



2IM09/10

**Dual channel (enhanced) integrity checking probe with
built-in frame synchronizers**

A Synapse® product

Synapse

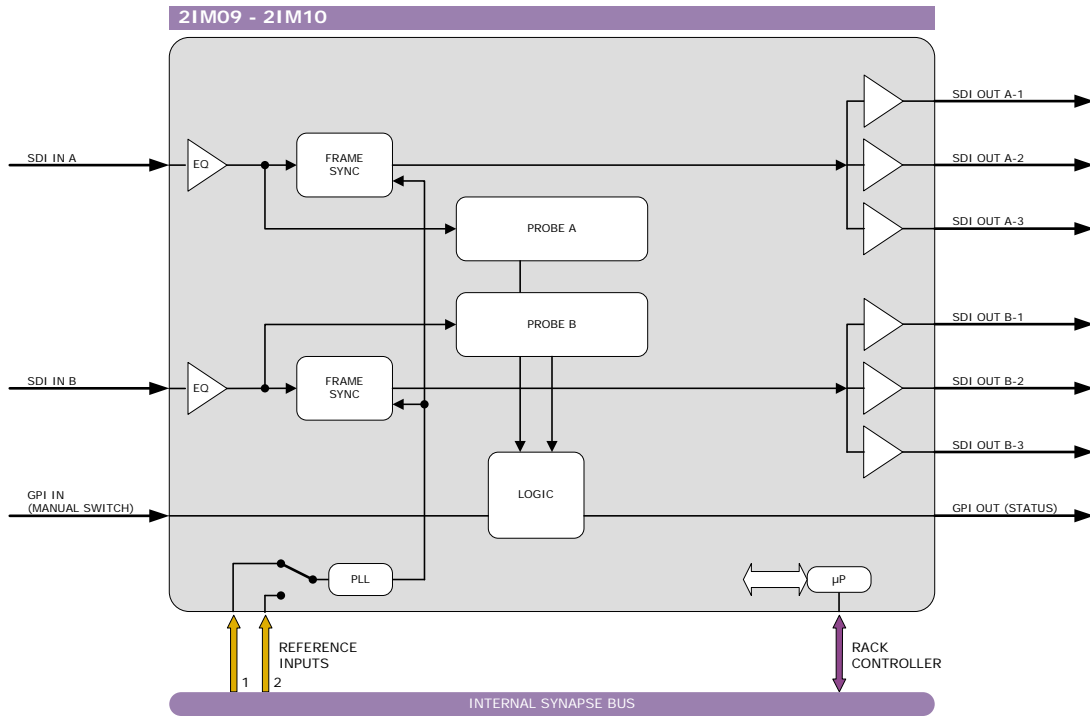


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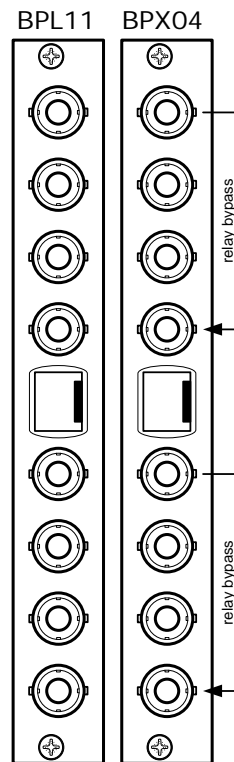
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Block schematic & I/O panel



- SDI INPUT A (OPTIONAL FIBER INPUT)
- SDI OUTPUT A-1
- SDI OUTPUT A-2
- SDI OUTPUT A-3 (OPTIONAL FIBER OR CVBS OUTPUT)
- GPI INPUT/OUTPUT
- SDI INPUT B (OPTIONAL FIBER INPUT)
- SDI OUTPUT B-1
- SDI OUTPUT B-2
- SDI OUTPUT B-3 (OPTIONAL FIBER OR CVBS OUTPUT)

For fiber connectivity see www.axon.tv



Features

The 2IM09/10 is a dual channel high performance SDI video and embedded audio probe (signal integrity monitor). The difference between the 2IM09 and 2IM10 is that the latter has an enhanced range of probing functions that include phase reversal and macro blocking detection. The switch function can be triggered by any of the integrity controls or by GPI. Besides the extensive probe functions, the cards also provide full line and frame synchronization on both inputs. Each output has a fan-out of 3.

