INSTRUCTION MANUAL

AQD-RCS

AQD - Remote Configuration Server
Stock No. 2730

UL

651217900A

<table>
<tr><td>The lightning flash with arrow-head symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.</td><td>⚡</td><td>**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN</td><td>**!**</td><td>The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.</td></tr>
</table>

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For all pluggable equipment the socket-outlet shall be installed near the equipment and shall be easily accessible.

Never power up one RPR from the outlet of another RPR, Daisy chaining or using a multiple outlet power strip powered from the RPR could result in fire due to overloading of the AC supply circuit.

Unpacking and Installation

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Unpacking and Handling
Each unit is shipped with all equipment assembled, wired, factory tested, and then packaged in an appropriate shipping container.
Ensure that all accessories are removed from the container and packing material before they are discarded.

Mechanical Inspection
Inspect the front and rear of the equipment for shipping damage. Make sure the equipment is clean, and no wires, cables, or connectors are broken, damaged or loose.

Precautions
Adherence to the initial installation precautions outlined in the Table below will help prevent problems arising during the installation and future maintenance of the unit.

Damage in Shipment
Should any damage be discovered after unpacking the unit, immediately file a claim with the carrier. A full report of the damage shall be made and a copy forwarded to Blonder Tongue Laboratories Inc. The company will then advise what disposition is to be made of the equipment.

Unit Adjustments
After installing the unit, make the following adjustments:

Audio Modulation
With audio source connected, adjust Audio Modulation control for 25 kHz deviation. In lieu of an audio modulation meter, use a TV set and adjust for equal volume as compared to a known off-air broadcast. Monitor for a few minutes to assure that maximum volume does not over modulate, which can cause picture distortion.

Video Modulation

With a nominal 1 volt P-P video source connected, adjust the Video Modulation control for the correct percentage of modulation (87.5%). If test equipment is not available for such measurements, then adjust for proper picture contrast when viewed on a TV set (compare with known off-air broadcast picture quality).

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.

Table 1 - Installation Precautions Table

| PRECAUTIONS	REQUIREMENTS
Avoid Heat Buildup	Allow (1) EIA rack space (1$^{3/4}$") between powered headend products in the equipment racks.
Ensure easy access to rack wiring.	Allow a minimum of 18 inches behind the equipment rack(s)
Facilitate servicing and maintenance.	Allow a minimum of 36" of clearance in front of the equipment rack(s).
Avoid direct heating or air conditioning.	If unavoidable, use deflector plates.
AC power source outlets.	Locate equipment near sufficient outlets to provide power for test equipment and power tools.
Rack Support.	Make certain rack supports are sufficiently rigid to support racks.
Building leakage.	Beware of dripping water onto equipment from leaky roofs, waveguide roof entries, and cold water pipe condensations.

Safety Instructions

WARNING!

You should always follow these instructions to help ensure against injury to yourself and damage to your equipment.

➧ Read all safety and operating instructions before you operate the unit.

➧ Retain all safety and operating instructions for future reference.

➧ Heed all warnings on the unit and in the safety and operating instructions.

➧ Follow all installation, operating, and use instructions.

➧ Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.

➧ Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.

➧ Do not operate the unit in high-humidity areas, or expose it to water or moisture.

➧ Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mounted equipment.

➧ Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.

Safety Instructions - continued

◗ Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.

◗ The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.

◗ Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

◗ Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:
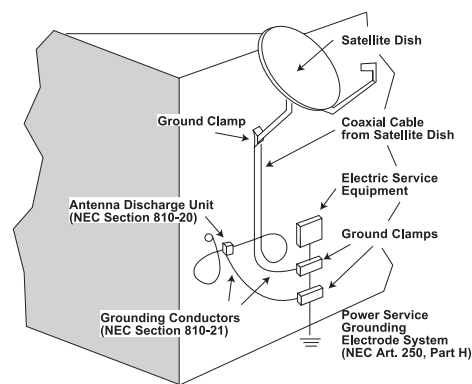
◗ We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and other equipment. This will prevent damage caused by lightning or power line surges.

◗ Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.

◗ Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.

◗ Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.

◗ Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.

◗ Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:

❒ The power supply cord or plug is damaged;

❒ Liquid has been spilled, or objects have fallen into the unit;

❒ The unit has been exposed to rain or water;

❒ The unit has been dropped or the chassis has been damaged;

❒ The unit exhibits a distinct change in performance.

◗ When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.

◗ Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

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Description

The Blonder Tongue AQD Remote Configuration Server is an optional accessory product to allow remote monitoring and control of an AQD (ATSC/QAM Demodulator) headend over the Internet. The Remote Configuration Server eliminates the need to load any special software onto a computer and uses a standard web browser to access the unit. It can also be used with any computer, Macintosh® or PC, etc. and at any location that has a web browser with Internet access including your home, office or anywhere on the road.

Features and Benefits

- Permits complete remote monitoring & control of all units at a headend location
- Works on any computer — MAC or PC compatible
- Easy to use graphical interface through a standard web browser
- No software installation required

System Requirements

The AQD RCS is designed to run with minimal system requirements. The minimum requirements for the software application are shown below:

Operating System:	Any that supports Web Browser Interface
Network Interface Card:	Any that supports Ethernet Protocol
Web Browser:	Microsoft Internet Explorer® 6.0 or later recommended
	JavaScript Enabled Required
Display resolution:	1024 x 768 recommended, 800 x 600 required
Processor:	Minimum Pentium® III or equivalent recommended
Memory:	Minimum 256 MB recommended

Getting Started

You will need several cables to allow the Remote Configuration Server to function properly. Below is a list of the required cables:

- RJ-11 Extension Cable, Stock No. 2722
  Standard cross pinning for communication — see Appendix A for details
- RJ-11 Jumper Cables for Daisy Chaining PCM units, Stock No. 2721
  Custom built jumper cables – Straight pinning for data — see Appendix A for details
- RJ-45 Ethernet Data Cable — **(Not Supplied)**
 Standard Ethernet Cable — Straight pinning for data

NOTE: Straight pinning means that each contact is straight pinned to it's respective contact (1-1, 2-2, 3-3, etc.).
Cross pinning means that contacts are pinned to the opposite contact. See Appendix A for wiring details.

