

# Platinum™

## Innovative Large-Scale Routing



The Platinum™ line of routing switchers combines a highly robust architecture with the flexibility required to future-proof your investment, delivering unsurpassed value for your large-scale routing needs. All Platinum 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 seamlessly integrates the capabilities of a discrete audio infrastructure in a fully embedded video plant without the need for a secondary audio frame.

In keeping with a tradition of innovation — the hallmark of Platinum routing systems — Harris introduced an eight-channel frame sync input card that allows up to eight wild video signals to be synchronized to house reference without the use of external frames or wiring. This optional card also will perform demultiplexing of up to 16 channels of embedded audio in each video stream, which can then be routed independently and discretely.

Created to support 24/7 operation, Platinum 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.

- 
- 
- 

## FEATURES

- Mixed-signal routing (SD, HD, 3 Gb/s and audio)
  - Up to 256x256 video in 15RU (up to 512x512 discrete stereo/audio)
  - Up to 512x512 video in 28RU (up to 1024x1024 discrete stereo/audio)
- All Platinum frames have independent signal paths and crosspoints for video and audio
- 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
- 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 provide support for either coaxial or fiber connectivity
- Front-loading, hot-swappable modules for 24/7 operation
- Redundant power supplies, controllers and signal paths
- Enhanced control and monitoring
  - Wide range of hardware control panels
  - Powerful control integration for easy setup and configuration
  - Software and web-based applications with user-configurable GUIs
  - Protocol support for [CCS Navigator™](#), 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
- CENTRIO™ integrated internal multiviewer
  - 32 PiPs per CENTRIO module
  - Onscreen control
  - CC presence and text
  - Clocks and timers
  - Tallies and UMDs
  - Audio meters and phase

## PRODUCT DETAILS

### World's First True Embedded Audio Processing Router

Platinum 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 is able to [demux incoming embedded audio signals](#) internally. All audio within the frame is presented to the TDM M•A•X crosspoint, routed independently and discretely, and can be [multiplexed](#) within the router into any digital video output. Additionally, utilizing the TDM M•A•X crosspoint, Platinum can perform phase

reversal, swap, sum and "quiet" breakaway switching of the audio between any discrete or embedded input, and provide gain/level adjustments on a per-channel basis. This ability to process and route both discrete and embedded audio within the Platinum frame eliminates the need for racks of external equipment and saves on space, cabling, troubleshooting and maintenance.

All the capabilities of a discrete audio infrastructure are now available with the straightforward wiring of an embedded plant. System designers can now reduce the number of modules and frames, and simplify wiring and system integration tasks while providing enhanced functionality for the end user.

### **Enhanced Control and Monitoring**

Harris router control systems make even the most complex router configuration simple and intuitive to implement and maintain. Among the powerful tools available for administering systems are low-level discovery of available hardware, allowing database creation and maintenance to be accomplished from the engineer's desk; and automatic, wizard-based creation of logical source assignments for demultiplexed audio levels. The DB Editor interface provides access to the Platinum router's distributed control architecture, which drives router frames and control surfaces without reliance on a centralized controller. Each Platinum 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. This topology also allows control panel communication to be distributed throughout the facility, eliminating single points of failure.

### **Integrated Multiviewer Support**

Platinum is the only routing system in the marketplace to offer an integrated, internal multiviewer system. [CENTRIO](#) modules reside in the Platinum frame, seamlessly providing multiviewer support for all inputs coming into the router. Combining superior graphics, industry-proven architecture and integrated test and measurement tools, CENTRIO is a landmark development in multiviewer design and value. With multi-image processing, routing, superior graphics and an unrivaled monitoring toolkit all in one chassis, CENTRIO delivers a lower-cost solution, simpler system design and a more efficient use of space for broadcast video and audio monitoring, master control rooms, broadcast trucks and events. Each multiviewer output provides up to 32 discrete PiP (picture-in-picture) images that are controlled from the router control system in the same way as dedicated outputs, creating a user-friendly experience that is easily understood by operators.

### **Higher Reliability**

Platinum routing frames are designed for harsh operation (including mobile truck environments) and feature front-loading, hot-swappable modules for ease of serviceability. Employing the latest technology, Platinum allows more functionality at lower power consumption, and is supported by redundant, load-sharing power supplies. Airflow is from front to back, with each fan individually replaceable without taking the system offline. For further reliability, Platinum I/O modules support either eight inputs or eight outputs, thereby limiting the number of signals affected by any one module. Each Platinum frame supports redundant control, and redundant cross-points are available in most configurations.

## IMAGES/DIAGRAMS

<tr valign="top"><td><br></td><td><br></td></tr>

## SPECIFICATIONS

Specifications and designs are subject to change without notice.