- SDI carrier detect
- EDH detection
- TRS validation
- ANC checksum validation*
- Y/Pr/Pb Range validation ($64 < Y < 940$, $64 < Pr$ or $Pb < 960$)*
- Video content freeze detection
- Video content black detection
- Video monochrome detection (Stuck C value)*
- Macro blocking detection*
- Timecode availability*
- VI value detection*
- WSS value detection*
- Audio channel count detection (8 stereo pairs)*
- Audio silence detection (8 channels)*
- Audio Phase reversal detection within one group (2 pairs)*
- Audio Clip/5 sample full-scale indication*
- Dolby E present detection*
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)
- Optional 2 fiber inputs (replacing 2 SDI inputs) or 2 fiber outputs (replacing 2 SDI outputs) on I/O panel
- Optional 2 CVBS outputs (replacing 2 SDI outputs) on I/O panel

* = 2IM10 only

Applications

- The 2IM09/10 can be used as station output card and ingest quality control card
- Generic lines centre probe
- Infrastructure (studio) probing
- Transmission probing

Ordering information

Module:

- **2IM09:** Dual channel integrity checking probe with built-in frame synchronizers
- **2IM10:** Dual channel enhanced integrity checking probe with built-in frame synchronizers

Standard I/O:

- **BPL11_2IM09:** I/O panel for 2IM09
- **BPX04_2IM09:** I/O panel for 2IM09 with relay bypass
- **BPL11_2IM10:** I/O panel for 2IM10
- **BPX04_2IM10:** I/O panel for 2IM10 with relay bypass

Fiber outputs:

- **BPL11T2_FC/PC_2IM09:** I/O panel for 2IM09 with 2 fiber transmitters on FC/PC
- **BPL11T2_SC_2IM09:** I/O panel for 2IM09 with 2 fiber transmitters on SC
- **BPL11T2_FC/PC_2IM10:** I/O panel for 2IM10 with 2 fiber transmitters on FC/PC
- **BPL11T2_SC_2IM10:** I/O panel for 2IM10 with 2 fiber transmitters on SC

Fiber inputs:

- **BPL11R2_FC/PC_2IM09:** I/O panel for 2IM09 with 2 fiber receivers on FC/PC
- **BPL11R2_SC_2IM09:** I/O panel for 2IM09 with 2 fiber receivers on SC
- **BPL11R2_FC/PC_2IM10:** I/O panel for 2IM10 with 2 fiber receivers on FC/PC
- **BPL11R2_SC_2IM10:** I/O panel for 2IM10 with 2 fiber receivers on SC

CVBS outputs

- **BPL11C2_2IM09:** I/O panel for 2IM09 with 2 CVBS outputs
- **BPL11C2_2IM10:** I/O panel for 2IM10 with 2 CVBS outputs

Specifications

Serial Video Input

Standard	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio
Number of Inputs	2 (1 per channel)
Equalization	Automatic to 300m @ 270Mb/s with Belden 1694A or equivalent cable
Return Loss	> 15dB up to 270MHz

SD Serial Video Output

Standard	625/50 or 525/59.94 SMPTE 259M-C (270Mb/s) with SMPTE 272M embedded audio
Number of Outputs	6 (3 per channel)
Signal Level	800mV nominal
DC Offset	0V \pm 0.5V
Rise/Fall Time	800ps nominal
Overshoot	< 10% of amplitude
Return Loss	> 15dB up to 270MHz

Reference Video Input

Standard	PAL (ITU624-4), NTSC (SMPTE 170M)
Number of Inputs	2 on SFR18, 2 on SFR08, 1 on SFR04
Connector	BNC
Signal Level	1V nominal
Impedance	High impedance, with loop for termination
Return Loss	> 25dB to 10MHz

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	<9 Watts