The Unit
Front Panel
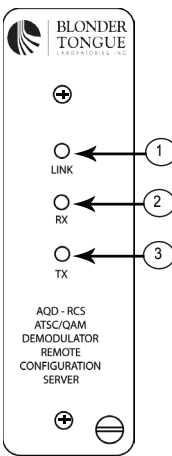
1. **Ethernet Link** – LED Indicator
2. **Ethernet Receive** – LED Indicator
3. **Ethernet Transmit** – LED Indicator

Rear Panel
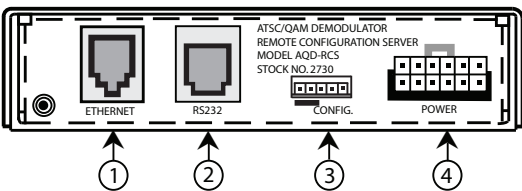
1. **RJ-45 Ethernet Connector** — Connect to Internet (via Router, Modem, etc.)
2. **RJ-11 RS-232 Serial Data Connector** — Connect to AQD Headend
3. **Configuration Header** — For Factory & Restore Default Use Only
4. **12-Pin Power Connector** — Connect with AQD-PCM power/data cable

Specifications

Programming
IP Addressing: Fixed Static IP
User Name & Password: Software Settable
Administrator & View Modes

Mechanical
Module Dimensions: 11.31 x 5.25 x 1.5 Inches
Chassis Dimensions: 19 x 5.25 x 12 Inches
Mounting: Standard 3 EIA Unit Height – 5.25" x 19"
Module Weight: 1.5 lbs.

General
Power Requirement: 5 VDC, 200 mA
Operating Temperature: 0° to +50° C
Storage Temperature: -20° to +70° C
Humidity: 0 to 95% RH

Controls
RJ-45 Ethernet Connector
RJ-11 RS-232 Serial Data Connector
12-pin Power Connector

Indicators
Ethernet Link LED
Ethernet Receive LED
Ethernet Transmit LED

Installing the AQD-RCS

The AQD-RCS is designed to occupy any single module slot in the AQD rack chassis. Slide the AQD-RCS unit into the desired chassis slot and connect the 12-pin power/data cable from the PCM to the RCS unit. Tighten the retaining screw on the front panel to secure the unit in the chassis.

The Chassis is 5.25 inches tall, 19 inches wide and 12 inches deep.

> **NOTE:** The AQD PCM will appropriately power the RCS unit but will treat it as an "AQD not present" on the LCD readout window and in the web interface – this does not indicate a problem and is the normal condition.

Unit Connections

AQD Remote Configuration Server Connection Wiring Diagram
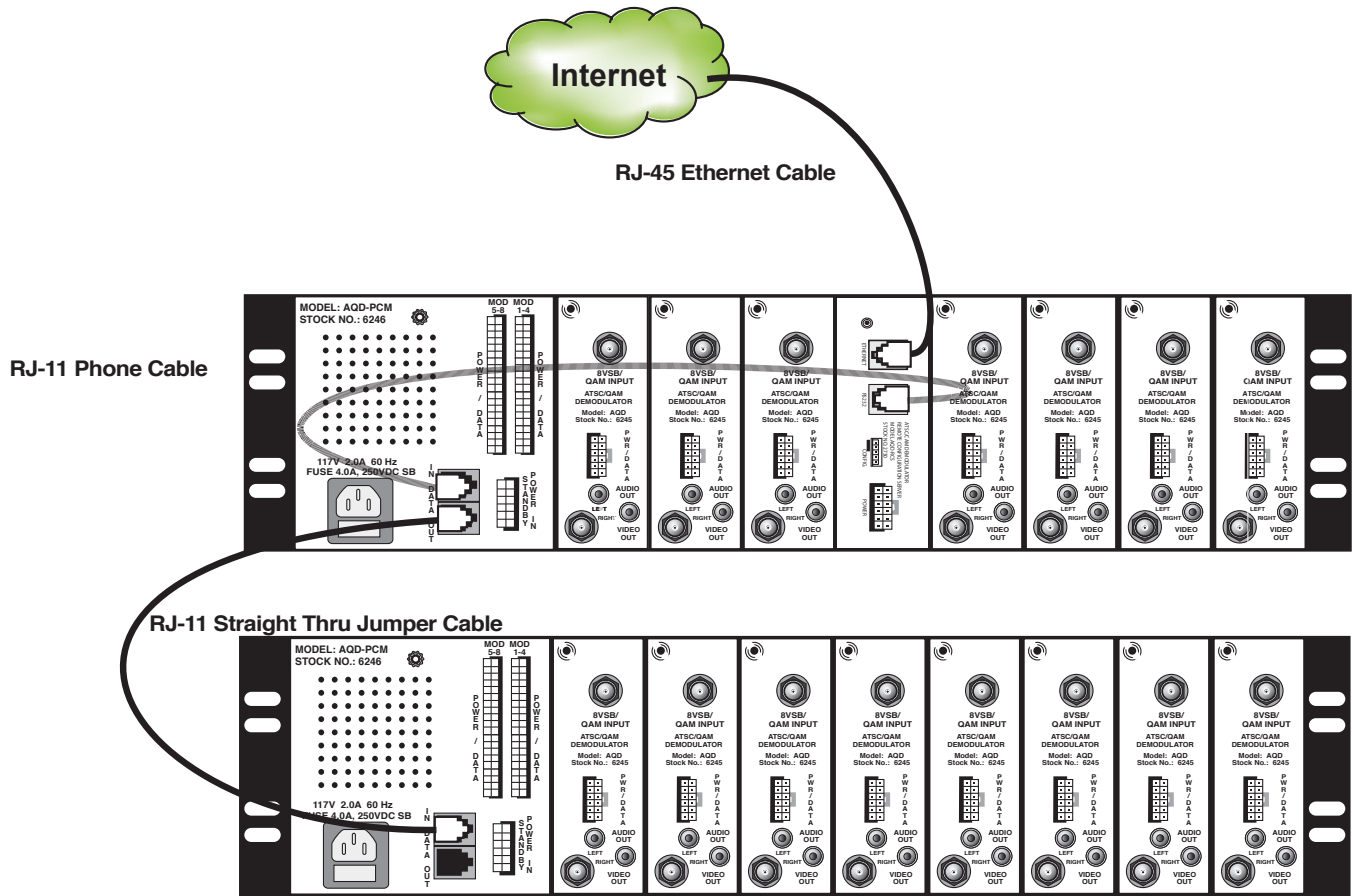
NOTE: It is recommended to place the AQD-RCS unit in the middle slot of the top AQD rack in the headend. The middle slots in the AQD chassis are subject to the most heat. The AQD-RCS has the capability to measure the ambient temperature. Placing the AQD-RCS in this location in the rack will provide the most valuable data about the overall temperature of the entire rack. It is also recommended that if all chassis slots are not used that empty slots start at the middle of the rack and alternate to encourage the most air flow possible. As with any electronic equipment this will help extend the usable life of the units.

Accessing the AQD-RCS

The AQD-RCS features an easy to use web interface and is designed to be accessed by using a standard HTTP web browser. The AQD-RCS is optimized for use with Microsoft® Internet Explorer™ 6.0 or later and requires Javascript to enabled.

The unit may be accessed locally or remotely. Remote access is defined as a connection to the unit over an LAN, a WAN or the Internet. Local access is defined as a direct connection to the unit from the personal computer network interface card.

