

3Gbit 16 Channel Embedder / De-embedder

Description

The P DM 5288 is a versatile 16 channel (8xAES) embedder or de-embedder which can be used to address a variety of audio issues in broadcast. The module is multiformat supporting SDI formats up to 3Gbit/s.

The module can be switched between a 16 channel embedder or a 16 channel de-embedder, and used as a combination of both. 16 channels of audio are always de-embedded from the input SDI signal and passed into an audio processing stage. In embedder mode 16 channels of external audio are passed through selectable sample rate converters (SRC) and into the audio processing stage. Audio processing includes adjustable gain, phase invert and mute for each of the 32 channels as well as a selectable mono mixdown function for each left and right pair. The processed audio is passed onto a 32 x 32 output

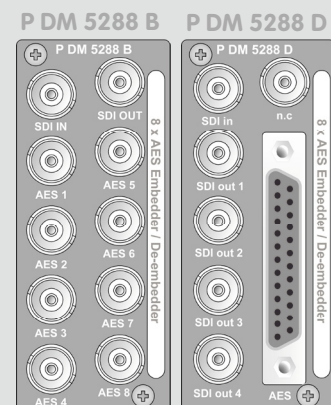
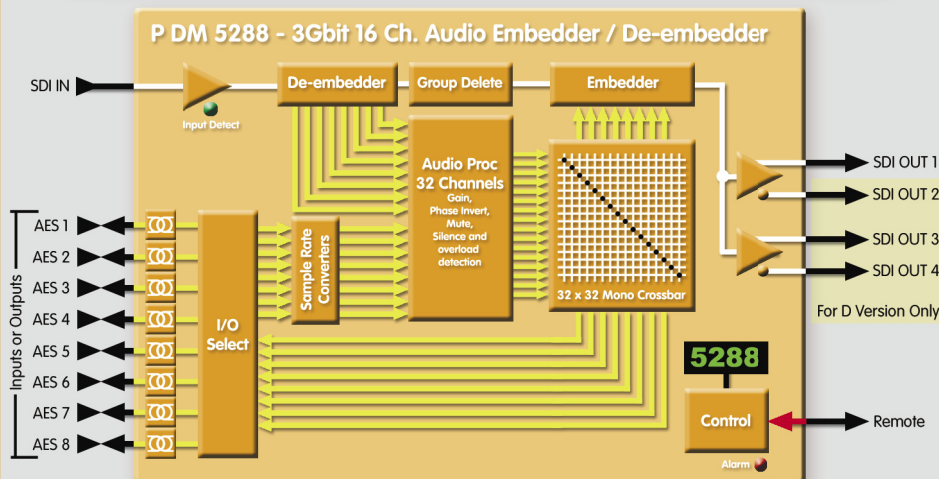
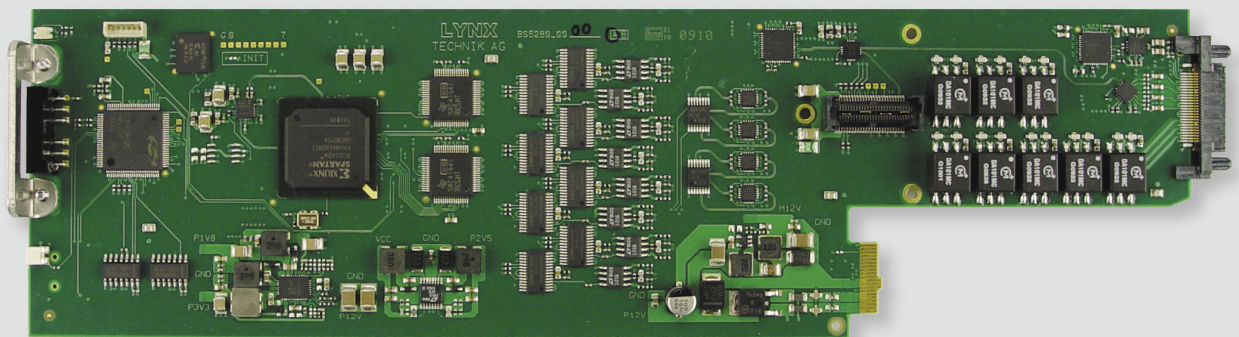
crossbar where the audio for the embedder, and / or audio for the external outputs can be mapped. Eight selectable SRC channels ensures transparent compatibility with encoded audio streams such as DolbyE.

Two rear connection panel options are provided one for balanced AES3 audio on a SubD connector, and one for unbalanced AES3-id audio on BNC connectors.

Microprocessor control and on board flash ram enable configurations and settings to be stored within the module (through power cycles and module removal). Remote control, status monitoring and error reporting is possible when using the LYNX control system.

