



# CV HDMI2 QAM IP

2 CHANNEL HDMI TO SPTS / SRT / QAM ENCODER



STOCK #	MODEL NAME	DESCRIPTION
6569	CV HDMI2 QAM IP	2 Channel HDMI to SRT Backhaul / QAM Encoder; MPEG-2 / H.264 (AVC) / H.265 (HEVC) for up to 2 HD or SD programs or up to 2 Video Files

We recommend that you write the following information in the spaces provided below.

Purchase Location Name:	
Purchase Location Telephone Number:	
CV HDMI2 QAM IP Serial Number(s):	

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## CROSS-REFERENCE & HYPERLINKING USAGE

This guide makes use of hyperlinks for the Table of Contents, some cross-reference linking between sections, and external hyperlinking to web addresses. This has been done to assist the reader in finding the information they are seeking in a much quicker way. In addition to hyperlinking, the Table of Contents also makes use of the bookmarking feature present in the Adobe Reader application.

## PRODUCT AND DOCUMENTATION UPDATES

The latest user documentation (PDF) and Firmware Updates can be obtained by visiting our website. Navigate to the product page by entering the full Model Name in the search field. **Firmware Updates** can also be directly accessed under the "Support" section of the website. If you cannot find your product model on the website, please reach out to Tech Support through our [support request form](#).

## 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 [review our return policies](#) or [contact our service department](#) for further information.

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## SECTION 1 – GENERAL & SAFETY INSTRUCTIONS



The **STOP** sign symbol is intended to alert you to the presence of **REQUIRED** operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.



The **YIELD** sign symbol is intended to alert you to the presence of **RECOMMENDED** operating and maintenance (servicing) instructions.



The **LIGHTNING** flash symbol 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 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

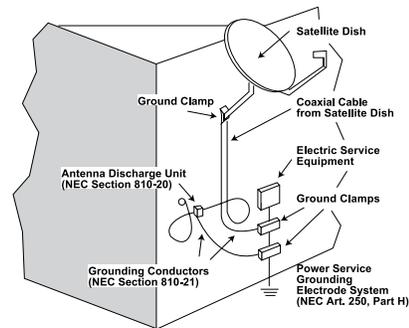
**This reminder is provided to call the CATV System Installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as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



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

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature per Section 2.3.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- 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.
- 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 the antenna. 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 the 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.

## SECTION 2 – PRODUCT SUMMARY

### 2.1 PRODUCT APPLICATION & FEATURES

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#### APPLICATION

The **CV HDMI2 QAM IP** is a dual channel encoder/player that accepts up to two (2) HD or SD programs from two (2) rear panel HDMI input connectors or it can loop a video file from its internal file store. The unit multiplexes and modulates both HDMI streams into one QAM output channel, including PSIP for direct digital TV display, which extends to digital signage applications.

The CV HDMI2 QAM IP offers encoding options for MPEG-2, H.264/MPEG-4 (AVC), or H.265 (HEVC) at all major resolutions ranging from 480i to 1080p60. The encoder has the capability to output two (2) SRT streams or Unicast/Multicast SPTS. In addition to its other features, the unit includes two (2) composite ports designed for NTSC Closed Caption input.

#### KEY FEATURES

- ▶ Supports up to (2) HDMI inputs for ingest of local content
- ▶ Supports up to (2) video file inputs for local ingest
- ▶ Internal File Store and Player – Up to 512 MB video file with looping player (*per output channel*)
- ▶ Video encoding MPEG-2, H.264, or HEVC
- ▶ Audio encoding Dolby® Digital AC3 and AAC
- ▶ Supports output data rates from 2 to 19 Mbps
- ▶ Supports simultaneous QAM and IP output (*see note below*)
- ▶ QAM modulates (2) HDMI programs to (1) QAM channel
- ▶ Supports UDP/RTP/SRT for IP outputs

**NOTE:** Output to QAM is not supported for certain video file input modes



**IMPORTANT NOTE:** The unit does not currently support HDCP in any capacity. All HDMI sources **NEED** to be clear/unencrypted.

## 2.2 PRODUCT DESCRIPTION



### FRONT PANEL

- A IP Reset:** When pushed and held for 5 seconds, temporarily resets the IP address, Usernames, and Passwords to Factory Default. Activation is indicated by the Power LED blinking twice. Default values are as follows:
  - ▶ **IP Address:** **172.16.70.1**
  - ▶ **Username:** **Admin** (*case-sensitive*)
  - ▶ **Password:** **pass** (*case-sensitive*)
- PLEASE NOTE:** Resetting power will revert IP and login credentials back to what has been configured by the user. The effects of activating the IP Reset feature are temporary and only last until the unit is power cycled.
- B Control:** RJ45 connector for 1000Base-T Ethernet (GigE) Ethernet interface for monitoring and configuring the unit via standard web browser. Only a static IP address can be assigned to this interface. (Factory Default: "**172.16.70.1**")
- C IP Video:** RJ45 for 1000Base-T Ethernet (GigE) interface; used for IP video output.
- D Power LED:** If the LED is Green, the AC power is detected. If the LED is Off, it will indicate one of the following:
  - ▶ AC power is not connected, **or**
  - ▶ AC power is connected but the power supply is defective. Unit must be sent to factory for repairs.
- E Fan (temperature) LEDs #1 and 2:**
  - ▶ Solid Red = Unit temperature is critically high.
  - ▶ Solid Amber = Unit temperature is high.
  - ▶ Solid Green = Unit temperature is normal.
- F Encode Status LEDs # 1 and 2:**
  - ▶ Off = Encode channel is not enabled.
  - ▶ Solid Green = Encode channel is configured and currently encoding without issue.
  - ▶ Solid Red = Encode channel is experiencing an error or has failed. See log for details.
- G QAM LED:**
  - ▶ Solid Green = QAM channel is configured and currently outputting without issue.
  - ▶ Solid Red = QAM channel is experiencing an error or has failed. See log for details
- H -20dB QAM RF TEST:** "F" female connector for QAM RF output signal, 20dB lower than the actual QAM RF output. Used for test purposes, without taking the unit out of service.

## 2.2 PRODUCT DESCRIPTION (CONTINUED)



### REAR PANEL

- I** **Input Power Assembly & Fuse:** IEC 14 power inlet plug – rated 110-230 VAC; 0.4/0.2 A; 60/50 Hz; equipped with Slo-Blo, 3.0A, 250 V Fuse. The operation of the power assembly can be monitored through the User Interface.
- J** **RF OUT:** “F” female connector for a single (1) QAM RF output.
- K** **CC IN # 1 and 2:** RCA connector used for bringing in Closed Caption content.
- L** **HDMI # 1 and 2:** Type “A” HDMI connectors used for SD and HD content input.

