AV610 CaptionPort™



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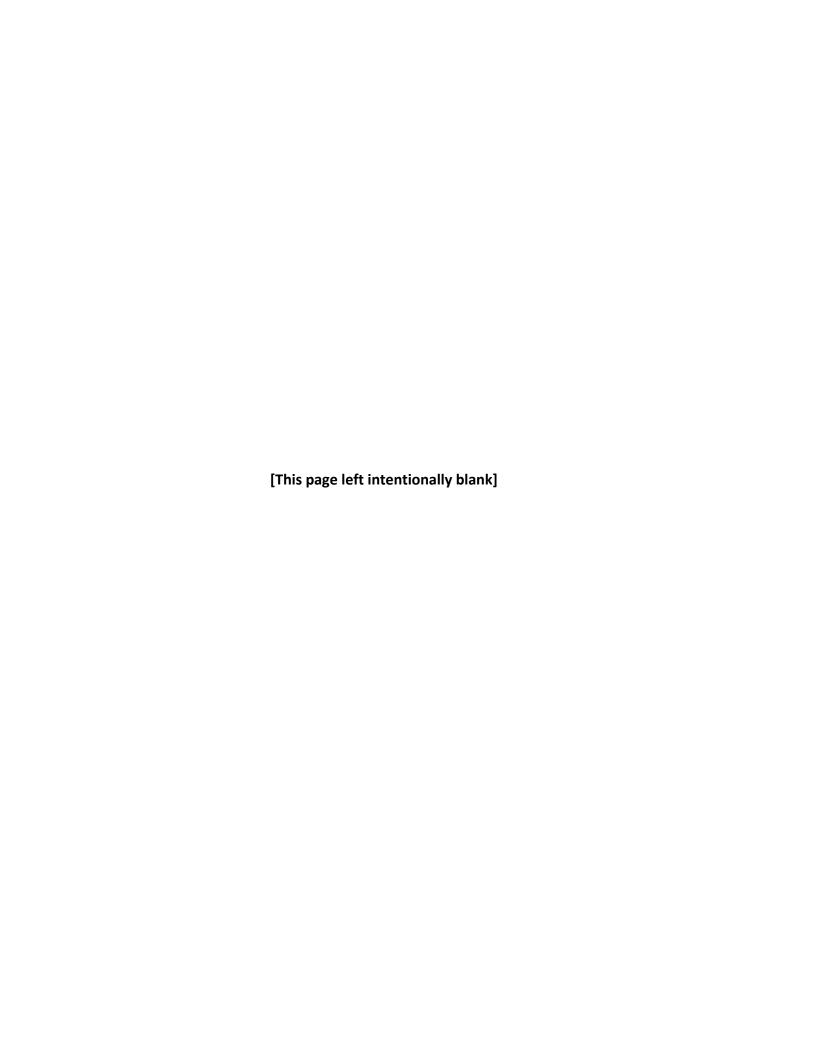


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Introduction

Product Description

The AV610 CaptionPort delivers world class caption connectivity designed specifically for video conference displays, with easy setup and cost efficiency in mind. In addition to displaying captions, the CaptionPort keeps presentations fully visible by scaling the input video down by 15% with the option of placing caption data above or below the video area. This feature allows the use of standard presentation templates without visual interference from captions. The AV610 lets you source captions from thousands of live captioners over our iCap network or automatically from our automatic captioning service, Lexi. Connectivity and testing instructions for both services are provided in this manual.

List of Features

- ✓ Connectivity to Lexi, EEG's Cloud-hosted Automatic Captioning service.
- ✓ Connectivity to iCap, EEG's global network of caption service providers.
- √ Video Output Scaling feature: Scales video down by 15% and allows placement of captions above or below the presentation area.
- ✓ Local logging of caption input for future reference
- ✓ Relay-bypassed master video path



Unit Setup

Quick Network Setup

To use iCap or Lexi and to access further features on the CaptionPort's web interface, you must first select **Network Settings** from the front panel LCD menu and setup the unit on your network.

