

## Applications

- Railway and pipeline inspection
- Autonomous mining
- Emergency medical response
- Law enforcement
- Farming and forestry, crop management, and harvesting
- Oil and gas exploration
- Fire, smoke, and dangerous chemical detection and suppression
- Border patrol and customs
- Marine vessel and structure inspection
- Transportation vehicle: stress monitoring, fuel consumption optimization, and pre-emptive maintenance

## Benefits

- Provide for better public safety
- Increase productivity and improve quality
- Secure high-value research and exploration data
- Protect borders from threats, illegal entry, and contraband
- Reduce operating costs and increase profits
- Avoid unexpected equipment repairs and failures
- Secure confidential law enforcement and emergency services data

## ACUMEN™ AI ON THE EDGE

### RUGGEDIZED SUPERCOMPUTE AI PLATFORM

#### I-SERIES FOR INDUSTRIAL APPLICATIONS

BITMICRO® ACUMEN Ruggedized Supercompute AI Platform offers a rugged, compact, high speed, power-efficient, and secure platform for 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 lightning speed. Ideal for computer vision, image processing, data acquisition, and high performance computing.

ACUMEN Ruggedized Supercompute AI Platform's deep learning feature allows 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 rugged and/or remote applications such as on-location near-real-time facial recognition, research and exploration, production and manufacturing quality control and optimization. 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 Specified 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 images and data
- Powerful processors parse information in near-real-time to quickly discover critical information
- Information can be captured, analyzed, and acted upon within milliseconds
- Use intelligence to determine where assets should be dispersed to deliver the most impact
- Analyze and transmit only relevant data while archiving other data for future use
- Combine with BiTMICRO RAMPART™ Distributed End-to-End Cyber Security with seamless AES encryption and data sanitization
- Capture, store, and process up to 16TB of information on verified rugged solid state storage
- Compact size, reduced power, and low weight allow for use on a large variety of systems where SWaP (size, weight, and power) is important
- Rugged design can withstand a wide temperature range, high humidity, extreme vibration and shock, and meets most industrial operational requirements

## Product Specifications

Ruggedness Level	Specified 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 <i>(requires conduction cooling or equivalent)</i>
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

### For more information:

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