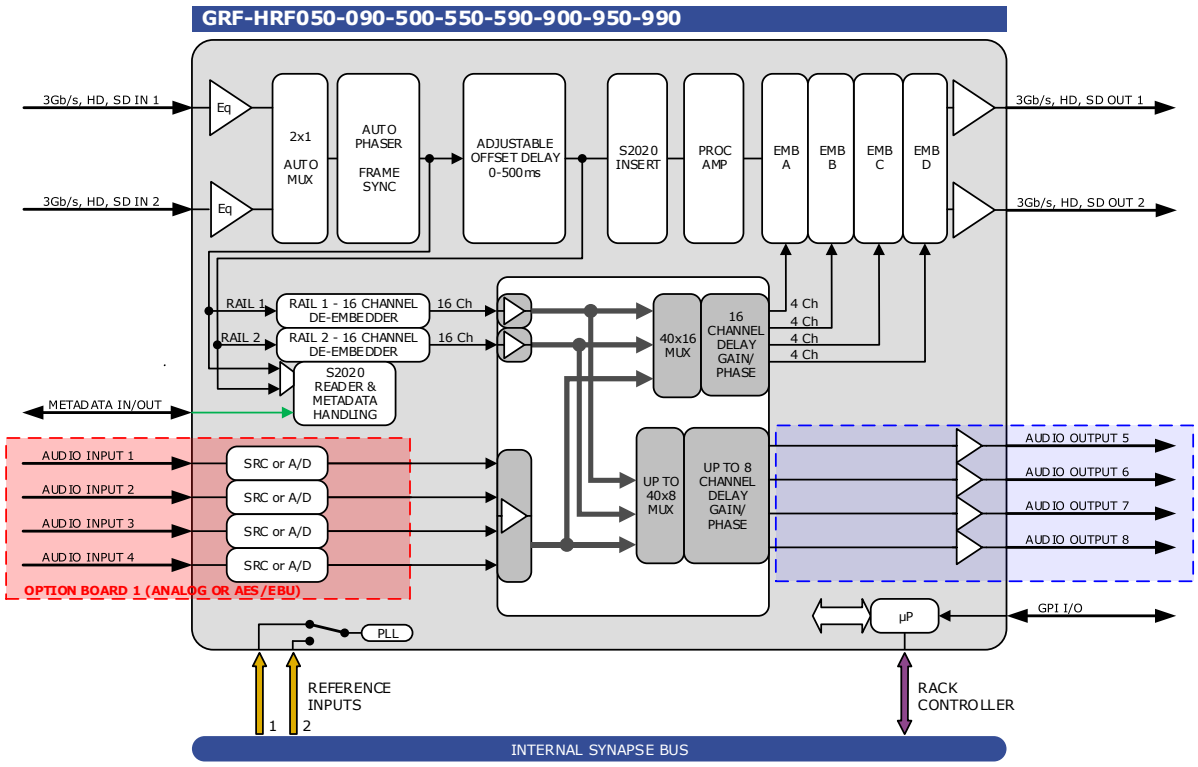
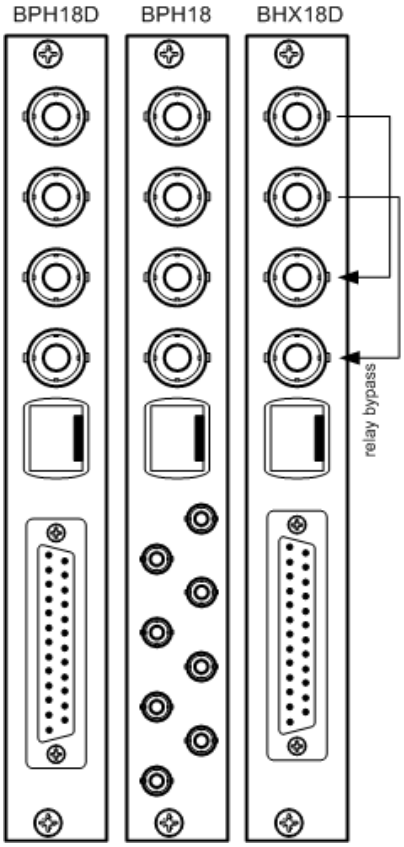
Synapse

GRF050-090-500-590-900-950-990

3Gb/s, HD, SD analog or digital audio re-embedder with audio shuffler and framesync
A Synapse® product

Block schematic & I/O panel





3Gb/s, HD, SD SDI INPUT 1
3Gb/s, HD, SD SDI INPUT 2
3Gb/s, HD, SD SDI OUT 1
3Gb/s, HD, SD SDI OUT 2
GPI AND METADATA (S2020) OUTPUT
ANALOG OR DIGITAL AUDIO INPUTS AND/OR OUTPUTS

Features

The GRFxxx are re-embedders with analog or digital audio in-outputs and a built-in framesync. Re-embedding of available embedded sources is also included (shuffling)

- 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
- Offset VIDEO delay adjustable between 0 and 050ms
- Frame sync with output phase control in Frames, Lines and pixels with respect to reference. Delay setting are stored per output format for a constant latency operation.
- 30 Frames (1080i/p), 60 frames (720p) or 125 frames (SD) delay offset per channel
- 4 Analog audio or Digital audio in and/or outputs which can be used with balanced and unbalanced systems via the BPH18D and BPH18 respectively (unbalanced outputs have a -6dB gain mismatch).
- 7 presets that configure all I/O channels. controlled by GPI or ACP (Cortex)
- S2020 metadata insertion/extraction from an external source
- Append and overwrite modes
- Audio level and phase control
- Audio offset delay up to 5000 ms
- Peak detection 0 dBFS
- Silence detection with threshold (-100 to -20dBFS) and time control (1 to 255 sec)
- Video Proc-Amp with Y, Cr, Cb controls for level and black
- Transparent for ATC time code RP188, RP196, RP215
- Locks to Tri-level, Bi-level syncs or SDI input
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)
- Optional relay bypass (BHX18 or BHX18D)

Applications

- Ingest de-embedding to analog or digital audio with shuffle function from asynchronous video sources

Ordering information

Module:

- **GRF090:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 digital audio outputs
- **GRF500:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 analog audio inputs
- **GRF900:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 digital audio inputs
- **GRF050:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 analog audio outputs
- **GRF550:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 analog audio inputs and 4 analog audio outputs
- **GRF990:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 digital audio inputs and 4 digital audio outputs
- **GRF590:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 analog audio inputs and 4 digital audio outputs
- **GRF950:** 3Gb/s, HD, SD digital audio re-embedder/shuffler/Framesync with 4 digital audio inputs and 4 analog audio outputs

Standard I/O:

- **BPH18-PANEL:** I/O panel for GRFxxx with unbalanced audio in and outputs
- **BPH18D-PANEL:** I/O panel for GRFxxx with balanced audio in and outputs

Relay bypass I/O:

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

Specifications

Serial Video Input

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

Serial Video Output

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

Analog Audio output

Connector	25 pins female sub-D (balanced) or DIN1.0/2.3 coax (unbalanced)
Standard	High impedance 24 bit A/D converter
Number of outputs	4
Resolution	24 bits
Minimum Input/Output Delay	2 ms
Impedance	10 kOhm
Level	Up to +24dBu for 0dBFS embedding, switchable to +18, +15 and +12dBu

Reference Input through RRC

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

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	<15 Watts