Platinum MX

Medium-Scale Routing

Platinum™ MX routing switchers combine a highly robust architecture with the flexibility required to future-proof your investment, delivering unsurpassed value for your mid-scale routing needs. All Platinum MX frames provide independent signal paths and crosspoints for audio and video, allowing complete versatility regardless of matrix size.

Designed to support high-quality routing of all analog and digital video and audio signals, Platinum MX seamlessly integrates the capabilities of a discrete audio infrastructure in a fully embedded video plant without the need for a secondary audio frame.

Supporting 24/7 operation, Platinum MX routing switchers are well-suited to network, local broadcaster, mobile production, cable, telco, military, government and corporate applications — any environment that requires routing of a large number of audio and video signals.

Explore the Platinum Configurator Tool.

Benefits

- Integrated video, audio and multiviewer capabilities in a compact frame – save on space, cabling, power
- Independent signal paths and crosspoints for video and audio – ensures versatility and reliability

Features

- Mixed-signal routing (SD, HD, 3 Gb/s and audio)
  - Up to 72x64 video in 5RU (up to 144x128 discrete stereo/audio)
  - Up to 128x128 video in 9RU (up to 256x256 discrete stereo/audio)
- Independent signal paths and crosspoints for video and audio
- Optional eight-channel frame sync input card for wild feed ingest and audio shuffling, as well as demultiplexing of up to 16 channels of embedded audio in each video stream
- Modular I/O in groups of eight provides support for either coaxial or fiber connectivity
- Front-loading, hot-swappable modules for 24/7 operation
- Redundant power supplies, controllers and signal paths
- Mux/demux audio processing support
  - Mux/demux 16 channels of audio per video stream
  - Full mono breakaway audio routing support
  - Seamless integration between demultiplexed and discrete audio
  - Multiplex 16 channels of audio into each video output
- Enhanced control and monitoring
  - Wide range of hardware control panels
  - Powerful control integration for easy setup and configuraiton
  - Software and web-based applications with user-configurable GUIs
  - Protocol support for Magellan CCS™, SNMP and third-party vendors
  - Secure access rights with restrictions by level, source and destination
- Video routing support
  - 1080p (3 Gb/s) signal routing (any size)
  - Almost any digital video signal from 3 Mb/s to 3 Gb/s including: HD-SDI, SD-SDI, ASI, SMPTE 310, SMPTE 305, etc.
  - SMPTE-compliant analog video supported via conversion to/from SD-SDI on I/O
- Discrete audio routing support
  - Digital audio signals including balanced and unbalanced AES
  - Analog stereo/mono audio via conversion to/from AES on I/O modules
  - Support for up to 16 embedded AES streams per video input
  - “Quiet switch” with transitions

- Platinum™ SX Pro integrated internal multiviewer
  - 32 discrete PiPs per module
  - Up four IP decodes in addition to baseband
  - Onscreen control
  - CC presence and text
  - Clocks and timers
  - Tallies and UMDs
  - Audio meters and phase

Applications

- **True Embedded Audio Processing Router**
  Platinum MX combines the best of both high-bandwidth video signal routing and an internal TDM architecture to provide the world's first embedded audio infrastructure router. By providing parallel signal paths and dedicated, redundant crosspoints for both audio and video within a single frame, Platinum MX is able to demux incoming embedded audio signals internally.
- **Enhanced Control and Monitoring**
  Imagine Communications router control systems make even the most complex router configuration simple and intuitive to implement and maintain. Platinum MX frame features redundant control modules that store configuration information related to that frame in non-volatile memory, protecting your crucial configuration information and current routing status.
- **Integrated Multiviewer Support**
  Platinum SX Pro is an output module that operates in any current Platinum router chassis (5, 9, 15 or 28RU). Occupying from one to four slots, the module can reside alone in a Platinum frame and function exclusively as a multiviewer or can be combined with routing cards for ultimate flexibility.
- **Higher Reliability**
  Platinum MX routing frames are designed for harsh operation (including mobile truck environments) and feature front-loading, hot-swappable modules for ease of serviceability. Each Platinum MX frame supports redundant control, and redundant cross-points are available in most configurations.