- A standard 'straight through' RJ-45 Ethernet cable is used for a Remote Access configuration
- A 'Cross' RJ-45 Ethernet cable is required for a direct connection.

To Access the AQD Remote Configuration Server:

- Open a web browser on your computer
- Enter the default IP address in the address line on your browser — http://172.16.70.1

ATTENTION!

> NOTE: It may be necessary to adjust your computer's IP address settings to ensure that the same subnet address is set to permit first-time communication to the AQD-RCS.
>
> Adjust your IP address from automatically obtain or another fixed address to 172.16.70.2 (any last digit of 2-254 may be used) & Subnet Mask to 255.255.0.0

• Enter the User Name and Password and Click Submit

Default Entries:
Administrator Access:
Username: Admin
Password: pass

Read Only Access:
Username: Guest
Password: pass
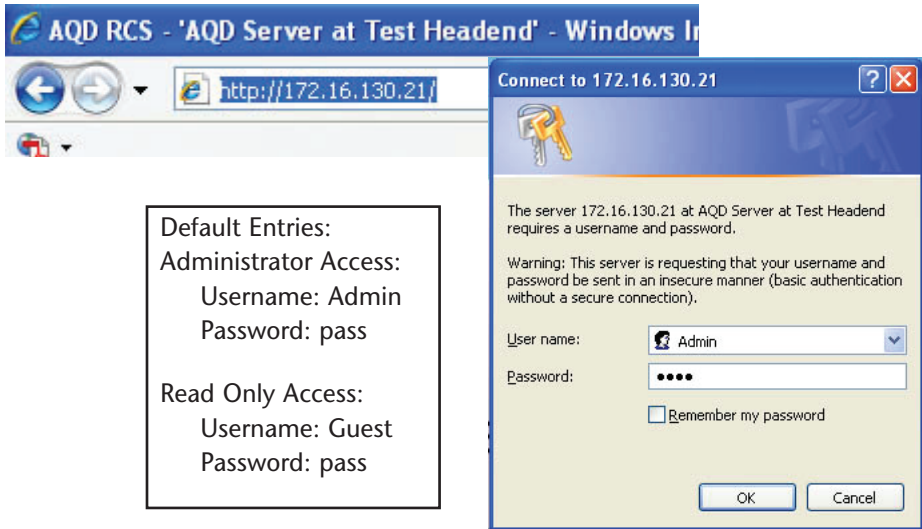
If the User Name and Password are correctly entered then the AQD-RCS will attempt communication. This is a real-time serial communication process and may require several seconds to get a status response.
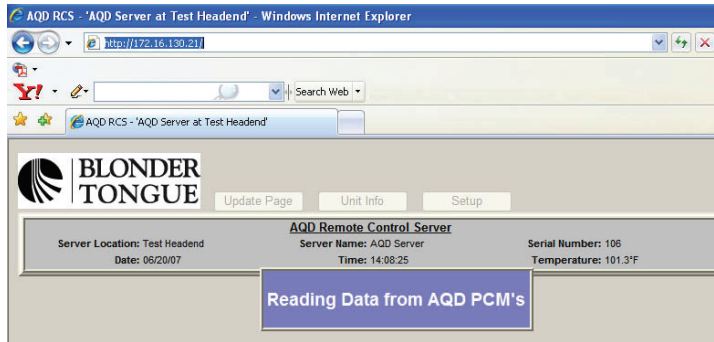
The "Reading Data from AQD PCM's" message will be displayed during the communication process. After a status response is received the Headend Status screen will be displayed. This is a real time data communication process in which the AQD-RCS is reading the data from each AQD module and may take a few moments to complete, please be patient.
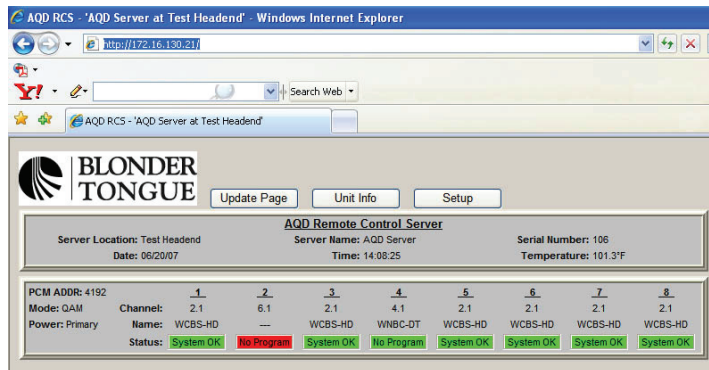
Click the Setup button to proceed to the Setup Page - this permits the entry of the AQD-PCM unit digital addresses into the AQD-RCS.

AQD-RCS Setup Page

The AQD-RCS Setup Page is used to enter headend site information as well as the digital address of each respective PCM unit connected and deployed in the headend. The digital address of the PCM unit must be entered in order for the Remote Configuration Server to communicate correctly in real time.
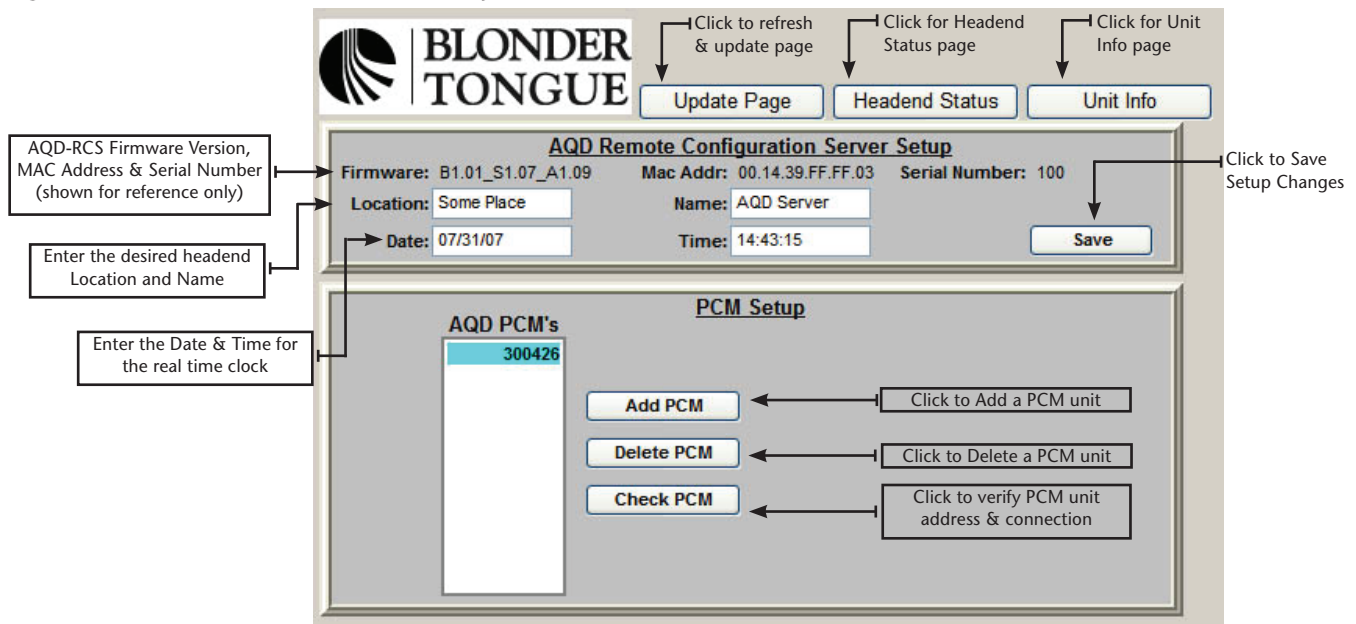
Enter the desired information in the upper portion of the Setup Page and Click the Save button to apply the information to non-volatile memory.
Use the lower portion (PCM Setup) to enter, remove and verify AQD-PCM units. The digital address of an AQD-PCM must be first entered into the AQD Remote Configuration Server before it can communicate.

