



# Synapse

## INS400

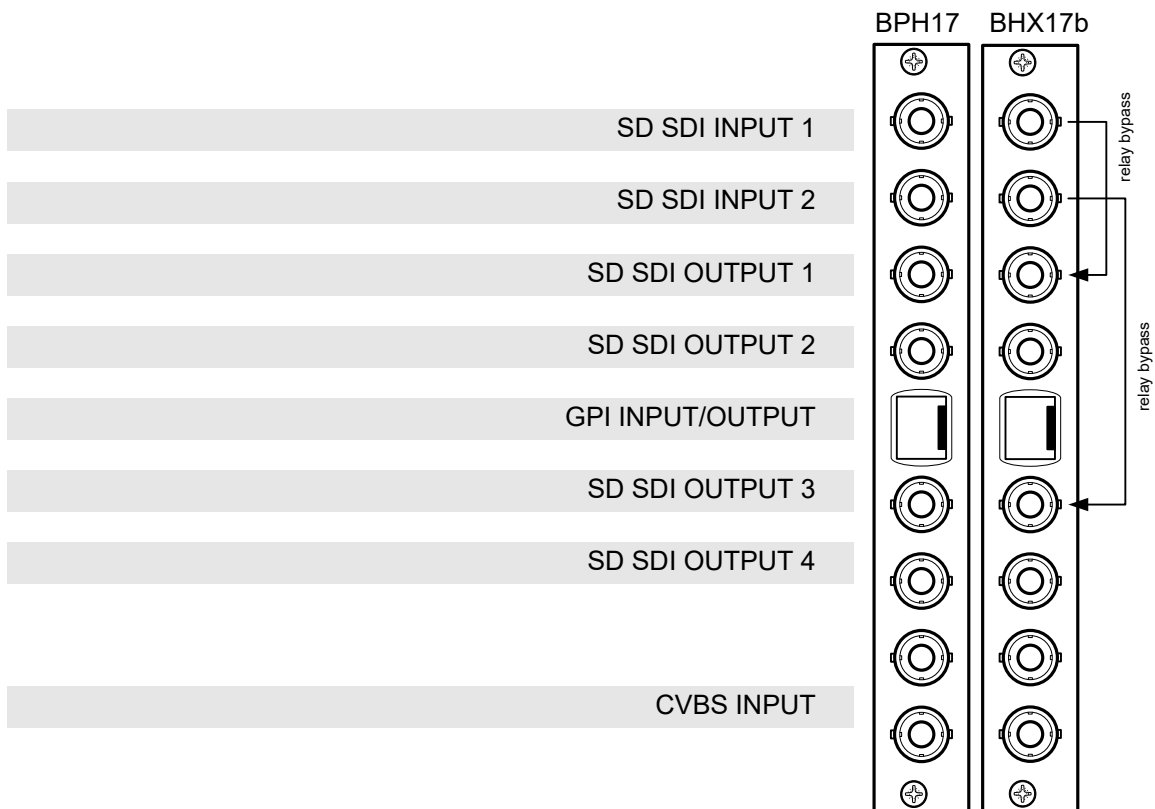
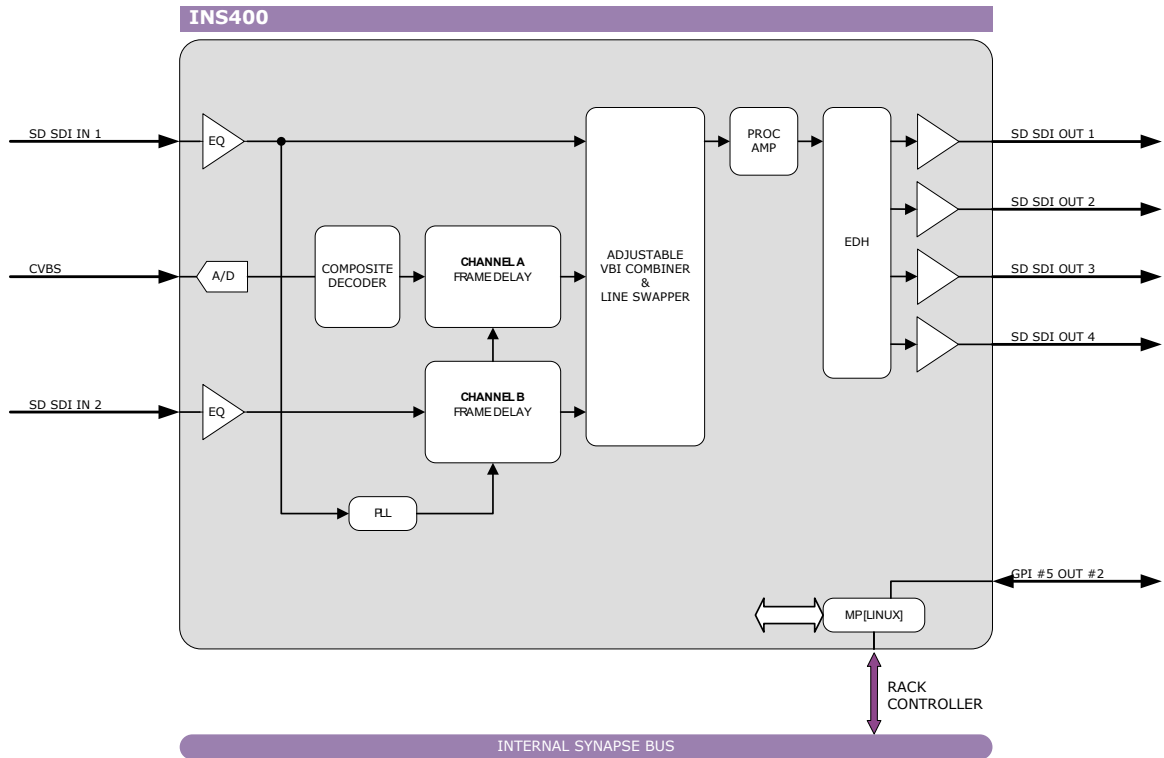
VBI line inserter/swapper (data bridge) for composite and SD-SDI

