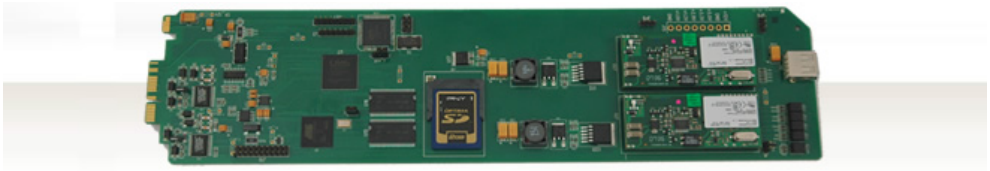
EEG ComCC-1250
iCap Communications Hub



Product Manual

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1 Introduction

The ComCC-1250 is an openGear® real-time caption routing card that virtualizes dial-up modem connections to enable a flexible routing interface to iCap-enabled closed caption encoders. When used in tandem with iCap captioning over IP, ComCC provides a fully redundant backup path for real-time captioning that can smoothly handle short-term connectivity outages to the iCap cloud, whether the problem originates at the broadcast facility or a remote captioner's work site.

Each ComCC-1250 card provides up to two channels of simultaneous real-time captioning and audio delivery. Each channel is fully user-selectable to access any local closed caption encoder, or even combinations of multiple encoders that must receive the same caption data. Compatible iCap encoders are capable of sending and receiving data through iCap and ComCC connections simultaneously, with automatic arbitration to prevent conflicting or redundant data from going to air.

ComCC-1250 cards can also be used independently from the iCap system to achieve reductions in fixed telephone line costs with increased security, logging, and configuration flexibility compared to traditional "point-to-point" dial-up connections.

1.1 Features

- Provides a fully redundant backup path to iCap IP captioning
- Standardizes access codes across dial-up and IP connections
- Caption multiple video nets with a single pair of telephone lines
- Integrated low-latency audio delivery
- Password-protected dial-up connections
- Provides two independent caption channels per card
- Automatically downloads iCap account changes
- Complete connection logging
- Stand-alone operation modes with no Internet connection required
- Full compatibility with existing captioning software packages

