



ADC24

**4 channel 24-bit audio A/D converter
with AES/EBU bypass inputs**

A Synapse® product

Synapse

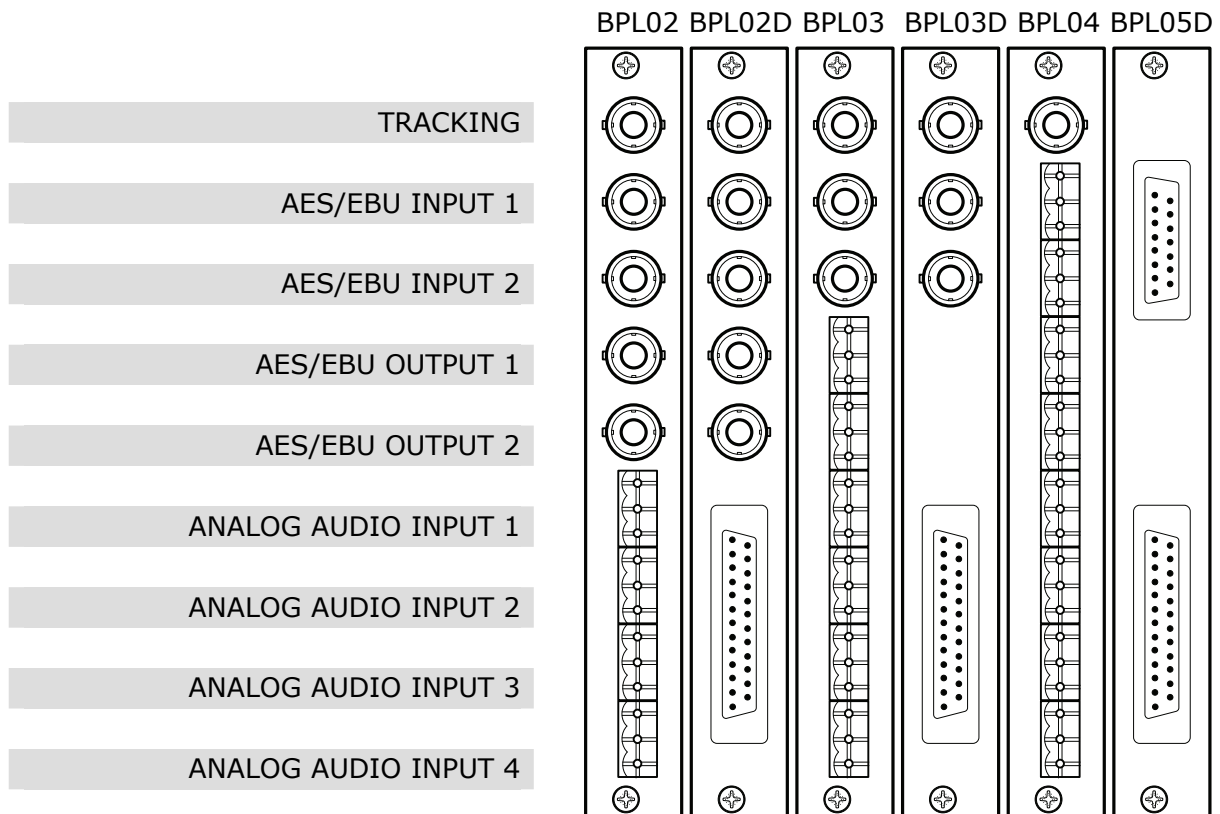
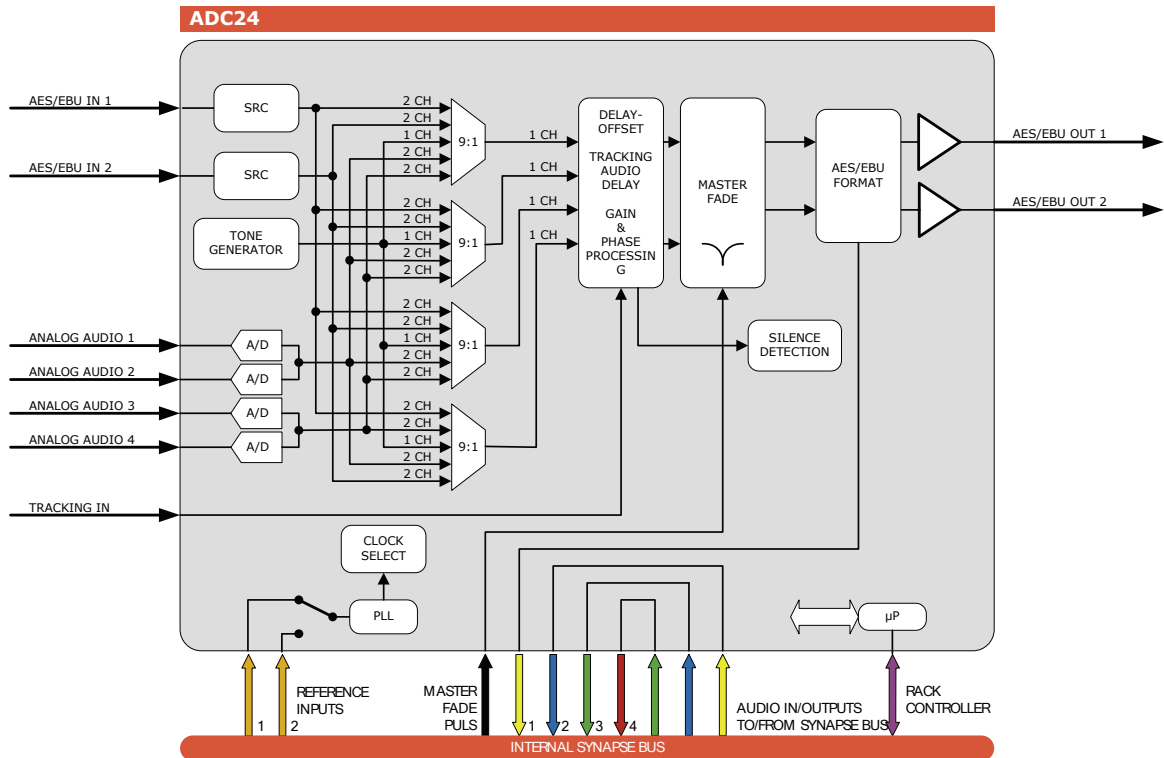
**ADD-ON
Card**

