



2TG100

Dual 3Gb/s, HD and SD test pattern generator with embedded audio signals, Lip-Sync measurement and Quad Speed ADD-ON audio I/O

A Synapse® product

The Synapse logo, written in a light blue, cursive script font.

**MASTER
Card**

**Quad speed
MASTER**

3 TRIPLE RATE
GB/s, HD, SD

**Embedded
Metadata**
S2020

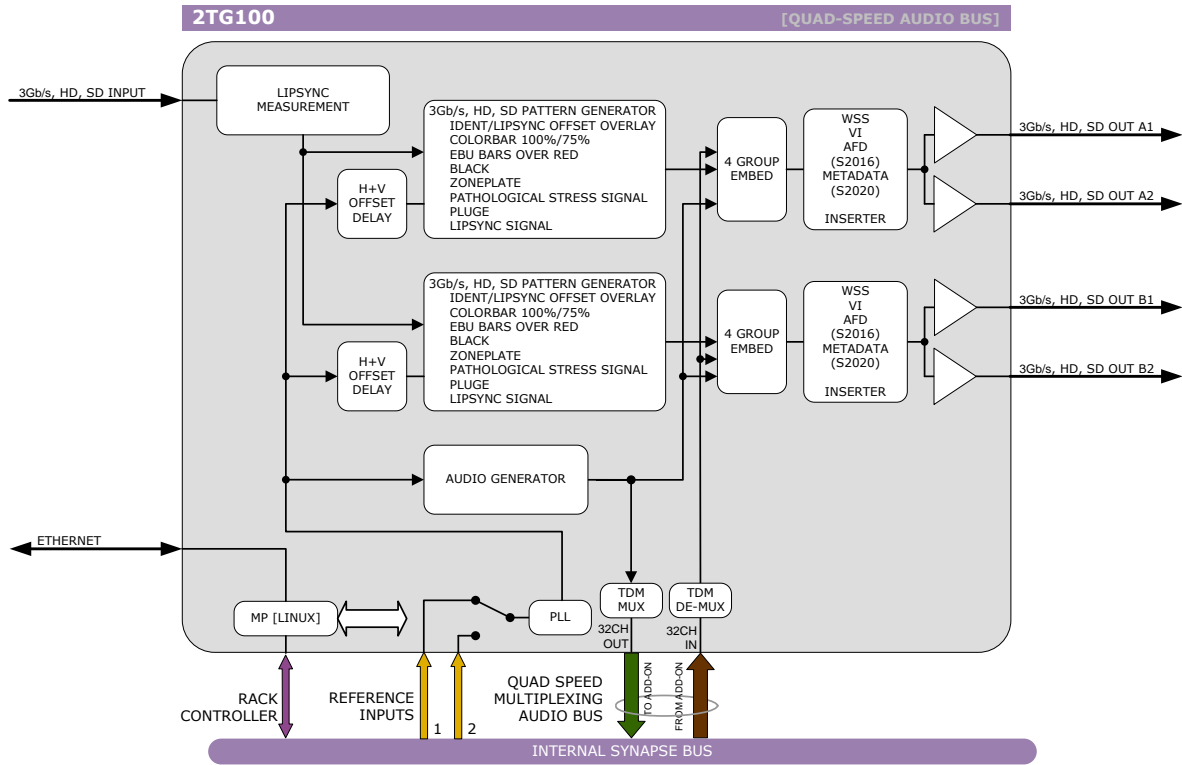
AFD ready
S2016

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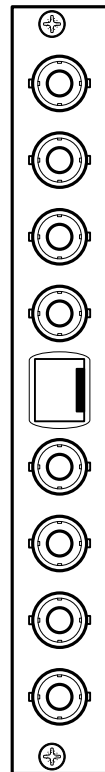
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Block schematic & I/O panel



BPH19

- 3GB/S, HD, SD SDI INPUT (LIPSYNC MEASUREMENT)
- 3GB/S, HD, SD SDI OUTPUT A1 (OPTIONAL FIBER OUTPUT)
- 3GB/S, HD, SD SDI OUTPUT A2
- ETHERNET (BPH19 ONLY, FUTURE USE)
- 3GB/S, HD, SD SDI OUTPUT B1 (OPTIONAL FIBER OUTPUT)
- 3GB/S, HD, SD SDI OUTPUT B2



