



Synapse

GDV080/090

HDV080/090

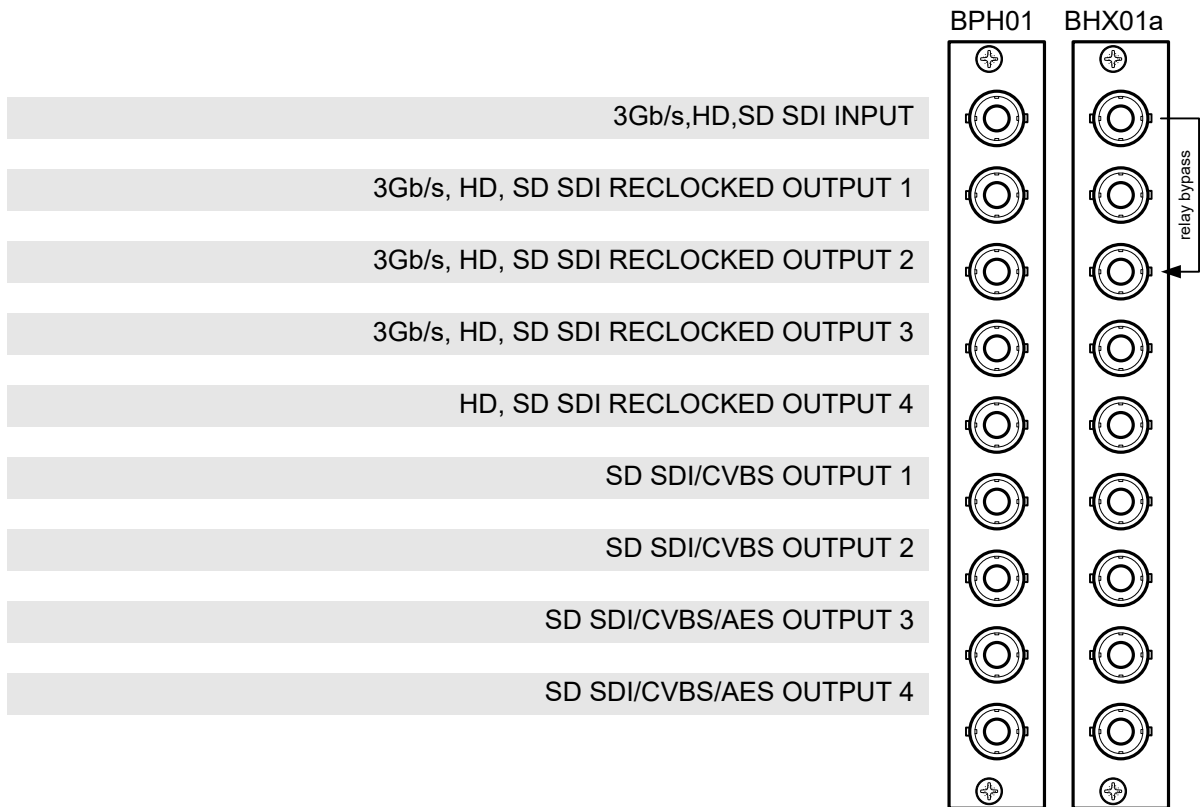
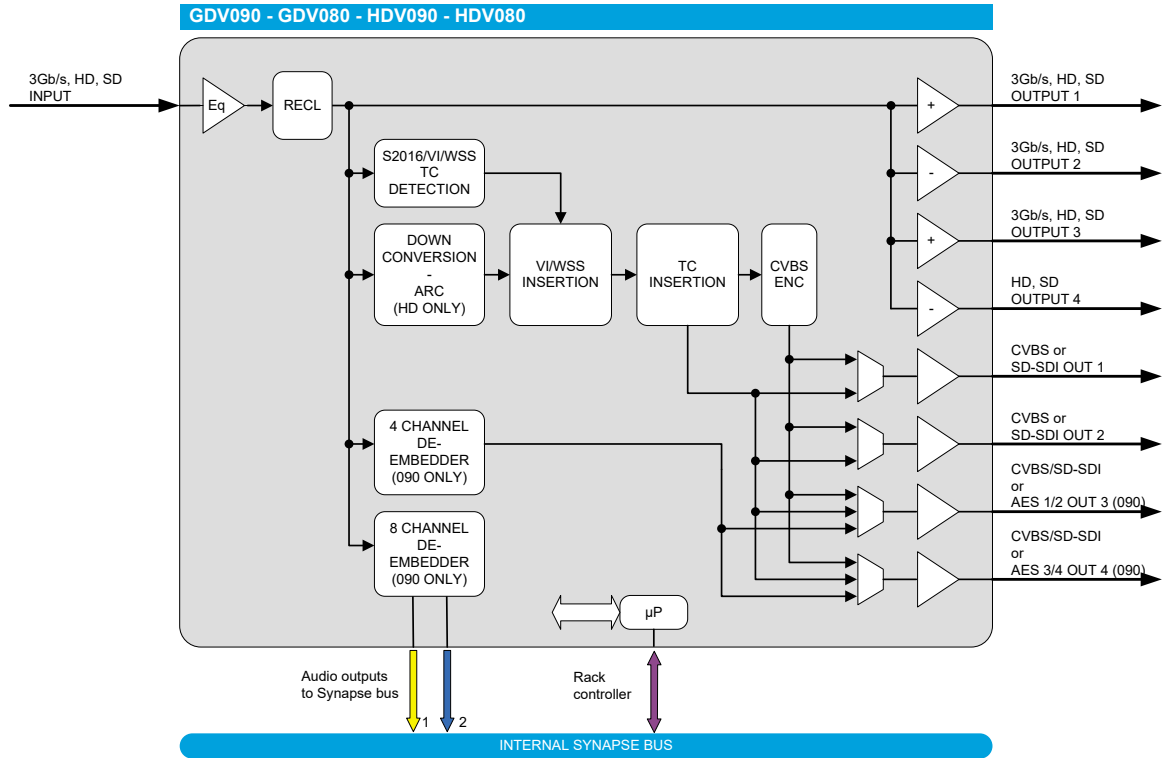
Monitoring distribution amplifier with down converted SD or analog video outputs and optional audio de-embedder

