



## UDR416

**4K Distribution Amplifier with single wire and four-wire converter**

**A Synapse® product**

*Synapse*

**4K**  
ULTRAHD  
3840 x 2160

**3** TRIPLE RATE  
GB/s, HD, SD

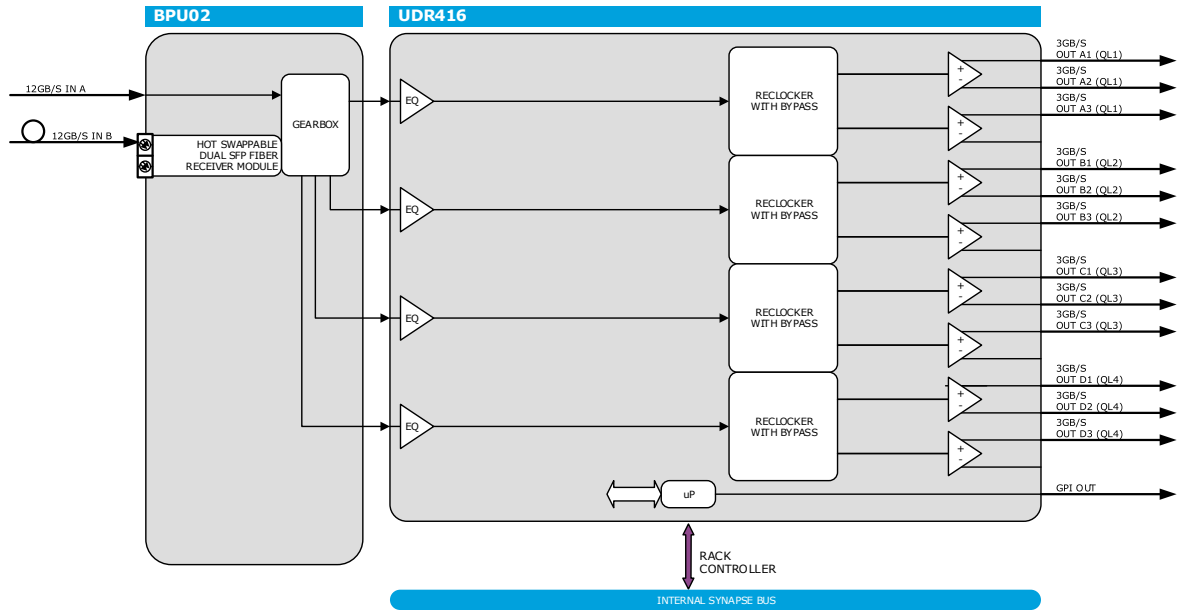
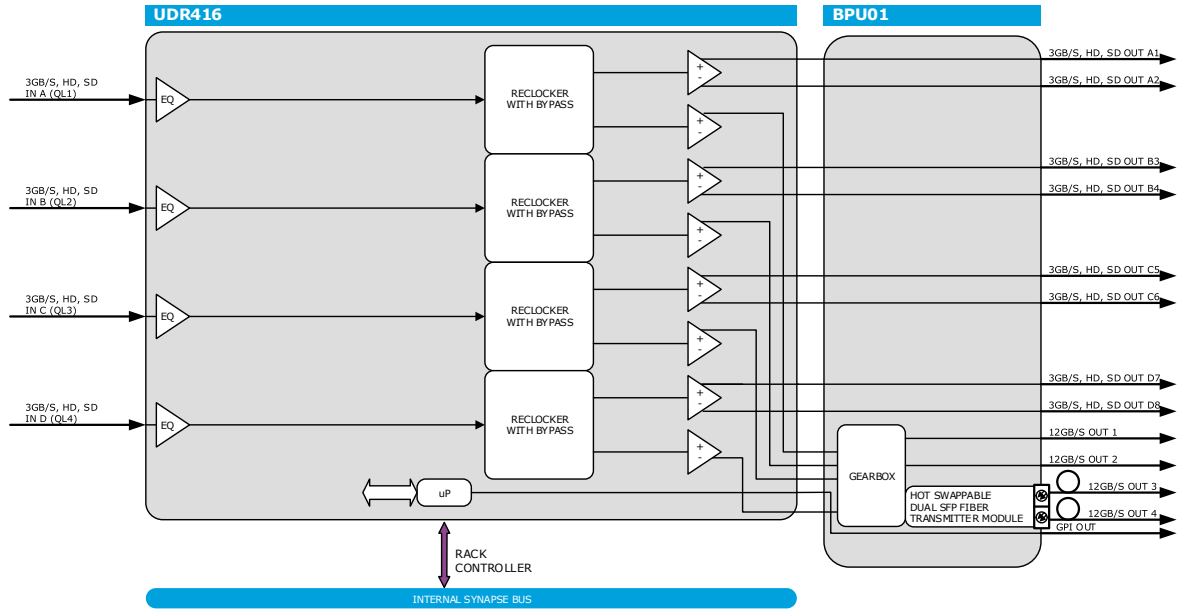
DESIGNED FOR  
**ASI/DVB**

