

MPMC-9336-0001

3-slot 3U VPX Mission Computer

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Key Features

- Multi-channel high speed ADC and DAC
- FPGA processing
- 3-slot 3U VPX backplane
- 28VDC PSU
- Wide temperature range: -40°C to +65°C baseplate
- 200g/3ms shock capability
- Controlled by UK export regulations

Applications

- SIGINT
- RADAR

Overview

The MPMC-9336-0001 Multi-Purpose Modular Computer is a flexible, high performance, RF-capable processing system, packaged in a rugged enclosure for deployment in military and aerospace environments.

The system has two ADC channels of up to 4 GS/s or four ADC channels up to 2 GS/s and two, 4 GS/s DAC channels backed by Xilinx® FPGA data processing. Control and additional processing is provided by an Intel® Architecture based single board computer (SBC) connected using Gen2 PCI Express® (PCIe) as part of a 3-slot 3U VPX backplane.

System processing is handled by a Curtiss-Wright VPX3-530 3U VPX Transceiver module, a Curtiss-Wright VPX3-1258/9 Intel® Core™ i7 SBC, and an optional Curtiss-Wright XCLK1 low-phase noise clock generator.

The coldplate-cooled system enclosure provides environmental protection for the conduction cooled processing modules and supports a baseplate temperature of up to +65°C; optional internal heaters support cold-starts down to -51°C. The system is powered by a 28VDC power supply unit (PSU) capable of supporting 150W and includes power and signal conditioning to meet the most demanding EMC requirements. Additionally, there is a spare slot which supports a 3U VPX storage module containing a 2.5" rugged SATA SSD (capacities up to 8 TB are currently available).

The system enclosure is held to the cold-plate by four high-strength integral bolts; it has been qualified to 200g/3ms ballistic shock. The MPMC-9336 can be readily modified to provide alternative backplane and RF connectivity.

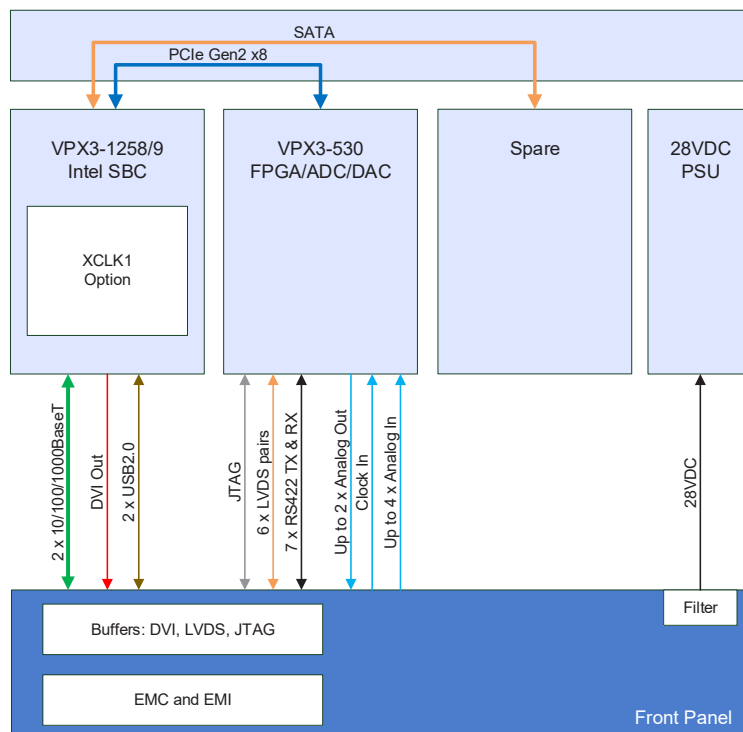


Figure 1: MPMC-9336-0001 block diagram

Specifications

Dimensions

- Dimensions (H x L x W) 4.9" x 9.8" x 6.0"
(124 x 248 x 152 mm)
- Mass 14.3 lbs (6.5 kg)

IO Interfaces to VPX3-131

- 2 x 10/100/1000BaseT Ethernet
- 2 x USB 2.0
- 1 x DVI
- SATA to Spare VPX slot

IO Interfaces to VPX3-530

- 4 x RS422
- 6 x M-LVDS (TX or RX)
- 2 x 4 GS/s ADC Inputs
- 2 x 4 GS/s DAC Outputs
- 1 x Sample Clock Input

Connectivity

The MPMC-9336-0001 backplane connects the VPX3-1258/9 to the VPX3-530 using a x8 Gen2 PCIe link to support high data-rates between the two modules.

The MPMC-9336-0001 front panel supports 6 high-frequency SMA RF connectors, these can be flexibly allocated to support up to 4 analog inputs, up to 2 analog outputs, sample clock input and Trigger input and output.

Optionally the VPX3-1258/9 or the spare slot can host an XCLK1 low phase noise clock generator which can be used as a sample clock generator for the VXP3-530.

With the exception of the high frequency SMA connectors, all the connections to the front panel of the system are via rugged 38999 series III.

A challenge for anyone installing avionics is meeting increasingly tight timescales and minimizing the risk of integrating new systems. Off-the-shelf solutions and pre-integrated systems can greatly alleviate these risks and provide a speedy solution. Pre-integrated, pre-qualified subsystems tailored by the factory, enable customers to dramatically reduce scheduling risk and program management overhead, while maximizing use of open architecture COTS technologies. Each unit features electrical/mechanical I/O expansion capabilities that enable rapid integration of payload-specific I/O interfaces for avionics, vetronics, situational awareness and other applications. Our proven systems also have comprehensive lifecycle services to help keep your systems running for the long haul.

Standard Features

The MPMC-9336-0001 is available as a fully developed configuration utilizing the following Curtiss-Wright products:

- 1 x VPX3-1258/9 – 3U VPX Intel 4th/5th generation Core i7 SBC
- 1 x VPX3-530 – 3U VPX Dual 4 GS/s Transceiver/FPGA

Custom Variations

The MPMC-9336 can be ordered as a modified commercial off-the-shelf (MCOTS) product with a modified front panel connector set, modified backplane wiring or a modified card set so it will fit your exact needs, for example configurations utilizing either Intel or PowerPC® based processor are available. The system can integrate additional features required for mission critical or video display systems such as MIL-STD-1553, ARINC 429, Ethernet switching and video capabilities. Contact your local Curtiss-Wright representative for more information.

Environmental Qualification

The MPMC-9366 is designed to meet the harsh environments of many military and aerospace computing applications. To ensure the highest level of performance, the system has been designed to meet or surpass MIL-STD-810G and 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 chassis are completely isolated from external environmental conditions such as humidity, dust and sand.

Curtiss-Wright Defense Solutions

Whether the intent is to maximize COTS content or leverage an existing custom solution, Curtiss-Wright is your embedded systems partner. Take advantage of our decades of experience in assembling generic platforms, upon which you can build your applications. Alternatively leverage specific system solutions that focus on addressing full compliance to platform/program requirements. Regardless, Curtiss-Wright 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.

Ordering Information

Please contact the factory.