AXON

GIX/HIX100-110

Dual channel 3Gb/s, HD, SD integrity checking probe with optional clean audio (2x1) switch-over function

A Synapse® product
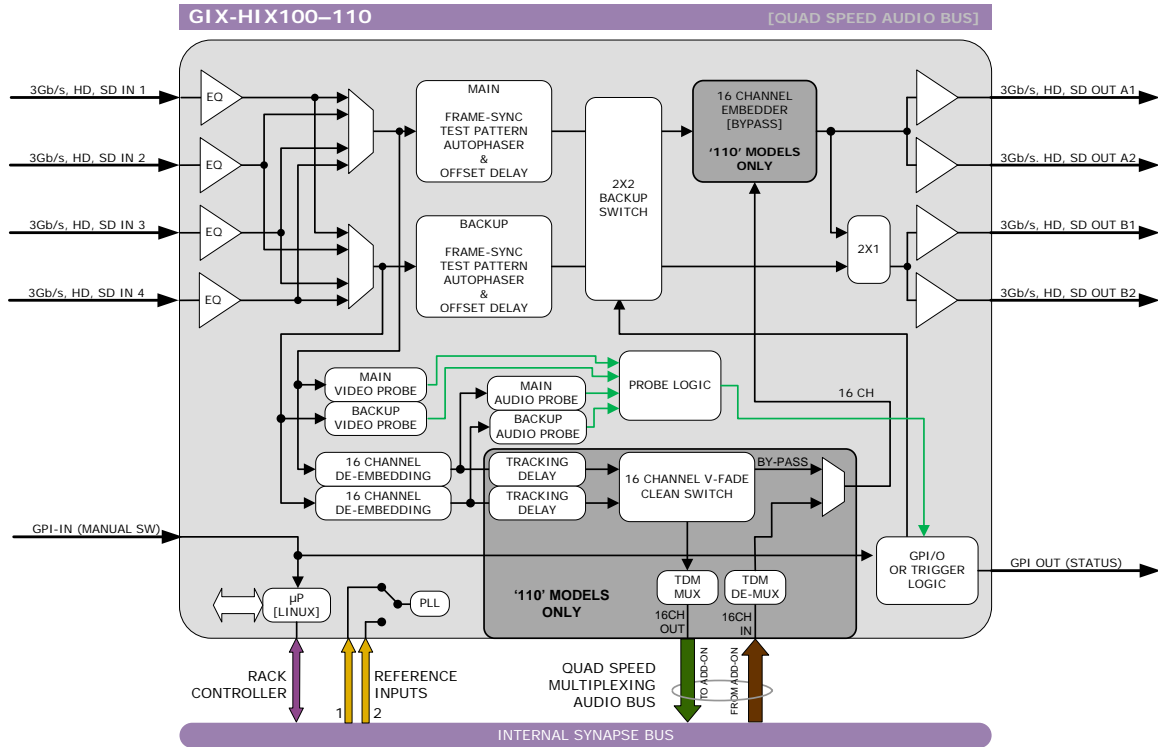
Synapse

3 TRIPLE RATE GB/s, HD, SD

Powered by **LINUX**

COMPATIBLE WITH **DOLBY. E**

Block schematics & I/O panel

GIX-HIX100–110   [QUAD SPEED AUDIO BUS]

3Gb/s, HD, SD IN 1
3Gb/s, HD, SD IN 2
3Gb/s, HD, SD IN 3
3Gb/s, HD, SD IN 4

EQ

MAIN
FRAME-SYNC
TEST PATTERN
AUTOPHASER
&
OFFSET DELAY

BACKUP
FRAME-SYNC
TEST PATTERN
AUTOPHASER
&
OFFSET DELAY

2X2
BACKUP
SWITCH

16 CHANNEL
EMBEDDER
[BYPASS]
'110' MODELS
ONLY

2X1

3Gb/s, HD, SD OUT A1
3Gb/s, HD, SD OUT A2
3Gb/s, HD, SD OUT B1
3Gb/s, HD, SD OUT B2

MAIN
VIDEO PROBE
BACKUP
VIDEO PROBE

MAIN
AUDIO PROBE
BACKUP
AUDIO PROBE

PROBE LOGIC

16 CH

16 CHANNEL
DE-EMBEDDING
16 CHANNEL
DE-EMBEDDING

TRACKING
DELAY
TRACKING
DELAY

16 CHANNEL V-FADE
CLEAN SWITCH

BY-PASS

GPI-IN (MANUAL SW)

'110' MODELS
ONLY

TDM
MUX
16CH
OUT

TDM
DE-MUX
16CH
IN

GPI/O
OR TRIGGER
LOGIC

GPI OUT (STATUS)

µP
[LINUX]

PLL

RACK
CONTROLLER

REFERENCE
INPUTS
1   2

QUAD SPEED
MULTIPLEXING
AUDIO BUS

TO ADD-ON
FROM ADD-ON

INTERNAL SYNAPSE BUS

BPH17   BHX17b

3Gb/s, HD, SD INPUT 1 (OPTIONAL FIBER IN)

3Gb/s, HD, SD INPUT 2 (OPTIONAL FIBER IN)

3Gb/s, HD, SD MAIN OUTPUT 1 (OPTIONAL FIBER OUT)

3Gb/s, HD, SD MAIN OUTPUT 2

GPI I/O

3Gb/s, HD, SD BACKUP OUTPUT 1 (OPTIONAL FIBER OUT)

