

# PXES-2590

PXIe Chassis, 9-Slot, All Hybrid

## FEATURES

- PXI-Express Chassis
- 9-Slots (3U)
  - ♦ 7 Hybrid (Fit Both PXIe and PXI Hybrid Modules)
  - ♦ 1 System Timing (Fits Any PXIe Module or System Timing Controller)
  - ♦ 1 System (Fits Internal or Remote Controller)
- Up to 7 GB/s System Bandwidth
- Up to 2 GB/s Peripheral Slot Bandwidth
- PXI™-5 PXI Express HW Specification Rev 1.0 Compliant
- 30 W Per Slot Cooling Capacity
- 400 W Usable Power
- 0°C to 55°C Extended Operating Temperature Range
- 10 MHz In/Out BNC Connectors
- Intelligent Chassis Management
  - ♦ Automatic Fan Speed Control
  - ♦ Chassis Status Monitoring and Reporting
  - ♦ Remote Chassis Power On/Off Control
- Power, Temperature, and Fan Monitoring LEDs

## PXI-Express Standard

PXI and PXI-Express (PXIe) are industry standards. Any hybrid PXI, PXIe, Compact PCI (cPCI), or Compact PCI Express (cPCIe) module from any manufacturer will work properly in the 7 hybrid slots of this chassis. The System Timing Slot accepts PXIe or cPCIe modules or a System Timing Controller.

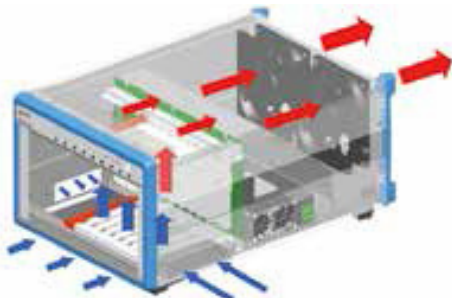
Slot 1 is for a System Controller (computer) which can be up to 4 slots wide, or you can install a remote controller module which connects through a cable to an external PC or laptop, such as the PXIe-8301 from National Instruments.

## High Bandwidth

The PXES-2590 is a 4-link PXIe chassis with 7 GB/s total system bandwidth, and 2 GB/s slot bandwidth for 6 peripheral slots and 1 GB/s for 2 peripheral slots (see the switch fabric diagram below).

## Power and Cooling

Equipped with an industrial grade AC power supply, the PXES-2590 still provides 400W under 55°C and delivers superior cooling capacity, from two 120 mm cooling fans in the rear of the chassis.



PXES-2590 Chassis

## Optional Accessories

- PMK-1524  
Portable LCD monitor/keyboard accessory kit
- Trolley Case  
For the chassis/PMK-1524, 570x270x390 mm, 5 kg
- Rackmount Kit



PMK-1524 Keyboard/Monitor

Advanced Features

This chassis includes the advanced features in the PXIe standard such as a System Timing Slot which provides advanced clocking and triggering support. The System Timing Slot allows a PXIe module to drive the system clocks in the backplane so that the whole system is synchronized to the same clock. The NK732 Counter /TIA and the NK420 Microwave Synthesizer from Carmel Instruments can drive the backplane clocks.

You can supply an external 10 MHz reference for the system clock on a 10 MHz input BNC and you can get the internal 10 MHz clock on an output BNC for chaining to other systems.

