$\begin{array}{c} \textbf{EEG CC1260} \\ \text{iCap}^{\text{TM}} \text{ Interface Card} \end{array}$



Product Manual

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The revision date for this manual is June 5, 2018.

1 Introduction

1.1 Product Description

The CC1260 iCapTM Interface Card provides access to EEG's iCapTM network for legacy caption encoders. The CC1260 works just like any other iCapTM encoder from a captioner's point of view, but it outputs caption data via TCP/IP and RS-232 to non-iCapTM encoders, rather than directly encoding closed captions into SDI.

2 Rear Module



MASTER IN	Master video input. Accepts SMPTE 259M SD–SDI, SMPTE 292M HD–SDI, or SMPTE 424M 3G–Level-A SDI.
AUX IN	Reserved.
MASTER OUT	Reserved.
AUX OUT	Reserved.
GP IN A and GP IN B	Two Molex 87831-0841 connectors, each
	containing 4 GPI inputs. See Appendix A for more information regarding GPIO usage.
GP OUT	Molex 87831-0841 connector containing 4
	GPI outputs. See Appendix A for more in-
	formation regarding GPIO usage.
SERIAL	Connector for cable containing two DB-9
	(RS-232) serial ports labeled P1 and P2.
	P2 will output all caption data entered via iCap [™] .
LAN	1000-Base Ethernet port for connection to
	LAN. After configuring your CC1260's net-
	work settings in DashBoard (see below),
	you can view the Web Configuration site for
	your card by navigating to its local IP ad-
	dress in your web browser.

3 CC1260 Operation

3.1 Front Panel

The front of the CC1260 card is depicted in the following diagram:



3.2 DashBoard Menus

The DashBoard software is used to configure settings, networking, and perform additional basic configuration for the frame card. It can be downloaded from Ross Video: https://www.rossvideo.com

Once you have successfully installed the DashBoard tool, open the program to find information about the CC1260 and to configure your card.

CC1260 iCap[™] Interface Card



There are two main sections in the DashBoard interface: the Status information on the left side and the Setup menu on the right side. At the bottom of the interface, you will find the **Upload** button, which can be used to upgrade your CC1260's DashBoard interface firmware, and the **Reboot** button, which can be used to reboot your CC1260.

The upper section on the left shows the card state and the connection status, each of which has an indicator light and description of the card's status. There is a more detailed tab labeled **Status Information** below the two basic indicators that provides information about the card's version and its current setup configurations.

In the **System Status** section, Master Input Format displays the video type detected on the master video input, including format information for 3G or HD video. iCap Status indicates whether the card is connected to an iCap[™] server and, if so, whether a captioner is actively connected. Remote Connection Status indicates whether the card is connected to a remote encoder via Telnet. The Upgrade Status field displays information about whether the encoder is currently loading an upgrade.

The lower section entitled **Product** displays identifying information about the hardware and software versions of the card. This section displays the supplier, the build number, the firmware number, and the ASW version to identify the software installed and the serial number of the card.

The setup section in the right half of the interface is broken up into two tabs: System and Audio.

3.2.1 System

The System tab contains network configuration and remote connection setup fields.



MAC Address	Displays the encoder's MAC address.
Configuration	Selects between static and DHCP network
	settings.
IP Address	Selects the IP address the unit will be as-
	signed on your LAN (read-only in DHCP
	mode).
Subnet Mask	Selects the bit mask used; this should
	match the mask used on your LAN (read-
	only in DHCP mode).
Gateway	Selects the address of the device that the
	unit will use to communicate outside of
	your LAN (read-only in DHCP mode).

Enable	Remote	Con-	When set to Yes , the card will attempt to
nection			connect to a remote encoder at the IP and
			port specified below, for the purpose of for-
			warding incoming $iCap^{\ensuremath{^{\rm TM}}}$ caption data and
			commands.
Destination IP Address		ldress	IP address of the encoder to which a remote
			connection should be established.
Destina	tion Port		TCP/IP port to which a remote connec-
			tion should be established, at the above-
			specified IP address.

3.2.2 Audio

The Audio menu allows configuration and monitoring of audio for $iCap^{TM}$.

System Audio	
	Audio Setup
Audio Group	1
Audio Mix	Surround
Stereo Pair	Channels 1 and 2
Mono Channel	1
Input Level Adjustment (dB)	0
Peak Level (%)	86
L	

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.

