

# 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



## Overview

#### **Slot Configurations**

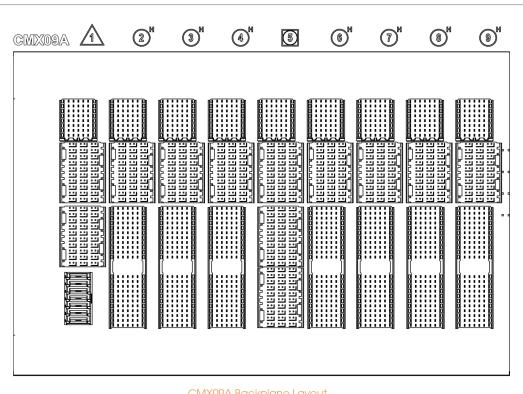
The CMX09A is a 9-slot PXI Express mainframe with 1 system controller slot, 7 PXIe Peripheral/Hybrid slots, and 1 PXIe timing slot. The PXI Express hybrid slot delivers connectivity to either a x4 PCI Express link or to the 32-bit, 33 MHz PCI bus on the backplane. This allows PXI Express, hybrid-compatible, 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**

Storis	Specifications	
Total Stots         9 stots           PXI Express System Controller         1 stot (stot 1)           PXI Express Peripheral / Hybrid         7 stots (stots 2.3.4.6.7,8.9)           PXI Express Timing         1 stot (stot 5)           Module Size         3U           BANDWIDTH         Stot           Stot         2 GB/s           Mainframe         8 GB/s           Standards Compliance         PXI-5 PXI Express Hordware Specifications Pxi-1 hardware specifications Rev 2.2           SYSIEM SYNCHRONIZATION CLOCKS         10 MHz System Reference Clock:           PXI_CLK10         300ps           Max Stot-Io-Stot Skew         300ps           Accuracy         +/- 50 ppm Max           Accuracy         +/- 25 ppm Max           EXIERNAL         10 Mps           10 Mhz Reference Out (From BNC Out)         Accuracy           Accuracy         +/- 50 ppm Max           EXIERNAL         1 Vpp, ±20% square wave into 50Ω           Output Amplitude         1 Vpp, ±20% square wave into 50Ω           Output Impedance         50Ω ± 5Ω           EXIERNAL CLOCK SOURCE         100 mMz ± 100 ppm           Input Amplitude         100 mMyp to 5 Vpp squire-wave or sine-wave (Rear panel BNC) 5V or 3.3V TIL Signal (System timing slot)           Rear Panel Bnc In		
PXI Express System Controller   1 slot (slot 1)		Oploto
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		
PXI Express Timing		
Module Size     3U       BANDWIDTH       Slot     2 GB/s       Mainframe     8 GB/s       Standards Compliance     PXI-5 PXI Express Hardware Specifications Rev 2.2       SYSTEM SYNCHRONIZATION CLOCKS       10 MHz System Reference Clock:     PXI-CLK10       Max Sich-To-Slot Skew     300ps       Accuracy     +/- 50 ppm Max       100 MHz System Reference Clock:     PXI-CLK100       Max Sich-To-Slot Skew     100 ps       Accuracy     +/- 25 ppm Max       EXTERNAL     100 Mhz Reference Out (From BNC Out)       Accuracy     +/- 50 ppm Max       EXTERNAL     1 Vpp. ±20% square wave into 50Ω       Output Amplitude     1 Vpp. ±20% square wave into 50Ω       Output Impedance     50Ω ± 5Ω       EXTERNAL CLOCK SOURCE     10 MHz ± 100 ppm       Input Amplitude     100 mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC) 5V or 3.3V TIL Signal (System timing slot)       Rear Panel Bnc Input Impedance     50Ω ± 5Ω       Maximum Jitter Introduced By Backplane     1 ps RMS Phase Jitter (10 Hz - 1 MHz range)       MECHANICAL     Dimensions     322 mm (W) x 190 mm (H) x 465 mm (D) (12.55* x 7.4* x 18.3*)		
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 50\(\Omega\$ 2 Vpp unloaded  Output Impedance 50\(\Omega\$ ± 5\(\Omega\$ EXTERNAL CLOCK SOURCE  Frequency 100 MHz ± 100 ppm  Input Amplitude 100 mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC) 5V or 3.3V TIL Signal (System timing slot)  Rear Panel Bnc Input Impedance 50\(\Omega\$ ± 5\(\Omega\$ \text{ SQ}  SQ		
