AXON

HEB20

HD/SD preset based audio embedder

A Synapse ® product
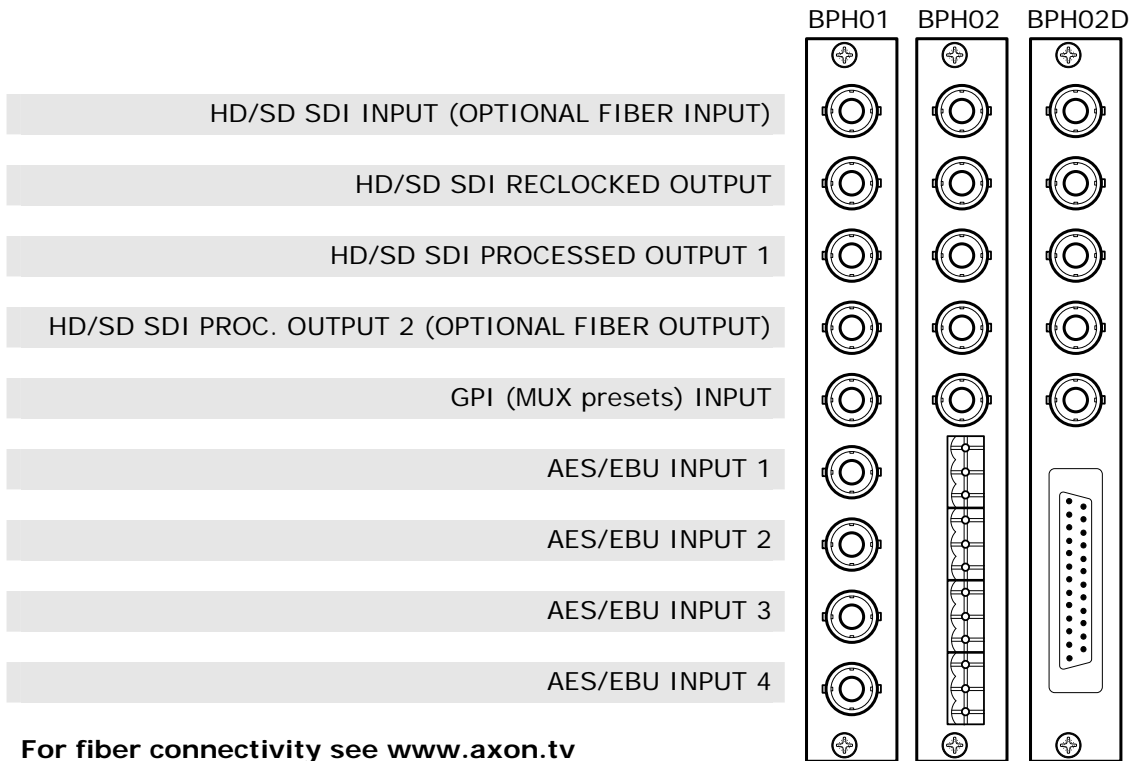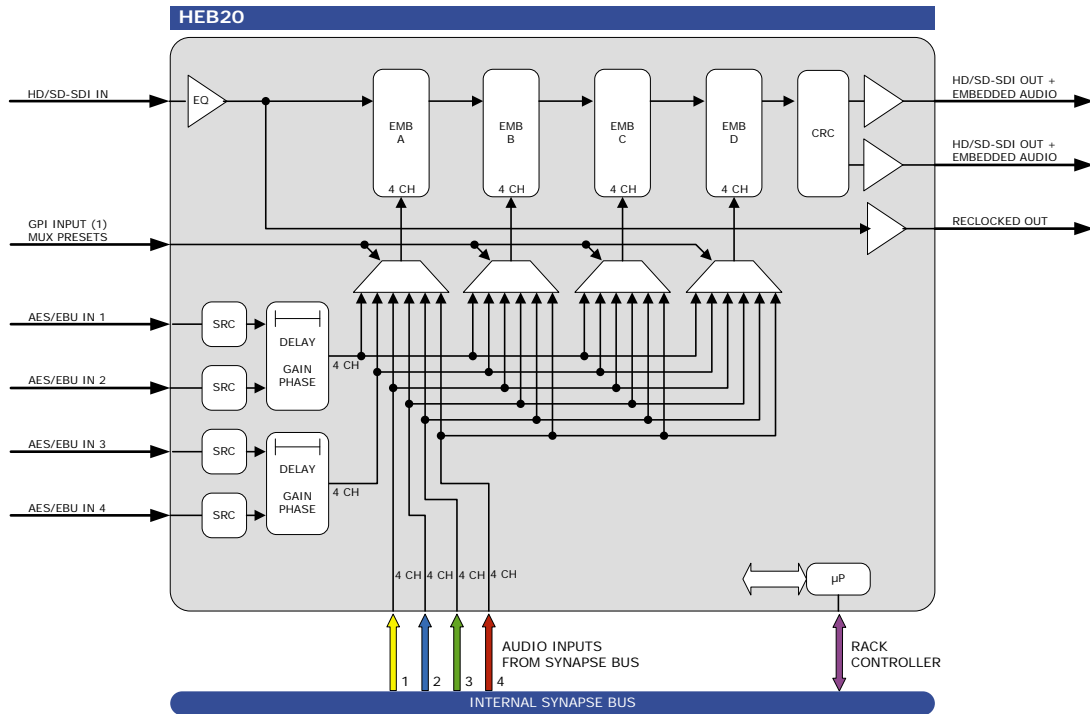
MASTER Card

