



## GDK-HDK-SDK100

Dual background input 3Gb/s, HD, SD downstream keyer

A Synapse® product

The Synapse logo, which is the word "Synapse" written in a light blue, cursive script font with a slight drop shadow.

Quad speed  
**MASTER**

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

 Powered  
by **LINUX**

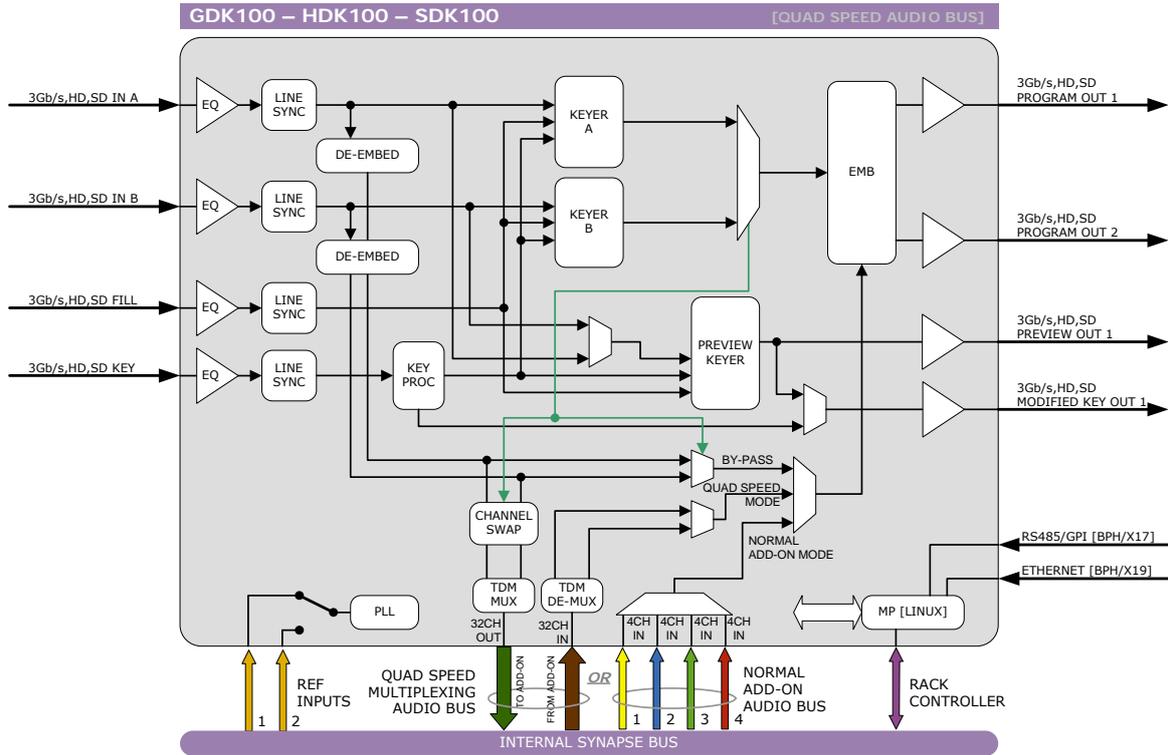
Upgradable to  
**3Gb/s**

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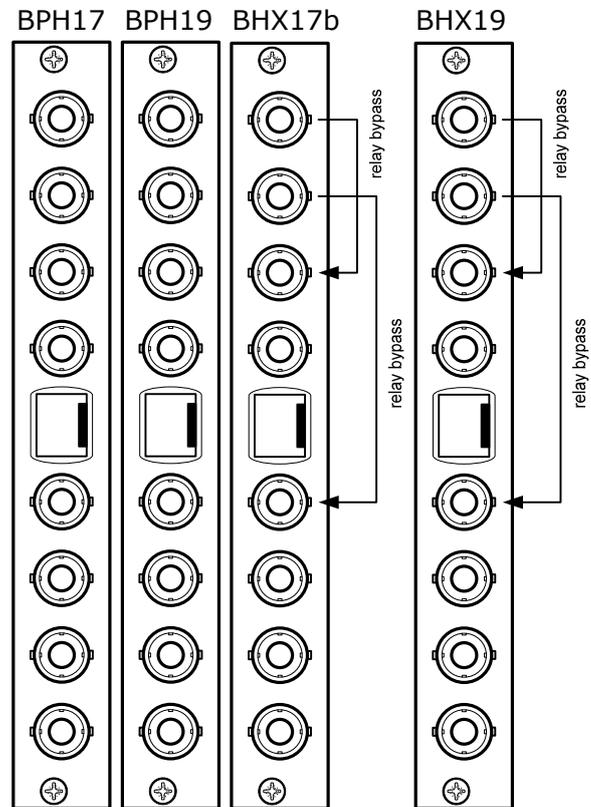
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Block schematic & I/O panel