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 m/pp to 5 Vpp squre-wave or sine-wave (Rear panel BNC) 5V or 3.3V TIL Signal (System timing slot)  Rear Panel Bnc Input Impedance 50Ω ± 5Ω  Maximum Jitter Introduced By Backplane MECHANICAL  Dimensions 322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")		30
Mainframe       8 GB/s         Standards Compliance       PXI-5 PXI Express Hardware Specifications PXI-1 hardware specifications Rev 2.2         SYSIEM SYNCHRONIZATION CLOCKS         10 MHz System Reference Clock:         PXI_CLK10         Max Slot-To-Slot Skew       300ps         Accuracy       +/- 50 ppm Max         100 MHz System Reference Clock:       PXI=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       2 Vpp unloaded         Output Impedance       50Ω ± 5Ω         EXTERNAL CLOCK SOURCE       Frequency         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		2 GB/s
SYSTEM SYNCHRONIZATION CLOCKS  10 MHz System Reference Clock:  PXI_CLK10  Max Slot-To-Slot Skew  Accuracy  Accuracy  Max Slot-To-Slot Skew  Accuracy  Max Slot-To-Slot Skew  Accuracy  Max Slot-To-Slot Skew  Accuracy  Max Slot-To-Slot Skew  100 ps  Accuracy		•
SYSTEM SYNCHRONIZATION CLOCKS  10 MHz System Reference Clock:  PXI_CLK10  Max Slot-To-Slot Skew  Accuracy  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  EXTERNAL  10 Mhz Reference Out (From BNC Out)  Accuracy	Standards Compliance	PXI-5 PXI Express Hardware Specifications PXI-1 hardware specifications Rev 2.2
$\begin{array}{lll} \text{PXI\_CLK10} \\ \text{Max Slot-To-Slot Skew} & 300\text{ps} \\ \text{Accuracy} & +/-50\text{ ppm Max} \\ 100\text{ MHz System Reference Clock:} \\ \text{PXIe\_CLK100} & \\ \text{Max Slot-To-Slot Skew} & 100\text{ ps} \\ \text{Accuracy} & +/-25\text{ ppm Max} \\ \text{EXTERNAL} \\ 10\text{ Mhz Reference Out (From BNC Out)} \\ \text{Accuracy} & +/-50\text{ ppm Max} \\ \text{Output Amplitude} & 1\text{ Vpp. } \pm 20\% \text{ square wave into } 50\Omega \\ 2\text{ Vpp unloaded} \\ \text{Output Impedance} & 50\Omega \pm 5\Omega \\ \text{EXTERNAL CLOCK SOURCE} \\ \text{Frequency} & 10\text{ MHz} \pm 100\text{ ppm} \\ \text{Input Amplitude} & 100\text{ mVpp to } 5\text{ Vpp squre-wave or sine-wave (Rear panel BNC)} \\ \text{5V or } 3.3\text{V TIL Signal (System timing slot)} \\ \text{Rear Panel Bnc Input Impedance} & 50\Omega \pm 5\Omega \\ \text{Maximum Jitter Introduced By Backplane} \\ \text{MECHANICAL} \\ \text{Dimensions} & 322\text{ mm (W) x } 190\text{ mm (H) x } 465\text{ mm (D) } (12.55\text{" x } 7.4\text{" x } 18.3\text{"})} \\ \end{array}$	SYSTEM SYNCHRONIZATION CLOCKS	
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       2 Vpp unloaded         Output Impedance       50Ω ± 5Ω         EXTERNAL CLOCK SOURCE       Frequency         Input Amplitude       100 mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)         5V or 3.3V TTL Signal (System timing slot)       SV 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 - 1 MHz range)         MECHANICAL       Dimensions         322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	10 MHz System Reference Clock:	