1.2 System Description

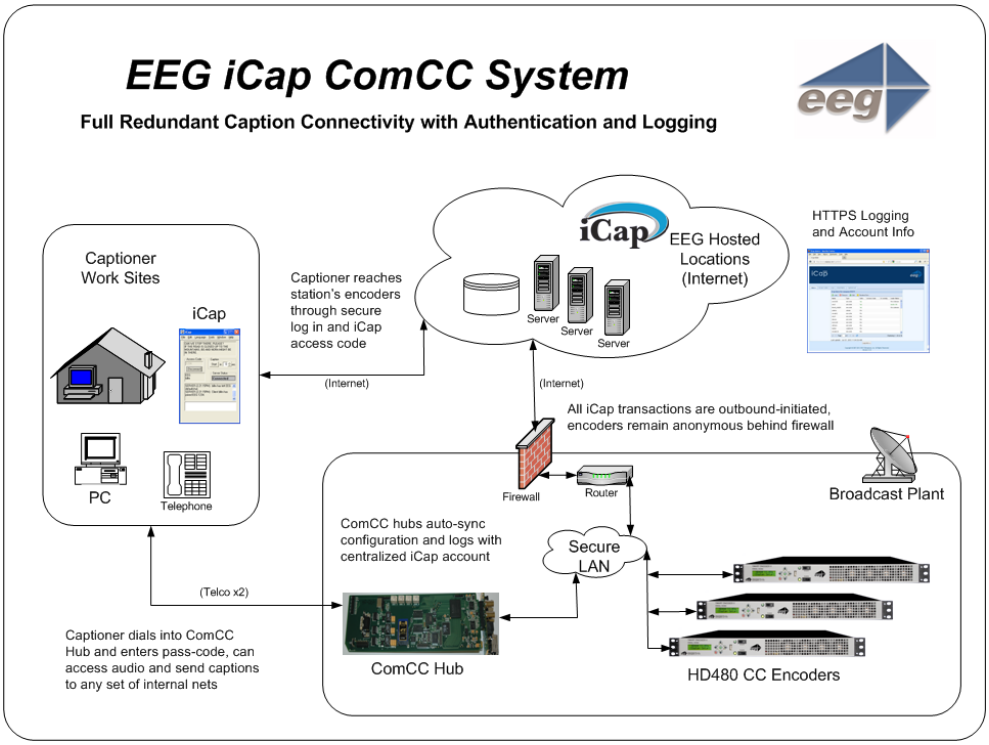


Figure 1: This figure shows the independent iCap and ComCC connection paths between a remote captioner site and firewall-protected multi-encoder broadcast facility.

The ComCC system provides flexible and secure dial-up links to enable remote captioners to exchange program audio and caption transcription data with one or more video closed captioning encoders sharing a LAN in a broadcast or live event facility. Each ComCC-1250 card provides two independent channels of audio and caption delivery, along with integrated virtualization software enabling each of these channels to reach any LAN-connected encoder through a system of iCap access codes. The ComCC system extends many of the benefits of iCap captioning to dial-up connections, while providing equipment and cost savings when compared to wiring point-to-point dial-up connections to individual encoders.

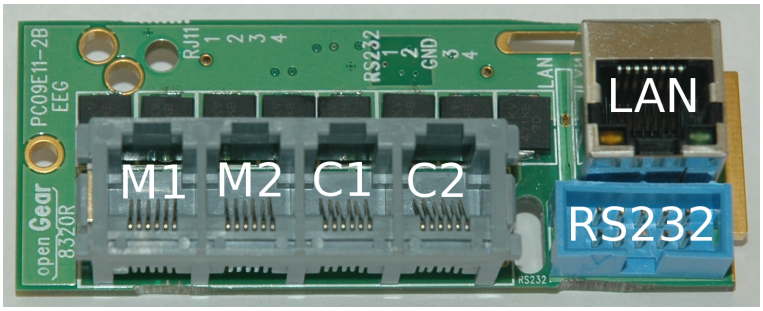
A remote captioner dialing into ComCC enters a security passcode and iCap access code through a touch-tone menu, and is then connected to the audio feed from the encoder listed in the iCap access code's configuration. The

caption transcription data from this ComCC channel is routed to the encoder providing the audio, plus any number of other encoders listed in the access code. Any access codes configured through the central iCap system are also available on ComCC, but must be in numeric form for touch-tone dialing.

2 Installation

2.1 Back Panel

The ComCC 1250 rear panel is shown below, followed by a guide to the connectors located there.



