Product Brief

Industrial Computer

KCO Series

2U KCO-2000 & 3U KCO-3000 Series of Certification Ready Industrial Computers

The world has significantly changed in the past decade, with technology advancing rapidly, digitalizing many of the products and services that we use daily. Industrial computers have been embedded into all types of devices, making them more intelligent than ever before. Making ordinary devices intelligent via embedded computers allows businesses and organizations to deliver better customer service by predicting customers' needs before they arise, allowing them to act quickly and precisely to address their needs. That said, bringing compute power closer to the source of data generated from sensors and smart devices requires purpose-built computing devices that offer the processing power, rich I/O, connectivity, and reliability required for such deployments. For this reason, we have launched our 2U KCO-2000 and 3U KCO-3000 Series of Certification Ready Industrial Computers ready for mass deployment, easily scalable into final system-level configuration.

The KCO-Series delivers blazing-fast performance powered by multi-core Intel 9th Generation Celeron, Pentium, and Core i3, Core i5, and Core i7 processors. The KCO-2000 and KCO-3000 Series of industrial computers are based on Premio's industrial-grade Micro-ATX motherboard. The micro-ATX size motherboard features the LGA 1151 socket, offering support for Intel's Q370 chipset, providing better performance, stronger security, and quicker I/O connectivity to peripherals, IoT devices, and PCIe Gen 3 expansions. Furthermore, the KCO-Series is Certification Ready, enabling system integrators and platform builders to achieve a faster time-to-market. These industrial computers hold CE, FCC, and UL Certifications, offering a perfect solution for sub-assembly computer integration and product introductions for enterprise IoT deployments.

Key Applications

When it comes to applications, the KCO-Series is ideal for deployment for the following applications: interactive kiosk machines, ATMs, security and surveillance, metrology and automation inspection, and mobile medical carts. The KCO-Series is a great option because it comes equipped with extensive USB resources to accommodate the large number of varied peripherals that IoT devices must connect to. IoT peripherals include cameras, barcode scanners, magnetic card readers, RFID card readers, fingerprint scanners, bill readers, receipt printers, and many other peripherals.

KCO Series Key Features

Powerful Processing Power

The KCO Series of industrial computers supports Intel's 9th General Celeron, Pentium, Core i3, Core i5, and Core i7 processors, capable of delivering powerful multi-core performance in a compact solution that does not sacrifice I/O availability.

For complex and demanding workloads that require powerful processing power, the KCO-Series can be configured using Intel's Core i3, i5, and i7 processors, offering plenty of processing power thanks to the availability of multiple cores with high clock speeds. For example, the KCO-2000 and KCO-3000 series can be configured with the Intel Core i7-9700E, offering eight cores with a base frequency of 2.60GHz and a maximum turbo frequency of 4.40GHz, providing plenty of performance for complex and demanding industrial workloads.

The KCO Series can also be configured using Intel Core i3, Core i5, Pentium, or Celeron processors for less demanding data processing workloads. For example, the system can be specked with the Intel Celeron 4900T Processor, featuring dual cores clocked at 2.90GHz at a low 35 Watt TDP, making it an excellent option for entry-level workloads that do not require a lot of processing power in an industrial-grade design.

Compact Size and Performance in Micro-ATX

The KCO-2000 Series is compact, built around Premio's Micro-ATX motherboard, making it compact enough to fit in space-limited environments. It also has a tool-less mounting option that can be used for mounting in tight and enclosed industrial spaces. For example, the 2U model comes in at 12.73" (W) X 10.75" (D) X 3.45" (H), which is slim considering the features and extremely rich I/O this system has to offer. The 3U model is larger, coming in at 13.15" (W) X 11.78" (D) X 5.23" (H) but can support more add-in cards in full-length full-height GPU. The 3U model offers a standard rackmount mounting option that can be deployed in any standard rack. A key enterprise benefit and differentiator for the KCO-Series is its number of I/O ports, allowing connectivity to both new and legacy devices.

