SD/HD Frame Sync with Full Audio Support

Description

The P VD 5630 is a flexible frame synchronization solution for multiformat digital environments. This is a single channel device with an optional fully featured second input, which converts the module to a dual channel device with seamless input switching. Full audio support is provided for embedded audio and external AES.

The module will accept a variety of digital video sources from SDTV (525/625) as well as HDTV formats with fully automatic input standard and format detection. The auto sensing reference capability supports bi-level analog SD sync or tri-level HD sync with full cross lock capability. Optional firmware upgrades provides a second input as well as two channels of integrated Down Conversion. SDTV ARC functionality is standard. Three output channels are provided which can be independently mapped by the user. Each channel has its own multiformat test generator as well as digital proc amps with adjustable gain

/ saturation / hue and lift controls. Broadcast quality Down Conversion combined with Integrated color space conversion and adjustable horizontal aperture correction ensures the very highest quality conversions.
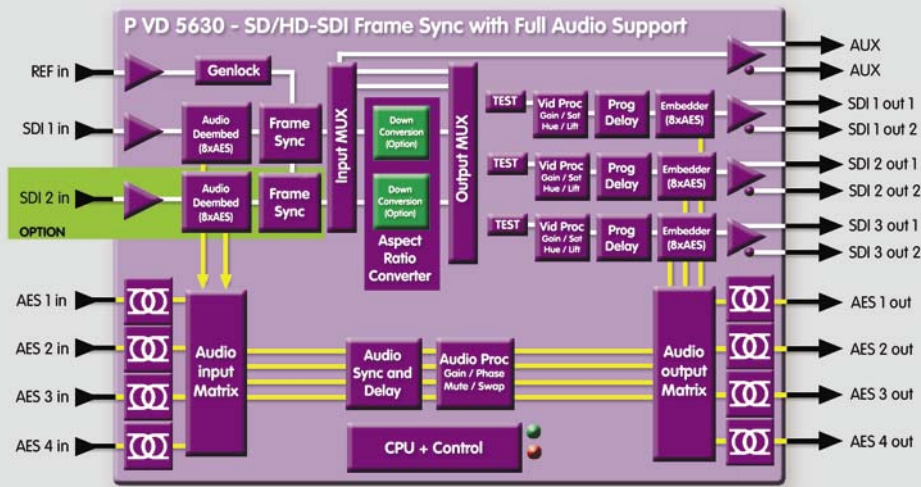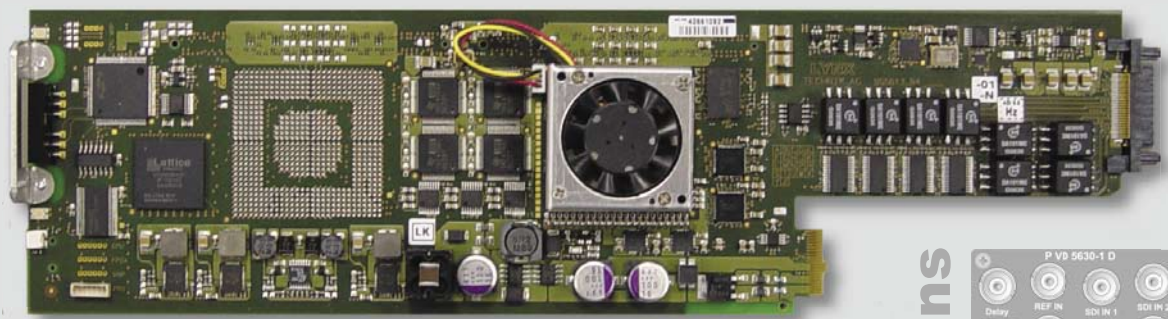
All audio (16 channels) is de-embedded from each SDI input and passed through a full audio processing stage. Selectable sample rate converters, input matrix and adjustable gain / mute / phase invert control is provided. Each output channel has its own 16 channel embedder with in dependant audio mapping. External AES inputs and outputs are also provided which are fully isolated through transformers. Separate audio pathways are provided which maintains DolbyE integrity through the synchronizer.

This is an extremely flexible and powerful module which can address a multitude of applications in Broadcast.
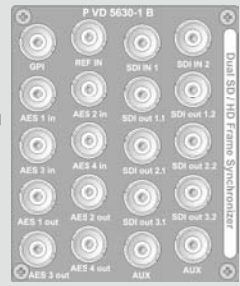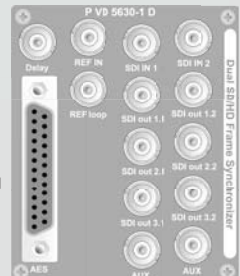
Features

- Multi-format operation. SDTV and HDTV inputs (auto-detect).
- Single input with optional second input providing seamless input switching.
- 3 user mapped output channels.
- 3 output Proc amps with adjustable gain, saturation, hue and pedestal.
- Each channel has a 3 frame programmable video delay. Adjustable in frames, lines and pixel increments.
- Analog tri-level or bi-level (black) reference sync (auto-detect) cross lock compatible.

- Integrated SDTV ARC (Aspect Ratio Converter).
- Integrated test pattern generator for each output channel.
- All audio (16 channels) is de-embedded from each SDI input.
- Audio processing includes gain / swap / mute and invert with selectable sample rate converters.
- Each output channel has its own 16 channel embedder.
- DolbyE transparency
- Optional firmware upgrade adds 2 Ch. Down Conversion.
- Integrated color space conversion and adjustable aperture correctors.
- Store up to 8 sets of user settings in module flash RAM.