M1 Dial-up modem input, channel 1

M2 Dial-up modem input, channel 2

C1 Audio coupler output, channel 1

C2 Audio coupler output, channel 2

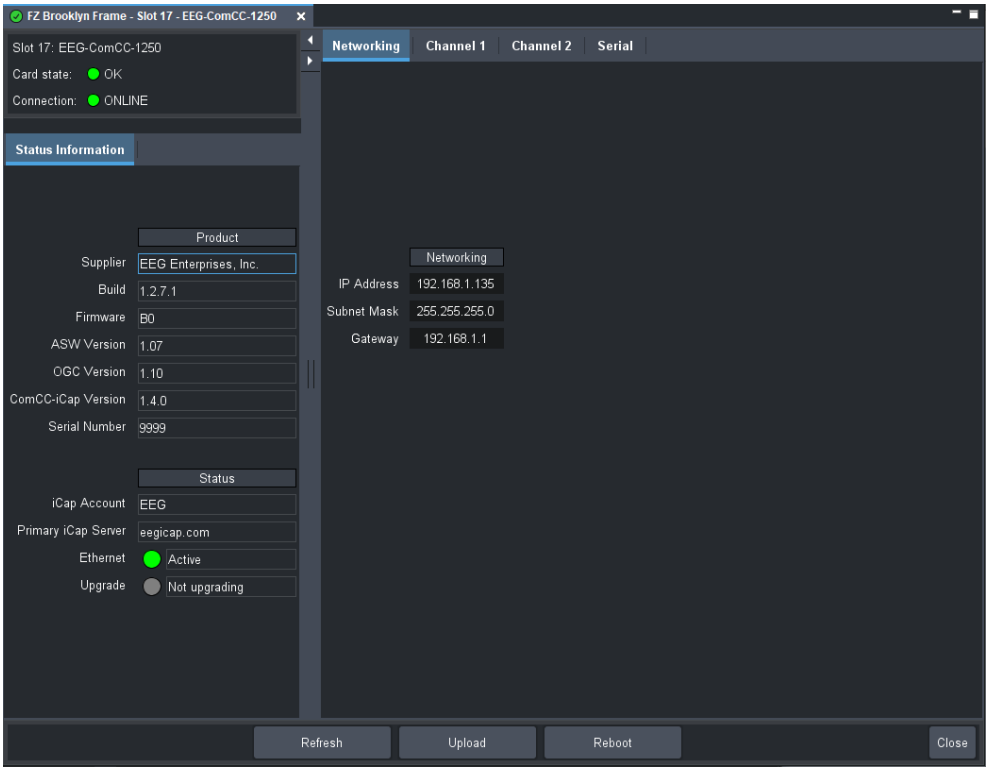
LAN 100-Base Ethernet port for TCP/IP socket data outputs

RS232 An EEG-provided cable connects to this port and branches out to four DB-9 serial connectors, each of which can be used to output caption data derived from a modem or TCP/IP input source.

3 DashBoard Configuration

Ross Video's DashBoard software is used to administer the cards in your openGear® frame. It can be downloaded from the following URL:
`https://www.rossvideo.com/support/software-downloads/dashboard/`

Once you have successfully installed DashBoard, the program will automatically detect the openGear® frames on your LAN. Double-clicking on the frame containing your ComCC card will allow you to view status information and configure the card.

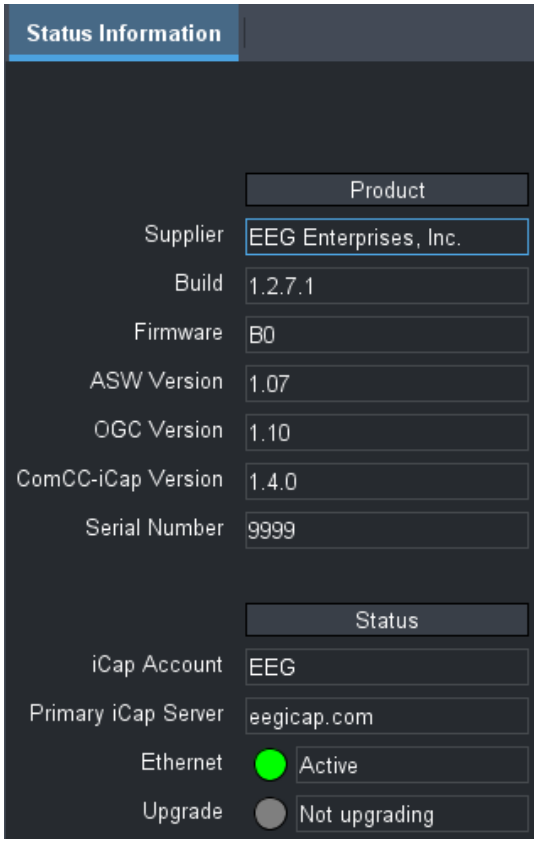


There are two main sections in the DashBoard interface: the left side contains status information, while the right side contains configurable settings. On the right, there are four tabs at the top which can be used to select between the configuration subsections: **Networking**, **Channel 1**, **Channel 2**, and **Serial**.

