



Aitech's New U-C850x Series of 3U VPX Cybersecurity-enabled SOSA Aligned SBCs Ideal for Applications Handling Large Amounts of Sensitive Data

Three configurations use powerful Intel TigerLake SoC with integrated GPGPU processing to optimize SWaP-C and provide superior interconnectivity as well as design flexibility

U-C850x Series Technology Highlights & Innovations

- Three configurations – with the most enhanced model sporting a large Xilinx MPSoC FPGA for acceleration of data processing and security applications
- SWaP-C-optimized 3U VPX SBCs aligned to SOSA™ for improved time-to-market
- Enhanced system security through AiSecure™, Aitech's advanced cybersecurity framework
- Excellent graphics and AI/ML performance using integrated GPGPU
- Superior connectivity bandwidth and design flexibility

Chatsworth, Calif. August 2022 – Aitech Systems, a leading provider of rugged boards and system level solutions for military, aerospace and space applications, now offers the U-C8500, U-C8501 and U-C8502, three new [3U VPX cybersecurity-enabled single board computers](#) (SBCs) aligned to The Open Group Sensor Open Systems Architecture™ (SOSA) Technical Standard.

Unique to the U-C850x Series SBCs is the single board combination of three main pillars of modern data processing acceleration: CPU, iGPU & FPGA. A high-performance CPU SoC featuring a strong internal GPU is combined with optional integrated large FPGA, enabling the new SBC series to be used in a wide range of rugged military and aerospace data-intensive applications, including artificial intelligence and machine learning (AI/ML), all while minimizing SWaP-C and without sacrificing performance.

The U-C850x Series fully supports AiSecure™, Aitech's innovative and proprietary cybersecurity framework that increases survivability and level of confidence by detecting and preventing unexpected attacks. The inherent security features enable both firmware and data protection as well as prevents reverse engineering and tampering with system integrity, while allowing secure transmission and storage of sensitive data.

The U-C850x Series of rugged 3U VPX SBCs features a multi-core Intel Architecture CPU processor, strong GPGPU artificial intelligence (AI) processing and advanced cybersecurity protection. The high-performance Intel 11th generation TigerLake UP3 (TGL-UP3) SoC with 4 cores/8 threads and an innovative GPU with up to 96 Execution Units enables ground-breaking performance per watt, with 12W, 15W & 28W TDP options. The boards also feature other advanced I/O options.

The series comes in three different configurations:

- **U-C8500:** 4x PCIe Gen3/4 Data Plane; XMC slot
- **U-C8501:** 4x PCIe Gen3 Data Plane; 4xPCIe Gen4 Expansion Plane; XMC slot
- **U-C8502:** 4x PCIe Gen3 Data Plane; 4xPCIe Gen4 Expansion Plane; integrated Xilinx MPSoC FPGA

Alex Trigoub, Director, Board Level Product Line for Aitech, commented, "The U-C850x Series provides an improved performance-to-cost ratio as well as better performance-per-Watt than existing Intel SBCs. The boards are also aligned with the SOSA Technical Standard, allowing for much faster, easier integration and upgrades, while improving time-to-market and lowering risk. Having advanced Intel application performance and strong video, AI and ML processing capabilities, as well as a large integrated FPGA on a 3U VPX SBC, without wasting additional SWaP-C on separate GPGPU and FPGA boards, is an impressive combination, one that today's military systems are demanding."

Highly integrated functionality and excellent SWaP-C make the new U-C850x series ideal for several harsh military and aerospace applications that need to reliably process significant amounts of data. These include unmanned aerial vehicles and unmanned ground vehicles (UAV/UGV), mission computers and digital signal and image processing as well as signal intelligence (SIGINT) and electronic warfare (EW).

The boards feature support for up to 64GB LPDDR4X RAM to provide higher performance for graphics and AI/ML applications using the integrated GPGPU as well as PCIe Gen4 support for optimized interconnect to other boards in the system.

About Aitech:

With 40 years of experience, Aitech is a global digital electronics manufacturer with expertise in providing reliable, rugged embedded systems for the harshest, most unforgiving environments in military, aerospace and space applications. We enable the world's leading companies to expand their most revolutionary explorations and push the boundaries of innovation across sea, land, air, and space.

We provide COTS products based on multiple open standard architectures, including SOSA, FACE, VPX, CompactPCI, etc., such as single board computers, I/O, memory and graphics boards, PMC/XMCs and sub-system enclosures, with over 100,000 boards and custom integrated systems delivered to take on the most challenging projects in the harshest environments and succeed. As a pioneer in space applications, Aitech offers proven space pedigree with trillions of miles flown in a variety of space missions without a single failure.

At Aitech, we stand behind our product and our customer to secure a better tomorrow.