Loudness Control, Upmixing, AES and SDI I/O, Compensating Video Delay
Plus Optional Dolby® Encoding/Decoding and Nielsen Watermarking,

AERO.2000
Audio/Loudness Manager

AERO.2000 is audio purity for digital television. A very inclusive extension of the popular AERO.air, it combines air-proven loudness control, audio processing, encoding/decoding, unmatched upmixing capabilities and extensive I/O features.

Factory presets ensure consistent, reliable signal transmission. Fine tuning features give experienced users extensive access to controls. Adjust the AERO.2000 for wideband multi-stage processing, multiband multi-stage processing, or anywhere in between.

AERO.2000 Features

Two instances provide processing for 5.1+Local/Upmix/Downmix and 2+2+Local

Comprehensive TCP/IP remote control including full adjustment, ITU-R BS.1770 meters for all programs, return audio for monitoring remotely, HTTP server for get/set control

Dolby® Decoding Option:

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

Dolby Encoding Option:

Dolby Digital (AC-3) and/or Dolby Digital Plus encoders for each instance

Nielsen Option:

Generates revenue critical Nielsen NAES II and the new Nielsen Watermarks audience measurement codes. AERO.2000 precisely inserts these signals for maximum code recovery – after audio decoding and processing and before transmission encoding.

AERO.2000

AERO.2000 features the new Linear Acoustic Intelligent Dynamics™ - a patented hybrid of our popular wideband and multiband look-ahead techniques and Dynamic Range Control (DRC) metadata. An infinitely adjustable balance between permanent and reversible control is provided to enable quality to be preserved while delivering consistently pleasing audio. How does it sound? Exactly like the highest quality audio control always provided by Linear Acoustic: Exceptional. The difference is that now audio can remain untouched. Or not.

Broadcasters can choose reversible control for high quality trusted programming and use permanent control where necessary. Finally the choice of compliance or quality is easy: Choose both.

Industry standard two-channel to 5.1-channel upmixing is provided by the "Hollywood approved" UPMAX® II algorithm. AutoMAX-II provide 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 16 channels of AES inputs and outputs, auto-sensing HD/SD-SDI I/O, with included compensating video delay, enables de-embedding and re-embedding up to 16 channels of audio plus SMPTE 2020 (VANC) metadata. Embedded channels can be routed through or around processing. Encoded signals can be de-embedded and re-embedded. A powerful front panel headphone connector is provided for local monitoring.

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 Linear Acoustic AERO.2000 contains dual redundant power supplies and hard relay bypass of the digital audio, SDI and metadata signals for mission critical applications.

Options such as Dolby® encoding and decoding and Nielsen watermarking can be field-enabled via purchased software keys.

AERO.2000 Specifications:

Processing Structure (Dual Instance)

First Instance: 5.1+2 with local/Voiceover input, downmix output and dual-path upmixing; Second Instance: Dual stereo (2+2) with local/voiceover input and Auto SAP/DVS:

Processing

- Linear Acoustic Intelligent Dynamics™
- AEROMAX® multistage adaptive wideband and multiband loudness and dynamic range control with ITU-R BS.1770 loudness metering
- UPMAX® II two-channel to 5.1 channel upmixing and downmixing, automatically bypasses discrete content.

Reference

48kHz via AES DARS reference input or SDI input

Dolby E/Dolby Digital Decoding (Option)

Auto-sensing Dolby Digital or Dolby E decoder, or PCM pass-through

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

Dolby Digital and/or Dolby Digital Plus bitstream output for connection to an external video encoder and/or transport stream multiplexer.

Frequency Response

20Hz – 20 kHz +/- 1 dB (protection limit preset)

Latency

180 msec minimum. Zero timing via included Compensating Video Delay.

Digital Audio Inputs and Outputs

1/2, 3/4, 5/6, 7/8, AES Ref – BNC Female. Eight channels of auxiliary digital I/O on DB-25 female connector. All digital inputs are 75 Ohm internally terminated, unbalanced. with signal levels per SMPTE 276M/ AES-3ID-2001. All I/O can be assigned as needed

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 B VANC metadata. Up to 1080p/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

Ethernet

Gigabit Ethernet via RJ45

Remote Control

TCP/IP remote control; Included Windows®-compatible application for control and remote audio monitoring; HTTP server allows get/set control from any OS.

Front Panel Controls and Indicators

Rotary encoder and control keys plus color display

Power Requirements

Dual redundant power supplies, each rated at 100-264 VAC, autosensing, 50/60 Hz, 175 W each 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: Tested to comply with the limits for a class A digital device pursuant to Part 15 of the FCC rules (CFR). Power supplies are UL tested and approved.

Europe: Tested to comply with the requirements of harmonised Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC as indicated by the affixed CE marking; RoHS and WEEE compliant.

Warranty

Standard Linear Acoustic two-year limited parts and labor

Options

Option 02 - Dolby Digital (AC-3) Encoder
Option 06 - Dolby E/Dolby Digital Decode
Option 08 - Nielsen Watermark Encoding

TCP/IP Remote Application

- Full adjustment & display of all parameters
- ITU-R BS.1770 meters for all programs
- Dolby Digital (AC-3) statistics
- Manage multiple units with ease
- Return audio for remote monitoring*

*Network speed permitting.

LINEAR ACOUSTIC®
THE TELOS ALLIANCE

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