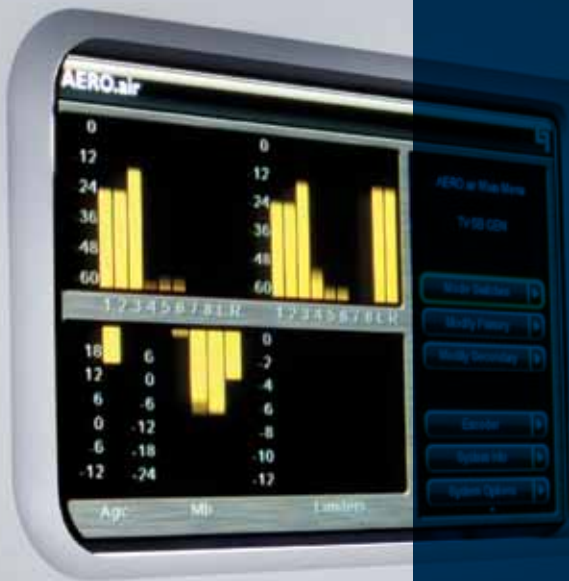


- F1
- F2
- F3
- F4



Loudness Control, Upmixing, AES and SDI I/O plus Optional Dolby® Encoding and Decoding, Nielsen, and Compensating HD/SD-SDI Video Delay

AERO.air Audio/Loudness Manager



AERO.air
Audio/Loudness Manager

AERO.air® is audio purity for digital television. Air-proven loudness control, audio processing, decoding and encoding with unmatched upmixing capabilities. Loudness is stable and image is fully locked in. Factory presets ensure consistent, reliable signal transmission. Fine tuning features give experienced users extensive access to controls. Adjust the AERO.air for wideband multi-stage processing, multiband multi-stage processing, or anywhere in between.



Nielsen Option:

Generates revenue critical NAES II and Nielsen Watermark audience measurement codes. AERO.air precisely inserts these signals for maximum code recovery – after audio decoding and processing and before transmission encoding.

Dolby® Decoding Option:

Allows reference quality decoding of Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3), and Dolby E content from any AES or SDI input signal.

Dolby Encoding Option:

Two Dolby Digital (AC-3) and/or Dolby Digital Plus (E-AC-3) encoders for 5.1 plus stereo audio

AERO.air is available in two versions:

AERO.air (DTV) provides 5.1 channel loudness control and upmixing, and outputs full-time 5.1+2

AERO.air (5.1) adds additional stereo processors supporting programs from 2+2+2+2 up to 5.1+2+2

AERO.air



AERO.air accepts 5.1-channel and two-channel audio via included AES or HD/SD-SDI inputs, plus dedicated EAS/ Aux bypass inputs. Audio is then processed by the multiband, multistage ITU-R-compliant AEROMAX® loudness cores resulting in smooth audio with appropriate dynamics. Two-channel audio is automatically upmixed producing a consistent surround-field, perfectly downmix compatible for all stereo viewers.

If present, audio metadata will manage upmixing and improve loudness control while minimizing impact on source audio. Extensive fallback options enable the AERO.air to compensate for missing or incorrect metadata.

Industry standard two-channel to 5.1-channel upmixing is provided by the Hollywood approved UPMAX® and UPMAX II algorithms. AutoMAX-II provides automatic and GPI or metadata guided control of upmixing without risking loss of center channel dialogue.

A fully processed selectable LtRt surround or LoRo stereo downmix of the main program audio is provided at all times for legacy stereo distribution paths or simple local monitoring. A 6.3mm (1/4") high-level headphone connector and VGA output for multi-screen display complete the package.



Extensive standard I/O includes up to ten main AES inputs and outputs and front panel headphone connector. HD/SD-SDI I/O, with or without compensating video delay, enables de-embedding and re-embedding up to 16 channels of audio plus SMPTE 2020 (VANC) metadata. All AES outputs remain active when SDI option is enabled. Embedded channels can be routed through or around processing. Encoded signals can be de-embedded and re-embedded.



Bright, colorful display, large rotary encoder, and four control keys provide simple menu navigation and adjustment. Remotely controlled via parallel TTL inputs and status outputs. Gigabit Ethernet connects to a remote control software application and enables TCP control by automation systems. The AERO.air contains dual redundant power supplies and hard relay bypass of the digital audio, SDI and metadata signals for mission critical applications.

