GDS100/110-HDS100/110

3Gb/s, HD, SD down converter/synchronizer with optional audio shuffler

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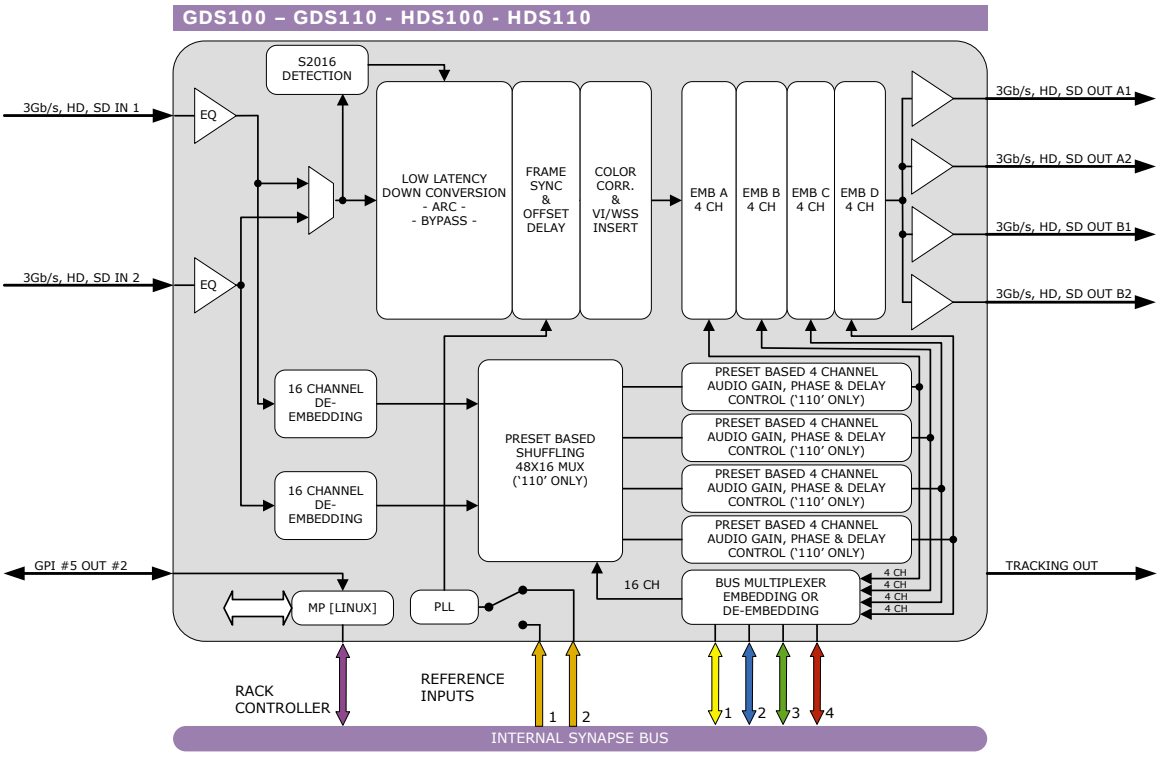
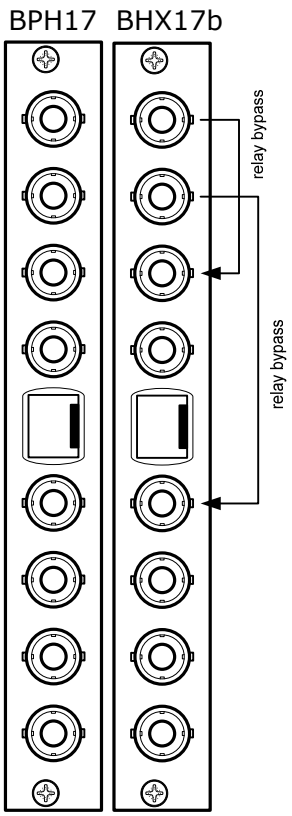
Block schematic & I/O panel





3Gb/s, HD, SD INPUT 1 (OPTIONAL FIBER INPUT)
3Gb/s, HD, SD INPUT 2 (OPTIONAL FIBER INPUT)
SD OUTPUT 1 (OPTIONAL FIBER OUTPUT)
SD OUTPUT 2
GPI INPUT/OUTPUT, TRACKING OUTPUT
SD OUTPUT 3
SD OUTPUT 4

Features

The GDS100/110 and HDS100/110 are low latency down converters with 16 channel audio transparency.

