

Rugged Mission Computer for Critical Defense Operations

COBALT™ S1901



Agility. Intelligence. Reliability.

The **COBALT™ S1901** delivers high-performance mission computing at the tactical edge, enabling AI-driven decision-making, real-time sensor processing, and secure data handling in the most demanding military environments.

Built to operate where conventional systems fail, it ensures mission readiness across land, air, and maritime deployments, withstanding shock, vibration, extreme temperatures, and unpredictable conditions. With modularity and scalability at its core, the S1901 empowers defense platforms with the flexibility to evolve alongside mission requirements.

Why Choose Kontron's COBALT™ S1901 for Defense?

› High-Performance Edge AI & Compute

Supports server-class Intel® Xeon® D processing with NVIDIA® GPU acceleration for AI inference, real-time sensor fusion, and a high-performance network switch for computing at the edge, bringing data-center-level capabilities directly into the field.

› Precision Timing & Deterministic Networking

Features a Deterministic Ethernet Fabric with multi-tiered 1/2.5/10GbE ports that, combined with built-in IEEE 1588 PTP support a high-precision SMA PPS output. This provides the sub-microsecond synchronization required for nanosecond-level accuracy in multi-sensor fusion.

› Mission-Ready Modular Architecture

Flexible I/O and expansion (GPU, FPGA, video modules, wireless connectivity) allow rapid adaptation to evolving mission requirements and seamless payload integration.

› Ruggedized for Harsh Environments

IP-67 rated and designed for extreme conditions including vibration, dust, temperature variation, and mobile deployment, ensuring continuous operation in real-world defense scenarios.

Designed to meet:

- Environmental Standards: MIL-STD-810 / MIL-STD-461 ; -40°C to +70°C operational
- Mission Profile Modularity: MOSA-based architecture (Modular Open Systems Approach)

S1901 Mission Use Cases

➤ Autonomous ground vehicles (UGVs):

Enables UGVs to process sensor data in real time, supporting autonomous navigation, obstacle avoidance, and mission execution in complex and contested environments.

➤ Unmanned aerial systems (UAS):

Powers onboard computing for UAS, enabling real-time image processing, flight optimization, and AI-driven decision-making during surveillance and reconnaissance missions.

➤ ISR and sensor fusion platforms:

Synchronizes disparate streams from cameras, LIDAR, and radar. By time-aligning sensor data to the same nanosecond, the S1901 enables actionable intelligence for improved situational awareness and faster decision-making.

➤ Tactical edge AI processing:

Performs AI inference directly at the edge, transforming raw data into immediate insights without reliance on remote or cloud-based systems.

➤ C5ISR and mission system modernization:

Supports modern C5ISR architectures by providing a modular, high-performance computing platform that simplifies integration and enables scalable upgrades over time.

Built for the Edge. Ready for the Mission.

The **COBALT™ S1901** bridges the gap between centralized computing and tactical operations, delivering rugged, high-performance processing exactly where it's needed most: **at the point of action.**

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