Additionally, there are four general-purpose buttons at the bottom of the

DashBoard window. The **Refresh** button updates the fields in DashBoard to reflect the card's current state. The **Upload** button enables you to apply a software update file to the card's DashBoard interface. The **Reboot** button has no effect; cards should be rebooted by removing and re-inserting them into the frame. The **Close** button closes the frame card interface.

3.1 Status



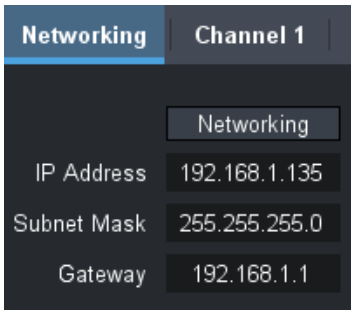
iCap Account This is the iCap company account the card is configured for. This determines what encoders are available for captioners to connect to.

Primary iCap Server This is the primary iCap server the card is configured to communicate with. It is set via the ComCC Web Portal and may be accessible via LAN or Internet.

Ethernet This field displays the status of the card's network connection.

Upgrade This field will display the status of the most recent attempt to upgrade the card's software.

3.2 Networking



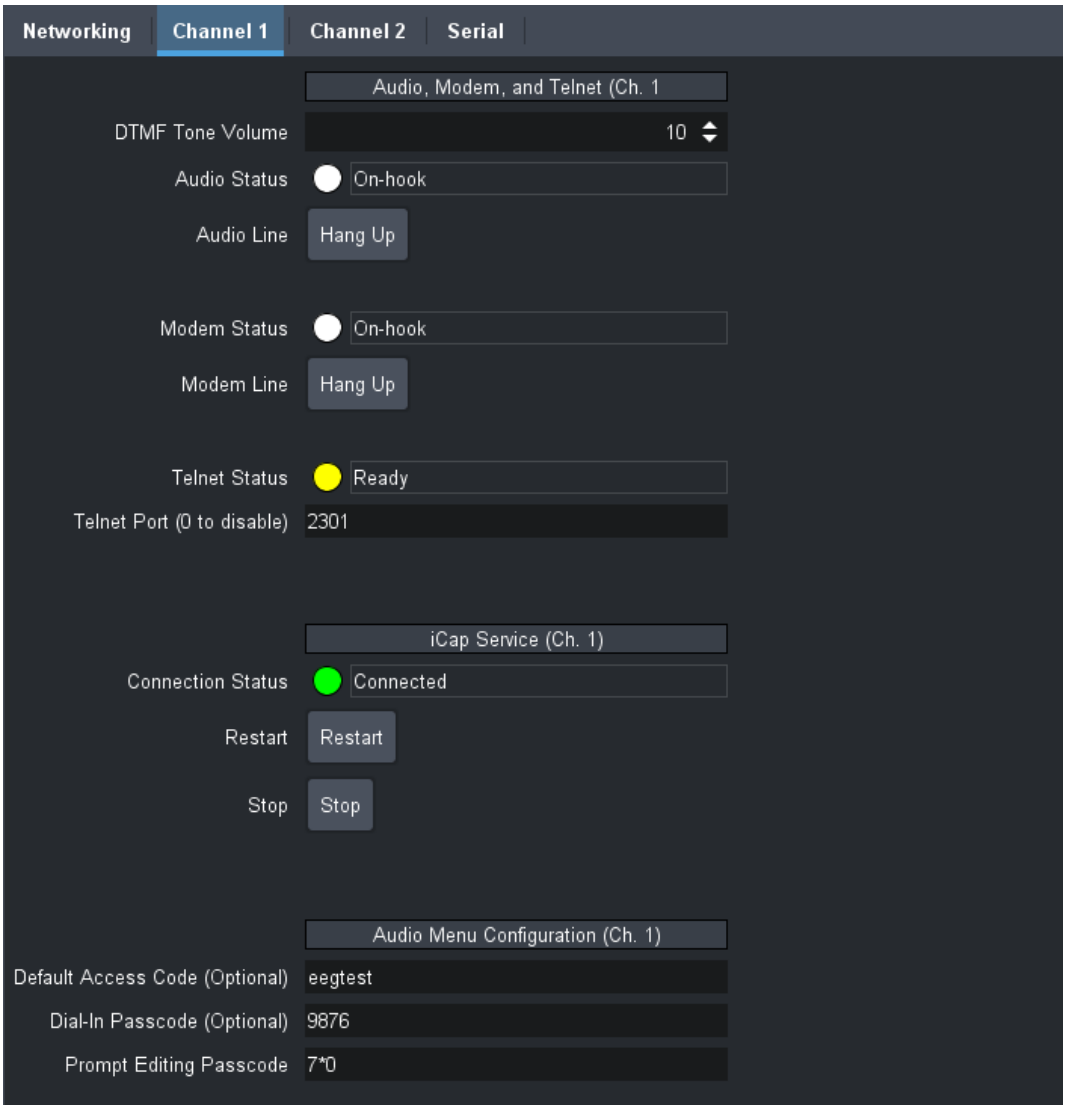
IP Address Sets a fixed network address for the unit on your LAN.