Specifications

Specifications and designs are subject to change without notice.

HD DIGITAL VIDEO INPUTS (PT-HSR8C-IBG)	
Number of Inputs	8
Input Connector	75 ohms BNC per IEC 1698
Impedance	75 ohms (BNC)
Signal Type	SMPTE 424M, SMPTE 292M, SMPTE 259M, SMPTE 344M, DVBASI Most other <1 V pkpk digital signals, 3 Mb/s to 3 Gb/s
Maximum Input Level	880 mV (BNC)
Return Loss (BNC)	>15 dB, up to 1.485 GHz >10 dB, 1.485 to 2.97 GHz
Equalization (BNC)	Automatic 400 m Belden 1694A for 270 Mb/s data rate 200 m Belden 1694A for 1.485 Gb/s data rate 150 m Belden 1694A for 2.97 Gb/s data rate

BALANCED DIGITAL AUDIO INPUTS (PT-AEBT-IB)	
Number of Inputs	16
Input Type	Balanced, transformer coupled
Input Connector	DB-25
Impedance	110 ohms
Signal Type	AES3 AES frame rates 32 to 192 kHz

BALANCED DIGITAL AUDIO INPUTS (PT-AEBT-IB)	Other 40% to 60% duty cycle digital signals from 2 to 25 Mb/s
Input Amplitude	0.2 V to 7 V pk-pk
Nominal Input Amplitude	5 V pk-pk ±1 V

UNBALANCED DIGITAL AUDIO INPUTS (PT-AECT-IB)	
Number of Inputs	16
Input type	AC, coupled
Input connector	BNC, 75 ohms per IEC 169-8 (via adapter)
Impedance	75 ohms
Signal Type	AES3id, SMPTE 276M AES frame rates from 32 to 192 kHz Other 40% to 60% duty cycle digital signals 2 to 25 Mb/s
Input Amplitude	0.1 to 2 V pk-pk
Nominal Input Amplitude	1 V pk-pk ±10%

ANALOG VIDEO INPUTS (PT-DEC-IB)	
Number of Inputs	8
Input Connector	BNC, 75 ohms per IEC 169-8
Impedance	75 ohms
Signal Type	NTSC, PAL
Input Coupling	DC, coupled
Maximum Input Amplitude	2 V pk-pk
Nominal Input Amplitude	1 V pk-pk + 10%
Clamping	Automatic
Quantization	10 bits
Filter	5 line adaptive comb, notch, or trap
Output Data Rate	270 Mb/s per SMPTE 259C
Frequency Response	±0.1 dB to 5.75 MHz
Differential Gain	<1%
Differential Phase	<1°
Signal-to-Noise Ratio	>65 dB
Bulk Delay	<80 microseconds, typical

ANALOG AUDIO INPUTS (PT-ADCT-IB)	
Number of Inputs	16
Input Type	Balanced
Input Connector	DB-44
Impedance	>20 k ohms
Signal Type	Stereo analog audio
Maximum Input Amplitude	+28 dBu
Full scale Adjustment Range	0 dBFS = +13 dBu to +28 dBu in 1 dB steps, ±0.5 dB

ANALOG AUDIO INPUTS (PT-ADC-HE)	
CMRR	>75 dB rejection @ 60Hz
Conversion Type	128x oversampling, 1-bit, delta-sigma
Resolution	24 bits
Sampling Rates	32 to 192 kHz using external AES reference 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 or 192 kHz using internal oscillators
Gain Stability	±0.01 dB
Frequency Response	±0.15 dB, 20 Hz to 20 kHz
Linearity Deviation	<±0.5 dB typical <±1.0 dB worst case
THD+N	<0.01% @ 997 Hz, –1 dBFS = +23 dBu
Idle Channel Noise	<-100 dBFS CCIR-RMS, typical <-90 dBFS CCIR-RMS, worst case
Dynamic Range	>100 dB CCIR-RMS, typical >90 dB CCIR-RMS, worst case
Crosstalk	>90 dB isolation, 20 Hz to 20 kHz, all hostile (hostile channels driven at -1 dBFS = +23 dBu)

