system firmware Obtain ATX update procedure [ANW1198 UCrypt Firmware Update Instructions](#) for complete update guidance.

If the firmware upgrade does not resolve the issue, this may be an internal error. Ensure you have remote login connectivity to the equipment and contact an ATX Networks support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the error. Once this is done, steps to potentially resolve this condition include the following:

1. Select **Refresh** on the Program Details page.
2. Select **Apply** on the CableCARD View page.
3. Reboot or power cycle the unit.

### 1.5.1 Internal QAM Module Error

Select the **Output QAM View>QAM Diagnostics** page for the output QAM module associated with the problem program in question. If there has been a high number of restarts for the output QAM outputting the program in question this may indicate an internal QAM module error.

#### Resolution:

Ensure that the QAM module firmware is the latest version. If it is not, contact ATX Networks support and update the system firmware Obtain ATX update procedure [ANW1198 UCrypt Firmware Update Instructions](#) for the complete update guidance. The instruction may also be obtained at this site: [https://atxnetworks.com/wp-content/uploads/ANW1198\\_MDU\\_UCrypt\\_Firmware\\_Update\\_Instruct\\_v3.2.1.pdf](https://atxnetworks.com/wp-content/uploads/ANW1198_MDU_UCrypt_Firmware_Update_Instruct_v3.2.1.pdf)

If the firmware upgrade does not resolve the issue, this is an internal error. Ensure you have remote login connectivity to the equipment and contact an ATX Networks support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the error. Once this is done, steps to potentially resolve this condition include the following:

1. Select **Restart** on the DQAM.
2. Reboot or power cycle the unit.

## 1.6 Other Troubleshooting

### 1.6.1 Unit Does Not Power Up

If the system does not power up follow the steps below:

1. Ensure the power toggle button on the power supply at the rear is in the 'On' position. If a software based shutdown command was sent to the Device from the Management Interface, the power switch must be set to the 'Off' position for a minimum of 30 seconds to allow for proper circuit discharge and then set back to 'On' position to begin powering up the system again.
2. Check that the power cable is firmly plugged in at both ends. If possible, try an alternate power cable.
3. Check to make sure the outlet the equipment is plugged into is live and carrying mains power.

### 1.6.1 No Connectivity to the UCrypt® Unit

If you experiencing issues connecting to the Management Interface follow the steps below:

1. Ensure at that at least one LED on the Ethernet adapter on both the host computer and the Management Interface port is lit. If there are no link lights on either Ethernet adapter, there is a problem with either the Ethernet adapter of

the host computer, the Ethernet adapter of the UCrypt Device or the Ethernet cable being used to connect the two Devices. Plug the host computer into another Device to ensure its Ethernet interface is working. Also try a different Ethernet cable that is confirmed to be working with the host computer and another Device. If the host computer can connect to another Device using the same Ethernet cable as was used to attempt to connect to the UCrypt port, but there are still no link lights when the connection is made, contact an ATX Networks support engineer.

2. If the link lights are present, but you cannot establish the Management Interface connectivity, ensure all steps were followed exactly as described in the **Initial Startup Chapter** of [ANW1215 UCrypt Operating Manual](#). This manual may be obtained from the ATX support site [https://atxnetworks.com/wp-content/uploads/ANW1215\\_MDU\\_UCrypt\\_Operation\\_Manual.pdf](https://atxnetworks.com/wp-content/uploads/ANW1215_MDU_UCrypt_Operation_Manual.pdf). If the unit has been assigned a static IP address that is different from the original default IP of 192.168.0.23, you must ensure that the Management Computer subnet is the same as the subnet assigned to the unit in order to establish a direct connection. If there is still no connection using a web browser, try sending a network ping to the UCrypt management port on its assigned IP address. If the ping is successful, then network connectivity is present, so the issue is most likely with the browser or some other settings on the Management Computer. Ensure that the correct address is typed into the URL/address field of the browser. Also try using an alternate browser.
3. If you receive a warning on the browser web page that the site you are trying to connect to is potentially unsafe, this is normal as the UCrypt Device software may not currently have a signed & registered Security Certificate that many web browsers look for from web servers. Select the option to ignore this warning and continue to the Management Interface.
4. If none of the above steps are successful, access the Craft interface on the back of the equipment. You may have to remove a screw holding the panel over this interface. The static IP address of the Craft Interface is 192.168.250.2 however use subnet mask 255.255.0.0 in order to communicate with the auxiliary port. Open a browser and enter <https://192.168.250.2> while connected to the Craft Interface. If the Management Interface does not open, try pinging the interface on this address. If all of the above steps fail, contact an ATX Networks support engineer.

