PRODUCT SOLUTION GUIDE

2023

INDUSTRIAL COMPUTING SOLUTIONS FROM THE EDGE TO THE CLOUD

BUILT RUGGED. BUILT READY.
We are flexible, adaptable, and responsive to the change in demands of our customers, the market, and our environment. We are willing to learn and create new ideas to drive and embrace changes actively. We constantly strive to drive innovation into all aspects of our business to provide products that deliver reliability, quality, performance, and value creation. We work together to contribute to the development of new products and services that will ensure the success of our customers. We always hold ourselves accountable for our products, services, and actions to our employees, customers, and partners. We offer our valued customers the highest possible standards of solutions. At Premio, we treat customers with dignity, respect, and courtesy. We listen objectively to their needs and respond in a timely, efficient, and responsible manner.

Premio is a global solutions provider specializing in computing technology from the edge to the cloud. We design and manufacture highly reliable, world-class computing solutions for enterprises with complex, highly specialized requirements for over 30 years. Our engineering specialty and agile manufacturing pushes the technical boundaries in Embedded IoT Computers, Rugged Edge Computers, and HMI Displays.

At Premio, we go to extraordinary lengths to solve the most formidable challenges faced by our customers. We do so by becoming more than their partner: we become their ‘Inside Outsource’ - an extension of their businesses, work cultures, manufacturing processes and operations, modulating our solutions to answer their special needs with speed, agility and precision.

Headquartered in Los Angeles, California with a state-of-the-art facility (ISO9001, ISO2001, ISO13485) and strategic locations in worldwide, Premio provides robust product engineering, flexible speed to market, and unlimited manufacturing transparency. Premio shares a promise to deliver the best possible next generation industrial PC solutions compliant with the highest standards and certifications for our customers in:

- Industrial Automation
- Transportation
- Food & Beverage
- Military
- Kiosk & Retail
- Security & Surveillance
- Intelligent Healthcare
- Machine Vision & Robotics

YOUR TOP CHOICE PARTNER IN INDUSTRIAL COMPUTING FROM THE "EDGE TO THE CLOUD"

OUR MISSION
Premio dedicates its engineering resources and manufacturing services to meet the incredible demands of computing across industrial and enterprise deployments. Our global teams strive for the highest standards in innovation and technology that translates into the design and mass production of our purpose-built computing solutions.

OUR VISION
"Your Success, Our Commitment." With this simple vision, Premio aims to address computing challenges with purpose-built products. Premio solves challenges for our customers by delivering solutions around the design, integration, validation, and deployment of our computing products in IoT and edge markets. Our 30+ years of industry-knowledge enable our customers to leverage high quality products and application ready hardware for a faster time to market.

OUR VALUE
Apart from our standard computing offerings, Premio also provides unique value to our customers through our robust engineering resources, environmental testing validation, manufacturing scale, supply chain & product lifecycle management, reverse logistics, and next generation computing design and innovation.

OUR CORE VALUES
We deliver our core brand values through the way we conduct business. Premio’s core values of Innovation, Commitment, Collaboration, Agility, and Accountability guide our decisions to exceed expectations.

AGILITY
We are flexible, adaptable, and responsive to the change in demands of our customers, the market, and our environment. We are willing to learn and create new ideas to drive and embrace changes actively.

INNOVATION
We constantly strive to drive innovation into all aspects of our business to provide products that deliver reliability, quality, performance, and value creation.

COLLABORATION
We work together to contribute to the development of new products and services that will ensure the success of our customers.

ACCOUNTABILITY
We always hold ourselves accountable for our products, services, and actions to our employees, customers, and partners.

COMMITMENT
We offer our valued customers the highest possible standards of solutions. At Premio, we treat customers with dignity, respect, and courtesy. We listen objectively to their needs and respond in a timely, efficient, and responsible manner.
Premio, which means “Prize” in Spanish, emerged as “Premio PC”, a personal computer manufacturer providing computers nationwide to many educational programs (K-12) around the nation. From its inception in 1989 to 2000, Premio pioneered and remained a trusted partner and manufacturer for many educational institutions in the United States.

As computing technology advanced and became more commoditized, Premio proved to be resilient and achieved another milestone by evolving itself from its own personal computer in 2000 into a respectable contract manufacturer – providing a variety of highly specialized turnkey OEM integration processes and business services for some of the world’s elite computing companies; many of which still exist today in its global operations. This monumental shift demanded Premio to move its operational infrastructure into a fully automated 150,000 square feet Los Angeles based manufacturing facility that was fully customized for ultimate flexibility and unlimited scalability. Even today Premio’s world-class manufacturing facility continues to be a testament for state-of-the-art automation and assembly for many leading OEMs in computing technology.

Starting from the year 2000, “Premio PC” transformed its brand identity into “Premio Inc.” – becoming a pivotal partner and key advisor in manufacturing and servicing premier technology companies around the world. Furthermore, Premio also restructured its mission and core values around a customer-centric business model with “total customer satisfaction” driving its core. By 2010, Premio Inc. achieved yet another milestone by successfully engaging with over 50+ customers worldwide ranging from enterprise level companies to start-ups that were eventually acquired by major fortune 500 companies.

In 2011 Premio decided to once again refine its business operations and developed more advanced technologies by investing into the research and development of home grown purpose-built Premio products in: - Enterprise Servers and Storage Solutions - Industrial Embedded Computing Solutions - Industrial Touch Display Solutions

By combining our home grown products with our design capabilities plus our renowned OEM services, Premio’s advantage lies within its ability in providing a customized turnkey solution that can scale efficiently but also seamlessly align with the goals of our customers, resulting in ROI growth and measurable success over time.

Today, Premio has successfully evolved into a full-service technology company that specializes in top-notch computing designs, scalable manufacturing for both variety and volume, and robust end-to-end business services that result in streamlined growth and success with global expansion (Design – Manufacturing – Services)
Premio’s fanless embedded systems are extremely flexible and reliable to provide integrated solutions to meet different needs. With its superior features integration, exceptional system performance, flexible I/O connections, wide range power input, smart management functions, and rugged reliability, Premio fanless embedded systems deliver a compelling platform that is needed in today’s demanding workloads and industrial needs.

Premio provides ethernet daughterboard modules that integrate easily into Premio embedded and edge computers through standard PCIe protocols. These flexible add-in modules provide additional ethernet I/O ports and scalable connectivity for IoT deployments that require ethernet connections in multiple RJ45 and M12 locking connectors.

Premio’s Industrial Panel PCs and Touch Monitors are purpose-built for the toughest embedded deployments requiring mission-critical reliability. System integrators and automation engineers can easily deploy Premio industrial panel PCs and touch monitors as human machine interfaces to achieve better productivity and operational efficiency in their enterprise projects.

Premio offers industrial-grade scalability with standard motherboards and OEM system design. Standard form factors include: Single board computers (1.8” FEMTO-ITX, 2.5” PICO-ITX, and 3.5” SBCs); Mini-ITX; and Micro-ATX.

Certification-Ready industrial computers are embedded computing solutions that act as sub-assembly building blocks or final OEM system configuration in key enterprise and IoT applications.
2023 FEATURED INDUSTRIAL SOLUTIONS

RCO-6000-ADL series
Al Edge Inference Computer EDGEBoost Nodes

12/13th
EDGBoost
GPUN/Me/SATA Performance Upgrade
2x Support 2x Universal I/O Brackets
PCE 4.0 Up to 16 GT/s per lane

Securely locks GPU cards Support x16 PCIe 4.0
Extended Operating Temperature Range -25°C to 70°C
High-Performance Machine Vision Computer

VCO-6000-ADL series

5G & AI MODULE SERIES
Expandable Performance Accelerators
Now available! Configure 5G, AI, and NVMe accelerator modules with various industrial computers through universal I/O brackets. The innovative expandable modules enable industrial solutions to unlock intelligent computing at the rugged edge.

ACO-6000-CML series
In-Vehicle Fanless Computer

16x Support up to 16x LAN/PoE/USB
EN50155 E-Mark Certification Ready
9-48V | 48-110V Highest voltage for railway solutions

DTB-2M2BK NEW 2x M.2 B Key for AI/5G/NVMe module
DTB-M2MK NEW 1x M.2 M Key for AI/NVMe module

Industrial-Grade Locking Brackets Securely locks GPU cards
Full-Length GPU Support Support x16 PCIe 4.0
-25°C to 70°C Extended Operating Temperature Range
4x Up to 4x PCIe Expansion Slots
RCO-3000-CML series
Small Form Factor Industrial Computer

Ultra Compact
- 10th Gen Intel Processor (Comet Lake S)
- 192 x 227 x 60 mm (W x D x H)
- 2x SD-DIMM, up to 64GB
- Intel GbE supports Wake & PXE
- Extended Operating Temperature Range

ECO-1000 series
ENERGY PACK
Portable. Smart. Ruggedized.
Power Backup System with up to 16x High-Density Industrial Supercapacitors

ECO-1000-EHL series
Mini Fanless Embedded Computer with Intel® Elkhart Lake Series
Built for Edge AI and IIoT solutions.

Elkhart Lake
- Intel® Celeron® J6413
- 15 Year IOTG Product Lifecycle Support
- Up to 32GB DDR4
- Up to 3 Displays
- -40°C to 70°C Extreme Operating Temperature

VISIT P.24
VISIT P.20
VISIT P.46
VISIT P.30

ECC
Support DDR4
Up to 32GB

M.2 PCIe
1x M.2 B Key
1x 90-Pin Connector (PCIe4x)

4K Independent Displays

10Y Ten Years Availability

-20°C to 55°C Extended Operating Temperature Range

DDR4
1x SD-DIMM
Up to 32GB

4K 2x 4K, 1x LVDS

Ultra-Compact
100 x 192 x 187 mm (W x D x H)

-25°C to 60°C Extended Operating Temperature Range

VISIT P.18
VISIT P.16
Premio introduces a 1.8” and 3.5” single board computer powered by AMD Ryzen R1000/V1000 Processors. The AMD CT-DR101 and CT-NR101 are industrial-grade motherboards that are small, compact, and provide power-efficient performance in a system-on-chip design (SoC). Despite their small form factor, they provide a balance between performance and cost-effectiveness for intelligent industrial applications.