3Gb/s, HD, SD BACKUP OUTPUT 2

3Gb/s, HD, SD INPUT 3

3Gb/s, HD, SD INPUT 4

relay bypass

relay bypass
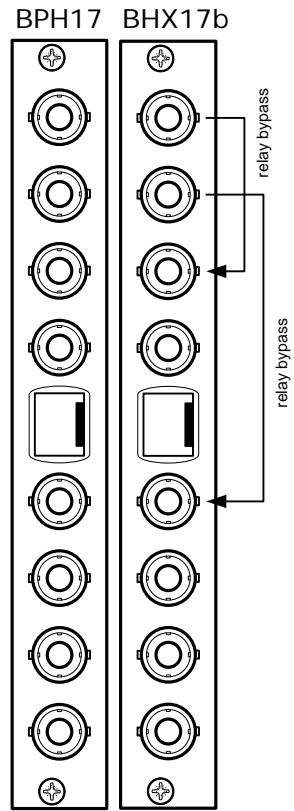
Features

The GIX100-110 and HIx100-110 are dual channel high performance 3Gb/s, HD and SD SDI video and embedded audio probes (signal integrity monitor) with clean video switch-over function.

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.

The '110' adds a smooth 16 channel audio change over with a V fade processing. An interesting feature is the ability to apply 4 individual sources and pre-route these signals to any of the main channels. This enables a backup functionality beyond two channels and can be used for adding a third or fourth backup channel.

- 4 free selectable inputs per probe input
- Clean backup switching through built-in frame synchronizers
  - Input formats need to be equal
- Clean audio switch-over through V fade in '110'
- Tracking audio delay in '110'
- Output configuration of 2 x main + 2x backup or 4 x main (In 2x2 backup channel has no clean audio processing)
- Probe functions:
  - SDI carrier detect
  - TRS validation
  - ANC checksum validation
  - Video content freeze detection
  - Video content black detection
  - VANC WST and OP47 present detection
  - Timecode availability
  - Audio channel detection (16 channels)
  - Audio silence detection (16 channels)
  - Audio Clip/5 sample full-scale indication (16 channels)
  - Dolby E present detection (with disable of V fade function in '110')
- An extensive probing matrix allows adjustment of individual classes of importance of the channels next to the main and backup channels.
- Test pattern generator as 5th source for emergency and test.
- Quad Speed Audio Add-On bus for post fade audio processing ('110' only)
- Locks to Bi-level, Tri-level or SDI input
- 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

Applications

- The GIXxxx family can be used as station output card, and ingest quality control card or a generic 2 x 2 switch.
- The integrity checking can also be performed for alarm monitoring purposes with the switch function disabled.
- Generic probing with automatic back-up switching
- Multi input backup capability allows for complex backup routing in multi platform environments

Ordering information

Module:
- **GIXxxx:** Dual channel 3Gb/s, HD, SD basic integrity checking probe with switch-over function
- **GIX100:** Dual channel 3Gb/s, HD, SD enhanced integrity checking probe with switch-over function
- **GIX110:** Dual channel 3Gb/s, HD, SD enhanced integrity checking probe with switch-over function and clean audio switching
- **HIXxxx:** Dual channel HD, SD basic integrity checking probe with switch-over function*
- **HIX100:** Dual channel HD, SD enhanced integrity checking probe with switch-over function
- **HIX110:** Dual channel HD, SD enhanced integrity checking probe with switch-over function and clean audio switching

Standard I/O:
- **BPH17_GIXxxx:** I/O-panel for GIXxxx

Relay bypass I/O:
- **BHX17b_GIXxxx:** Relay backup I/O-panel for GIXxxx

Fiber outputs:
- **BPH17T_FC/PC_GIXxxx:** I/O panel for G-HIXxxx with one fiber transmitter on FC/PC
- **BPH17T2_FC/PC_GIXxxx:** I/O panel for G-HIXxxx with two fiber transmitters on FC/PC
- **BPH17T_SC_GIXxxx:** I/O panel for G-HIXxxx with one fiber transmitter on SC
- **BPH17T2_SC_GIXxxx:** I/O panel for G-HIXxxx with two fiber transmitters on SC

Fiber inputs:
- **BPH17R_FC/PC_GIXxxx:** I/O panel for G-HIXxxx with one fiber receiver on FC/PC
- **BPH17R2_FC/PC_GIXxxx:** I/O panel for G-HIXxxx with two fiber receivers on FC/PC
- **BPH17R_SC_GIXxxx:** I/O panel for G-HIXxxx with one fiber receiver on SC
- **BPH17R2_SC_GIXxxx:** I/O panel for G-HIXxxx with two fiber receivers on SC

Fiber inputs and outputs:
- **BPH17TR_FC/PC_GIXxxx:** I/O panel for G-HIXxxx with one fiber transmitter and one receiver on FC/PC
- **BPH17TR_SC_GIXxxx:** I/O panel for G-HIXxxx with one fiber transmitter and one receiver on SC

Specifications

Serial video input

Standard	3Gb/s, HD and SD SDI:, SMPTE424, SMPTE 292M, SMPTE 259M
Number of inputs	4
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	4
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.); > 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. 450g
Operating temperature	0 °C to +40 °C
Dimensions	137 x 296 x 20 mm (HxWxD)

Electrical

Voltage	+24V to +30V
Power	<17 Watts