Preliminary

Applications

- Autonomous military land, marine, air, and space surveillance systems, vessels, and vehicles
- Aerospace manned and unmanned aircraft
- Threat identification and deterrence systems
- Autonomous drones and drone swarms
- Supercomputing in harsh, unpredictable environments
- Avionics, Telemetry and Data Recording
- Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR)

Benefits

- Expand situational awareness
- Deploy assets more quickly
- React immediately to threats
- Optimize operational efficiency
- Minimize network utilization
- Ensure information security
- Collect and filter more data
- Reduce system size, weight, and power
- Operate in the harshest environments

BITMICRO
Time - Tested. Verified Rugged. Proven Secure.

ACUMEN™ AI ON THE EDGE

RUGGEDIZED SUPERCOMPUTE AI PLATFORM

M-SERIES FOR MILITARY APPLICATIONS

BiTMICRO® ACUMEN Ruggedized Supercompute AI Platform offers a rugged, compact, high speed, power-efficient, and secure platform for DoD/military-related data and image acquisition, processing, and transmission. ACUMEN includes embedded CPUs and GPUs, delivering high performance with integrated deep learning features allowing data or images to be captured and mined in near-real-time. Ideal for computer vision, image processing, data acquisition, and high performance computing.

ACUMEN Ruggedized Supercompute AI Platform's deep learning feature allows DoD/military images and data to be analyzed, filtered, encoded and resized for reduced bandwidth and latency transmission to ground systems.

ACUMEN Ruggedized Supercompute AI Platform, combined with BiTMICRO RAMPART™ Distributed End-to-End Embedded Cyber Security, is suited for mobile and / or remote applications such as reconnaissance using UGVs and UAVs, low altitude satellite-based surveillance, or threat detection and disarming robots (ROS). It provides an effective and secure solution, allowing data to be securely stored and transmitted between any two widely distributed locations. Data can be securely transmitted across any network, interface, bus, memory, and operating system.

In addition, ACUMEN is manufactured under our Verified Rugged program, designed and engineered to operate in rugged, unpredictable, and hostile environments.

BiTMICRO maintains provenance of the ACUMEN Ruggedized Supercompute AI Platform by controlling all aspects of the product lifecycle, from in-house design to trusted manufacturing and sourcing partners.

Feature Highlights:

- Numerous, high-speed inputs provide faster capture, higher volume, and better clarity of mission-relevant images and data
- Powerful processors parse information in near-real-time to quickly discover critical information
- Data can be captured, analyzed, and acted upon within milliseconds to identify and deter potential threats
- Use intelligence to determine where assets should be dispersed to deliver the most impact
- Analyze and transmit only mission-relevant data while archiving other data for future use
- Combine with BiTMICRO RAMPART™ Distributed End-to-End Cyber Security with seamless AES encryption, military sanitization, and secure erase
- Capture and store up to 16TB of information on verified rugged solid state storage
- Compact size, minimal power , and low weight allow for use on a large variety of systems where SWaP is important
- Rugged design can withstand a wide temperature range, high humidity, extreme vibration and shock, and meets most military standards

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Product Specifications

Ruggedness Level	Verified Rugged
Form Factor	Ultra-Small Form Factor
GPU	512-Core Volta GPU with Tensor Cores
CPU	8-Core ARM v8.2 64-bit CPU, 8MB L2 + 4MB L3
Memory	16GB 256-bit LPDDR4x 137GB/s
Data Storage Capacity	Up to 16TB of verified rugged solid state storage with BiTMICRO RAMPART Distributed End-to-End Embedded Cyber Security
Data Storage Security	AES-256 with BiTMICRO RAMPART Distributed End-to-End Embedded Cyber Security
Data Transmission Security	
Deep Learning Accelerator	2x NVDLA Engines
Video	2x 4Kp60 Encode (HEVC) 2x 4Kp60 Decode (12-bit Support)
Camera Connector	16x CSI-2 Lanes
Operating Temperature	-40 to 85 °C *(requires conduction cooling or equivalent)*
Operating Shock	140 G, half-sine, 2ms
Operating Vibration	5 Grms (10-500 Hz)
Power	Power requirements range from as low as 35w depending on the configuration, application, and amount of solid state storage capacity required
Warranty	Standard: 1 Year Extended (Optional): 3 Years

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