## 2.3 PRODUCT SPECIFICATIONS

INPUT	
<b>Connectors</b>	2x HDMI, "Type A" (HDMI In, Rear Panel)
<b>Virtual</b>	2x Video Files uploaded from HTTP UI; 512MB max per file; supports MP4 and TS file formats
<b>Closed Caption</b>	1x Composite (CC Ports, Rear Panel)

VIDEO	
<b>Video Resolution</b>	480i (59.94, 60 FPS) 480p (29.97, 30, 59.94, 60 FPS) 720p (29.97, 30, 60 FPS) 1080i (59.94, 60 FPS) 1080p (29.97, 30, 59.94, 60 FPS)

AUDIO	
<b>Audio Format</b>	PCM Raw (L-PCM, IEC-60958 @ up to 192 kHz)

GENERAL	
<b>Dimensions (W x H x D)</b>	19.0 x 1.75 x 8.5 in (483 x 45 x 216 mm)
<b>Weight</b>	9.5 lbs (4.31 kg)
<b>Power</b>	110/230VAC, 0.35/0.175A, 60/50 Hz
<b>Power Consumption</b>	35 W
<b>Operating Temp.</b>	32 to 122 °F (0 to 50 °C)
<b>Storage Temp.</b>	-13 to 158 °F (-25 to 70 °C)
<b>Operating Humidity</b>	0 to 95% RH @ 35 °C max, non-condensing

ALARMS & MONITORING	
<b>Local Monitoring</b>	1x Power and Status LED (bicolor) 2x Fan Control Status LED (bicolor) 2x Encoder Status LED (bicolor) 1x QAM Status LED (bicolor)
<b>Local Control</b>	1x IP Reset Button
<b>Remote Control</b>	1x RJ45 (1000Base-T GbE; Front Panel) GUI-Based Menu Via Internal Web Server

OUTPUT	
RF QAM MODULATION	
<b>QAM Connector</b>	1x "F" Connector, Full Agile QAM
<b>QAM Test Point</b>	1x "F" Connector, -20 dB
<b>Standards</b>	ITU-T J.83; Annex B
<b>Frequency Range</b>	54 to 1002 MHz
<b>Power</b>	+45 dBmV
<b>Channel Bandwidth</b>	6 MHz
<b>Return Loss</b>	≥ 14 dB
<b>Level Adjust. Range</b>	15 dB
<b>Level Accuracy</b>	±1 dB
<b>QAM MER</b>	>40 dB
<b>Impedance</b>	75 Ω
<b>Phase Noise</b>	-95 dBc @ 10 kHz offset

IP OUTPUT	
<b>IP Connector</b>	1x RJ45 Gigabit Ethernet Output
<b>IP Protocols</b>	UDP; RTP; SRT
<b>Streaming Protocols</b>	Unicast, Multicast
<b>SRT Protocols</b>	Specifications - <a href="http://www.SRTalliance.org">www.SRTalliance.org</a>

SPTS STREAM PROTOCOLS	
<b>Standard</b>	ISO/IEC 13818-1 Systems
<b>TS Supported</b>	2x SPTS
<b>TS Packet Length</b>	188 bytes
<b>Sync Byte</b>	0x47
<b>Encoding Type</b>	CBR or Capped VBR

ENCODED VIDEO AND AUDIO	
<b>Encoded Video Bitrate</b>	2 Mbps to 19 Mbps (0.1 Mbps increments)
<b>Video Resolution</b>	1080p (30, 60 FPS); 1080i (60 FPS); 720p (30, 60 FPS); 480p (30, 60 FPS); 480i (60 FPS)
<b>Video Format</b>	MPEG-2; H.264 (AVC); H.265 (HEVC)
<b>Audio Format</b>	Dolby® AC3; AAC

## SECTION 3 – INSTALLATION & POWER-UP

### 3.1 UNPACKING

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You will find the following items in the box:

- ▶ CV HDMI2 QAM IP Encoder (QTY=1)
- ▶ Power Cord with IEC C13 line socket and 3-pin type B NEMA 5 plug (QTY=1)

### 3.2 INSTALLATION AND POWER-UP

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The **CV HDMI2 QAM IP** is designed to be installed in a standard 19-inch (483 mm) rack (EIA 310-D, IEC 60297, and DIN 41494 ). Adequate ventilation is very important for unit installations. Some air movement is advisable in enclosed rack cabinets.

- 1 To install, secure the unit's front panel to the rack by inserting four (4) machine screws, with cup washers, through the four (4) mounting holes in the front panel. A 1RU open space is recommended above the unit for ventilation.



**DO NOT BLOCK THE UNIT'S AIR INTAKE OR AIR DISCHARGE OPENINGS.**

Unit performance will be degraded without proper ventilation.

Excessive heat will shorten the life of the unit.

- 2 To power the unit up, connect the IEC line cord to the input power receptacle on the rear panel. Then connect the other end to a 120 VAC power outlet. The input power receptacle is equipped with a fuse-holder and fuse (SLO-BLO, 3.0 Amp, 250V).



For safe and reliable operation, the ground pin of the power cord must be grounded properly.

## SECTION 4 – CONNECTING TO A PC/LAPTOP

### 4.1 ETHERNET ACCESS

Local or remote communication with the unit is only possible through a GUI-based menu via any standard web browser. Before you can communicate with the unit, you must configure your computer's IP address to be in the same subnet as the units default IP address. To do so, follow these steps:

- 1 Plug one end of the Ethernet cable into the **Control** management port located on the front-panel of the unit. Connect the other end of the Ethernet cable to your computer.
- 2 The factory default IP address of the control management port is **172.16.70.1**. To be able to communicate with the management port, you must first change your computer's IP address.

The following steps explain how to do this for a computer within the **Windows** operating software:

- (a) On your computer, navigate to the “**Network and Sharing Center**”.
- (b) Once open, click on “**Change Adapter Settings**” on left hand side of the window.
- (c) Right-click on the local area network, and then click on “**Properties**”.
- (d) A “**Properties**” dialog box will appear. In this box, double-click on the “**Internet Protocol Version 4 (TCP/IPv4)**”.
- (e) A dialog box entitled “**Internet Protocol Version 4 (TCP/IPv4) Properties**” will appear. Select the “**Use the following IP address**” option and enter the following addresses:
  - ▶ IP address: **172.16.70.2**
  - ▶ Subnet mask: **255.255.255.0**
  - ▶ No need to enter a value for the Default Gateway.

Click **OK** to close the dialog box. Your computer is now ready to communicate with the unit.

### 4.2 ACCESSING THE GATEWAY VIA THE WEB BROWSER

You must complete the steps described in Section 4.1 before proceeding as follows:

- 1 Open a web browser on your computer (Chrome or Firefox is recommended) and enter the following URL address (**http://172.16.70.1**). The “**Login**” prompt (Figure 4.2a) will appear.
- 2 Enter the following case-sensitive factory-default Username and Password, and click on the “**Submit**” button.

