

iLM8

8 Channel Audio Loudness Monitor



The iLM8 gives DTV broadcasters an important tool they need to significantly reduce viewer complaints due to sudden, disturbing changes in audio loudness.

David Day
DaySequerra, President



iLM8 Live Intelligent Loudness Monitor

Differences in audio levels between TV programs, or between programs and commercials, are a constant annoyance to viewers. DaySequerra's iLM8 Live permits broadcasters to maintain their desired loudness level across all audio programming and minimize viewer complaints.

Key Features of the iLM8 Live

- Standalone operation – no external encoder is required
- Eight input channels of PCM AES and optional HD-SDI inputs with channel mapping for all 16 embedded audio channels
- Any eight channels of de-multiplexed SDI audio can be routed to the AES outputs
- Industry-standard ITU-R BS.1770 - latest revision; simultaneous measurement for 5.1 surround and auxiliary stereo inputs
- Easy-to-read numerical Measured and Target readouts on vacuum fluorescent display; bargraph LED audio level meters
- Front panel headphone monitor
- Rear panel includes an alarm port as well as an Ethernet interface for long-term logging, email alerts and field software updates capability

DaySequerra's iLM8 Live Intelligent Loudness Monitor measures perceived loudness of eight channels of program audio using the industry-standard ITU-R BS.1770 - latest revision.



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Loudness is a perceptual property of an audio signal when it is reproduced acoustically. It is a complex non-linear function of amplitude, frequency and bandwidth. Current audio level meters measure the level of audio signals expressed as the amplitude of the signal - either the RMS (root mean square) voltage of an electrical signal or the sound pressure of an acoustical signal. Neither of these measurements, although widely accepted, provides accurate indications of how viewers will perceive the loudness of the audio programming.

The iLM8 Live measures the perceived loudness of eight channels of program audio and displays the results in an easy-to-read numerical format with a moving average over time, eliminating the variations with engineers interpreting traditional VU or PPM indicators (neither of which can measure perceived loudness). Four AES inputs and one HD-SDI input (optional) are provided for simultaneous measurement for 5.1 surround and auxiliary stereo inputs. With the HD/SDI option, eight channels of de-multiplexed SDI audio can be routed to the AES outputs; channel mapping is provided for all 16 SDI audio channels.

To improve system reliability and up-time, the DaySequerra iLM8 Live uses a robust DSP-based processing platform rather than the PC-based approach used by most other manufacturers to completely avoid broadcast disruptions caused by operating system lockups. The iLM8 Live's built-in high-performance headphone amplifier allows monitoring of any two user-selected outputs even in noisy background environments. An Ethernet interface provides long-term logging and field software updates capability.

Applications for the DaySequerra iLM8 Live include network and program ingest centers, satellite facilities; cable head-end facilities, turnaround uplinks, broadcast quality control, and post-production facilities.

Whether pre-screening content at an ingest point or keeping tabs on the output of a broadcast air-chain, the DaySequerra iLM8 Live is your key to reduce viewers complaints and improve audience satisfaction.

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TECHNICAL SPECIFICATIONS

INPUTS

- 3 AES PCM inputs for 5.1 surround sound
- 1 AES PCM input for auxiliary stereo
- 1 HD/SDI input with Option 01

PASSIVE OUTPUTS

- 3 AES PCM outputs for 5.1 surround sound
- 1 AES PCM output for auxiliary stereo
- 1 HD/SDI passthrough output with Option 01

DIGITAL INPUTS & OUTPUTS

- AES/EBU, 75ohm, unbalanced BNC
- Balanced Digital AES via DB-25 TASCAM format cable with option

LOUDNESS ALGORITHMS

- ITU-R BS.1770/1 Industry Standard Loudness Measurement

HEADPHONE MONITOR

- >150mW max into 32ohm load, 3.5mm front panel TRS connector

SAMPLE RATE

- 32kHz and 96kHz

LATENCY

- < 4 msec

DYNAMIC RANGE

- 140dB DR, any input to any output

GPIO

- Opto-isolated DB-9 female connector; 0-5VDC TTL

ETHERNET

- 10/100-BASE-T for remote logging and field software updates

DIMENSIONS & WEIGHT

- 1 RU, 19" (482mm) W x 8" (203mm) L x 1.75" (44mm) H
- 7lbs. (3.2kg)

ENVIRONMENTAL

- Convection cooled. Operating: 0 to 60 degrees C

REGULATORY

- North America: Designed to comply with FCC Class A, Part 15
- Europe: LV Directive 73/23/EEC and EMC Directive 89/366/ECC, CE Mark (EN55022 Class A, EN55024)
- RoHS and WEEE compliant

OPTIONS

- 01: HD/SDI Input
- 02: Balanced Digital AES via TASCAM interface

POWER SUPPLY

- Auto-sensing 100-240V, 50-60Hz
- EMI suppressed male IEC320 connector

WARRANTY

- Three years, limited parts and labor

NOTES

- [1] Audio measurement made using a 0dBfs 1kHz sine wave sampled at 48kHz, 20-20kHz A-weighted

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