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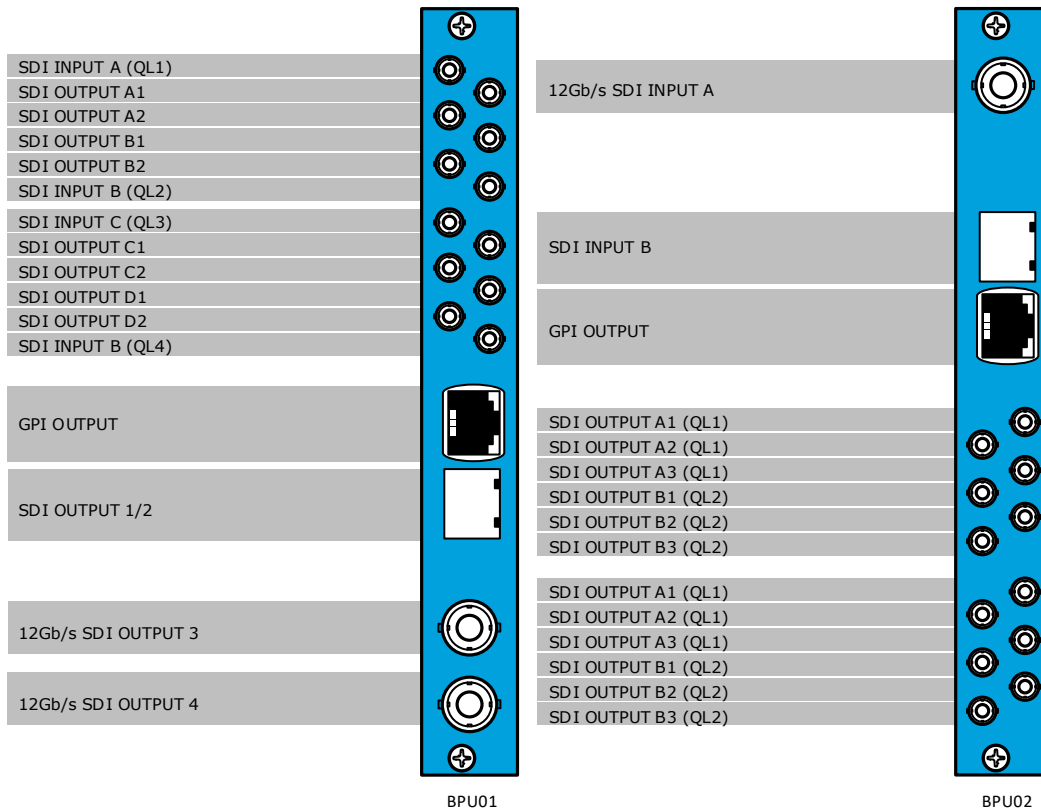
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Block Schematic & I/O panel



## Digital Video Distribution



## Features

The functionality of the UDR416 is twofold. Firstly, it is a four channel 3Gb/s, HD, SD SDI reclocking distribution amplifier. Secondly, the UDR416 is a 4K quad 3Gb/s link to single 12Gb/s link converter and back depending on the back panel.