- ✓ Use a Static IP address on your network to assign the CaptionPort (recommended). It doesn't have to be, and in most cases should not be, a publically routable IP address.
- ✓ Program a gateway address the gateway address is typically the local network address of your router. This is necessary if you plan to connect out of your local network to iCap or any other application from the CaptionPort.
- ✓ Program a Subnet Mask for your network
- ✓ Lexi only: Program your network to allow outbound connections to https://eegcloud.tv on port 443. Your device must also have a valid DNS server configured under the Network tab on the web portal. See additional Lexi setup instructions on Page 6.

As an alternative to these recommended steps you may also set up the device for DHCP – Selecting DHCP will automatically pull available IP, gateway, and subnet information from your network. *IMPORTANT: With DHCP, your device's assigned IP may change on its own which will affect how you access the web interface for your device.*

Video Input/Output

Put SDI video into the unit. Output captions will appear on the SDI video output. Refer to page 19 for a diagram of the rear-panel connector.

Test Captions

With video input connected to the CaptionPort, you can send a stream of auto-generated test captions to the output video to ensure proper initial setup of the device. To send test captions navigate to **Utilities** > **Test Captions** > **Enable** > **On** and a stream of test caption text should appear on the output of your CaptionPort. Note that video input is required to send test captions.

Setting Audio Levels

Your program audio source is typically embedded in the standard video input to your CaptionPort. Audio may also originate from a separate Analog or AES source (XLR connector input to unit). To send this program audio to captioners through iCap, you must first configure the audio settings through the front panel menu of the unit.

From the main menu go to **Audio Setup > Audio Mix** and set to *Stereo* or *Surround* appropriately. Next, visit **Audio Setup > Peak Level** and ensure the audio level peaks at around 80% and does not warn "Clipping!" This step is crucial for ensuring that quality audio is being sent to the captioner (quality audio = quality captions).

If your audio levels are too low, or too high – you can achieve an appropriate level by adjusting the audio source itself or simply adjusting the source audio level from the CaptionPort front panel LCD menu **Audio Setup > Scale Audio** which allows you to scale the audio up or down in 6 decibel increments.

Detailed Explanation of All Audio Setup Menu Options

Input Select	Selects whether the input audio format is analog, AES digital or embedded audio.
--------------	--

Use the **LEFT** and **RIGHT** keys to select the correct format, then press **ENTER** to exit and apply changes or **CANCEL** to exit and cancel changes. The CaptionPort does not currently support direct input of Dolby® E or other compressed audio signals.

Peak Level Dynamically displays the peak signal level at the audio input. A warning message will

be displayed when clipping is detected at the input. For optimal sound quality, the peak level bar should reach at least 60% across the screen, but should never display

"Clipping!"

Scale Audio Adjusts the audio input level without adjusting the output level of your source. The

built-in digital input trim can boost or cut the audio input level up by as much as 12

dB.

Audio Group Selects the SDI embedded audio channel group that the iCap[™] mix is sourced from.

Up to 4 channel groups can be carried on an SDI signal, though most commonly Group 1 carries the primary audio program. *Applies only when embedded audio*

input is selected.

Audio Mix Selects whether the iCap™ mix is being created from a Stereo or Surround channel

group. Choose "Stereo" to select a mix of the left and right channels (1 & 2 or 3 & 4 within the selected Audio Group, according to the Stereo Channel setting), or "Surround" to select a mix of the left, right, and center channels (1, 2 & 3 within the

selected Audio Group). Applies only when embedded audio input is selected.

Stereo Channel Selects whether the iCap™ stereo mix is being created from channels 1 & 2 or channels

3 & 4 within the selected Audio Group. Applies only when embedded audio input AND

stereo audio mix are selected.

Accessing the Web Interface

The web interface of your device can be accessed through any computer on your local network and controls many of the CaptionPort's applications, configurations, and features. You will see it referenced many times throughout this manual.

The device must be connected on your network to access the web interface (reference *Quick Network Setup* section on page 3). The web interface is accessed by entering the IP address assigned to your device in your computer's web browser. If you set the device up with a static IP address, the address for your web interface will be the same. If you set the device up with DHCP, the address can change at will and you should check the IP from the front panel of your CaptionPort at **System Setup > Network > IP Address** to ensure you are using the correct IP to access the web interface.