Subnet Mask The subnet mask should be set to match the bit mask used on your LAN.

Gateway The gateway should be set to the address of the computer or device that the unit will use to communicate outside of your local network, if applicable.

3.3 Channels 1 and 2

The ComCC supports two independent captioning channels, each of which has its own pair of I/O ports on the rear module and its own tab in the DashBoard interface.



3.3.1 Audio and Modem

Audio Volume
Sets the volume of the audio played out on the coupler line; 10 is the maximum value.

Audio Status
Displays the status of the audio coupler on the respective channel. If a caller has dialed in on this line, the status will indicate whether they are in the menu system or have connected to an access code; in the latter case, the active access code will be displayed. This field will display **On-hook** if no one is connected.

Modem Status
Displays the status of the dial-up modem on the respective channel. Possible values: **Connected**, when a captioner has successfully dialed into the modem; **Ringing**, when there is an incoming call on that modem; and **On-hook** otherwise.

Hang-Up Buttons
These buttons are used to disconnect an active dial-in user and place the respective line back on-hook.

Telnet Status
This field indicates whether a captioner is connected to the card on the given channel's TCP/IP input port.

Telnet Port
The integer specified here determines what port the card will open for TCP/IP caption input on this channel. A value of 0 will disable the TCP/IP caption input feature for this channel.

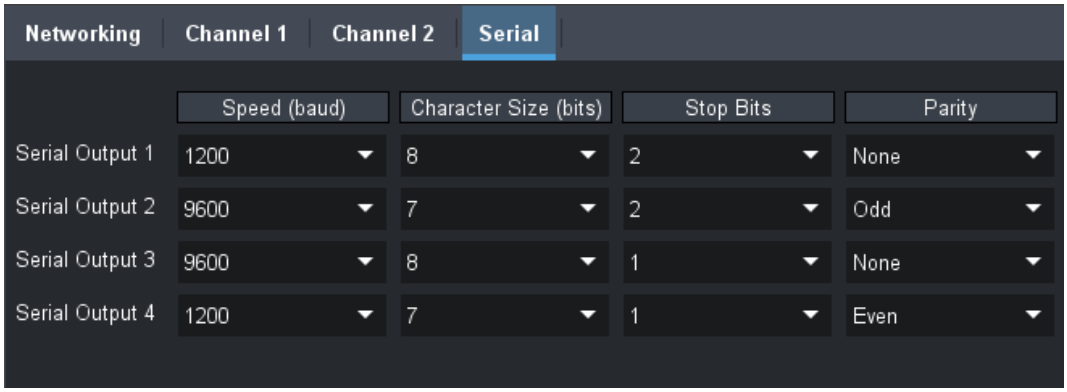
3.3.2 iCap Service

Connection Status	This field indicates the status of the respective channel's connection to the active iCap server.
Restart Button	Restarts the iCap services on the respective channel; **please note that this will interrupt any active captioning sessions**.
Stop Button	Stops the iCap services on the respective channel; **please note that the services must be restarted before captioning can resume**.

