

3Gbit Video Processor

Description

The P IE 5810 is a flexible video processing platform allowing users to customize functionality for a specific application.

The basic module has one multiformat SDI input and two multiformat output channels which includes a test pattern generator and video proc amps for each output channel. All audio (16 channels) is de-embedded from the input signal and automatically delayed to match any video processing delay and then re-embedded into each output channel.

Support for SDI signals up to 1.5Gbit is standard. 3G can be added with a licence code. Optional optical I/O with CWDM support (18 wavelengths) is also provided.

Five firmware options are provided to customize the modules primary function. Use one, or any combination of the options to derive the required functionality, options include:

3G Support: Adds support for 3Gbit SDI video signals

Noise reduction: Advanced noise reduction option for "mosquito noise" removal, block artifact removal with 2D and 3D recursive filtering and H and V aperture correction.

Up / Down / Cross Conversion: High quality format conversion with letterbox / pillarbox and stretch to fill presets as well as user adjustable sizing. Includes color space conversion

SDTV ARC: Provides advanced high quality Aspect Ratio conversion for SDTV signals with presets and user adjustable sizing.

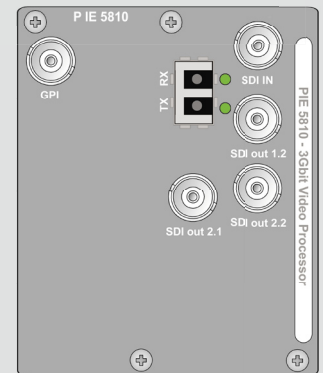
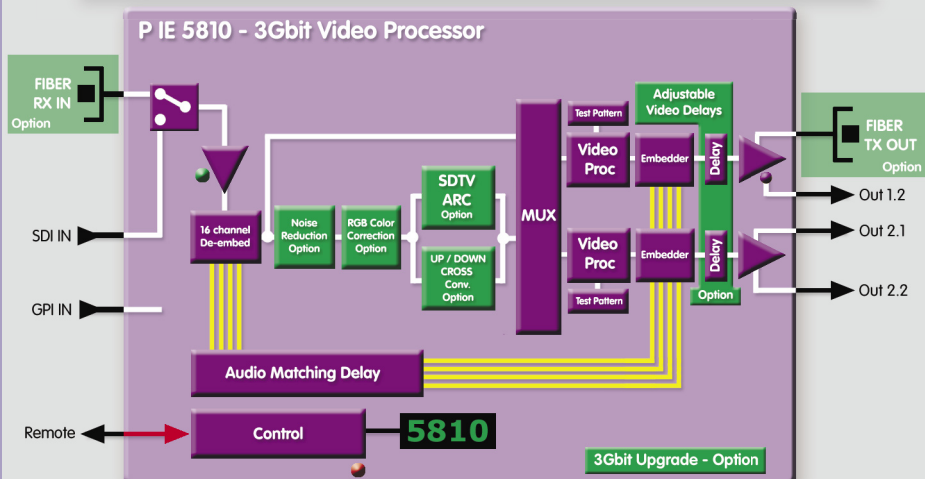
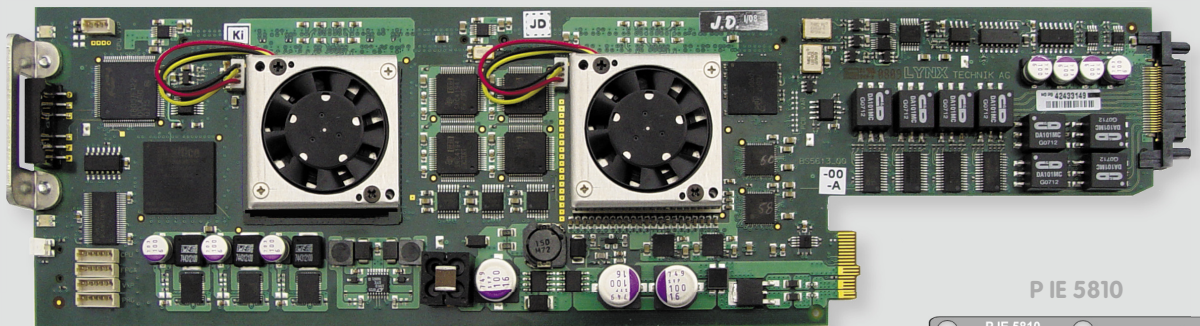
Video Delay: Provides programmable 12 frame video delays in each output channel, adjustable in frame / line and pixel increments.

Color Corrector: Provides adjustments for RGB gain and black levels

Firmware options are enabled using a licence code.

Features

- Supports SDI video signals up to 1.5Gbit
- Upgrade to 3G anytime with a licence code
- 2 user mapped multiformat SDI output channels
- Proc amps with adjustable gain, saturation hue and pedestal
- Test pattern generator for each output
- All audio (16 channels) de-embedded and automatically delayed to match video processing delay
- Firmware options include: Noise Reduction, SDTV ARC, Up-Down-Cross conversion, video delay and color correction
- Store 7 user presets and switch any two with GPI trigger
- Optional optical I/O with CWDM support (18 wavelengths)
- AFD/Closed Caption/Timecode and WSS support
- Internal flash ram for storing setup and configuration
- Module ships with all options installed, simply activate the options with a licence code when needed.
- Built in matrix display with menu system for local control
- Remote control, status monitoring and error reporting possible when used with LYNX control system.
- SNMP error reporting when using master controller option
- Hot swappable.



