



MPMC-9320

Multi-Platform Mission Computer 2-slot 3U CPCI System



Form Factor

- ◆ 3U CPCI backplane
- ◆ 2-slot 66 MHz/32-bit processing

Mechanical

- ◆ Volume optimized
- ◆ 9.1" x 5.0" x 5.1"

Power Supply

- ◆ 28 VDC input at up to 55 W

Configuration Options

- ◆ Up to two SBCs
 - DCP-124 PPC SBC or DCP-1201 Intel SBC
- ◆ Up to three PMC sites and one PMC/XMC site
 - MIL-STD-1553 PMC
 - ARINC 429 PMC
 - Video PMC
 - And more...

The MPMC-9320 is one of the smallest members of the Multi-Platform Mission Computer family. Packaged in an ultra compact 3U Compact PCI (CPCI) form factor and equipped with unprecedented processing power, the MPMC-9320 has all the elements required of modern mission computers in space constrained applications.

Optimal system cooling is ensured via thermal transfer between card edges of its conduction cooled 3U CPCI cards and the side walls of the system enclosure. EMI filters and gaskets are employed for system security and increased reliability.

The main processing power of the MPMC-9320 is supplied by either a DCP-124 (PowerPC®, 7448) or DCP-1201 (Intel®, Core™2 Duo) based single board computer (SBC).

The MPMC-9320 has a full selection of standard and optional I/O. The standard I/O includes Ethernet, RS-232 serial, RS-422 serial and DIO.

Two redundant channels of MIL-STD-1553 are supplied via 1553 PMC module. 32 channels of ARINC 429 can be provided via a 429 PMC with each channel individually selectable as Rx or Tx.

Up to two video outputs can be generated in DVI, LVDS, VGA or NTS/PAL/RS170 formats by a PMC-706, PMC-704 or an XMC-710. The video card can be hosted by the system controller or by a dedicated DCP-124P or DCP-1201P SBC. When a PMC-704 is utilized two channels of video can be captured. When a XMC-710 is utilized one channel of video can be captured.

One of the strengths of the MPMC-9320 is its flexibility. Although the MPMC-9320 is small, its open architecture provides unmatched versatility allowing the system to be configured with numerous feature combinations to meet specific program requirements. Essentially,

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the MPMC-9320 can accommodate up to two SBCs and support up to four PMC cards. Below is a sample list illustrating some of the system configuration options.

- ◆ Slot 1 is a CPCI system controller slot driving the CPCI bus at 66 MHz/32-bit. It can be either a PowerPC based DCP-124 or an Intel Core2 Duo based DCP-1201 and supports two redundant 1553 channel via PMC.
- ◆ PMC Site 1 is a PMC compliant site and is wired for ARINC 429. 32 channels of ARINC 429 are provided with each channel individually selectable as in input or output.
- ◆ PMC Site 2 is an X/PMC compliant site and is wired for a X/PMC video card. The video card provides two video channels, each of which can be DVI or VGA. Besides the two channels of video out, if a DPMC-704 is selected four video input channels can be selected and two of them sampled simultaneously. *By removing carrier card, a 50 ms power hold up can be implemented.
- ◆ Slot 2 has been wired for a generic 64 PMC and a PMC carrier or SBC. The SBC I/O and the 64-bits of PMC I/O has be wired to the front panel connectors.

Environmental Qualification

The MPMC-9320 is designed to meet the harsh environments of many military and aerospace computing applications. To ensure the highest level of performance, the MPMC-9320 has been designed to meet or surpass the DO-160F Environmental Conditions for Airborne Equipment. It has been designed to pass numerous environmental tests including Temperature, Altitude, Shock, Vibration, Fluid Susceptibility, Voltage Spikes, Electrostatic Discharge and more. Circuit cards installed in the sealed compact chassis are completely isolated from external environmental conditions such as humidity, dust and sand.

Curtiss-Wright Controls Embedded Computing

Whether the intent is to maximize COTS content or leverage an existing custom solution, CWCEC is your embedded systems partner. Take advantage of our decades of experience in assembling generic platforms, upon which you can build your applications. Or leverage specific system solutions that focus on addressing full compliance to platform/program requirements. Either way, we have the products, open standard technologies and system platforms to keep your program ahead of schedule and on budget. Your success is the standard upon which we base our performance.

Table 1: Environmental Qualifications

Qualification	Specification
Conducted Emission (CE)	MIL-STD-461F
Conducted Susceptibility (CS)	MIL-STD-461F
Radiated Emission (RE)	MIL-STD-461F
Radiated Susceptibility (RS)	MIL-STD-461F
Electrostatic Discharge (ESD)	IEC-801-2
Power Input Test	MIL-STD-704F
Temperature Extremes	MIL-STD-810F CN2 Method 502.4 & 501.4
Temperature Shock	MIL-STD-810F CN2 Method 503.4
Altitude Extremes	MIL-STD-810F Method 500.4
Salt Fog	MIL-STD-810F CN2 Method 509.4
Fungus	MIL-STD-810F CN2 Method 508.5
Contamination by Fluids	MIL-STD-810F CN2 Method 504
Immersion	MIL-STD-810F CN2 Method 512.4
Vibration	MIL-STD-810F CN2 Method 514.5
Shock	MIL-STD-810F CN2 Method 516.5

Figure 1: Configuration Example

