Synapse

TSX20-30

Triple/Dual channel enhanced TS/ASI monitor

A Synapse® product
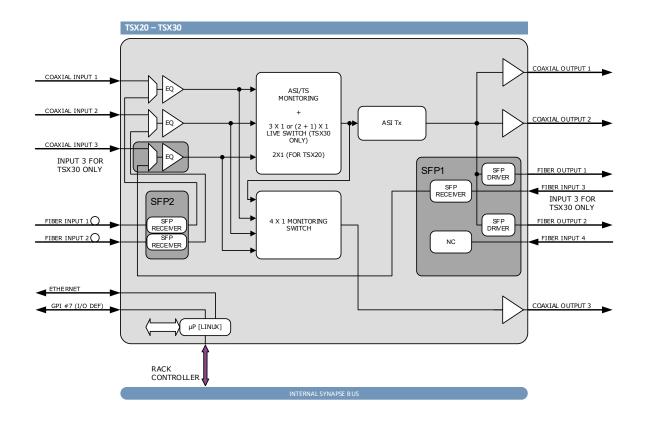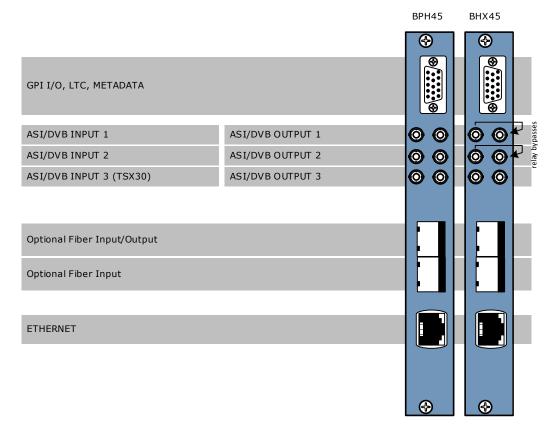
DESIGNED FOR *ASI/DVB*

Powered by Broadcast

SFP Flexible I/O

Block schematic & I/O panel

TSX20 – TSX30

COAXIAL INPUT 1

COAXIAL INPUT 2

COAXIAL INPUT 3

INPUT 3 FOR
TSX30 ONLY

EQ

EQ

EQ

ASI/TS
MONITORING
+
3 X 1 or (2 + 1) X 1
LIVE SWITCH (TSX30
ONLY)
2X1 (FOR TSX20)

ASI Tx

COAXIAL OUTPUT 1

COAXIAL OUTPUT 2

SFP1

SFP
RECEIVER

SFP
DRIVER

SFP
DRIVER

NC

FIBER OUTPUT 1

FIBER INPUT 3

INPUT 3 FOR
TSX30 ONLY

FIBER OUTPUT 2

FIBER INPUT 4

SFP2

SFP
RECEIVER

SFP
RECEIVER

4 X 1 MONITORING
SWITCH

FIBER INPUT 1

FIBER INPUT 2

ETHERNET

GPI #7 (I/O DEF)

µP [LINUX]

RACK
CONTROLLER

COAXIAL OUTPUT 3

INTERNAL SYNAPSE BUS

BPH45   BHX45

GPI I/O, LTC, METADATA	
ASI/DVB INPUT 1	ASI/DVB OUTPUT 1
ASI/DVB INPUT 2	ASI/DVB OUTPUT 2
ASI/DVB INPUT 3 (TSX30)	ASI/DVB OUTPUT 3

relay bypasses

Optional Fiber Input/Output

Optional Fiber Input

ETHERNET

Features

The TSX30 is a triple channel TS/ASI integrity checker with a configurable auto output switch and the TSX20 is a dual input version. The hardware can be fitted with 2 SFP modules that can be used as fiber in and/or outputs. Depending on the modules up to 3 fiber inputs or 2 fiber outputs can be enabled. A combination of 2 fiber inputs and 2 fiber outputs are also possible.
A TSX20 can be software upgraded to a TSX30

- ASI co-axial Transport Stream I/O
- 3 inputs with 3 analysis cores : configurable as 2+1 or a symmetrical 3 input (TSX30 only)
- 2 inputs symmetrical for the TSX20
- Up to 3 Fiber inputs: SFP2 is always configured as in, SFP1 can be used as dual out or single in
- 3 outputs and optional up to 2 fiber outputs (optional)
- Near-seamless switching between all inputs, preserving TS sync
- On-chip auto-switching and/or external control
- ASI Datalink monitoring with history - byte modes & periodicity
- TS Monitoring with 188/204 modes, rates & customizable alarms
- 64 fully configurable table detection tests
- 64 configurable PID detection tests in 4 upper distance groups
- Optional null TS output on loss of all 3 inputs
- TS and Network Id tests & indication
- Sync_byte_error reporting
- Transport_error_indicator reporting
- Monitor ASI/DVB streams and triggering of corresponding alarms. These can be used to trigger a switch over:
  - Loss of Transport Stream sync bytes
    - Alarm trigger: sync acquisition, fail
  - No Transport Stream
    - Alarm trigger: data, no data
  - Transport Stream-rate
    - Alarm trigger with lower and upper limit breach
  - Data-rate
    - Alarm trigger with lower and upper limit breach
  - Loss of an expected PID from user definable list of 64 PIDs
  - Loss of an expected table from user definable list of 64 tables
- Monitoring only:
  - Null packets / Active data ratio
  - ASI data link mode
    - Empty
    - Byte
    - Packet
    - Burst
  - 188/204 mode
    - 188 Mode
    - 204 Mode
    - Indeterminate
  - Number of PIDs in the stream
    - Total number of unique PIDs <preset
    - Total number of unique PIDs > preset
- Full control and status monitoring through the front panel of the SFR04/SFR08/SFR18 frame and the Ethernet port (ACP)

Applications

- Generic ASI/DVB integrity monitoring and backup switching
- Autonomous automatic A/B switching
- Redundancy switching at play out centers, head-ends and encoding/multiplexing systems
- Input monitoring and switching at DVB-T and DVB-T2 Transmitter sites

Ordering information

Module:
- **TSX30:** Triple channel ASI/DVB monitor with configurable output
- **TSX20:** Dual channel ASI/DVB monitor with configurable output

Standard I/O:
- **BPH45_TSX30:** I/O panel for TSX20-30
- **BHX45_TSX30:** I/O panel for TSX20-30 with relay bypass

Specifications

DVB/ASI Input

Standard	ISO/IEC 13818-1, BS EN 50083-9, EN 300 468, ATSC Doc. A/65C
Number of inputs	3 (1 per channel)
Equalization	Automatic up to 300m @ 270Mb/s or 100m @ 270Mb/s with BHX32 with Belden 1694A or equivalent cable
Return loss	> 15dB up to 270MHz

DVB/ASI Output

Standard	ISO/IEC 13818-1, BS EN 50083-9, EN 300 468, ATSC Doc. A/65C
Number of outputs	4
Signal level	800mV nominal
DC offset	0V ±0.5V
Rise/fall time	800ps nominal
Overshoot	< 10% of amplitude
Return loss	> 15dB up to 270MHz

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	<TBD