Adding a PCM

1. Click the Add PCM button to display the script dialog box.
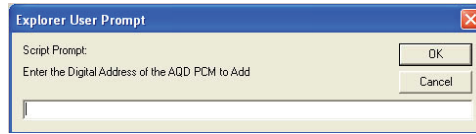
NOTE: The AQD-RCS uses Javascript for the Add PCM dialog box to pop up, this may need to be enabled in your browser.

Click anywhere on the warning bar (as pictured above & below) then select the Allow Scripted Windows option.
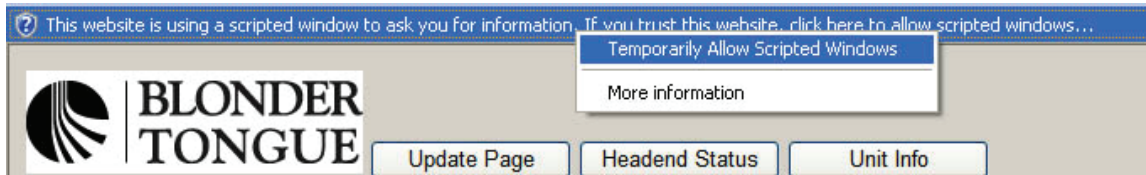

2. Enter the digital address of each PCM unit to be installed in the AQD-RCS for the respective location.
   The AQD-PCM digital address can be displayed by accessing the Interactive menu using the UP/DN arrow navigation keys on the front panel LCD menu of each PCM unit.
   Best results are achieved by entering the PCM addresses in the top to bottom order they are physically installed in the rack.
3. Click OK to Enter the PCM digital Address.

Deleting a PCM

1. Click the Delete PCM button to remove a PCM address from the installed list.
   The confirmation dialog box will appear.

2. Click OK to remove the PCM address.
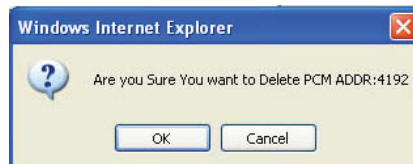
Checking a PCM address and communication

The AQD-RCS has an innovative tool built in to test the communication to a PCM address entered in the list. ***This is extremely valuable to ensure that the correct entry was made and that the wiring to the unit is correct.*** Any unit installed can be checked at anytime or sequence in the process and it does not matter where the unit physically resides in the headend chain.

1. Highlight a PCM address in the list by clicking on it.

2. Click the Check PCM button to query the digital address highlighted.

The AQD-RCS will attempt to communicate with the highlighted unit and report back a verification for successful communication or a cannot communicate message if the attempt failed. This is a very valuable tool to ensure that all units entered are correctly connected and the digital address matches the on-screen entry.

If the Cannot Communicate with PCM error message is displayed:

1. Verify the PCM address is entered in the list correctly - the AQD-PCM digital address can be displayed by accessing the Interactive menu using the UP/DN arrow navigation keys on the front panel LCD menu of each PCM unit.

2. Check the cabling on the rear of the AQD-RCS and respective AQD-PCM

Ensure a standard 4-pin cross phone cable (RJ-11) is used from AQD-RCS to the RJ-11 IN port of the first AQD-PCM and a straight thru RJ-11 jumper is used from the OUT port to the IN port of each subsequent PCM unit.
(See Appendix A for Cable Details)

Headend Status Page

The AQD-RCS Headend Status Page provides a snapshot of the status for each AQD module connected and installed to a PCM that is entered and connected to the AQD-RCS. PCM units are displayed vertically in the order they are entered in the setup section. There are two main areas of the Headend Status page that provide information to the operator. The top box provides information from the AQD-RCS including editable Name & Location fields, real-time clock, date, serial number and a temperature monitor displayed in degrees Fahrenheit. The lower and subsequent boxes (not shown) provide information for each PCM and respective AQD module installed. A color coded status indication is provided for each module that is determined by both the module lock status and the SNR status.

Signal to Noise Ratio Status Information
Green - Indicates Locked Signal w/ Good SNR
Yellow - Indicates Locked Signal w/ Marginal SNR,
8VSB Mode = Less than 23 dB & QAM Mode = Less than 27 dB
Orange - Indicates No Channel Database Present, No SNR Displayed
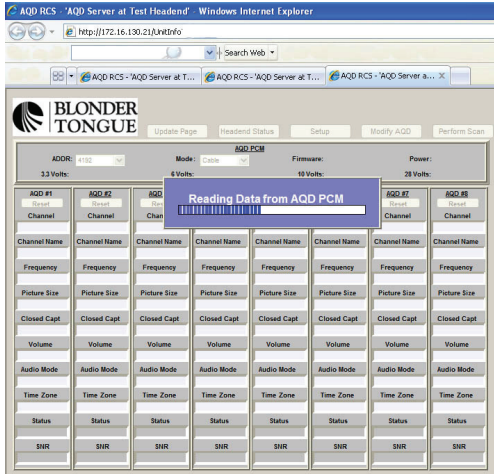Red - Indicates No Signal Lock, No SNR Displayed

Module Lock Status Information
Green - Locked, Status OK
Yellow - Locked Signal, No Program, Audio Only, No Audio or Scrambled signal
Orange - No Channel Database Present or Scanning
Red - Indicates No Signal Lock or No Program Present

AQD-RCS Unit Information Page

The AQD-RCS Unit Information Page provides detailed information for each AQD module connected to a respective AQD-PCM unit. Clicking the Unit Info button or anywhere on the PCM box in the Headend Status page will load the Unit Information Page. The Unit Information is displayed for each particular unit installed in the headend. The digital address of the PCM is found at the top left below the Blonder Tongue logo. Click the arrow and select the desired address to toggle between specific PCM units.


