



Application-Ready Platform for Defense Systems

- COM Express® Intel® High Performance Processor
- Expansion slots for multiple GPU, FPGA accelerators, or video modules
- Multiple I/O high speed interfaces and high-capacity storage options
- Wireless connectivity options for cellular and Wi-Fi
- Ruggedized & modular platform for defense deployments

Expandable and configurable to meet demanding requirements

To address the rapidly increasing need for powerful and configurable mission computing platforms in defense applications, Kontron has introduced the COBALT™ S1901, a pre-qualified embedded mission computer designed to tackle today's most demanding situations, including autonomous vehicle control, multi-sensor situational awareness, and advanced sensor processing. With its compact design, flexible configuration options, and scalable performance, the COBALT™ S1901 is perfectly suited for mission computing across all platforms — whether air, land, or sea.

The COBALT™ S1901 is built on ruggedized versions of COM Express® modules attached to a carrier and a customizable connector front-panel. However, the S1901 expands significantly on the capabilities of the COBALT™ 901 by offering:

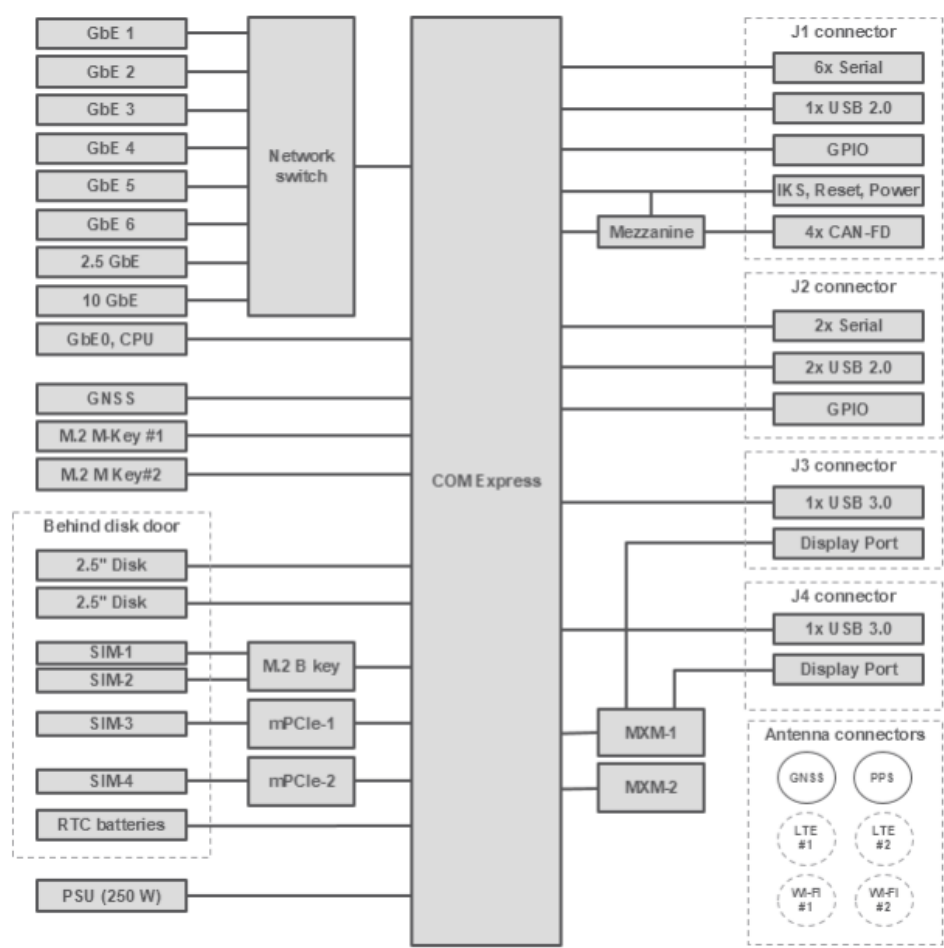
- Support for type 7 COM Express® modules
- Two MXM sites for GPU, FPGA-based, or specialized processing modules
- Three m.2 and two mini-PCIe sites
- Built-in managed Ethernet switch
- Built-in support for an optional CANBus or combination CANBus/Aurix™ MCU processor mezzanine
- Two, larger 2.5" drive bays for removable high-density solid-state drives
- An optional fan kit, for configurations drawing too much power to be cooled using passive convective/conductive cooling