**24" INDUSTRIAL PANEL PCS**

The VIO and SIO Panel PCs Series are now available in 24" sizes for enhanced productivity and immersive view experiences. In addition, our Industrial Panel PCs come with an IP rating and corrosion-proof materials to ensure smooth operations in various kinds of industrial environments.
**MINI FANLESS EMBEDDED COMPUTER**

**BCO-1000-J1900 SERIES**

- Intel® Celeron® J1900 Processor (Quad Core, 2.0GHz)
- Dual Independent Display
- Rich I/O Features with up to 2x RS-232/422/485
- 2x Full-size Mini-PCIe Slot for Communication or Expansion Modules
- 9 to 35 VDC Wide Range Power Input Supporting AT/ATX Mode
- Ultra Compact Size Design
- Fanless & Cable-less in Design
- TPM 2.0 Supported (Optional)

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>BCO-1000-J1900</th>
<th>BCO-1000-J1900-10</th>
<th>BCO-1000-J1900-20</th>
<th>BCO-1000-J1900-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Onboard</td>
<td>Intel® Celeron® J1900</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>1x 204-pin DDR3L-1066/1333MHz SO-DIMM, up to 8GB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DVI-I (optional DisplayPort: BCO-1000-J1900-10A, BCO-1000-J1900-20C &amp; BCO-1000-J1900-30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x 1GBE RJ45 (Support Wake-on-LAN and PXE)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5&quot; SATA HDD Bay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Expansion Slot</td>
<td>2x Full-size mini-PCIe (1x shared with mSATA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>9-30 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>Line-out / Mic-in Phone Jack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 50°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>142 x 101 x 30 mm</td>
<td>142 x 101 x 58 mm</td>
<td>142 x 101 x 75 mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>0.46 kg</td>
<td>0.68 kg</td>
<td>0.72 kg</td>
<td></td>
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<tr>
<td>Universal Expansion Slot</td>
<td>0 (1 rear)</td>
<td>2 (rear)</td>
<td>3 (rear)</td>
<td></td>
</tr>
</tbody>
</table>

**BCO-1000-EHL SERIES**

- Support Intel® Celeron® Processor
- 1x 260-pin DDR4 2400/2667/3200/4266/4800/6400/6466/8100/12800MT/s SO-DIMM, Max. up to 32GB
- Dual Independent Display by 2x Display Port
- 1x 2.5Gbe, 1x 10Gbe supporting [Wake-on-LAN and PXE]
- 1x 2.5" SATA HDD Bay, 1x mSATA, 1x M.2 (8 Key, 2242/3042/3052, Support 4G/LTE)
- 1x Full-size mini PCIe for communication or expansion modules
- 9 to 36 VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -20°C to 50°C
- TPM 2.0 Supported
- Up to 4x Universal Expansion Slot

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>BCO-1000-EHL-10</th>
<th>BCO-1000-EHL-20</th>
<th>BCO-1000-EHL-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Support</td>
<td>Support Intel® EHL Processor (Up to 10W TDP)</td>
<td>Intel® Celeron® Processor J4125, Quad Core, 1.5 MB Cache, 1.8 GHz</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>1x 260-Pin DDR4 2667/3200/4266/4800MT/s SO-DIMM, Max. up to 32 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>Dual Independent Display by 2x DisplayPort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x RJ45 (2.5 &amp; 1 Gbe), Support Wake-on-LAN and PXE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB, Serial</td>
<td>3x USB 3.2 Gen 2 (10 Gbps), 1x USB 2.0, 2x RS-232/422/485</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1x Internal 2.5&quot; SATA HDD Bay (Support H=9.5 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Expansion Slot</td>
<td>1x Full-size Mini PCIe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>9-36 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>1x Mic-in, 1x Line-out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 50°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>UL 62368 Ed. 3, CE, FCC Class A</td>
<td></td>
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</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>142 x 101.2 x 41.5 mm</td>
<td>142 x 101.2 x 58 mm</td>
<td>142 x 101.2 x 75 mm</td>
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<tr>
<td>Weight</td>
<td>0.6 kg</td>
<td>0.7 kg</td>
<td>0.74 kg</td>
</tr>
<tr>
<td>Universal Expansion Slot</td>
<td>Up to 1x Universal Expansion Slots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion</td>
<td>Expansion Modules (Optional) :</td>
<td>2-port COM module with Super I/O Chipset (Up to 2x Slot)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-port USB module with USB hub (1x Slot Only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-Port DP 1.4 and DIO (6 in / 4 out, isolated, 1x Slot Only)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1-Port HDMI 2.0 (1x Slot Only)</td>
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</tr>
</tbody>
</table>
## BCO-2000-WHL-U SERIES
- Support 8th Gen. Intel® Core™ i5 & Intel® Celeron® Processor
- 1x 260-pin DDR4 2400 MHz 50-DIMM, Max. up to 32GB
- Dual dual display by 1x HDMI and 1x DisplayPort support
- 2x Mini PCIe (Gen3) with 1x SIM slot support
- 4x USB 3.2 Gen 2, 2x RS-232/422/485 (w/ 2x Internal)
- 1x Internal 2.5” SATA HDD Bay and 1x mSATA
- Watchdog timer, software programmable supports 1-255 sec. system reset
- TPM 2.0 Supported

## BCO-2000-RYZ-V1605B SERIES
- Support AMD Ryzen™ Embedded R1000/V1000 Series Processor
- 2x 260-pin DDR4 2400 MHz 50-DIMM, Max. up to 32GB
- 2x Intel® 8th Gen (Support Wake-on-LAN and PXE)
- Triple Independent Display by 1x DisplayPort, 1x LVDS, 1x HDMI (Optional)
- 1x M.2 Key for 4G/5G Communications & Storage
- 1x full-size M.2 PCIe for expansion modules
- 2x USB 3.2 Gen 2, 2x USB 2.0, 2x RS-232/422/485
- 1x Internal 2.5” SATA HDD Bay, 1x internal SIM support
- Watchdog timer 1-255s system reset
- TPM 2.0 Supported

### MINI FANLESS EMBEDDED COMPUTER
- Universal Expansion Slot 2
- Internal Expansion Slot 2x Full-size Mini-PCIe for communication or expansion modules
- Dual Independent Display
- Rich I/O Features with up to 4x RS-232/422/485
- 2x Full-size Mini-PCIe Slot for Communication or Expansion Modules
- 9 to 48 VDC Wide Range Power Input Supporting AT/ATX Mode

### Model

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Support</td>
<td>Support 8th Gen. Intel® Core™ i5 &amp; Intel® Celeron® 4405U Processor</td>
<td>AMD Ryzen™ Embedded V1605G with Radeon™ Vega 8 Graphics, 4 Threads, Up to 3.6 GHz</td>
<td>AMD Ryzen™ Embedded R1000G with Radeon™ Vega 3 Graphics, 8 Threads, Up to 3.6 GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>1x 260-Pin DDR4 2400 MHz 50-DIMM, up to 32GB</td>
<td>2x 260-Pin DDR4 2400 MHz 50-DIMM, Max 32 GB</td>
<td>2x 260-Pin DDR4 2400 MHz 50-DIMM, Max 32 GB</td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DisplayPort, 1x DisplayPort, 1x 2-bit dual channel LVDS, 1x HDMI (Optional)</td>
<td>1x DisplayPort, 1x DisplayPort, 1x 2-bit dual channel LVDS, 1x HDMI (Optional)</td>
<td>1x DisplayPort, 1x DisplayPort, 1x 2-bit dual channel LVDS, 1x HDMI (Optional)</td>
</tr>
<tr>
<td>USB, Serial</td>
<td>6x USB 3.2 Gen 2, 2x USB 2.0 (2x internal), 2x RS-232/422/485</td>
<td>2x USB 3.2 Gen 2 (10 Gbps), 6x USB 2.0 (2x internal), 2x RS-232/422/485</td>
<td>2x USB 3.2 Gen 2 (10 Gbps), 6x USB 2.0 (2x internal), 2x RS-232/422/485</td>
</tr>
<tr>
<td>Storage</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
</tr>
<tr>
<td>Internal Expansion Slot</td>
<td>2x Full-size Mini-PCIe (1x shared with mSATA)</td>
<td>PCIe x1 &amp; USB 3.0, 3042/3052, SATA, USIM, Support 4G/5G, 1x Full-Size Mini PCIe for expansion modules</td>
<td>PCIe x1 &amp; USB 3.0, 3042/3052, SATA, USIM, Support 4G/5G, 1x Full-Size Mini PCIe for expansion modules</td>
</tr>
<tr>
<td>Power</td>
<td>AT/ATX 12V Select, 3-pin Terminal Block</td>
<td>AT/ATX 12V, 3-pin Terminal Block</td>
<td>AT/ATX 12V, 3-pin Terminal Block</td>
</tr>
<tr>
<td>Audio</td>
<td>Line-out / Mic-in Internal</td>
<td>Line-out / Mic-in Phone Jack</td>
<td>Line-out / Mic-in Phone Jack</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to 60°C</td>
<td>-40°C to 70°C</td>
<td>-40°C to 70°C</td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>150 x 105 x 37 mm</td>
<td>150 x 105 x 65 mm</td>
<td>150 x 105 x 85 mm</td>
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<tr>
<td>Weight</td>
<td>0.69 kg</td>
<td>0.85 ~ 0.88 kg</td>
<td>1.11 kg</td>
</tr>
<tr>
<td>Universal Expansion Slot</td>
<td>0</td>
<td>1 (front)</td>
<td>2 (front)</td>
</tr>
</tbody>
</table>

### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>RCO-1000-J1900</th>
<th>RCO-1000-J1900-10</th>
<th>RCO-1000-J1900-20</th>
<th>RCO-1000-J1900-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Onboard</td>
<td>Intel® Atom™ processor E3845, 1.91GHz or Intel® Celeron® J1900, 2.0GHz</td>
<td>Intel® Atom™ processor E3845, 1.91GHz or Intel® Celeron® J1900, 2.0GHz</td>
<td>Intel® Atom™ processor E3845, 1.91GHz or Intel® Celeron® J1900, 2.0GHz</td>
<td>Intel® Atom™ processor E3845, 1.91GHz or Intel® Celeron® J1900, 2.0GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>1x 260-pin DDR4L-1066/1333MHz 50-DIMM, up to 8GB</td>
<td>1x 260-pin DDR4L-1066/1333MHz 50-DIMM, up to 8GB</td>
<td>1x 260-pin DDR4L-1066/1333MHz 50-DIMM, up to 8GB</td>
<td>1x 260-pin DDR4L-1066/1333MHz 50-DIMM, up to 8GB</td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DVI-I (optional DisplayPort)</td>
<td>1x DVI-I (optional DisplayPort)</td>
<td>1x DVI-I (optional DisplayPort)</td>
<td>1x DVI-I (optional DisplayPort)</td>
</tr>
<tr>
<td>LAN</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
</tr>
<tr>
<td>Storage</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
<td>1x mSATA (shared by 1x Mini PCIe), 1x Internal 2.5” SATA HDD Bay</td>
</tr>
<tr>
<td>Power Ignition Management (internal)</td>
<td>RCO-1000-J1900-10A</td>
<td>RCO-1000-J1900-10B</td>
<td>RCO-1000-J1900-10C</td>
<td>RCO-1000-J1900-10D</td>
</tr>
<tr>
<td>DP, 8-bit Isolated DIO (front)</td>
<td>RCO-1000-J1900-20C</td>
<td>RCO-1000-J1900-20D</td>
<td>RCO-1000-J1900-20E</td>
<td>RCO-1000-J1900-20F</td>
</tr>
<tr>
<td>Power (rear)</td>
<td>RCO-1000-J1900-10A</td>
<td>RCO-1000-J1900-10B</td>
<td>RCO-1000-J1900-10C</td>
<td>RCO-1000-J1900-10D</td>
</tr>
<tr>
<td>DP, 8-bit Isolated DIO (rear)</td>
<td>RCO-1000-J1900-20C</td>
<td>RCO-1000-J1900-20D</td>
<td>RCO-1000-J1900-20E</td>
<td>RCO-1000-J1900-20F</td>
</tr>
<tr>
<td>2x COM (front)</td>
<td>RCO-1000-J1900-20C</td>
<td>RCO-1000-J1900-20D</td>
<td>RCO-1000-J1900-20E</td>
<td>RCO-1000-J1900-20F</td>
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<tr>
<td>4x COM (front)</td>
<td>RCO-1000-J1900-20C</td>
<td>RCO-1000-J1900-20D</td>
<td>RCO-1000-J1900-20E</td>
<td>RCO-1000-J1900-20F</td>
</tr>
</tbody>
</table>