HD DIGITAL OUTPUTS (PT-HSR-OBG+)	
Number of Outputs	8
Output Connector	BNC, 75 ohms per IEC 169-8
Impedance	75 ohms
Signal Type	SMPTE 424M, SMPTE 292M, SMPTE 259M, SMPTE 344M, DVB-ASI Other <1 V pk-pk digital signals, 3 Mb/s to 3 Gb/s
Reclocking	Automatic for 2.970 Gb/s, 2.967 Gb/s, 1.485 Gb/s, 1.4835 Gb/s, and 270 Mb/s Bypass for all other rates between 3 Mb/s and 3 Gb/s
Output Amplitude	800 mV pk-pk ±10%
DC Offset	0 V ±0.5 V
Rise/Fall Times	400 ps to 1500 ps, for SMPTE 259M data rates <135 ps, for SMPTE 424M and 292M data rates
Overshoot	<10% of amplitude

SD DIGITAL VIDEO OUTPUTS (PT-SR-OBG+)	
Number of Outputs	8
Output Connector	BNC, 75 ohms per IEC 169-8
Impedance	75 ohms
Signal Type	Signal type SMPTE 259M, SMPTE 344M, DVB-ASI Other <1 V pk-pk digital signals, 3 to 540 Mb/s
Reclocking	Automatic for 270 Mb/s Bypass for all other rates between 3 and 540 Mb/s
Output Amplitude	800 mV pk-pk ±10%
DC Offset	0 V ±0.5 V

SD DIGITAL VIDEO OUTPUTS (PT-SR-OBG+)	
Rise/Fall Times	400 to 1500 ps
Overshoot	<10% of amplitude

BALANCED DIGITAL AUDIO OUTPUTS (PT-AEBT-OB)	
Number of Outputs	16
Output Type	Balanced, transformer coupled
Output Connector	DB-25
Impedance	110 ohms
Signal Type	AES3 AES frame rates from 32 to 192 kHz Other 40% to 60% duty cycle digital signals from 2 to 25 Mb/s
Output Amplitude	5 V pk-pk ±1 V into 110 ohms load
DC Offset	0 V ±0.05 V
Rise/Fall Times	5 to 30 ns
Propagation Delay	<170 ns

UNBALANCED DIGITAL AUDIO OUTPUTS/INPUTS (PT-AECT-OB)	
Number of Outputs	16
Output Type	Unbalanced
Output Connector	BNC, 75 oms per IEC 169-8 (via adaptor)
Impedance	75 ohms
Signal Type	AES3id, SMPTE 276M AES frame rates from 32 to 192 kHz Other 40% to 60% duty cycle digital signals from 2 to 25 Mb/s
Output Amplitude	1 V pk-pk ±10% into 75 ohms load
DC Offset	0 V ±0.05 V
Rise/Fall Times	30 to 44 ns
Propagation Delay	<170 ns

ANALOG VIDEO OUTPUTS (PT-ENC-OB)	
Number of Outputs	8
Output Connector	BNC, 75 ohms per IEC 169-8
Impedance	75 ohms
Signal Type	NTSC, PAL
Output Amplitude	1 V pk-pk ±10%
Filtering	CCIR-601-compliant
Resolution	10 bits
Frequency Response	±0.05 dB to 5.2 MHz
Differential Gain	<0.8%
Differential Phase	<0.6°
Bulk Delay	<80 microseconds
Signal-to-Noise Ratio	(RMS) >65 dB unified — weighting

DC Offset	0 V ±0.025 V

ANALOG VIDEO OUTPUTS (PT-ENC-OB)	