3.3.3 Audio Menu Configuration

Default Access Code	This field provides a fixed access code that will automatically be used for all callers on the given channel. If it is left blank (as in the default case), dial-in users will need to enter a numeric access code before receiving audio and being able to enter captions.
Dial-In Passcode	This field is used to optionally provide a passcode that users dialing in on the audio coupler line must enter before connecting to an access code, for added security.
Prompt Editing Passcode	Entering an access code of **9999** on the audio coupler line will route the user to a separate voice menu that can be used to modify the system's voice prompts; this passcode must be entered before continuing to that menu. See the section titled **Modifying Voice Menu Prompts** for more details.

3.4 Serial



Each ComCC input channel has two corresponding RS-232 serial outputs: channel 1 maps to serial outputs 1 and 2, while channel 2 maps to serial outputs 3 and 4. Any caption data received on the modem or TCP/IP input on a given channel will automatically be forwarded to the channel's two serial outputs. The fields in this interface allow the user to configure the serial communication settings for each port.

4 Firewall Requirements

If your ComCC card is connecting to an iCap server outside your LAN, or if you have firewalls set up between different parts of your LAN, we recommend consulting the latest EEG iCap Networking and Firewall Requirements application note.

Additionally, if you are connecting to an iCap Local server, please note that TCP port 14000 and UDP port 14010 on the server must be accessible to your ComCC card.