P VD 5630 - SD/HD-SDI Frame Sync with Full Audio Support

SD/HD Frame Sync with Full Audio Support

Specifications

Video Inputs

Signal Type	Serial digital video SMPTE 292M, 344M, 259M-C
Input standards	**SDTV**: 525 59.94Hz / 625 50Hz **HDTV**: 1080i 59.94Hz / 1080i 60Hz / 1080i 50Hz / 720P 59.94Hz / 720P 60Hz / 720P 50Hz (Field upgradable for additional format support)
No. Of inputs	1 input (with optional second input)
Connector	BNC
Impedance	75 Ohm
Cable Equalization	Up to 250m Belden 8281 (270MHz) Up to 140m Belden 1694A (1.485GHz)
Return Loss	> 15 dB (270MHz) > 10dB (1.485GHz)

Reference Input

Signal Type	Analog Bi-level / Tri-level (auto detect) cross lock compatible
No of inputs	1 x External or internal rack reference
Connection	BNC
Impedance	75 Ohm

Video Outputs

Signal Type	Serial digital video SMPTE 292M, 344M, 259M-C
Output standards	**SDTV**: 525 59.94Hz / 625 50Hz **HDTV**: 1080i 59.94Hz / 1980i 60Hz / 1080i 50Hz / 720P 59.94Hz / 720P 60Hz / 720P 50Hz
No. Of outputs	6 (in 3 sets of 2 outputs) + 2 AUX outputs
Connector	BNC
Impedance	75 Ohms
Jitter	< 0.2 ui (270MHz) < 0.25 ui (1.485GHz)
Return Loss	> 15 dB (1.5GHz)

AES Inputs and Outputs

Signal	P VD 5030-1 B: Unbalanced AES3id P VD-1 5030 D: Balanced AES3
Number of inputs / outputs	4 x AES inputs + 4 x AES outputs (transformer coupled)
Connector	P VD 5030-1 B: BNC (75 Ohm) P VD 5030-1 D: Female SubD (110 Ohm)

Video Processing

Delay adjustment range	Up to 3 frames of prog delay in pixel / line / frame increments
Minimum delay	1 frame (including ARC and down conversion option)
Video adjustments	Gain / Saturation / Hue / Pedestal
Aperture Corrector	In dependant for each output channel, sharpen (+ve) and soften (-ve) user adjustments provided
ARC Functionality with 4:3 SDTV in	16:9 output. Stretch to fill / center cut top and bottom / pllar box
ARC Functionality with 16:9 SDTV in	4:3 output. Stretch to fill / center cut / letterbox 16:9

Audio Processing

De-embedding	All audio (8xAES) de-embedded from each SDI input
Input audio matrix	De-embedded and External AES on selection matrix
Audio Proc	Adjustable gain / mute and phase invert functionality
Embedder Output Matrix	Output matrix feeds (3) 8 x AES embedders for each channel (source only from Audio Pathway 1 and 2 below)
Sample rate converters	Selectable ON/OFF
Audio delay and synchronization	Automatic (tracking) with user offset adjustments
Audio Pathway 1	8 x AES wide with selectable sample rate converters and full audio proc functions
Audio Pathway 2	12 x AES wide + audio proc (+ bypass for DolbyE transparency)
Audio Pathway 3	4 x AES wide synchronized to SDI 1 input
Audio Pathway 4	4 x AES wide synchronized to SDI 2 input
External AES output Matrix	Select 4 x AES from any audio pathway

Operating Modes

Frame Sync	Basic SD/HD Frame Synchronizer with full audio support (included)
Dual Channel Frame sync	Requires second input option
Dual Channel Down Converter	Requires Down Conversion option
SDTV ARC	Standard (included)

Control

Local Controls	Local alphanumeric display with integrated menu system for setting "basic" module parameters. Use of the control system is **MANDATORY** for the operation of this module.
Remote Control	Comprehensive remote control and status monitoring supported when used with a LYNX Controller option
External GPI Input	Single GPI input (Function configurable)
User Settings	Store up to 8 user settings, 2 of which can be switched between with external GPI input

Electrical Specifications

Operating Voltage	12 VDC
Power Consumption	16 W
Safety	IEC 60950/ EN 60950/ VDE 0805

Options

Firmware upgrades (field upgradable)

OC-5630-SCND	**Second Input:** Provides a fully featured second input with de-embedder (8xAES), frame synchronizer and seamless switching between the two input channels. Fully integrated option (firmware licence code activation)
OC-5630-DOWN	Provides internal broadcast quality down conversion from HDTV input sources to a SDTV output format. (525/625) Output aspect ratio presets: • 16:9 into 4:3 (Letterbox) • Center cut • Stretch to fill (709) to (601) Color space conversion - selectable

Note. This module utilizes a double width rear connection plate and will take up two slots in the standard RFR 5011 Rack Frame.

Note. The use of the control system for the setup and use of this module is **mandatory**. Its not possible to bring all the settings and features into the local control adjustments provided.

Ordering Information

Specifications subject to change

Model #	Part Number	Description	Includes
P VD 5630-1 D	5155605630	SD/HD Frame Sync with Audio Support (SubD, AES3)	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual
P VD 5630-1 B	5155035630	SD/HD Frame Sync with Audio Support (BNC, AES3id)	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual
OC-5630-SCND	1000000027	Second input option	Activation licence code
OC-5630-DOWN	1000000026	One channel of integrated down conversion (2 possible)	Activation licence code