



# GDK150/200-HDK150/200

3Gb/s, HD Keyer, Mixer with dual 2D DVE

A Synapse® product

*Synapse*

MASTER  
Card

Quad speed  
MASTER

3 TRIPLE RATE  
GB/s, HD, SD

 Powered  
by LINUX

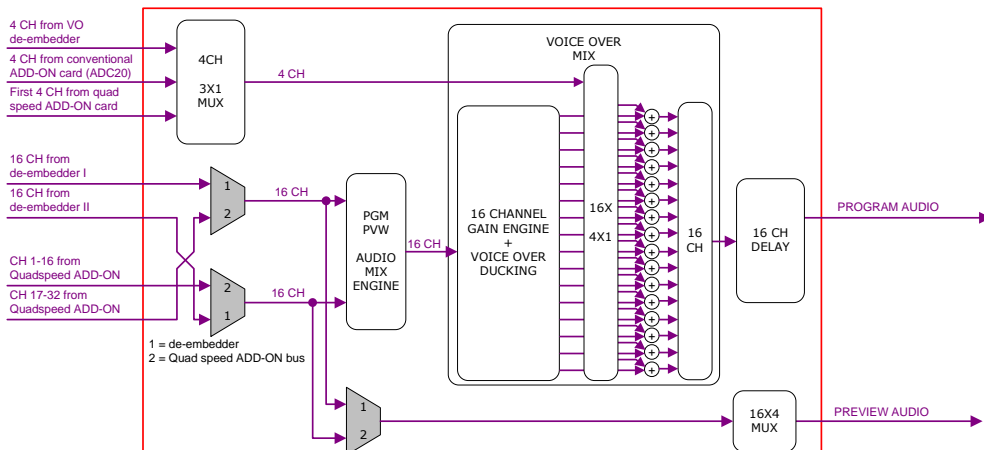
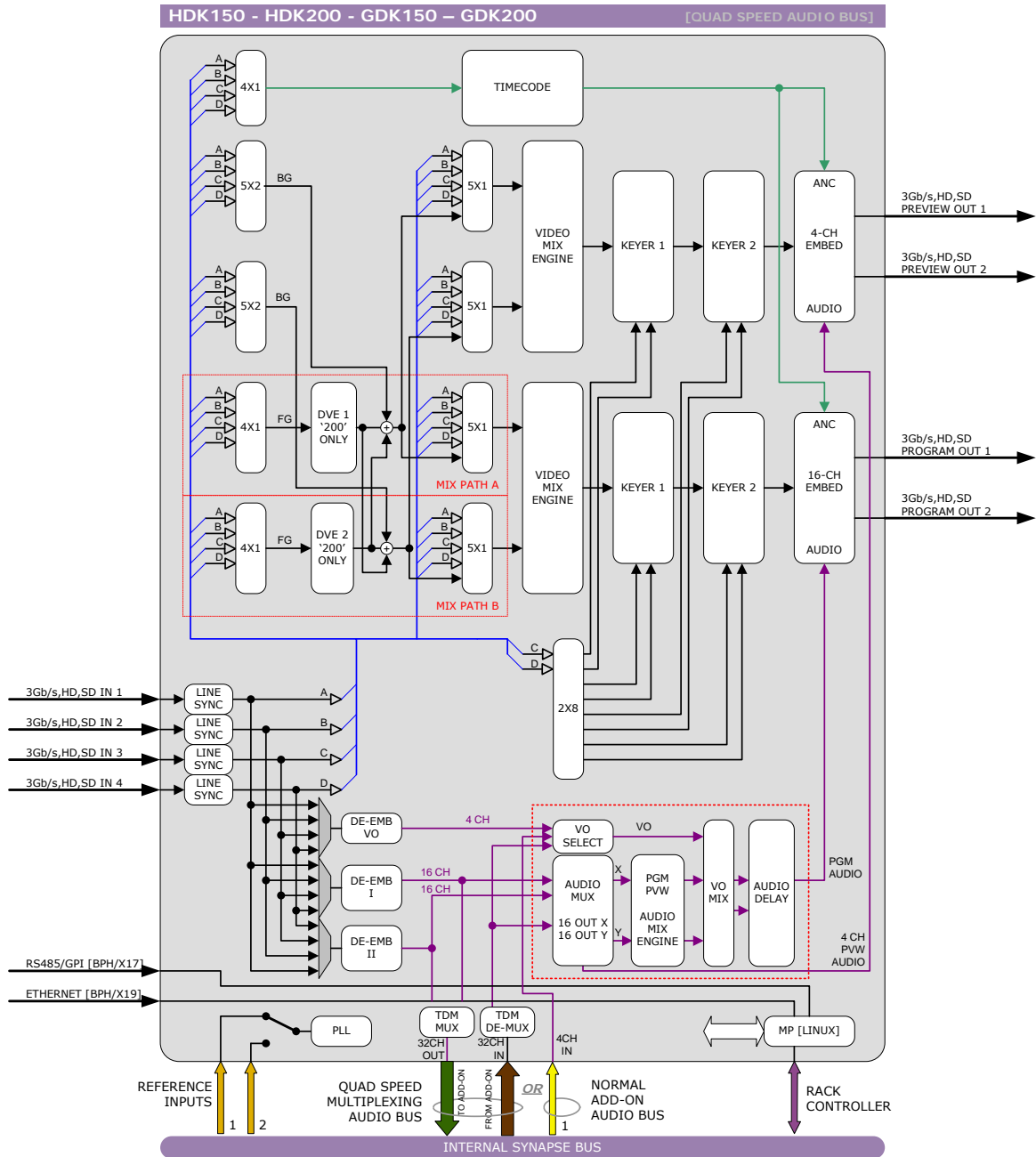
Upgradable to  
3Gb/s