**NOTE:** When logged in as Admin, the user has read and write permission.  
Only one Admin can be logged in at a time.

Username = **Admin** (case-sensitive)  
Password = **pass** (case-sensitive)

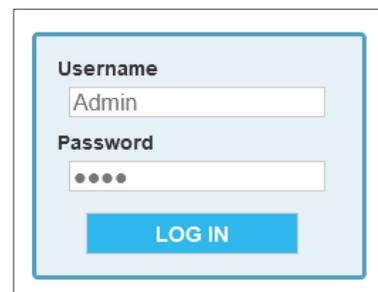
The image shows a web browser login interface. It has a light blue background. At the top, the word "Username" is written in a small font. Below it is a text input field containing the word "Admin". Underneath that, the word "Password" is written, followed by a text input field containing four black dots. At the bottom of the form is a blue rectangular button with the text "LOG IN" in white capital letters.

Figure 4.2a - “Login” Screen

## 4.2 ACCESSING THE GATEWAY VIA THE WEB BROWSER (CONTINUED)

Monitoring and configuration of the unit is achieved via a series of web pages as described in the Sections below. The following read-only information is displayed in a **“Page Header”** at the top of each web page:



Figure 4.2b - Page Header and Navigation

- ▶ **Name:** a user-defined field to make identification easier
- ▶ **Location:** a user-defined field to make identification easier
- ▶ **ESN:** unit’s serial number
- ▶ **Uptime:** time elapsed since last time the unit was turned on
- ▶ **Version:** software version of the Controller Module.

As shown in Figure 4.2b, under the **“Page Header”** the following Navigation tabs and links will appear:

- ▶ **Left Navigation:** **“Status”, “System”, “Time”, “Encoders: Status”, “Encoders: Settings”, “Encoders: Graphics Overlay”, and “Encoders: Global Output Settings”**
- ▶ **Right Navigation:** **“Log” and “Firmware Update”**
- ▶ **Modules Navigation:** This includes tabs to the remaining 12 module slots. The tabs will give access to any installed module in the numbered slot. To review how the physical slots are numbered, please see the product diagram in **Section 2.3**.
- ▶ In addition, in the upper right corner above the navigation, the user can access the **“Admin”** screen through a link, alongside the **[LOG OUT]** button.

Each tab for the **“Left”** and **“Right”** Navigation is described in the subsequent sections.

## SECTION 5 – BASIC CONFIGURATION

### 5.1 “STATUS” TAB

“Status” (Figures 5.1a and 5.1b) is a “read-only” screen which displays the general health of the unit, such as temperature, fan speed and status reporting. The information is provided as a quick way to monitor the system or assist with troubleshooting issues that may arise.

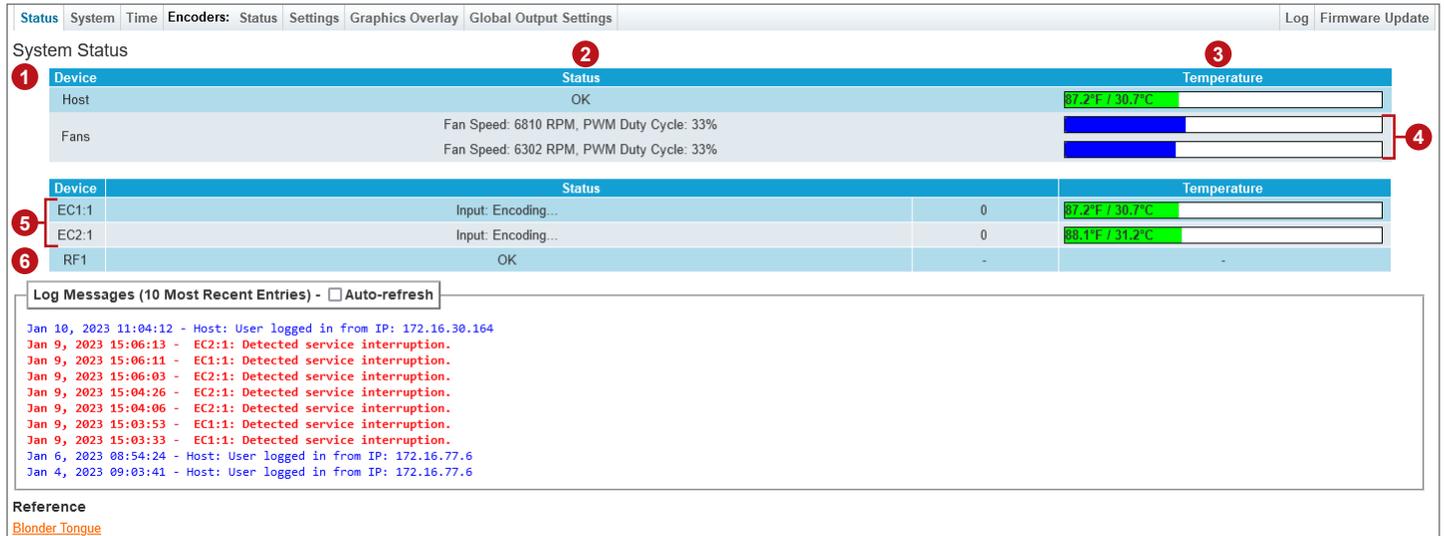


Figure 5.1a - “System Status”

The “System Status” page has four (4) columns of data for each system component. The data is detailed as follows:

- 1 **Device:** Indicates the following system components:
  - **Host** is the CV HDMI2 QAM IP system.
  - **Fans** displays data for each of the system fans on the chassis.
  - **EC1 and EC2** displays information for each of the 2 input streams being encoded. These will populate other data as the channels are set up and enabled. When a numbered encoder is not available the row will display as empty.
  - **RF1** displays information for the single RF output.

- 2 **Status:** Indicates a status for each system component being monitored. The following section gives a breakdown of the information given in this column.

- 3 **Temperature:** Indicates the following in real-time:
  - **Host:** Temperature the Host unit is currently running at. Temperatures are displayed in both Fahrenheit and Celsius. (Figure 5.1a)
  - **EC1 and EC2:** Temperature each encoder is currently running at. The temperatures are displayed in both Fahrenheit and Celsius. (Figure 5.1b)



Figure 5.1a - Host Temperature Status Range



Figure 5.1b - Encoder Temperature Status Range

- 4 **Fans:** Revolutions Per Minute (RPM), rotational speed, of each fan in the chassis. (Figure 5.1c)

- **Fan Speed:** numerically displayed and measured in Revolutions-per-Minute (RPM).
- **PWM Duty Cycle:** Pulse-Width Modulation (PWM) indicates if the fan is working at 100% speed or lower, by percentage.