ANALOG AUDIO OUTPUTS (PT-DACT-OB)	
Number of Outputs	16
Output Type	Balanced
Output Connector	DB-44
Impedance	66 ohms
Signal Type	Stereo analog audio
Maximum Output Amplitude	+28 dBu
Full Scale Adjustment Range	0 dBFS = +13 dBu to +28 dBu in 1 dB steps, ±0.5 dB
DC Offset	0 V ±0.05 V
Conversion Type	128x oversampling, fifth-order, delta-sigma
Resolution	24 bits
AES Frame Rates	32 to 192 kHz
Gain Stability	±0.01 dB
Frequency Response	±0.25 dB, 20 Hz to 20 kHz
Linearity Deviation	<±0.5 dB
THD+N	<0.01% @ 997 Hz, -1 dBFS = +23 dBu
Idle Channel Noise	<-100 dBFS CCIR-RMS
Dynamic Range	>100 dB CCIR-RMS
Crosstalk	>90 dB isolation, 20 Hz to 20 kHz, all hostile, typical (hostile channels driven at -1 dBFS = +23 dBu)

PHYSICAL	
Dimensions (W x D x H)	5RU (PM-FR-5): 17.5 x 18.4 x 8.75 in. (44.5 x 46.7 x 22.2 cm) 9RU (PM-FR-9): 17.5 x 18.4 x 15.75 in. (44.5 x 46.7 x 40 cm)
Weight Fully Loaded (approximately)	5RU (PM-FR-5): 68 lbs (31 kg) 9RU (PM-FR-9): 125 lbs (57 kg)

Ordering Information

FRAME COMPONENTS	
PM-FR-5	Platinum MX 5RU frame assembly (includes -PS, -RES)
PM-FR-9	Platinum MX 9RU frame assembly (includes -PS, -RES)
PT-PS	AC redundant power supply
PT-FAN	Replacement fan
PT-ALARM	Replacement alarm module

CONTROL COMPONENTS	

CONTROL COMPONENTS	
PT-RES	Resource controller module
PT-SNMP-128	SNMP license (per 128 ins and outs)

CROSS-POINT MODULES	
PM-72x64-3G5	Platinum MX 72x64 cross-point module for 5RU
PM-128x128-3G9	Platinum MX 128x128 cross-point module for 9RU

TDM CROSS-POINT MODULES	
PM-ATDM9-X5	Platinum MX ATDM XPT for 9 slots audio in 5RU
PM-ATDM16-X9	Platinum MX ATDM XPT for 16 slots audio in 9RU

INPUT MODULES	
PX-HSR8C-IBG	Platinum and Platinum MX SD/HD/3G 8 coaxial input card
PT-DEC-IB	Platinum 8 analog to SDI decoder input module with back panel
PT-AECT-IB	Platinum and MX 16 unbalanced AES input module with back panel (requires TDM cross point)
PT-AEBT-IB	Platinum 16 balanced AES input module with back panel (requires TDM cross point)
PT-ADCT-IB	Platinum 16 stereo to balanced AES input module with back panel (requires TDM cross point)
PT-FSDMX-IBG	Internal demultiplexer base board-frame sync-capable; coaxial connectivity for signals up to 3 Gb/s
PT-FSDMXO-IBG	Internal demultiplexer base board-frame sync-capable; optical connectivity for signals up to 3 Gb/s
PT-FSIB-OPT	License to enable frame sync capability on PT-FSDMX-IBG or PT-FSDMXO-IBG for signals up to 3 Gb/s
PT-HSR8C1D-IBG	Platinum SD/HD/3G matrix expansion input module w/ 8 HD BNC + matrix expansion back panel
PT-HSR8O1D-IBG	Platinum SD/HD/3G matrix expansion input module w/ 8 fiber/4 SFP cages + matrix expansion back panel
PT-HSR1D-IBG	Platinum SD/HD/3G matrix expansion input module; requires one 6 m or 10 m DensiShield cable
PT-FSDX8C1D-IBG	Platinum SD/HD/3G demux input module w/ 8 HD BNC + matrix expansion back panel - frame sync capable
PT-FSDX8O1D-IBG	Platinum SD/HD/3G demux input module w/ 8 fiber/4 SFP cages + matrix expansion back panel - frame sync capable
PT-MADI4C-IBG	Platinum MADI audio input module w/ 4 active BNC
PT-MADI4O-IBG	Platinum MADI audio input module w/ 4 fiber/2 SFP cages
PT-HSR2D-IBG	Platinum SD/HD/3G matrix expansion DensiShield input module; requires one 6 m or 10 m DensiShield cable

