



HAS05E

**HD/SD 8-channel 2-group embedded audio processing
card with local AES/EBU inputs**

A Synapse ® product

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**MASTER
Card**

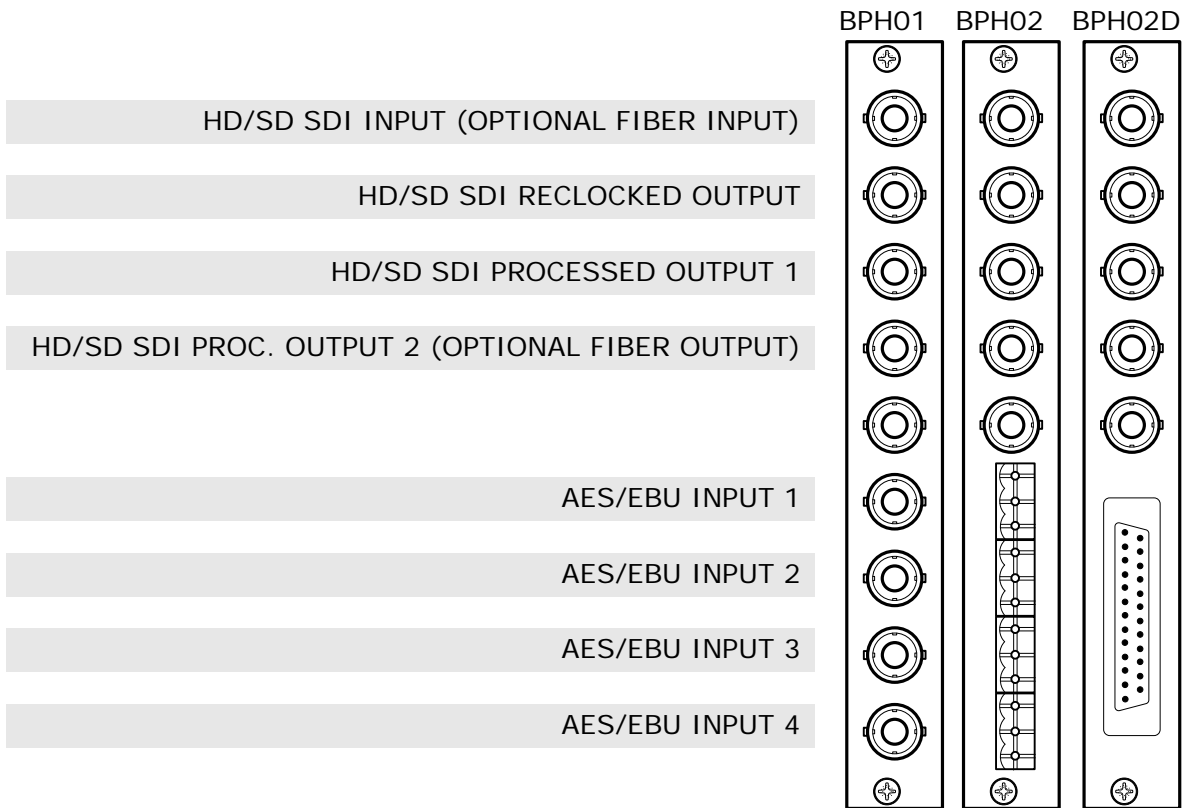
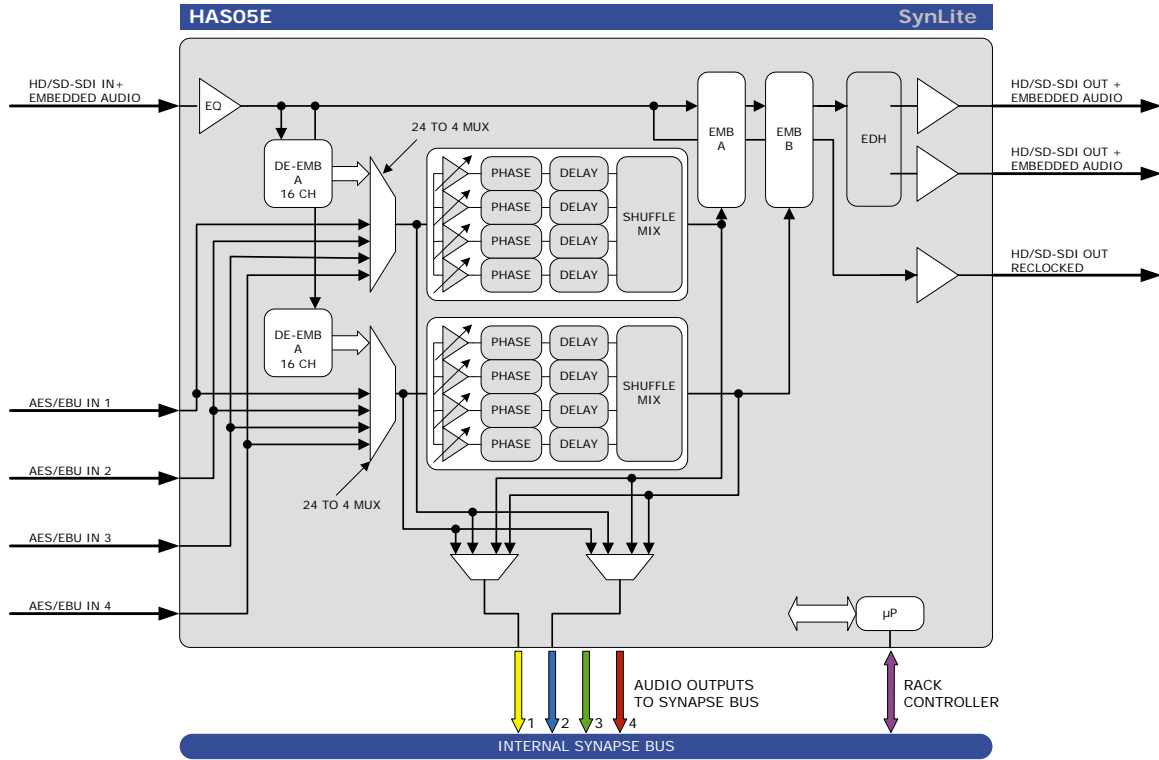
HD
High definition