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Block schematic & I/O panel



For detailed sub-D connections see the manual

Features

The ADC24 is a multi-functional product. Its 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 ADC24 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. The ADC24 for example acts as a analog audio embedder if used in combination with the ASV12, SFS11 or HFS11 (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 in- and outputs are available on 75 Ohms BNC or 110 Ohms on screw terminals and sub-D connectors. This selection is determined by the type of connector panel.

- 24-bit audio conversion
- 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)
- Available with 110 Ohms (phoenix or sub-D) or 75 Ohms (BNC) AES/EBU
- 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
- 1kHz tone generator
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Complementary products:

- SFS11, HFS11
- SEB10, SEB11, SEB20, HEB20
- ASV08, ASV12, ASV22, ASM10
- All embedding master cards

Applications

- Stand alone high quality 4 channel Audio A/D conversion
- The ADC24 is also a generic analog and digital audio ADD-ON card for dedicated Synapse master cards that have an embedding function
- AES/EBU proc-amp
- Tone generator for service applications

Ordering information

Module:

- **ADC24:** 4 channel 24-bit A/D converter with AES/EBU bypass inputs

Standard I/O:

- **BPL02_ADC24:** I/O panel for ADC24 with balanced analog audio in, unbalanced AES/EBU in and unbalanced AES/EBU out
- **BPL02D_ADC24:** I/O panel for ADC24 with balanced analog audio in on sub-D, unbalanced AES/EBU in and unbalanced AES/EBU out
- **BPL03_ADC24:** I/O panel for ADC24 with balanced analog audio in, balanced AES/EBU out and unbalanced AES/EBU in
- **BPL03D_ADC24:** I/O panel for ADC24 with balanced analog audio in, balanced AES/EBU out on sub-D and unbalanced AES/EBU in
- **BPL04_ADC24:** I/O panel for ADC24 with balanced analog audio in, balanced AES/EBU in and balanced AES/EBU out
- **BPL05D_ADC24:** I/O panel for ADC24 with balanced analog audio in, balanced AES/EBU in, balanced AES/EBU out and tracking on sub-D

Specifications

Analog Audio Input

Type	Balanced analog audio
Number of Inputs	4
Connector	Removable terminal strip or 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	BNC, Screw terminal or female Sub-D (balanced)
Standard	AES-1992 for balanced synchronous or asynchronous PCM/AES, SMPTE 276M for single ended synchronous or asynchronous PCM/AES
Number of Inputs	2
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
Number of Inputs	2
Impedance	110 Ohms or 75 Ohms
Level	0.2V to 1V nom for BNC, 2V to 7V for balanced operation

AES Audio Output

Number of Outputs	2
Connector	BNC, Screw terminal or 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