



DLA44/43/41

**8 channel (5.1/2.0) digital audio loudness control and
upmixer/downmixer unit based on Linear Acoustic
algorithms**

A Synapse® product

Synapse

Quad speed
ADD-ON

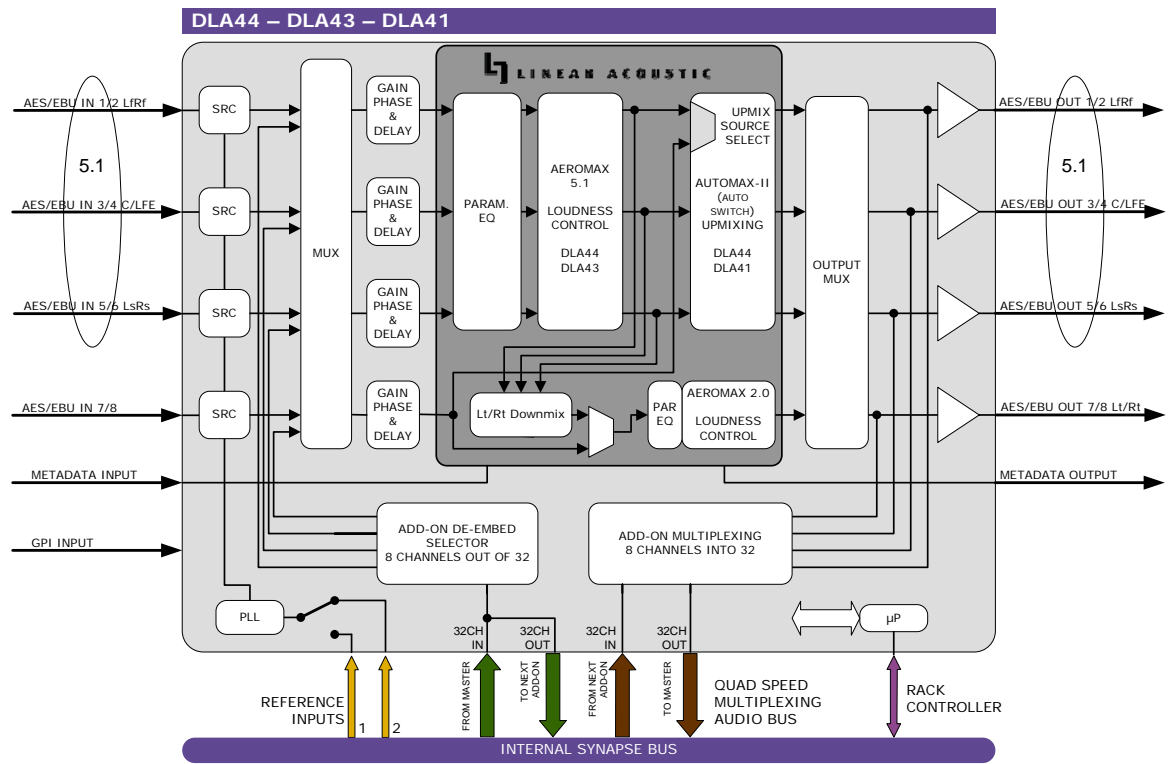
L LINEAR ACOUSTIC

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Block schematic & I/O panel



Features

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. It is clear that with the transition to digital (HD), a simple and cost effective solution is needed right now!

The DLA44/43 is based on third generation audio and loudness management technology by Linear Acoustic. The DLA44 protects your viewers from loudness shifts and loss of surround sound in a simple, cost effective, modular and hot-swap manner next to over 150 other Synapse modules.

The DLA44 accepts three pairs of PCM audio to handle a program stream containing 5.1 and two channel audio. The unit can apply multiband, multistage loudness control and upmixing to the applied audio. Loudness control is provided by the popular AEROMAX algorithm, while upmixing is provided by the air-proven and industry standard UPMAX algorithm. Both technologies are used world-wide to provide consistent and compelling 5.1 channel audio while remaining completely downmix compatible.