HD High definition

COMPATIBLE WITH DOLBY. E

Block schematic & I/O panel

HEB20

HD/SD-SDI IN

EQ

EMB A — 4 CH
EMB B — 4 CH
EMB C — 4 CH
EMB D — 4 CH
CRC

HD/SD-SDI OUT + EMBEDDED AUDIO
HD/SD-SDI OUT + EMBEDDED AUDIO
RECLOCKED OUT

GPI INPUT (1) MUX PRESETS

AES/EBU IN 1 — SRC — DELAY — GAIN PHASE — 4 CH
AES/EBU IN 2 — SRC
AES/EBU IN 3 — SRC — DELAY — GAIN PHASE — 4 CH
AES/EBU IN 4 — SRC

4 CH 4 CH 4 CH 4 CH

1 2 3 4

AUDIO INPUTS FROM SYNAPSE BUS

µP

RACK CONTROLLER

INTERNAL SYNAPSE BUS

	BPH01	BPH02	BPH02D
HD/SD SDI INPUT (OPTIONAL FIBER INPUT)			
HD/SD SDI RECLOCKED OUTPUT			
HD/SD SDI PROCESSED OUTPUT 1			
HD/SD SDI PROC. OUTPUT 2 (OPTIONAL FIBER OUTPUT)			
GPI (MUX presets) INPUT			
AES/EBU INPUT 1			
AES/EBU INPUT 2			
AES/EBU INPUT 3			
AES/EBU INPUT 4			

For fiber connectivity see www.axon.tv

Features

The HEB20 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 HEB20 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 HEB20 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
- 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

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:
- **HDB20:** HD/SD preset based audio de-embedder

Standard I/O:
- **BPH01_HEB20:** I/O-panel for HEB20 with unbalanced AES/EBU in
- **BPH02_HEB20:** Rear connector for HEB20 with balanced AES/EBU in
- **BPH02D_HEB20:** I/O-panel for HEB20 with balanced AES/EBU in on sub-D

Fiber outputs:
- **BPH01T_FC/PC_HEB20:** I/O-panel HEB20 with fiber transmitter on FC/PC
- **BPH01T_SC_HEB20:** I/O-panel for HEB20 with fiber transmitter on SC
- **BPH02T_FC/PC_HEB20:** I/O-panel for HEB20 with fiber transmitter on FC/PC
- **BPH02T_SC_HEB20:** I/O-panel for HEB20 with fiber transmitter on SC
- **BPH02DT_FC/PC_HEB20:** I/O-panel for HEB20 with fiber transmitter on FC/PC
- **BPH02DT_SC_HEB20:** I/O-panel for HEB20 with fiber transmitter on SC

Fiber inputs:
- **BPH01R_FC/PC_HEB20:** I/O-panel for HEB20 with fiber receiver on FC/PC
- **BPH01R_SC_HEB20:** I/O-panel for HEB20 with fiber receiver on SC
- **BPH02R_FC/PC_HEB20:** I/O-panel for HEB20 with fiber receiver on FC/PC
- **BPH02R_SC_HEB20:** I/O-panel for HEB20 with fiber receiver on SC
- **BPH02DR_FC/PC_HEB20:** I/O-panel for HEB20 with fiber receiver on FC/PC
- **BPH02DR_SC_HEB20:** I/O-panel for HEB20 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 ±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