



MOSARC AIR VEHICLE COMPUTER

Safety-critical, multi-core processor and data concentrator

A low-risk MOSA approach to airworthiness certification for military aircraft

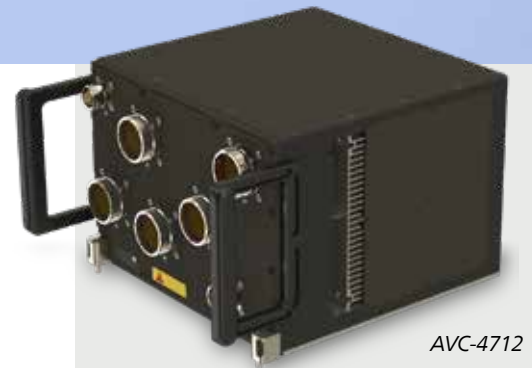
Collins Aerospace's Mosarc® Air Vehicle Computer (AVC), the mid-range size, weight, power and cost (SWaP-C) variant of our AVC product line, features an SCX3 3U OpenVPX card and multicore processor. As the only multi-core processor that meets FAA Technical Standard Order (TSO)-A for all cores, per the Certification Authorities Software Team (CAST)-32A requirements, Mosarc AVC provides our customers with a low-risk approach to achieving airworthiness certification.

Mosarc AVC is designed as both a safety-critical processor and data concentrator of all types of standard and legacy interfaces. Its extendable IOX3 interface module uses a field-programmable gate array (FPGA) developed to meet DO-254

DAL A guidance and is paired with a set of configurable software application programming interfaces (APIs) and drivers for handling data over MIL-STD-1553B-, ARINC 429- and RS-422-compliant interfaces, as well as analogs and discretes.

Installed with a complete software ecosystem of libraries, APIs, drivers, configuration and analysis tools, and instructions, Mosarc AVC supports ARINC 661 graphics and offers far more capabilities than commodity mission computers.

Designed for Modular Open Systems Approach (MOSA) flexibility and sustainability, Mosarc AVC features Hardware Open Systems Technologies (HOST) with Sensor Open Systems Architecture™ (SOSA)-conforming backplane along and a 3U OpenVPX processor to support both LynxOS-178 Guest Operating System (GOS) v2.2.4 (aligned with a FACE safety-extended profile) and VxWorks 6.6.7 GOS (aligned with a safety-base profile).



AVC-4712

KEY FEATURES & BENEFITS

- Supports multiple and varied serial, analog and discrete legacy interfaces
- Supports 10/100/1000 BASE-T Ethernet interfaces
- MIL-STD-810H, MIL-STD-461G, and MIL-STD-704 qualified for rugged applications
- FAA TSO certified processing for low risk airworthiness certification
- Over 7,000 hours reliability
- Dependable, affordable product sustainment
- MOSA-aligned solution
- APIs for health monitoring, persistent storage, and file systems
- Mounting feet with captive fasteners and bushing for secure mounting to a tray

Model: AVC-4712

FEATURES

- Includes APIs and hardware engines to support ARINC 661 graphics
- Provides a total support package ecosystem, including libraries, APIs, drivers, configuration and analysis tools, and instructions
- Features two Collins’ Assured MultiCore with NXP T2080 processors at 1.5GHz, supporting both LynxOS-178 GOS v2.2.4 (aligned with the FACE safety-extended profile) and VxWorks 6.6.7 GOS (aligned with safety-base profile)
- FAA TSO-A certified for use of all cores per CAST 32A, DO-254 Level-A complex devices and level of rigor (LoR) 2 software developed to satisfy U.S. Naval Air Systems Command (NAVAIR) Software Criticality Index (SwCI) guidance, AC 17-01 and MIL-HDBK-516C criteria
- Includes a Wind River®-Certified network stack with extensions for configurability and traffic shaping and APIs for POSIX BSD sockets along with ARINC 653 ports and queues
- Includes a video mixing FPGA developed per DO-254 DAL A that supports lightweight, resilient ARINC 818 fiber optic video

CHARACTERISTICS

Maximum size	10.48 in. W x 10.82 in. L x 7.59 in. H
Cooling methods	Forced air convection cooled via gasketed airflow inlet at the rear of the box
Ambient operating temperature	-40° C to 71° C
Maximum power	259 W (baseline configuration) 28 VDC
Maximum weight	28.5 lb. with MIL-STD-1472 handles
Connectors	Eight military-style circular connectors arranged per MIL-STD-1472 guidance

INTERFACES

MIL-STD-1553B	4
ARINC 818-3 video output	5
10/100/1000 BASE-T Ethernet	8
RS-422/485 input	8
RS-422/485 output	8
Discrete input (various)	174
Discrete output (various)	30
ARINC 429 input	32
ARINC 429 output	16
One pulse per second (1PPS)	2
Analog input (various)	29
26 VAC rotary variable differential transformers (RVDTs) input	18

PRODUCT LINE SUPPORT

Collins funds product line support for the AVC and its components, reducing sustainment costs for our customers. This includes next-generation technology development, insertion planning, obsolescence monitoring and refresh. Collins is incentivized to continue investment in the safety-critical commercial market, resulting in lower cost solutions for our military customers.

The AVC-4712 contains the following Collins product line modules:

- SCX3 (2x)
 - VMX3
 - IOX3 (2x)
- GPMX
 - Power Supply Module (PSM)
 - Commercial Ethernet Switch (CES)

Specifications subject to change without notice.



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