Accuracy +/- 50 ppm Max  100 MHz System Reference Clock:  PXIe_CLK100  Max Stot-To-Stot 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")	PXI_CLK10	
100 MHz System Reference Clock:  PXIe_CLK100  Max Slot-To-Slot Skew  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  MECHANICAL  Dimensions  322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	Max Slot-To-Slot Skew	300ps
$\begin{array}{lll} \textbf{PXIe\_CLK100} & & & & & & & & & & & & & & & & & & $	Accuracy	+/- 50 ppm Max
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       322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	100 MHz System Reference Clock:	
Accuracy  EXTERNAL  10 Mhz Reference Out (From BNC Out)  Accuracy  +/- 50 ppm Max  0utput Amplitude  1 Vpp, ±20% square wave into 50Ω 2 Vpp unloaded  Output Impedance  50Ω ± 5Ω  EXTERNAL CLOCK SOURCE  Frequency  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  MECHANICAL  Dimensions  322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	PXIe_CLK100	
EXTERNAL10 Mhz Reference Out (From BNC Out)Accuracy $\pm 1 \text{ Vpp.} \pm 20\% \text{ square wave into } 50\Omega$ Output Amplitude $\pm 1 \text{ Vpp.} \pm 20\% \text{ square wave into } 50\Omega$ Output Impedance $\pm 50\Omega \pm 5\Omega$ EXTERNAL CLOCK SOURCEFrequency $\pm 100 \text{ MHz} \pm 100 \text{ ppm}$ Input Amplitude $\pm 100 \text{ mVpp to } 5 \text{ Vpp squre-wave or sine-wave (Rear panel BNC)} 50\% \text{ or } 3.30 \text{ TTL Signal (System timing slot)}$ Rear Panel Bnc Input Impedance $\pm 50\Omega \pm 5\Omega$ Maximum Jitter Introduced By Backplane $\pm 100 \text{ ppm} \text{ ps RMS Phase Jitter (10 Hz - 1 MHz range)}$ MECHANICAL $\pm 100 \text{ ppm} \text{ pmm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")}$	Max Slot-To-Slot Skew	100 ps
10 Mhz Reference Out (From BNC Out)  Accuracy +/- 50 ppm Max  Output Amplitude $1 \text{ Vpp, } \pm 20\% \text{ square wave into } 50\Omega$ $2 \text{ Vpp unloaded}$ Output Impedance $50\Omega \pm 5\Omega$ EXTERNAL CLOCK SOURCE  Frequency $10 \text{ MHz} \pm 100 \text{ ppm}$ Input Amplitude $50\Omega \pm 5\Omega$ Rear Panel Bnc Input Impedance $50\Omega \pm 5\Omega$ Maximum Jitter Introduced By Backplane $100 \text{ mVpp } = 100 \text{ mVp} = 1$	Accuracy	+/- 25 ppm Max
Accuracy $+/-50$ ppm Max $1 \text{ Vpp, } \pm 20\%$ square wave into $50\Omega$ $2 \text{ Vpp unloaded}$ Output Impedance $50\Omega \pm 5\Omega$ EXTERNAL CLOCK SOURCE Frequency $10 \text{ MHz} \pm 100 \text{ ppm}$ Input Amplitude $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 500 \pm 500$ Rear Panel Bnc Input Impedance $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 500 \pm 500$ Maximum Jitter Introduced By Backplane $100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} 100 \text{ ppm}$ $1$	EXTERNAL	
$\begin{array}{lll} \text{Output Amplitude} & \begin{array}{ll} 1 \text{ Vpp, } \pm 20\% \text{ square wave into } 50\Omega \\ 2 \text{ Vpp unloaded} \end{array} \\ \text{Output Impedance} & 50\Omega \pm 5\Omega \\ \hline \text{EXTERNAL CLOCK SOURCE} \\ \hline \text{Frequency} & \begin{array}{ll} 100 \text{ MHz} \pm 100 \text{ ppm} \end{array} \\ \hline \text{Input Amplitude} & \begin{array}{ll} 100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)} \\ 500 \text{ or } 3.3 \text{ VTIL Signal (System timing slot)} \end{array} \\ \hline \text{Rear Panel Bnc Input Impedance} & \begin{array}{ll} 50\Omega \pm 5\Omega \\ \hline \text{Maximum Jitter Introduced By Backplane} \end{array} \\ \hline \text{NECHANICAL} \\ \hline \text{Dimensions} & \begin{array}{ll} 322 \text{ mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")} \end{array} \\ \hline \end{array}$	10 Mhz Reference Out (From BNC Out)	
