



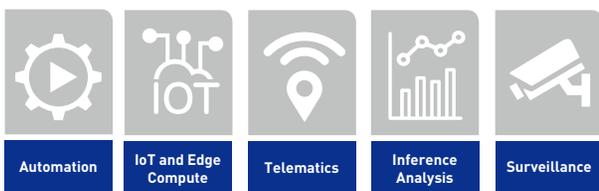
RCO 6100 Industrial Computer

Automation for the Rugged Edge

More versatile compute hardware is revealing that businesses have yet to see the peak of Industry 4.0's reformations. Purpose-built ruggedized hardware is safely carrying powerful computing intelligence into more challenging, dynamic environments. The hardened IoT solutions provide real-time insights, low-latency responsiveness, workload consolidation and nimble automation capabilities close to the data sources.

The RCO 6100 Industrial Computer Series bring vigorous performance to rigorous settings. These rugged edge computers are engineered to enable Intel®'s 9th Gen (codename: Coffee Lake Refresh) and Q370 chipset PCH advanced processing in volatile, demanding and mobile deployments. The RCO 6100 Industrial Computer Series support rich processing, future-ready storage technology, and rapid connectivity for more reliable, efficient processing at the rugged edge.

Key Applications



Computing for the Evolving Edge

8th/9th Gen Intel® Processor and Q370 chipset

The RCO 6100 Industrial Computer Series leverage rich performance enhancements supplied by 8th / 9th Gen. Intel® CFL-R S Processors and Q370 chipset support. The Intel® technology enables up to 16-way multi-tasking through hyperthreading its maximum 8 powerful cores. The processor supports DDR4 RAM for up to 64 GB of memory and 2666 MT/s transfer speeds, while UHD graphics offer rich visual output for many applications using optical data.

The LGA1151 socket design is combined with Intel®'s Q370 chipset to deliver augmented peripheral performance for low-latency edge responsiveness. Gigabit wireless speeds, PCIe 3.0 lanes, SATA ports and rapid USB 3.2 Gen 2 grant the RCO 6100 Industrial Computer Series exceptional I/O integration options for transmitting data to and from the device.

RCO 6111 & 6122: Intelligent GPU Support through Expandability

The 8th / 9th Gen Intel® Core™ Processor enables powerful GPU processing in parallel to the CPU via the RCO 6111's & 6122's rear PCIe X16 expansion slots. This next-gen Industrial Computer offers multi-level processing and real-time intelligence by balancing workloads between CPU and GPU performance cores. The rear-side PCIe expansion slots for the inference computer can be populated with GPU performance accelerators up to 250W. Graphics accelerators like GPUs allow intelligent machines to run machine learning algorithms for inference analysis of data from a variety of IoT sensors.

RCO-6100 Series

Advanced Automation And
Intelligent Computing For Industrial IoT

5G Module

10G Ethernet Module

PoE / LAN RJ45 Module

PoE / LAN M12 Module

Improved IoT Data Storage Adaptability

The RCO 6100 Industrial Computer Series support storage technologies accommodating any rugged edge and automation application. Two internal SATA SSD/HDD drives are joined by two additional external SATA SSD/HDD bays as a scalable RAID solution satisfying data storage needs for many harsh deployments. The external 2.5" bays permit toolless, hot-swappable replacement of the SATA drives, simplifying service and capacity upgrades.

The RCO 6100 Industrial Computer Series also support high-speed NVMe storage for greatly accelerated data leverage. An onboard M.2 NVMe drive with PCIe 3.0 x4 performance efficiently feeds integrated CPUs and GPUs volumes of data for complex data cache applications. Rapid data speeds enable more reflexive inference analysis at the edge.

NVMe. Informing the Rugged Edge.

Many optimized technologies are converging to promote real-time, in-depth responsiveness at the edge. Multi-core CPUs and advanced GPUs stand ready to perform numerous parallel processes, while wireless 5G, 10GbE networks and speedier I/O technologies wait to receive and offload volumes of rich data. Solid state drive (SSD) storage offers a vastly quicker and structurally more rugged technology data repository than its hard disk drive (HDD) cousin. The main hindrance to immediate intelligence at the edge has been the storage

technology's ability to efficiently read and write data due to the limitations inherent in the connective architecture. This is where NVMe carries the day compared to more traditional protocol from legacy computers.

NVMe, or Non-Volatile Memory Express, is an SSD protocol conceived with focused efficiency in mind. As an SSD, it relies on semiconductor chips without moving parts to store and access data. NVMe's delivery system, however, is via direct contact with PCIe lanes. This more direct interface alleviates a great amount of the data bottlenecking that can occur with other SSD technologies.

NVMe's theoretical data read speeds of 2,500 MB/s are practically quintuple those of SATA. SATA, the other predominant SSD protocol, boasts write speeds of about half NVMe's, topping around 550 MB/s. As far as HDD competition, NVMe delivers 16 times the read speed.

