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MAG2A AVIO

3G-SDI GRAPHICS AND VIDEO CAPTURE MISSION COMPUTER WITH AVIONIC INTERFACES

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MISSION COMPUTER WITH AVIONIC INTERFACES

MAG is a family of rugged Mission Computers OpenVPX based designed for critical environment applications.
The MAG2A AVIO is a high-performance Mission Computer with 3G-SDI graphics & video capture capabilities, and MIL-STD-1553 and ARINC 429 avionic interfaces.
At the heart of the unit there is a Quad Core Intel® Xeon® E3-1505M v6 processor, with a 16GB DDR4 and a 64GB Flash memory. The MAG2A AVIO is powered by a Nvidia Pascal Quadro P2000 dedicated video processor with a 4GB GDDR5 memory, and a rich video I/O selection including 2x 3G-SDI outputs, 2x 3G-SDI inputs and 2x VGA independent outputs. One VGA output channel from the graphic processor is also buffered to drive two identical sets of video signals. Additionally, a DVI-D single link is brought out from the processor. The graphic processor board is connected to the SBC via PCI Express™. The connection allows video inputs to be transferred into the system memory for manipulation and/or to be recorded into a local SATA SSD supporting a Secure Erase hardware. The MAG2A AVIO Mission Computer includes a number of dedicated avionic interfaces available: dual-channel dual redundant MIL-STD-1553B and 4x TX + 8x RX ARINC 429 serial channels. Furthermore, a large number of I/O such as 3x Gigabit Ethernet ports, 2x USB 2.0 ports, 1x USB 3.0 port, 4x serial COM (RS232/RS422/RS485) and up to 4 configurable digital I/O are also available. The MAG2A AVIO can host a further internal 2.5" Serial-ATA III SSD with the capability of triggering a hardware Secure Erase signal.

MAG series Mission Computers employ conduction cooled cards inside a sealed chassis, using baseplate cooling for heat dissipation. The MAG2A AVIO is compliant to MIL-STD-810/MIL-STD-461 specifications and RTCA/DO-160G.

Product Features

- SWaP-C optimized
- Cold plate dissipation
- 7th Gen Intel® Xeon® processor
- 2 slots 3U VPX architecture
- Avionic interfaces
- Compliant to RTCA/DO-160G

Technical Specifications

System

Processor Module	Quad Core Intel® Xeon® E3-1505M v6 (4C @ 3.0 GHz)
Memory	16GB DDR4 ECC DRAM
Video Processing Module	Based on Nvidia Pascal Quadro P2000 GP107 GPU with 768 CUDA cores Integrate 4GB GDDR5 graphic memory with 128-bit memory width and 96GB/s memory bandwidth
Video Ports	2x 3G-SDI inputs & 2x 3G-SDI outputs 2x VGA (1920×1200) independent outputs 1x VGA split output (replica of a VGA channel) 1x DVI Output (from CPU board)
I/O Ports	3x Gigabit LAN (copper) 2x USB 2.0 ports 1x USB 3.0 Port 4x serial Ports (RS232/RS422/RS485) 2x isolated discrete IN + 2x Isolated discrete OUT Dual-channel dual-redundant MIL-STD-1553B interfaces 4x ARINC-429 TX channels + 8x ARINC-429 RX channels
Internal Storage Devices	64GB SATA III On-Board SSD Chip Internal 2.5" SATA SSD w/ Secure ERASE option (hardware trigger)
Management Features	Power BIT, continuous BIT Internal temperature monitoring Internal voltage monitoring
Software	Windows 10, Linux

Power Section

Power Input	+28Vdc standard (+20V to +36V) Extreme operating range: +16V to +50V Compliant to RTCA/DO-160G S16 CAT. Z and MIL-STD-704F
Power Consumption	Power consumption (average) 110W Power peak up to 150W
Voltage Spike	600V (RTCA/DO-160G S17 CAT. A)

Mechanical Features

Dimensions (W x D x H)	167.0 mm x 219.0 mm x 97.0 mm
Weight	4 Kg
Cooling	Fanless design, conduction cooling through baseplate
Interfaces	3x MIL-DTL-38999 military circular connectors 1x USB 3.0 connector

Environmental Features

Operating Temperature	-45°C to +70°C" (RTCA/DO-160G S4 CAT. B2)
Storage Temperature	-50°C to +85°C" (RTCA/DO-160G S4 CAT. B2)
Altitude	Operative: Max 25.000 feet (RTCA/DO-160G S4 CAT. B2)
Humidity	Up to 95% (RTCA/DO-160G S6 CAT. B)
Shock	6g shock, 11ms (RTCA/DO-160G S7 CAT. B)
Crash Safety	20g shock, 11ms (RTCA/DO-160G S7 CAT. B)
Vibrations	Random, up to 4.76 Grms Frequency Range: 5 ÷ 300Hz (RTCA/DO-160G S8 CAT. U)
Environmental Protection	IP65 rated according to EN 60529
Fungus Protection	According to RTCA/DO-160G S13 CAT. F
Salt Spray	5% 35°C 48 hours (RTCA/DO-160G S14 CAT. S)
Magnetic Effect	Deviation at 0.3m (RTCA/DO-160G S15 CAT. Z)
EMC	Audio frequency susceptibility: RTCA/DO-160G S18 CAT. Z Induced signal susceptibility: RTCA/DO-160G S19 CAT. ZC Radio frequency susceptibility: RTCA/DO-160G S20 CAT. T Emission of radio frequency energy: RTCA/DO-160G S21CAT. M Electrostatic discharge: RTCA/DO-160G S25 CAT. A

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