



HEB05

HD/SD preset based audio embedder

A Synapse ® product

Synapse

SynLite

**MASTER
Card**

HD
High definition

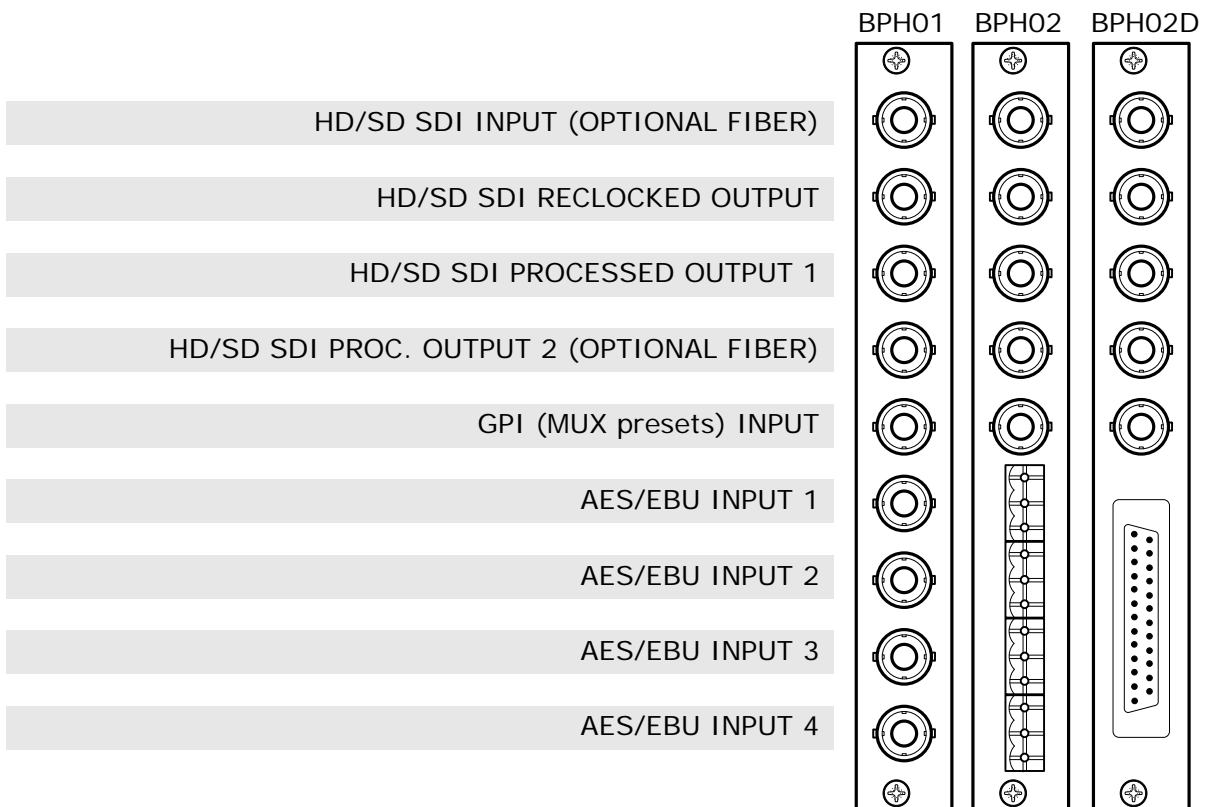
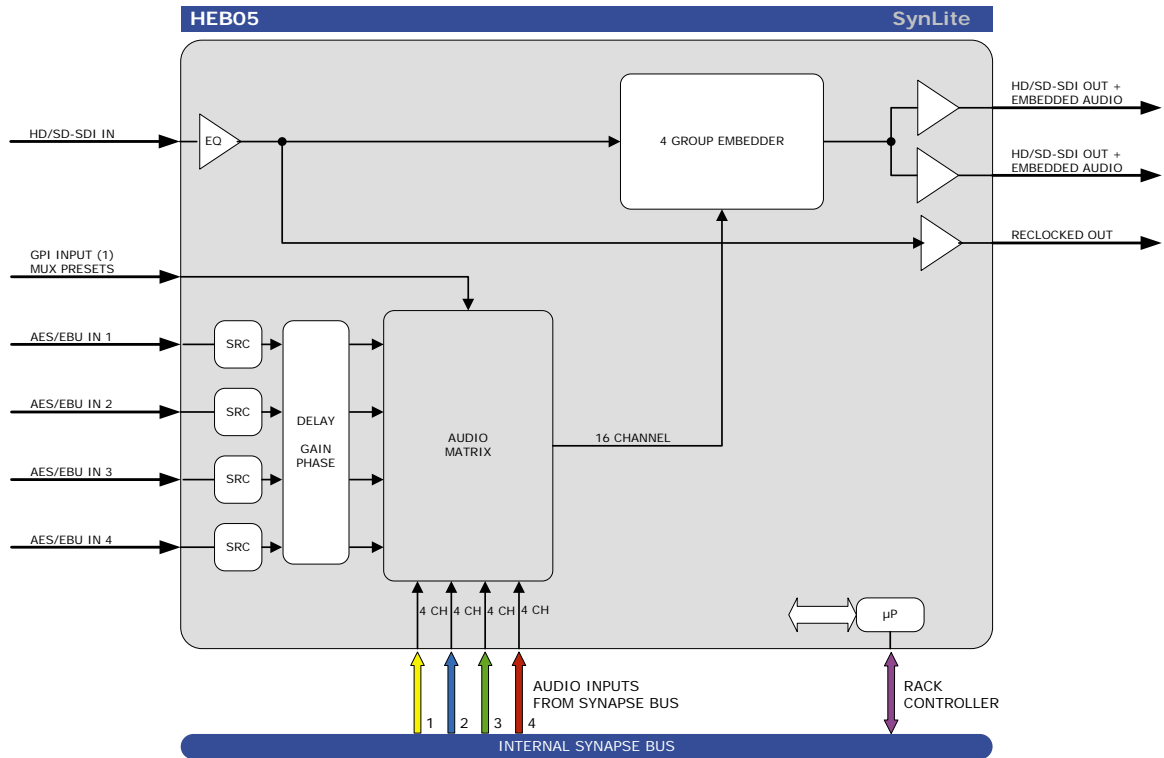