Output Impedance $50\Omega \pm 5\Omega$ EXTERNAL CLOCK SOURCE  Frequency $10 \text{ MHz} \pm 100 \text{ ppm}$ Input Amplitude $50\Omega \pm 5\Omega$ Rear Panel Bnc Input Impedance $50\Omega \pm 5\Omega$ Maximum Jitter Introduced By Backplane $50\Omega \pm 5\Omega$ MECHANICAL  Dimensions $322 \text{ mm}$ (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	Accuracy	+/- 50 ppm Max
EXTERNAL CLOCK SOURCEFrequency $10 \text{ MHz} \pm 100 \text{ ppm}$ Input Amplitude $100 \text{ mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC)}$ Rear Panel Bnc Input Impedance $50\Omega \pm 5\Omega$ Maximum Jitter Introduced By Backplane $1 \text{ ps RMS Phase Jitter (10 Hz - 1 MHz range)}$ MECHANICAL $322 \text{ mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")}$	Output Amplitude	
Frequency 10 MHz $\pm$ 100 ppm 100 mVpp to 5 Vpp squre-wave or sine-wave (Rear panel BNC) 5V or 3.3V TTL Signal (System timing slot) Fear Panel Bnc Input Impedance 50 $\Omega$ $\pm$ 5 $\Omega$ 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")	Output Impedance	$50\Omega \pm 5\Omega$
	EXTERNAL CLOCK SOURCE	
Rear Panel Bnc Input Impedance $5V \text{ or } 3.3V \text{ TTL Signal (System timing slot)}$ Rear Panel Bnc Input Impedance $50\Omega \pm 5\Omega$ 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")	Frequency	10 MHz ± 100 ppm
Maximum Jitter Introduced By Backplane1 ps RMS Phase Jitter (10 Hz - 1MHz range)MECHANICAL322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	Input Amplitude	
MECHANICAL           Dimensions         322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	Rear Panel Bnc Input Impedance	$50\Omega \pm 5\Omega$
Dimensions 322 mm (W) x 190 mm (H) x 465 mm (D) (12.55" x 7.4" x 18.3")	Maximum Jitter Introduced By Backplane	1 ps RMS Phase Jitter (10 Hz - 1MHz range)
	MECHANICAL	
Weight: 9 kg (19.8 lbs)	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)

 $<sup>^{\</sup>rm 1}$  There will be power derating at > 55 °C. Refer to the detailed specifications.

(continued next page)

## General Specifications (continued)

Specifications					
POWER SUPPLY					
	Input Voltage R	<b>ange</b> : 100 to 240 V	/AC		
AC Input	Operating Volta	age Range*: 85 to	264 VAC		
*Guaranteed by power supply design	Input Voltage F	requency: 50 to 60	l Hz		
-	Operating Voltage Frequency*: 47 to 63 Hz				
Input Current Rating	115 VAC, 13 A 230 VAC, 10 A				
	VDC	Maximum	Load Regulation	Maximum Ripple and Noise	
	+5 V	23.0 A	±3%	50 mV	
DC Output	+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 SPECIFICATION	ONS				
Operating Environment	Ambient Temperature: 0°C to 55°C (32°F to 131°F)				
Operating Environment	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				
		i <b>on:</b> to 500 Hz, 0.3 Grms g: 5 to 500 Hz, 2.46			
SAFETY AND EMC					
Emissions Compliance	EN 61326-1 FCC Class A				
CE Compliance	Safety: EN 6101 Immunity: EN 6				

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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