The DLA44 also includes the new AutoMAX-II auto-detection algorithm to smoothly and automatically bypass upmixing when applied content is 5.1 channels. The AutoMAX-II algorithm prevents any loss of dialogue or cause of switching artifacts. Upmixing and loudness processing modes can also be controlled by the ACP protocol and Cortex or by GPI contact closures.

A full-time downmixed version of the main program is provided as the fourth AES output pair. This signal can be either a stereo LoRo downmix or an industry standard LtRt surround encoded mix compatible with all legacy consumer decoders.

- Selection/swapping of 8 local inputs or ADD-ON inputs.
- Input gain, phase and delay adjustments
- Parametric EQ for the 5.1 input and 2.0 sources
- 2.0 to 5.1 upmixing (DLA44 and DLA41 only)
- Downmix from 5.1
- 5.1 loudness control (DLA44/43 only)
- 2.0 loudness control of discrete or downmixed 2.0 input (DLA44/43 only)
- Metadata manipulation of external source to preset levels (DialNorm)
- Locks to Black & Burst, AES input and Mastercard.
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Applications

- Transmission or ingest loudness control
- Transmission 2.0 to 5.1 upmixing with transparent 5.1 mode
- Pre Dolby Digital (plus) or Dolby Pulse processing
- Automated upmixing in 5.1 applications

Ordering information

Module:

- **DLA44:** 8 channel (5.1/2.0) digital audio loudness control and upmixer/downmixer ADD-ON card
- **DLA43:** 8 channel (5.1/2.0) digital audio loudness control ADD-ON card
- **DLA41:** upmixer/downmixer ADD-ON card

Standard I/O:

- **BPL11_DLA44:** I/O panel for DLA44 with unbalanced AES/EBU in and out
- **BPL11_DLA43:** I/O panel for DLA43 with unbalanced AES/EBU in and out
- **BPL11_DLA41:** I/O panel for DLA41 with unbalanced AES/EBU in and out

Relay bypass I/O:

- **BPX11_DLA44:** I/O panel for DLA44 with unbalanced AES/EBU in and out and bypass relay
- **BPX11_DLA43:** I/O panel for DLA43 with unbalanced AES/EBU in and out and bypass relays
- **BPX11_DLA41:** I/O panel for DLA41 with unbalanced AES/EBU in and out and bypass relays

Specifications

AES Audio Input

| | |
|-----------------------------------|---|
| Connector Standard | BNC 75 Ohm AES-1992 for synchronous or asynchronous PCM/AES, SMPTE 276M for single ended synchronous or asynchronous PCM/AES |
| Number of Inputs | 4 |
| Sampling Rate | 32 kHz to 192 kHz Synchronous 48 kHz in Master/ADD-On mode |
| Resolution | 24 bits when AES inputs selected, 20 bits in Master/ADD-ON mode |
| Minimum Input/Output Delay | TBD |
| Impedance Level | 75 Ohms 0.2V to 1V nom |

AES Audio Output

| | |
|--|-------------------|
| Number of Outputs | 4 |
| Connector | BNC, |
| Resolution | 24 bits |
| Sampling Rate | 48KHz synchronous |
| Minimum Input/Output delay | TBD |
| Maximum Input/Output offset delay | 1300 ms |

Reference Input through RRC

| | |
|-------------------------|---|
| Number of Inputs | 2 on SFR18, 2 on SFR08 and 1 on SFR04 |
| Bi-level | PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M |
| Word clock | 1Vp-p nominal, 75 Ohms terminated through loop AES11-2003 Annex B, not terminated on loop 48kHz |

Miscellaneous

| | |
|------------------------------|---------------------------|
| Weight | Approx. 250g |
| Operating Temperature | 0 °C to +50 °C |
| Dimensions | 137 x 296 x 20 mm (HxWxD) |

Electrical

| | |
|----------------|--------------|
| Voltage | +24V to +30V |
| Power | <10 Watts |