A Synapse® product



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Block schematic & I/O panel



## Features

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The INS400 is a vertical interval (Vertical Blanking) inserter with composite and SDI inputs and an SDI input and output. VBI (for example Teletext) information present in the composite or SDI signal can be inserted into the main SDI signal. The INS400 can insert any composite or SDI line between line 7 – 22 and line 320 – 335 from both composite and SDI domain into any line between line 7 – 22 and line 320 – 335 in the SDI domain. For example, line 7 of the CVBS input can be inserted into line 335 of the SDI signal.

This line exchange is transparent to embedded audio that might be present in the SDI domain.

- Takes any line between 7 and 22 of Field 1 and any line between line 320 and 335 of field 2 of the composite or SDI input and inserts it any line between 7 and 22 of Field 1 and any line between line 320 and 335 of field 2 of the SDI domain
- Lines can be swapped, blanked or set transparent.
- Built-in proc-amp
- 2 processed outputs
- Locks to SDI input
- Full control and status monitoring through the front panel of the SFR08/SFR18 frame and the Ethernet port (ACP)

## Applications

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- Generic data bridge application where composite domain vertical blanking lines are inserted in the SDI domain

## Ordering information

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**Module:**

- **INS400:** VBI line inserter/swapper (data bridge)

**Standard I/O:**

- **BPH17\_INS400:** I/O panel for INS400

**Relay bypass I/O:**

- **BHX17b\_INS400:** I/O-panel for INS400 with relay bypass

## Specifications

### Video Input (CVBS)

<b>Standard</b>	PAL (ITU624-4), NTSC (SMPTE 170M)
<b>Number of Inputs</b>	1
<b>Impedance</b>	75 Ohms
<b>Return Loss</b>	> 35dB up to 10MHz
<b>Frequency Response</b>	< $\pm 0.25$ dB (100KHz to 4.2MHz)
<b>Differential Gain</b>	< $\pm 0.5$ % typical
<b>Differential Phase</b>	< $\pm 0.2^\circ$ typical
<b>Noise Floor</b>	< -57dB RMS (black video, 15KHz to 5MHz)
<b>C/L Gain</b>	< $\pm 0.5$ %
<b>C/L Delay</b>	< $\pm 9$ ns
<b>Minimum Delay</b>	3 lines

### Serial Video Input (SDI)

<b>Standard</b>	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio
<b>Number of Inputs</b>	1
<b>Equalization</b>	Automatic to 300m @ 270Mb/s with Belden 1694A or equivalent cable
<b>Return Loss</b>	> 15dB up to 270MHz

### Serial Video Output

<b>Standard</b>	SMPTE 259M 525/59.95 or 625/50
<b>Number of Outputs</b>	2
<b>Connector</b>	BNC
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V $\pm 0.5$ V
<b>Rise/Fall Time</b>	900ps nominal
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB to 270MHz
<b>Jitter</b>	< 0.1UI

### 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>	<9 Watts