By deploying a rapid-fire storage media and setting a clear path for its transmission to PC components, NVMe provides the operative immediacy that responsive edge intelligence demands. Applications leveraging inference analysis to gain business insights, make decisions and perform independently access stored algorithms and mission-critical data at speeds exceeding human cognition.



Metrology & Inspection



Machine & Computer Vision



Robotic Automation



NVR Video Surveillance



Smart Manufacturing &
Industrial IoT



Connecting from the Rugged Edge

Steady Wireless Connectivity

The RCO 6100 Series enable seamless wireless connectivity for remote and mobile edge deployments. Wi-Fi 6 and Bluetooth 5 technologies reliably connect to sensors and network systems through a wireless IoT enterprise. Dual external access SIM sockets provide continuous 4G/LTE cellular connectivity at remote of mobile edge deployments. The RCO 6100 Series are also 5G ready through a modular add-in card, providing edge deployments vastly greater cellular speeds and more granular network slicing options.

10GbE I/O Ready

The rugged edge computer supports two 10GbE ports (Intel® x710-AT2 chipset) through its universal I/O bracket. The high-speed connections enable low-latency data transmission for advanced industrial inference analysis applications.

LAN/PoE Options

The RCO 6100 Series may be configured with four LAN ports for standard IoT network connectivity. PoE ports are also available to supply electricity to power-constrained peripheral devices like cameras and sensors. Optional locking M12 connectors ensure secure coupling in moving, volatile deployments.

High-Speed Gbps USB Integration

The RCO 6100 Series boast several generation of USB connections to accommodate data traffic needs of a variety of peripheral technologies. Augmenting two internal USB 2.0 headers are five USB 3.2 (Gen 1) which support 5 Gbps speeds, and four USB 3.2 (Gen 2) for rapid 10 Gbps transfers.

CAN Bus for Vehicle Insight

The RCO 6100 Series support CAN bus protocol to leverage vehicle telematics data for Intelligent Transportation Systems, fleet management, process analytics and systems optimization.

Built Rugged. Built Ready.

Wide Operating Temperature

The RCO 6100 Series' wide -25 to 70°C operating temperature accommodates a vast range of challenging thermal conditions. Blistering steel foundries and ice-encrusted arctic minesites can easily dispatch the rugged edge computer for complex compute and automation at the rugged edge.

Wide Voltage Input

A 9 to 48VDC input latitude accepts a wide range of available power voltages and provides a level of surge mitigation. The RCO 6100 Series support AT/ATX power modes according to deployment requirements.

Fanless Architecture

The RCO 6100 Series perform continuously, reliably through its fanless design. By substituting passive cooling technology for susceptible, noisy fans, the rugged edge computers eliminate a chief hardware failure point and ventilation vulnerabilities.

Shock and Vibration Tolerance (50G shock / 5 Grms Vibration)

The RCO 6100 Series are hardened to withstand environmental impacts and vibrations characteristic of the rugged edge. The rugged edge computer can be safely deployed in vehicles to instantly collect and process torrents of sensor data to effect efficient automation, leverage telematics for intelligent fleet management or perform predictive analytics to alert of impending traffic hazards.

Power Ignition Management

Intelligent transportation deployments can harness the power of advanced computing and automation safely through the RCO 6100 Series' power ignition management feature. The rugged edge computer safely powers down after engine shutoff following a predetermined interval. The feature ensures applications close properly and data is neither lost nor corrupted.

TPM 2.0 Security

An integrated trusted platform module applies TPM 2.0 standards to safeguard the RCO 6100 Series. The microprocessor's root keys enable password protection, device authentication and future-ready cybersecurity. The TPM defends the device, data and transmissions against malicious actors.

RCO-6100 SERIES



RCO-6100

RCO-6111

RCO-6122

	RCO-6100	RCO-6111	RCO-6122
Processor	Support 8 th / 9 th Gen. Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)		
Memory	2x 260-Pin DDR4 2400/2666MHz SODIMM. Max. up to 64GB (Un-buffered and Non-ECC)		
Display	Triple Independent Display by 1x DVI-I and 2x DisplayPort		
Storage	2x Internal 2.5" SATA HDD Bay (support H=9mm) 2x Removable 2.5" SATA HDD Bay 1x mSATA (Shared by 1x Mini PCI Express) 1x M.2 (M Key, NVMe PCIe x4, 2280) 1x M.2 (E Key, PCIe x2, USB 2.0, 2230) 2x External SIM socket		
Internal Expansion Slot	2x Full-size Mini PCIe (1x shared by 1x mSATA)	2x Full-size Mini PCIe (1x shared by 1x mSATA) 1x PCIe x16	2x Full-size Mini PCIe (1x shared by 1x mSATA) 1x PCIe x16, and 1x PCI
I/O	4x RS-232/422/485 (External), 2x RS-232/422/485 (Internal) 4x USB 3.2 Gen2, 5x USB 3.2 Gen 1, 2x USB 2.0 (Internal Header) 8 in / 8 out (Isolated) 2x Intel® GbE supporting Wake-on-LAN and PXE		
Power	9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode		
Operating Temp.	-25°C to 70°C		