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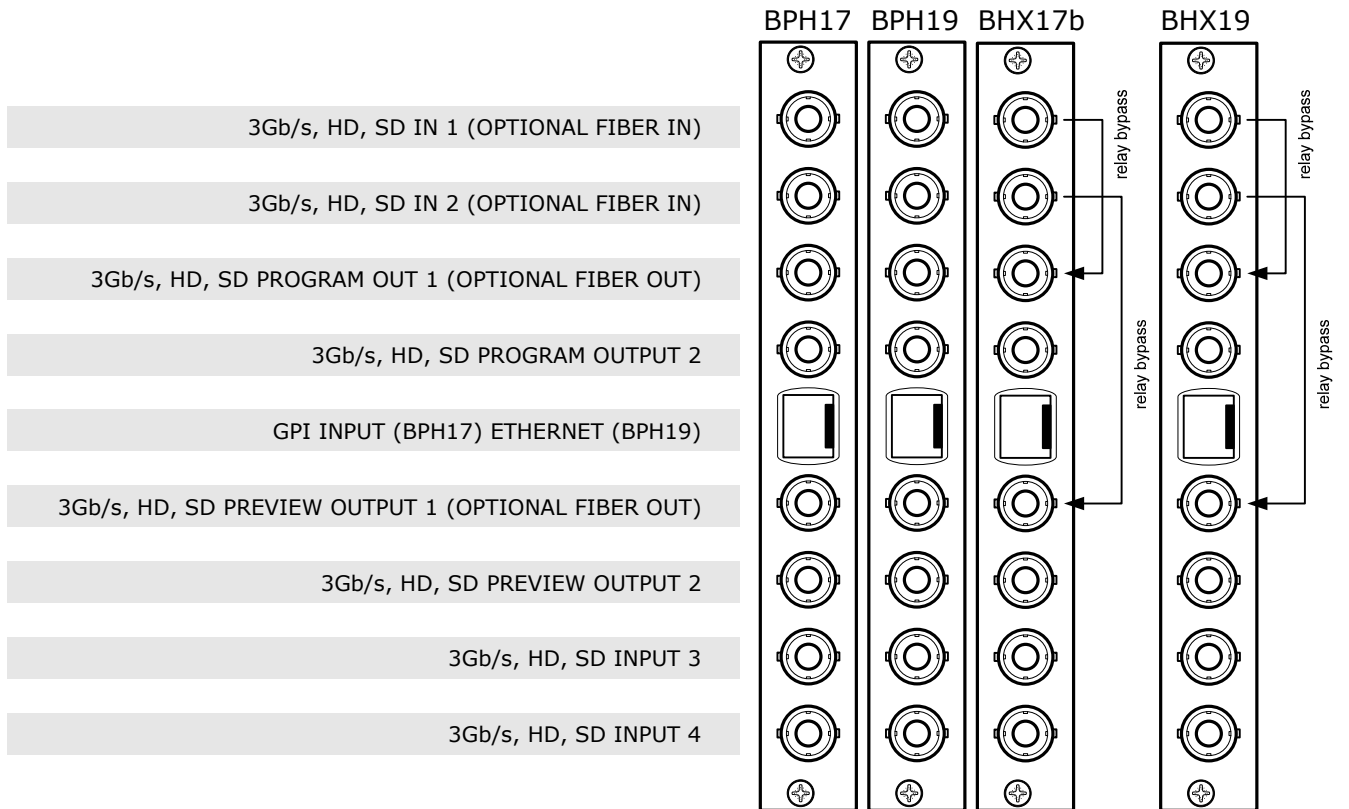
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Block schematic