Unit Information — View Mode

The AQD-RCS is programmed with the ability to provide some detailed information when a user moves the cursor on or near a field (referred to as a mouseover) with interactive information. One significant example is on the View and Modify pages is when a mouseover is performed on the Channel Number, Channel Name and Frequency the Signal mode and Channel number is display (as shown below).

8VSB: Ch 61 ← Displays the 8VSB Mode with the respective physical UHF channel
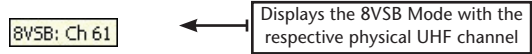
ADDR — The AQD-PCM Address section permits toggling between installed PCM units. Click the arrow and select the desired PCM digital address

Mode — The PCM mode selection permits toggling between the cable and off-air modes, a mode change requires a rescan of all units connected to the PCM unit

**Reset** — Pressing reset performs a warm power reset to the AQD module

Modify AQD Button — Click this button to activate the Modify Mode in order to make detailed module changes Perform

Scan Button — Click this button to perform a scan. A scan is performed for the AQD to automatically populate it's channel database, it is required to be performed in order for the AQD to function properly.
Clicking the Scan button will launch the Scan dialog box as shown below. Click on the scan button for a desired module to begin the scan process. More than one module may be scanned at a time by pressing the scan button for the next desired module.

Scan Selection Dialog Box
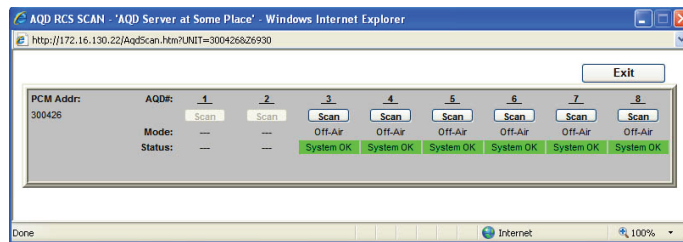
Scan Progress Bar
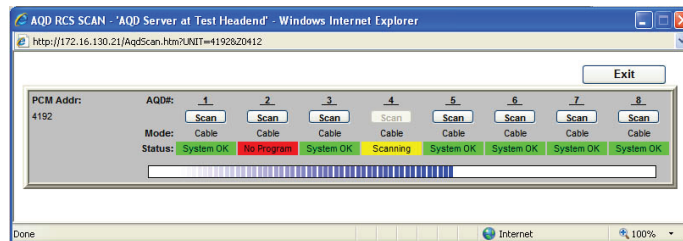
Please be patient as the scan process can take a few minutes to complete, approximate wait is 1-2 minutes for Off-Air Mode 8VSB scans and 3-4 minutes for Cable mode QAM. The progress bar will illustrate the process. It is recommended to wait until the scan is completely finished before attempted to make any module modifications.

Scan Complete
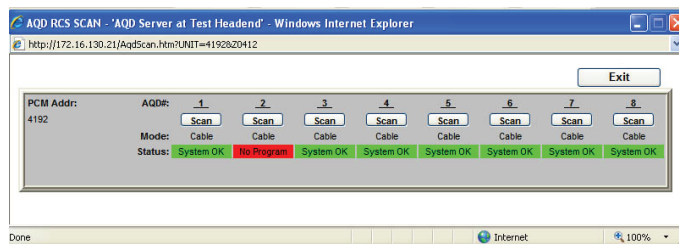
Exit Button — Click the exit button to close the scan dialog box, this does not cancel any in process scans.

Unit Information — Modify Mode

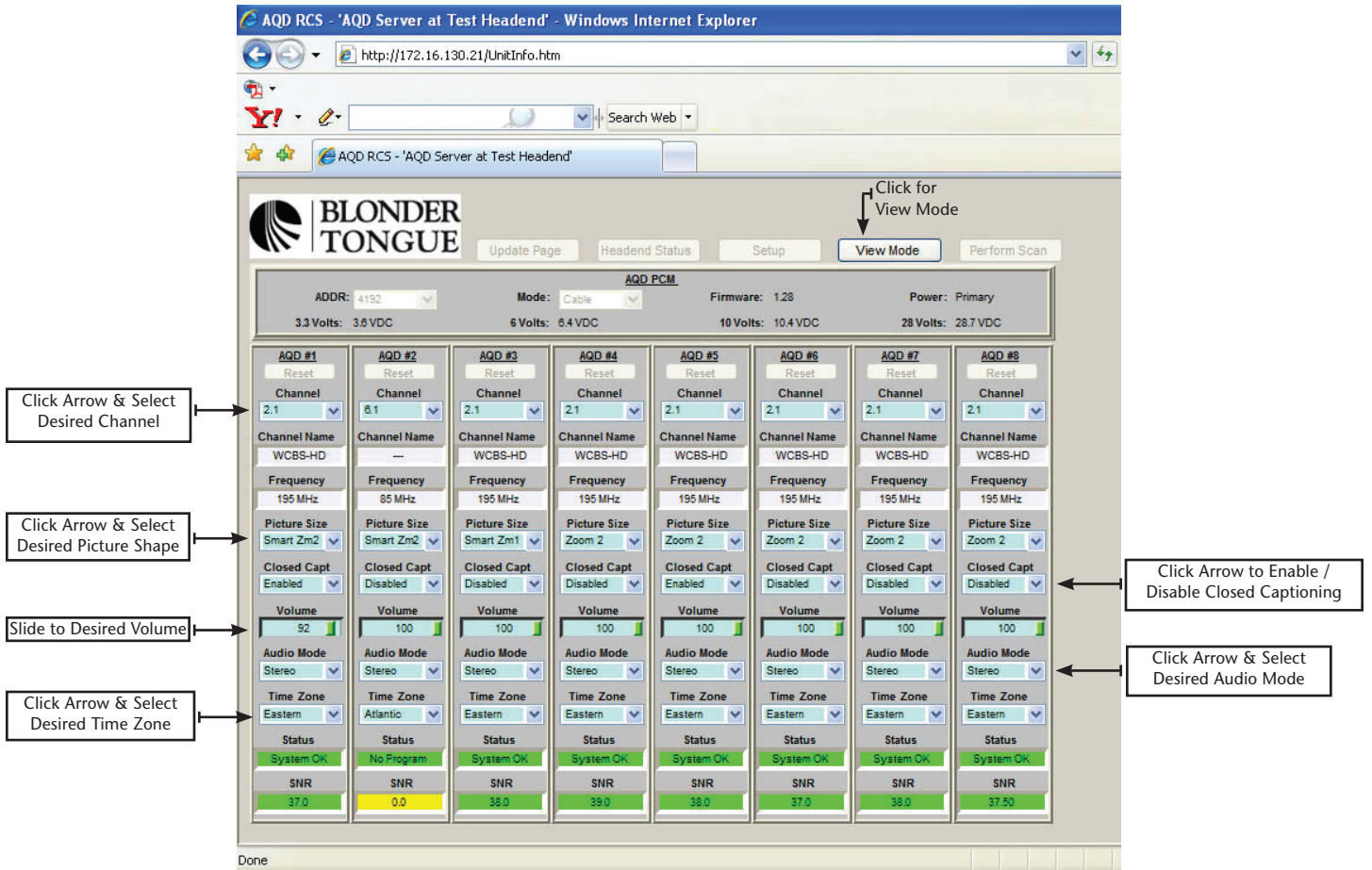The AQD-RCS Modify Mode Page permits changes for each AQD module connected to the Power & Control Module. Individual module changes may only be made from this page with the Administrator logon.

