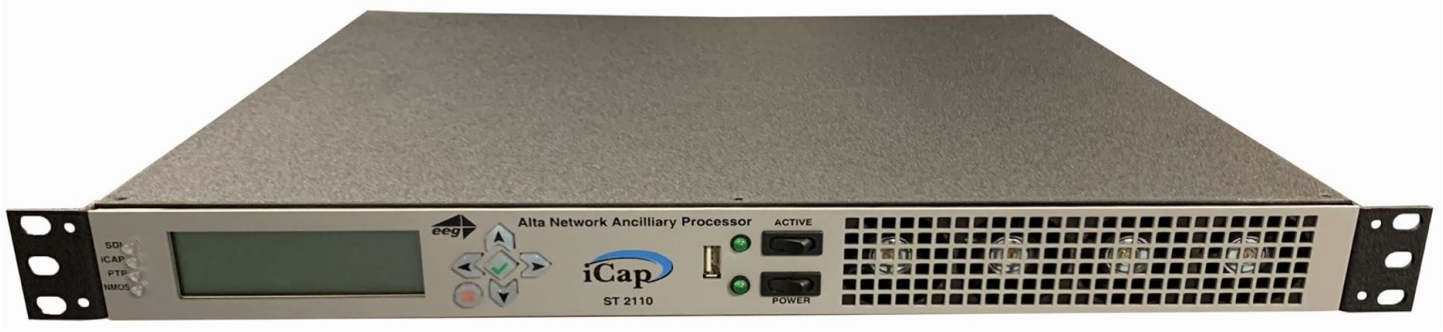
ALTA ST 2110 NAP



Introduction

The EEG Alta ST 2110 NAP is a 1RU server for live closed captioning and OP-47 Teletext data output as 2110-40 ANC data for use with the SMPTE 2110 suite of standards.

Getting Started

Once the ST 2110 has been powered on and has completed the boot cycle the LCD display will display NMOS and PTP status. Press the green checkmark (the OK button) to display these menu options:

- Network
- Update
- LCD Display
- Version

Please see the LCD Display Option section for details.

Server Setup

Network Interfaces

The Alta ST 2110 NAP server is shipped with 4 onboard network interfaces. Please see the Rear Panel NIC Identification section. In the Alta system there are 3 distinct network "use types", but these can be combined as desired into the same interface:
(1) Outbound connection to internet - iCap and licensing
(2) Local management - stream setup and monitoring
(3) Media - actual stream data

Quick Network Setup

To use iCap or Lexi, and to access additional features on the web interface of the encoder, you must first select **Network Settings** from the front panel LCD menu and set up the encoder on your network.

- **Use a Static IP address on your network to assign the server (recommended)**. It does not have to be, and in most cases should not be, a publicly routable IP address.

- **Program a gateway address** – the gateway address is typically the local network address of your router. This is necessary to connect out of your local network to iCap, Lexi, or any other application from the Alta server.

- **Program a Subnet Mask** for your network

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

Accessing the Alta Web Interface

The Alta web interface can be accessed through a web browser on any computer on your local network. The Alta UI controls the configuration, management, status reporting and logging. The server must be connected on your network to access the web interface (reference *Quick Network Setup*).

The web interface is accessed by entering the IP address assigned to your server into a web browser on a computer installed on the same network subnet as the Alta server. Note that if DHCP addressing has been configured, the IP address may change and should be verified by viewing the **Network** LCD display setting for the interface that you are attempting to reach. The login credentials are
Username: ***eeg***
Password: ***eeg***

Alta Global Settings

The Alta server contains several Global settings.

PTP Global Menu

The PTP menu provides settings and status for using PTP to synchronize Alta and the media timestamps for all streams to an external PTP master clock. PTP synchronization is a requirement for correct SMPTE-2110 reception and transmission.

PTP Doman ID, Interface, IP Mode
Set the PTP Domain ID to the ID value programmed in the master clock that Alta should take its timing synchronization from. Select the Network Interface through which PTP messages will be received. Select *Multicast* or *Hybrid* mode.