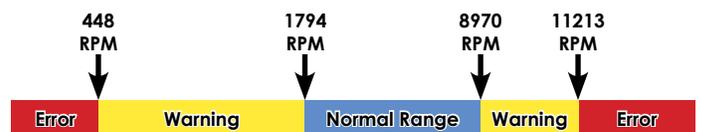


Figure 5.1c - Fan RPM Status Range

## 5.1 “STATUS” TAB (CONTINUED)

### STATUS - MESSAGES / INFORMATION

**Host:** Types of messages under status column for Host:

- **Ok:** indicates the host is working without errors.
- **Error:** indicates one or more errors have been detected. See the message log below or navigate to the full Log using the menu at the top.
- **Warnings:** indicates one or more warnings have been triggered. Check system log for more information.

**5 EC1 and EC2 (Encoders):** Types of messages under the status column(s).

- **Encoding...:** indicates the EC is actively encoding. Each of the EC programs is shown on its own row. If applicable, SRT output status will be displayed.
- **Error:** indicates that one or more errors have been detected. See the message log below or navigate to the full Log using the menu at the top.

**6 RF1:** Types of messages under the status column(s).

- **Ok:** indicates the host is working without errors.
- **Error:** indicates one or more errors have been detected. See the message log below or navigate to the full Log using the menu at the top.



**NOTE:** Listed are the most common status messages. Messages shown will give indication of what is occurring within the unit, alongside those shown under the Log screen, to assist with any required troubleshooting.

Log Messages (10 Most Recent Entries) -  Auto-refresh **6**

```

Jan 10, 2023 11:04:12 - Host: User logged in from IP: 172.16.30.164
Jan 9, 2023 15:06:13 - EC2:1: Detected service interruption.
Jan 9, 2023 15:06:11 - EC1:1: Detected service interruption.
Jan 9, 2023 15:06:03 - EC2:1: Detected service interruption.
Jan 9, 2023 15:04:26 - EC2:1: Detected service interruption.
Jan 9, 2023 15:04:06 - EC2:1: Detected service interruption.
Jan 9, 2023 15:03:53 - EC1:1: Detected service interruption.
Jan 9, 2023 15:03:33 - EC1:1: Detected service interruption.
Jan 6, 2023 08:54:24 - Host: User logged in from IP: 172.16.77.6
Jan 4, 2023 09:03:41 - Host: User logged in from IP: 172.16.77.6

```

Reference **7**  
[Blonder Tongue](#)

Figure 5.1b - “System Status”

### OTHER INFORMATION:

**6 Log Messages:** The Log Messages sections will show the 10 most recent entries to the system log. For a full view of all messages, please see the Log tab. The user can click on the "Auto-Refresh" checkbox to enable that function. See Section 7.2 for more information on types of messages.

**7 Reference:** The reference link within this sub-section points to the Blonder Tongue website.

### 5.3 “SYSTEM” TAB

“System” (Figure 5.3) is a “read and write” screen. The general ethernet connection and user-defined identification data for the platform can be configured here.

Figure 5.3 - “System Configuration” - Full View

#### UNIT OPERATIONS

- 1 **Reboot** Clicking this button will reboot the unit. All firmware updates will be applied upon restart.



**IMPORTANT:** A reboot is required after defaulting or applying a configuration file.

#### SETTINGS CONFIGURATION

- 2 **Default Unit Settings** Resets the unit back to the factory defaults. It is always recommended to save the existing configuration file before resetting to the default values.
- 3 **Download Configuration File** Downloads the current unit configuration file.
- 4 **Browse...** No file selected. Browse and select a configuration file. (2 MB maximum file size)
- 5 **Load & Apply Configuration File** After selecting a file, click this to load and apply the new configuration.

#### COMMAND/CONTROL ETHERNET SETTINGS

- 6 **Unit Name:** a user-defined field to more easily identify the unit by name. The character limit is 64 alphanumeric, however if other character types are used, the display limit is decreased and may truncate.
- 7 **Unit Location:** a user-defined field to more easily identify the unit’s location. The character limit is 64 alphanumeric, however if other characters types are used, the display limit is decreased and may truncate.
- 8 **MAC Address:** the Media Access Control (MAC) Address is a read-only field that serves as a unique identifier assigned to the network.
- 9 **IP Address:** the static IP address that is assigned to the unit, allowing the user to access it via the web interface. Pressing the IP reset button returns unit to factory default of **172.16.70.1**.
- 10 **Subnet Mask:** the subnet mask allows the user to access it from another network via the web interface. Factory Default is **255.255.255.0** for local subnet.
- 11 **Default Gateway:** the gateway address of unit, allowing the user to access it from another network via the web interface. The gateway address should be in the same subnet as IP Address.

### 5.3 “SYSTEM” TAB (CONTINUED)

- 12 **Primary DNS:** the primary Domain Name Server (DNS) hosts the controlling zone file, containing all the authoritative information for a domain.
- 13 **Secondary DNS:** the secondary Domain Name Server (DNS) contains read-only copies of the zone file, and gets its info from a primary server in a communication known as a zone transfer.

IP Video Ethernet Settings						
14	EC1	Static IP	IP Address: 10.1.1.164	Subnet Mask: 255.255.255.0	Default Gateway: 10.1.1.254	
	EC2	Static IP	IP Address: 10.1.1.43	Subnet Mask: 255.255.255.0	Default Gateway: 10.1.1.254	
*Static IP settings or IP settings acquired via DHCP are available on the <a href="#">Encoder Status</a> page. Changes may not be reflected immediately on the Encoder Status page.						
Apply Settings						

Figure 5.3b - “System Configuration” - IP Video Ethernet Settings

### IP VIDEO ETHERNET SETTINGS

- 14 This section allows the user to individually configure the network settings for each numbered encoder (EC1 & EC2). In addition to the IP Address, Subnet Mask, and Default Gateway, the user is also able to choose between “**Static IP**” or “**DHCP**” for the IP Setting.



**REMEMBER:** Click on the [APPLY SETTINGS] button to save and apply new values/configuration changes.

### 5.6 “TIME” TAB

“**Time**” (Figure 5.4a, Figure 5.5b, Figure 5.4c, and Figure 5.4d) is a “read and write” screen. Time settings for the system and the event log are configured here.

Time Configuration

Current Time at Page Load

- 1 ClearView: Tue Jan 10 2023 11:05:15 GMT-0500 (Eastern Standard Time)
- 2 Client: Tue Jan 10 2023 11:05:15 GMT-0500 (Eastern Standard Time)

\*Times are shown using the Client’s local time and timezone.