### Specifications
- **Support 8th Gen. Intel® Core™ i5 & Intel® Celeron® Processor**
- **1x 260-pin DDR4 2400 MHz 50-DIMM, Max. up to 32GB**
- **2x Intel® 8th Gen (Support Wake-on-LAN and PXE)**
- **Triple Independent Display by 1x DisplayPort, 1x LVDS, 1x HDMI (Optional)**
- **1x M.2 Key for 4G/5G Communications & Storage**
- **1x full-size M.2 PCIe for expansion modules**
- **2x USB 3.2 Gen 2, 2x USB 2.0, 2x RS-232/422/485**
- **1x Internal 2.5” SATA HDD Bay, 1x internal SIM support**
- **Watchdog timer 1-255s system reset**
- **TPM 2.0 Supported**
**RCO-1000-EHL SERIES**

- Intel® Celeron® Processor (Up to 10W TDP)
- Dual Independent Display by 2x DisplayPort
- 1x 2.5Gbe, 1x GbE supporting (Wake-on-LAN and PXE)
- 1x 2.5" SATA HDD Bay, 1x mSATA
- 1x Full-size mini PCIe for communication or expansion modules
- 2x RS-232/422/485, 3x USB 3.2 Gen2, 1x USB 2.0
- 9 to 36 VDC Wide Range Power Input

**RCO-3000-KBL-U SERIES**

- Support 7th Gen. Intel® Core™ i5 / i3 Processor
- Triple Independent Display
- Support up to 6x LAN or 4x PoE by Unique Modular Design
- Multiple Expansion Capability including PCIe, PCI, and Mini PCIe
- Wide Operating Temperature -40°C to 70°C
- 9 to 50 VDC Wide Range Power Input Supporting AT/ATX Mode
Advanced Fanless System based on Intel® Skylake & Kaby Lake-U processors

CPU Support
- Support 6th & 7th Gen Intel® Core™ i7 / i5 / i3 / Pentium® / Celeron® Desktop Processor (LGA 1151)
- Intel® Q170 chipset

Memory
- 2x DDR4 1866/2133MHz SO-DIMM. Max. up to 32GB

Graphic Output
- Intel® HD Graphics 530 / 630

LAN
- 2x GBE RJ45 (Support Wake-on-LAN and PXE)

USB, Serial, & Digital I/O
- 6x USB 3.2 Gen1 (5 Gbps), 2x USB 2.0 (2x internal), 6x RS-232/422/485 (2x internal), 16 isolated digital I/O

Storage
- 2x internal 2.5” SATA HDD Bay with RAID 0, 1, 5, 10 support, 2x mSATA (shared by 2x Mini PCIe), 1x CFast
- 2x full-size Mini PCIe (shared by 2x mSATA) for communication or expansion modules, 2x external SIM socket

Internal Expansion Slot
- 2x Full-size mini-PCIe
- 1x M.2 E Key, PCIe x1, USB 2.0, 2230, Support CNVi
- 4x USB 3.2 Gen 2, 4x USB 2.0 (2x internal), 5x RS-232/422/485 (2x internal)

Power
- 9-50 VDC Wide-Range Power Input, Supporting ATX Mode
- TPM 2.0 Supported

Audio
- Speaker-out / Mic-in Phone Jack

Dimensions (WxDxH)
- 185 x 197 x 57.4 mm

Weight
- 2.28 kg

Operating Temperature
- -25°C to 60°C

More info
## RUGGED MINI (SFF) INDUSTRIAL COMPUTER

### Model: RCO-3000-CML Series

- **CPU Support**: 10th Gen Intel® CML-R 5 Processor (LGA 1200, 35W TDP)
- **Intel® Q470E Chipset**
- **Triple independent display** by DisplayPort, Support Resolution 4096 x 2304
- **1x Full-size mini PCIe (shared by 1x mSATA)**
- **2x 2.5” SATA HDD Bay with RAID 0, 1, 5 support, 1x mSATA (Shared by 1x Mini PCIe)**
- **1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVI)**
- **4x USB 3.2 Gen 2, 2x USB 3.2 Gen 1, 5x RS-232/422/485 (2x internal)**
- **8x DI + 8x DO with isolation**
- **9 to 18VDC Wide Range Power Input Supporting AT/ATX Mode**
- **TPM 2.0 Supported**

### Model: RCO-6000-KBL Series

- **CPU Support**: 6th/7th Gen. Intel® Core™ i7/i5/i3 or Pentium® / Celeron® Desktop Processor
- **Triple Independent Display**
- **Support up to 10x LAN or 8x PoE by Unique Modular Design**
- **Multiple Expansion Capability including PCIe, PCI, and Mini PCIe**
- **Wide Operating Temperature -25°C to 70°C**
- **9 to 18VDC Wide Range Power Input Supporting AT/ATX Mode**
- **Fanless & Cable-less in Design**
- **TPM 2.0 Supported**

### Model Table

<table>
<thead>
<tr>
<th>Model</th>
<th>CPU Support</th>
<th>Memory</th>
<th>Graphic Output</th>
<th>LAN</th>
<th>USB, Serial, &amp; Digital I/O</th>
<th>Storage</th>
<th>Internal Expansion Slot</th>
<th>Power</th>
<th>Audio</th>
<th>Operating Temperature</th>
<th>Certification</th>
<th>Dimensions (WxDxH)</th>
<th>Weight</th>
<th>Universal Expansion Slot (Horizontal)</th>
<th>Universal Expansion Slot (Vertical)</th>
<th>Proprietary Module Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCO-3000-CML</td>
<td>Intel® 10th Gen. (Comet Lake-S) CPU &amp; Q470E PCH</td>
<td>2x 260-Pin DDR4 2666/2933MHz SO-DIMM Max. up to 64GB (ECC and Non-ECC)</td>
<td>3x DisplayPort, support resolution 4096 x 2304 (1x DP Port Co-layouted HDMI Connector)</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td>2x USB 3.2 Gen 2 (2x10 Gbps)</td>
<td>3x RS-232/422/485 (2x internal)</td>
<td>1x Full-size mini PCIe (Shared by 1x M.2 PCIe)</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td>Speaker-out / Mic-in Phone Jack</td>
<td>-25°C to 70°C</td>
<td>UL 63368 Ed.3, CE, FCC Class A</td>
<td>260 x 261 x 79 mm</td>
<td>260 x 261 x 107 mm</td>
<td>4.37 – 5.21 kg</td>
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<tr>
<td>RCO-6000-KBL</td>
<td>Intel® 6th/7th Gen. (Kabylake &amp; Skylake-S) Desktop Processor</td>
<td>2x 260-pin DDR4-1866/2133MHz SO-DIMM, up to 32GB</td>
<td>1x DVI-I, 1x DisplayPort</td>
<td>2x GbE RJ45</td>
<td>2x USB 3.2 Gen 1 (5 Gbps, internal)</td>
<td>3x RS-232/422/485 (2x internal)</td>
<td>4x Full-size mini PCIe</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td>Speaker-out / Mic-in Phone Jack</td>
<td>-25°C to 70°C</td>
<td>UL 63368 Ed.3, CE, FCC Class A</td>
<td>260 x 261 x 79 mm</td>
<td>260 x 261 x 107 mm</td>
<td>4.67 – 6.64 kg</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Proprietary Module Expansion

- **RCO-3000-CML**:
  - DTB-D10G
  - DTB-4U3
  - DTB-4ETH
  - DTB-4ETH-M12
- **RCO-6000-KBL**:
  - DTB-4LAN
  - DTB-4LAN-PWR
  - DTB-4LAN-M12
  - DTB-4LAN-PWR-M12

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**More info**

- **RCO-3000-CML** Series
  - RUGGED MINI (SFF) INDUSTRIAL COMPUTER
- **RCO-6000-KBL** Series
  - HIGH-PERFORMANCE INDUSTRIAL COMPUTER
**RCO-6000-CFL SERIES**

- Support 8th/9th Gen. Intel® CFL-R S Processor (LGA 1151, 35W TDP)
- Intel® Q270 chipset
- 2x DDR4 2666/2400 MHz SO-DIMM. Max. up to 64GB
- Triple Independent Display by 1x DVI-I and 2x DisplayPort
- 4x USB 3.2 Gen 2, 6x USB 3.2 Gen 1 (1x internal), 4x RS-232/422/485 (2x internal)
- 2x PCIe x8 (Optional)
- 4x 2.5" SATA SSD/HDD Bay and 1x mSATA. Support RAID 0, 1, 5, 10
- 1x NVMe M.2 SSD, 1x M.2 E Key for WiFi
- Intel® Q370 chipset
- 2x DDR4 2666/2400 MHz SO-DIMM. Max. up to 64GB
- Intel® Support 8th/9th Gen. Intel® CFL-R S Processor (LGA 1151, 35W TDP)
- Core™ i7-9700E/9700TE/8700T, Core™ i5-9500E/9500TE/8500T, Core™ i3-9100E/9100TE/8100T
- Intel® CPU Support
- 6x RS-232/422/485 (w/ 2x internal)

**Performance and Storage at the Rugged Edge**

Pentio Edge Inference Computers are specifically engineered with the latest technologies that offer real-time data inference analysis and boosted storage for machine-learning purposes in the most rigorous IoT deployments. Our industrial computers push further the capabilities of AI and machine learning for industrial automation, vehicle telematics, smart city, and metrology.

**RCO-6000-CFL EDGEBOOST NODE SERIES**

Premio Edge Inference Computers are specifically engineered with the latest technologies that offer real-time data inference analysis and boosted storage for machine-learning purposes in the most rigorous IoT deployments. Our industrial computers push further the capabilities of AI and machine learning for industrial automation, vehicle telematics, smart city, and metrology.

