U4D100

4K (3840x2160) Ultra HD 4 wire to 1080p or 1080i down converter

A Synapse® product

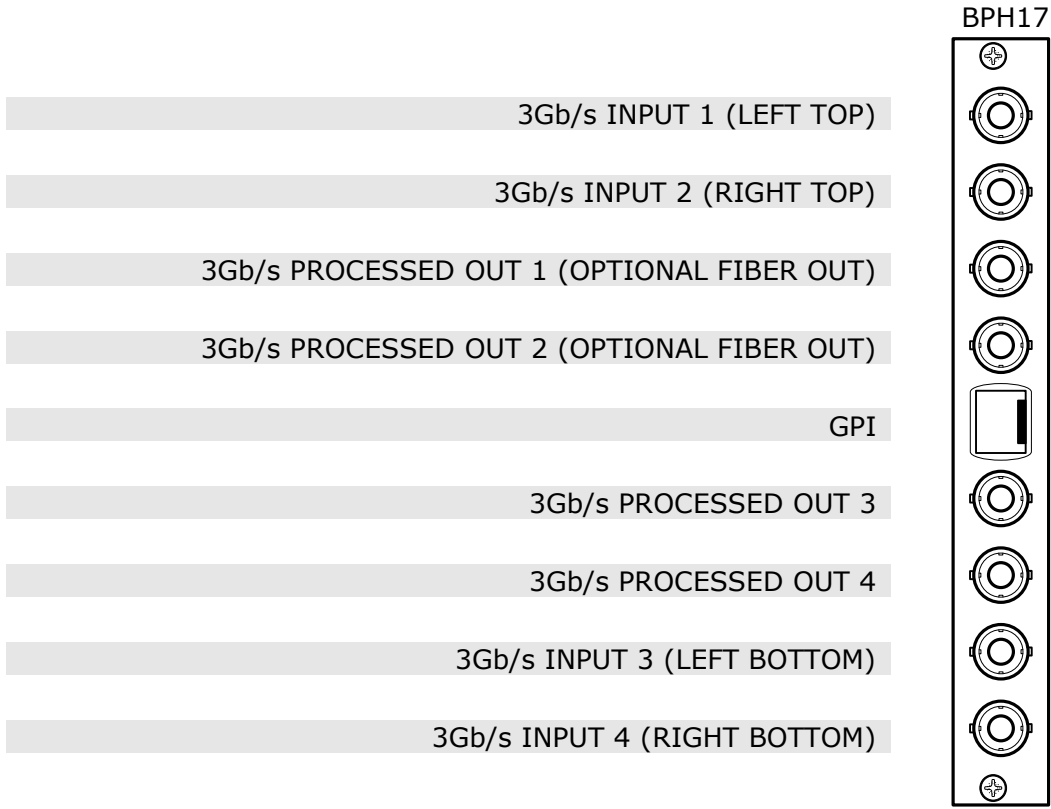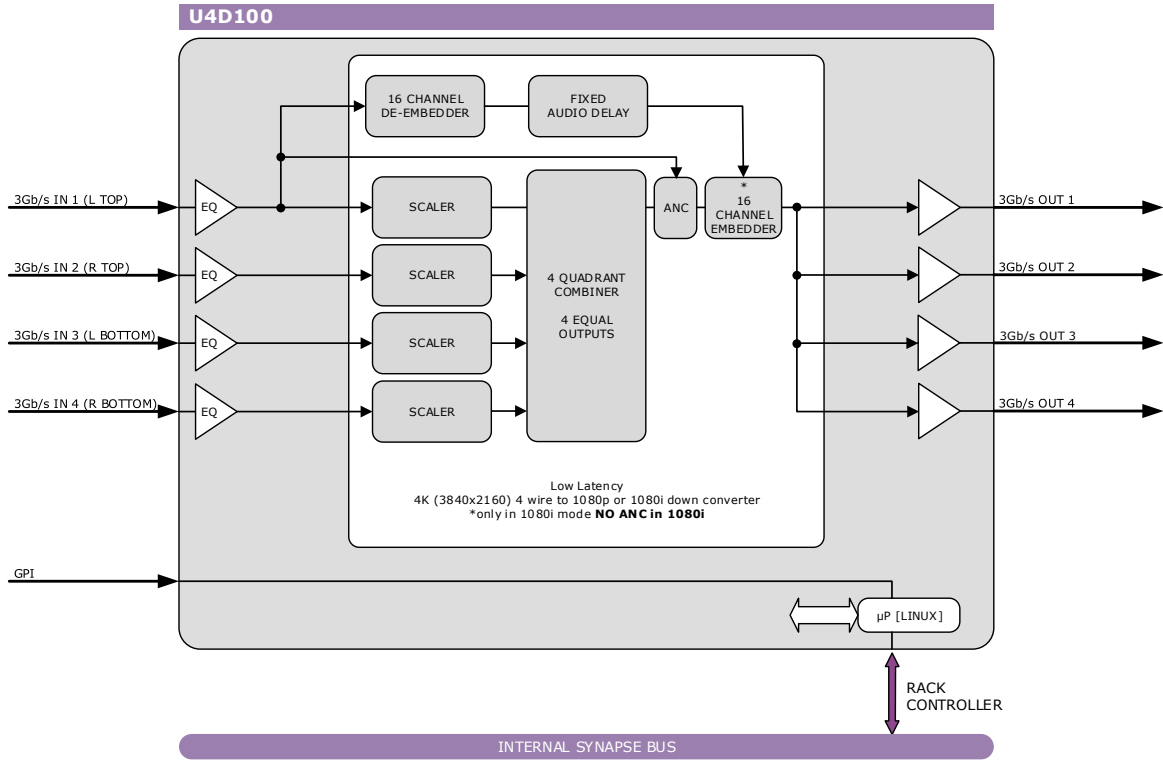## Block schematic & I/O panel