Figure 5.4a - “Current Time at Page Load”

### CURRENT TIME AT PAGE LOAD

- 1 **Hardware or Unit Time:** read-only display of the unit’s current date and time, shown in UTC format. The time is adjusted for states, territories and countries that use time change (ie. Eastern Standard Time and Eastern Daylight Time).
- 2 **Client or Local Browser Time:** read-only display of the current client, or local browser, date and time, shown in UTC format with time zone. The time is adjusted for states, territories and countries that use time change (ie. Eastern Standard Time and Eastern Daylight Time).

## 5.6 “TIME” TAB (CONTINUED)

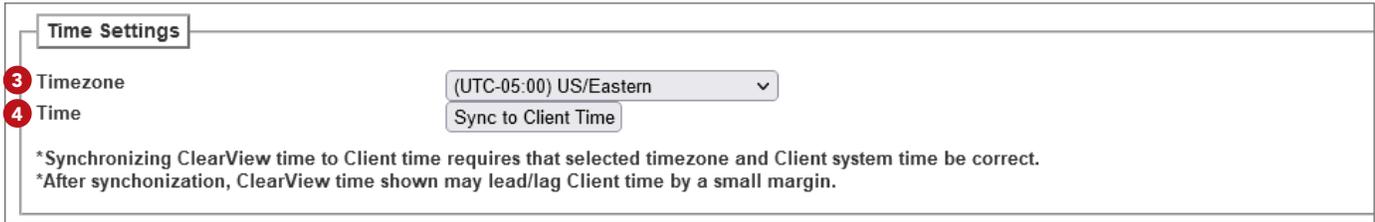


Figure 5.4b - “Time Settings”

### TIME SETTINGS

- 4 Time Zone:** user is able set the time zone, shown in UTC format.
- 3 Time:** Clicking the button will synchronize the Hardware time to Client time. This requires that the selected time zone and client system time are correct. After synchronization, the Hardware time shown may lead or lag the Client time by a small margin.



Figure 5.4c - “NTP Settings”

### NTP SETTINGS

- 5 Enable NTP System Time Synchronization:** Enable (  ) or Disable (  ) System Time Synchronization.
- 6 Use Custom NTP Servers:** Enable (  ) or Disable (  ) the Custom NTP Servers. Network Time Protocol (NTP) uses one or more IP addresses that the platform can sync time to. When enabled, the three fields under **7** are usable.
- 7 Custom NTP Server IP (#1, #2, #3):** Enter the custom NTP server IP addresses within these fields. The time servers specified must support the Network Time Protocol (NTP) in order for automated time acquisition to work properly.

**NOTE:** Default NTP Servers are “0.pool.ntp.org”, “1.pool.ntp.org”, “2.pool.ntp.org”, and “3.pool.ntp.org”.



**REMINDER:** Internet access must be present in order to access the default NTP Servers.



Figure 5.4d - Saving your configuration

- 8**  Click to apply and save the system configuration changes.

## SECTION 6 – CONFIGURING THE ENCODERS

### 6.1 “ENCODERS: STATUS” TAB

The “**Encoders: Status**” Tab (Figure 6.1) is a “read-only” screen which indicates the status of each encoder. A visual status of the pipeline is also shown on the left side. When hovering over an encode block, the corresponding status table, to the right, will highlight.

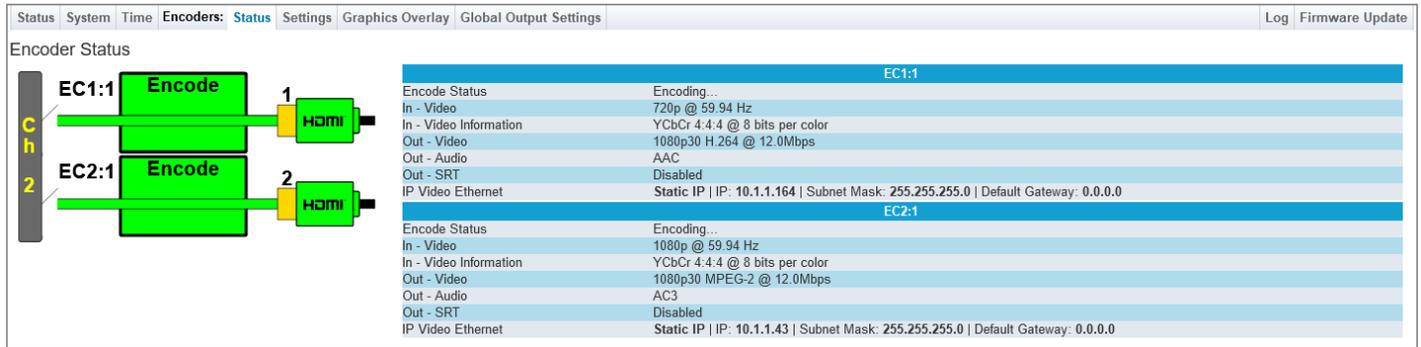
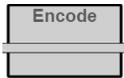
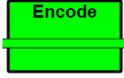


Figure 6.1 - “Encoders: Status” Screen

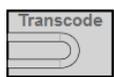
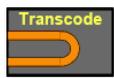
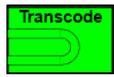
#### Encoder Status States

-  **Light Gray (Red ? Mark):** Encoder has not been detected yet.
-  **Light Gray:** Encoder is disabled.
-  **Dark Gray (Orange Pipe):** Encoder is idle.
-  **Green:** Encoder is active.
-  **Red:** Encoder has failed.

#### HDMI Status States

-  **Black:** The HDMI has no connection.
-  **Green:** The HDMI is connected and sending a signal.
-  **Red:** The HDMI is connected and has an error.

#### File Transcoder Status States

-  **Light Gray (Red ? Mark):** Transcoder has not been detected yet.
-  **Light Gray:** Transcoder is disabled.
-  **Dark Gray (Orange Pipe):** Transcoder is idle.
-  **Green:** Transcoder is active.
-  **Red:** Transcoder has failed.

#### Video File States

-  **Green:** Video File has been successfully uploaded and converted.
-  **Red:** Video File input has been selected, but no video file has been uploaded.



**NOTE:** The video file states will display instead of the HDMI when a file is uploaded and selected for streaming. See Section 6.2 for more information on use and setup of this feature.

## 6.2 “ENCODERS: SETTINGS” TAB

The “**Encoders: Settings**” Tab (Figure 6.2) allows the user to configure each encoder (EC) and displays status information about the input and output streams. A visual status of the pipeline is also shown on the left side. When hovering over an encode block, the corresponding status table, to the right, will highlight.