<table>
<thead>
<tr>
<th>Model</th>
<th>RCO-6000-CFL-2I</th>
<th>RCO-6000-CFL-2C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superbar Fanless System with LGA-1151 socket for Intel® CFL-R S Processor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>2x 260-pin DDR4-2666/2400 MHz SO-DIMM, up to 64GB (Un-buffered and Non-ECC)</td>
<td>1x mSATA (shared by 1x Mini PCIe)</td>
</tr>
<tr>
<td>LAN</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td>1x HDMI (GPU), 3x DisplayPort, 1x DVI-I, 2x DisplayPort</td>
</tr>
<tr>
<td>USB, Serial, &amp; Digital I/O</td>
<td>4x USB 3.2 Gen 2 (10 Gbps), 2x USB 3.2 Gen 1 (5 Gbps), 6x RS-232/422/485 (2x internal), 1x isolated digital I/O</td>
<td>4x USB 3.2 Gen 2 (10 Gbps), 6x USB 3.2 Gen 1 (5 Gbps), 6x RS-232/422/485 (2x internal), 1x isolated digital I/O</td>
</tr>
<tr>
<td>Storage</td>
<td>4x 2.5&quot; SATA SSD/HDD bay with RAID 0, 1, 5, 10 support (2x internal, 2x removable &amp; hot-swappable), 1x mSATA (shared by 1x Mini PCIe), 1x NVMe M.2 M Key</td>
<td>1x NVMe M.2 M Key</td>
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<tr>
<td>Internal Expansion Slot</td>
<td>2x Full-size mini-PCIe (1 shared by 1x mSATA), 1x M.2 E Key</td>
<td>1x NVMe M.2 Key</td>
</tr>
<tr>
<td>Power</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
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<tr>
<td>Audio</td>
<td>Line-out / Mic-in Phone Jack</td>
<td>Line-out / Mic-in Phone Jack</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25°C to 70°C</td>
<td>-25°C to 60°C</td>
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<td>Certification</td>
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<td>E-Mark, EMC Conformity with EN 50155, EN 50221-3-2</td>
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<tr>
<td>Dimensions (WxDxH)</td>
<td>260 x 261 x 79 mm</td>
<td>260 x 261 x 127.3 mm</td>
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<td>Weight</td>
<td>5.97 kg</td>
<td>7.73 kg</td>
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<td>Universal Expansion Slot</td>
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<td>1 (by mini PCIe interface)</td>
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<tr>
<td>Proprietary Module Expansion</td>
<td>Up to 1x Module: DTB-M2BK, DTB-D100, DTB-U3</td>
<td>Up to 1x Module: DTB-D100, DTB-M2BK, DTB-U3</td>
</tr>
<tr>
<td>Proprietary Module Expansion</td>
<td>Up to 1x Module: DTB-M2BK, DTB-D100, DTB-U3</td>
<td>Up to 1x Module: DTB-M2BK, DTB-D100, DTB-U3</td>
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<tr>
<td>Proprietary Module Expansion</td>
<td>DTB-4ETH, DTB-4ETH-PWR, DTB-4ETH-M12</td>
<td>DTB-4ETH, DTB-4ETH-PWR, DTB-4ETH-M12</td>
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<tr>
<td>Proprietary Module Expansion</td>
<td>DTB-M2MK, DTB-2M2BK</td>
<td>DTB-M2MK, DTB-2M2BK</td>
</tr>
</tbody>
</table>

**Model**

- RCO-6000-CFL-2I: 9-48 VDC, 3-pin Terminal Block, AT/ATX Select, 4-pin Terminal Block, AT/ATX Select, for GPU/Storage
- RCO-6000-CFL-2C: 9-48 VDC, 3-pin Terminal Block, AT/ATX Select, 4-pin Terminal Block, AT/ATX Select, for GPU/Storage

**Specifications**

- CPU: Support 8th/9th Gen. Intel® CFL-R S Processor (LGA 1151, 35W TDP)
- Memory: 4x 260-pin DDR4-2666/2400 MHz SO-DIMM, up to 64GB (Un-buffered and Non-ECC)
- LAN: 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- USB, Serial, & Digital I/O: 4x USB 3.2 Gen 2 (10 Gbps), 2x USB 3.2 Gen 1 (5 Gbps), 6x RS-232/422/485 (2x internal), 1x isolated digital I/O
- Storage: 4x 2.5" SATA SSD/HDD bay with RAID 0, 1, 5, 10 support (2x internal, 2x removable & hot-swappable), 1x mSATA (shared by 1x Mini PCIe), 1x NVMe M.2 M Key
- Internal Expansion Slot: 2x Full-size mini-PCIe (1 shared by 1x mSATA), 1x M.2 E Key
- Power: 9-48 VDC, AT/ATX Select, 3-pin Terminal Block
- Audio: Line-out / Mic-in Phone Jack
- Operating Temperature: -25°C to 70°C
- Certification: E-Mark, EMC Conformity with EN 50155, EN 50221-3-2
- Dimensions (WxDxH): 260 x 261 x 79 mm
- Weight: 5.97 kg
- Universal Expansion Slot: 1 (by mini PCIe interface)
- Proprietary Module Expansion: Up to 1x Module: DTB-M2BK, DTB-D100, DTB-U3
- Proprietary Module Expansion: DTB-4ETH, DTB-4ETH-M12, DTB-M2MK
- Proprietary Module Expansion: DTB-D100, DTB-M2BK, DTB-U3
- Proprietary Module Expansion: DTB-4ETH, DTB-4ETH-M12, DTB-M2MK
**RCO-6000-CML EDGEBOOST NODE SERIES**

- Support 10Gbps Intel® CML5 Processor (LGA 1200, 35W TDP)
- Intel® W480E chipset
- 2x DDR5 4800MHz SO-DIMM
- Wide Operating Temperature: -25°C to 70°C
- 9-48 VDC, AT/ATX Select, 5-pin Terminal Block, for GPU/Card Expansion
- Audio: Line-out / Mic-in Phone Jack
- Operating Temperature: -25°C to 70°C
- Certification: UL 62368 Ed. 3, CE, FCC Class A
- Dimensions (WxDxH): 240 x 261 x 79 mm
- Weight: 3.1~3.5 kg
- Universal Expansion Slot: 2 (by mini PCIe interface)

**RCO-6000-ADL EDGEBOOST NODE SERIES**

- Support 12/13 Gen. Intel® ADL S & RPL-S Processor
- Intel® W780E chipset
- 2x DDR5 4800MHz SO-DIMM
- Wide Operating Temperature: -25°C to 70°C
- Wide Range Power Input Supporting AT/ATX Mode
- TPM 2.0 Supported

**Model**

<table>
<thead>
<tr>
<th>RCO-6000-CML</th>
<th>RCO-6000-CML-2C</th>
<th>RCO-6000-CML-2C-48V/8M</th>
<th>RCO-6000-CML-2C-2PWR</th>
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<table>
<thead>
<tr>
<th>CPU Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support 10Gbps Intel® CML5 Processor (LGA 1200, 35W TDP)</td>
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<tr>
<td>Intel® W480E chipset</td>
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<tr>
<td>2x DDR5 4800MHz SO-DIMM</td>
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<tr>
<td>Wide Operating Temperature: -25°C to 70°C</td>
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</table>

<table>
<thead>
<tr>
<th>Graphic Output</th>
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</thead>
<tbody>
<tr>
<td>9-48 VDC, AT/ATX Select, 5-pin Terminal Block, for GPU/Card Expansion</td>
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</table>

<table>
<thead>
<tr>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line-out / Mic-in Phone Jack</td>
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</table>

<table>
<thead>
<tr>
<th>Operating Temperature</th>
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<tbody>
<tr>
<td>-25°C to 70°C</td>
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<table>
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<tr>
<th>Certification</th>
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<th>Dimensions (WxDxH)</th>
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<tr>
<td>240 x 261 x 79 mm</td>
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<table>
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<th>Weight</th>
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<tbody>
<tr>
<td>3.1~3.5 kg</td>
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</table>

<table>
<thead>
<tr>
<th>Universal Expansion Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (by mini PCIe interface)</td>
</tr>
</tbody>
</table>

**Proprietary Module Expansion**

- Up to 2x Module:
  - DTB-M2BK
  - DTB-D100
  - DTB-4U3

**GRAPHIC Output**

- 1x Full-size Mini PCIe for communication or expansion modules, 2x SIM socket
- 1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVi)

**Graphics Output**

- Graphic Output: 1x HDMI, 3x DP
- 2x PCIe x16 (8-lane) (Optional)

**Storage**

- 3x 2.5” SATA HDD bay with RAID 0, 1, 5 support (1x internal, 1x removable, 1x mSATA)
- 1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVi)

**Power**

- 9-48 VDC, AT/ATX Select, 5-pin Terminal Block, for GPU/Card Expansion

**Certification**

- UL 62368 Ed. 3, CE, FCC Class A
- Dimensions (WxDxH): 240 x 261 x 79 mm
- Weight: 3.1~3.5 kg
- Universal Expansion Slot: 2 (by mini PCIe interfaces)

**PCI Express**

- RCO-6000-CML-2C: 1x PCIe, 1x PCIe x16
- 2x PCIe (Optional)

**Proprietary Module Expansion**

- Up to 2x Module:
  - DTB-M2BK
  - DTB-D100
  - DTB-4U3

**CPU Support**

- Support 12/13 Gen. Intel® ADL S & RPL-S Processor
- Intel® W780E chipset
- 2x DDR5 4800MHz SO-DIMM
- Wide Operating Temperature: -25°C to 70°C
- Wide Range Power Input Supporting AT/ATX Mode
- TPM 2.0 Supported

**Graphic Output**

- Graphic Output: 1x HDMI, 3x DP
- 2x PCIe x16 (8-lane) (Optional)

**Operating Temperature**

- -25°C to 70°C

**Dimensions (WxDxH)**

- 260 x 261 x 127 mm

**Weight**

- 6.2 kg

**Universal Expansion Slot**

- 2 (by mini PCIe interfaces)
Mix & Match EDGEBoost Nodes
Performance Accelerators Upgrade

The AI Edge Inference Computers support modular add-on nodes through a two-piece modular design that allows the EDGEBoost Nodes to easily attach to the lower portion of the RCO-6000-CFL/CML/ADL for more performance accelerators.

### Mix & MATCH EDGEBoost Nodes

EDGEBoost nodes are highly configurable performance boosters designed to meet the demand for complex applications that require powerful data processing, high-speed data storage, and inference capabilities at the edge. EDGEBoost nodes attach to the lower portion of the AI Edge Inference Computers, providing SATA, NVMe storage, and GPU acceleration for complex edge workloads.

#### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>PCIe/PCI</th>
<th>SATA Boost</th>
<th>NVMe Boost</th>
<th>GPU Boost</th>
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<tbody>
<tr>
<td>RCO-6000-ADL</td>
<td>2C</td>
<td>2C-4B7M</td>
<td>2E-4N (7mm)</td>
<td>2C-2PWR</td>
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<td>2C-2B15M</td>
<td>4NS (15mm)</td>
<td>20-2060S</td>
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<td>8NS (7mm)</td>
<td>4N-2060S</td>
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<td>RCO-6000-CML</td>
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<td>2C-4B7M</td>
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<td>RCO-6000-CFL</td>
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<td>2C-4B7M</td>
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<td>2C-2B15M</td>
<td>4NS (15mm)</td>
<td>20-2060S</td>
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<td>4NH (15mm)</td>
<td>2N-2060S</td>
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<td></td>
<td></td>
<td>8NS (7mm)</td>
<td>4N-2060S</td>
</tr>
</tbody>
</table>

* PCI/PCI and SATA Boost modules have optional 2C, 2E or 2I configurations:
  + 2C: 1x PCIe x16, 1x PCI
  + 2E: 2x PCIe x16 (8x Lane)
  + 2I: 2x PCI

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Learn More
Interested in Edge AI?
Download Premio’s M.2 Whitepaper
AI Inference At The Rugged Edge

Unlock The Full Potential Of Edge AI with M.2 Acceleration Modules

What’s Inside?
This paper will take a deeper look at M.2 performance accelerators at the rugged edge and how modern hardware strategies can assure the reliable performance and intelligent data handling needed to fuel AI’s value further into modern life and enterprise business.

Get To Know the M.2 Interface
A compact, versatile next generation option.

Throughput Matters
Understanding benchmarks for real-world AI applications.

Hitting an AI Wall
Compute has come a long way and AI still needs more.

7 Steps Of Building A Fanless PC
The 7 key steps allow industrial fanless computers to perform real-time processing and machine learning in the harshest edge deployments. Industrial computers help provide the mission-critical foundation to manage new edge AI workloads in key automation deployments with ultimate reliability.

1. Select A CPU
10W - 65W TDP
2. Utilize Heatsinks
Ultra-Conductive Materials
3. Select EDGEBoost Nodes
Performance Accelerators
4. Test And Validate
Ensure Durability
5. Implement SSDs
NVMe SSDs
6. Use an Extruded Aluminum PC Case
One-Piece Heatsink Chassis
7. Put Pieces Together
Ruggedized Design

Premio’s Fanless Cooling Technology
Rugged. Reliable. Tested.
## ACO-6000-KBL SERIES

- **Support 6th-11th Gen. Intel® Core™ i7/i5/i3 or Pentium® / Celeron® Desktop Processor**
- **Triple Independent Display**
- **Support up to 1x LAN or 1x PCIe by Unique Modular Design**
- **Multiple Expansion Capability including PCIe, PCI, and Mini PCIe**
- **Wide Operating Temperature -25°C to 70°C**
- **9 to 48 VDC Wide Range Power Input Supporting AT/ATX Mode**

### Model Information

<table>
<thead>
<tr>
<th>Model</th>
<th>ACO-6000-KBL</th>
<th>ACO-6000-KBL-16X</th>
<th>ACO-6000-KBL-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Support</td>
<td>Intel® 6th/7th Gen. (Kaby Lake &amp; Skylake-S) Desktop Processor</td>
<td>With 16 GB in RJ-45 or M12 connectors with PoE option</td>
<td>With one PCIe or PCIe x1 expansion slot</td>
</tr>
<tr>
<td>Memory</td>
<td>2x 260-pin DDR4-1866/2133 MHz SSD - DIMM, up to 32 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DVI-I, 1x DisplayPort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x 10/100/1000TX (Support Wake-on-LAN and PXE)</td>
<td>2x PCIe x16 (by mini PCIe interface)</td>
<td>1x PCIe x16 (by mini PCIe interface)</td>
</tr>
<tr>
<td>USB, Serial &amp; Digital I/O</td>
<td>4x USB 3.2 Gen 2, 2x USB 2.0 (Internal), 2x USB 2.0 (External), 16x isolated digital IO</td>
<td>4x USB 3.2 Gen 2, 2x USB 2.0 (Internal), 2x USB 2.0 (External), 16x isolated digital IO</td>
<td>4x USB 3.2 Gen 2, 2x USB 2.0 (Internal), 2x USB 2.0 (External), 16x isolated digital IO</td>
</tr>
<tr>
<td>Storage</td>
<td>3x Full-size mini-Pcie (shared with mSATA)</td>
<td>3x Full-size mini-Pcie (shared with mSATA)</td>
<td>3x Full-size mini-Pcie (shared with mSATA)</td>
</tr>
<tr>
<td>Power</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
</tr>
<tr>
<td>Audio</td>
<td>Speaker-out / Mic-in Phone Jack</td>
<td>Speaker-out / Mic-in Phone Jack</td>
<td>Speaker-out / Mic-in Phone Jack</td>
</tr>
<tr>
<td>Certification</td>
<td>E-Mark, EMC Conformity with EN 50155, EN 50121-3-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (WxHxD)</td>
<td>240 x 261 x 79 mm</td>
<td>240 x 261 x 100 mm</td>
<td>240 x 261 x 107 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3.94 ~ 4.98 kg</td>
<td>5.34 ~ 6.82 kg</td>
<td>5.14 ~ 6.21 kg</td>
</tr>
</tbody>
</table>

### Universal Expansion Slot


### Proprietary Module Expansion

- **Up to 4x Module**: DTB-M28K (Support 1x Universal Slot Only)

### Proprietary Module Expansion

- **Up to 4x Module**: DTB-D10U / DTB-ETH / DTB-ETH-PWR / DTB-ETH-M12
- **Up to 2x Module**: DTB-D10U / DTB-ETH / DTB-ETH-PWR / DTB-ETH-M12

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## ACO-6000-CML SERIES

- **LGA 1200 socket for 10th Gen. Intel® CML 5 Processor (35W TDP)**
- **Intel® W480E chipset**
- **2x DDR4-2666/2933 MHz SSD - DIMM, max. up to 64 GB**
- **Triple Independent Display by 1x DVI-I and 2x DisplayPort**
- **2x Intel® GB supporting Wake-on-LAN and PXE**
- **2x Full-size Mini PCIe for communication or expansion modules, 2x SIM socket**
- **3x 2.5” SATA HDD Bay (1x Internal) with RAID 0, 1, 5 support**
- **1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVI)**
- **8x RS-232/422/485 (6x internal), 4x USB 3.2 Gen 2, 3x USB 3.2 Gen 1 (1x internal)**

### Model Information

<table>
<thead>
<tr>
<th>Model</th>
<th>ACO-6000-CML</th>
<th>ACO-6000-CML-1E</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Support</td>
<td>Support 10th Gen Intel® CML 5 Processor (LGA 1200, 35W TDP)</td>
<td>Support 10th Gen Intel® CPU &amp; W480E PCH, 1x PCIe x16 expansion slot</td>
</tr>
<tr>
<td>Memory</td>
<td>2x 260-pin DDR4-2666 /2933 MHz SSD - DIMM, up to 64 GB (ECC and Non-ECC)</td>
<td>2x DDR4-2666 /2933 MHz SSD - DIMM, up to 64 GB (ECC and Non-ECC)</td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DVI-I, 1x DisplayPort</td>
<td>1x DVI-I, 1x DisplayPort</td>
</tr>
<tr>
<td>LAN</td>
<td>2x 10/100/1000TX (Support Wake-on-LAN and PXE)</td>
<td>2x 10/100/1000TX (Support Wake-on-LAN and PXE)</td>
</tr>
<tr>
<td>USB, Serial &amp; Digital I/O</td>
<td>4x USB 3.2 Gen 2, 3x USB 3.2 Gen 1 (1x internal), 2x USB 2.0 (Internal), 8x RS-232/422/485 (4x internal), 8x DI + 8x DO with isolation</td>
<td>4x USB 3.2 Gen 2, 3x USB 3.2 Gen 1 (1x internal), 2x USB 2.0 (Internal), 8x RS-232/422/485 (4x internal), 8x DI + 8x DO with isolation</td>
</tr>
<tr>
<td>Storage</td>
<td>3x Full-size mini-Pcie (shared with mSATA)</td>
<td>3x Full-size mini-Pcie (shared with mSATA)</td>
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<tr>
<td>Power</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
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<td>Speaker-out / Mic-in Phone Jack</td>
<td>Speaker-out / Mic-in Phone Jack</td>
</tr>
<tr>
<td>Certification</td>
<td>E-Mark, EMC Conformity with ENS 0155S &amp; ENS 0121-3-2</td>
<td>E-Mark, EMC Conformity with ENS 0155S &amp; ENS 0121-3-2</td>
</tr>
<tr>
<td>Dimensions (WxHxD)</td>
<td>240 x 261 x 79 mm</td>
<td>240 x 261 x 127 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.4 ~ 4.7 kg</td>
<td>6.2 ~ 6.6 kg</td>
</tr>
<tr>
<td>Universal Expansion Slot</td>
<td>2 (by mini PCIe interface)</td>
<td>4 (by mini PCIe interface)</td>
</tr>
</tbody>
</table>

### Proprietary Module Expansion

- **Up to 2x Module**: DTB-M28K (Support 1x Universal Slot Only)

### Proprietary Module Expansion

- **Up to 4x Module**: DTB-D10U / DTB-ETH / DTB-ETH-PWR / DTB-ETH-M12
GPU SERIES INDUSTRIAL EDGE COMPUTER

- AI EDGE INFERENCE COMPUTER
- MACHINE VISION COMPUTER

Premio’s GPU Series Industrial Computers support robust AI accelerators for inference analysis and powerful machine learning at the rugged edge. The computers are tested and validated for their reliability and durability while performing real-time analysis in the harshest industrial environments.

**AI EDGE INFERENCE COMPUTER**
**MACHINE VISION COMPUTER**

Additional Expansions: SATA/NVMe/M.2 SSDs
Dedicated GPU for Inference and Machine Learning
Ruggedized Design for Harsh Edge Environments
PCIe 3.0 and PCIe 4.0 Expansions

**Dedicated GPU for Inference and Machine Learning**

**Ruggedized Design for Harsh Edge Environments**

**PCIe 3.0 and PCIe 4.0 Expansions**

**High-Performance Machine Vision Computer**

**VCO-6000-KBL Series**
- Support 6th/7th Gen. Intel® Core™ i7/i5/i3 or Pentium® / Celeron® Desktop Processor
- Triple Independent Display
- Multiple Expansion Capability including up to 3x PCIe or 4x PCI
- Fanless Design Structure and Support Additional Fan Module
- Wide Operating Temperature: -25°C to 70°C
- 9 to 50 VDC Wide Range Power Input Supporting AT/ATX Mode
- TPM 2.0 Supported

**CPU Support**
- Intel® 6th/7th Gen. (Kaby Lake & Skylake-S) Desktop Processor
- Core™ i7-7700T/6700TE, Core™ i5-7500T/6500TE, Core™ i3-7101TE/6100TE, Pentium® G4400TE, or Celeron® G3900TE

**Memory**
2x DDR4-1866/2133MHz SO-DIMM, up to 32GB

**Graphic Output**
1x DVI-I, 2x DisplayPort

**LAN**
2x GbE RJ45 (Support Wake-on-LAN and PXE)

**USB, Serial, & Digital I/O**
4x USB 3.2 Gen1 (5 Gbps), 4x RS-232/422/485 (w/ 2x internal), 16x isolated digital I/O

**Storage**
2x Removable 2.5" SATA HDD Bay with RAID 0, 1, 5, 10 support, 2x mSATA (shared by 2x Mini PCIe), 1x CFast Internal Expansion Slot
3x Full-size Mini-PCIe (Share by 2x mSATA)

