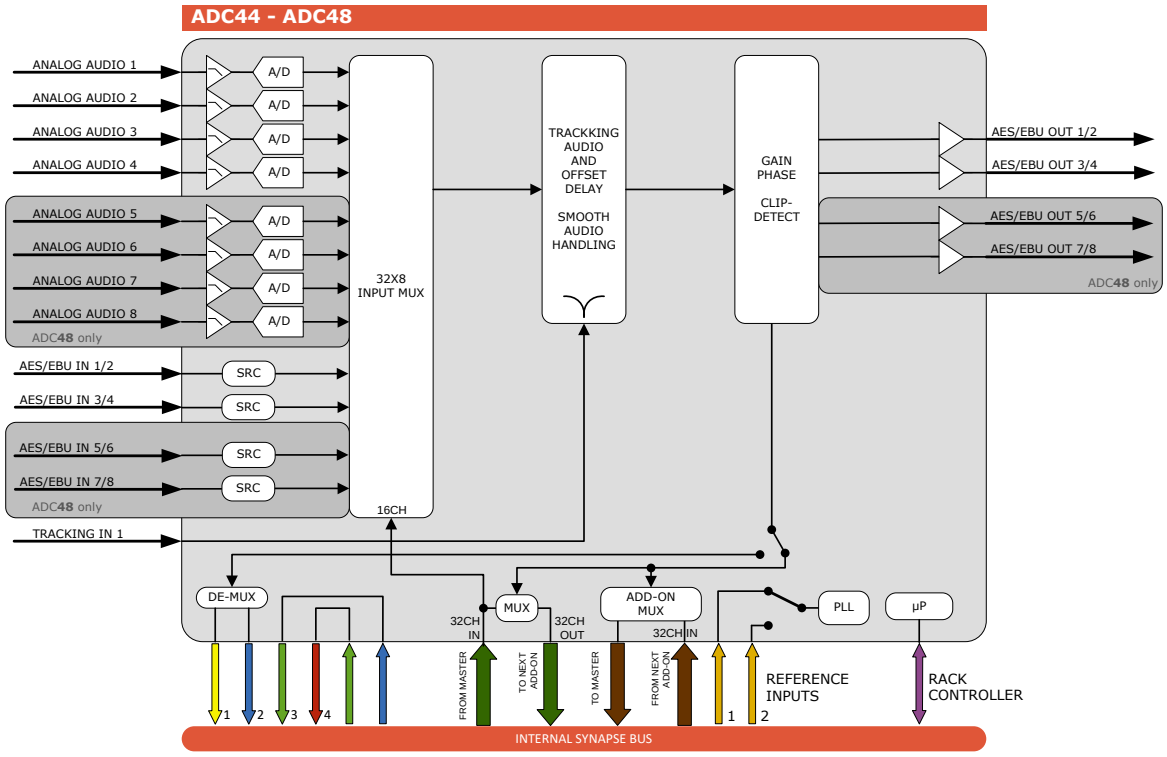
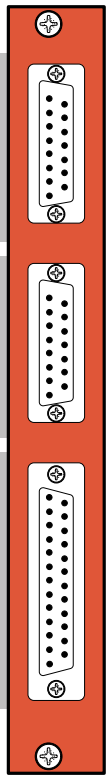
ADC44 – ADC48

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

A Synapse® product

Block schematic & I/O panel





AES/EBU INPUTS 1 – 4, TRACKING INPUT

AES/EBU OUTPUT 1 - 4

ANALOG AUDIO INPUTS 1 - 8

BPL14

Features

The ADC44 and ADC48 are multi-functional products. Their basic function is the conversion of analog audio to AES/EBU digital audio. In addition to the analog inputs it has AES/EBU inputs with a sample rate converter (SRC). The ADC44/48 has a tracking audio delay and a delay offset of up to 650ms at 96kHz or 1300ms at 48kHz.

It can also perform the Synapse ADD-ON function. In ADD-ON mode the card acts as an analog or digital audio input board that feeds a master card positioned one slot left of the ADD-ON card. Both the normal and Quad Speed Audio bus are supported. The card acts as a analog audio embedder for example if used in combination with the ASV12, SFS11 or GXG100 or in Quad speed mode with the GXG400 (many more options available). The audio data that enters the Synapse bus to a master card is identical to the data present in the local AES/EBU outputs. The AES/EBU 110 Ohms and analog audio signals are available on sub-D connectors.

- 24-bit audio conversion
- 8 channel internal processing selectable from 8 analog or 8 digital channels in ADC48
- 4 channel internal processing selectable from 4 analog or 4 digital channels in ADC44
- Any input to any output selection (This can be a mix of analog and digital signals)
- AES/EBU inputs with selectable SRC (32 to 96kHz sampling)
- 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)
- In- and outputs 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
- Adjustable audio delay offset up to 1300ms in 1ms increments (@48kHz)
- Tracking audio delay on dedicated BNC input
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Complementary products:

- All embedding master cards with normal or Quad Speed Audio bus compatibility

Applications

- Standalone high quality Audio A/D conversion
- Generic analog and digital audio ADD-ON card for dedicated Synapse master cards that have an embedding function
- AES/EBU proc-amp

Ordering information

Module:

- **ADC44:** 4 channel 24 bit A/D converter with AES/EBU bypass inputs
- **ADC48:** 8 channel 24-bit A/D converter with AES/EBU bypass inputs

Standard I/O:

- **BPL14_ADCxx**: I/O panel for ADCxx with balanced analog audio in, balanced AES/EBU in and balanced AES/EBU out

Specifications

Analog Audio Input

Type	Balanced analog audio
Number of Inputs	4 or 8
Connector	female sub-D
Impedance	10k Ohms nominal (differential)
Sampling Rate	48KHz
Signal Level	0dB FS => 12dBu, 15dBu, 18dBu or 24dBu
Level Control Range	+12dB to -60dB 0.25dB increments
Frequency Response	< ±0.1dB, 20Hz to 20kHz (broadcast quality)
Dynamic Range	100dB @-60 dBFS
THD+N	< 0.002% (>96dB) @ 1kHz, -1dB FS < 0.002% (> 96dB) @ 20Hz to 20kHz, -1dB FS
CMRR	> 60dB at 1kHz

AES Audio Input

Connector	female Sub-D (balanced)
Standard	AES-1992 for balanced synchronous or asynchronous PCM/AES,
Number of Inputs	2 or 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

AES Audio Output

Number of Outputs	2 or 4
Connector	female Sub-D (balanced)
Resolution	24 bits
Sampling Rate	48KHz synchronous
Minimum Input/Output Delay	2.5ms
Maximum Input/Output Delay	1300 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	<11 Watts