Setting Date & Time

The Date and Time can be set by selecting Date/Time from the side menu on the web interface.



Figure 1: Date/Time Settings on the Web Interface

Updating Your CaptionPort

Before updating you must first download the latest update file for your device model from the product updates section of our website https://eegent.com/support/product_updates

Once you have downloaded the latest version you can apply it to the CaptionPort either through the web interface OR the front panel USB port / LCD Menu.

- ✓ Web Interface: Select Update from the left side menu. Browse for the update file downloaded from our website, then click Upload, and finally click Proceed.
- ✓ USB / LCD: Transfer the update file to any USB stick. Insert the memory stick into the front panel USB port, navigate to the System Setup > Update from the LCD menu, and press enter to proceed and install the update. A message will appear on the LCD screen when the update has finished. Do not remove the memory device while the update is running. Some updates will require a power-cycle before they take effect; in this case, the unit will power down automatically once the update is complete.

Video Output Scaling and Caption Placement Settings

A distinct feature of the AV610 CaptionPort that sets it apart from other captioning units is the video scaler feature. By scaling the input video down by 15% you have the option of placing caption data above or below the video area. This feature allows the use of standard presentation templates without visual interference from captions.

From the main General System Information & Status page of the web interface look for the Video Output Scaling feature. Select the option from the dropdown that you would like represented on the captioned video output of your CaptionPort.

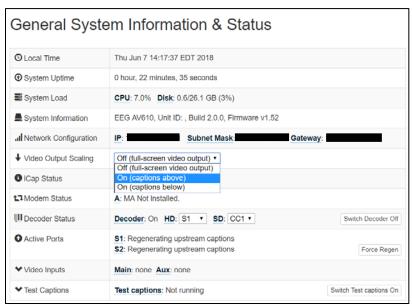


Figure 2: Video Output Scaling Options on the Web Interface



Figure 3: Example of Scaled Video Output with Captions Above Viewing Area



Lexi Setup and Testing

If you did not indicate interest in Lexi at the purchase of your CaptionPort, please contact EEG technical support at 516-293-7472 option 4 at the menu to obtain the necessary iCap and Lexi / EEG Cloud credentials. Also, be sure your AV610 is properly setup on your network prior to setting up Lexi (instructions on Page 3).

Please note that an iCap account is required for your CaptionPort to communicate with Lexi over a standard broadband connection.

1. Confirm iCap Connectivity and Know Your iCap Access Code:

- ✓ From the main page of web interface, confirm the iCap Status says Connected to remote server. Additionally, the iCap LED on the front panel of your CaptionPort should be green. If inactive, contact EEG support for credentials.
- ✓ Your iCap Access Code can be found in the shipping documentation provided with your Device. This will be used in the next step to enable Lexi to access live program audio from, and return automatic captions to, your CaptionPort over iCap.



Figure 4: Active iCap Status on Web Interface Main Page

2. Configure Lexi from the Web Interface

- ✓ Select the Lexi module from the left hand menu of the web interface. Enter your EEG Cloud Username and Password along with your iCap Access Code. If this information has not been preconfigured prior to shipment, noted in the paperwork that came with your CaptionPort unit, or provided to you via e-mail by EEG Support contact us at 516-293-7472 option 4 to setup your Lexi account and obtain this information.
- ✓ Ensure additional preferences are configured as desired. Below are descriptions for each setting field. Once this is complete you may click Apply Settings.

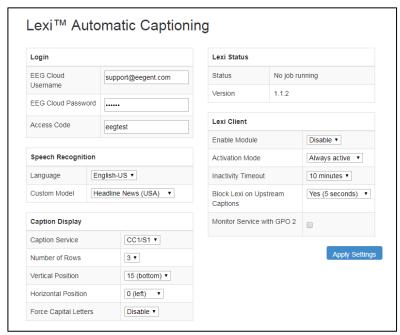


Figure 5: Lexi Module on the Web Interface

Speech Recognition

Language The base language models supported by Lexi currently include English-US,

English-UK, and Spanish.

