# Synapse

## GAD100

**3Gb/s, HD, SD embedded domain audio description and voice-over processor**

A Synapse® product

Quad speed **MASTER**

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

**Powered** by **LINUX**

# Block schematic & I/O panel



**GAD-HAD-SAD100**

- 3Gb/s, HD, SD IN 1
- 3Gb/s, HD, SD IN 2
- Eq
- 2x1 AUTO MUX
- ADJUSTABLE OFFSET DELAY 0-500ms
- 16 CHANNEL EMBEDDER
- 3Gb/s, HD, SD OUT 1
- 3Gb/s, HD, SD OUT 2
- META DATA
- 16 CHANNEL DE-EMBEDDER
- 34X16 MUX / 16 DE-EMBED / 16 QSB / 4 AD
- 4 Ch
- 16 CHANNEL DELAY GAIN PHASE
- 32X4 MUX / 16 DE-EMBED / 16 QUAD SPEED
- ADProg1 / ADProg2 / AD / ADControl
- 4 CHANNEL DELAY GAIN
- AUDIO DESCRIPTION VOICE-OVER PROCESSING
- ADProg1 / ADProg2 / ADProg1 + AD / ADProg2 + AD
- TDM MUX/DE-MUX
- 20 CH OUT / 16CH IN
- 16 Ch
- TO ADD-ON / FROM ADD-ON
- QUAD SPEED MULTIPLEXING AUDIO BUS
- µP
- GPI/O
- Rack controller
- INTERNAL SYNAPSE BUS

**BPH18D BHX18D**

| Signal | |
|---|---|
| 3Gb/s, HD, SD SDI INPUT | |
| 3Gb/s, HD, SD SDI INPUT | |
| 3Gb/s, HD, SD SDI OUT 1 | |
| 3Gb/s, HD, SD SDI OUT | |
| GPI/METADATA INPUT/OUTPUT | |
| NOT CONNECTED | |

relay bypass

## Features

The GAD100 is an embedded domain Audio Description processors with a Voice-Over mode. This processor uses a stereo track as main program (input 1-2 of the AD processor) and mixes the AD track triggered by the mix enable track (input 3-4 of the AD processor). The output of the AD processor can be routed to PCM channels of the 16 channel embedder or Quad Speed Bus.

The Quad Speed audio bus allows for implementation of 'in between' audio processing. This means that we can stream the de-embedded audio channels or audio described (mixed) channels to a Quad Speed Audio ADD-ON card like the DSF66 or any of the other available Quad Speed Bus enabled cards, process this audio and send it back to the G/H/SAD100 for The ADD-ON card does not need a connector panel and all audio routing is performed inside the Synapse frame by just placing these cards in adjacent slots.

- Audio Description processor with free routable I/O
- 2 SDI inputs (with auto switch on carrier loss, and switch back function)
- Compatible with the following input formats (auto selecting) (1080p only for GAD):
    - 1080p/59.94
    - 1080p/50
    - 1080i/59.94
    - 1080i/50
    - 1080p/29.97
    - 1080p25
    - 1080p(sf)/23.98
    - 720p/59.94
    - 720p50
    - SD525
    - SD625
- Offset video delay adjustable between 0 and 1000ms
- Quad Speed Audio ADD-ON bus for bidirectional audio processing
- 2 SDI + embedded audio outputs
- 7 presets that configure all 16 output channels at once, controlled by GPI or ACP (Cortex)
- Append and overwrite modes
- Audio level and phase control
- Audio offset delay up to 5000 ms
- Peak detection 0dBFS
- Silence detection with threshold (-100 to -20dBFS) and time control (1 to 255 sec)
- Transparent for ATC time code RP188, RP196, RP215
- Built-in linesync (autophaser)
- Locks to Tri-level, Bi-level syncs or input
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)
- Optional relay bypass (BHX18D)

Complementary cards:

- DLA44, DLA43. DLA42, DLA41 and DIO88 (plus all other quad speed audio ADD-ON cards)

## Applications

- 3Gb/s, HD and SD embedded Audio Description Processing
- 3Gb/s, HD and SD embedded Voice-Over Processing
- Preset based 16 channel audio (AD) shuffling

# Ordering information

**Module:**
- **GAD100-I/O:** 3Gb/s, HD, SD embedded domain Audio Description/ Voice-Over processor

**Standard I/O:**
- **BPH18D-PANEL:** I/O panel for GAD/HAD/SAD100

**Relay bypass I/O:**
- **BHX18D-PANEL:** I/O panel for GAD/HAD/SAD100 with relay bypass

# Specifications

### Serial Video Input

| | |
|---|---|
| **Standard** | SD,HD and 3Gb/s SDI: SMPTE 292M, SMPTE 259M, SMPTE424 |
| **Number of Inputs** | 2 |
| **Connector** | BNC |
| **Equalization** | Typical maximum equalized length of Belden 1694A cable: 90m at 2.97Gb/s, 120m at 1.485Gb/s, and 250m at 270Mb/s |
| **Return Loss** | > 15dB up to 1.5GHz |

### Serial Video Output

| | |
|---|---|
| **Number of Outputs** | 2 |
| **Connector** | BNC |
| **Signal Level** | 800mV nominal |
| **DC Offset** | 0V ±0.5V |
| **Rise/Fall Time** | 135ps nominal |
| **Overshoot** | < 10% of amplitude |
| **Return Loss** | > 15dB up to 1.5GHz (typ.)<br>> 10dB up to 3GHz (typ.) |
| **Wideband Jitter** | < 0.2UI |

### Reference Input through RRC

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

### Miscellaneous

| | |
|---|---|
| **Weight** | Approx. 250g |
| **Operating Temperature** | 0 °C to +50 °C |
| **Dimensions** | 137 x 296 x 20 mm (HxLxD) |

### Electrical

| | |
|---|---|
| **Voltage** | +24V to +30V |
| **Power** | <15 Watts |