Backplane

Note
The backplane is double width and will occupy 2 module slots in the card chassis

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Specifications

SDI (electrical) Video Inputs / Outputs

Signal Type	Serial digital video SMPTE, 292M, 424M, 259M with automatic video format and standard detection
Input standards	SDI formats up to 1.5Gbit/s* (see table) - 3Gbit upgrade option
No. Of Inputs	1 (or 1 optical input - optional)
No of Outputs	3 (2 x chan. 1 and 1 x chan. 2) + chan 2 optical out (optional)
Connectors / Impedance	BNC 75 Ohm
Cable Equalization	Up to 250m Belden 8281 (270Mbit) Up to 140m Belden 1694A (1.485Gbit) Up to 80m using Belden 1694A (2.97Gbit)
Return Loss	> 15 dB (270Mbit) > 10dB (2.97Gbit)
Jitter	< 0.20 UI (270Mbit) < 1.0 UI - Timing, < 0.20 UI - Alignment (1.485Gbit) < 2.0 UI - Timing, < 0.30 UI - Alignment (2.97Gbit)

SDI (Optical) Input / Output (Option)

Signal Type	SMPTE 297M - 2006
Connectors	LC / UPC
No. of inputs / outputs	1 input (selectable) and 1 output
Wavelength	(Refer to available options)

Video / Audio Processing

Video adjustments	Gain / Saturation / Hue / Pedestal
Test Pattern Generator	Color Bars + 75% Color bars over red + Pathological EQ, + Pathological PLL, + Full field R,G,B,Y,C,M + black +White + 15% grey.
Audio de-embedder	De-embeds all audio (16 channels) from input
Audio delays processing	Automatically delays audio to compensate for internal video processing delay (will pass embedded DolbyE transparently)
Embedders	Two 16 channel embedders provided to re-insert audio.

Control

Local Controls	Local alphanumeric display with integrated menu system for setting "basic" module parameters. Use of the control system is recommended 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 on BNC connector. (Function configurable)
User Settings	Store up to 7 sets of module user settings in module flash ram
MetaData	Supports Closed Captioning, AFD, Timecode and WSS

Electrical Specifications

Operating Voltage	12 VDC
Power Consumption	15 W
Safety	IEC 60950/ EN 60950/ VDE 0805

Mechanical

Size	283mm x 78mm
Weight	CardModule 150g, connector plate 100g Note: This Module has a double width rear connection plate and requires two available rack slots.

Ambient

Temperature	5°C to 40°C Maintaining specifications
Humidity	90% Max non condensing

Specifications subject to change

Options

All options are field upgradable

OH-TR-1	Fiber SFP Module. Fiber I/O module. 1310nm wavelength (non CWDM) TX power = -5dbm. RX sensitivity = -3dBm to -19dBm. Single Mode for up to 10Km (typical)
OH-TR-4-XXXX	CWDM Fiber SFP Module. Fiber I/O module. XXXX designates wavelength. [select from 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610nm] TX power = -1dbm. RX sensitivity = -7.5dBm to -20dBm. Singlemode for up to 40Km (typical)
OC-5810-UPXD	Provides internal broadcast quality up / down and cross conversion capability • Convert and format with black sidebars (pillarbox or letterbox) • Crop image • Stretch to fill Color space conversion
OC-5810-VDLY	Provides two channels or independently adjustable video delays, up to 12 frames max. Programmable in Frame / Line / Pixel increments
OC-5810-ARC	High quality aspect ratio conversion for SDTV, user preset modes for Crop, Letterbox, pillarbox or stretch to fill plus user adjustable image sizing and position.
OC-5810-NR	High quality noise reduction includes 'mosquito noise' removal, artefact black removal, 2D/3D recursive low pass filtering, and H/V aperture correction.
OC-5810-COCO	Adds a RGB color correction stage with adjustable gain and black level for Red Green and Blue
OC-5810-3G	Upgrades the module to support some 3 Gbit SDI formats. Please see table below for details*

Options can be added at any time and only requires the purchase of a licence code (no hardware or firmware modifications)

* 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 Level A
Formats : 3.0 Gbit (optional)	1080p / 60 / 59.94 / 50 Hz

Note. This module utilizes a double width rear connection plate and will take up two slots in the standard LYNX 2RU Rack Frames.

Note. The use of the control system is mandatory for this module. The local controls provide access to basic setup and configuration only.

Ordering Information

Model #	Part Number	Description	Includes
P IE 5810	515525810	3Gbit Video Processor	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual
OH-TR-1	1155301811	OPTION: Fiber Optic SFP Module 1310nm. (non CWDM)	SFP Module - Plugs into backplane using socket provided
OH-TR-4-XXXX	TBA	OPTION: CWDM Fiber Optic SFP Module (XXXX = wavelength see options table)	SFP Module - Plugs into backplane using socket provided
OC-5810-ARC	1300000028	OPTION: SDTV Aspect Ratio Converter	Licence code
OC-5810-UPXD	1300000031	OPTION: Up / Down / Cross Conversion	Licence code
OC-5810-NR	1300000029	OPTION: Noise Reduction	Licence code
OC-5810-VDLY	1300000032	OPTION: 12 frame programmable video delay	Licence code
OC-5810-COCO	1300000030	OPTION: RGB Color Corrector	Licence code
OC-5810-3G	1300000027	OPTION: 3Gbit Upgrade	Licence code