

LINEAR ACOUSTIC® AERO.10

DTV Audio Processor

QUICK START GUIDE (V3.19.85)



INTRODUCTION

Congratulations on your purchase of the Linear Acoustic AERO.10.

AERO.10 delivers the high-quality television loudness control, 2-channel to 5-channel upmixing, and flexible signal routing expected in a Linear Acoustic processor for PCM-only applications where Dolby®-coded audio and audience measurement watermarking are not required.

Like all other AERO-series products, it uses the industry-standard AEROMAX® and UPMAX®-II algorithms to ensure a consistent and compliant output level for main channel and SAP audio without compromising audio quality. LKFS/LUFS loudness metering and logging is provided for each program.

Each AERO.10 is configured from the factory in one of three program configurations:

- **AMX5.1 (5.1+2+2)** - 5.1-channel processing for main program audio with upmixing, 2-channel processing for SAP audio and/or a downmix of the main program audio, and a second 2-channel processor for an additional program and/or main program downmix
- **AMX2.0 (2+2+2)** - 2-channel processing for main program audio including downmixing for native 5.1-channel content, 2-channel processing for SAP audio and/or a duplicate of the main program audio, and a second 2-channel processor for an additional program
- **AMX5x2 (2+2+2+2+2)** - Processing for up to five 2-channel programs, but without the ability to downmix native 5.1-channel content at the input

All configurations allow local audio insertion from an outside source, typically for EAS alerts or TTS (text-to-speech) audio.

Regardless of how AERO.10 was initially ordered and configured, it can be field-updated to any other configuration by contacting Linear Acoustic support for a license key.

I/O includes one HD/SD-SDI input and output with access to all eight audio pairs and eight channels of AES-3 I/O.

AERO.10 Front Panel

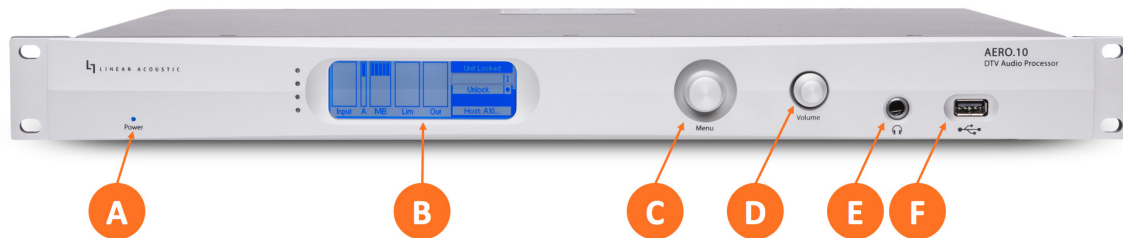


Figure 1: Front panel

AERO.10 front panel features include:

- **Power LED (A)** indicating the unit is receiving power from one or both power supplies
- **Front panel display (B)** showing input and output meters, processing activity, and the various menus
- **Menu rotary encoder (C)** used to navigate setup and configuration menus, primarily if the unit is not connected to a network
- **Headphone volume control (D)** and **1/4" headphone output jack (E)** for monitoring audio
- **USB port (F)** for performing software updates and downloading loudness logs if the unit is not connected to a network

AERO.10 Rear Panel

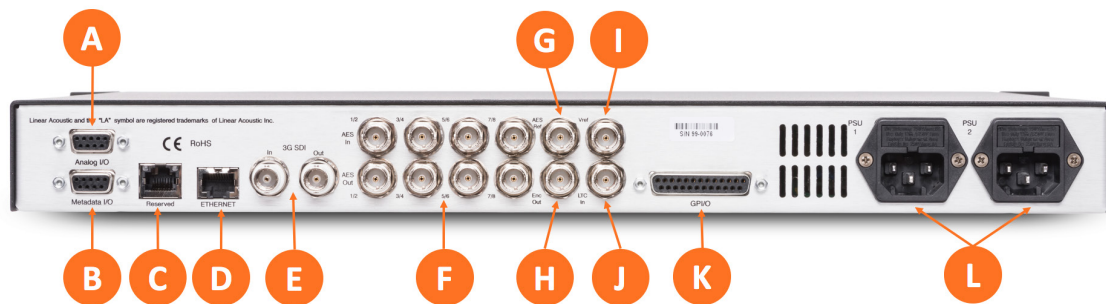


Figure 2: Rear panel

The rear panel of the AERO.10 contains the following connections:

- **Analog I/O DB-9 connector (A)**, not currently used
- **Metadata DB-9 connector (B)**, not currently used
- **Reserved Ethernet port (C)**, not currently used
- **Ethernet port (D)** used to connect the unit to a network for remote setup, control, monitoring, and logging
- Auto-sensing **HD/SD-SDI input and output BNC connectors (E)**, providing access to all eight channels of an applied SDI signal including de-embedding and pair shuffling at the input and re-embedding and pair shuffling at the output
- **AES-3 input and output BNC connectors (F)** for up to eight input and output channels
- **AES Reference Input (G)** for providing an external AES (dark) reference
- Dedicated **Encoder output BNC (H)**, not used on AERO.10 as it does not provide Dolby® encoding
- **Vref BNC (I)**
- **LTC timecode input (J)**, not currently used
- **GPI/O DB-25 connector (K)**
- **IEC power inlets (L)**

Installation

AERO.10 is a 1RU product intended to be permanently installed in a standard 19 ½" equipment rack and secured with four standard rack screws. It is fan cooled with air intakes and exhausts located on the side of the unit just behind the front panel, but whenever possible, it is recommended to leave 1RU of empty space above and below the unit.