Custom Model Through the EEG Cloud web site, you can manage your Lexi account and create

custom language models to further improve accuracy for your unique application. This dropdown box will display all of the custom models available

under your active EEG Cloud account.

Caption Display

Caption Service Choose from primary language (CC1/S1) and secondary language (CC3/S2)

options.

Number of Rows The number of rows per roll-up caption can range from 2 to 4.

Vertical Position CTA-608 base row options range from 2 (top of the screen) to 15 (bottom of

the screen).

Horizontal Position Choose a left horizontal offset from 0 to 28 characters.

Capital Letters When enabled, all captions will be written in upper-case.

Lexi Client

Enable Module Lexi must be enabled in order for the CaptionPort to communicate with Lexi

and receive captions from the cloud.

Activation Mode When "Always active" is selected, a Lexi captioning job will be started

immediately upon enabling the client module.

Inactivity Timeout A Lexi job that that runs for this amount of time without any dialog being

transcribed will be terminated automatically by the server. Set to "None" if

you want jobs to be able to run indefinitely without dialog.

Block Lexi on

Upstream Captions

Setting this to "Yes" will ensure that Lexi will not generate captions when upstream data is present. The time in parentheses indicates how long upstream captions will have to be absent in order for Lexi to start up again.

Monitor Service With GPO 2

When selected, GPO 2 will be active when Lexi is captioning to the selected

access code, and will be inactive otherwise.



iCap Setup and Testing

This section will walk you through a basic test of iCap and point out important information your captioner will need from you to get started. For sections that require you to access the iCap admin site – iCap Admin credentials are supplied by EEG at the time of unit purchase/rental along with your unique access code and is accessed at https://www.eegicap.com/iCapAdmin. If you did not indicate iCap usage at the purchase of your CaptionPort, contact technical support at 516-293-7472 to be set up with iCap.

1. Connect iCap From the CaptionPort Web Interface:

- ✓ Select *iCap* from the menu on the left and confirm that the *Company Name, User Name, and Password* are all present and correct.
- ✓ On the same page confirm that iCap Status says *Connected*. Additionally, the **iCap LED on** the front panel of your CaptionPort should be green. This also means the CaptionPort is connected to iCap.
- ✓ If all information is correct and the status does NOT say Connected try clicking the Start button found on this page to connect to the iCap Network. An iCap Connectivity indicator light on the left face of the CaptionPort will also show green when iCap is connected and red if not connected.



Figure 6: iCap Module Settings on the Web Interface

2. Know Your iCap Access Code:

- ✓ Your Access Code is what you provide to your captioner so that they can Access your
 program audio and provide live captions through iCap.
- ✓ Your unique Access Code can be found in the shipping documentation provided with your CaptionPort. It may also be found by logging into the iCap Admin website at eegicap.com/iCapAdmin (login credentials provided by EEG Support).
- ✓ ONLY "share" your Access Code with your caption service provider in the iCap Admin site. Your access code may already be shared with them in iCap Admin if you provided the information to EEG as part of your order. This can be verified in iCap Admin.

3. Coordinate Testing With Your Caption Service Provider

*This step requires your caption provider to connect to your CaptionPort from their iCap software. You MUST connect your audio/video input to the unit BEFOREHAND.

- ✓ Once you've provided your access code to the captioner and connected your program video/audio to the CaptionPort you will test your connection to ensure audio is reaching them and caption data is coming into your device.
- ✓ Enter the iCap Admin portal. In the Users tab confirm audio status for your CaptionPort says "Audio OK" (see figure 7) this means your captioner is receiving Audio. If the Status says "No Listeners" it means that the captioner has not yet connected to your access code and you should verify that they have done so. The Users tab shows all users connected to your device and confirms their status.