Current PTP Status
The status table refreshes every several seconds with details on whether Alta is locked to a PTP clock, what the offset appears to be between Alta and the master clock, and whether a valid SMPTE 2059 TLV is being received from the master.

NMOS Global Menu

The NMOS menu provides control and status for how Alta presents itself as a “Node” on NMOS IS-04 and IS-05 management systems.

Note that to re-register to a new Registry present on the network or to change the Node Description, it may be necessary to toggle and reset the “Enable Node Registration” check box, or in cases where mDNS needs to be refreshed, to restart the Alta VM to see the new settings.

Node Description
Sets the Node description that this Alta server uses to identify itself to the NMOS Registry Server.

Node Status
The status table will show whether the Alta VM has been able to use mDNS to find an NMOS Registry, and what the IP address of that registry is. HTML links are also provided to browse the local IS-04 and IS-05 resource structures on the Alta VM.
You should expect to see a single “Node” corresponding to the Alta VM itself. Under the Node will be a separate “Device” for each Alta instances that has been activated on the VM. The devices each have an audio receiver and an upstream ancillary receiver, and an ancillary transmitter as the output. The multicast parameters for any of these transmitters and receivers can be modified through IS-05 endpoint commands.

Alta Channel Settings

Alta servers can have many individual channels configured. The number of channels that can be powered on simultaneously depends on the quantity purchased. Each licensed Alta channel has several configurable channel-specific settings.

Stream I/O Settings

Device Label
The name to be used for this instance within the Alta interface, and as a device label in NMOS registration.

Use NMOS IS-05?
Select this option to make this device responsive to changes in the input and output parameters made by NMOS IS-05 HTTP requests. When enabled, parameters received will override the static settings in this section.

ANC Multicast Destination
A UDP unicast or multicast address and port to be used for the 2110-40 (Ancillary) output transmissions. This parameter may be changed from its initial value by NMOS IS-05 once the device is active.

Audio Multicast Source
A UDP listen port or multicast address and port to receive a 2110-30 (uncompressed audio) stream for transmission to caption service providers through the iCap system. This parameter may be changed from its initial value by NMOS IS-05 once the device is active.

Audio Sample Frequency, Sample Size, and Number of Channels
Required information (as from an SDP file) on the sample rate and number of channels expected from the Audio Input stream. These parameters may be changed from its initial value by NMOS IS-05 once the device is active.

Audio Mix
Comma separated list of channels to be included in the mono mix down to the caption service provider

ANC Multicast Source
A UDP listen port or multicast address and port to receive a 2110-40 ancillary stream as a source of upstream captioning. Upstream captioning from this stream will be multiplexed with any new captioning being locally inserted according to priority rules as documented in EEG Smart Encoder protocol documentation. This parameter may be changed from its initial value by NMOS IS-05 once the device is active.

Media Network Interface
Specify the NIC IP addresses in this field to control which interface is used to send and listen for media multicasts associated with this channel.

S2022-7 Streams

Secondary Network Interface
The IP address of the secondary network interface for receiving and sending the 2022-7 secondary multicasts.

2022-7 ANC Multicast Destination
The IP address and port number for 2110-40 ancillary output stream.

2022-7 Audio Multicast Source
The IP address and port number for the secondary 2110-30 audio input stream.

2022-7 ANC Multicast Source
The IP address and port number for the secondary 2110-40 ancillary input stream.

Telnet (Proxy) Settings

Two different modes are available for Alta Telnet: iCap-to-Telnet bridging (recommended) and Local listen mode (insecure). Alta Telnet will transmit 2110-40 captions based on the data received through either of these options.

S1 Telnet Address, Username and Password
Destination IPv4 address and connection credentials (if authentication is required) to an external telnet device that will receive S1 caption command data.

Second Telnet Address, Username and Password (Output)
Used to clone captions to a second device, enter the destination IPv4 address and connection credentials (if authentication is required).

Telnet Listen Address (Input)

Other Settings

Warnlevel

This value can be set from 0-5 to control how much information is sent to the logs for this channel. Lower number settings may be more useful when debugging a problem but can make logs harder to read and increase resource usage per stream.