Software options can generally be added in the field. Hardware options such as Dolby® encoding or decoding and video delay must be factory installed.

AERO.air Specifications:

Input Channels

5.1 channel main, 2-channel local, 2-channel auxiliary/EAS input: 48kHz reference from AES or SDI inputs.

Output Channels

5.1 channel main audio plus 2-channel local, plus full time 2-channel LtRt (surround encoded) or LoRo (stereo) version of main Program

Processing

- AEROMAX®: ITU-R compliant loudness control with AGC, multiband compression, limiting, source noise reduction, and look ahead peak limiters. Includes factory presets for common applications. Processing can be adjusted from simple wideband multi-rate processing to multiband, multi-rate processing for complex input signals requiring faster correction with fewer side effects
- UPMAX® and UPMAX II 5.1-channel upmixing with AutoMAX-II™ automatically bypasses discrete content
- CrowdControl™ dialogue protection processing

Dolby E/Dolby Digital/Dolby Digital Plus Decoding (Option)

Internal Dolby-manufactured hardware decoder auto-senses and switches between PCM, Dolby E, Dolby Digital and Dolby Digital Plus decoding.

Dolby Digital (AC-3) and Dolby Digital Plus Encoding (Option)

Internal Dolby-manufactured hardware encodes 5.1 plus Stereo audio into two Dolby Digital or Dolby Digital Plus bitstreams for connection to an external video encoder and/or transport stream multiplexer. Dolby Pulse (HE-AAC) encoding is also optionally available.

Frequency Response

20Hz – 20 kHz +/- 0.25 dB (protection limit preset)

Latency

33 msec minimum, Dolby encoding adds 137 msec, Dolby Decoding adds 33/40 msec (NTSC/PAL), and Nielsen adds 20 msec. Zero timing can be achieved with addition of Option 08 Compensating Video Delay.

Digital Audio Inputs and Outputs

1/2, 3/4, 5/6, 7/8, AES Ref, EAS/Aux – BNC Female, 75 Ohm internally terminated, unbalanced. Signal levels per SMPTE 276M/ AES-31D-2001

Headphone Output

1/4" (6.35mm) front panel connector with volume control

HD/SD-SDI Auto-Sensing Input and Output

De-embed up to 16 channels from applied SDI signal, process and/or encode, re-embed up to 16 channels. Signal levels per SMPTE 292M /259M. Supports SMPTE 2020 A and BVANC metadata. Up to 1080i/60/59.94/50Hz supported.

Serial Metadata Input

9-pin female D connector, 115 kbps, pinout per SMPTE 207M (RS-422/485); Directly interfaces with Dolby Metadata (SMPTE RDD6)

GPI/O Parallel Control Port

25-pin female D connector, 0-5V TTL levels; Controls upmixing, preset recall and EAS (processing bypass) modes.

Ethernet

Gigabit Ethernet via RJ45

Front Panel Controls and Indicators

Rotary encoder and control keys plus color display

Power Requirements

Dual redundant power supplies, each rated at 100-264VAC, autosensing, 50/60 Hz, 200 W total maximum

Dimensions and Weight

2RU: 3.50"H x 19"W x 17"D (89mm X 483mm X 432mm)

Net weight 20 lbs. (9 kg), approximate

Environmental

Fan cooled. Operating: 0 to 50 degrees C, non-operating –20 to 70 degrees C.

Regulatory

North America: Designed to comply with the limits for a class A digital device pursuant to Part 15 of the FCC rules (CFR). Designed for U.S. and Canadian listing with UL. Europe: Designed to comply with the requirements of Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC (CE). Designed for RoHS and WEEE compliance.

Warranty

Standard Linear Acoustic two-year limited parts and labor

Available Configurations

AERO.air (DTV) - 5.1 channel input, 5.1 plus downmix output
AERO.air (5.1) - Supports 2+2+2+2 to 5.1+2+2 plus downmix

Options

- Option 02 - Dolby Digital (AC-3)/Plus encoder (5.1 + 2)
- Option 06 - Dolby E/Dolby Digital/Dolby Digital Plus Decode
- Option 07 - Dolby Pulse (HE-AAC) encoding
- Option 08 - Nielsen Watermark Encoding (5.1+2)
- Option 09 - Compensating video delay for HD/SD-SDI

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Linear Acoustic
108 Foxshire Drive
Lancaster, PA 17601
www.LinearAcoustic.com
sales@LinearAcoustic.com
+1.717.735.3611