**Power**
9-50 VDC, AT/ATX Select, 5-pin Terminal Block

**Audio**
Speaker-out / Mic-in Phone Jack

**Operating Temperature**
-25°C to 70°C

**Dimensions**
(WxDxH) mm
- 77 x 256 x 240
- 117 x 256 x 240
- 137 x 256 x 240
- 157 x 256 x 240
- 177 x 256 x 240
- 197 x 256 x 240

**Weight**
- 3.83 kg
- 5.29 kg
- 5.34 ~ 5.39 kg
- 5.42 ~ 5.86 kg
- 5.46 ~ 6.02 kg
- 6.21 kg

**PCI & PCIe Express**
- VCO-6000-KBL-1E: 1x PCIe x16
- VCO-6000-KBL-1I: 1x PCI
- VCO-6000-KBL-2E: 2x PCIe x8
- VCO-6000-KBL-2I: 2x PCI
- VCO-6000-KBL-3E: 1x PCIe x16 1x PCI
- VCO-6000-KBL-3I: 1x PCIe x16
- VCO-6000-KBL-4E: 2x PCIe x4 2x PCIe x8
- VCO-6000-KBL-4I: 4x PCI
- VCO-6000-KBL-4C: 2x PCIe x4 1x PCIe x8 2x PCIe
- VCO-6000-KBL-5C: 2x PCIe x4 1x PCIe x8 2x PCIe

**Model**
- VCO-6000-KBL-1
- VCO-6000-KBL-2
- VCO-6000-KBL-3
- VCO-6000-KBL-4
- VCO-6000-KBL-5
**VCO-6000-CFL SERIES**

- Support 6th/7th Gen. Intel® Core™-R 5 Processors [LGA 1151, 38W TDP]
- Intel® Q370 chipset
- 2x DDR4 2400/2666Hz SO-DIMM. Max. up to 64GB (Un-buffered and Non-ECC)
- Intel® R680E chipset
- 9 to 48 VDC Wide Range Power Input Supporting AT/ATX Mode
- Unique Expansion Module Design to Support 1 to 5 Expansion Cards
- TPM 2.0 Supported

**CPU Support**
- Support 8th/9th Gen. Intel® Core™-R 5 Processors [LGA 1151, 38W TDP]
- Core™ i3-8100E/i3-8100T, Pentium® G5400T, or Celeron® G4900T
- Core™ i5-8500E/i5-8500T, Core™ i7-8700E/i7-8700T, Core™ i9-8900E/i9-8900T

**Storage**
- 3x 2.5” SATA HDD Bay with RAID 0, 1, 5 support (1x Internal, 1x Removable, 1x mSATA)
- 1x M.2 B Key, PCIe x2, USB 2.0, 2.5x8, Support CNVi
- 1x M.2 B Key, PCIe x2, 3042/3052, Support 6G/8G/10G ECC

**LAN**
- 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- 8x USB 3.2 Gen 2 (10 Gbps, 4x internal), 8x USB 2.0 (internal)
- 1x HD Audio Line-out / Mic-in Phone Jack

**Audio**
- 1x Full-size mini-PCIe (1 shared by 1x M.2 SATA, 1x M.2 B Key)
- 8x DI + 8x DO with isolation
- 8x RS-232/422/485 (6x internal), 16x isolated digital I/O

**Internal Expansion Slot**
- 1x Full-size mini-PCIe (1 shared by 1x M.2 SATA, 1x M.2 B Key)

**Operating Temperature**
- -25°C to 70°C

**Dimensions (WxHxD)**
- 137 x 360 x 240 mm
- 157 x 360 x 240 mm
- 177 x 360 x 240 mm

**Weight**
- 8.5 Kg
- 9.1 Kg
- 9.5 Kg
- 10.1 Kg

**Model**
- VCO-6000-CFL-2
- VCO-6000-CFL-3
- VCO-6000-CFL-4
- VCO-6000-CFL-5

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**VCO-6000-ADL SERIES**

- Support 12th Gen. Intel® ADL 5 & RPL-5 Processor (LGA 1700, 65W/35W TDP)
- Intel® Rio6E chipset
- 2x DDR5 4800 MHz SO-DIMM. Max. up to 64GB
- Intel® R680E chipset
- 9 to 48 VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -25°C to 70°C
- TPM 2.0 Supported

**CPU Support**
- Support 12th Gen. Intel® ADL-5 & RPL-5 Processor (LGA 1700, 65W/35W TDP)

**Storage**
- 3x 2.5” SATA HDD Bay with RAID 0, 1, 5 support (1x Internal, 1x Removable, 1x mSATA)
- 1x Full-size mini-PCIe (1 shared by 1x M.2 SATA, 1x M.2 B Key)
- 1x M.2 B Key, PCIe x2, 3042/3052, Support 6G/8G/10G ECC

**LAN**
- 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- 8x USB 3.2 Gen 2 (10 Gbps, 4x internal)
- 2x USB 2.0 (internal)

**Audio**
- 5-pin Terminal Block, 8-channel Audio Line-out / Mic-in Phone Jack
- 8x DI + 8x DO with isolation

**Internal Expansion Slot**
- 1x Full-size mini-PCIe (1 shared by 1x M.2 SATA, 1x M.2 B Key)
- 6x internal USB 3.2 Gen1 (5 Gbps)
- 6x RS-232/422/485 (4x internal)

**PCI Express**
- 2x PCIe x8

**Model**
- VCO-6000-ADL-2
- VCO-6000-ADL-3
- VCO-6000-ADL-4

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**VCO-6000-CFL Series**

- 1x M.2 B Key (3042/3052, Support 4G/5G/AI/NVMe)
- 1x M.2 E Key (2230, Support Wi-Fi/Bluetooth)

**CPU Support**

**Storage**
- 2x Removable 2.5” SATA HDD Bay (Support H=7mm, Hot-swappable) Support RAID 0, 1, 5

**LAN**
- 1x Full-size mini-PCIe (1 shared by 1x M.2 SATA, 1x M.2 B Key)

**USB, Serial, & Digital I/O**
- 4x USB 3.2 Gen 2 (10 Gbps, 4x internal)
- 4x USB 2.0 header (internal)

**Audio**
- Line-out / Mic-in Phone Jack

**Operating Temperature**
- -25°C to 70°C

**Dimensions (WxHxD)**
- 137 x 360 x 240 mm
- 157 x 360 x 240 mm
- 177 x 360 x 240 mm

**Weight**
- 9.1 Kg
- 9.5 Kg
- 9.9 Kg

**Model**
- VCO-6000-CFL-2
- VCO-6000-CFL-3
- VCO-6000-CFL-4
Premio Industrial GPU Computing Solutions deliver supreme processing and graphic performance. Our GPU Series has the capability to run complex and data-intensive applications to drive automation, mission-critical and high-performing operations, such as product line inspection, intelligent security surveillance, biomedical imaging, and vision-guided robotic/vehicles.

**GPU SERIES**

**Model**
- RCO-6000-KBL-1050T1
- VCO-6000-KBL-1050T1
- VCO-6000-KBL-2PWR

**CPU Support**
- Intel® 6th/7th Gen Intel® Core™ Processor and Q170 PCH, Intel® Coffee Lake R

**Memory**
- 2x DDR4-1666/1866/2133MHz SO-DIMM, up to 32GB

**GPU**
- GTX 1050 Ti

**Graphic Output**
- 2x DVI-I, 1x HDMI, 1x DisplayPort

**LAN**
- 2x GbE RJ45 (Support Wake-on-LAN and PXE)

**USB**
- 6x USB 3.2 Gen1 (5 Gbps)
- 6x USB 3.2 Gen2 (10 Gbps)

**Serial & Digital I/O**
- 4x RS-232/422/485 (2x internal), 1x isolated digital I/O

**Storage**
- 4x 2.5" SATA HDD Bay

**Internal Expansion Slot**
- 2x Full-size mini-PCIe (shared by 2x Mini PCIe)

**Power**
- 9-48 VDC, AT/ATX Select, 3-pin Terminal Block

**Audio**
- Speaker-out / Mic-in Phone Jack

**Operating Temperature**
- -25 °C to 60 °C

**Certification**
- E-Mark, EMC Conformity with EN 50155, EN 50121-3-2

**Dimensions (WxDxH)**
- 240 x 261 x 127 mm

**Weight**
- 7.76 kg

**Universal Expansion Slot (Front)**
- 4x PCIe x1 (1-lane)

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**Model**
- RCO-6000-CFL-2060S
- VCO-6000-CFL-3-2PWR

**CPU Support**
- 8th/9th Gen Intel® Core™ Processor (LGA 1151, 35W TDP)

**Memory**
- 2x DDR4-2400/2666MHz SO-DIMM, up to 64GB (Un-buffered and Non-ECC)

**GPU**
- RTX 2060 Super

**Graphic Output**
- 1x DVI-I, 1x HDMI, 1x DisplayPort

**LAN**
- 2x GbE RJ45 (Support Wake-on-LAN and PXE)

**USB**
- 4x USB 3.2 Gen2 (10 Gbps)
- 6x USB 3.2 Gen2 (10 Gbps)

**Serial & Digital I/O**
- 6x RS-232/422/485 (2x internal), 1x isolated digital I/O

**Storage**
- 4x 2.5" SATA HDD Bay with RAID 0, 1, 10 support

**Internal Expansion Slot**
- 2x Full-size mini-PCIe (1 shared by 1x mSATA)

**Power**
- 9-48 VDC, 3-pin Terminal Block, AT/ATX Select, 12-48 VDC, 4-pin Terminal Block for GPU expansion

**Audio**
- Line-out / Mic-in Phone Jack

**Operating Temperature**
- -25 °C to 60 °C

**Certification**
- E-Mark, EMC Conformity with EN 50155, EN 50121-3-2

**Dimensions (WxDxH)**
- 240 x 261 x 79.2 mm

**Weight**
- 8.1 kg

**Universal Expansion Slot (Front)**
- 1 by mini PCIe interface (1 shared by 1x mSATA)

**PCIe x16**
- 1x PCIe x16 for GPU Card
- 1x PCIe x16

**PCIe x4 (1-lane)**
- 1x mini PCIe interface
- 1 PCIe x4
Premio supports rich expandability to boost wireless connectivity, streamline integration and unlock automation capabilities in harsh deployments. Leading edge and legacy technologies are easily incorporated into a powerful, intelligent IoT solution for better bandwidth and I/O flexibility. Our daughterboard modules integrate easily into Premio embedded and edge computers through standard PCIe protocols. These add-in modules include additional ethernet I/O ports in 1GbE [RJ45 & M12], 10GbE [RJ45], USB 3.2 Gen1, and 5G ready M.2 for scalable connectivity in IoT deployments at the edge.