The screenshot displays the 'Encoders: Settings' interface. On the left, under 'Encoder Configuration', two encoder blocks are shown: 'EC1:1 Encode' and 'EC2:1 Encode'. Each block is connected to an 'HDMI' output. A vertical bar on the far left is labeled 'Ch 2'. On the right, the 'Video/Audio Pipeline Settings' for 'EC1:1' are shown. The settings are as follows:

Setting	Value
1 Pipeline Control	Enable
2 Input Control	HDMI
3 Video File (512MB Max)	Browse... No file selected. <span>X Delete Uploaded File</span>
4 Output Resolution	1080p30
5 Output Video Encoding Format	H.264/AVC
6 Overscan Adjustment (Horizontal)	0 Pixels
Overscan Adjustment (Vertical)	0 Pixels
7 Output Video Bitrate	12.0Mbps
8 Output Audio Encoding Format	AAC
9 Output Audio Bitrate	192Kbps
10 Output Audio Gain	0 - Unity
11 Output Stream URI	UDP // 239.76.1.1 2001
12 SRT Key Length	Clear
13 SRT Passphrase	AbCdEfGhIj
14 Major Virtual Channel Number	2
Minor Virtual Channel Number	0
15 Short Channel Name	Ap_HBO

An 'Apply' button is located at the bottom right of the settings panel.

Figure 6.2 - “Encoders: Settings” Screen

To begin configuration on an encoder, click on a tab (on the right side) to open the “**Video/Audio Pipeline Settings**”, as shown above. The configurable options are as follows:

- 1 **Pipeline Control:** Allows the user to “**Enable**” or “**Disable**” the encode.
- 2 **Input Control:** Set the desired input type. Options available are “**HDMI**”, “**Video File with Transcode**”, and “**Video File Passed-through (Excluded from QAM)**”. No content conversion is being performed for video files being passed-through. When in this mode, the resulting output will only be available through IP.
- 3 **Video File:** Video files may be uploaded here. Supported formats are “.m4v”, “.mp4”, “.mpg”, “.mpeg”, and “.ts”. Due to the wide variety of media and media container formats, file type alone cannot be used to determine whether a particular video file is supported by the unit.

The video file must be in a format capable of being converted to a transport stream container. Video files will be rejected if the size exceeds 512MB. An uploaded video file must be deleted before another is allowed to be uploaded.

- 4 **Output Resolution:** Sets the output video resolution. Options available for this model are “**480i60**”, “**480p30**”, “**480p60**”, “**720p30**”, “**720p60**”, “**1080i60**”, “**1080p30**”, and “**1080p60**”.
- 5 **Output Video Encoding Format:** Sets the output video encoding format. Options available for this model are “**MPEG-2**”, “**H.264/AVC**”, and “**H.265/HEVC**”.
- 6 **Overscan Adjustments:** Allows the user to adjust framing of the resulting encoded video to account for variances in the actual viewable region on display devices. The adjustment range in both the vertical and horizontal directions is from **0** to **100** pixels.

## 6.2 “ENCODERS: SETTINGS” TAB (CONTINUED)

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- 7 Output Video Bitrate:** Sets the output video bitrate in Mbps. Options available for this model are “**2.0**” to “**19.0**”, incremented by “**0.1**” Mbps.
- 8 Output Audio Encoding Format:** Sets the output audio encoding format. Options available for this model are “**AC3 (2.0)**” and “**AAC**”.
- 9 Output Audio Bitrate:** Sets the output audio bitrate. Options available for this model are “**128Kbps**”, “**192Kbps**”, and “**256Kbps**”.
- 10 Output Audio Gain:** Sets the output audio gain. Options available for this model are “**Mute**” and a range between “**-7 (minimum)**” to “**+7 (maximum)**”.
- 11 Output Stream URI:** The user can configure the following URI Output stream settings: “**Protocol**”, “**IP**”, and “**Port**”. The user must select the protocol that matches the one used by the receiving equipment. The available options within this model are: “**Disabled**”, “**UDP**”, “**RTP**”, “**SRT Caller**”, and “**SRT Rendezvous**”.
- 12 SRT Key Length:** Allows a user to select the encryption level of a resulting SRT stream. Options available for this model are “**Clear**” (no encryption), “**AES128 (16)**”, “**AES192 (24)**”, and “**AES256 (32)**”.
- 13 SRT Passphrase:** Allows a user to configure an encryption passphrase when operating in an SRT mode. The passphrase must be 10 to 79 alphanumeric characters in length. The device receiving the SRT stream will use this same passphrase to decrypt the stream.
- 14 Major/Minor Virtual Channel Numbers:** Allows a user to configure the major/minor virtual channel numbers associated with a program when output via QAM. This can be done as One-part and two-part. One part can be set by setting the Minor Virtual Channel number to 0. The Major Virtual Channel will then be used as the One-part VCN value.
- 15 Short Channel Name:** Allows a user to assign a name to a program when output via QAM. Names may be up to 7 alpha-numeric characters in length.



**REMINDER:** Click on the “Apply” button to apply any new values and/or configurations.

### 6.3 “ENCODERS: GRAPHICS OVERLAY” TAB

The “**Encoders: Graphics Overlay**” Tab (Figure 6.2) allows the user to insert an overlay, or watermark, onto the program’s active video. This is best utilized when paired with local live streaming purposes.

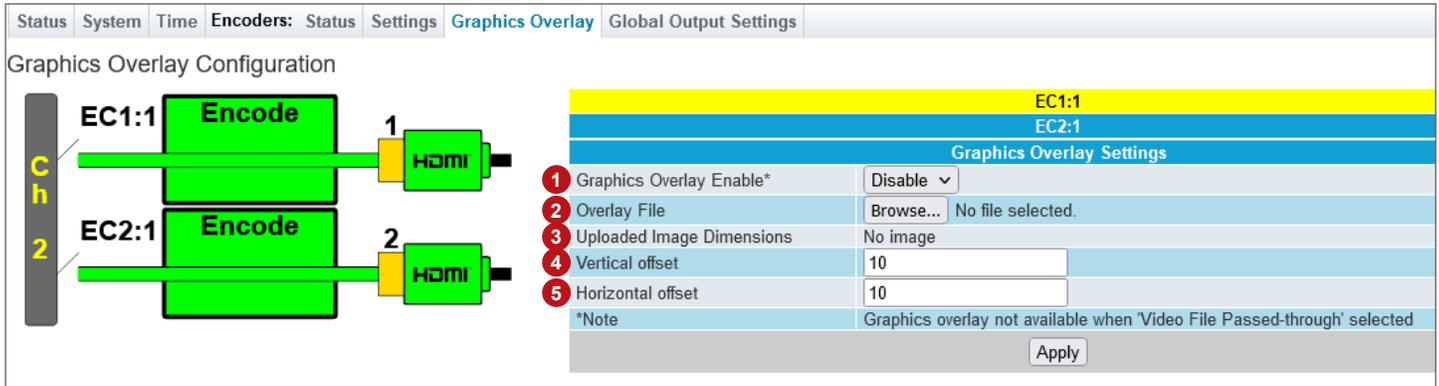


Figure 6.3 - “Encoders: Graphics Overlay” Tab

To begin configuration on an encoder, click on a tab (on the right side) to open the “**Video/Audio Pipeline Settings**”, as shown above. The configurable options are as follows:

- 1 **Graphics Overlay Enable:** Allows the user to enable or disable this feature on the selected encode pipeline.
- 2 **Overlay File:** Image files are uploaded from here. Supported image formats are: .jpeg, .jpg, .gif, .png
- 3 **Uploaded Image Dimensions:** Displays the width x height dimensions (in pixels) for the uploaded image file.
- 4 **Vertical Offset:** Allows the user to vertically offset the overlaid image for the purpose of placing the image onto active video. On the vertical (y) axis in increments of 1 pixel.
- 5 **Horizontal Offset:** Allows the user to horizontally offset the overlaid image for the purpose of placing the image onto active video. On the horizontal (x) axis in increments of 1 pixel.