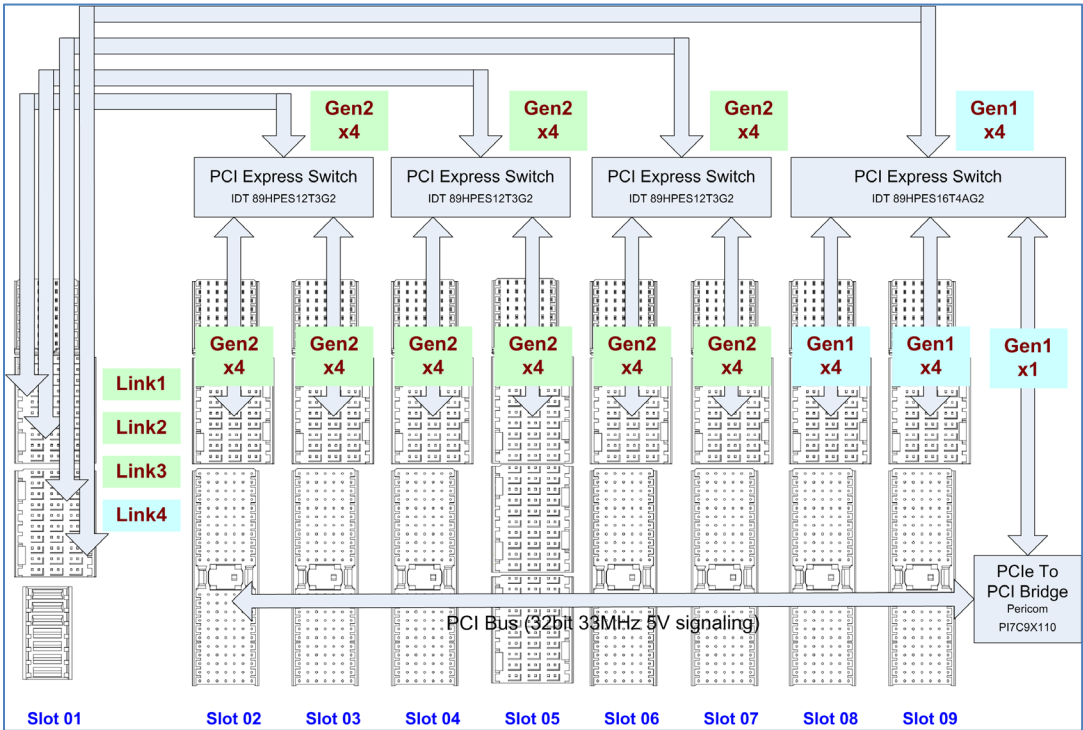
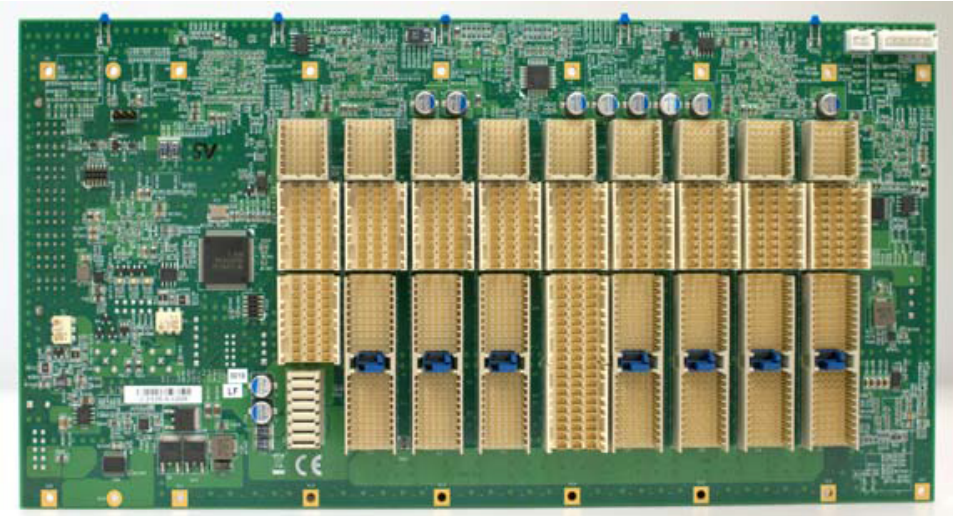
The PXES-2590 features an innovative heat dissipation solution. Two 185.9CFM cooling fans in the rear section of the chassis draw cool air through lower apertures, which is then

exhausted through the back. This design generates uniform airflow for each PXI slot, delivering exceptional cooling.

When installed in a rack, the cooling design minimizes intake of hot air from the rear side, separating airflow for modules and power supplies, while isolating noise source (fan) from modules and maintaining a steady internal temperature.

System Monitoring

The PXES-2590 is implemented with a smart system monitoring controller, reporting full chassis status, including fan speed, system voltages, and internal temperature. You can also remotely turn the system on and off.



## SPECIFICATIONS

### General

- Warranty: 1 year
- Complies with PXI™-5 PXI Express HW Specification Rev 1.0 and accepts all modules compliant with the PXI™-5 and Compact PCI specification.