U4D100

16 CHANNEL DE-EMBEDDER	FIXED AUDIO DELAY

3Gb/s IN 1 (L TOP) — EQ — SCALER

3Gb/s IN 2 (R TOP) — EQ — SCALER

3Gb/s IN 3 (L BOTTOM) — EQ — SCALER

3Gb/s IN 4 (R BOTTOM) — EQ — SCALER

4 QUADRANT COMBINER

4 EQUAL OUTPUTS

ANC

* 16 CHANNEL EMBEDDER

3Gb/s OUT 1
3Gb/s OUT 2
3Gb/s OUT 3
3Gb/s OUT 4

Low Latency
4K (3840x2160) 4 wire to 1080p or 1080i down converter
*only in 1080i mode **NO ANC in 1080i**

GPI

µP [LINUX]

RACK CONTROLLER

INTERNAL SYNAPSE BUS

BPH17

3Gb/s INPUT 1 (LEFT TOP)

3Gb/s INPUT 2 (RIGHT TOP)

3Gb/s PROCESSED OUT 1 (OPTIONAL FIBER OUT)

3Gb/s PROCESSED OUT 2 (OPTIONAL FIBER OUT)

GPI

3Gb/s PROCESSED OUT 3

3Gb/s PROCESSED OUT 4

3Gb/s INPUT 3 (LEFT BOTTOM)

3Gb/s INPUT 4 (RIGHT BOTTOM)

Features

The U4D100 is a 4K (3840x2180), 4 wire, to 1080p down-converter.
The low latency unit combines and filters the four quadrants into a 1080p (1920x1080) signal. For the 1080p60 and 1080p50 standards the card is completely transparent for all the ANC data from input 1. For the other standards the card must be locked to input and is only transparent for 2 groups of audio.

- Four wire 1080p 50 or 59.94 input (level B compliant)4 1080p 50 or 59.94 input (level B compliant)
- 4 outputs (equal signals)
- One 1080p50, 1080p59.94 on all 4 outputs
- Or 1080i50, 1080i59.94, 1080p25 or 1080p29.97 signal on all 4 outputs with 4 groups of audio and **no ANC transparency**
- Low Latency (1 1080p Frame 20ms @ 50Hz, 16.7ms @ 59.94 Hz)
- 4K 4 wire (3840 x 2160)
- Compatible with the following input formats (auto selecting)
    - 1080p/59.94
    - 1080p/50
- The BPH17 can optionally be fitted with up to two fiber I/O modules (outputs)
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Applications

- Down conversion from 4K production sets

Ordering information

Module:
- ▪ **U4D100:** 4k (4 wire) Down converter

Standard I/O:
- ▪ **BPH17_U4U100:** I/O-panel for U4X100

Fiber outputs:
- ▪ **BPH17T_FC/PC_U4D100:** I/O-panel for U4D100 with one fiber transmitter on FC/PC
- ▪ **BPH17T_SC_U4D100:** I/O-panel for U4D100 with one fiber transmitter on SC
- ▪ **BPH17T2_FC/PC_U4D100:** I/O-panel for U4D100 with two fiber transmitters on FC/PC
- ▪ **BPH17T2_SC_U4D100:** I/O-panel for U4D100 with two fiber transmitters on SC

Specifications

Serial Video Input

Standard	3Gb/s SDI:SMPTE424/5 (Level B)
Number of Inputs	1
Connector	BNC
Equalization	Typical maximum equalized length of Belden 1694A cable: 90m at 2.97Gb/s, 120m at 1.485Gb/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

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	<15 Watts