VTI Instruments

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CMX09A

9-SLOT 3U PXI EXPRESS CHASSIS | UP TO 8GB/S

FEATURES

- 9-slot PXI Express chassis with 1 system controller slot, 7 PXIe peripheral/hybrid slots and 1 PXIe timing slot
- High bandwidth PCIe Gen 2 backplane with 2 GB/s slot bandwidth and 8 GB/s system bandwidth
- IEEE 1588 distributed instrument synchronization
- Rack mount, custom front panels

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Overview

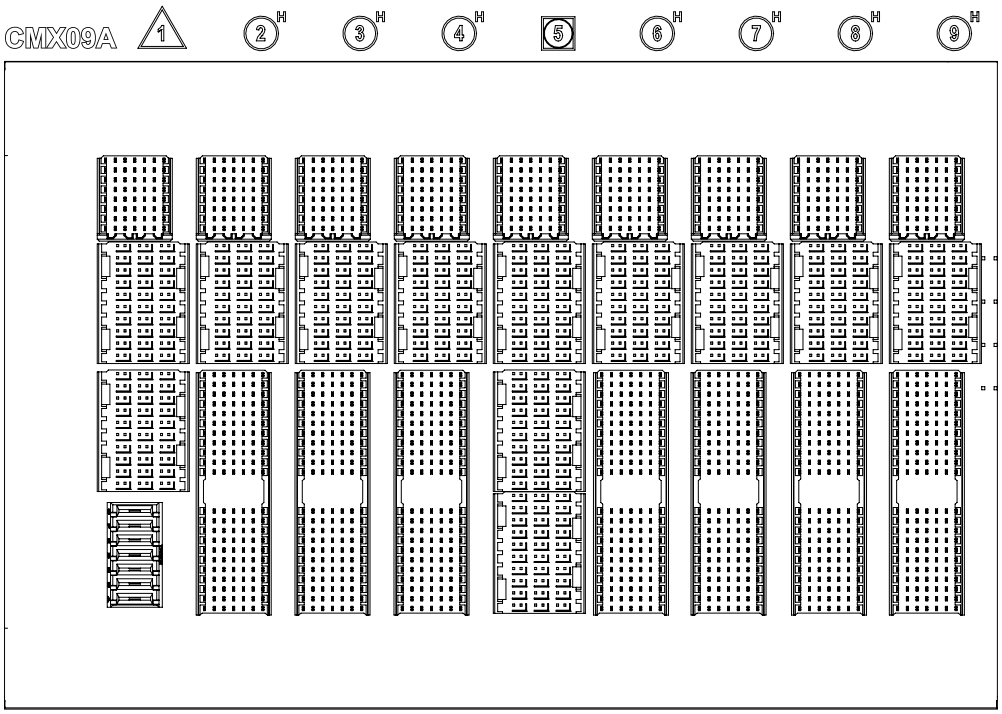
Slot Configurations

The CMX09A is a 9-slot PXI Express mainframe with 1 system controller slot, 7 PXIe Peripheral/Hybrid slots, and 1 PXIe timing slot. The PXI Express hybrid slot delivers connectivity to either a x4 PCI Express link or to the 32-bit, 33 MHz PCI bus on the backplane. This allows PXI Express, hybrid-compatible, or 32-bit cPCI/PXI-1 modules (without J2 connector) to be used in this slot. The PXIe timing slot accepts either a PXI Express module or a PXI Express system timing controller for advanced timing and synchronization.

Unmatched Speed, Flexibility and Performance

Best in class Bandwidth

The CMX09A uses a 4-lane Gen 2 PCIe backplane to achieve unmatched data rates of up to 2 GB/s per slot and 8 GB/s system. This is especially useful when using high-speed instruments like digitizers, oscilloscopes, and signal generators.



CMX09A Backplane Layout

IEEE-1588 Distribution

The CMX09A backplane contains a built-in mechanism for distributing an IEEE-1588 time source to the plugin modules. This mechanism is only supported when using the EMX-2500 Gigabit Ethernet LXI controller, and allows timestamping of data from all plugin modules on a common time-base for advanced timing and synchronization. In addition, it also provides the capability to synchronize PXI systems with LXI instruments.

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Intelligent Chassis Management

The CMX09A has a built-in system monitoring controller that monitors and manages full chassis status, including internal temperature, fan speed, and DC voltages.

IO/Switch on Rear Panel

- BNC connectors for 10MHz clock input/output
- Fan speed selector switch
- Inhibit mode selector switch
- D-SUB9 for voltage monitoring and remote inhibit

Rugged Design

Table-top Option

A rugged, compact and light-weight design makes the CMX09A ideal for portable applications. The CMX09A is available with optional handles which makes it convenient to lift and move. There are no air-holes on the front of the chassis, which protects the instruments from spills when used in industrial environments.