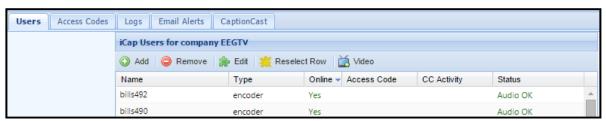


Figure 7: iCap Admin Users Tab with Audio Status

(Cont. on next page)

✓ Once you've confirmed the audio - click on the Access Codes tab to confirm incoming CC Activity from your captioner. Once the captioner presses "Start" on their iCap software the CC Activity in iCap Admin should read "Active" (see figure 8). Alternatively, confirm the CC LED on the front panel of your CaptionPort is green. This means that your CaptionPort is receiving caption data from your captioner.



Figure 8: iCap Admin Access Codes Tab with CC Status

- ✓ iCap Audio and Caption activity can also be verified locally by taking the following additional measures in the web interface.
 - Check the *Audio Packets Sent* under the iCap menu in the web interface. If the number is growing then Audio is being sent to the captioner. If it says 0, check with your captioner to ensure they have connected.
 - Check caption activity by selecting Logs from the side menu on the web interface. Then look for iCap, and select the log with today's date. The iCap log will show some communication data which means that captions are being received.

Alternatively, you can view the "Clone" logs section which will show all binary commands received - also indicating captions are coming through the connection.

Monitor / View Captioner History with iCap Admin Logs

To monitor or view past captioner connection history to your CaptionPort's access code, login to iCap Admin and select the *Logs* tab. Next, select either the access code you want to see history for. Once you've selected the desired access code, an event log will appear that you can view to see all activity on your access code.

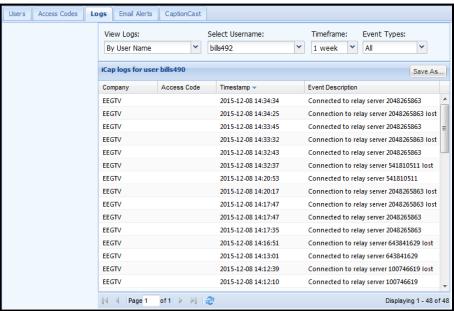


Figure 9: iCap Admin Logs Tab



Other Live Captioning Methods

Modem (Optional Add-on)

Standard RJ-11 connection. Connect to a phone line to enable dial-up captioning and provide your captioner with the telephone number associated. Using a PBX or other digital non-POTS system is NOT recommended - many of these are not compatible with modem communications. Once connected, the LED on the front panel of your unit labeled "MDM" will turn green.

Telnet

Enable telnet via the web interface and select a port. Configure your firewall to allow a captioner to get to your CaptionPort on the designated port and then give your caption service provider the port number and public IP address.

RS-232 / RS-422

See hardware section for cabling detail. Serial port settings are controlled through the web interface selecting **Serial Ports** from the left side menu or by navigating to **System Setup > P1 Mode** from the front panel LCD menu. The CaptionPort supports RS-232, RS-422, and RS-422 Sony (with RS-422 and RS-422 Sony options configurable on Port 1 only). Default settings are 1200 baud, odd parity, and 7 data bits. Customized settings are sticky after power cycles. Modem will automatically take priority when active so that the prompter can be overridden as desired.

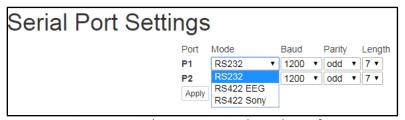


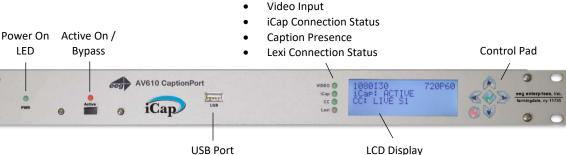
Figure 10: Serial Port Settings in the Web Interface



Hardware Reference

Front Panel

Status Indicator LEDs:



Power Switch There is one power switch on the rear panel for each power cable connected

to the unit.

Power On LED There is one power LED for each power supply connection provided with the

unit

Active Toggles the CaptionPort between active operations and Relay Bypass mode.

In Relay Bypass mode, the signal at the master video input is routed directly through to the master video output, while the signal at the auxiliary video input is routed directly through to the auxiliary video output. Video output 2

is inactive.