COMPATIBLE WITH
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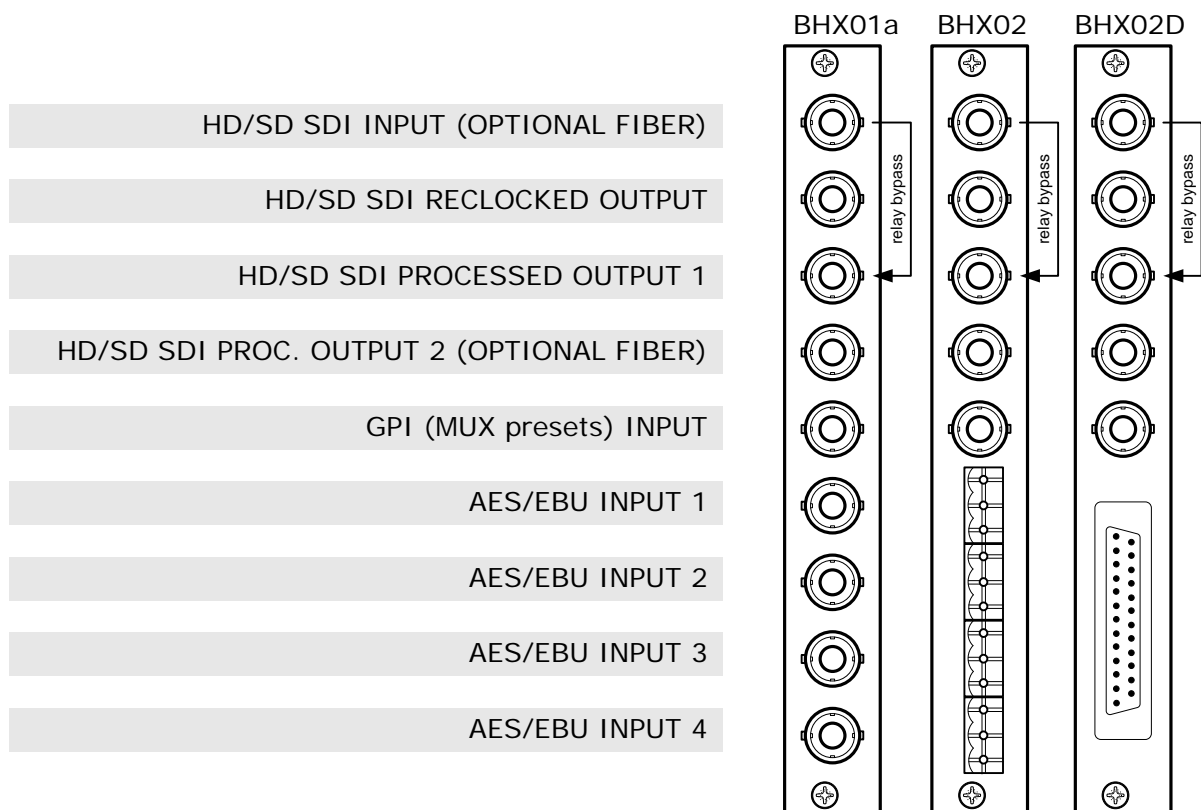
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Block schematic & I/O panel





