



**SFS12/22**

**SD multi functional frame/line synchronizer with de-embedding function (12: 2 groups, 22: 4 groups)**

**A Synapse® product**

*Synapse*

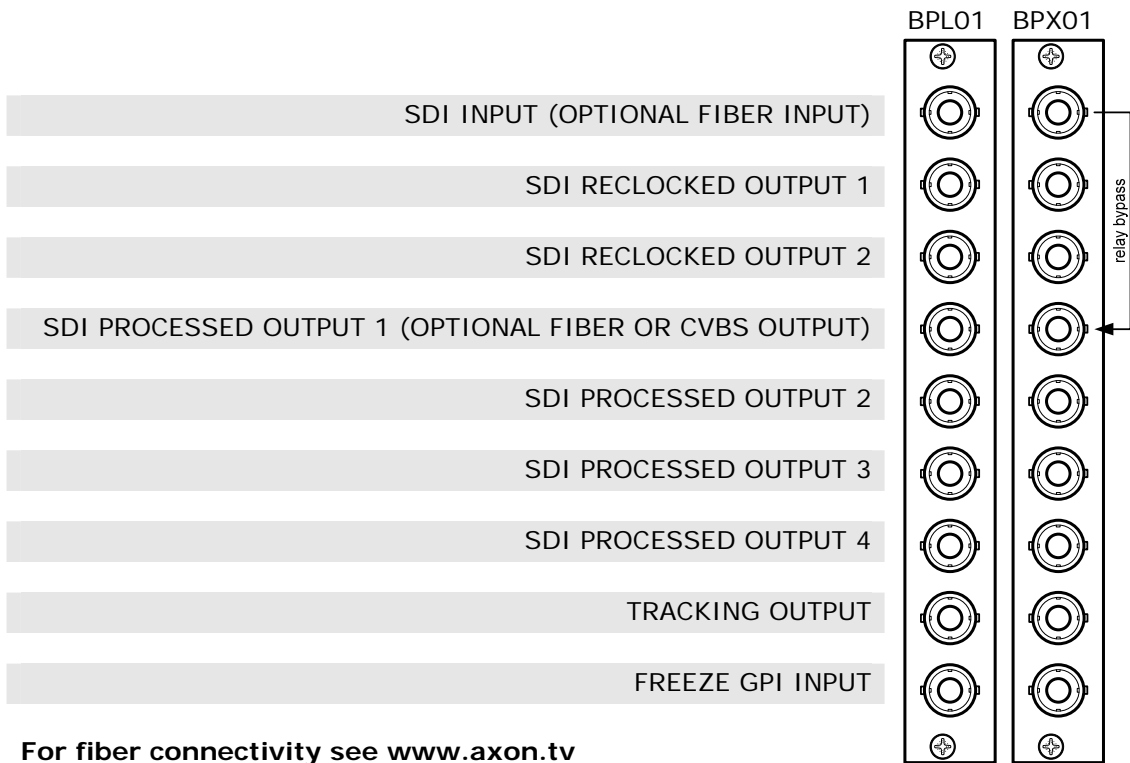
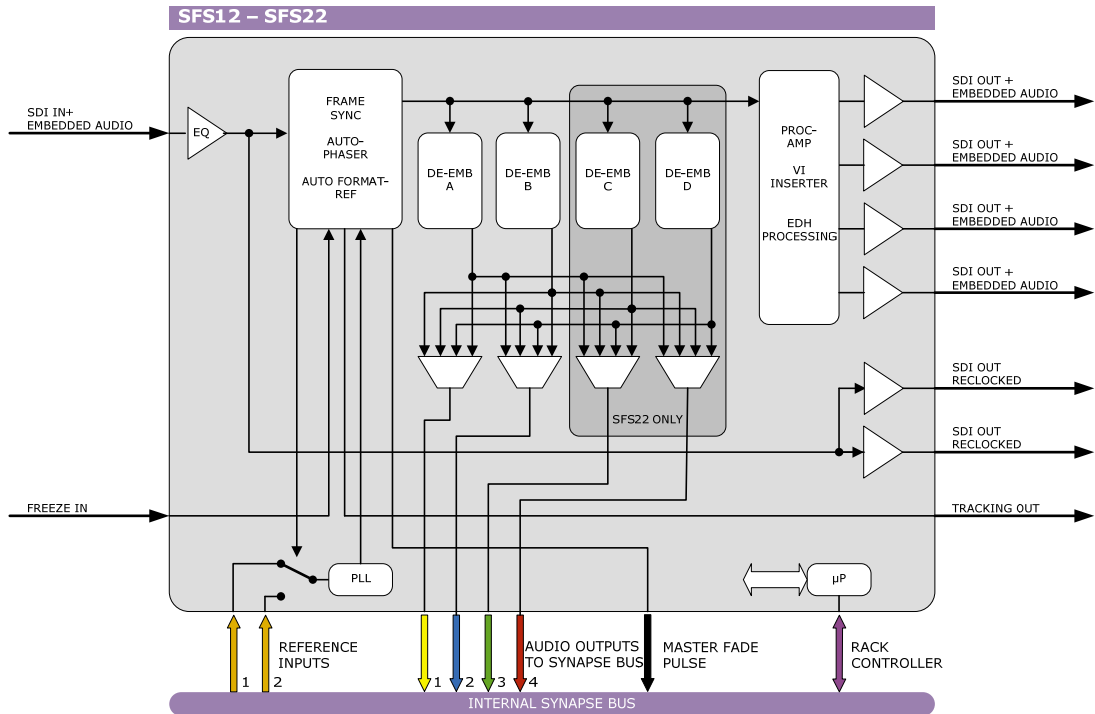