Features

- Supports SDI formats up to 3Gbit
- Switch between 16 channel embedder or de-embedder
- 32 channel audio processing stage with adjustable gain, phase invert, mute and stereo to mono mixdown. Also provides overload and silence detection.
- 32 x 32 mono output crossbar for embedder and external audio channel assignment
- Selectable "Auto Black Function" with no input video the module will embed audio in a black video frame
- 8 selectable sample rate converters (SRC)
- DolbyE Transparent (no audio proc functions with DolbyE).
- Two backplane options supporting single ended AES or balanced AES audio connectivity.
- Transformer coupled (isolated) audio inputs and outputs.
- Remote control, status monitoring and error reporting possible when used with LYNX control system.
- Full SNMP support when used with master controller option
- Hot Swappable.



Backplane Options

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CardModules

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
Connector / Impedance	BNC, 75 Ohms
Return loss	> 15dB (270Mbit) , > 10dB (2.97Gbit)
Video Outputs	
No. Of Outputs	P DM 5288 B = 1 output. P DM 5288 D = 4 outputs
Signal Type	Serial digital video SMPTE, 292M, 424M, 259M
Output format	Follows input format.
Connector / Impedance	BNC. 75 Ohm
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)
Return loss	> 15dB (1.485Gbit), > 10dB (2.97Gbit)
AES Audio Inputs / Outputs	
No. of Inputs / outputs	8 (8 x AES inputs or 8 x AES outputs)
Signal	P DM 5288 B = 8 x AES3id unbalanced (single ended) P DM 5288 D = 8 x AES3 balanced
Connectors	P DM 5288 B = BNC, 75 Ohm P DM 5288 D = Female 25 pin sub D, 110 Ohm balanced
Output level	P DM 5288 B = 1 v peak to peak nominal P DM 5288 D = 4v peak to peak nominal
Coupling	Transformer (isolated) inputs or outputs
Audio Processing	
Audio Proc Functions	Adjustable Gain / Mute / Phase Invert / Mixdown (32 channels) Silence and overload protection (32 channels)
AES output Crossbar	32 x 32 mono output crossbar. 16 output channels for external AES assignment and 16 output channels for embedder assignment
Embedder	8 x AES (16 channel) embedder, input configured by crossbar
De-embedder	8 x AES (16 channel) de-embedder
Operation Modes	
Embedder	8 x AES inputs through sample rate converters (Selectable)
De-embedder	8 x AES outputs (16 channel)
Performance	
Cable equalization	Up to 250M using Belden 8281 (270Mbit) Up to 140m using Belden 1694A (1.485Gbit) Up to 80m using Belden 1694A (2.97Gbit)
Control	Basic local control selection local matrix display.** Full remote control / status monitoring possible when using a LYNX controller option. (Note. Remote control is recommended for easier access the extensive features this module provides)
Status Monitoring	Card edge LED indicators
Electrical Specifications	
Operating Voltage	12 VDC
Power Consumption	< 7W
Safety	IEC 60950/ EN 60950/VDE 0805
Mechanical	
Size	283mm x 78mm
Weight	CardModule 120g, connector plate 50g
Ambient	
Temperature	5°C to 40°C Maintaining specifications
Humidity	90% Max non condensing

Specifications subject to change

Settings and Control

Local Settings**	
Audio I/O config	Embedder / de-embedder
Auto Black	ON/OFF (uses black video frame is input video is missing)
SRC config	Set Sample Rate Converter ON /OFF for each external AES input (8)
Embedder group config	ON/OFF for each group (4) ON = SDI embedded audio replaced with new audio OFF = SDI embedded audio passed unmodified
Crossbar config	a) Assign AES outputs b) Assign SDI Embedder inputs
Restore factory defaults	YES/NO
Additional Settings Available from Control System	
Crossbar config	Access to full mono crossbar functionality
Set audio gain	32 channels
Mute	32 channels
Auto black format	Set the format of the auto black video frame if no input is present.
Phase aligned	(phase aligned de-embedding) ON/OFF
20/24 bit audio	Select 20/24 Bit for each group (SDTV mode only)
Group delete	Delete embedded audio group (4) ON/OFF
Phase invert	32 channels
Mute	32 channels
Stereo Mixdown	16 channels
Silence and overload	(32 input channels) Detected and displayed in GUI - not logged in error logs

On Board Indicators / LEDs

SDI input status. Present / Not present
General Alarm Indicator - 3 color

* 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	1080p / 60 / 59.94 / 50 Hz

**Note

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

Ordering Information

Model #	Part Number	Description	Includes
P DM 5288 B	6155015288	3 Gbit 16 channel embedder / de-embedder	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual (on CD)
P DM 5288 D	6155005288	3 Gbit 16 channel embedder / de-embedder	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual (on CD)