SDI Frame Synchronizer with External AES I/O

Description

The P VD 5810 is a versatile SDI frame synchronizer with full audio support which can be used to address a variety of synchronization issues in broadcast. The module offers multi-format support for SDI formats up to 3Gbit/s (auto-detect).

The module utilizes robust "flywheel" synchronization which can accommodate a wide variety of low quality asynchronous SDI sources. Comprehensive audio support includes de-embedding all 16 channels contained in the SDI input plus 16 external inputs. Audio is passed through a 32 channel audio processing stage before being passed into internal crossbars to configure the external audio outputs and the audio embedder. Audio is synchronized to the video automatically and is free

from disturbances even when dropping and adding frames. A DolbyE synchronizer is also provided to correctly synchronize and maintain critical guard band alignment.
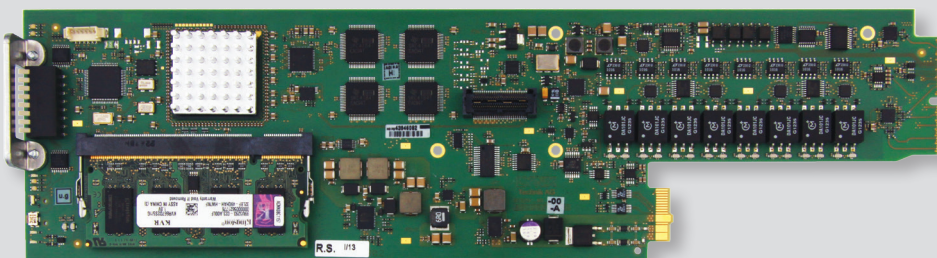
The module also provides up to 62 frames of programmable output delay adjustable in frames, lines and pixels.

Microprocessor control and on-board Flash RAM enable configurations and settings to be stored within the module.
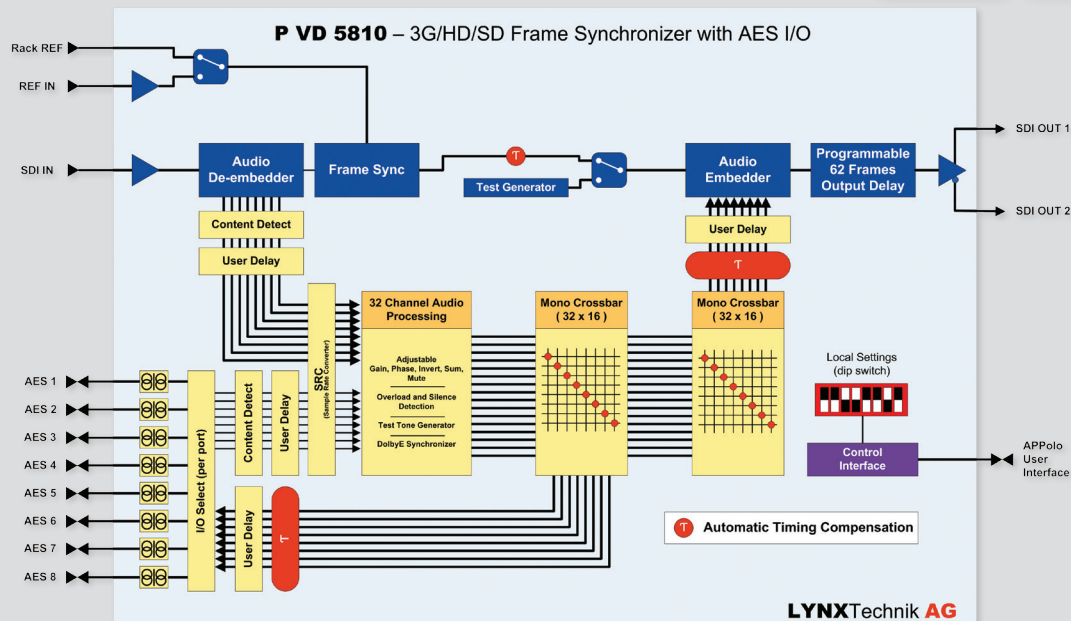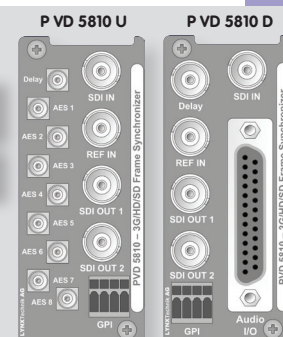
Remote control, status monitoring and error reporting is possible when using the LYNX APPolo Control System.