**REMINDER:** Click on the “Apply” button to apply any new values and/or configurations.

## 6.4 “ENCODERS: GLOBAL OUTPUT SETTINGS” TAB

The “**Encoders: Global Output Settings**” Tab (Figure 6.4) allows the user to configure each encoder (EC) and displays status information about the input and output streams. A visual status of the pipeline is also shown on the left side. When hovering over an encode block, the corresponding status table, to the right, will highlight.

Global Output Configuration	
Global Output Settings	
1 Output RF Channel	2 (57 MHz) ▾
2 Output RF Level	40.0dBmV ▾
3 Output RF Mode	256QAM ▾
4 Transport Stream ID	1
5 Virtual Channel Table Mode	CVCT ▾

Apply

Figure 6.4 - “Encoders: Global Output Settings” Tab

To begin configuration on an encoder, click on a tab (on the right side) to open the “**Video/Audio Pipeline Settings**”, as shown above. The configurable options are as follows:

- 1 Output RF Channel:** Allows the user to select the RF channel/frequency for QAM output. The channel range is from **2 (57 MHz)** to **158 (999Mhz)**.
- 2 Output RF Level:** Set the desired RF output level. The output level range is from **30.0dBmV** to **45.0dBmV** in **0.5dBmV** steps. The “F” connector labeled as “**-20d RF TEST**” on the front of the unit will provide an RF level that is 20dB lower than what is configured.
- 3 Output RF Mode:** Sets the output RF mode. Options available for this model are “**Disabled**”, “**256QAM**”, “**64QAM**”, and “**CW**”. Selecting the “**Disabled**” option will turn off the RF output. IP outputs will be unaffected. Selecting the “**CW**” mode will put the RF output in a Continuous Wave mode for testing and troubleshooting purposes.
- 4 Transport Stream ID:** Sets the transport stream identifier included in the QAM output. The allowable range is **0** to **65535**. Transport stream IDs should be unique on a cable system.
- 5 Virtual Channel Table Mode:** Configures the type of virtual channel table included in the QAM output. Options available for this model are “**Disabled**”, “**CVCT**”, and “**TVCT**”.



**REMINDER:** Click on the “Apply” button to apply any new values and/or configurations.

## SECTION 7 – UPDATE, TROUBLESHOOT, AND MAINTENANCE

### 7.1 “LOG” TAB

The “Log” (Figure 7.1) screen displays system log messages. The following is a description of the changeable parameters for this screen as well as a description of the message filter types.

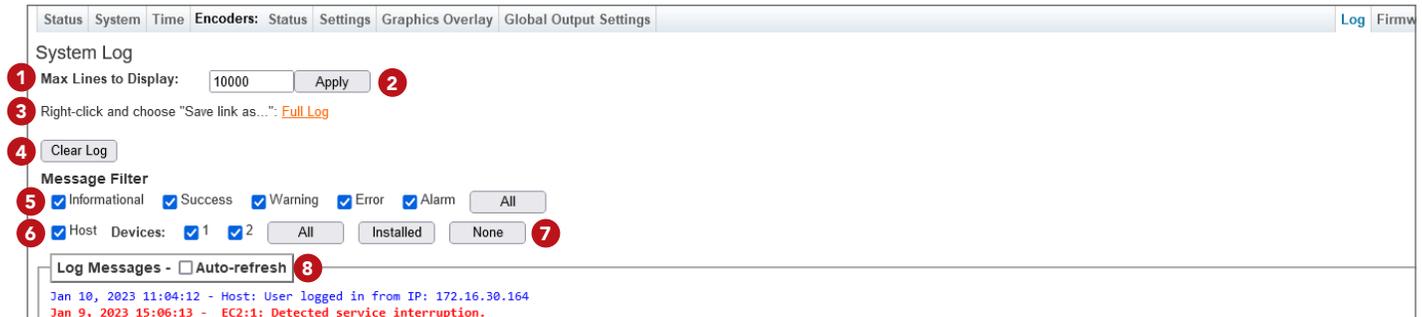


Figure 7.1 - “System Log”

- 1 **Max Lines to Display:** allows the user to select the maximum number of lines to display starting at the most recent. (Minimum: 1, Maximum: 100,000)
- 2 **Apply** Click this button to apply changes to Max Lines to Display setting.
- 3 **Full Log:** To save the full event log, right-click and choose “Save link as...”. The log can then be saved to a user-chosen location.
- 4 **Clear Log** Click this button to clear the event log.

#### MESSAGE FILTERS

The following message filters can be set to enabled or disabled.

- 5 **Event Message Severity:** The following severity messages can be chosen individually or enable them all easily by clicking the all button.
  - **Informational:** messages appear in **blue text** and indicates an informational-only event was logged.
  - **Success:** messages appear in **green text** and indicates an event was logged where an operation was successful.
  - **Warning:** messages appear in **dark orange text** and indicates an event was logged pertaining to an issue that did not cause a loss of service.
  - **Error:** messages appear in **bold red text** and indicates an event was logged that caused or may cause loss of service.
  - **Alarm:** messages appear as **bold white text on a red background** and indicates an ongoing event was logged that is actively causing a loss of service.
- 6 **Host:** the user may enable or disable the event log monitoring of the Host unit.
- 7 **Devices:** the user may show or hide the event log monitor messages of any or all encoders.
- 8 **Auto Refresh:** The user is able to set the auto-refresh on this page. The log messages will display real-time as they happen.

## 7.2 “FIRMWARE UPDATE” TAB

The “**Firmware Update**” tab (Figures 7.2a to 7.2d) is located on the right side of the main menu. This page allows the user to review the currently installed firmware version and provides a quick and easy way to apply firmware updates.