Adjustable Items:

Channel — The drop list contains all available major & minor channel options found during the module scan. It is required to rescan a module if/when new channel programming becomes available

Picture Size — The drop down list permits selection of any of the picture shape options for converting 16:9 images to 4:3 format as required for traditional television ratio viewing

- Letter Box - Presents with black bars
- Full - Presents w/o black bars (stretched)
- Zoom 1 - a Vertical / Horizontal cut with black bars
- Zoom 2 - a Vertical / Horizontal cut w/o black bars
- Smart Zoom 1 - Modified version of Zoom 1 ignoring the Pan/Scan data
- Smart Zoom 2 - Modified version of Zoom 2 ignoring the Pan/Scan data

Closed Captioning — The closed captioning command, also known as line 21 captions per EIA-608, the standard for closed captioning for NTSC broadcasts in the United States, can be enabled or disabled eliminating the need to adjust individual viewing locations

Volume — The output volume can be adjusted by sliding the scale with a range of 0% to 100%, 0% mutes audio

Audio Mode — The audio mode allows for the selection of mono or stereo audio output.

NOTE: it is extremely important to change the audio mode to mono if using a non-stereo modulator in conjunction with the AQD. This will present the full combined mono audio on both RCA connectors

Time Zone — Select the desired time zone

AQD-RCS Administration Page

The AQD-RCS Administration Page provides the ability for an operator to adjust the IP as well as Username and Password settings for the unit.

The Administration may only be accessed by typing the URL of the AQD-RCS followed by a forward slash and Admin.htm, for example: http://172.16.70.1/Admin.htm

> NOTE: The Administration page is a hidden web page to prevent unwanted modifications to the critical IP Username and Password settings. It may only be accessed by using the Administrator logon.

Display Only Fields:

Serial #: Serial number of the AQD-Remote Configuration Server
Firmware Rev: Displays the revision of firmware, may be used for troubleshooting purposes
MAC Address: Media Access Control Address is a hardware address that uniquely identifies an AQD-RCS on a network

Editable Fields:

IP Address: IP Address of the AQD-RCS, Default IP Address is 172.16.70.1
Subnet Mask: A mask used to determine which subnet an IP Address belongs to, Default subnet mask is 255.255.255.0
Default Gateway: IP Address of a node (router) on the network that serves an access point to another network, Default gateway is 172.16.180.254
Admin ID: Case sensitive user identification for Administrative access and privileges, Default Admin ID is "Admin"
Admin Password: Case sensitive password for Administrative access and privileges, Default Admin Password is "pass"
View ID: Case sensitive user identification for view only and privileges, Default View ID is "Guest"
View Password: Case sensitive password for view only and privileges, Default View Password is "pass"
FTP ID: Case sensitive user identification for file transfer protocol (FTP) access, Default FTP ID is "FTP"
FTP Password: Case sensitive password for file transfer protocol (FTP) access and privileges, Default FTP Password is "pass"

Factory Defaults Button - Resets the AQD-RCS back to factory default settings and deletes all stored configurations, IP addresses and identifications stored
Reset Unit Button - Press the Reset Unit button to perform a warm power reset of the AQD-RCS unit. Refresh the page on your web browser to continue.
Cancel Button - Does not apply changes made to the AQD-RCS Administration page and resets the values to the previously saved state
Save Button - Applies and saves the current AQD-RCS network settings, user identifications and passwords to non-volatile memory

Factory Defaults:

Software Default Reset

The AQD-RCS can be reset back to its factory default settings if the IP Address, Admin ID and Admin Password are known by clicking the Factory Defaults button on AQD-RCS Administration page. It will delete all data that may have been entered in the AQD-RCS but will not effect the programming or status of any deployed AQD module.

If the IP Address, Admin ID and Admin Password are known, then perform the following steps:
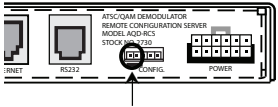1. Access the Administration page (Admin.htm) by typing the appropriate URL in the browser address bar
2. Click the "Factory Defaults" button. The following prompt will appear:
3. Click the OK button to reset all values to their factory defaults
4. Power cycle the AQD-RCS for the new settings to take effect
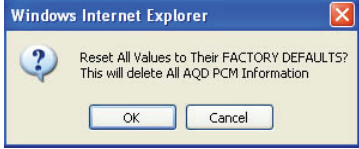
Temporary Hardware Admin Default Reset

If the IP Address and/or Admin ID or Password of the AQD-RCS are not known, then perform the following steps to 'temporarily' set the AQD-RCS to its default Admin access settings:
1. Facing the AQD-RCS, place a 2-pin jumper across the two pins next to the RS232 interface.
2. Power cycle the AQD-RCS
    A. The unit should now be 'temporarily' configured for the default IP Address (172.16.70.1)
3. Log into the AQD-Remote Configuration Server's Admin page — http://172.16.70.1/Admin.htm
    A. Use the default U/N & PW — "Admin" & pass
4. Change the IP Address; Subnet Mask; Gateway; Admin ID; Admin Password,; etc. as required
5. Click the Save button
6. Remove the 2-pin jumper from the "CONFIG" header
7. Power cycle the AQD-RCS
    A. The unit should now be configured for the new Admin settings
8. To erase all entries and reset the unit to the factory default settings follow the Software Default Reset procedure

NOTE: *After a hardware reset a direct connection to the AQD-RCS may be required, a cross Ethernet cable is required for a direct connection.*

AQD-RCS Utility Updating Tools:

NOTE: *Any AQD-RCS Utility functions should ONLY be performed if directed by a qualified Blonder Tongue technician!*