Features

The 2TG100 is a dual channel test pattern generator. Locked to a black&burst or tri level sync it can generate 2 fully independent test patterns in either 3Gb/s, HD or SD. 16 test signals of embedded audio are also inserted. These audio signals can be sourced to the Quad Speed audio bus for discrete usage. External audio can also be inserted via the Quad Speed audio bus with for example a DIO88

The fully individual outputs can handle any format in the same frequency. So 1080p/50 and 1080i/50 can be used simultaneously

In September 2013 the card is upgraded with a Lip Sync analyzer. An 3Gb/s capable SDI input has been added to provide a measurement probe. In Cortex or as an OSD overlay the Lip-Sync offset is shown in milliseconds. This Feature is a free upgrade to all 2TG100 owners. This new analyzer block also identifies channel swaps.

- 2 individual 3Gb/s, HD, SD SDI test patterns
 - Colorbar 100%
 - Colorbar 75%
 - Bars over red 100%
 - Bars over red 75%
 - Black
 - Zoneplate
 - Pathological stress signal
 - Pluge
 - Lip Sync test signal Generation
- Individual offset delay with respect to reference in pixel increments up to one frame
- **S2020 metadata generator**
- VI/WSS/AFD (S2016) inserter
- Compatible output formats for each output (only one output frequency can be used at one time when locked to a reference)
 - 1080p60
 - 1080p50
 - 1080p30
 - 1080p25
 - 1080p24
 - 1080i60
 - 1080i50
- 720p60
- 720p50
- 720p30
- 720p25
- 720p24
- 525
- 625
- A 16 character text ident can be overlaid each pattern
 - Alternatively this overlay can show the Lip-Sync offset
- 16 channel audio generator with adjustable gain and phase for embedded audio test signals. Available patterns:
 - Sine 10Hz to 20kHz (with or without 6dB dip sequence)
 - Blits 5.1
 - Lip Sync (combined with video marker)
 - Stepped Sweep
- **Lip-Sync Analyzer**
- **Channel swap identification**
- External audio via the Synapse bus (Normal or Quad Speed technology)
- Optional 2 fiber outputs (replacing 2 SDI outputs) on I/O panel

Complementary cards:

- DIO88

For more technical background information about the quad speed audio bus check our website. www.axon.tv/support/downloads/whitepapers

Applications

- Generic Studio infrastructure test and ident generation
- Infrastructure Lip-Sync measurement

Ordering information

Module:

- **2TG100:** Dual 3Gb/s, HD and SD test pattern generator

Standard I/O:

- **BPH17_2TG100:** I/O panel for 2TG100
- **BPH19_2TG100:** I/O panel for 2TG100 with (future use) Ethernet

Fiber outputs:

- **BPH17T2_FC/PC_2TG100:** I/O panel for 2TG100 with two fiber transmitters on FC/PC
- **BPH19T2_FC/PC_2TG100:** I/O panel for 2TG100 with two fiber transmitters on FC/PC and (future use) Ethernet
- **BPH17T2_SC_2TG100:** I/O panel for 2TG100 with two fiber transmitters on SC
- **BPH19T2_SC_2TG100:** I/O panel for 2TG100 with two fiber transmitters on SC and (future use) Ethernet

Specifications

Serial Video outputs

Standard	SD,HD and 3Gb/s SDI: SMPTE 292M, SMPTE 259M, SMPTE424
Number of Outputs	2x2
Signal Level	800mV nominal
DC Offset	0V \pm 0.5V
Rise/Fall Time	135ps nominal
Overshoot	< 10% of amplitude
Return Loss	> 15dB up to 1.5GHz (typ) > 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 600 mVp-p nominal, 75 Ohms terminated through loop
Bi-level	PAL Black Burst ITU624-4/SMPTE318, Composite NTSC SMPTE 170M 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 (HxWxD)

Electrical

Voltage	+24V to +30V
Power	<11 Watts