



# Synapse

## GRB100

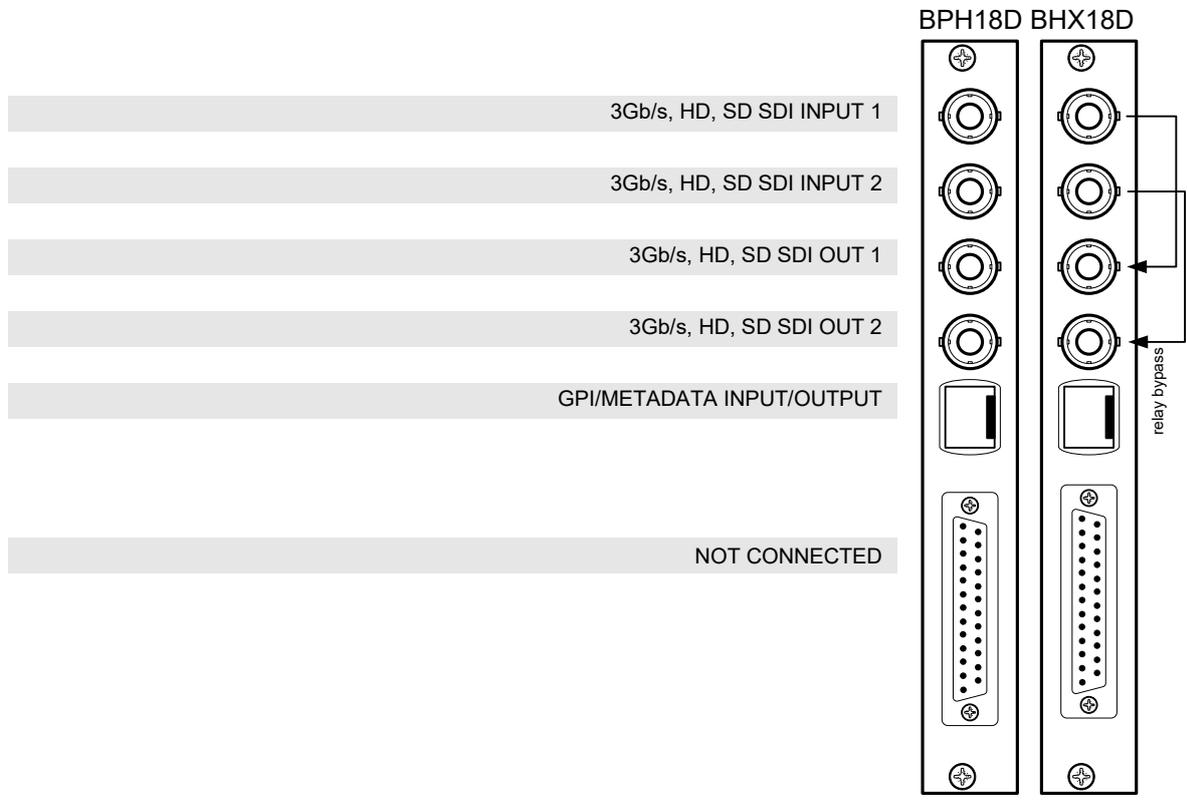
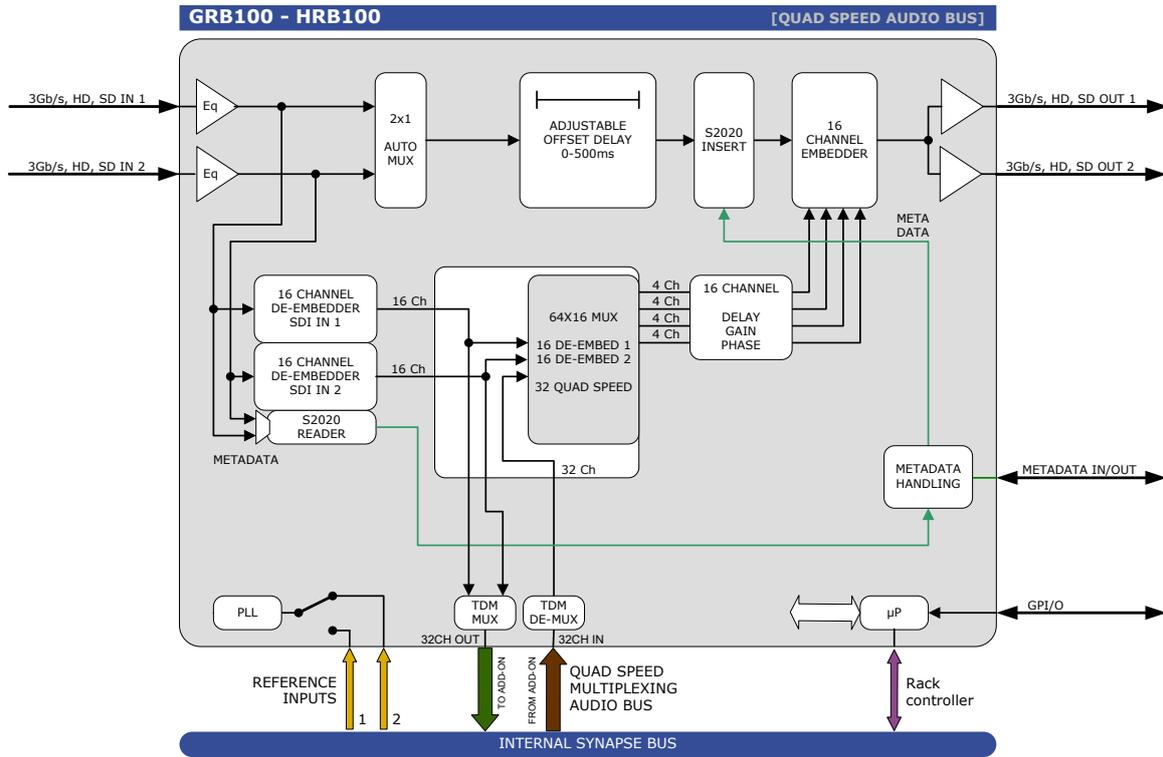
**3Gb/s, HD, SD dual SDI in embedded domain shuffler and re-embedder with S2020 metadata insertion**

