



FMC-4212 AIRBORNE, LOW-PROFILE MISSION COMPUTER

VERSATILE MISSION COMPUTER

Reliable performance and flexibility

Complex civil and military flight missions, as well as tighter budgetary restrictions, require airborne mission computers to be more powerful and leaner than ever. Collins Aerospace's FMC-4212 mission computer offers features that meet those requirements.

The FMC-4212 is a low-profile mission computer that delivers increased processing power and improved data throughput capabilities. It works with your existing avionics architecture or next-generation sensors and functionalities, such as precision engagement, sensor fusion, video and mission data recording.

The FMC-4212 is a commercial off-the-shelf (COTS) product. It meets extensive size, weight, power and cost (SWaP-C) requirements due to its low-profile, a versatile input/output (I/O) concept and passively cooled housing. The mission computer was designed in accordance with DO-178C, DO-254 and DO-160F. It is ready for delivery, including certification artifacts for design assurance level C (DAL-C).

Due to its versatile, functional and environmental approach, the FMC-4212 can be used in various airborne platforms. For example, it is an appropriate mission computer for fixed wing, rotary wing and unmanned aerial vehicles (UAVs). It can be installed either by the original equipment manufacturer (OEM) or as an aftermarket solution.



KEY FEATURES

- Low size, weight and power consumption
- Fan-less chassis design; passive cooling is sufficient
- Commercial-off-the-shelf (COTS) with no NRCs
- ITAR-free
- In serial-production and certified on various platforms
- Advanced computing performance by using a Freescale P3041 quad-core PowerPC running at 1.3 GHz on a single core
- Large set of I/Os
- Graphics and powerful real-time video processing capability
- Maintenance and health monitoring modes

TECHNICAL OVERVIEW

The FMC-4212 computing core is based on a Freescale P3041 quad-core PowerPC general purpose processor (GPP) and an I/O module configuration, which provides a versatile range of interfaces. The device offers a powerful real-time video processing functionality, which is based on a multi-processing hardware digital signal processing module (SPM).

- Freescale P3041 quad-core PowerPC running at 1.3 GHz on a single core
- 2 GB DDR3 RAM with ECC; 512 MB NOR Flash; 2 Mb MRAM
- Support for OpenGL ES 1.1
- 64 GB SSD capacity with reliable Secure-Erase functionality
- Board form factor: 3U VPX, PMC/XMC
- Software development kit available
- Advanced video functionalities
 - Video switching, reformatting, 2D overlay alpha blending and video snapshot extraction
 - Video interfaces support multi-standard analog video on shared sets of physical connector pins



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INTERFACES AND CONNECTORS

- Ruggedized circular connectors (MIL-C-38999)
- ARINC 429 (13 receive, 13 transmit)
- Customizable I/O module (26 discrete I/Os)
- Power and test connector interface
- Analog audio I/O (2x stereo outputs)
- RS-232 or RS-422 standard (16 receive, 16 transmit)
- 10/100 BASE-T Ethernet ports (2x)
- HD-SDI video interfaces (3x receive and 3x transmit)
- Analog video inputs (3x)
- MIL-STD-1553B (1x)

ENVIRONMENTAL CONDITIONS AND HOUSING

- Dimensions: ~ 327 mm x 167mm x 125mm (w x d x h) without tray
- Weight: ~5.8kg
- Connectors: MIL-C-38999 compliant rugged circular connectors
- Input power: 28V DC (MIL-STD-704F)
- Reduced power dissipation: <60W
- Operating temperature range: -40°C to 71°C with natural convection
- Category A, for vibrations; [RTCA/DO-160F], section 8.0
- MTBF: >3,800 hours (ARW, 50° C, 15° C)

EXEMPLARY APPLICATIONS

The FMC-4212 is already in use on various platforms. On one hand, it is used as a general purpose computer on helicopters and jet aircraft. On the other hand, it is used for system extensions like COM and IFF control, which may be done in combination with our Pro Line Fusion® cockpit.



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