Active On LED The Active On LED will light green when the unit is in active operating mode.

The LED will turn off when the CaptionPort is in Relay Bypass mode.

LCD Screen The LCD Screen provides access to the unit's front panel configuration menu.

Status information is displayed when the menu is not in use. Press the "check

mark" button to enter the menu at any time.

Control PadThe Control Pad provides menu navigation for the front panel configuration

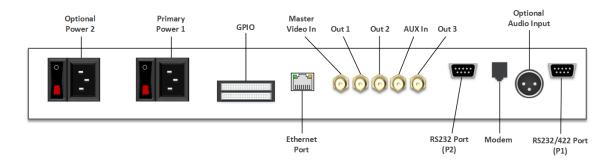
menus. The control pad buttons are: ENTER (marked by a check), CANCEL

(marked by an 'X'), LEFT, RIGHT, UP, and DOWN.

USB Port

The front panel USB port provides firmware upgrade capability via a flash memory device. Updates can be applied through the USB port as well as the web interface. See *Updating Your CaptionPort* section on page 5 to learn more.

Rear Panel



Primary Power 1 AC power input, 120 – 240 V, 50-60 Hz tolerant. Connects to the unit's AC

power source. Corresponding switch powers unit on or off.

Optional Power 2 AC power input, 120 – 240 V, 50-60 Hz tolerant. Connects to the unit's AC

power source (second power supply does not come standard).

GPI In & Out Two blocks of 8 GPI input switches and 8 GPO output notifications. Switch

functions vary based on software configurations.

Ethernet Port Used to connect the CaptionPort to your local network for access to the web

interface and Lexi. The CaptionPort will be reachable on your network using

the static or DHCP IP address set in the front panel configuration menu.

Master Video In Input for program video source - can use 3G-SDI, HD-SDI, or SD-SDI

Out 1 Relay-bypass protected primary video output.

Out 2 Non relay-bypass protected copy of the primary video output signal.

RS-232 / RS-422 Connection Detail

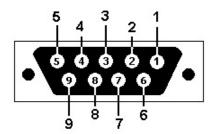
Both Serial ports 1 and 2 use DB-9 connectors. Only serial port 1 supports RS-422 and RS-422 Sony. See the following PIN assignments:

RS-232 Protocol		
Pin	Master	AV610
1		
2	Rx	Tx
3	Tx	Rx
4		
5	Ground	Ground
6-9		

RS-422		
Pin	Master	AV610
1	Rx-	Tx-
2	Rx+	Tx+
3	Tx+	Rx+
4	Tx-	Rx-
5	Ground	Ground
6-9		

RS-422 Sony		
Pin	Master	AV610
1		
2	Rx-	Tx-
3	Tx+	Rx+
4		
5	Ground	Ground
6		
7	Rx+	Tx+
8	Tx-	Rx-
9		

DB-9 Female connector pinout on rear of the unit:



These ports can be connected directly to a standard PC serial port with a 9-pin, three wire straight serial cable. A "null modem" cable MAY NOT be used for this purpose since it will reverse the connections of pins 2 and 3. Null Modem cable may be used only when the intent is to connect two units together via the serial port (see *Cloning* on page 17).