**DTB-4ETH**
- Intel® Ethernet Controller I350
- 1x PCIe x4 Gold finger (x4 Lane)
- 4x 1GbE LAN, RJ45 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4ETH-PWR**
- Intel® Ethernet Controller I350
- 1x PCIe x4 Gold finger (x4 Lane)
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4ETH-M12**
- Intel® Ethernet Controller I350
- 1x PCIe x4 Gold finger (x4 Lane)
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4ETH-PWR-M12**
- Intel® Ethernet Controller I350
- 1x PCIe x4 Gold finger (x4 Lane)
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4LAN**
- Intel® Ethernet Controller I210
- 1x PCIe x1 Gold finger
- 4x 1GbE LAN, RJ45 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4LAN-PWR**
- Intel® Ethernet Controller I210
- 1x PCIe x1 Gold finger
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4LAN-M12**
- Intel® Ethernet Controller I210
- 1x PCIe x1 Gold finger
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**DTB-4LAN-PWR-M12**
- Intel® Ethernet Controller I210
- 1x PCIe x1 Gold finger
- 4x 1GbE LAN, M12 Port
- Support Power over Ethernet by an optional PoE module

**New DTB-2M2BK**
- 2x M.2 B Key for AI/5G/NVMe module
  - 1x M.2 B Key slot, Support 2x AI/5G Module (Support 1x 5G Only)
  - 1x SIM slot
  - Support 1x Universal Slot Only

**New DTB-M2MK**
- 1x M.2 M Key for AI/NVMe module (PCIe x4)
  - M.2 M Key slot, Support AI/NVMe Module
  - M.2 B Key, PCIe x4, 2242/2260
  - Support 1x Universal Slot Only

**COMPATIBLE LIST**
- RC0-6000-ADL
- RC0-6000-CML
- RC0-4000-ADL
- RC0-4000-CML
- ACO-6000-XKL
- ACO-6000-CML
- ACO-6000-KBL
- RCO-6000-CFL
- RCO-3000-ADL
- RCO-3000-CML
- RCO-3000-KBL
- RCO-3000-CFL

**COMPATIBLE LIST DTB-D10G**
- Intel® Ethernet Controller X710-AT2
  - 1x PCIe x1 Gold finger (x4 Lane)
  - 2x 10GbE LAN, RJ45 Port
  - Support 1x SIM slot
  - Support 1x Universal Slot Only

**COMPATIBLE LIST DTB-2M2BK**
- Intel® Ethernet Controller X710-AT2
  - 1x PCIe x1 Gold finger (x4 Lane)
  - 2x 10GbE LAN, RJ45 Port
  - Support 1x SIM slot
  - Support 1x Universal Slot Only

**COMPATIBLE LIST DTB-M2MK**
- Intel® Ethernet Controller X710-AT2
  - 1x PCIe x1 Gold finger (x4 Lane)
  - 2x 10GbE LAN, RJ45 Port
  - Support 1x SIM slot
  - Support 1x Universal Slot Only

**COMPATIBLE LIST DTB-4U3**
- Intel® Ethernet Controller X710-AT2
  - 1x PCIe x4 Gold finger (x4 Lane)
  - 2x 10GbE LAN, RJ45 Port
  - Support 1x SIM slot
  - Support 1x Universal Slot Only

**NEW**
- Supports 4x USB 3.2 Gen1 ports (shared PCIe Gen2 x1 bandwidth)
- Independent 1.5A over-current protection (OCP) for each port
- Compliant with eHCl 1.1, USB 3.2 Gen1 Rev 1.0
DUAL-SIM READY MODULE

The Dual-SIM 5G cellular network module enables Premio’s industrial computers to reap the benefits of 5G wireless connectivity. 5G networks provide blazing-fast wireless connectivity for industrial computers with speeds up to 100x faster than 4G LTE.

KEY BENEFITS OF 5G NETWORKS

Rugged edge computing provides a convergence of the latest technologies in compute, storage, and connectivity in hardened competing platforms. For the first time ever, new wireless technologies like 5G provide new advancements in connectivity for industrial edge computers with enhanced mobile broadband, low-latency connections, and massive machine-to-machine communications.

### COMPATIBLE LIST

<table>
<thead>
<tr>
<th>Model</th>
<th>DTB-M2BK</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCO-6000-ADL</td>
<td>V</td>
</tr>
<tr>
<td>RCO-6000-CML</td>
<td>V</td>
</tr>
<tr>
<td>ACO-6000-CML</td>
<td>V</td>
</tr>
<tr>
<td>RCD-6000-CFL</td>
<td>V</td>
</tr>
</tbody>
</table>

### WCO-3000-KBL-U SERIES

- Intel® 7th Gen. Intel® Core™ i5 / i3 Processor
- Full system IP65/IP67 level dustproof & waterproof
- Wide Operating Temperature (up to -40°C to 70°C)
- 9 to 50 VDC Wide Range Power Input
- Lockable M12 I/O Connectors
- Fanless Design

**Model** | **Description** |
--- | --- |
WCO-3000-KBL-U | IP65/IP67 Waterproof System with Intel® Kaby Lake-U processor |

**CPU Support**

- Intel® 7th Gen. Intel® Core™ i5 / i3 Processor

**Memory**

- 1x DDR4-1866/2133MHz SO-DIMM, up to 16GB

**Graphic Output**

- 1x VGA (Waterproof connector)

**LAN**

- 2x GbE RJ45 (Support Wake-on-LAN and PXE) by M12 X-Code 8-pin

**USB**

- 1x USB 3.2 Gen1 (5 Gbps, Waterproof connector), 2x USB 2.0 by M12 D-Code 8-pin

**Serial**

- 1x RS-232/422/485 by M12 D-Code 8-pin

**Storage**

- 1x internal 2.5" SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCI Express)

**Internal Expansion Slot**

- 2x Full-size mini-PCIe

**Power**

- 9-50 VDC, M12 A-code 4-pin

**Operating Temperature**

- -40°C to 70°C

**Dimensions (WxDxH)**

- 230 x 292 x 56.5 mm

**Weight**

- 4.18 Kg

**IP65**

- WCO-3000-KBL-U

**IP67**

- WCO-3000-KBL-U-IP67
ECO-1000 ENERGY PACK

• Extended Energy System for various Box/Panel PCs
• Maximum 16x High-Density Industrial Supercapacitor
• Maximum 200W output power
• 12 to 35 VDC wide range power input
• 12 or 24 VDC power output
• 4x DI + 4x DO with isolation
• -25°C to 65°C extended operating temperature
• Power ignition management

<table>
<thead>
<tr>
<th>Model</th>
<th>ECO-1000-8S</th>
<th>ECO-1000-16S (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>8x 370 Farads</td>
<td>16x 370 Farads</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>12 – 35 VDC</td>
<td></td>
</tr>
<tr>
<td>Input Connector</td>
<td>3-pin Terminal Block (V+, GND, IGN IN)</td>
<td></td>
</tr>
</tbody>
</table>
| Output Voltage | Charge mode: DC IN Voltage bypass (DC OUT = DC IN)  
Discharge mode: 12 or 24V |
| Output Power | Maximum 100W output  
Maximum 200W output |
| Output Connector | 3-pin Terminal Block (V+, GND, IGN Out)  
1x RS-232, 1x USB, 2x DI + 2x DO with isolation |
| Others | 1x Remote Power On/Off  
1x switch for 12V/24V  
1x PC/CAR Mode Switch, 1x Delay Time Switch |
| Power Ignition Sensing | Power Ignition Management |
| Operating Temp | -25°C to 65°C,  
-20°C to 65°C (Optional LCM) |
| Certification | CE, FCC Class A,  
EMC Conformity with EN50155, EN50121-3-2 |
| Dimensions (WxDxH) | 100 x 192 x 187.4 mm |
| Weight | 1.8 kg  
2.8 kg |
| Mounting | Wall Mounting, DIN Rail Mounting (Optional) |

The ECO Series is a power backup module that ensures power-reserve management in mission-critical applications. This standalone module leverages high-density, industrial grade supercapacitors for stable backup power during unforeseen power outages. The ECO Series uses supercapacitor technology that enables power management for extended operations in harsh environments, providing wider operating temperatures and longer operating life. This makes the ECO series incredibly durable and reliable for your embedded computing systems that require zero downtime.

Connect ECO’s GUI to an External System
Connect ECO’s Graphical User Interface to an external computer through USB or COM ports for remote monitoring and setup.

The power ignition management delays the system shutdown after engine shut off for a predetermined time interval.
This feature ensures that applications close properly, avoiding data loss or corruption.

The LCM module provides a quick setup and monitoring for field operators at the deployment location.
**INDUSTRIAL DISPLAY SYSTEMS**

**Mix-and-Match Solution**

The VIO Series supports various monitor and PC modules that provide mix-and-match flexibility for HMI automation, information, and communication applications for industrial deployments. This plug-and-play design enables scalable and upgradable solutions for the VIO to be configured into an industrial panel PC or a rugged touch monitor.

**Scalability in Panel Sizes**

10.4" / 12.1" / 15" / 15.6"
17" / 19" / 21.5" / 23.8"
(4:3 / 16:9)

**Different Frame Options**

Standard Frame
Thin Frame

**Flexibility in Touch Screen**

Resistive Touch
Capacitive Touch

**Diverse Platform Options**

Intel® Elkhart Lake
Intel® Kaby Lake-U
Intel® Bay Trail

**Easy Installation & Maintenance**

Offers user-friendly mechanical design. Just three steps, a system ready for multi-applications.

**System**

- **PC Module**
  - PC100-KBL-U
    - Kabylake-U
  - PC100-EHL
    - Elkhart Lake
  - PC100-J1900
    - Bay Trail
  - MX100H
    - Monitor Module

**Display**

- **Panel PC**
  - VIO-200
    - Thin Frame
  - VIO-200-MX100H
    - Thin Frame

**Touch**

- **Monitor**
  - VIO-200-MX100H
    - Thin Frame

**Mix-and-Match Solution**

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    - Kabylake-U
  - PC100-EHL
    - Elkhart Lake
  - PC100-J1900
    - Bay Trail
  - MX100H
    - Monitor Module

**Display**

- **Panel PC**
  - VIO-200
    - Thin Frame
  - VIO-200-MX100H
    - Thin Frame

**Touch**

- **Monitor**
  - VIO-200-MX100H
    - Thin Frame

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  - PC100-KBL-U
    - Kabylake-U
  - PC100-EHL
    - Elkhart Lake
  - PC100-J1900
    - Bay Trail
  - MX100H
    - Monitor Module

**Display**

- **Panel PC**
  - VIO-200
    - Thin Frame
  - VIO-200-MX100H
    - Thin Frame

**Touch**

- **Monitor**
  - VIO-200-MX100H
    - Thin Frame

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**System**

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  - PC100-KBL-U
    - Kabylake-U
  - PC100-EHL
    - Elkhart Lake
  - PC100-J1900
    - Bay Trail
  - MX100H
    - Monitor Module

**Display**

- **Panel PC**
  - VIO-200
    - Thin Frame
  - VIO-200-MX100H
    - Thin Frame

**Touch**

- **Monitor**
  - VIO-200-MX100H
    - Thin Frame

**Mix-and-Match Solution**

The VIO Series supports various monitor and PC modules that provide mix-and-match flexibility for HMI automation, information, and communication applications for industrial deployments. This plug-and-play design enables scalable and upgradable solutions for the VIO to be configured into an industrial panel PC or a rugged touch monitor.