I/O panel



## Features

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The GDK150/200 and HDK150/200 are advanced keyer platforms for use in transmission applications. Especially where a full master control unit is overkill these cards can be a cost and space saving alternative. These units have 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 and 2 preview outputs.

Depending on the connector panel you have either Ethernet (for easy and fast card upgrading) or GPI control (over RJ45).

The GDK150/200 and HDK150/200 are not designed for direct external 3<sup>rd</sup> party control protocols (i.e. M2100). Normal automation still is possible like on all Synapse cards. The units can be used with GPI's, and Cortex 'soft' control panels. Of course is 3<sup>rd</sup> party control via ACP possible.

The following is a summary of the features the GDK-HDK200 offers:

- 2 selectable background inputs
- Key input
- Fill input
- Self key
- 2x 2D DVE (in 200)
- Advanced routing capabilities for flexible program/production applications
- Mix engine with speed and transition adjustments
- Adjustable slice level and transparency
- Preview output with transition preview, for content verification prior to go on air
- Transparent for 16 channels of embedded audio
- Transparent for Time Code data
- Quad speed Synapse audio bus for enhanced external audio applications
- 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 Logo insertion)

Complementary cards:

- DLA44, DLA43, DLA42, ADC24 and DIO24 for VO functions

## Applications

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- The GDK/HDK200 can be used as an entry level program output processor for basic program channels.
- Production (3Gb/s) mixer/2D-DVE for live applications like sports events

For more technical background information about the quad speed audio bus check our website. [www.axon.tv/support/downloads/whitepapers](http://www.axon.tv/support/downloads/whitepapers)

## Ordering information

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### Module:

- **GDK150:** 3Gb/s, HD, SD keyer/mixer
- **HDK150:** HD, SD keyer/mixer.\*
- **GDK200:** 3Gb/s, HD, SD keyer/mixer with 2D DVE
- **HDK200:** HD, SD keyer/mixer with 2D DVE.\*

### Standard I/O:

- **BPH17\_GDKxxx:** I/O-panel for G/HDK150/200 with GPI
- **BPH19\_GDKxxx:** I/O-panel for G/HDK150/200 with Ethernet

### Relay by-pass I/O:

- **BHX17b\_GDKxxx:** I/O-panel for G/HDK150/200 with GPI and relay bypass
- **BHX19\_GDKxxx:** I/O-panel for G/HDK150/200 with Ethernet and relay bypass

### Fiber outputs:

- **BPH17T2\_FC/PC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber transmitters on FC/PC connector
- **BPH19T2\_FC/PC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber transmitters on SC connector and (future use) Ethernet
- **BPH17T2\_SC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber transmitters on SC connector
- **BPH19T2\_SC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber transmitters on SC connector

### Fiber inputs:

- **BPH17R2\_FC/PC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber receivers on FC/PC
- **BPH19R2\_FC/PC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber receivers on SC and (future use) Ethernet
- **BPH17R2\_SC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber receivers on SC
- **BPH19R2\_SC\_GDKxxx:** I/O panel for GDK-HDK150/200 with two fiber receivers on SC and (future use) Ethernet

\* Upgradeable to 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