- Conversions between 4-wire 4k and single link 4k 2SI SDI signals
- BPU01 for 4-wire 3Gb/s to 12Gb/s
- BPU02 for 12Gb/s to 4 -wire 3Gb/s
- With BPU01 it is a 4 channel DA with 8 outputs and dual 12Gb/s outputs on BNC or SFP
- With BPU02 it is a 4 channel DA with 12 outputs (4x3)
- GPI controlled input swapping and status monitoring
- Compatible with SD SDI 270 Mbit/s and HD SDI 1485 Mbit/s with BPU01 only
- Compatible with 3Gb/s SDI 2970 Mbit/s and 12Gb/s SDI (SMPTE2082)
- Compatible with ASI/DVB on the positive outputs only (see block schematic)
- Bypass function of the reclocker for non-standard frequencies
- Optional 12Gb/s fiber I/O modules

### Applications

- 4K generic wideband DA
- 4k 4-wire to 12Gb/s converter with BPU01 back panel
- 12Gb/s to 4 –wire 4K converter with BPU02 back panel
- Quad channel generic wideband 3Gb/s DA

### Ordering information

#### Module:

- **UDR416:** 4K, 3Gb/s, HD, SD-SDI quad reclocking distribution amplifiers and converter

#### Standard I/O:

- **BPU01\_UDR416:** I/O-panel for UDR416 with 4-wire 4K to 12Gb/s conversion
- **BPU02\_UDR416:** I/O-panel for UDR416 with 12Gb/s to 4 wire 4K conversion

#### SFP I/O:

- **BPU01\_FIBER\_T2\_UDR416:** I/O-panel for UDR416 with fiber SFP module output options
- **BPU02\_FIBER\_R1\_UDR416:** I/O-panel for UDR416 with fiber SFP module input options
- **BPU01\_SDI\_T2\_UDR416:** I/O-panel for UDR416 with SDI SFP module output options
- **BPU02\_SDI\_R1\_UDR416:** I/O-panel for UDR416 with SDI SFP module input options

### SFP Modules

#### BPU01 SFP Transmit Modules:

LLT94710015	SFP 12Gb/s Optical Dual Transmitter	EB12LC2T-MNR-13F
LLT94710017	SFP 12Gb/s SDI Transmitter HDBNC	EB12HD2T-MNR

#### BPU02 Receive Modules:

LLT94710016	SFP 12Gb/s Optical receiver	EB12LC1R-MNR-P
LLT94710018	SFP 12Gb/s SDI Receiver HDBNC	EB12HD1R-MNR

## Specifications

### Video

<b>Standard</b>	12Gb/s, 3Gb/s ,HD and SD SDI: SMPTE425-5/6, SMPTE424, SMPTE259M, SMPTE 292M
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### Serial Video Input BPU01

<b>Number of Inputs</b>	4 on BPU01 and 2 on BPU02
<b>Connector</b>	DIN1.0/2.3, BNC, Fiber LC
<b>Return Loss</b>	> 15dB up to 3GHz, 12Gb/s tbd

### Serial Video Output BPU01

<b>Number of Outputs</b>	8 on 3Gb/s, 1 on 12Gb/s
<b>Connector 3Gb/s, HD, SD</b>	DIN1.0/2.3
<b>Connector 12Gb/s</b>	BNC, fiber LC
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V ±0.5V
<b>Rise/Fall Time</b>	135ps nominal
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB up to 1.5GHz (typ.) > 10dB up to 3GHz (typ.) > tbd on 12Gb/s
<b>Wideband Jitter</b>	< 0.2UI, tbd on 12Gb/s

### Serial Video Output BPU02

<b>Number of Outputs</b>	12 on 3Gb/s
<b>Connector</b>	DIN1.0/2.3
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V ±0.5V
<b>Rise/Fall Time</b>	135ps nominal
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB up to 1.5GHz (typ.) > 10dB up to 3GHz (typ.)
<b>Wideband Jitter</b>	< 0.2UI

### GPI Output

<b>Number of Outputs</b>	4
<b>Connector</b>	RJ45
<b>Type</b>	>2.5 Volts High Level, <0.8V Low Level

### Miscellaneous

<b>Weight</b>	Approx. 250g
<b>Operating Temperature</b>	0 °C to +50 °C
<b>Dimensions</b>	137 x 296 x 20 mm (HxWxD)

### Electrical

<b>Voltage</b>	+24V to +30V
<b>Power</b>	<6 Watts