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Block schematic & I/O panel



For fiber connectivity see [www.axon.tv](http://www.axon.tv)

## Features

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The SFS12 is an SD frame synchronizer, line synchronizer/autophaser, video delay, video proc-amp and Video Index inserter. In addition, the SFS12 has a 2 group de-embedder (4 group in the SFS22). The synchronizer function can be used to synchronize a non-synchronous signal or to compensate for a delay. New sync codes (TRS) are being generated and re-inserted in the output signal. The SFS12/22 has total transparent blanking, both horizontally and vertically. The video reference is connected through the central genlock input of the SFR18, SFR08 or SFR04 frames. The line synchronizer function corrects timing errors (hops) that occur due to switching in a router. In addition the SFS12/22 can be used as a delay line, giving up to 625 lines of delay. A video reference is not required in this case as the output clock frequency is derived from the input video clock.

- Auto detecting of 525/625 with correct reference input selection (SFR08 and SFR18 only)
- Frame synchronizer or delay mode
- Automatic Line synchronizer/autophaser function
- Full frame adjustable output phase with respect to reference in sample and line increments
- Adjustable vertical interval blanking (selectable start and stop line)
- V-bit autophasing (625 only)
- Proc-Amp
  - Y, Cr and Cb gain
  - Y, Cr and Cb Black
- 2 Group (4 for the SFS22) de-embedding with Synapse ADD-ON card like the DAC20, DAS24 and others
- Blanking of two adjustable ranges in the vertical interval from line 4 to 23
- VI insertion
- EDH processing
- GPI Freeze input
- Tracking audio output
- Selectable panic freeze or manual freeze
- 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
- Optional 1 CVBS output (replacing 1 SDI output) on I/O panel

## Applications

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- Free running SDI signal synchronizer with de-embedding function
- Post router autophasing (line synchronization) with de-embedding function
- Jitter killer with de-embedding function
- Adjustable vertical blanking cleaning with de-embedding function
- Adjustable delay line for timing corrections with de-embedding function

## Ordering information

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**Modules:**

- **SFS12:** SD multi functional frame/line synchronizer with de-embedding function (12: 2 groups)
- **SFS22:** SD multi functional frame/line synchronizer with de-embedding function (22: 4 groups)

**Standard I/O:**

- **BPL01\_SFS12:** I/O panel for SFS12
- **BPX01\_SFS12:** I/O panel for SFS12 with relay bypass
- **BPL01\_SFS22:** I/O panel for SFS22
- **BPX01\_SFS22:** I/O panel for SFS22 with relay bypass

**Fiber outputs:**

- **BPL01T\_FC/PC\_SFS12:** I/O panel for SFS12 with fiber transmitter on FC/PC
- **BPL01T\_SC\_SFS12:** I/O panel for SFS12 with fiber transmitter on SC
- **BPL01T\_FC/PC\_SFS22:** I/O panel for SFS22 with fiber transmitter on FC/PC
- **BPL01T\_SC\_SFS22:** I/O panel for SFS22 with fiber transmitter on SC

**Fiber inputs:**

- **BPL01R\_FC/PC\_SFS12:** I/O panel for SFS12 with fiber receiver on FC/PC
- **BPL01R\_SC\_SFS12:** I/O panel for SFS12 with fiber receiver on SC
- **BPL01R\_FC/PC\_SFS22:** I/O panel for SFS22 with fiber receiver on FC/PC
- **BPL01R\_SC\_SFS22:** I/O panel for SFS22 with fiber receiver on SC

**CVBS outputs:**

- **BPL01C\_SFS12:** I/O panel for SFS12 with CVBS output
- **BPL01C\_SFS22:** I/O panel for SFS22 with CVBS output

## Specifications

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### Serial Video Input

<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

### SD Serial Video Output

<b>Standard</b>	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio
<b>Number of Outputs</b>	4
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V $\pm$ 0.5V
<b>Rise/Fall Time</b>	800ps nominal
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB up to 270MHz

### Reference Video Input

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

### 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>	<7 Watts