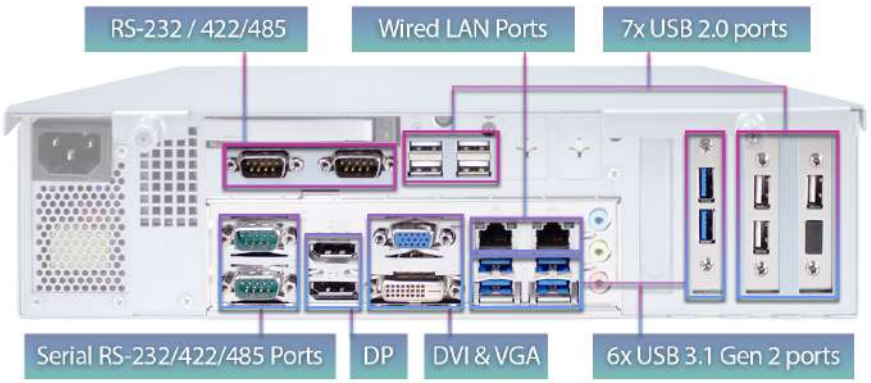
KCO-2000 Series

KCO-3000 Series

CT-MCL01 MicroATX
Industrial Motherboard

USB Type-A Ports - x13 USB Ports

- Serial COM Ports RS-232/422/485
- Wired LAN Ports
- VGA, DVI, DP



Rich I/O

The KCO-Series is jampacked with I/O ports, allowing your system to connect to new and legacy devices. Here are all the I/O ports that you will find on the KCO-Series of industrial computers:

• USB Type-A Ports

The KCO-Series comes configured with 13x USB Type-A ports (7x USB 2.0 ports & 6x USB 3.1 Gen 2 ports), accommodating sensors, cameras, barcode reader, bill scanners, card readers, fingerprint sensors, and a variety of other peripherals that utilize USB Type-A ports. USB 3.1 Gen 2 ports offer blazing-fast data transfer speed, enabling systems to transfer data at speeds of up to 10 Gigabits per second, making it great for peripherals such as high-resolution cameras that require high data transfer bandwidth. For peripherals that do not require a ton of bandwidth, USB 2.0 ports can be used to connect them. USB 2.0 is capable of transferring data at speeds of up to 480 Megabits per second, so although it's not as fast as USB 3.1 Gen 2, it still offers high-speed connectivity to modern devices and peripherals.

• Serial COM Ports RS-232/422/485

The KCO-Series of industrial PCs comes equipped with four Serial COM (DB9) ports supporting (RS-232/422/465 modes), allowing the system to connect to legacy devices and equipment. Equipping the solution with both USB Type-A ports and Serial COM ports allows the system to connect to both new and legacy technologies, allowing organizations to continue using legacy equipment that still utilizes Serial COM ports.

• Wired LAN Ports

Additionally, the KCO-2000 & KCO-3000 series come equipped with dual RJ45 Gigabit LAN Ports, offering high-speed wired connectivity to the internet and other devices that can be connected via Ethernet ports. Ethernet ports provide better speed than Wi-Fi, lower latency, and much more reliable connectivity to the internet and other devices.

Also, the Gigabit Ethernet Ports on the KCO-Series equipped with an i5 or i7 offer support Wake-on-LAN, PXE boot, and vPRO. Having Dual Ethernet ports enables systems to perform link aggregation, load balancing and adds redundancy. Link aggregation allows organizations to combine two Ethernet network connections in parallel, increasing the bandwidth that's available to the system.

Furthermore, load balancing allows organizations to ease network congestion by dividing incoming and outgoing traffic, resulting in a more effective use of internet bandwidth. Also, configuring the system with dual Ethernet ports adds redundancy so that if one of the cables were to become disconnected, the other ethernet cable could continue to offer the system internet connectivity.

