



## AERO.qc™ Audio Quality Controller

With Loudness Measurement (ITU) and Control, Upmixing, and Metadata Processing with 8-Channel Analog Out, Optional HD/SD-SDI I/O, Dolby® E/Digital (AC-3) Decoding

Inconsistent DTV audio loudness, or the so-called “loud commercial problem” is the number one complaint of television viewers and it is driving them away. A large number of loudness issues can be traced back to content that is not properly ingested. Tools are spread across several boxes all of which must be configured correctly and yet rarely are.

Are you producing the best audio possible? Do you have the time, staff and expertise to manage the problem? Do you have the rackspace to support separate products for measurement, adjustment, and monitoring?

The new Linear Acoustic AERO.qc contains everything necessary to get audio under control at the beginning of the program chain. During ingest or quality control, AERO.qc provides ITU loudness measurement, manual or automatic correction of program loudness to match a target value, selective upmixing to create 5.1-channel audio, and outputs audio and metadata that match plant or externally supplied delivery specifications.

The AERO.qc can also be used during program production. Channel level meters are displayed next to a numeric indication of program loudness, allowing levels to be managed in real time. Upmixing can be used for integrating two-channel audio into a 5.1-channel program, and dynamics control can be applied to the audio prior to output.

Experience has shown that managing loudness at each section of the program chain results in better loudness and soundfield control with fewer side-effects. Using AERO.qc as early in the production process as possible delivers audio that requires little additional processing while still satisfying viewers and regulators.

Simply relying on one final stage to blindly correct loudness issues means that all programming will be affected to the degree necessary to correct the worst pieces. Using the AERO.qc at the point of ingest or production allows loudness and other important aspects of the audio program to be measured and set correctly at the earliest stage possible.

### AERO.qc Features:

- ITU BS.1770 loudness metering
- True peak meters over ITU bar-graph
- Intuitive color-coding indicates loudness go/no-go
- Industry standard UPMAX upmixing
- 6 channel AES I/O standard
- HD/SD-SDI I/O option
- 5.1-channel multistage loudness control option
- 8-channel balanced analog monitor outputs

Included is an 8-channel analog monitor output with inputs for remote fader, mute, and return to reference controls and indicators. Options include 5.1-channel multiband, multistage AERO-style loudness control, Dolby E/Dolby Digital (AC-3) decoding, HD/SD-SDI de-embedding and for audio and metadata, and re-embedding for audio.

Metadata can be applied for display, analysis, and user-selectable control of upmixing and processing functions. Standard RS-485 serial input is supported, or when the SDI option is present, metadata can be extracted from an applied HD-SDI signal.

A detailed color OLED display provides channel audio levels, ITU loudness, and key metadata information simultaneously on one screen. Front panel control is via two navigation clusters that allow quick menu navigation and control of monitor and headphone levels. Autoranging PSU for worldwide operation; redundant PSU optionally available.

## AERO.qc Specifications:

### AES Inputs and Outputs

All connectors are 75-Ohm BNC female; Eight main inputs with 75-Ohm internal termination; Eight main outputs; Signal levels per SMPTE 276M/AES-3ID-2001

### Processing Algorithms

ITU-compliant loudness control using multiband/multi-stage AEROMAX engine; Stereo to 5.1 upmixing via UPMAX; additional algorithms to be announced.

### Processing Delay

16 msec fixed PCM in to PCM out (any mode), adjustable in 1 msec steps up to 100 msec. Add 33/40 msec for Dolby E in NTSC/PAL frame rates or 32 msec for AC-3 decoding.

### Serial Metadata Input

9-pin female D connector, 115 kbps, pinout per SMPTE 207M (RS-485); protocol per SMPTE RP2020 metadata specification and is Dolby compliant

### HD/SD-SDI (SMPTE 292M/259M) - OPTION

De-embedding, processing, and re-embedding of up to 16 audio channels from applied SDI signal. 75-Ohm BNC female connectors, compatible with 1080i and 720p formats.

### GPIO Control Port

25-pin female D connector, 0-5V TTL levels, used to control upmixing and audio switching

### Power Requirements

100-264 VAC, auto-sensing, 40 W maximum; Redundant PSU optionally available.

### Dimensions and Weight

Two rack unit- 3.5"H x 19"W x 21"D (89 x 483 x 533 mm)

Net weight: 6 lbs (2.72 kg), approximate; Shipping weight: 8 lbs (3.63 kg), approximate.

### Environmental

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 to be a RoHS and WEEE compliant product.

### Warranty

Standard Linear Acoustic two-year limited parts and labor warranty.

### OPTIONS:

Option - 01 - HD/SD-SDI audio embedding/de-embedding (plus VANC metadata in HD)

Option - 03 - Dolby E/Dolby Digital (AC-3) input

Option - 04 - Redundant PSU

Option - 05 - 5.1-channel AERO-style dynamic range and loudness control engine

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