MAGIC

Military and Airborne Graphic Enhanced Integrated Computer

- **Powerful Quad Core i7 based processor**
- **Nvidia GeForce Graphics accelerator**
- **Mass storage (with secure erase option)**
- **Avionics interfaces (MIL-STD-1553 & ARINC-429)**
- **Gigabit Ethernet , RS-422 & USB interfaces**
- **Analog, Discrete I/O**
- **DVI & Analog video output**
- **Multiple Analog and/or digital (SDI) video inputs**
- **HD Video supported**

Typical applications:
- Airborne mission computer
- Video stream processing
- Virtual training computer
- Onboard training simulation
- Video conversion and overlay generation
- Tactical mission system processor
- Moving map processor

MAGIC (Military and Avionics Graphics enhanced Integrated Computer) is a powerful computing machine for airborne platforms and various military applications that requires the power of high-end computing, high-end graphics and meeting tough environmental conditions.

Astronautics' MAGIC computing family of product is offering the unique combination of a quad-core processing, Nvidia GeForce graphics accelerator, embedded mass-storage and avionics I/O interfaces (MIL-STD-1553B, ARINC-429), as well as modern computing interfaces (Gigabit Ethernet, USB, RS422). All is packaged in an environmentally protective enclosure that fully meet airborne and military tough environment conditions, as well as full EMI/RFI protection. The MAGIC computer is designed with passive cooling, without any rotating fan inside, and/or forced air cooling required.

With a full military specification compliance, the MAGIC computer is qualified to operate in a wide temperature range, shock, vibrations and humidity that are typical for military and airborne equipment, The MAGIC computer combines the high-level processing and interface capabilities, with a fully compliance to demanding environmental requirements that are common in the military and aviation industries.

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MAGIC

Military and Airborne Graphic Enhanced Integrated Computer

Main Features

- CPU: i7 Processor (Dual-core or Quad-core)
  - 4GB SDRAM, DDR3 (Up to 8GB)
  - 128GB up to 512GB SSD
    (Secure erase – option)
- Graphics:
  - nVidia graphics accelerator, 96 CUDA cores, 1GB memory (DDR3)
  - Support NVIDIA CUDA™, OpenCL™, OpenGL , Microsoft® DirectX
- Video:
  - Two (2) RS-170A video inputs, RGsB input
  - One (1) VGA video output (1,024x768 pixels resolution)
  - Two (2) DVI1.0 video outputs (with DDC interface), One RS170A output
  - One (1) Audio Input/Output [600 Ohm]
- Ethernet:
  - Five (5) Gigabit Ethernet
- Discretes: 16 Input/Output
- MIL-STD-1553B – Two (2) dual redundant busses supported
- ARINC-429 (Tx/Rx) – Two (2) channels
- RS-422 (6) – Up to 921.6 kbps (for each channel)
- RS-232 (1) – Up to 115.2 kbps (for each channel)
- Analog – Eight (8) inputs
- Controls: ON/OFF, Shutdown

Environment Characteristics

- Altitude: Up to 65,000 feet
- Temperature: -40ºC to +71ºC (Operational)
- Acceleration:
  - Max 9g (Per MIL-SRD-810F, Method 513.5
- Shock:
  - Functional: 40g, 11ms
  - Crash safety: 40g forward, per MIL-STD-810F, Method 513.5 Proc. III
- Humidity: Per MIL-STD-810F, Method 507.4
- EMC: Per MIL-STD-461E
  - CS101,CE102, RE101, RE102, RS101, RS103
- Lightning: Per MIL-STD-461E
  - CS114, CS115, CS116

Power

- 28 VDC 170 Watts
  (Per MIL-STD-704F and MIL-STD-1275A)

Physical Characteristics

- Dimensions:
  - Width: 165.0 mm
  - Height: 230.0 mm
  - Length: 250.0 mm
- Weight: 10.0 Kg

Reliability

- MTBF: 9,000 Hours
- MTTR:
  - 30 Min @ O-Level
  - 120 minutes (max) @ D-Level

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