### Power Supply

- AC Input
  - ♦ Input voltage range: 100 to 240 VAC
  - ♦ Operating voltage range: 85 to 264 VAC
  - ♦ Input voltage frequency: 50 to 60 Hz
  - ♦ Operating voltage frequency 47 to 63 Hz
  - ♦ Input current rating:
    - 115 VAC: 13A
    - 230 VAC: 10A
- DC Output
  - ♦ Maximum total usable power: 400 W

Voltage	Max Current	Load Regulation	Max Ripple and Noise
+5V	23 A	±3%	50 mV
+12V System Slot	15 A	±3%	50 mV
+12V Peripherals	16 A	±3%	50 mV
+3.3V	33 A	±3%	50 mV
-12V	1.75 A	±3%	50 mV

### Switch Fabric (See Diagram)

- System Controller Slot:
  - ♦ Three Gen2 x4 PCIe links (2 GB/s each)
  - ♦ One Gen1 x4 PCIe link (1 GB/s)
- Peripheral Slots
  - ♦ For PXIe and cPCI peripherals
    - Slots 2 and 3 share one Gen2 x4 PCIe link (2 GB/s)
    - Slots 4 and 5 share one Gen2 x4 PCIe link (2 GB/s)
    - Slots 6 and 7 share one Gen2 x4 PCIe link (2 GB/s)
    - Slots 8 and 9 share one Gen1 x4 PCIe link (1 GB/s)
  - ♦ For hybrid PXI and cPCI peripherals
    - Slots 2, 3, 4, 6, 7, 8 and 9 share one 5V, 33 MHz, 32-bit PCI bus (132 MB/s)

### Rear Panel I/O and Switches

- 10 MHz system clock input: BNC
- 10 MHz system clock output: BNC
- Fan control switch: Auto or High
- DB9 connector: Inhibit, voltage monitoring and power on/off control
- Inhibit switch: Enables power on/off control through DB9 connector

### System Clocks

- 10 MHz system clock (PXI\_CLK10)
  - ♦ Frequency accuracy: ±25 ppm
  - ♦ Slot to slot skew: 300 ps max
  - ♦ Rear BNC output:
    - Square wave, 1 Vpk-pk ±20% into 50 ohm, 2 Vpk-pk unloaded
    - Output impedance: 50 ohm ±5 ohm
- External 10 MHz input:
  - ♦ Frequency deviation: ±100 ppm max
  - ♦ Input signal: 100 mVpk-pk to 5 Vpk-pk (square or sine)
  - ♦ Input impedance: 50 ohm ±5 ohm
- PXI\_CLK10\_IN input to the backplane on System Timing Slot (Slot 5): 5 V or 3.3 V TTL signal
- PXIe\_CLK100 on backplane:
  - ♦ Frequency: 100 MHz ±25 ppm
  - ♦ Slot to slot skew: 100 ps max

### Cooling

- Two 185 CFM fans
- Per-slot cooling capacity: 30 W (verified by 55°C chamber test)

### Physical

- Slots: 9
  - ♦ 1 System slot for controller (computer)
  - ♦ 1 System Timing slot (also accepts PXIe modules)
  - ♦ 7 Hybrid peripheral slots (both PXI and PXIe modules)
- Dimensions (W x H x D):
  - ♦ 321.9 x 191.4 x 465.3 mm
  - ♦ 12.7 x 7.5 x 18 in
- Weight: 8.8 kg (19.4 lb.)

### Environmental

- Storage:
  - ♦ Temperature: -20°C to 70°C
  - ♦ Humidity: 10% to 90% noncondensing
- Operating:
  - ♦ Temperature: 0°C to 55°C
  - ♦ Humidity: 10% to 90% noncondensing
- Functional shock: 30 G, half sine, 11 ms pulse duration
- Random vibration:
  - ♦ Operating: 5 to 500 Hz, 0.31 Grms, 3 axes
  - ♦ Non-operating: 5 to 500 Hz, 2.46 Grms, 3 axes

## Certification

- Safety: EN 61010-1
- Electromagnetic compatibility:
  - ♦ Emissions: EN 55011 Class A
  - ♦ Immunity: EN 61326-1
  - ♦ FCC class A
- CE compliance:
  - ♦ Meets essential requirements of applicable European Directives, as amended for CE Marking:
    - Low-Voltage Directive (safety): 73/23/EEC
    - Electromagnetic Compatibility Directive (EMC): 9/336/EEC

## Accessories

- PMK-1524 Portable LCD monitor/keyboard accessory kit:
  - ♦ 15 in touch screen LCD monitor with 1024x768 resolution
  - ♦ English keyboard and touchpad
  - ♦ VGA video connection
  - ♦ No requirements for external power
  - ♦

## Ordering Information

PN	Description
PXES-2590	9-slot PXIe chassis
PMK-1524	Optional portable LCD monitor/keyboard
Rackmount Kit	Optional