Power

There is no on/off switch. AERO.10 will power up when power is applied to either power supply. To power down, simply remove power from both supplies.

Each of the supplied IEC power cords should be connected to different mains power sources. Remember that while redundant supplies do protect against the unit losing power in the event of a PSU failure, the loss of mains supply voltage is a bigger concern. Accordingly, each supply should be fed from a different circuit equipped with adequate surge protection and fitted with an uninterruptable power supply (UPS).

Front Panel Operation

The front panel of AERO.10 includes a rotary encoder (joystick) which operates as follows:

- **Left:** "Escape"; moves one step backward in the menu structure towards the main menu
- **Right:** "Enter"; moves right into the selected sub-menu
- **Up:** Moves up through the menu tree
- **Down:** Moves down through the menu tree
- **Turn/Rotate:** Adjusts parameters

When AERO.10 powers up, the front panel will be locked but will display the hostname, IP address, system location (a user-customized field), and the software version.

The "Password" field will be highlighted by default; highlighted fields are most easily recognized by a light border surrounding the text. The default password is "1234". Click the encoder *right* to display the on-screen keyboard. When the keyboard appears:

- Rotate the encoder *left* one click to the "123" selection
- Click *right*; the keyboard will change to numbers and symbols
- Rotate the encoder *left* until the number "1" is highlighted, then click *right* to accept it
- Repeat selecting and accepting the remainder of the password
- Once the password is entered, rotate the encoder to highlight "Ok", then click *right* to accept
- Click *down* once to highlight "Unlock"
- Click *right* to unlock the unit

Setting an IP Address

AERO.10 ships with DHCP enabled and will automatically retrieve an IP address when connected to a network with a DHCP server. In most applications, a static IP address will be preferred.

To set a static IP address:

- Use the rotary encoder to navigate to the System > Network > IP Config > Use DHCP field
- Click *right* to de-select the DHCP option
- Click *down* to highlight "Apply", then click *right*
- A warning message will appear asking if you are sure you want to make the change
- Click *down* through the message to "Yes", then click *right*
- Click *down* to the IP, Mask, Gateway, and DNS fields and enter the desired values with the on-screen keyboard and rotary encoder just as you did when entering the password
- When all of the information has been entered, click *Up* to highlight "Apply", then click *right*
- Click *left* repeatedly to return to the main display screen

Connecting Inputs and Outputs

Connect inputs and outputs as required for your particular installation. AERO.10 can access any of the eight audio pairs carried on an incoming HD- or SD-SDI stream and provide de-embedding and pair shuffling at its input. Audio can also be received using the AES-3 inputs. Detailed instructions on audio routing are provided in the full AERO.10 user manual.

Remote Connection via NfRemote Software

The NfRemote client software allows AERO.10 to be set up, configured, adjusted, and monitored remotely on nearly any Windows computer or tablet. AERO.10 is designed to remain connected to your local network at all times, ready to accept an incoming remote connection.

As mentioned earlier it is possible to perform nearly all of these same functions via the front panel controls, but the larger size (with correspondingly large menus, controls, and displays), full color support, and display customization options offered by NfRemote make for a much nicer experience. Plus, the detailed instructions in the full user manual presume the use of and make reference to NfRemote.

The latest version of NfRemote as well as the full user manual are available for download from the Telos Alliance website on the AERO.10 product page at <https://www.telosalliance.com/Linear/AERO10>.

After downloading NfRemote, double-click on the application and follow the on-screen instructions for installation. Once installed, enter the IP address of the AERO.10 and the default password of "1234". If you like, you can add a "friendly" name in the "Comment" field, a useful feature for quickly identifying multiple units.

Connect to the unit by clicking the "Connect" button. Optionally, clicking "Add" adds the unit to the quick recall list in the bottom portion of the window. Keep in mind that anyone with access to the host PC will be able to connect to the AERO.10 if you do so.

NfRemote can be used to connect to any Telos Alliance product that utilizes the client, and an almost infinite number of connections can be stored within a single NfRemote installation.

At this point, we refer you to the full user manual for complete detailed instructions and documentation on further configuration, setup, and operation of your AERO.10.

SPECIFICATIONS

Power

- Dual internal redundant auto-ranging power supplies, each rated at 100-264VAC, 50/60Hz, 40 Watts maximum

Dimensions and Weight

- 19" W x 9" D x 1.75" H (approximately 48.2 x 22.9 x 4.5 cm)
- Net weight: Approximately 9.0 lbs (4.08 kg)
- Shipping weight: Approximately 12.0 lbs (5.44 kg)

Environmental

- Operating: 0 to 50 degrees C
- Non-Operating: -20 to 70 degrees C

Intended Location

- Telecommunications center or dedicated computer/machine room

Regulatory

- North America – FCC and CE tested and compliant with UL-approved power supplies
- Europe – Complies with European Union Directive 2002/95/EC on the restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended by Commission Decisions 2005/618/EC, 2005/717/EC, 2005/747/EC (RoHS directive), and WEEE

Warranty

- Standard Telos Alliance 2-year limited parts and labor

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