AV610 CaptionPort Specs

HD-SDI Video Inputs	
Number of Inputs	7
Connector	
	3G (SMPTE 424M), HD (SMPTE 292M), and SD (SMPTE 259M and 344M)
Input Level	
Input Impedance	
Equalization	Automatic up to 100m @ 3 Gb/s with Belden 1694 or equivalent
HD-SDI Video Outputs	
Number of Outputs	3
Output 1	Master (relay bypass protected)
Output 2	Master copy
Decoder Out	Auxiliary (relay bypass protected)
Connector	BNC per IEC 169-8
Output Level	800 mV p-p \pm 10%
Output Impedance	75 Ohms
DC Offset	0V ± 0.5V
Rise/Fall Time	200 pS nominal
Overshoot	< 10% of amplitude
Wide Band Jitter	< 0.2 UI
DATA PORTS	
LAN	RJ45 connector, 10/100/1000 Base T TCP/IP
USB	Three standard USB ports, one on front panel and two on rear
Serial Ports	Two serial DB-9 jacks, Selectable RS-232C / RS-422.
Serial Data Input Format	7 data bits, odd parity, 1 stop bit, settable between 1200-38400 baud
Modem	Paid Option. One RJ-11 telephone jacks 1200/2400 baud
GPI/GPO	Two ports which each mate to female IDC-16 connectors, Switches rated
	to 1A / 30 VDC
AUDIO PORTS	
Port 1	·
	Program audio input for streaming audio applications
Connector	
Format	Balanced analog or AES balanced 110-ohm digital
FRONT PANEL	
Display	Back-lit LCD display with six-button keypad and navigable menus for unit
Davier	configuration Unit power switch with LED indicator
	·
Active On	Unit bypass switch with LED indicator
Active On PHYSICAL	Unit bypass switch with LED indicator
Active On PHYSICAL	·
PHYSICAL Dimensions	Unit bypass switch with LED indicator 19" rack mount x 1 RU x 16.5" deep
PHYSICAL Dimensions ELECTRICAL Power Supply	Unit bypass switch with LED indicator 19" rack mount x 1 RU x 16.5" deep



Developer Features

Command Concept

Commands allow you to communicate with and control the operation of your CaptionPort either manually or through your custom written software that contains any combination of the commands detailed in this section. All commands begin with a leading control code of <CTRL+A> or the ASCII hex code 01 for developers writing software. All commands must end with a carriage return (the <ENTER> key on a keyboard or 0D in ASCII hex). For manual entry of commands, the three following methods may be used. A Full Command Reference may be found at the end of this section.

Telnet: Commands may be entered through a telnet connection to the device only after you've enabled a telnet connection through the web interface (select Telnet from the side menu)

Web Terminal: The Command Terminal is found on the web interface (select *Terminal* from the side menu). This emulates the serial port interface to the device and allows you to enter commands directly from the web interface (see figure 19).

RS-232: Commands may be entered through an RS-232 connection to the unit. Default settings allow entry through RS-232 right out of the box.

```
Smart Encoder Command Terminal
Version 1.6

Welcome to the Smart Encoder Command Terminal

Type a Smart Encoder command and hit enter.

- Type commands using [CTRL+A] and [CTRL+C]

- An asterisk signifies the end of a successful request

- 'El' is returned if an unknown or unsupported command is used
```

Figure 14: Command Terminal on the CaptionPort Web Interface

Startup Settings

The Startup Settings Editor enables entry of commands that will run every time the CaptionPort starts up. Use Startup Settings whenever you want a setting to be "sticky"; settings entered through the Web Terminal or the serial port only are not sticky and will revert to defaults when the CaptionPort is power-cycled. Startup Settings can be accessed via the web interface by selecting *Startup Settings* from the side menu.

To use the Startup Settings editor, type any desired command from the Command Reference on the next page into the command box. *Omit the <CTRL+A> character entirely as this character is implied at the beginning of each line*. To add additional commands, press the '+' button and more lines will appear.

When you have entered commands for all the settings that you want to make sticky, click Update Startup Settings. The configuration changes will take the next time the CaptionPort starts up.



Figure 15: Startup Settings on the Web Interface

Command Reference

Local Entry Modes

Regeneration Mode:

Regenerate Upstream VANC

Ignore Upstream Caption Channel

Return Upstream Caption Channel

CTRL+A>! [ON/OFF] <ENTER>

CTRL+A>6 Channel <ENTER>

CTRL+A>7 Channel <ENTER>

Begin PassThru Mode <CTRL+A>3 [Pairing] [Field] <ENTER>

End PassThru Mode <CTRL+C>

Begin RealTime Mode <CTRL+A>2 [Channel] [Rollup] [bBase] <ENTER>

End RealTime Mode <CTRL+C>

Status Commands

Status Commands:

Modem Status <CTRL+A>+ [Modem] <ENTER>

Monitor Line 21 <CTRL+A>5 [Channel] [I/O] <ENTER>

End Monitoring <CTRL+C>