Updating the AQD-PCM Firmware

The AQD-RCS provides the ability to locally or remotely upgrade the firmware revision of the AQD-PCM unit.
This is a hidden function, enter the IP address of the AQD-RCS in the browser address line followed by /bootload.htm as shown.
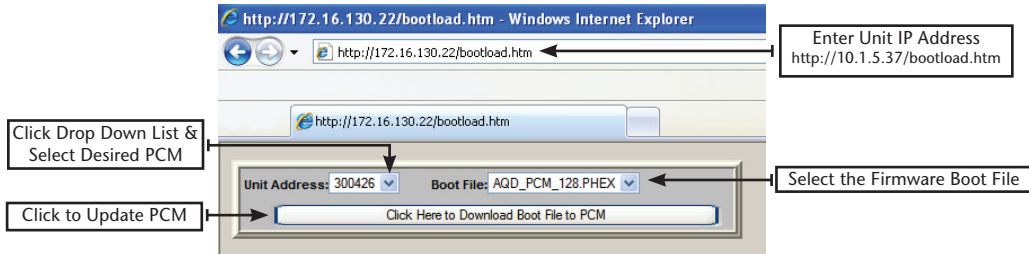
The Bootload utility is a hidden utility function and requires the manual entry of the IP address followed by */bootload.htm.
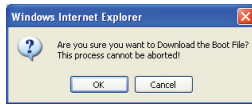
1. To upgrade the AQD-PCM firmware using the AQD-RCS, click the drop down list and select desired PCM address.
    Click the browser refresh button if not all PCM unit addresses are displayed in the drop down selection list.
2. Select the appropriate bootload file, this file has a *.PHEX file format extension, the name of the file contains the actual version number of the firmware. "AQD_PCM_128.PHEX" indicates AQD-PCM version 1.28.
    NOTE: The AQD-RCS is pre-loaded with the latest current released version of the AQD-PCM firmware.
    Visit the Blonder tongue FTP site for any additional updates @ ftp1.blondertongue.com, AQD directory as shown.
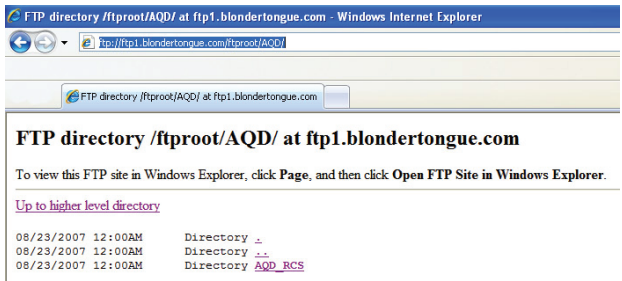
See the FTP file transfer instructions for downloading a new firmware version

3. Click the "Click Here to Download Boot File to PCM" button.
4. Click OK on the confirmation message prompt.

The Firmware Upgrade process can not be cancelled or interrupted after proceeding. The upgrade process takes approximately 1 minute to complete.

The AQD-PCM LCD (if you are present at the headend to observe) will display "PROGRAM FLASH" during the upgrade process. The Backlight of the LCD will shut off upon completion and the PCM will reboot itself. The bootload web utility will display the successful completion message when finished.
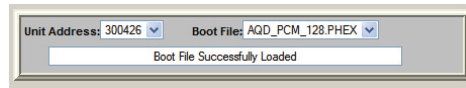
The updated firmware version number can now be verified on the Unit Info page of the AQD-RCS.
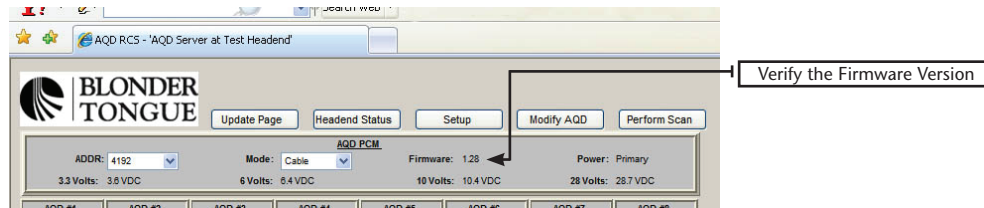
Updating the AQD-RCS Web Pages
The AQD-RCS uses Java enabled http web pages for the interactive communication process. From time to time Blonder Tongue may make updated web pages available that address operational or bug related items as well as make new features available. The web pages should only be updated after consultation with the Blonder Tongue Technical Engineering Group.

The latest released web pages may be downloaded from the Blonder Tongue FTP site:
ftp://ftp1.blondertongue.com/ftproot/AQD/AQD_RCS/Web_pages/

It is recommended to always download and update all web pages in the FTP site directory when performing an update. See the "Transferring Files to the AQD-RCS using FTP for additional instructions.

Updating the AQD-RCS Firmware
The AQD-RCS firmware may also be updated from time to time via FTP. The firmware file has a *.firm file format extension, the name of the file contains the actual version number of the firmware. "AqdServer109.firm" indicates AQD Server version 1.09. The firmware version can be verified by accessing the Setup and/or Admin page — the last three digits indicate the firmware version. The firmware should only be updated after consultation with the Blonder Tongue Technical Engineering Group.

Transferring Files to the AQD-RCS using FTP
FTP — File Transfer Protocol is a commonly used protocol to transfer data from one computer to another over the Internet or a network that supports TCP/IP protocol. There are two computers or devices .involved in an FTP transfer, a server and a client. The FTP server, running FTP server software, listens on the network for requests. The client, running FTP client software, initiates a connection to the server. Once connected the client can perform operations such as downloading or uploading files to the server. FTP servers by default listen on port 21 for incoming connections from FTP clients. The Blonder Tongue FTP site and the AQD-RCS act as FTP Servers.

• FTP client software, such as FTP Commander (a free FTP client software program) is required to access and transfer files to AQD-RCS unit. The appropriate username and password are required for transfer — default UN: "FTP" & PW: "pass" (these entries are case sensitive)

NOTE: FTP Commander Version 7.33 can be downloaded from the Blonder Tongue FTP Site, Version 8.x of the FTP Commander software does not function in some computer setup environments and thus, not recommended.
• Navigate to the BT FTP site @ ftp://ftp1.blondertongue.com/ftproot/
• The standard Internet Explorer web browser may be used to access and download the FTP Commander freeware
• Proceed to the AQD/FTP Commander directory and download the executable file
• Install the FTP Commander freeware software on your desired PC

