Synapse

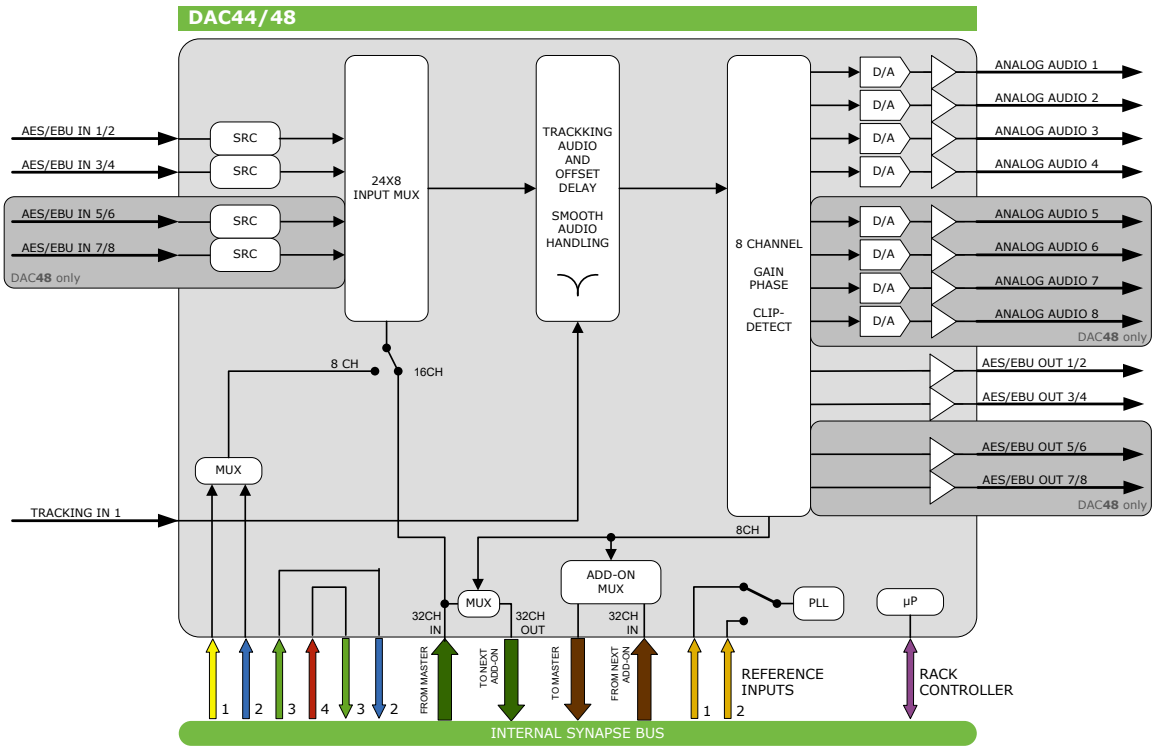
DAC44 – DAC48

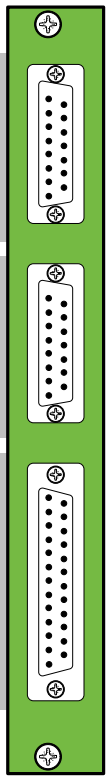
4 or 8 channel 24-bit audio D/A converter with analog and AES/EBU outputs

A Synapse® product

ADD-ON Card

Block schematic & Connector panel





AES/EBU INPUTS 1 – 4, TRACKING INPUT

AES/EBU OUTPUT 1 - 4

ANALOG AUDIO OUTPUTS 1 - 8

BPL13

Features

The DAC44 and DAC48 are multi-functional products. Their basic function is the conversion of AES/EBU digital audio to analog audio. In addition to the analog outputs they have AES/EBU outputs and offer the Synapse ADD-ON function. In ADD-ON mode the card acts as an input board which is fed by a master card positioned one slot left of the ADD-ON card. Both normal and Quad Speed Audio bus are supported. The DAC48 for example acts as an analog and digital audio de-embedder when used in combination with the AXON SAV12 (SDI to CVBS converter) or HFS12 (frame synchronizer) or in Quad Speed mode with an HLD200 (long time delay) or GXG400 (up/down/cross converter). The AES/EBU in- and outputs are available on 110 Ohm sub-D connectors. You can control channel selection/swapping, and gain and phase control of all audio channels.

The DAC44 is a 4 channel Digital to Analog converter with 2 AES inputs, 2 AES outputs and 4 analog outputs. The DAC48 is an 8 channel converter with 4 AES inputs, 4 AES outputs and 8 analog audio outputs.

- 24-bit audio conversion
- 8 analog outputs and 4 AES/EBU outputs (copy of analog channels) in DAC48
- 4 analog outputs and 2 AES/EBU outputs (copy of analog channels) in DAC44
- 96kHz and 48kHz sample clock locked to: B&B ref or word clock ref. (in ADD-ON, only 48kHz)
- 96kHz and 48kHz sample clock in free running mode (In ADD-ON, only 48kHz)
- Output analog reference levels adjustable for 12, 15, 18 and 24dBu
- Adjustable audio gain (in 0.25dB) and phase (0-180 deg)
- Can be used as a Synapse ADD-ON card in both normal and Quad Speed Bus mode
- Individual selection of each mono channel out of the AES/EBU domain
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Complementary card to:

- All de-embedding master cards normal and Quad Speed Bus

Applications

- Generic audio D/A converter, with AES/EBU processed outputs
- ADD-ON D/A converter next to Synapse de-embedding products

Ordering information

Module:

- **DAC44:** 4 channel 24 bit audio D/A converter with AES/EBU outputs
- **DAC48:** 8 channel 24 bit audio D/A converter with AES/EBU outputs

Standard I/O:

- **BPL13_DACxx:** I/O panel for DACxx with balanced analog audio out, balanced AES/EBU in and balanced AES/EBU out

Specifications

AES Audio Input

Connector	female sub-D (balanced)
Standard	AES-1992 for balanced synchronous or asynchronous PCM/AES,
Number of Inputs	4
Sampling Rate	32 kHz to 96 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	2.5ms
Impedance	110 Ohms
Level	2V to 7V for balanced operation
Minimum Input/Output Delay	3.5ms

Analog Audio Output

Type	Balanced analog audio
Number of Outputs	8
Connector	female sub-D
Impedance	50 Ohms balanced with transformer properties
Signal Level	0dB FS => 12dBu, 15dBu, 18dBu or 24dBu
Frequency Response	< ±0.05dB (20Hz to 20kHz)
Gain Mismatch	< 0.25 dB @997Hz, -20dBFS Multi channel
Dynamic Range	>100 dB @ -60dBFS
THD+N	< 92dB @ 1kHz, -1dBFS
Crosstalk	< -100dB (20Hz to 20kHz)
DC Offset	< ±30mV
Dynamic range	> 97dB @-60dBFS

AES Audio Output

Number of Outputs	4
Connector	female sub-D (balanced)
Resolution	24 bits
Sampling Rate	48 or 96kHz synchronous or free running
Minimum Input/Output Delay	1 ms

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	<15 Watts