COBALT™ S1901 offers commercial off-the-shelf variants but can easily be customized to meet the needs of any deployed application.

Technical Information

DIMENSIONS	330 mm x 284 mm x 115 mm (13.0" W x 11.2" D x 4.5" H)
COMe PROCESSOR	COMe-bID7 Intel® Xeon® D-1732, 8 Cores-p, 1.9 GHz, 64 GByte of DRAM ECC COMe-bBD7 Intel® Xeon® D-1539, 8 Cores, 1.6 GHz, 64 GByte of DRAM ECC COMe-bBD7 Intel® Xeon® D-1559, 12 Cores, 1.5 GHz, 64 GByte of DRAM ECC Contact Factory for other configurations options
STORAGE AND EXPANSION	2x M.2 M key 2230/2260/2280/22110 1x M.2 B key 2242/3052 2x mPCIe full length Removable Storage Drive Bay; Includes two 2.5" storage slots (contact factory for configuration options)
MXM GPU	NVIDIA MXM: A2000 ADA, A2000 (contact factory for latest GPU options)
ETHERNET PORTS	1x 10GBASE-T (Switched) 1x 2.5GBASE-T (Switched) 6x 1000BASE-T (Switched) 1x 1000BASE-T (Direct to CPU) PPT/1588 with 1PPS, GNSS
USB	2x USB 3.0 with Display port 3x USB 2.0
WIRELESS (OPTIONAL)	Cellular connectivity Wi-Fi connectivity 4 SIM cards (supports up to 3 simultaneous 5G/LTE connections)
SERIAL	4x RS232 2x RS232 or RS485/422 2x RS485/422
VIDEO	1x Display Port with USB 3.0
DISCRETES	9x GPI, 8x GPO, 7x GPIO 1x Ignition key switch
AUDIO	2 Balanced Audio In, 2 Balanced Audio Out
SPECIAL FEATURES	GPS and 1 PPS input/output, 4x CANBus (Option) Aurix™ TC387 MCU Processor (Option)
POWER	+28 VDC (+9 VDC to +36 VDC) power input Power Consumption: up to 250 W (Typical 175 W)
COOLING	Passive air/conduction cooled. Auxiliary IP67 fan kit option.
OPERATING SYSTEM	Linux Ubuntu 24.04, LTS, 64-Bit (installed) Other OS options are available. Contact factory for details.

Diagram



Environmental Specifications

COOLING METHOD	Passive convective cooling with conduction cooling through the bottom plate (no fans).
QUALIFICATION TESTING	MIL-STD-810H, MIL-STD-461G, MIL-STD-464D, MIL-STD-704F, MIL-STD-1686C, MIL-STD-1275F,
OPERATING TEMPERATURE	-40 °C to +70 °C ambient - configuration dependent
STORAGE TEMPERATURE	-40 °C to +85 °C
VIBRATION (OPERATING)	10 Hz to 2000 Hz, Random, 1hr each axis, 8.1 gRMS Power Spectrum Density
SHOCK (FUNCTIONAL)	40 g, 11ms TP sawtooth, Tested to MIL-STD-810G with a Kontron composite test profile
ALTITUDE (OPERATING)	-1500 ft to 40,000 ft
INGRESS PROTECTION	IP67, designed to meet MIL-STD-810 for liquid, freezing rain, sand, dust, salt fog, and explosive atmospheres



About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

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