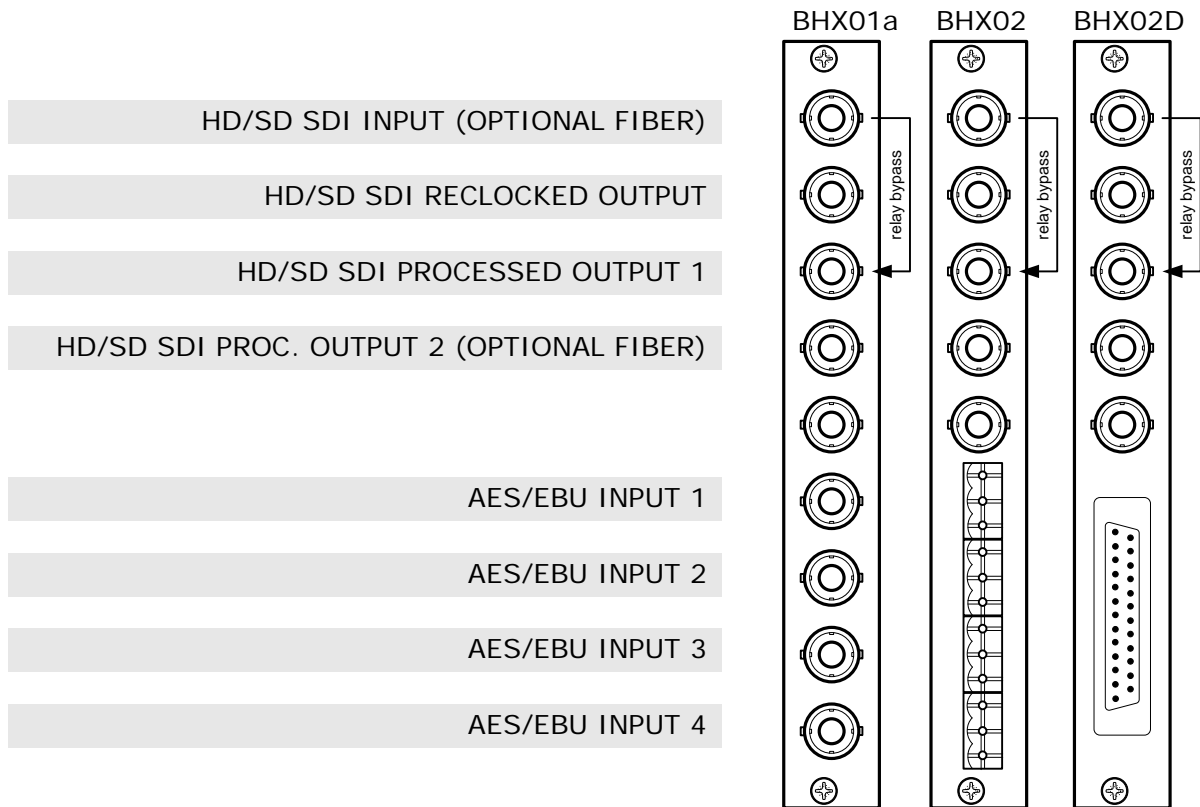
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Block schematic & I/O panel