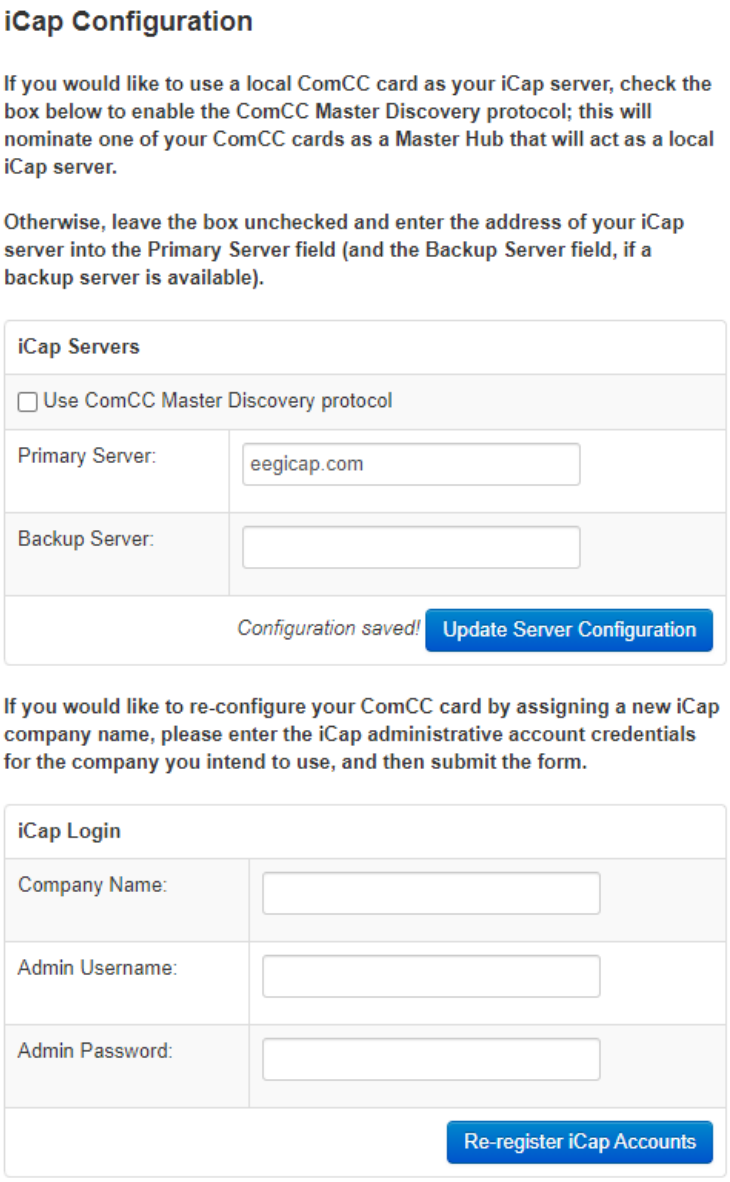
5 ComCC-1250 Web Portal

The ComCC-1250 Web Portal is used to access features related to the ComCC routing system and to update the software on the card.

To access the ComCC-1250 Web Portal, use a web browser to navigate to the IP address set for the card in the DashBoard application. At the initial login page, enter the Administrative account credentials provided with your card.

If the card has already successfully synced accounts with the central iCap cloud, you can also log in with any other administrator user name from your company's iCap account, as these accounts will be copied down to the ComCC card during the sync.

5.1 Registration Tab

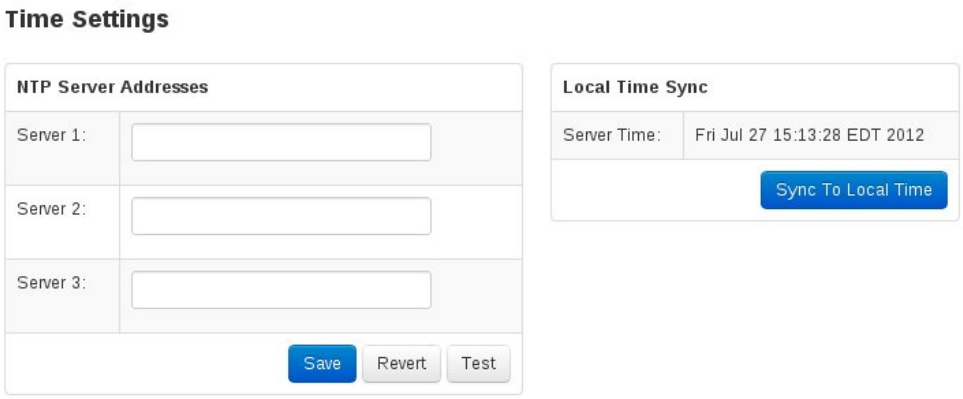


The Registration page allows users to configure their primary and backup iCap server addresses, as well as to change the iCap company account the ComCC card is configured for. In order to perform the latter operation, enter iCap administrative credentials for the new iCap account of interest into the "iCap Login" section and click the "Re-register iCap Accounts" button.

5.2 System Logs Tab

The System Logs tab contains various system software logs that may be useful for debugging. Each of the five available log categories will display a drop-down button from which you can choose a specific daily log to investigate or download.