Hot-Swappable 2.5” SATA Drive Tray and m.2 NVMe On-Board

The KCO Series comes standard with a hot-swappable drive tray that offers support for solid-state drives (SSDs) and hard disk drives (HDDs). Hot-swappable drive trays allow organizations to quickly swap out drives, reducing the downtime an organization may experience due to having to swap out a failed or failing drive with a new one. In addition to removable storage drive bays, the KCO Series also features on-board NVMe storage in m.2 form factor that can support NVMe PCIe x 4 in 2242, 2260, 2280 dimensions.

KCO-2000 Series

1x Hot-Swappable 2.5” SATA Drive Bay (support H=7mm)

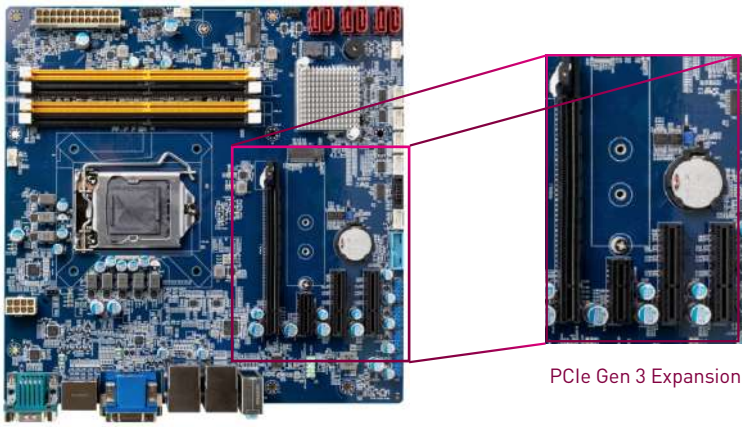
KCO-3000 Series

1x 3.5" SATA HDD drive or

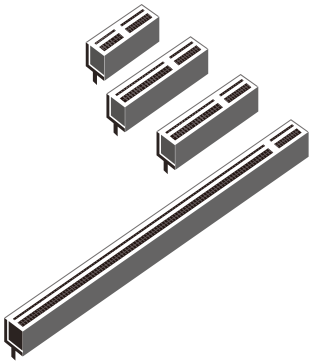
2x 2.5" SSD/HDD up to 15mm

PCIe Gen 3 Expansion Slots

The KCO-2000 Series comes with a single PCIe Gen 3 x16 slot, allowing system integrators to add a low-profile add-in card to the system. On the other hand, the KCO-3000 series comes with 3x PCI Express slots (one PCIe Gen 3x 16, and two PCIe Gen 3 x4), allowing users to add multiple add-in cards to the system.



PCIe Gen 3 Expansion



Shock & Vibration Resistance

Both the KCO-2000 and KCO-3000 Series come with some shock and vibration resistance that makes them better suitable for deployment in challenging industrial environments than regular desktop computers. Both solutions can withstand up to 25Gs of shock when equipped with SSDs (solid-state drives) and up to 1GRMs of vibration, making them able to handle exposure to light shocks and vibrations.

Hardware Security – TPM 2.0

When it comes to hardware security, the KCO-Series is equipped with TPM 2.0 (trust platform module 2.0), providing boot security and platform integrity at the hardware level. TPM functions by storing RSA encryption keys on a specific chip that cannot be accessed by software, protecting the system against unauthorized firmware and software modifications. Additionally, TPM can be used in conjunction with software such as the Microsoft Bitlocker disk encryption application, which uses the TPM to store encryption keys. So, if someone were to remove a drive from a computer and attempt to access it on a different computer, he or she will not be able to access the data on the drive.

Industrial-Grade Chassis & Dust Filter

The chassis of the KCO-Series is built using heavy-duty metals while maintaining practicality and ease-of-use, forming an excellent housing for the sensitive internal components. Additionally, the KCO Series comes equipped with an external dust filter that lowers the amount of dust that can make its way into the industrial computer. Dust is the number one enemy of computers, so by adding a dust filter, we've reduced the number of dust particles that enter the system and damage the sensitive internal components. A key design feature is the washable dust filter, making it easy to clean to keep dust out of the PC and keep air easily flowing throughout the system for embedded reliability.