



VCO-6000 Series - Superior Machine Vision Systems

Our world today is more connected than ever in what's been labeled as the "Internet of Things". As the data usage from our connected "things" and devices continue to grow, so does the demand for machine intelligence. The manufacturing and automation industry is one area experiencing tremendous growth due to the continuous advancement of Big Data and Machine Learning. Many companies from this vertical are beginning to understand the true value in the collection of data and are making major infrastructure investments for the future. Some of these investments consist of connecting their factory floors with smarter and more intelligent computing systems capable to make calculated decisions, allowing for better informed business decisions from the factory floor.

Not only do the "things" that we manufacture become increasingly smarter and more intelligent, but the manufacturing industry has specifically evolved to a point where the manufacturing processes and industrial automation workloads can leverage new technologies packaged with machine intelligence and computer vision – "Industry 4.0"

Premio continues to deliver robust embedded computing solutions to satiate the never-ending need to optimize efficiency, productivity, and quality. One solution from Premio's embedded industrial portfolio that fits perfectly into "Industry 4.0" expansion is the "VCO Series", designed specifically for machine and computer vision applications in industrial automation.

Premio's VCO-6000 series allows for easy installation with single-sided access to its rich I/O modules. Capable of sustaining wide temperatures ranging from -25°C to 70°C and voltage ratings of 9~50VDC, the VCO-6000 series of embedded Machine Vision solutions is the perfect fit for extreme environments. With a fan-less and cable-less design, the VCO-6000 series eliminates points-of-failure to provide superior reliability and minimizes factory downtime. In addition to the VCO-6000 series' industrial construction of extruded aluminum and heavy duty metal, it also goes through intense and rigorous anti-shock and anti-vibration testing to ensure for continuous operation in even the most strenuous and adverse conditions. With a robust expansion module design, the VCO-6000 series equips companies with optimal scalability and functionality, thus creating a more flexible and intelligent network for a wide range of applications from the edge to the cloud.

KEY APPLICATIONS:



KEY PREMIO BENEFITS:

MULTIPLE EXPANSION INTERFACE OPTIONS

There is an array of expansion interfaces on the VCO-6000 series to meet different demands of each customer. The 3x mini PCIe slots can be used for high speed wireless and cellular communication such as 4G or LTE. The VCO-6000 series can support up to a maximum of five expansion slots in various PCIe and PCI configuration for maximum flexibility. Depending on the usage, these expansions slots can be used to add additional functionality such as motion control, frame grabber, video capture, or industry standard control protocols such as CANBUS or PROFINET.

WIDE TEMPERATURE + WIDE RANGE VOLTAGE

The VCO-6000 series is constructed with extruded aluminum and heavy duty metal which enables it to adapt for continuous operation under adverse condition. Its operating temperature range of -25°C to 70°C ensures the unit will be functional in a harsh industrial setting. For protection against the wide range of voltage levels (9VDC to 50VDC), the system comes with power protection features such as OVP (Over Voltage Protection), OCP (Over Current Protection), and Reverse Protection.

FAN-LESS AND CABLE-LESS DESIGN

Delivering high quality, durability and compact construction, the VCO-6000 series leverages a reliable fanless and cable-free configuration, optimal thermal dissipation, and easy installation for flexible and user-friendly system development and application implementation in harsh environments.

INTEL 7TH GEN PROCESSOR

The VCO-6000 series is designed with the latest generation of embedded Intel processors. Now with Intel's 7th Generation Kaby Lake processor, the VCO-6000 series enables customers to bring 4K video content to the factory's floor without requiring any hardware update to existing platforms, thus minimizing production downtime. Kaby Lake brings significant performance to 4K video encoding and decoding with the inclusion of HEVC and VP9 4K video engine by embedding them into the processor's core. These dedicated video engines are designed for power efficiency as well as parallel operation for performance throughput, well as high-end dual processor ATX motherboards.