The GDS100/110 is compatible with 270Mb/s, 1.5Gb/s and 3Gb/s for full 1080p/50 or 1080p/59.94 use. The HDS100/110 are compatible with SD-SDI (270Mb/s) and HD-SDI (1.5Gb/s) and can be future upgraded to 3Gb/s compatibility

- 2 SDI inputs
- Low latency conversion process (as low as 1 field in controlled timing environment)
- Compatible with the following input formats (auto selecting):
  - 1080p/59.94 (2GS only)
  - 1080p/50 (2GS only)
  - 1080i/59.94
  - 1080i/50
  - 1080p/23.98
  - 1080psf/23.98
  - 720p/59.94
  - 720p/50
  - 720p/23.98
  - SD525
  - SD625
- Output standards (one standard can be chosen for both outputs simultaneously): SD525, SD625
- Two individual conversion paths. The inputs can be different standards SD or HD and unlocked to the single output format.
- 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
- ARC modes contain:
  - Anamorphic
  - Center Cut
  - V-Zoom
  - LBox-16:9
  - LBox-14:9
  - PBox-4:3
  - PBox-14:9
  - Variable H and V (50—200%)
- 16 Free individual programmable presets banks for:
  - Down converter ARC A and B
  - Transparent ARC A and B
  - VI/WSS/S2016 insertion A and B
  - Embedder shuffling/Gain/Phase (-110 only)
- 5 GPI inputs assignable to various preset banks
- ARC triggers by VI, WSS, WSSext and S2016 (AFD)
- Transparent for 16 channels of embedded audio
- Embedded domain cross input audio shuffling, gain and phase control (110 only)
- Embedding and de-embedding through synapse bus
- Video proc-amp (Y and C control)
- Color corrector (RGB and total gain, RGB and total black)
- Hue control for NTSC inputs
- Locks to Tri-level, Bi-level or SDI input
- OP47 to WST cross conversion
- Timecode cross conversion
- Auxiliary timecode input, allowing for 2 separate timecodes
- CC-708 to CC-608 conversion
- 6 Line Vertical Ancillary Blanking transparency in transparent mode
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Complementary cards:

- DAC20, DAC24, DAS24, DIO48, ADC20, ADC24, DIO24, DLA44, DLA43

Conversion abilities

The GDS-HDS100/110 can handle the following conversions:

	CONVERSION	Output										
		1080psf23.97	1080p23.97	1080p50*	1080p59.94*	1080i59.94	1080i50	720p59.94	720p50	720p23.98	480i59.94(525)	576i50(625)
SDI Input	1080psf23.97	x									x	
	1080p23.97		x								x	
	1080p50*			x								x
	1080p59.94*				x						x	
	1080i59.94					x					x	
	1080i50						x					x
	720p59.94							x			x	
	720p50								x			x
	720p23.98									x	x	
	480i59.94(525)										x	
	576i50(625)											x
CVBS	480i59.94(NTSC)										x	
	576i50(PAL)											x

* = GDS models only

Applications

Transmission output down conversion with backup input

Ordering information

Module:

- **GDS100:** 3Gb/s, HD, SD down converter
- **GDS110:** 3Gb/s, HD, SD down converter with audio shuffler proc-amp
- **HDS100:** HD, SD down converter*
- **HDS110:** HD, SD down converter with audio shuffler proc-amp*

Standard I/O:

- **BPH17_GDSxxx:** I/O-panel for G-HDS100/110

Relay bypass I/O

- **BHX17b_GDSxxx:** I/O-panel for G-HDS100/110 with relay bypass

Fiber outputs:

- **BPH17T_FC/PC_GDSxxx**: I/O panel for G-HDS100/110 with one fiber transmitter on FC/PC
- **BPH17T_SC_GDSxxx**: I/O panel for G-HDS100/110 with one fiber transmitter on SC

Fiber inputs:

- **BPH17R2_FC/PC_GDSxxx**: I/O panel for G-HDS100/110 with two fiber receivers on FC/PC
- **BPH17R2_SC_GDSxxx**: I/O panel for G-HDS100/110 with two fiber receivers on SC

For other fiber options please contact AXON

* Upgradable to 3Gb/s

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	4
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

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. 450g
Operating Temperature	0 °C to +40 °C
Dimensions	137 x 296 x 20 mm (HxWxD)

Electrical

Voltage	+24V to +30V
Power	<17 Watts