A Synapse® product



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Block schematic & I/O panel



## Features

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The GRB100 is a 64x16 channel shuffler - re-embedder. The source audio channels used for embedding into the output SDI can be derived from 2 individual 3Gb/s HD or SD inputs and from the 32 channels that are available in the quad speed multiplexing audio ADD-ON bus.

One of the nice features of this card is that the output embeds 16 channels and that the source for these audio can be derived from both SDI input 1 (that normally also carries the video) and from SDI input 2. Input two can be connected to a second SDI source that is just used for carrying audio. (the two SDI streams need to be clock locked)

- 2 SDI inputs (with auto switch on carrier loss, and switch back function)
- 2 SDI outputs
- Compatible with the following input formats (auto selecting) (1080p only for GXX):
  - 1080p/59.94
  - 1080p/50
  - 1080i/59.94
  - 1080i/50
  - 1080p/30
  - 1080p25
  - 1080p(sf)/23.98
  - 1035i/59.94
  - 720p/59.94
  - 720p50
  - SD525
  - SD625
- Single VIDEO delay adjustable between 0 and 500ms
- Two SDI inputs can source the audio de-embedder when sources are clock locked (not phase locked\*)
- De-embedding of all 32 channels from SDI 1 and SDI 2 to the Synapse bus
- 32 extra inputs through the quad speed Synapse bus
- 7 presets that configure all embedding channels. controlled by GPI or ACP (Cortex)
- S2020 metadata reading and insertion from an external source
- Metadata-shuffler (can also be used as metadata-generator)
- Append and overwrite modes
- Audio level and phase control
- Audio offset delay up to 5000 ms
- 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 relay bypass (BHX18D)

\* (In 2-SDI shuffle mode the sources need to be running on the same clock, the phase is not critical)

Complementary cards:

- DIO88, DLA44, DLA43, DLA42, DLA41, DBD18

## Applications

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- Embedded domain shuffling and swapping (from second SDI input)
- Master card for high end audio processing

## Ordering information

### Module:

- **GRB100-I/O:** 3Gb/s, HD, SD re-embedder/shuffler

### Standard I/O:

- **BPH18D-PANEL:** I/O panel for GRB100

### Relay bypass I/O:

- **BHX18D-PANEL:** relay I/O panel for GRB100

## Specifications

### Serial Video Input

<b>Standard</b>	SD, HD and 3Gb/s SDI: SMPTE 292M, SMPTE 259M, SMPTE424
<b>Number of Inputs</b>	2
<b>Connector</b>	BNC
<b>Equalization</b>	Typical maximum equalized length of Belden 1694A cable: 90m at 2.97Gb/s, 120m at 1.485Gb/s, and 250m at 270Mb/s
<b>Return Loss</b>	> 15dB up to 1.5GHz

### Serial Video Output

<b>Number of Outputs</b>	2
<b>Connector</b>	BNC
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V $\pm$ 0.5V
<b>Rise/Fall Time</b>	135ps nominal
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB up to 1.5GHz (typ.) > 10dB up to 3GHz (typ.)
<b>Wideband Jitter</b>	< 0.2UI

### Reference Input through RRC

<b>Number of Inputs</b>	2 on SFR18, 2 on SFR08 and 1 on SFR04
<b>Tri-level</b>	SMPTE274M, SMPTE296M 600 mVp-p nominal, 75 Ohms terminated through loop
<b>Bi-level</b>	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 1Vp-p nominal, 75 Ohms terminated through loop

### Miscellaneous

<b>Weight</b>	Approx. 250g
<b>Operating Temperature</b>	0 °C to +50 °C
<b>Dimensions</b>	137 x 296 x 20 mm (HxLxD)

### Electrical

<b>Voltage</b>	+24V to +30V
<b>Power</b>	<15 Watts