### HD Digital Video Inputs (PT-HS-IB+)

Number of Inputs	8
Input 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 *tested using JBERT (PRBS 23 and pathogenic signal types); as new test equipment becomes available, further compliance testing will continue
Maximum Input Amplitude	880 mV
Nominal Input Amplitude	800 mV $\pm$ 10%

### SD Digital Video Inputs (PT-S-IB+)

Number of Inputs	8
Input Connector	BNC, 75 ohms per IEC 169-8
Impedance	75 ohms
Signal Type	SMPTE 259M, SMPTE 344M, DVB-ASI; other <1 V pk-pk digital signals, 3 to 540 Mb/s
Maximum Input Amplitude	880 mV
Nominal Input Amplitude	800 mV $\pm$ 10%

### 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 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 $\pm$ 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 $\pm$ 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	$\pm$ 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, $\pm$ 0.5 dB
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	$\pm$ 0.01 dB
Frequency Response	$\pm$ 0.15 dB, 20 Hz to 20 kHz
Linearity Deviation	< $\pm$ 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
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 $\pm$ 1 V into 110 ohms load
DC Offset	0 V $\pm$ 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 ohms 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 $\pm$ 10% into 75 ohms load
DC Offset	0 V $\pm$ 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 $\pm$ 10%
Filtering	CCIR-601-compliant
Resolution	10 bits
Frequency Response	$\pm$ 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 $\pm$ 0.025 V

#### 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, $\pm 0.5$ dB
DC Offset	0 V $\pm 0.05$ V
Conversion Type	128x oversampling, fifth-order, delta-sigma
Resolution	24 bits
AES Frame Rates	32 to 192 kHz
Gain Stability	$\pm 0.01$ dB
Frequency Response	$\pm 0.25$ dB, 20 Hz to 20 kHz
Linearity Deviation	$< \pm 0.5$ 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)	15U (PM-FR-15): 17.5 x 18.4 x 26.25 in. (44.5 x 46.7 x 66.7 cm) 28RU (PM-FR-28): 17.5 x 18.4 x 49 in. (44.5 x 46.7 x 124.5 cm)
Weight Fully Loaded (approximately)	15U (PM-FR-15): 210 lbs (95 kg) 28RU (PM-FR-28): 350 lbs (159 kg)

## ORDERING INFORMATION

### Frame Components

PT-FR-15	Platinum 15RU frame assembly (includes (2)-PS, -RES)
PT-FR-28	Platinum 28RU frame assembly (includes (4)-PS, -RES)
PT-PS	Platinum and MX AC redundant power supply
PT-FAN	Platinum and MX replacement fan
PT-ALARM	Platinum and MX replacement alarm module
PT-FR-15-DC	Platinum 15RU frame assembly with DC power (includes (2)-PS, -RES)
PT-FR-28-DC	Platinum 28RU frame assembly with DC power (includes (4)-PS, -RES)
PT-PS-DC	Platinum and MX DC redundant power supply

### Control Components

PT-RES	Platinum and MX resource controller module
PT-SNMP-128	Platinum and MX SNMP license (per 128 inputs and outputs)

### Cross-point Modules

PT-128x256-3G15	Platinum 128x256 3 Gb/s cross-point module for 15RU
PT-128x256-3G28	Platinum 128x256 3 Gb/s cross-point module for 28RU



**TDM Cross-point Modules**

PT-ATDM16-X15	Platinum and MX ATDM XPT for 16 slots audio in 15RU
PT-ATDM32-X15	Platinum and MX ATDM XPT for 32 slots audio in 15RU
PT-ATDM32-X28	Platinum and MX ATDM XPT for 32 slots audio in 28RU
PT-ATDM64-X28	Platinum and MX ATDM XPT for 64 slots audio in 28RU

**Input Modules**

PT-HS-IB+	Platinum 8 HD-SDI input module with options and BP
PT-S-IB+	Platinum 8 SDI input module with options and BP
PT-DEC-IB	Platinum 8 analog to SDI decoder input with BP
PT-HSO-PIN-IB+	Platinum 8 input (4 SFP) optical input module with options and BP
PT-AECT-IB	Platinum 16 unbalanced AES input module with BP
PT-AEBT-IB	Platinum 16 balanced AES input module with BP
PT-ADCT-IB	Platinum 16 stereo to balanced AES input with BP
PT-DMX	Platinum and MX demux daughter board for video signals up to 1.5 Gb/s
PT-DMX-3G	Platinum and MX demux daughter board for video signals up to 3 Gb/s

