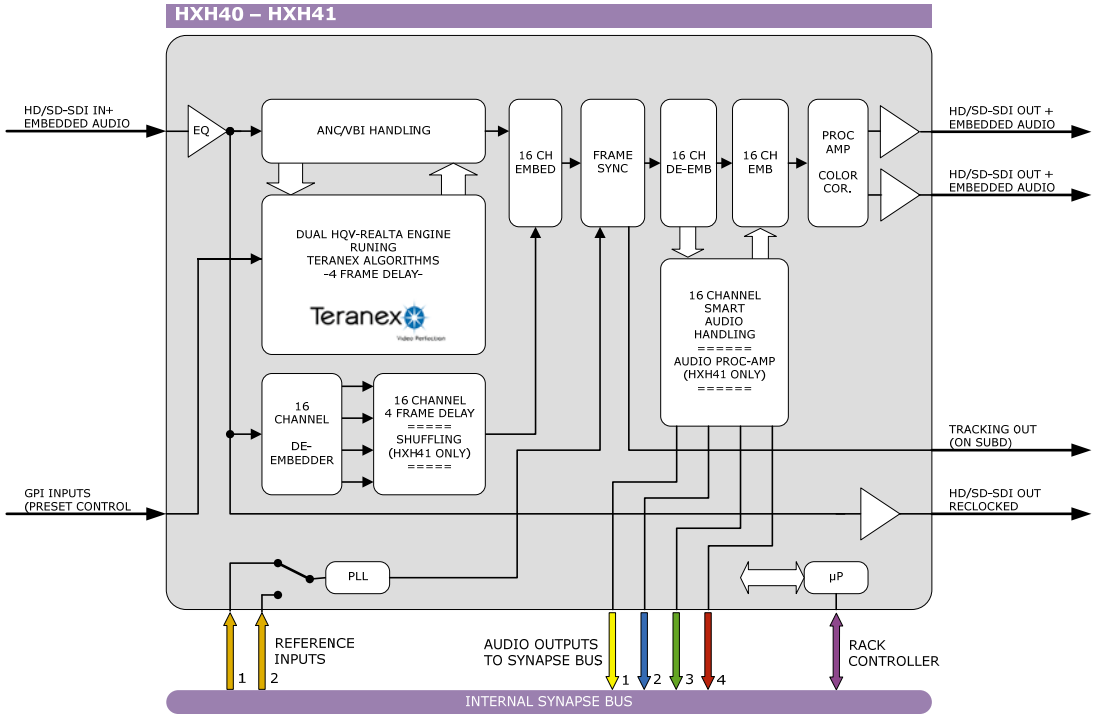
HXH40 / 41

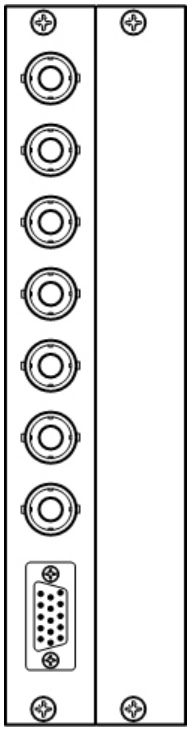
High performance HD up / down / cross & standards converter

A Synapse® product

Block Schematic & I/O panel



BPH03+BPL00



HD/SD-SDI INPUT (OPTIONAL FIBER INPUT)

HD/SD-SDI RECLOCKED OUTPUT

HD/SD-SDI PROCESSED OUTPUT 1

HD/SD-SDI PROCESSED OUTPUT 2 (OPTIONAL FIBER OUTPUT)

GPI INPUT AND TRACKING OUTPUT

The HXH40/41 is a dual slot card taking up 2 card positions in a frame.
For fiber connectivity see www.axon.tv

Features

The HXH40/41 is a Linear SD/HD Standards converter, Up converter, Down Converter and Cross converter based on the advanced Teranex® algorithms. This high performance dual slot processing module is the pinnacle of the huge range of SD and HD conversion modules in the Synapse range. HD and SD standard conversion is a process of converting (mostly US-based) 59.94 frames/fields per second video stream is converted to 50 frames/fields per second and vice versa for 1080i, 720p, 576i, 480i.

The advanced algorithms are running on two HQV Realta chips supplied by Silicon Optix. This gives the board 2 Trillion operations per second processing power, and makes it the most powerful modular processing card at the time of its introduction.

- HD/SD-SDI input
- 1 reclocked output
- 2 processed outputs
- Frame sync with built-in 16 channel tracking audio delay
- Audio offset delay -60ms to +1240ms
- Full audio shuffling of all 16 channels (HXH41 only)
- Audio gain and phase control of all 16 channels
- GPI preset control for audio shuffling (HXH41 only)
- All audio is present on ADD-ON bus for monitoring
- Transparent to Closed Captioning
- 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

Conversion abilities

The HXH40 and HXH41 can handle the following conversions:

	CONVERSION	Output					
		1080i50	1080i59.94	720p50	720p59.94	576i50(625)	480i59.94(525)
Input	1080i50	x	x	x	x	x	x
	1080i59.94	x	x	x	x	x	x
	720p50	x	x	x	x	x	x
	720p59.94	x	x	x	x	x	x
	576i50(625)	x	x	x	x	x	x
	480i59.94(525)	x	x	x	x	x	x

Applications

The HXH40/41 is the choice for all HD format conversions in a dynamically changing environment.

- High quality HD standards-conversion
- Ultra High quality Up, Down and Cross conversion
- Conversion with preset audio shuffling (HXH41 only)
- Mobile truck applications
- DVD mastering and authoring

Ordering information

Module:

- **HXH40:** High performance HD standards converter
- **HXH41:** High performance up converter with full 16 channels of audio swapping

Standard I/O:

- **BPH03_HXH40:** I/O-panel for HSU20
- **BPH03_HXH41:** I/O-panel for HXH41

Fiber outputs:

- **BPH03T_FC/PC_HXH40:** I/O-panel for HXH40 with fiber transmitter on FC/PC
- **BPH03T_SC_HXH40:** I/O-panel for HXH40 with fiber transmitter on SC
- **BPH03T_FC/PC_HXH41:** I/O-panel for HXH41 with fiber transmitter on FC/PC
- **BPH03T_SC_HXH41:** I/O-panel for HXH41 with fiber transmitter on SC

Fiber inputs:

- **BPH03R_FC/PC_HXH40:** I/O-panel for HXH40 with fiber receiver on FC/PC
- **BPH03R_SC_HXH40:** I/O-panel for HXH40 with fiber receiver on SC
- **BPH03R_FC/PC_HXH41:** I/O-panel for HXH41 with fiber receiver on FC/PC
- **BPH03R_SC_HXH41:** I/O-panel for HXH41 with fiber receiver on SC

Specifications

SD/HD 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

Reference Video Input

Standard	PAL (ITU624-4), NTSC (SMPTE 170M)
Number of Inputs	2 on SFR18, 2 on SFR08, 1 on SFR04
Connector	BNC
Signal Level	1V nominal
Impedance	High impedance, with loop for termination
Return Loss	> 25dB to 10MHz

Miscellaneous

Weight	Approx. 500g
Operating Temperature	0 °C to +50 °C
Dimensions	137 x 296 x 40 mm (HxWxD) = DUAL SLOT

Electrical

Voltage	+24V to +30V
Power	<36 Watts (dual slot)