

Themis Computer VMEbus Single-Board Computers Selected for Use in the U.S. Army's Next Generation UAV Systems



Themis® Computer USPlii-1V™ survives over 40G of shock and vibration and provides the ruggedized military reliability required for the U.S. Army's demanding mobilized environments

FREMONT, California – April 25, 2002 - Themis Computer announced the selection of its USPlii-1V VMEbus single-board computers for use in the U.S. Army's next generation of Unmanned Aerial Vehicle (UAV) systems. The U.S. Army awarded AAI Corporation a contract to develop the Shadow Tactical Unmanned Aerial Vehicle (TUAV) system, designated by the Army as the RQ-7A. The Shadow 200 aerial vehicle was selected by the U.S. Army as the TUAV for battlefield and peacekeeping reconnaissance and surveillance missions. Under the contract, Themis has delivered units for Low Rate Initial Production (LRIP), and expects to deliver hardware for full-rate production in 2002.

"We're working closely with the Shadow development team test engineers and delivering rugged, high performance USPlii-1V single-board computers that provide high reliability and meet all expectations for system transportability and use," stated William E. Kehret, president of Themis Computer. "Our USPlii-1V single-board computers can operate in 40G shock environments, making them an excellent choice for integration into the Army's demanding mobilized environments."

The first in a new generation of TUAV systems, the Shadow TUAV will provide U.S. Army brigade commanders with crucial reconnaissance, surveillance, and battlefield damage intelligence — delivered efficiently from the air vehicle's electronic payload, directly to tactical command centers. The Ground Control Station (GCS) is an operations proven Rugged Portable System adapted for use with the Shadow TUAV. Use of pre-existing hardware and software reduces risk and provides system maturity.

Themis Computer Press Announcement



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The Portable Ground Control Station (PGCS) is a subset of the shelterized TUAV Ground Control Station. The PGCS is packaged in ruggedized transit cases to enable easy transport and rapid set up and tear down in the field. The PGCS, in conjunction with the Portable Ground Data Terminal has full functionality to launch and recover the air vehicle, operate the payload, and receive and display payload data.

AAI Corporation, the prime contractor, leads the Shadow TUAV system team. The Shadow TUAV was developed from a heritage of technically mature and operationally proven UAVs, and COTS technology, for complex mission-critical system applications. The Themis USPlii-1V is the computer of choice for use in the GCS and PGCS VME-based operator workstations. These workstations collect, process, analyze, and distribute digitized battlefield information by interfacing with present and planned service command, control, communications, computers and intelligence (C4I) systems.

Themis USPlii-1V Single-Board Computer



The Themis Computer single VME slot USPlii-1V combines the UltraSPARC™-IIi, Sun Microsystems highly integrated 64-bit SPARC V9 superscalar processor, with a high speed VME64 controller. The USPlii-1V has performed military standard 810E method 514.4 under shock and vibration loads that exceed the requirements for basic transportation and ground mobile environments. The shock tests included power up, functional tests performed to flight and ground equipment standards, subjecting the USPlii-1V to shock loads in excess of 40G on three axis, for a duration of 11 ms.

These tests were performed under both operating and non-operating conditions, three or more times in both directions, along each of three orthogonal axis. The transportation tests simulate product vibrations resulting from the interaction of vehicle suspension and structures with road and surface discontinuities, when products are transported from manufacturer to user installation. The ground based mobile tests simulate the vibration spectrum of a helicopter, exposing the USPlii-1V to increased levels of vibration, at higher frequencies.

Both the value and performance of the USPlii-1V are complemented by a complete set of workstation I/O features. The USPlii-1V includes dual Ultra Wide SCSI ports, one 10/100Base-T Ethernet or MII port, and two RS-232 serial ports on a 6U platform. Designed for the highest level of configuration flexibility, the USPlii-1V is also available in two slot and three slot versions, with expanded I/O (multi-protocol serial ports, parallel port) for computing intensive applications. In the two-slot version the USPlii-1V may be configured with a Creator Graphics board (USPlii-1V/2C) and expanded I/O, or with three PMC expansion (USPlii-1V/2P) capability. The three-slot version (USPlii-1V/3) offers three PMC slots, Creator Graphics and expanded I/O. The three-slot configuration (USPlii-1V/3) meets the speed, I/O, and graphics requirements for the Shadow 200's GCS and PGCS operator workstations.

Themis Computer VMEbus Single-Board Computers

Themis Computer provides the United States Armed Forces the widest breadth of general purpose embedded systems products in the industry, including its VMEbus and CompactPCI-based products, spanning a greater than a 20-fold performance range. Themis is a proven supplier to the U. S. Army in TENCAP and tactical defense systems contracts.

Themis Computer's high performance VME single-board computers are being integrated into new systems and used to retrofit existing systems. The high performance single-board computers from Themis include the new USPlii[™], the USPlii-cPCI[™], the USPlii-3V[™], and the USPlii-1V, a single-slot UltraSPARC[™] Ili VME engine with expandable I/O architecture. These Single-Board Computers put more processing power and increased system reliability into increasingly sophisticated application environments resulting in lower hardware and software costs. The use of open systems, off-the-shelf technology results in significant cost savings in both development and deployment in performance upgrades and maintenance.

About AAI Corporation

AAI is a subsidiary of United Industrial Corporation (UIC) based in New York. UIC includes Detroit Stoker, a subsidiary that manufactures industrial stoker furnaces. AAI is headquartered in Hunt Valley, Maryland, with over 200,000 square feet of facility space. Currently, AAI has approximately 1,400 employees, with annual sales of over \$170 million. Additionally, AAI currently maintains numerous field offices around the country supporting various customer bases and requirements. AAI is divided into five primary business units; Defense Systems, Unmanned Air Vehicle Systems, Fluid Test Systems, Transportation Systems, and Engineering & Maintenance Services.

About Themis Computer

Themis Computer is the leading developer and supplier of ruggedized high performance VME single-board computers and systems for military/aerospace, telecommunications and industrial embedded applications. Themis' products incorporate features designed to ensure high reliability and availability while reducing the risks and costs of failure caused by environmental extremes. An ISO 9001 certified company, Themis Computer practices Total Quality Management (TQM) in all areas of its business, from engineering and manufacturing to customer service. Themis Computer is headquartered in the Silicon Valley and offers worldwide service and support. For more information please visit www.themis.com or email: info@themis.com.

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