



ITU-R BS.1770 Loudness Measurement; AES and HD/SD-SDI Inputs standard,  
 Optional Dolby® Digital (AC-3), Dolby Digital Plus (E-AC-3) and Dolby® E Decoding

# LAMBDA II™

Professional Digital Audio and Metadata Monitor



LAMBDA II is the ultimate digital TV broadcast audio monitor. Designed specifically for the specialized needs of the modern TV station, LAMBDA combines a unique understanding of audio and metadata through the entire broadcast chain from production to consumer.



A long-life and durable vacuum fluorescent display, plus two intuitive navigation clusters for menu and monitoring functions provide straightforward system navigation and audio adjustment. Quick navigation is accomplished by four dedicated function keys that allow direct channel selection, instant preset recall, and downmix configuration.

Optional Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3) and Dolby E decoding can be applied to any of the discrete AES or embedded audio pairs. Decoded discrete audio is available on the AES outputs, decoded metadata is displayed and can be applied to the audio and metering signals. Extensive GPI/O functions are included. The unit can be supplied with an optional second power supply for redundancy.

# LAMBDA



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## Audio/Metadata Monitor

LAMBDA displays and reproduces up to sixteen audio channels via AES or HD/SD-SDI input, and accepts industry standard professional audio metadata via 9-pin serial input or by extracting it from the vertical ancillary (VANC) space of an applied HD-SDI input. Audio and metadata are displayed and properly combined to allow for accurate monitoring. A utility audio delay is included to allow up to three frames of compensation for external video monitors.

Any channel, channel pair, or downmix can be monitored through internal speakers, via the exceptionally dynamic front panel headphone output, or from the rear panel balanced analog stereo and AES digital output. A new 16-channel mode allows all applied audio channels to be displayed simultaneously and reproduced individually or as a 5.1 downmix.



High-excursion full range drivers with aluminum cones are coupled with metal dome HF drivers in an acoustically tuned enclosure to optimize frequency response and power handling. Digital Linkwitz-Reilly style crossovers are combined with low distortion, high efficiency class-D power amplifiers for exceptional audio quality and loudness.

Loudness metering per the ITU-R BS.1770 standard is also included. In addition to a numerical readout, a thin line indicating measured loudness “floats” over audio metering to allow quick verification of program loudness.

# LAMBDA II Specifications:

## Input Channels

Eight AES inputs via BNC connectors (SMPTE 276/AES-31D-2001) - HD/SD-SDI (SMPTE 292M/259M) input (all 16 channels)

## Dolby Digital (AC-3) and Dolby E decoding (Available Option)

Decodes AC-3 and Dolby E signals, displays meters for all encoded channels, any pair of channels or downmix outputs for monitoring.

## Digital Audio Inputs and Outputs

1/2, 3/4, 5/6, 7/8, 9/10, 11/12, 13/14, 15/16 AES inputs, with active loop- through or AES output of de-embedded channels or optionally decoded audio; AES Downmix Monitor output. All digital I/O via unbalanced female BNC connectors per SMPTE 276/AES-31D-2001.

## Audio Sample Rate

48kHz

## Latency

5msec (LoRo), 11msec (LtRt), adjustable in 1msec steps to 100msec

## Frequency Response (Electrical Outputs)

20Hz – 20 kHz +/- 0.25 dB

## Speaker Outputs

98 dB SPL @ 1 meter, 160Hz - 20 kHz, 85 dB SPL @ 120 Hz

## Headphone and Monitor Outputs

Headphone via 6.3mm front panel connector, +12 dBu max into 600-Ohms, mutes speakers upon insertion; Analog Monitor out via electronically balanced 3-pin male XLR, output impedance 25-Ohms, 24-bit DAC, +4dBu @ -20dBFS.

## Latency

PCM Audio: <1 msec; Dolby Digital (AC-3): 32 msec; Dolby E (NTSC): 33 msec, Dolby E (PAL): 40 msec

## Metadata Input

9-pin female D connector, 115 kbps, pinout per SMPTE 207M (RS-485); Designed to directly interface with Dolby Metadata; alternately metadata can be extracted from VANC space of applied HD-SDI signals.

## Ethernet

10/100-BASE-T

## Front Panel Controls and Indicators

Long-life, durable, reconfigurable vacuum fluorescent display provides visual indication of audio levels, metadata, and setup parameters. Independent navigation clusters with rotary encoder and switches for intuitive control of menus, monitor modes, volume, and mute.

## Power Requirements

High-reliability medical grade power supply rated at 100-264 VAC, auto-sensing, 45 W maximum; optional second supply for redundancy.

## Dimensions and Weight

3.50"H (2RU) x 19"W x 15"D; (89 x 483 x 381 mm). Net weight 13.4 lbs (6.1 kg), approximate.

## Environmental

Convection cooled. Operating: 0 to 50 degrees C, non-operating -20 to 70 degrees C. RoHS compliant design.

## 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

## Available Factory Installed Options

Option -01 - Dolby Digital (AC-3)/Dolby E decoding Option -03 - Dual power supply (second PSU)

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