

# UNMANNED VEHICLE MISSION COMPUTER

## DATA SHEET & TECHNICAL SPECIFICATIONS



### Features

- ▶ Field Proven Hardware
- ▶ Modular Design
- ▶ High Performance Processing I/O
- ▶ Ruggedized Aluminum Chassis
- ▶ Qualified to MIL-STD-461E (EMI), MIL-STD-810G (Env), MIL-HDBK-781A (Reliability)
- ▶ Hi-speed Mission Data Recording
- ▶ Compatible RTOS's: MQX, Linux, Wind River, Green Hills

The Unmanned Vehicle Mission Computer (UVMC) is a modular, high performance system that provides maximum flexibility for easy integration into multiple platforms. It was developed with high-level mission planning capabilities and vehicle sensor integration as key feature capabilities.

The field proven UVMC is designed with an advanced parallel processing architecture that utilizes a 760 MIPS main processor for computationally intensive autopilot control algorithms and an FPGA based processing module for Input/Output signal control requirements.

This unique architecture allows the core autopilot

software to remain separate from the I/O software, thus offloading I/O functions from the main processor.

The UVMC includes interfaces for external GPS and IMU modules as well as RS-232/485/422, CAN, HDLC, 10Base100 Ethernet, JTAG, and ITCS. MIL-STD-1553B is also available as an optional upgrade. A removable Compact Flash module is also available to support high speed data recording requirements.

The UVMC utilizes a Common Interface Bus architecture that provides expansion capability for additional I/O and additional communication interfaces.

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### Applications

- ▶ Vehicle Control System
- ▶ Autopilot
- ▶ Command and Telemetry
- ▶ Vehicle Payload Interface
- ▶ Remote Data Terminal

### Characteristics

- ▶ CPU Module: Freescale MPC5200B Main Processor (760 MIPS)
- ▶ Serial Interfaces: RS-232/485/422, CAN, HDLC, 10Base100 Ethernet, JTAG, Integrated Target Control System
- ▶ Data Recording: Compact Flash
- ▶ Standard I/O Module: Xilinx Spartan 3A with MicroBlaze 32 bit processor (60 MIPS)
- ▶ Discrete Outputs: 10 Type 1, 28VDC/Open, 1A | 8 Type 2, GND/Open, 500ma | Type 3 Open Collection
- ▶ Discrete Inputs: 8 Type 1, 28VDC/Open | 6 Type 2, GND/Open | 4 Type 3, TTL
- ▶ Proportional Inputs: 4 Type 1, 0 to +40VDC | 3 Type 2, 0 to +10VDC | 2 Type 3, -8mV to +54mV

### Available Real Time Operating Systems

- ▶ Compatible with: MQX, Linux, Wind River, Green Hills

### Environmental (MIL-STD-810G) / EMI (MIL-STD-461E)

- ▶ Temperature: Operating: -40°C to +70°C
- ▶ Cooling: Passive Conductive (no moving parts)
- ▶ Vibration: Random, 11.5g's RMS from 20Hz to 2000Hz
- ▶ Altitude: 50,000 ft
- ▶ Shock: 20 g's, half sine, 11 milliseconds
- ▶ Humidity: Up to 95% @ 40°C (all boards are conformal coated)
- ▶ EMI/RFI: CE102, RE102, CS101, CS114, CS115 and RS103

### Physical

- ▶ Size: 5.00" W x 3.50" T x 7.25" D
- ▶ Weight: 6 pounds
- ▶ Connectors: 44 and 62 pin D-Sub connectors, RJ45 connector, Compact Flash Interface
- ▶ Finish: Powder Coat
- ▶ Installation: Flange Mount Base Plate

### Power Requirements

- ▶ DC Power: 22 to 32VDC (28VDC Nominal)
- ▶ Consumption: 20 Watts max (standard unit)
- ▶ Protection: Surge, Reverse, and Over Voltage protected

### Additional Options

- ▶ I/O Expansion Module with additional Input and Output Signal Capability
- ▶ Inertial Navigation Module that includes a MEMS IMU and GPS Module

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