Features

The HEB05 is an HD SDI and SD SDI digital audio embedder. It is capable of inserting or appending 4 free-running AES/EBU digital audio channels (8 channels). The core of the HEB05 consists of four embedder-blocks Emb_A, Emb_B and Emb_C and Emb_D. Each block is capable of embedding 4 audio channels into one group, which gives a total of 16 audio channels into four groups. In addition, four ADD-ON Cards can be connected to create a routing matrix. One ADD-ON Card is needed to get 16 embedded channels (DIO48). The architecture of Emb_A to Emb_D blocks is identical. The local inputs have the opportunity to do additional Phase and Gain corrections (on the fly). The HEB05 has two HD-SDI processed outputs and 4 local AES/EBU inputs.

- 4 AES/EBU inputs with sample rate converter (available with 110 Ohm and 75 Ohm inputs)
- 4 extra AES/EBU inputs through the Synapse bus
- 1 x reclocked HD SDI output
- 2 x HD SDI + embedded audio outputs
- 8 presets that configure all 16 input channels at once. One controlled by closing of BNC 5
- Audio level and phase control (local inputs only)
- Audio offset delay (local inputs only) up to 2600 ms
- 8 extra audio channels (2 groups) with ADD-ON Card
- Peak detection 0, -6, -12 and -18dBFS
- Silence detection with threshold (-100 to -20dBFS) and time control (1 to 255 sec)
- Transparent for ATC time code RP188, RP196, RP215
- Locks to SDI input
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)
- Optional 1 fiber input (replacing 1 SDI input) or 1 fiber output (replacing 1 SDI output) on I/O panel

Complementary cards:

- DIO48, ADC20, ADC24, DIO24, DLA44, DLA43

Applications

- HD/SD audio embedding
- Preset based 8 channel audio embedding
- Preset based 16 channel audio embedding with DIO48 ADD-ON Card

Ordering information

Module:

- **HEB05:** HD/SD preset based audio embedder

Standard I/O:

- **BPH01_HEB05:** I/O-panel for HEB05 with unbalanced AES/EBU in
- **BPH02_HEB05:** Rear connector for HEB05 with balanced AES/EBU in
- **BPH02D_HEB05:** I/O-panel for HEB05 with balanced AES/EBU in on sub-D

Relay bypass I/O:

- **BHX01_HEB05:** I/O panel for HEB05 with unbalanced AES/EBU out with relay bypass
- **BHX02_HEB05:** I/O for HEB05 with balanced AES/EBU out with relay bypass
- **BHX02D_HEB05:** I/O panel for HEB05 with balanced AES/EBU out on sub-D with relay bypass

Fiber outputs:

- **BPH01T_FC/PC_HEB05:** I/O-panel HEB05 with fiber transmitter on FC/PC
- **BPH01T_SC_HEB05:** I/O-panel for HEB05 with fiber transmitter on SC
- **BPH02T_FC/PC_HEB05:** I/O-panel for HEB05 with fiber transmitter on FC/PC
- **BPH02T_SC_HEB05:** I/O-panel for HEB05 with fiber transmitter on SC
- **BPH02DT_FC/PC_HEB05:** I/O-panel for HEB05 with fiber transmitter on FC/PC
- **BPH02DT_SC_HEB05:** I/O-panel for HEB05 with fiber transmitter on SC

Fiber inputs:

- **BPH01R_FC/PC_HEB05:** I/O-panel for HEB05 with fiber receiver on FC/PC
- **BPH01R_SC_HEB05:** I/O-panel for HEB05 with fiber receiver on SC
- **BPH02R_FC/PC_HEB05:** I/O-panel for HEB05 with fiber receiver on FC/PC
- **BPH02R_SC_HEB05:** I/O-panel for HEB05 with fiber receiver on SC
- **BPH02DR_FC/PC_HEB05:** I/O-panel for HEB05 with fiber receiver on FC/PC
- **BPH02DR_SC_HEB05:** I/O-panel for HEB05 with fiber receiver on SC

Specifications

HD/SD Serial Video Input

Standard	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio SMPTE 292M (1.5Gb/s), SMPTE 260M, SMPTE 274M, SMPTE 296M, SMPTE 349M 1080i/59.94, 1080i/50, 720p/59.94, 720p/50
Equalization	Automatic to 100m @ 1.5Gb/s with Belden 1694A or equivalent cable.
Return Loss	> 15dB up to 1.5GHz

HD Serial Video Output

Standard	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio SMPTE 292M (1.5Gb/s), SMPTE 260M, SMPTE 274M, SMPTE 296M, SMPTE 349M 1080i/59.94, 1080i/50, 720p/59.94, 720p/50
Signal Level	800mV nominal
DC Offset	0V \pm 0.5V
Rise and Fall Time	200ps nominal for HD, 750ps nominal for SD
Overshoot	< 10% of amplitude
Return Loss	> 15dB up to 1.0Gb/s, > 10dB up to 1.5Gb/s
Wideband Jitter	< 0.2UI

AES Audio Input

Connector	BNC, Screw terminal or 25 pins 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	4
Sampling Rate	32 kHz to 96 kHz A-Synchronous via SRC and 48 kHz Synchronous in transparent mode (Dolby E)
Resolution	24 bits in HD, 20 bits in SD
Minimum Input/Output Delay	1 ms
Impedance	110 Ohms or 75 Ohms
Level	0.2V to 1V nom for BNC, 2V to 7V for balanced operation

Miscellaneous

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

Electrical

Voltage	+24V to +30V
Power	<8 Watts