OUTPUT MODULES	
PT-HSR-OBG+	Platinum 8 3G/HD/SD/ASI out with options and back panel, energy efficient
PT-HSRO-OBG+	Platinum and MX 8Ch energy efficient 3G/HD/SD fiber output

OUTPUT MODULES	board with options. Includes 4 dual-channel 1310 SFP modules
PT-ENC-OB	Platinum 8 SDI to analog encoder output module with back panel
PT-AECT-OB	Platinum 16 unbalanced AES output module with back panel (requires TDM cross point)
PT-AEBT-OB	Platinum 16 balanced AES output module with back panel (requires TDM cross point)
PT-DACT-OB	Platinum 16 balanced AES to stereo output with back panel (requires TDM cross point)
PT-MADI4C-OBG	Platinum MADI audio output module w/ 4 active BNC
PT-MADI4O-OBG	Platinum MADI audio output module w/ 4 fiber/2 SFP cages
PT-HSRMX8C-OBG	Platinum IP3 SD/HD/3G Mux Output Module w/ 8 BNC
PT-HSRMX8O-OBG	Platinum IP3 SD/HD/3G Mux Output Module w/ 8 Fiber/4 SFP's
PT-FSOB-OPT	3G frame sync and clean and quiet license

OUTPUT MONITORING MODULES	
PT-HSRAEC-OM	3 Gb/s HD-SDI output monitoring module

MULTIVIEWER MODULES	
Platinum SX Pro	See Ordering Information Tab on that web page for Multiviewing Modules and options. Remember that to gain full capacity of 16 PIPs per slot, your Platinum Frame must be equipped with redundant Cross-point modules.

BACK MODULES (INCLUDED WITH FRONT MODULE BUT ORDERABLE SEPARATELY)	
PT-BLANK1-BP	1-slot blank/spacer back plane
PT-BLANK2-BP	2-slot blank/spacer back plane
PT-BLANK4-BP	4-slot blank/spacer back plane
PT-BLANK16-BP	16-slot blank/spacer back plane
PT-HS-BP+	8-BNC 3G back plane (HSR, SR, ENC, DEC)
PT-A2-IBP	16-stereo audio input back plane
PT-A2-OBP	16-stereo audio output back plane
PT-AEB-IBP	16-balanced AES audio input back plane
PT-AEB-OBP	16-balanced AES audio output back plane
PT-AEC-IBP	16-unbalanced AES input back plane with cable
PT-AEC-OBP	16-unbalanced AES output back plane with cable
PT-CAB-AEC-BOC	16-unbalanced AES break-out cable
PT-A2-44MALEDB	16-stereo 44-pin male DB connector
PT-AEB-25MALEDB	16-AES 25-pin male DB connector

SERVICE OPTIONS	
PS-RMM-CONSULT	Design and Consulting for RMM products
PS-RMM-FE	Field Engineering for RMM products

SERVICE OPTIONS	
PS-RMM-PM	Project Management for RMM products
PS-RMM-TE	Travel & Expenses
ONEPAK-RMM-BASIC	1-Year Service contract that provides 9X5 Technical Phone support, Software Bug Fixes, 5-day Advance Exchange Shipment of Replacement Parts for Audio & Video Processing products
NEPAK-RMM-GOLD	1-Year Service contract that provides 24x7 Technical Phone Support, Software Bug Fixes & Upgrades, Next Day Advance Exchange Shipment of Replacement Parts and Annual Onsite Preventative Maintenance Visit for Audio & Video Processing products

Images/Diagrams

5RU routing hardware (front)

9RU routing hardware (front)