Transferring Files using FTP Commander V 7.33

• Open the FTP Commander Software
• Click the "New Server" button (See picture) to create a new connection to the AQD-RCS unit or the BT FTP site to download the replacement web pages and/or firmware
• Enter the required information in the FTP Server Properties window
  • Name: Enter a desired name for the server connection
  • FTP Server: Enter the IP address of the desired server such as the AQD-RCS or BT FTP Site
  • FTP Port: The AQD-RCS & the BT FTP Site use the default FTP transfer port, Port 21
  • User ID: Enter the appropriate Username (default for the AQD-RCS is "FTP" and the BT FTP site is anonymous)
  • Password: Enter the appropriate Password (default for the AQD-RCS is "pass" and the BT FTP site uses no PW entry)
      NOTE: Usernames and Password are case sensitive
• Click the Save button
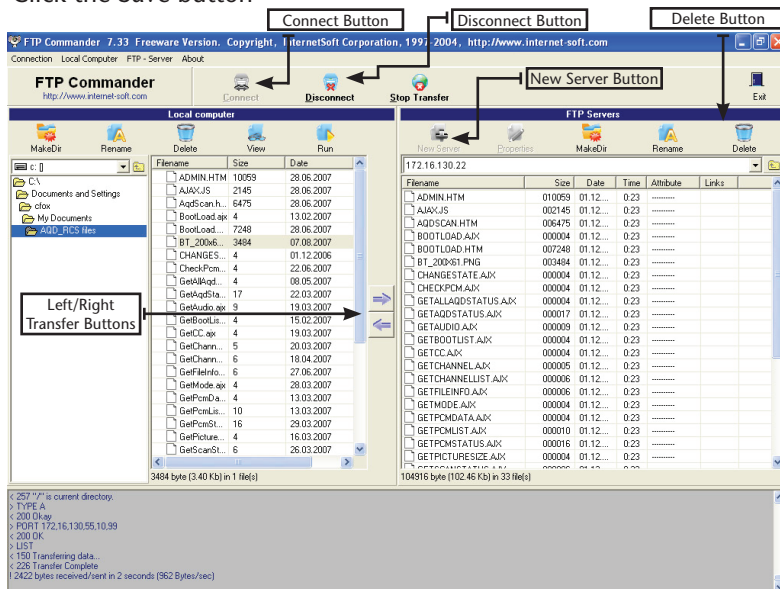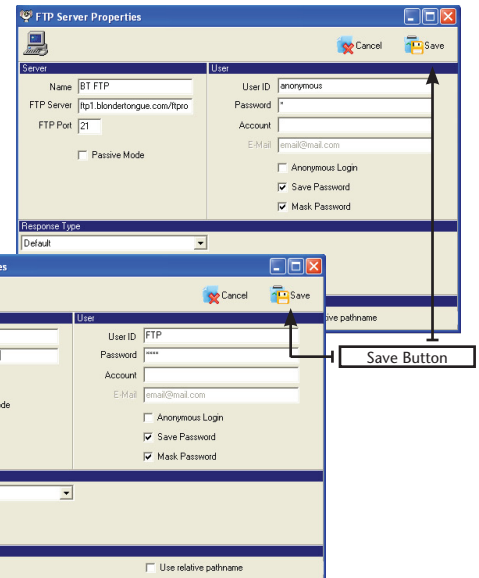
Uploading & Downloading files

• Click the desired Server you created in the list of FTP Servers
• Click the Connect button to establish a connection to the desired server
• The connection should be established and the available files for download/upload should be displayed (AQD-RCS example shown at right)
• Select all the files on the FTP server to transfer and click the left arrow button to transfer to the open directory

### Updating the AQD-RCS with BT FTP site files

1. Create a new directory on your local PC for the AQD-RCS web pages and/or firmware files required to update the unit
2. Download all the files from the BT FTP as instructed above to the new directory on your local PC
3. Click Disconnect to close the connection with the Blonder Tongue FTP Site and establish a connection with the AQD-RCS unit (click the server you created for the AQD-RCS and click the Connect button), the files on the RCS unit will be displayed
4. The web pages on the RCS unit must be deleted prior to updating. Select all the web page files ****NOTE: do not select & delete files with a ".firm" or ".phex" extension — these are firmware related files and will prevent the RCS unit from operating**** and click the delete button
5. Navigate to the directory on your local PC with the updated web page files from the FTP site, select all the files and click the right arrow button to transfer the updated web page files to the RCS unit, as directed

Appendix A
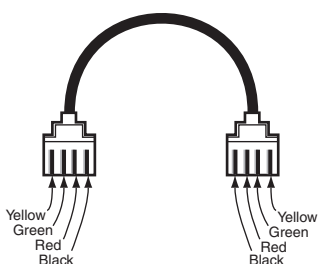
Cross Pinned RJ-11 Cable Diagram
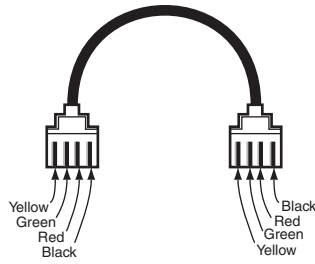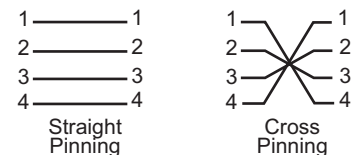
Straight Pinned RJ-11 Cable Diagram

Straight Pinning

Cross Pinning

Note: Straight pinning means that each contact is straight pinned to it's respective contact. Cross pinning means that contacts are pinned to the opposite contact.

Limited Warranty

Blonder Tongue Laboratories, Inc. (BT) will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product manufactured by BT which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing (i) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed), with respect to iCentral™ (hardware and software) and all other software products (including embedded software) licensed from BT, (ii)) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers (including TRAILBLAZER™, RETRO-LINX™ and TWIN STAR™ products) as well as for DigiCipher ® satellite receivers, and (iii) for a period of three (3) years from the date of original purchase, with respect to all other BT products. Notwithstanding the foregoing, in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in BT products and on certain private–label products manufactured by third-parties for resale by BT are of shorter duration or otherwise more limited than the standard BT limited warranty. In such cases, BT's warranty with respect to such third-party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third-party vendor's warranty. In addition, certain products, that are not manufactured but are resold by BT, carry the original OEM warranty for such products. The limited warranty set forth in this paragraph does not apply to any product sold by BT, which at the time of sale constituted a Refurbished/Closeout Product.

(b) BT will at its sole option, either repair or replace (with a new or factory-reconditioned product, as BT may determine) any product sold by BT which at the time of sale constituted a refurbished or closeout item ("Refurbished/Closeout Product"), which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on third party software and on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in BT products and on certain private–label products manufactured by third-parties for resale by BT are of shorter duration or otherwise more limited than the BT limited warranty for Refurbished/Closeout Products. In such cases, BT's warranty for Refurbished/Closeout Products constituting such third party software, third-party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third-party vendor's warranty. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by BT, carry the original OEM warranty for such products, which may be longer or shorter than the BT limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to: Blonder Tongue Laboratories, Inc., One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) lack of reasonable care or (vi) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

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All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer. Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of BT, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to BT for examination by BT's inspection department and verification of the defect. BT, at its option, will either repair, replace or issue a credit for products determined to be defective. BT's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by BT shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of BT. Under no circumstances are products to be returned to BT without BT's prior written authorization. BT reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between BT and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of BT's standard terms and conditions of sale, including the limited warranty, is available from BT upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties are also available from BT on request. DigiCipher ® is a registered trademark of Motorola Corp. (**Rev 0509)**