Coda Octopus
Sound Underwater Intelligence

Benefits

- Customizable, high powered, small form factor and rugged embedded computer solution
- Current User Base includes wearable deployment on body and backpack
- Well-established user based including several defense programs
- Suitable for manned/unmanned vehicles including marine, airborne, and land-based
- Data and graphics-intense mission ready with high performance processing, memory, and storage
- Size, weight, and power (SWaP) optimized for mobile platforms and computational efficiency
- Designed for Artificial Intelligence (AI) applications using NVIDIA® PASCAL architecture
- Designed to meet MIL-STD-810G specification for extreme use and environments
- Commercial Off-the-Shelf (COTS) value with broad configurability and expandability
- Designed for harsh and rugged environments
- Customizable I/O solution
- Used in many established markets (Defense/Underwater Robotics/ Marine/Autonomous Vehicle Applications)

High powered ruggedized computing solution for harsh and rugged environments.

Designed for airborne, maritime and land-based high performance computing applications, the Thermite® GPU system is a high performance, rugged, small form factor, commercial off the shelf (COTs) configurable mission computer solution for harsh environments with excellent track record for reliability and used in many demanding environments and defense programs and is currently used in a number of defense program applications. The design has been qualified for Defense Grade applications (Mil Spec) and has been validated for the requisite temperature, vibration, and other environmental performance measures within the relevant specifications e.g. MIL-STD-810G. The small form factor with its ruggedized packaging and high-powered processor (NVIDIA Graphics Card and Multi-Core Intel Processors) makes it a versatile embedded computer solution for many domain applications including maritime, airborne and land based. The Thermite® is currently used in several markets including in programs relating to helicopters, drones, land-and underwater based robotics and is also wearable directly on the body or on backpack.

Compact, Uncompromised Performance in the Harshest of Environments

Thermite can be used as a "headless" processor for many autonomous or remotely controlled applications such as:

» Autonomous Underwater Vessels (AUV)
» Autonomous Surface Vessels (ASV)
» Remote Controlled Vessels (RCV)
» Remote Control Construction Machinery (Excavators etc.)
» Structure Data Collection (Bridges and waterfront infrastructure)
» Monitoring Buoys (Ocean, wave and tidal stations)

Thermite can also be coupled with an easy-to-obtain ruggedized waterproof monitor and keyboard for challenging environments with human direct control such as:

» Rigid Hull Inflatable Boats (RHIB)
» Small open boats/Jon boats
» Survey Vessels
» Breakwater and Marine Construction

Processor Summary Features:

- High powered Xeon processor with nVidia CUDA GPU
- Low power operations (typical 35 watts)
- MIL-STD and IP67 design
- Windows 10 and Linux Platform support
- Extensive I/O capability, standard system has 6 USB ports, 2 serials ports, and 2 GigE Ethernet ports
- Expansion capability for more I/O, Video Capture, GPS, CAN Bus and many more available on request
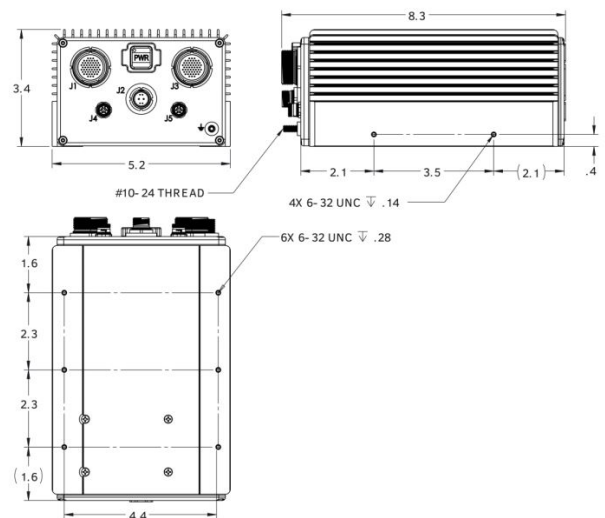
![Coda Octopus logo — Sound Underwater Intelligence]

Technical Specifications

CPU	Intel® 6th generation Xeon® E3-1515M v5 with 8MB Cache
Graphics	NVIDIA® Quadro® Embedded P2000 4GB 128BIT GDDR5 768 CUDA cores
Memory	32GB DDR4 ECC SO-DIMM 64GB DDR4 ECC SO-DIMM Configurable
Storage	256GB M.2 iSLC SSD Optional removable SSD
Video Output	Two HDMI 1.4 ports
Standard Interfaces (High Configurability)	Four USB 2.0 ports Two USB 3.0 ports Two Gigabit Ethernet (GigE) ports Two configurable serial I/O ports: RS-422, RS-485, or RS-232 Audio I/O Fan Connection (power and status ports)
Operating System	Linux or Windows
Expandability	Mini PCIe slots MIL-STD-1553 mSATA option M.2 SATA slot CAN Bus Video Capture Wi-Fi/BT GPS ARINC-429 Gig Ethernet GPIO ADC DAC Fiber
Power	18V to 33V input, MIL-STD 1275E compliant Optional power button with indicator Optional MIL-STD-704 power supply Max. - 150W Nom. - 35W
Ruggedization	IP67 Designed to MIL-STD-810G Environmental Designed to MIL-STD-461F EMI/EMC
Thermal	Standard Conduction Cooled or forced air-cooling Storage Temp: -55° to 85° C Operating Temp: -40° to 71° C
Dimensions (LxWxH)	8.3in x 5.2in x 3.4in 210mm x 130mm x 85mm
Weight	4.8 lbs (2.2 kg)
Exportability	Dual use, 4A994, under U.S. export guidelines Contact sales@codaoctopus.com for more information

Available for Echoscope® Series

Thermite is a drop in solution that integrates easily with your existing Echoscope series sonar, rotator, and navigation system set up. It is currently available to pair with the Echoscope, and it is fully compatible with both CodaOctopus® Underwater Survey Explorer (USE), CodaOctopus® 4G USE, and CodaOctopus® Construction Monitoring Solution (CMS) software. Thermite can also be supplied with a rugged waterproof monitor and keyboard for operational use.

We also have standard survey variants available for either Linux or Windows 10. If you have specific requirements, please contact sales@codaoctopus.com to discuss a custom solution.