Audio Mix	Selects whether the $iCap^{TM}$ mix is being created from a Stereo or Surround channel group, or a single Mono channel. 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 Pair setting); "Surround" to select a mix of the left, right, and center channels (1, 2 & 3 within the selected Audio Group); or "Mono" to select one specific channel.
Stereo Pair	Selects whether the iCap [™] stereo mix is being created from channels 1 & 2 or channels 3 & 4 within the selected Audio Group
Mono Channel	Selects an individual channel from which to obtain iCap [™] audio when Audio Mix is set to "Mono".
Input Level Adjust- ment (dB)	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 in- put level by as much as 12 dB.
Peak Level (%)	Dynamically displays the peak signal level at the audio input. For optimal sound quality, the peak level should reach at least 60% across the screen.

3.3 Web Configuration

The Web Configuration interface enables you to access configurations for your CC1260 applications from any computer on your local network. Several web applications are installed at the factory: a Startup Setting editor, a web-based serial-emulation Terminal for entering Smart Encoder commands, system date/time configuration, and configuration of $iCap^{TM}$ settings.

Once you have configured your CC1260's network settings in DashBoard and connected it to your LAN via the port on the rear module, you can open up a web browser on any PC on the same local network. Navigate to the IP address that you configured in DashBoard; for example, type 192.168.1.15 into the address bar of the browser if that is the address you entered into DashBoard. If you cannot navigate to the page in your web browser, check with your network administrator that the IP Address and Subnet Mask you entered in DashBoard are valid parameters for your network, since individual settings vary.

Once the page has loaded, you will see a list on the left panel of the different web applications installed on your encoder. Click any of these links to navigate to the page for that application.

4 Connecting to Remote Encoders

The CC1260 iCapTM Interface Card allows broadcasters and caption service providers to enter closed captions into an encoder that does not directly support EEG's iCapTM system, while still leveraging many of the advantages of iCapTM. Captioners can connect to the CC1260 using the same workflow they use with other iCapTM-enabled products, while administrators can monitor job status and other information via familiar iCapTM administrative tools.

The CC1260 can clone iCap[™] caption data and commands over both TCP/IP and RS-232. The IP address and port of a remote encoder that's accessible over TCP/IP can be entered into the DashBoard interface, as described in section 3.2.1 above. Serial port P2 simultaneously defaults to cloning all incoming iCap[™] data via RS-232; see the Serial Ports page in the CC1260 web interface for connection parameters, including baud rate and parity.

A General-Purpose I/O

Each of the 2 GPIO input banks, Bank A and Bank B, has the following pinout:

7	8
5	6
3	4
1	2

Bank A provides GPI inputs 1-4:

Input	Pins
4 (D)	7, 8
3 (C)	5,6
2 (B)	3, 4
1 (A)	1, 2

Bank B provides GPI inputs 5-8:

Input	Pins
8 (H)	7, 8
7 (G)	5, 6
6 (F)	3, 4
5 (E)	1, 2

A GPI input is activated when closed (connected to ground), and inactive when open (left floating). The even-numbered pin in a given GPI pair is its ground. For example, GPI input 1 can be activated by connecting pins 1 and 2 of Bank A, thereby grounding pin 1. If pin 1 were left floating, GPI input A would be inactive.

A GPI output's pins form a switch that is on when closed and off when open. For example, pins 3 and 4 of the GPI output bank form a switch that is closed when GPI output 2 is active, and open when it is inactive.

B Serial Port Connector

The single-width and double-width rear modules both contain a single IDC-10 connector, providing the interface for serial ports P1 and P2. P1 can be configured as RS-232, RS-422 (Sony), or RS-422 (EEG), via the DashBoard interface. P2 operates as RS-232 only. The following image and table describe the pin mapping from the IDC-10 connector to the two DB9 connectors that can be used to communicate with ports P1 and P2:



In RS-232 mode, these ports can be connected directly to a standard PC serial port with a 9-pin, 3-wire straight serial cable. A 'null modem' cable MAY NOT be used for this purpose as it will reverse the connections of pins 2 and 3.

C Video/Connector Specifications

SDI Video Inputs		
Number of Active Inputs	1	
Connector	BNC per IEC 169–8	
Format	2.97 Gb/s SMPTE 424M, 1.485 Gb/s SMPTE	
	292M, or SMPTE 259M 270 Mb/s	
Input Level / Impedance	800 mV p–p \pm 10% / 75 Ohm	
Equalization	Automatic up to 100m @ $1.5Gb/s$ with Belden	
	1694 or equivalent	
Data Input/Output Characteristics		
Data Ports	2 DB-9 (one RS-232, one configurable between	
	RS-232 and RS-422)	
Serial Data Format	7 data bits, odd parity, 1 stop bit, 1200 baud	
	default	
GPIO	Three 8-pin Molex 87831-0841 connectors: two	
	containing 4 GPI inputs each, one containing 4	
	GPI outputs	
Electrical		
Power	115/230V AC 50/60Hz	
Power Consumption	6 W	
Physical		
Dimensions	12.75" long x 3" wide x 1" tall	
Weight	< 1 lb.	