



**HFS05T**

**HD/SD frame synchronizer with smart audio  
handling for 2 groups**

**A Synapse® product**

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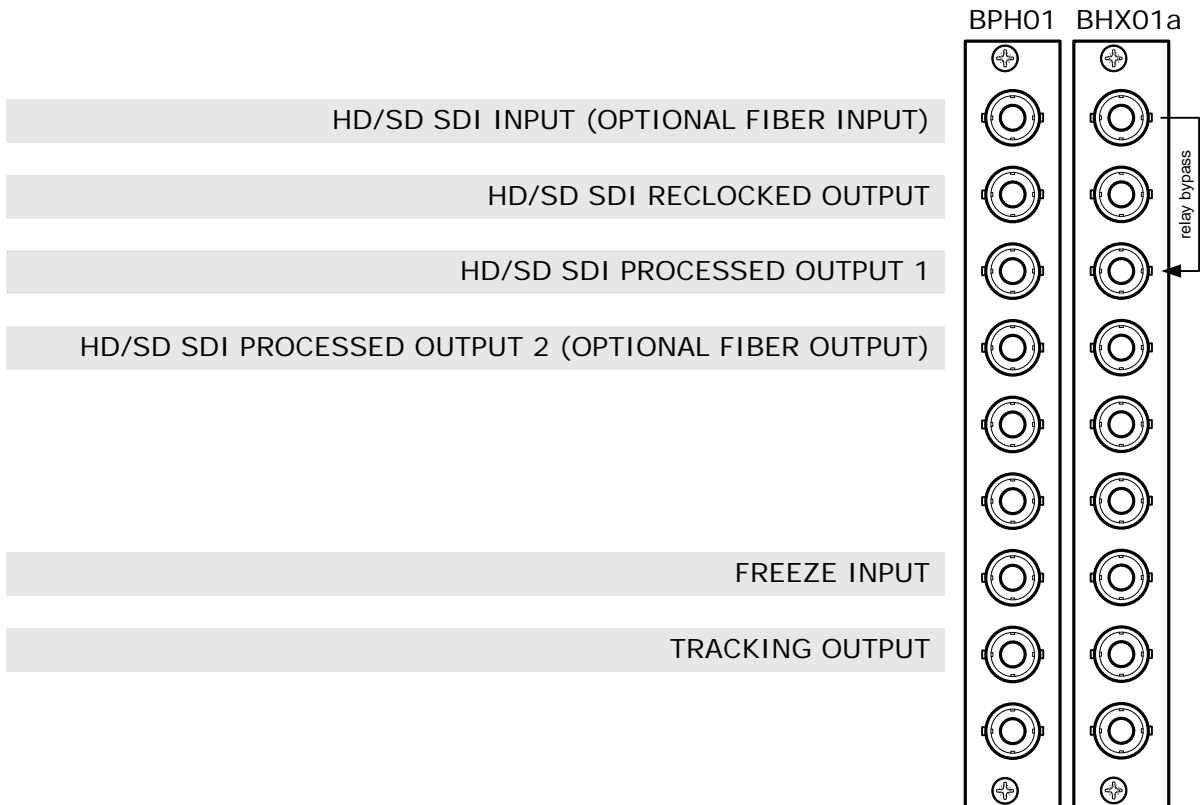
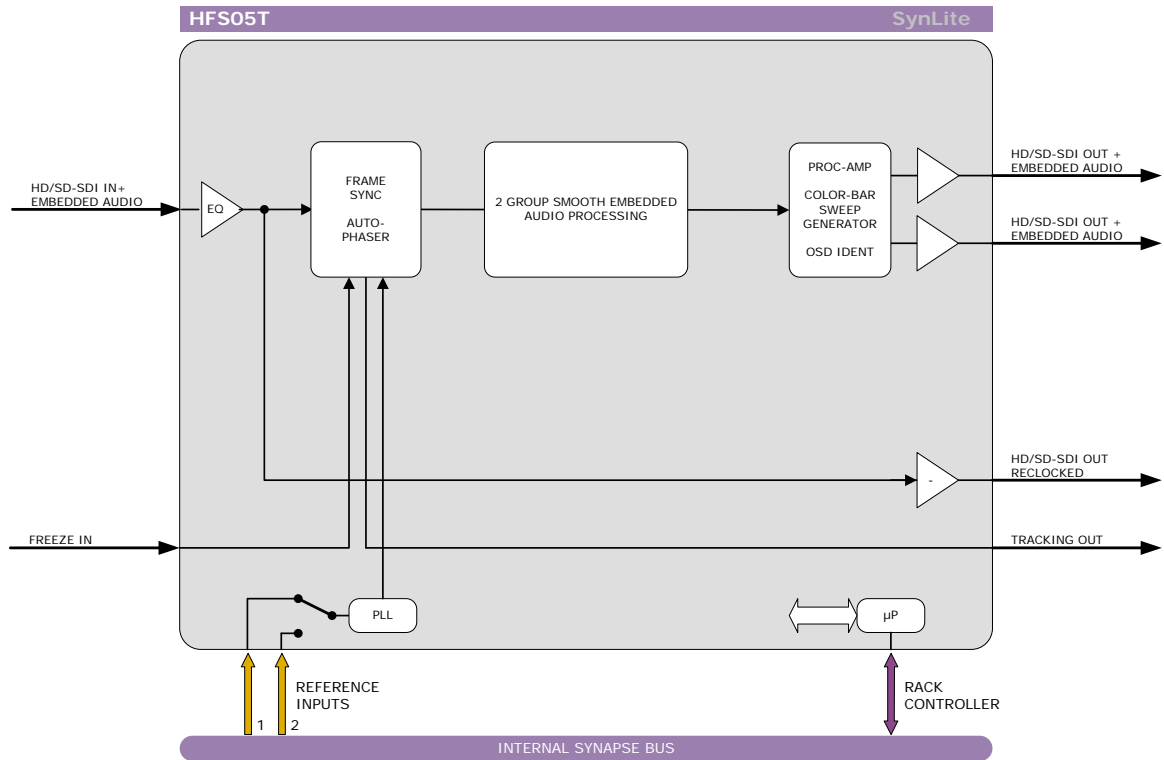
**HD**  
High definition

