Flexible COTS Integrated Subsystem Functions Out of the Box

Aitech Defense Systems now offers the highly-integrated, compact RediBuilt rugged COTS computer that boots and executes your real-time operating system right out of the box. This flexible computer can accommodate either Intel or Freescale processors as well as a CompactPCI or OpenVPX backplane in a condensed package measuring less than 0.22 ft3, comparable in volume to a 1/4 ATR Short enclosure.

Designed to TRL 9 (Technical Readiness Level) as defined by the DoD, NASA and other government agencies, RediBuilt eliminates all NRE (non-recurring engineering) and customization costs. It is a highly capable, fully functioning embedded computing subsystem proven through successful operation, complete with built-in, real-world I/O and HD (high definition) graphics and video capabilities.

Equipped with standard, circular MIL-DTL-38999 I/O connectors on the front panel and a two-slot 3U CompactPCI or OpenVPX backplane, RediBuilt provides all system interconnections, internal power distribution and filtering circuitry pre-assembled in the unit.

The computer's integrated functionality, combined with its lightweight, rugged aluminum enclosure, makes the RediBuilt ideal for demanding applications where SWaP (size, weight and power) is important, as found extensively in military and airborne computing environments.

Both unmanned airborne systems (UAS) and unmanned ground vehicles (UGV) benefit from the RediBuilt's compact size as well as the full environmental sealing that protects the unit from water, sand, dust, humidity, immersion and condensation. The unit measures 202 mm (W) x 260 mm (D) x 126 mm (H) and weighs less than 13 lbs complete.

Systems can be built to different power levels depending on the application and reliability needed. The various high-performance Freescale and Intel processor options in single, dual or multi-core configurations are available with a host of standard I/O, including Gigabit Ethernet, serial ports, discrete I/O, USB, SATA and CANbus and more.

Additional real-world sensor and effector I/O, including A/D, D/A, Servo, Resolver and RTDs can be added via industry standard PMC/XMC mezzanine sites.

The modular, MIL-STD-704, high-efficiency 28 VDC power supply unit and power input filter ensures reliable operation over a wide 18 VDC to 36 DC input voltage range and provides EMI/EMC compliance.

This new, sealed, rugged COTS computer utilizes internal conduction cooling. External cooling is achieved through convection cooling using fins to dissipate heat or by conduction cooling via a coldplate interface. RediBuilt supports industry standard PMC and XMC mezzanines for easy expansion of function and I/O. Supported operating systems include VxWorks, INTEGRITY, Windows and Linux.

Relying on more than 30 years of military computing expertise, Aitech designs, builds and tests all aspects of each integrated RediBuilt subsystem to ensure full operation and reduce program risks.

For more information please visit http://www.rugged.com/a190-redibuilt-integrated-rugged-cots-computer [1].

Posted by Janine E. Mooney, Editor

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