A Synapse® product



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Block schematic & I/O panel



Features

The G-HDV090/80 are 3Gb/s - HD – SD SDI distribution amplifiers with a built-in 3Gb/s, HD SDI to SD SDI or composite down converter. The G-HDV090 is capable of de-embedding 8 channels audio into 2 groups on the bus. The G-HDV090 is also capable of de-embedding 4 channels audio in two AES channels on the back panel. This card acts as a master-card. It is an audio extractor that outputs 2 x 4 channels ADD-ON audio signals via the local bus to two ADD-ON cards.

- 1 auto-detect 3Gb/HD/SD SDI input
- 4 reclocked HD/SD SDI outputs or 3 3Gb outputs
- 4 individually switchable down converted video outputs. User can choose from CVBS or SD SDI or AES audio (lowest 2 BNCs on G-HDV090 only)
- Supports 16:9 letterbox, 14:9 letterbox, 4:3 (anamorphic and centre crop)
- HD to SD color space conversion (ITU709 and ITU601)
- Reads S2016 and converts to WWS/VI preset based (3Gb/s and HD)
- Copies WSS/VI into SD output (SD)
- Reads ATC data and transports TC data from 3Gb/s, HD and SD to SD SDI
- 2 groups de-embedding on bus (G-HDV090)
- Selectable NTSC setup removal
- Y level adjustable for SMPTE
- Locks to SDI input
- Full control and status monitoring through the front panel of the SFR04/08/18 frame and the Ethernet port (ACP)

Complementary cards:

- DAC20, DAS24, DIO48, DIO24

Conversion abilities

The G-HDV080/090 can handle the following conversions:

CONVERSION		Output											
		1080p29.97	1080p25	1080p23.97	1035i59.97	1080i59.94	1080i50	720p59.94	720p50	720p29.97	720p25	720p23.98	480i59.94(525)
Input	1080p29.97											x	
	1080p25												x
	1080p23.97											x	
	1035i59.97											x	
	1080i59.94											x	
	1080i50												x
	720p59.94											x	
	720p50												x
	720p29.97											x	
	720p25												x
	720p23.98											x	
	480i59.94(525)											x	
576i50(625)												x	

Applications

- Generic 3Gb/s, HD, SDI Distribution with preview output
- Pre-routing down converted DA or SD with monitoring output
- De-embedding of two groups on the bus (G-HDV090 only)
- De-embedding of two AES channels on back panel (G-HDV090 only)

Ordering information

Module:

- **GDV080:** 3G/HD/SD SDI Monitoring distribution amplifier with down converted SD or analog video outputs
- **GDV090:** 3G/HD/SD SDI Monitoring distribution amplifier with down converted SD or analog video outputs and digital audio outputs
- **HDV080:** HD/SD SDI Monitoring distribution amplifier with down converted SD or analog video outputs
- **HDV090:** HD/SD SDI Monitoring distribution amplifier with down converted SD or analog video outputs and digital audio outputs

Standard I/O:

- **BPH01_GDVxxx:** I/O panel for G-HDV080/090

Relay bypass I/O:

- **BHX01a_GDVxxx:** I/O panel for I/O panel for G-HDV080/090 with relay bypass

Specifications

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, 1080p/23.98
Number of inputs	1
Equalization	Automatic to 100m @ 1.5Gb/s with Belden 1694A or equivalent cable.

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, 1080p/23.98
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 (< 1UI by 10Hz HPF in SD)

Down converted video outputs

Number of outputs	4
Connector	BNC
Output type	Analog video or SD SDI
Delay	4ms in 1080p/59.94, 1080p/50, 1080i/59.94, 1080i/50, 720p/59.94, 720p/50 30ms in p24 and p25 modes (external audio delay needed)

Analog video output

Standard	PAL (ITU624-4) or NTSC (SMPTE 170M) and PAL-M
Signal level	1V nominal
Impedance	75 Ω
Return loss	> 35dB to 10MHz
Frequency response	0.5dB to 4.5 MHz
Differential gain	< 0.6%
Differential phase	< 0.7°
SNR	> 75dB

SD Serial video output

Standard	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s)
Signal level	800mV nominal
DC Offset	0V \pm 0.5V
Rise/Fall time	520ps nominal
Overshoot	< 10% of amplitude
Return loss	> 18dB up to 270MHz
Jitter	< 600ps 10Hz HPF