**Output Modules**

PT-HSR-OBG+	Platinum 8 HD-SDI with reclock output green module with options and BP
PT-SR-OBG+	Platinum 8 SD-SDI with reclock output module with options and BP
PT-HSRO13-OB+	Platinum 8 output (4 SFP) optical output module with options and BP
PT-ENC-OB	Platinum 8 SDI to analog encoder output with BP
PT-AECT-OB	Platinum 16 unbalanced AES output module with BP
PT-AEBT-OB	Platinum 16 balanced AES output module with BP
PT-DACT-OB	Platinum 16 balanced AES to stereo output with BP
PT-MUX	Platinum and MX mux daughter board for video signals up to 1.5 Gb/s
PT-MUX-3G	Platinum and MX mux daughter board for video signals up to 3 Gb/s

**Output Monitoring Modules**

PT-HSR-OM	Platinum and MX HD-SDI output monitoring module
-----------	---

**Back modules (included with front module but orderable separately)**

PT-BLANK1-BP	Platinum and MX 1 slot blank/spacer BP
PT-BLANK2-BP	Platinum and MX 2 slot blank/spacer BP
PT-BLANK4-BP	Platinum and MX 4 slot blank/spacer BP
PT-BLANK16-BP	Platinum and MX 16 slot blank/spacer BP
PT-V-BP	Platinum and MX 8 BNC BP (HSR, SR, ENC, DEC)
PT-A2-IBP	Platinum and MX 8 stereo audio input BP

PT-A2-OBP	Platinum and MX 8 stereo audio output BP
PT-AEB-IBP	Platinum and MX 8 balanced AES audio input BP
PT-AEB-OBP	Platinum and MX 8 balanced AES audio output BP
PT-AEC-IBP	Platinum and MX 8 unbalanced AES input BP with CAB
PT-AEC-OBP	Platinum and MX 8 unbalanced AES output BP with CAB
PT-CAB-AEC-BOC	Platinum and MX 8 unbalanced AES break-out cable
PT-A2-DTB	Platinum and MX 8 stereo break-out screw term. BP
PT-A2-44MALEDB	Platinum and MX 8 stereo 44-pin male DB connector
PT-AEB-25MALEDB	Platinum and MX 8 AES 25-pin male DB connector

### Ethernet Switch

CCS-NET-24	24-port Ethernet switch for CCS routing networks
CCS-NET-24-PS	Redundant power supply for CCS-NET-24; requires 1 CCS-NET-PS-FR for every 2 CCS-NET-24-PS
CCS-NET-PS-FR	Redundant power supply tray for CCS-NET-24, holds 2 power supplies (power supplies not included), tray only required for redundancy

### SERVICE OPTIONS

#### 90-Day Elite Care

PT-90-ELITE	<b>90-day Elite ServicePAK</b> — Enhanced Elite support for the first 90-days: includes on-call project expert, next-day advance exchange of parts, RemoteDialup support and one wrap-up and review session (excludes travel and expenses, actual charges billed using PS-TE-V-SVC)
-------------	---

#### QuickStart Commissioning

PT-LG-QS	<b>Mandatory</b> 5-day QuickStart for 512X Platinum (includes travel and expenses) *Applies to specific zones in Europe and Asia
PT-LG-QSNT	<b>Mandatory</b> 5-day QuickStart for 512X Platinum (excludes travel and expenses, which are billed separately)
PT-MD-QS	<b>Mandatory</b> 4-day QuickStart for 256X Platinum (includes travel and expenses) *Applies to specific zones in Europe and Asia
PT-MD-QSNT	<b>Mandatory</b> 4-day QuickStart for 256X Platinum (excludes travel and expenses, which are billed separately)

#### ServicePAK Agreements

PT-LG-BASIC	1-year Basic ServicePAK for large (512X) Platinum router
PT-LG-GOLD	1-year Gold ServicePAK for large (512X) Platinum router
PT-MD-BASIC	1-year Basic ServicePAK for medium (256X) Platinum router
PT-MD-GOLD	1-year Gold ServicePAK for medium (256X) Platinum router

PT-RDOPT-BASIC	1-year Basic ServicePAK for Platinum redundant options (logic cards and power supplies)
PT-RDOPT-GOLD	1-year Gold ServicePAK for Platinum redundant options (logic cards and power supplies)

**Training Courses**

PT-OPS-OTR	2-day on-site Platinum operational training course (excludes travel and expenses)
PT-OPS-FTR	2-day factory Platinum operational training course (excludes travel and expenses)

**CONTACTS**

<b>North America</b> +1 800 231 9673	<b>Caribbean and Latin America</b> +1 786 437 1960	<b>Europe, Middle East &amp; Africa</b> +44 (0) 118 964 8200	<b>Asia, Pacific Rim</b> +852 2776 0628
---	---	---	--