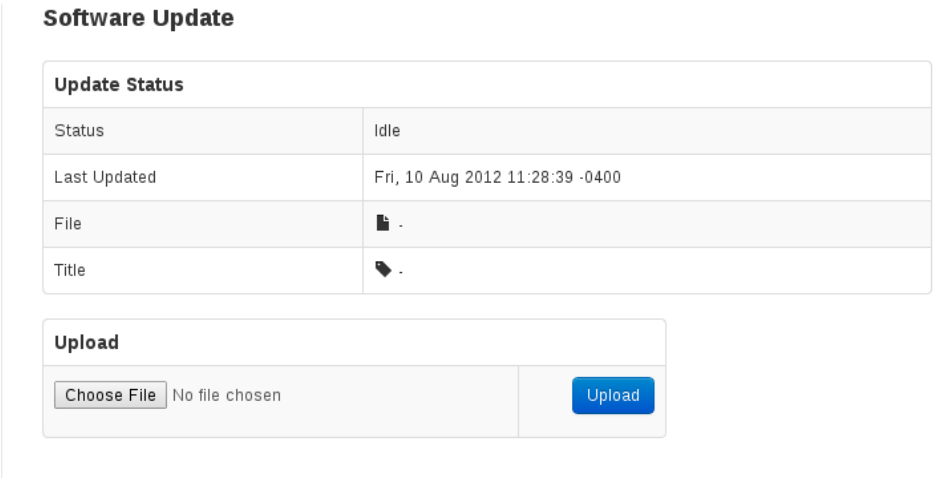
5.3 Time Tab



The Time tab provides tools to set the internal clock for the ComCC-1250 card. This clock is primarily used to record the timestamps seen in the Logs tab. NTP is recommended for keeping the clock accurate across long time periods with no manual maintenance; to use NTP over the internet, set the "Server 1" field to us.pool.ntp.org, or another provider of your choice. You may also choose to use a local NTP server rather than connecting to the internet.

The current ComCC-1250 system time is shown in the field "Server Time". To perform a one-time sync to the local time and date of the computer you are browsing from, click "Sync to Local Time".

5.4 Upgrade tab



The Upgrade tab enables you to apply a software update to the ComCC-1250 card. Click the "Browse" button to upload an EEG-provided update file from your local computer. The update file should have a name similar to "XXX.tar.bz2", and should not be de-archived by your local computer before uploading.

Once you have uploaded the file, continue to follow the on-screen prompts to apply the new software to the card.

6 Modifying Voice Menu Prompts

As an alternative to using the default set of menu system voice prompts that come with the ComCC, administrators can record their own prompts by dialing into one of the audio coupler channels and entering an access code of **9999**. After providing the prompt recording passcode specified in the DashBoard interface, they can then choose from the following four messages:

1. Passcode prompt: if the "Dial-In Passcode" field in DashBoard is set for this channel, the user will be asked for it before entering an access code.

2. Passcode denied message: this is played out in response to a user entering an invalid passcode.

3. Access code prompt: if no default access code is provided through DashBoard, this message will be used to request that the user enter an access code.

4. Access code denied message: this is played out in response to a user entering an invalid access code.

After choosing one of these four messages, the administrator can choose whether to:

1. Record a new message

2. Play back the current message

3. Restore the default message

Please note that each channel has independent prompts, which must be recorded separately.

A Instructions for Captioners

The ComCC system provides captioners a method of caption entry based on the familiar combination of a dial-up audio coupler line for program audio delivery and a dial-up modem line or remote TCP/IP connection for caption entry.

To establish a connection to a ComCC card, a captioner must use a touch-tone phone to dial the number associated with one of the audio couplers on the ComCC card. They will be prompted for a numeric access code, set up by the broadcaster through the iCap Admin web site or the local ComCC Web Portal. The captioner must also use a dial-up modem to connect to the modem line of the same channel on the ComCC, or the remote TCP/IP connection option in their captioning software, in order to begin captioning on the active access code.

The ComCC system supports simultaneous connection over both the iCap PC client and one of these two ComCC input ports. Captioners can connect via both at the same time for monitoring or redundancy purposes and can rely on the system to correctly arbitrate between the two data sources.

Please note that if a disconnection occurs on the caption data connection, the captioner may re-connect and resume captioning if the connection to the audio coupler has remained intact. If the audio connection is broken, the user must dial back in to re-establish an access code; while the audio connection is inactive, any captions entered on the data connection will be ignored.

B Connector Specifications

Data Input Characteristics	
Modem Ports	2 RJ-11 connectors
Data Output Characteristics	
Audio Coupler Ports	2 RJ-11 connectors
Electrical	
Power Consumption	< 6 W
Physical	
Dimensions	12” long x 4” wide x 2” tall
Weight	< 1 lb.