



AEROMAX 5.1-XL™

Ten Channel, 7 bands Digital Audio Processor

Loudness Controller, Upmixer, Metadata Manager, and Dolby Digital Encoder

The two largest audio issues in digital television are controlling loudness and keeping the audio image stable by supplying 5.1 channels all the time. Linear Acoustic innovated the first all-in-one solution in 2002, and now releases the next generation of DTV audio processing with the AEROMAX 5.1.

Based on the overwhelming success of our original OCTiMAX 5.1 product, the AEROMAX 5.1 offers all the audio processing and encoding a broadcaster needs for local, network and EAS audio. It combines air-proven dynamics processing for loudness with 'Hollywood approved' upmixing capabilities to allow seamless integration of local two-channel audio and network 5.1 audio.

Optional internal 5.1-channel emission encoding completes the package. Two Dolby Digital (AC-3) and/or Dolby Digital Plus (E-AC-3) encoders for 5.1 plus stereo audio.

The all-digital unit accepts 5.1 channel network and two-channel local audio plus a dedicated analog or digital EAS input. Audio is then processed by the dynamics processing core to control loudness and provide a smooth, yet still dynamic signal. Two-channel audio can then be upmixed if triggered by front panel or GPI control.

Audio metadata can be used to control upmixing and other parameters. Importantly, network and local audio can be handled separately, with one or

both relying on metadata control and the remaining being handled by the dynamics engine. A mixture of metadata and dynamics processing is also possible.

Included AutoMAX™ fixes the annoying problem of two-channel audio being sent to consumers but wrongly signalled as 5.1 channel audio. AutoMAX handles this situation effortlessly and without relying on any automatic detection schemes that can easily be tricked into the wrong mode and ruin dialog.

EAS audio can be applied as balanced analog or as a digital input. Upon GPI or front panel command, processing is bypassed and EAS audio is switched in place of the main program audio.

A fully processed two-channel selectable LtRt surround or LoRo stereo downmix of the main program audio is provided at all times for legacy stereo distribution paths or for simple local monitoring of audio channels. This output is also available on the analog and headphone connectors.

A color TFT display, large rotary encoder, and four control keys provide for straightforward menu navigation and adjustment. Simple remote control is provided by parallel TTL inputs.

The AEROMAX 5.1 contains dual redundant power supplies that are hot-swappable, and hard relay bypass of the digital audio and metadata signals for mission critical applications.

AEROMAX 5.1-XL Specifications:

Input Channels

5.1 channel network, 2-channel local, analog or digital EAS input; 48kHz AES reference required for proper operation.

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: Loudness control with AGC, multiband compression (up to 7 bands of AGC, 7 bands of Limiting), limiting, source noise reduction, and look ahead peak limiters with very low IMD
 -upMAX™ 2-channel to 5.1-channel upconversion
 -AutoMAX™: Solves known issue of stereo audio delivered within a 5.1 channel program stream.

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

Internal Dolby-manufactured hardware encodes 5.1 plus Stereo audio into two ATSC compliant Dolby Digital or Dolby Digital Plus bitstreams for connection to an external video encoder and/or transport stream multiplexer.

Audio Sample Rate and Resolution

48kHz at up to 24-bits, internal processing 32-bits

Frequency Response

20Hz – 20 kHz +/- 0.25 dB

Digital Audio Inputs and Outputs

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

Analog EAS Inputs and Monitor Outputs

Inputs and outputs via 3-Pin XLR connectors, +4dBu nominal at –20dBFS. Input 10K Ohms, output 75 Ohms

Headphone Output

3.5mm front panel connector, high-level, extension included

Metadata Input/Output

9-pin female D connector, 115 kbps, pinout per SMPTE 207M (RS-485); Designed to directly interface with Dolby Metadata

Parallel Control Port

25-pin female D connector, 0-5V TTL levels; Controls upmixing and EAS insertion.

Ethernet

10/100-BASE-T

Front Panel Controls and Indicators

Rotary encoder and control keys plus 4.5" color TFT display

Power Requirements

Dual, redundant, hot-swappable power supplies, each rated at 100-264 VAC, auto-sensing, 50/60 Hz, 460 W maximum

Dimensions and Weight

3RU: 5.25"H x 19"W x 24"D (133mm X 483mm X 610mm)
 Net weight 26 lbs. (12 kg)

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. Designed for RoHS and WEEE compliance.

Warranty

Two-years limited parts and labor

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Linear Acoustic Inc.
 354 North Prince Street
 Lancaster, PA 17603
www.LinearAcoustic.com
 717.735.3611