Rack-mount Option

Traditional rack-mount options with custom front panels are also available.

External Clock

The CMX09A includes a pair of IN/OUT BNC connectors in the rear to bring in an external 10 MHz reference clock. When a 10 MHz clock signal is detected on the IN connector, the internal clock is phase locked to the external clock. This reference clock may also be driven by a system timing module in slot 5. System timing controllers provide a high-stability clock source and the ability to drive the PXI star and PXIe differential star triggers. In addition timing controllers typically have the ability to import and export the PXI trigger lines on the backplane. The OUT BNC connector provides a buffered, non-TTL version of the 10 MHz reference clock.

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General Specifications

Specifications	
SLOTS	
Total Slots	9 slots
PXI Express System Controller	1 slot (slot 1)
PXI Express Peripheral / Hybrid	7 slots (slots 2,3,4,6,7,8,9)
PXI Express Timing	1 slot (slot 5)
Module Size	3U
BANDWIDTH	
Slot	2 GB/s
Mainframe	8 GB/s
Standards Compliance	PXI-5 PXI Express Hardware Specifications PXI-1 hardware specifications Rev 2.2
SYSTEM SYNCHRONIZATION CLOCKS	
10 MHz System Reference Clock:	
PXI_CLK10	
Max Slot-To-Slot Skew	300ps
Accuracy	+/- 50 ppm Max
100 MHz System Reference Clock:	
PXIe_CLK100	
Max Slot-To-Slot Skew	100 ps
Accuracy	+/- 25 ppm Max
EXTERNAL	
10 Mhz Reference Out (From BNC Out)	
Accuracy	+/- 50 ppm Max
Output Amplitude	1 Vpp, ±20% square wave into 50Ω 2 Vpp unloaded
Output Impedance	50Ω ± 5Ω
EXTERNAL CLOCK SOURCE	
Frequency	10 MHz ± 100 ppm
Input Amplitude	100 mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC) 5V or 3.3V TTL Signal (System timing slot)
Rear Panel Bnc Input Impedance	50Ω ± 5Ω
Maximum Jitter Introduced By Backplane	1 ps RMS Phase Jitter (10 Hz – 1MHz range)
MECHANICAL	
Dimensions	322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")
Weight	Weight: 9 kg (19.8 lbs)

[1] There will be power derating at > 55 °C. Refer to the detailed specifications.

(continued next page)

General Specifications (continued)

Specifications

POWER SUPPLY	
AC Input *Guaranteed by power supply design	**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, 13 A 230 VAC, 10 A

DC Output

VDC	Maximum	Load Regulation	Maximum Ripple and Noise
+5 V	23.0 A	±3%	50 mV
+12 V	27.0 A	±3%	50 mV
+3.3 V	33.0 A	±3%	50 mV
-12 V	1.75 A	±3%	50 mV

Maximum Total Usable Power is 400 W

COOLING	
Fans	Two 185.9 CFM fans
Chassis Cooling Intake	Bottom of front bezel, bottom panel of chassis
Chassis Cooling Exhaust	Rear of chassis
Slot Airflow Direction	Bottom of module to top of module

ENVIRONMENTAL SPECIFICATIONS	
Operating Environment	**Ambient Temperature:** 0°C to 55°C (32°F to 131°F)
	Relative Humidity: 10% to 90%, Non-condensing
Storage Environment	**Ambient Temperature:** -20°C to 70°C (-4°F to 158°F)
	Relative Humidity: 10% to 90%, Non-condensing
Shock and Vibration	**Functional Shock:** 30 G, Half-sine, 11 ms Pulse Duration
	Random Vibration: • Operating: 5 to 500 Hz, 0.3 Grms, 3 Axes • Non-operating: 5 to 500 Hz, 2.46 Grms, 3 Axes

SAFETY AND EMC	
Emissions Compliance	EN 61326-1 FCC Class A
CE Compliance	**Safety:** EN 61010-1 **Immunity:** EN 61326-1

Specifications subject to change without notice.

Ordering Information

Model	Configuration
70-0698-000R	Chassis, CMX09A, 9-slot 3U PXI-e, 8 GB/s, All Hybrid
70-0698-100R	F/A CMX09A Rackmount Kit
70-0698-200R	PXI/PXIe Filler Panel Kit, Qty 9 3U 1 Slot panels
70-0463-901R	Kit,Blnk Pnls,CMX09,Qty 5

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