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Block schematic & I/O panel



## Features

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The HFS05T is an HD/SD frame synchronizer/video delay/autophaser module, video ProcAmp and if in synchronizer mode, the HFS05T has smart audio handling for 2 embedded audio groups. The synchronizer function can be used to synchronize a non-synchronous signal or to compensate for a delay. The HFS05T has full transparent blanking, both horizontally and vertically. The video reference is connected through the central genlock input of the SFR18, SFR08 or SFR04 frames and is compatible with 2-level and 3-level sync. The line synchronizer function corrects timing errors (hops) that occur due to switching in a router. In addition the HFS05T can be used as a delay line, giving up to 1 frame delay. A video reference is not required in this case as the output clock frequency is derived from the input video clock. The HFS05T can be reprogrammed as an HFS05E or HFS04D without additional costs.

- HD-SDI and SD-SDI compatible
- Formats:
  - 1080i/50/59.94
  - 1035i/59.94
  - 720p/50/59.94/
  - 1080p(sf)/23.98/25/29.97
- Built-in proc amp
- 2 groups smart audio handling (user selectable out of all 4 groups)
- Audio processing pass through, processed or mute
- Bi-level, Tri-level sync compatible
- Tracking output
- Freeze input
- On loss of input:
  - Freeze
  - Black
  - Green
  - Gray
- One reclocked output
- Two processed outputs
- I/O delay measurement
- Switch positioning measurement (in autophase mode)
- H and V delay offset adjustment with respect to input or reference
- Separate delay settings for 1080, 720p and SD SDI
- ANC blanking of H, V or H+V
- Test pattern (color bar/sweep)
- OSD ident label with maximum 10 characters (for set-up purposes)
- Detection and transparency for S2016 (AFD)
- Locks to Bi-level or Tri-level syncs
- 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

## Applications

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- Free running external video synchronization
- Post router line synchronization or autophasing
- Video timing adjustment for virtual studios
- Jitter killer

## Ordering information

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**Module:**

- **HFS05T:** HD/SD frame synchronizer with smart audio handling for 2 groups

**Standard I/O:**

- **BPH01\_HFS05T:** I/O panel for HFS05T

**Relay bypass I/O:**

- **BHX01a\_HFS05T:** relay I/O panel for HFS05T

**Fiber outputs:**

- **BPH01T\_FC/PC\_HFS05T:** I/O panel for HFS05T with fiber transmitter on FC/PC
- **BPH01T\_SC\_HFS05T:** I/O panel for HFS05T with fiber transmitter on SC

**Fiber inputs:**

- **BPH01R\_FC/PC\_HFS05T:** I/O panel for HFS05T with fiber receiver on FC/PC
- **BPH01R\_SC\_HFS05T:** I/O panel for HFS05T with fiber receiver on SC

## Specifications

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### HD/SD Serial Video Input

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<b>Standard</b>	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
<b>Equalization</b>	Automatic to 100m @ 1.5Gb/s with Belden 1694A or equivalent cable.
<b>Return Loss</b>	> 15dB up to 1.5GHz

### HD Serial Video Output

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<b>Standard</b>	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
<b>Signal Level</b>	800mV nominal
<b>DC Offset</b>	0V $\pm$ 0.5V
<b>Rise and Fall Time</b>	200ps nominal for HD, 750ps nominal for SD
<b>Overshoot</b>	< 10% of amplitude
<b>Return Loss</b>	> 15dB up to 1.0Gb/s, > 10dB up to 1.5Gb/s
<b>Wideband Jitter</b>	< 0.2UI

### Reference Input through RRC

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<b>Number of Inputs</b>	2 on SFR18, 2 on SFR08 and 1 on SFR04
<b>Tri-level</b>	SMPTE274M, SMPTE296M 600 mVp-p nominal, 75 Ohms terminated through loop
<b>Bi-level</b>	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 1Vp-p nominal, 75 Ohms terminated through loop

### Miscellaneous

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<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

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<b>Voltage</b>	+24V to +30V
<b>Power</b>	<8 Watts