Features

The HAS05E is an 8-channel in 2-group preset-based HD-SDI embedded audio shuffler/mixer. AXON is an industry first with this comprehensive card, and puts full audio control power into the hands of an HD-SDI embedded signal user. Individual gain, phase and delay control for each channel are also part of this powerful card. The preset-based control of this card makes it ideal for repeated corrections or standard channel swapping occasions in a multi-lingual environment. If dynamic control is required the card can still perform this task as every preset is remote controllable by a third party control protocol or the dedicated control panel SCP08.

- 4 local AES/EBU inputs
- HD-SDI and SD-SDI compatible (functional equivalent to SD is SAS30)
- 8-channel selection (any out of 16 embedded + any out of 8 from local AES/EBU inputs)
- 8 presets (ACP controlled)
- Pre and post monitoring with ADD-ON Card
- Audio input gain (0.25dB steps)
- Audio input phase (0 - 180 deg)
- Audio input delay offset
- Mix of any 4 channels in group-A embedder and group-B embedder
- Overwrite and append modes
- 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
- Audio format detection (e.g. AC3, Dolby E and PCM)
- 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:

- DAC20, DAC24, DAS24, DIO48, DIO24, DLA44, DLA43

Applications

- HD/SD SDI audio shuffling with external source inputs
- MCR audio shuffling and swapping (for non compliant input signals)

Ordering information

Module:

- **HAS05E:** HD/SD 8 channel 2 group embedded audio processing card with local AES/EBU inputs

Standard I/O:

- **BPH01_HAS05E:** I/O panel for HAS05E with unbalanced AES/EBU out
- **BPH02_HAS05E:** I/O for HAS05E with balanced AES/EBU out
- **BPH02D_HAS05E:** I/O panel for HAS05E with balanced AES/EBU out on sub-D

Relay bypass I/O:

- **BHX01_HAS05E:** I/O panel for HAS05E with unbalanced AES/EBU out with relay bypass
- **BHX02_HAS05E:** I/O for HAS05E with balanced AES/EBU out with relay bypass
- **BHX02D_HAS05E:** I/O panel for HAS05E with balanced AES/EBU out on sub-D with relay bypass

Fiber outputs:

- **BPH01T_FC/PC_HAS05E:** I/O panel for HAS05E with fiber transmitter on FC/PC
- **BPH01T_SC_HAS05E:** I/O panel for HAS05E with fiber transmitter on SC
- **BPH02T_FC/PC_HAS05E:** I/O panel for HAS05E with fiber transmitter on FC/PC
- **BPH02T_SC_HAS05E:** I/O panel for HAS05E with fiber transmitter on SC
- **BPH02DT_FC/PC_HAS05E:** I/O panel for HAS05E with fiber transmitter on FC/PC
- **BPH02DT_SC_HAS05E:** I/O panel for HAS05E with fiber transmitter on SC

Fiber inputs:

- **BPH01R_FC/PC_HAS05E:** I/O panel for HAS05E with fiber receiver on FC/PC
- **BPH01R_SC_HAS05E:** I/O panel for HAS05E with fiber receiver on SC
- **BPH02R_FC/PC_HAS05E:** I/O panel for HAS05E with fiber receiver on FC/PC
- **BPH02R_SC_HAS05E:** I/O panel for HAS05E with fiber receiver on SC
- **BPH02DR_FC/PC_HAS05E:** I/O panel for HAS05E with fiber receiver on FC/PC
- **BPH02DR_SC_HAS05E:** I/O panel for HAS05E 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	Approx. 250g
Operating Temperature	0 °C to +50 °C
Dimensions	137 x 296 x 20 mm (HxLxD)

Electrical

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