Caption Output Format
Choose between SMPTE 334 CEA-708 VANC packets (DID/SDID 6101) and OP 47 EBU Teletext packets (DID/SDID 4302).

Output RTP Payload Type
The RTP payload type is a 7-bit value in the 2110-40 ANC packet output. The default if not configured is 100.

DVB Text Config
If using OP 47 Teletext output, specify how many languages to include by listing the language code and Teletext magazine and page number desired for each service. Up to 6 language services are supported.

Video Frame Rate
This option allows you to force selection of a specific frame rate for the interpretation of input and output 2110-40 ancillary streams.
The ***Auto*** option relies on data from the SMPTE 2059 TLV transmitted by the current PTP grandmaster to obtain this information.

Send VITC
Select this option to add VITC packets in DID/SDID 6060 into the output 2110-40 stream. The VITC time code is derived from the PTP grandmaster's signals as described in SMPTE 2059.

Test Captions
Select this option to have a looping test message of single language scrolling captions created on the 2110-40 output beginning when the instance is activated and ending when live captions are received at which point the test caption message will not resume unless the instance is stopped and then re-started.

iCap Setup and Testing

This section will walk you through a basic test run of iCap and point out the important information your captioner needs 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 Alta server purchase/rental along with your unique access code and is accessed at *https://accounts.eegicap.com/iCapAdmin/*. If you have not received your iCap Administrative account credentials, please contact technical support at 516-293-7472 menu option 4.

1. Connect iCap From the Encoder's Web Interface

- Select *iCap Settings* in the Alta Channel configuration and confirm that the *Company Name, Username, and Password* are all present and correct.

- Once the Channel is powered on, confirm that iCap Status reports *Connected*.

- If all information is correct and the status does NOT say *Connected,* verify that outbound communication to the iCap service has been enabled and is not blocked by network firewall rules. Please refer to the iCap Networking reference documentation found here: *appnote-icap-firewall*

2. Know Your iCap Access Code

- iCap Access Codes enable caption services to connect to your Alta channels, allowing them to listen to your program audio and provide live captions through iCap.
- Your unique Access Code can be found in the shipping documentation provided with your Alta server. Access Codes may also be found by logging into the iCap Admin website at *https://accounts.eegicap.com/iCapAdmin/*.
- For security purposes, be mindful to only "share" your Access Codes with your preferred caption service provider in the iCap Admin site. Your access code may already be shared with your providers in iCap Admin if you provided the information to EEG as part of your order which can be verified in iCap Admin.

3. Coordinate Testing with Your Caption Service Provider

This step requires your caption provider to connect to your encoder using their EEG iCap software and assumes that video with audio is connected to your Alta Channel.

- Once you've provided your access code to the captioner and connected your program video/audio to the Alta server, your captioner will verify that they are receiving the program audio through iCap and can begin transmitting captions to Alta.

- Enter the iCap Admin portal. In the Users tab - confirm audio status for your Alta "encoder" says "Audio OK", confirming that your captioner is receiving Audio. A "No Listeners" status indicates that the captioner has not yet connected to your access code. The Users tab shows all users connected to your encoder and confirms their status.

Rear Panel Ethernet Port Identification:

LCD Menu Options:

- **Network**
  - eno1
    - IP Address
    - Subnet Mask
    - Gateway
    - DNS Servers
    - Set Config
      - Static
      - DHCP
    - MAC Address

  - enp1s0f0
    - IP Address
    - Subnet Mask
    - Gateway
    - DNS Servers
    - Set Config
      - Static
      - DHCP
    - MAC Address

- enp1s0f1
  - IP Address
  - Subnet Mask
  - Gateway
  - DNS Servers
  - Set Config
    - Static
    - DHCP
  - MAC Address

- enp2s0
  - IP Address
  - Subnet Mask
  - Gateway
  - DNS Servers
  - Set Config
    - Static
    - DHCP
  - MAC Address

- **Update**

- **LCD display**
  - Contrast
  - Backlight

- **Version**
  - Unit ID XXXX
  - Build x.x.x
  - Firmware x.xx
  - Device xxxx