- 3Gb/s, HD, SD BACKGROUND IN A (OPTIONAL FIBER IN)
- 3Gb/s, HD, SD BACKGROUND IN B (OPTIONAL FIBER IN)
- 3Gb/s, HD, SD PROGRAM OUT 1 (OPTIONAL FIBER OUT)
- 3Gb/s, HD, SD PROGRAM OUT 2
- GPI INPUT (BPH17) ETHERNET (BPH19)
- 3Gb/s, HD, SD PREVIEW OUT (OPTIONAL FIBER OUT)
- 3Gb/s, HD, SD OUT 4
- 3Gb/s, HD, SD FILL IN
- 3Gb/s, HD, SD KEY IN



## Features

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The GDK100, HDK100 and SDK100 are keyer modules for the Synapse system. The GDK100 has 4 triple rate (all SD, HD, 3Gb/s capable) inputs: 2 background inputs, 1 fill input and 1 key input. It also has 4 triple rate outputs: 2 program outputs, 1 preview output and a user definable output (program, preview or modified key output). Depending on the connector panel you have either Ethernet (for easy and fast card upgrading) or GPI control (over RJ45).

The following is a summary of the features the G/H/SDK100 offers:

- 2 selectable background inputs
- Key input
- Fill input
- Self key
- The 4<sup>th</sup> output can be software configured for any output task: program, preview or modified key output.
- Adjustable slice level and transparency (with definable modified key monitor output)
- Preview output ,with fade in/out functionality, for content verification prior to go on air
- Transparent for 16 channels of embedded audio
- Transparent for all ANC data
- Compatible with:
  - 270 Mb/s (SMPTE 259M) 50 and 59.94Hz
  - 1485 Mb/s (SMPTE 292M) 50 and 59.94Hz (HDK/GDK only)
  - 2970 Mb/s (SMPTE 424M) =3Gb/s 50 and 59.94Hz (GDK only)
- Locks to Tri-level or Bi-level syncs

Depending on the connector panel you have either Ethernet or GPI control.

- GPI with BPH17 or BHX17b
- Ethernet with BPH19 or BHX19 (for fast updates)

Complementary cards:

- DAC20, DAC24, DAS24, DIO48, ADC20, ADC24, DIO24, DLA44, DLA43

## Applications

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- The G/H/SDK100 can be used as a downstream keyer for external logo generated keying and other graphical overlay keying.

## Ordering information

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### Module:

- **GDK100:** 3Gb/s, HD, SD downstream keyer with dual background input
- **HDK100:** HD/SD downstream keyer with dual background input.\*
- **SDK100:** SD downstream keyer with dual background input. \*\*

### Standard I/O:

- **BPH17\_GDKxxx:** I/O-panel for G-H-SDK100 with GPI
- **BPH19\_GDKxxx:** I/O-panel for G-H-SDK100 with Ethernet

### Relay bypass I/O:

- **BHX17b\_GDKxxx:** I/O-panel for G-H-SDK100 with GPI and relay bypass
- **BHX19\_GDKxxx:** I/O-panel for G-H-SDK100 with Ethernet and relay bypass

### Fiber outputs:

- **BPH17T2\_FC/PC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber transmitters on FC/PC
- **BPH19T2\_FC/PC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber transmitters on FC/PC and (future use) Ethernet
- **BPH17T2\_SC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber transmitters on SC
- **BPH19T2\_SC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber transmitters on SC and (future use) Ethernet

### Fiber inputs:

- **BPH17R2\_FC/PC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber receivers on FC/PC
- **BPH19R2\_FC/PC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber receivers on FC/PC and (future use) Ethernet
- **BPH17R2\_SC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber receivers on SC
- **BPH19R2\_SC\_GDKxxx:** I/O panel for G-H-SDK100 with two fiber receivers on SC and (future use) Ethernet

\* Upgradeable to 3Gb/s

\*\* Upgradeable to HD or HD + 3Gb/s

## Specifications

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### Video input

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<b>Standard</b>	SD,HD and 3Gb/s SDI: SMPTE 292M, SMPTE 259M, SMPTE424
<b>Number of inputs</b>	4
<b>Connector</b>	BNC
<b>Equalization</b>	Typical maximum equalized length of Belden 1694A cable: 70m at 2.97Gb/s, 140m at 1.485Gb/s, and 350m at 270Mb/s
<b>Return loss</b>	> 15dB up to 3GHz

### Serial video output

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<b>Number of outputs</b>	4
<b>Connector</b>	BNC
<b>Signal level</b>	800mV nominal
<b>DC offset</b>	0V $\pm$ 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

### 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>	<17 Watts