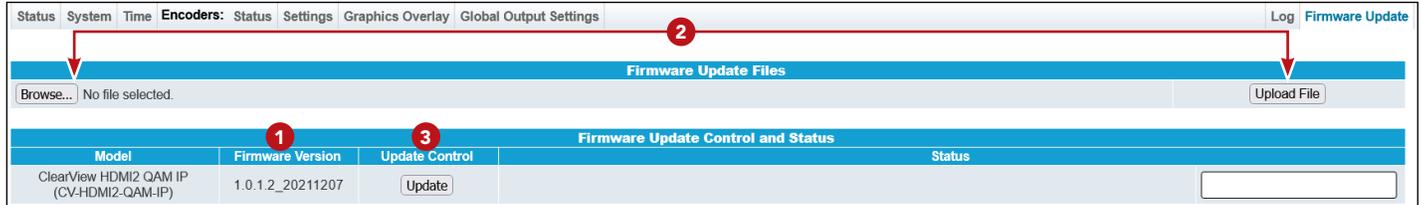


Figure 7.2a - “Firmware Update” Tab

- 1 Check “**Firmware Version**” to ensure you have the latest firmware. To determine if a new firmware update has been released, please go to our website at: ([www.blondertongue.com/support/firmware-updates/](http://www.blondertongue.com/support/firmware-updates/))

Click the “**Firmware Download Site**” linked button and then click through the following folders to view the device files: “**BLONDER TONGUE**” > “**C-**” > “**CV HDMI2\_QAM\_IP\_Stk# 6569**”

**NOTE:** There is a check of the file name versus product model ID to eliminate a user inadvertently updating any product models with incorrect files.

- 2 Under the “**Firmware Update Files**” section, the user can use  and  to select and send the update file(s) into the unit. See a view of the file when uploaded to the platform as shown below on Figure 7.2b.



Figure 7.2b - File when uploaded

- 3 Update the Firmware version by clicking the  button. The update status and progress will show under the “**Status**” columns. Below are the firmware updates as they appear while in-progress (Figure 7.2c) and upon completion (Figure 7.2d).

**Note:** After clicking the “Update” button, please allow a few seconds for the file to load.



Figure 7.2c - Update In Progress

- 4 Once the update progress is complete, the user **MUST** reboot the unit. The most convenient method for this process is by clicking the  button (Figure 7.2d) to apply and finalize the update(s).



Figure 7.2d - Completed Update

**NOTE:** An update can also be applied and finalized by using the reboot control through the system page.



When firmware updates are complete, the user can remove the loaded file by clicking the  button shown on **Figure 7.2b** next to the “Upload File” button under “Firmware Update Files”.

### 7.3 “ADMIN” SCREEN

The “Admin” (Figure 7.3) settings allow a user to change or modify the Username and Password values for the unit while logged in. To access this screen, click the “Admin” link at the top right corner as shown below.

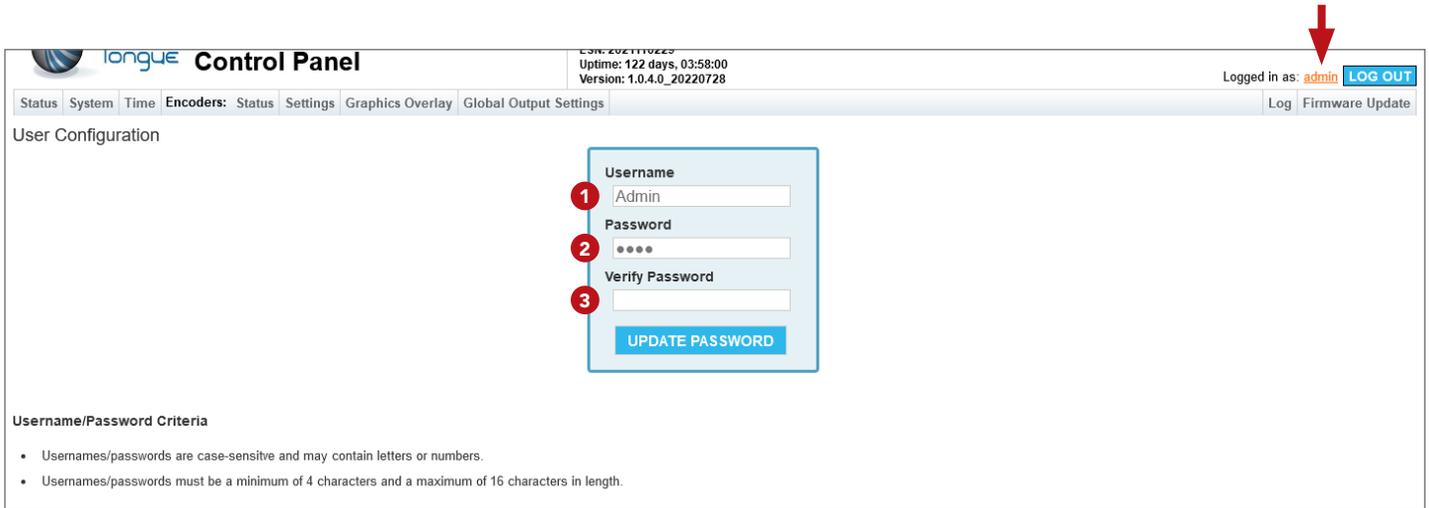


Figure 7.3 - “User Configuration”

- 1 **Username:** is the Administrator’s login (16 characters maximum). This login allows the user to make changes to any area of the unit. (Factory Default: “Admin”)
- 2 **Password:** is only used when changing the current Administrator’s password (16 characters maximum). The password will not be displayed. (Factory Default: “pass”)
- 3 **Verify Password:** is required when changing the current Administrator's password. It MUST match the “Password” field and will not be displayed.



**PLEASE NOTE:** Both the Login and Password are case-sensitive.

## 7.4 TROUBLESHOOTING

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For any additional technical support issues, please send more information to us about your issue via our website at [www.blondertongue.com/support/](http://www.blondertongue.com/support/) or call us toll-free at 1-800-523-6049 between the hours of 9:00 AM and 5:00 PM (EST, UTC -5).

For best service on calls, please leave a voice message with a brief summary of your problems including the Product Model Name(s) which are having issues. We will have someone use this information to prepare, in advance, to assist you in advance and contact you as soon as possible during business hours.

## NOTES

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# LIMITED WARRANTY

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that 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 (and for all BIDA products a period of eight (8) years) from the date of original purchase for all stock hardware products (ii) 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 from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("Non-Core Software"); (iii) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (ii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("Core Product Software") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software. Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media.

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to, and ownership of, all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("Refurbished/Closeout Product"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products. In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third-party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's 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, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or 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) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

**OTHER THAN THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SET FORTH ABOVE SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY SELLER OR BY ANY OF SELLER'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF SELLER'S BROCHURES MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS SELLER IN ITS SOLE DISCRETION SHALL DETERMINE. SELLER SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM SELLER.**

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 Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective. Seller'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 Seller 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 Seller. Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis. (Rev 1121)



**BLONDER TONGUE LABORATORIES**

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