Industrial Embedded Solutions Product Briefs:

Machine Vision Systems – VCO Series

Rugged Fan-less Systems – RCO Series

In-Vehicle Fan-less Systems – ACO Series

Basic Fan-less Systems – BCO Series



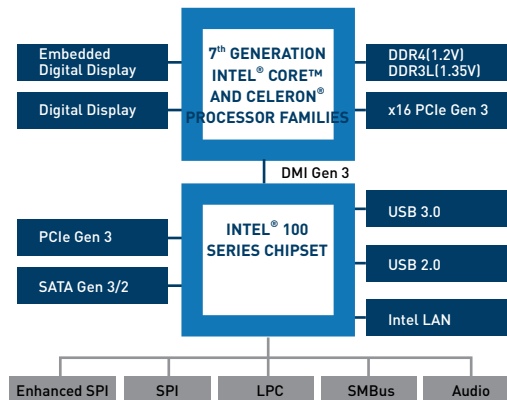
7th GENERATION INTEL® CORE™ PROCESSOR FAMILY (KABY LAKE) –








“FOR EMBEDDED IOT DESIGNS THAT DEMAND HIGHER CPU AND GRAPHICS PERFORMANCE”

Manufactured on the latest 14 nm technology, these processors offer rich visual experiences with the latest 4K Ultra HD graphics improvements, amazing CPU performance, and great power efficiency, with the same range of power options and latest advanced features to boost edge-to-cloud Internet of Things (IoT) designs. The 7th generation Intel Core processor family also maintains a standardized thermal envelope for 65W and 35W desktop products, remaining consistent with the previous processor generation, and is an ideal low-power option for manufacturing flexibility.

KEY PLATFORM HIGHLIGHTS:

- Accelerated 4K hardware media codecs- HEVC (10-bit), VP8, VP9, and VDENC encoding, decoding, and transcoding
- 4K Ultra HD support- now up to 4096 x 2304 pixels, and supports performance across three independent displays with audio
- Improved power efficiency- up to 17 percent faster multithreaded CPU performance and up to 15 percent faster graphics
- Intel® Turbo Boost Technology 2.0: Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits
- Advanced security and manageability - Intel® Platform Trust Technology (Intel® PTT), Intel® Software Guard Extensions (Intel® SGX), Intel® Memory Protection Extensions (Intel® MPX), and Intel® Boot Guard
- Quad- and dual-core options for workload specific applications



VCO-6000 Series	VCO-6000	VCO-6011E/P	VCO-6022E/P/C	VCO-6033E/P/C	VCO-6044P/C	VCO-6055C
						
Ordering P/N	VCO-6000-P	VCO-6011E-P VCO-6011P-P	VCO-6022E-P VCO-6022P-P VCO-6022C-P	VCO-6033E-P VCO-6033P-P VCO-6033C-P	VCO-6044P-P VCO-6044C-P	VCO-6055C-P
CPU	- 7 th Gen Intel® Core™ i7-7700T, Quad Core, 8MB cache, up to 3.8 GHz - 7 th Gen Intel® Core™ i5-7500T, Quad Core, 6MB cache, up to 3.3 GHz - 7 th Gen Intel® Core™ i3-7101TE, Dual Core, 3MB Cache, 3.4 GHz					
Memory	2x DDR4 1866/2133MHz SODIMM, Max. up to 32GB					
Drive Bays	2x Removable 2.5 SATA HDD Bay 2x mSATA (shared by 2x Mini PCIe)					
Mini PCIe Slots	3x Full-size Mini PCIe (shared by 2x mSATA)					
Expansion Slots	None	VCO-6011E: 1x PCIe x16 VCO-6011P: 1x PCI	VCO-6022E: 2x PCIe x16 (8 lane) VCO-6022P: 2x PCI VCO-6022C: 1x PCIe x16, 1x PCI	VCO-6033E: 2x PCIe x4 (1 lane), 1x PCIe x16 VCO-6033P: 3x PCI VCO-6033C: 1x PCIe x16, 2x PCI	VCO-6044P: 4x PCI VCO-6044C: 1x PCIe x16 (8 lane), 2x PCIe x4, 1x PCI	2x PCIe x4 1x PCIe x16 (8 lane) 2x PCI