### 1.6.1 Intermittent Connectivity &/or Management Interface Access to the UCrypt®

If you experience intermittent connectivity to the UCrypt GUI follow the steps below:

1. Shut down and restart the browser being used to access the unit. If this does not help, reboot the Management Computer and try accessing the unit with the browser again. Manually clear all cached information from the browser to ensure the issues are not related to caching of information by the browser. If all of these measures do not help, try using an alternate browser.
2. If the unit is experiencing intermittent connectivity while connected remotely, try logging in directly on site. If the intermittent connectivity is not present while connected directly but is present while connected remotely, check the network being used to provide remote connectivity for any possible issues.
3. If all of the above steps fail, please ensure you have remote login connectivity and contact an ATX Networks support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the problem.

### 1.6.1 OOB Signal Not Locking

If you are experiencing issues with the CableCARD boards locking into the OOB signal from the plant, follow the steps below:

1. Ensure the presence of the QPSK OOB carrier at the input test point. Check the signal level of the QPSK OOB carrier -- it needs to be <15 dBmV for the OOB signal to lock.
2. If the location of the OOB carrier on the plant is at 72.5 MHz and there is an analog channel present on EIA channel 4 on the plant, the OOB tuners may have difficulty locking due to the close proximity of the audio carrier from the analog channel 4 program to the OOB carrier. If this is the case, contact an ATX Networks support engineer for more information about outboard filters that can be used to rectify this issue.
3. If all of the above steps do not rectify the issue, ensure you have remote login connectivity to the equipment and contact an ATX Networks support engineer and provide them with IP address and login information.

### 1.6.1 CableCARD™/Tuner Board Does Not Appear on GUI

If an entire CableCARD/tuner board has disappeared from the CableCARD View page in the GUI, this may be due to an internal system error.

#### Resolution:

Ensure that the latest version of the system firmware is installed. If it is not, contact ATX Networks support and update the system firmware Obtain ATX update procedure [ANW1198 UCrypt Firmware Update Instructions](#) for complete update guidance.

If the firmware upgrade does not resolve the issue, this is an internal error. Ensure you have remote login connectivity to the equipment and contact an ATX Networks support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the error. Once this is done, steps to potentially resolve this condition include



the following:

1. Reboot or power cycle the unit.

### 1.6.1 QAM Module Does Not Appear on GUI

If an entire QAM module has disappeared from the Output QAM View page in the GUI, this may be due to an internal system error.

#### Resolution:

Ensure that the latest version of the system firmware is installed. If it is not, contact ATX Networks support and update the system firmware. Obtain ATX update procedure [ANW1198 UCrypt Firmware Update Instructions](#) for complete update guidance.

If the firmware upgrade does not resolve the issue, this is an internal error. Ensure you have remote login connectivity to the equipment and contact an ATX Networks support engineer and provide them with IP address and login information so that a technician can diagnose and log the nature of the error. Once this is done, steps to potentially resolve this condition include the following:

1. Reboot or power cycle the unit.

## 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](mailto: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](mailto: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](mailto:orders@atx.com)  
Web: [www.atx.com](http://www.atx.com)