Features

- Supports SDI formats up to 3Gbit (auto-detect)
- Robust "flywheel" synchronization for a wide variety of problematic sources
- "Cross lock" compatible reference input
- All 16 channels of audio de-embedded from SDI input
- 32 channel audio processing stage with adjustable gain, phase invert, mute and stereo to mono mixdown plus overload and silence detection
- 32 x 32 mono output crossbar for embedder and external audio channel assignment

- Integrated test pattern generator
- Auto-tracking audio delay with no "pops" or "clicks" in audio even when dropping and adding frames
- DolbyE Synchronizer to maintain guard band
- Up to 62 frames of programmable delay
- Two versions available for balanced and unbalanced AES
- All external audio inputs / outputs are transformer coupled
- Remote control, status monitoring and error reporting possible with LYNX APPolo control system
- Full SNMP support when used with master controller option
- Hot swappable

Two versions available: U = unbalanced AES on MiniDin connectors, D = balanced AES on Sub D connector

P VD 5810 – 3G/HD/SD Frame Synchronizer with AES I/O

LYNXTechnik AG

SDI Frame Synchronizer with External AES I/O

Specifications

Video Input

Signal type	Serial digital video SMPTE, 292M, 424M, 259M with automatic video format and standard detection
Supported formats	SDI formats up to 3Gbit/s* (see table)
No. of inputs	1
Input impedance	75 Ohm
Connector	BNC
Return loss	> 15dB (270Mbit) > 10dB (2.97Gbit)

Video Outputs

No. of outputs	2
Signal type	Serial digital video SMPTE, 292M, 424M, 259M
Output format	Follows input format
Connector	BNC
Impedance	75 Ohm
Timing jitter	< 0.2UI (270Mbit) < 1.0UI (1.48Gbit) < 2.0UI (2.97GBit)
Alignment jitter	< 0.2UI (270Mbit) < 0.2UI (1.48Gbit) < 0.3UI (2.97GBit)
Return loss	> 15dB (270Mbit), >10dB (2.97Gbit)

Reference Input

Signal type	Analog bi-level (SDTV) or tri-level (HDTV) Auto-detect and cross lock compatible
No of inputs	1 external or 1 internal (rack frame reference)
Connection	BNC
Impedance	75 Ohm

AES Audio I/O

No. of inputs / outputs	16 channels on 8 x AES connections. Inputs or outptuts
Signal type	P VD 5810 U = 8 x AES3id unbalanced (single ended) P VD 5810 D = 8 x AES3 balanced
Connectors	P VD 5810 U = Mini DIN 1.0/2.3, 75 Ohm P VD 5810 D = Female 25 pin SubD, 110 Ohm balanced
Output levels	P VD 5810 U = 1 V peak to peak nominal P VD 5810 D = 4 V peak to peak nominal
Coupling	Transformer (isolated) inputs or outputs

Audio Processing

De-embedder	All 16 audio channels are de-embedded from SDI input
Processing functions	32 channel adjustable: Gain, phase, invert, mute, sum plus overload and silence detection
Crossbars	32 x 16 channel (mono) output select crossbar 32 x 16 channel (mono) embedder select crossbar
Sample rate converters	48 kHz - one per AES channel (16) selectable ON/OFF

Video / Audio Delay

Automatic	Automatic AV timing compensation
Output delay	Up to 62 frames of delay manually adjustable in frame / line / pixel increments
Audio delay	Up to 10 seconds total. Adjustable for each incoming and outgoing audio channel Note: *These adjustments are offsets to the automatic processing compensation*

Performance

Cable equalization	Up to 250m (820ft) using Belden 8281 (270Mbit) Up to 140m (459ft) using Belden 1694A (1.48Gbit) Up to 80m (262ft) using Belden 1694A (2.97Gbit)
Control	Basic local configuration using dip switch. Full remote control / status monitoring possible when using the LYNX APPolo control system
Status monitoring	Module edge LED indicators

Specifications subject to change

Electrical Specifications

Operating voltage	12 VDC
Power consumption	< 10W
Safety	IEC 60950/ EN 60950/VDE 0805

Mechanical

Size	283mm x 78mm
Weight	CardModule 120g, (4.2oz) connector plate 50g (1.8oz)

Ambient

Temperature	5°C to 40°C (41°F - 104°F) maintaining specifications
Humidity	90% maximum, non-condensing

Settings and Control

Control

Local controls	Basic local configurations are made with a dip switch. Use of the APPolo control system is **highly recommended** for the operation of this module.
Remote control	Full remote control and status monitoring supported with the APPolo control system
External GPI inputs	GPI inputs (Function configurable with APPolo)
Store user settings	Store up to 7 sets of user settings in module flash ram, switch between any two sets with external GPI input

On Board Indicators / LEDs

General status / alarm LED - (visible with rack door closed)

SDI status LED

Ref status LED

Power status LED

* Supported Video Standards

Bits / color	10 Bit / 4:2:2 (Y,Cr,Cb)
Formats : SDTV	**525** / 59.94Hz, **625**/50Hz
Formats : 1.5 Gbit	**720p** / 60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 / 23.98 Hz **1080i** / 60 / 59.94 / 50 Hz **1080p** / 30 / 29.97 / 25 / 24 / 23.98 Hz **1080psF** / 25 / 24 / 23.98 Hz
Formats : 3.0 Gbit	**1080p** / 60 / 59.94 / 50 Hz (Level A)

Options

RBO 5025 - Audio Adapter PCB
This option facilitates simplified connections of balanced analog audio I/O to the P VD 5810 D module SubD 25 pin connector.

Ordering Information

Model #	Description	Includes
P VD 5810 U/D	3G/HD/SD - SDI Frame Synchronizer with external AES I/O	CardModule, Rear Termination Panel and Reference Manual (on CD)