**Scalability in Panel Sizes**

10.4" / 12.1" / 15" / 15.6"
17" / 19" / 21.5" / 23.8"
(4:3 / 16:9)

**Different Frame Options**

Standard Frame
Thin Frame

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Resistive Touch
Capacitive Touch

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Intel® Elkhart Lake
Intel® Kaby Lake-U
Intel® Bay Trail

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**System**

- **PC Module**
  - PC100-KBL-U
    - Kabylake-U
  - PC100-EHL
    - Elkhart Lake
  - PC100-J1900
    - Bay Trail
  - MX100H
    - Monitor Module

**Display**

- **Panel PC**
  - VIO-200
    - Thin Frame
  - VIO-200-MX100H
    - Thin Frame

**Touch**

- **Monitor**
  - VIO-200-MX100H
    - Thin Frame
### VIO-200-PC100-J1900 SERIES

- **CPU Onboard**: Intel® Celeron® J1900
- **Memory**: 1x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
- **Graphic Output**: 1x VGA, 1x DisplayPort
- **LAN**: 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- **USB, Serial, & Digital I/O**: 1x USB 3.2 Gen1 (5 Gbps), 3x USB 2.0, 6x RS-232/422/485 (with 2x internal), 16x isolated digital I/O
- **Storage**: 1x 2.5" SATA HDD Bay, 1x mSATA (shared by 1x Mini PCIe), 1x CFast (shared by 1x mSATA & 1x Mini PCIe)
- **Internal Expansion Slot**: 1x Full-size Mini PCIe Socket with USIM Socket (PCIe + USB + SATA)
- **Power**: 9-50 VDC, AT/ATX Select, 3-pin Terminal Block
- **Audio**: Line-out / Mic-in Phone Jack
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 12.1" / 15" / 17" / 19"
- **Touch Type**: Resistive 5-wire Touch / Projected Capacitive Touch
- **Universal Expansion Slot**: 0

### VIO-200-PC100-EHL SERIES

- **CPU Support**: Support Intel® EHL Processor (Up to 12W TDP)
- **Memory**: 1x 260-pin DDR4 2400/2667/3200MT/s SO-DIMM, Max. up to 32 GB
- **Graphic Output**: 1x DisplayPort, 1x Dual Channel 24 bit LVDS, 1x HDMI (Optional)
- **LAN**: 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- **USB, Serial, & Digital I/O**: 2x USB 3.2 Gen2 (10 Gbps), 4x USB 2.0 (2x Internal), 6x RS-232/422/485 (2x internal), 16x isolated digital I/O
- **Storage**: 1x 2.5" SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCIe)
- **M.2**: 1x M.2 [x2 Key, PCIe x1, USB 2.0, 2230]
- **Internal Expansion Slot**: 1x Full-size Mini PCIe Socket with USIM Socket (PCIe + USB + SATA)
- **Power**: 9-36 VDC, AT/ATX Select, 3-pin Terminal Block
- **Audio**: Line-out / Mic-in Phone Jack
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 12.1" / 15" / 17" / 19"
- **Touch Type**: Resistive 5-wire Touch / Projected Capacitive Touch
- **Universal Expansion Slot**: 0

---

**More info**

**Coming Soon**
### VIO-200-PC100-KBL-U SERIES

- **7th** Generation Intel® core i5/i3 Processor onboard (Kabylake-U)
- 12.1” ~ 23.8” Thin Frame Multi-functional All-in-One Panel PCs
- Projected Capacitive and 5-wire Resistive Touchscreen Available
- Triple Independent Display support by VGA, DisplayPort, and LVDS
- Rich in I/O Features with up to 2x RS-232/422/485, 6x USB 3.2 Gen1, 2x Full-size Mini PCIe, 2x LAN, 8x DI & 8x DO, CFast

### VIO-200-PC100-KBL-U-1

**CPU Onboard**
- Intel® 7th Gen. Kabylake-U Processor Core™ i5-7300U, Core™ i3-7100U

**Memory**
- 1x 260-Pin DDR4 1866/2133MHz SO-DIMM. Max. up to 16GB

**Graphic Output**
- 1x VGA, 1x DisplayPort, 1x Dual Channel 24-bit LVDS

**LAN**
- 2x GbE RJ45 (Support Wake-on-LAN and PXE)

**USB, Serial, & Digital I/O**
- 4x USB 3.2 Gen1 (5 Gbps), up to 6x RS-232/422/485, 16x isolated digital I/O

**Storage**
- 1x 2.5” SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCIe, 1x CFast [shared by 1x mSATA])

**Internal Expansion Slot**
- 2x Full-size Mini PCIe

**Power**
- 9-50 VDC, AT/ATX Select, 3-pin Terminal Block

**Audio**
- Line-out / Mic-in Phone Jack

**Operating Temperature**
- -10 °C to 60 °C
- -10 °C to 50 °C (19” and 23.8” Panel PC only)

**LCD Size**
- 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”

**Touch Type**
- Resistive 5-wire Touch / Projected Capacitive Touch

**Universal Expansion Slot**
- 2

---

### VIO-200-MX100H SERIES

- 12.1” ~ 23.8” Thin Frame Full Range Touch Monitors
- Projected Capacitive and 5-wire Resistive Touchscreen Available
- 9 to 48 VDC Wide Range Power Input
- Aluminum Die-casting Front Frame
- Front Panel IP65 Rating

**Touch Type**
- Resistive / Capacitive Touch

**VGA**
- 1x VGA Input

**HDMI**
- 1x HDMI Input

**DisplayPort**
- 1x DisplayPort Input

**USB**
- 1x USB 2.0 Input

**COM Port**
- 1x COM Port Input / Resistive

**Audio**
- 1x Audio Input

**Power**
- 9-48 VDC, AT/ATX Select, 3-pin Terminal Block

**Operating Temperature**
- -10 °C to 60 °C
- -10 °C to 50 °C (19” and 23.8” Panel PC only)

**LCD Size**
- 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”

---

### VIO-200-PC100-KBL-U

- **Model**: VIO-200-PC100-KBL-U
- **CPU Onboard**: Intel® 7th Gen. Kabylake-U Processor Core™ i5-7300U, Core™ i3-7100U
- **Memory**: 1x 260-Pin DDR4 1866/2133MHz SO-DIMM. Max. up to 16GB
- **Graphic Output**: 1x VGA, 1x DisplayPort, 1x Dual Channel 24-bit LVDS
- **LAN**: 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- **USB, Serial, & Digital I/O**: 4x USB 3.2 Gen1 (5 Gbps), up to 6x RS-232/422/485, 16x isolated digital I/O
- **Storage**: 1x 2.5” SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCIe, 1x CFast [shared by 1x mSATA])
- **Internal Expansion Slot**: 2x Full-size Mini PCIe
- **Power**: 9-50 VDC, AT/ATX Select, 3-pin Terminal Block
- **Audio**: Line-out / Mic-in Phone Jack
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”
- **Touch Type**: Resistive 5-wire Touch / Projected Capacitive Touch
- **Universal Expansion Slot**: 2

---

### VIO-200-MX100H

- **Model**: VIO-200-MX100H
- **Touch Type**: Resistive / Capacitive Touch
- **VGA**: 1x VGA Input
- **HDMI**: 1x HDMI Input
- **DisplayPort**: 1x DisplayPort Input
- **USB**: 1x USB 2.0 Input
- **COM Port**: 1x COM Port Input / Resistive
- **Audio**: 1x Audio Input
- **Power**: 9-48 VDC, AT/ATX Select, 3-pin Terminal Block
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”

---

### VIO-200-PC100-KBL-U SERIES

- **Model**: VIO-200-PC100-KBL-U
- **CPU Onboard**: Intel® 7th Gen. Kabylake-U Processor Core™ i5-7300U, Core™ i3-7100U
- **Memory**: 1x 260-Pin DDR4 1866/2133MHz SO-DIMM. Max. up to 16GB
- **Graphic Output**: 1x VGA, 1x DisplayPort, 1x Dual Channel 24-bit LVDS
- **LAN**: 2x GbE RJ45 (Support Wake-on-LAN and PXE)
- **USB, Serial, & Digital I/O**: 4x USB 3.2 Gen1 (5 Gbps), up to 6x RS-232/422/485, 16x isolated digital I/O
- **Storage**: 1x 2.5” SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCIe, 1x CFast [shared by 1x mSATA])
- **Internal Expansion Slot**: 2x Full-size Mini PCIe
- **Power**: 9-50 VDC, AT/ATX Select, 3-pin Terminal Block
- **Audio**: Line-out / Mic-in Phone Jack
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”
- **Touch Type**: Resistive 5-wire Touch / Projected Capacitive Touch
- **Universal Expansion Slot**: 2

---

### VIO-200-MX100H SERIES

- **Model**: VIO-200-MX100H
- **Touch Type**: Resistive / Capacitive Touch
- **VGA**: 1x VGA Input
- **HDMI**: 1x HDMI Input
- **DisplayPort**: 1x DisplayPort Input
- **USB**: 1x USB 2.0 Input
- **COM Port**: 1x COM Port Input / Resistive
- **Audio**: 1x Audio Input
- **Power**: 9-48 VDC, AT/ATX Select, 3-pin Terminal Block
- **Operating Temperature**: -10 °C to 60 °C
- **LCD Size**: 4:3 / 16:9 / 13” / 19” / 16:9 / 21.5” / 23.8”
The Display Modules VIO-200 series are compatible with PC modules PC400, PC100-EHL, PC100 series and monitor modules MX100H series for different display sizes and touchscreens. These modules allow to be used for configuring, upgrading and maintaining your Panel PC or touch monitor.

### 4:3 SERIES

**Thin Frame**

<table>
<thead>
<tr>
<th>Model</th>
<th>VIO-212</th>
<th>VIO-215</th>
<th>VIO-217</th>
<th>VIO-219</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Size</td>
<td>12.1”</td>
<td>15”</td>
<td>17”</td>
<td>19”</td>
</tr>
<tr>
<td>Max. Resolution</td>
<td>1024 x 768 (XGA)</td>
<td>1280 x 1024 (SXGA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brightness (cd/m²)</td>
<td>500</td>
<td>350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>700:1</td>
<td>800:1</td>
<td>1000:1</td>
<td></td>
</tr>
<tr>
<td>LCD Color</td>
<td>16.2M</td>
<td>16.7M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pixel Pitch (mm)</td>
<td>0.24 x 0.24 (H x V)</td>
<td>0.297 x 0.297 (H x V)</td>
<td>0.264 x 0.264 (H x V)</td>
<td>0.294 x 0.294 (H x V)</td>
</tr>
<tr>
<td>Viewing Angle (H-V)</td>
<td>160 / 160</td>
<td>170 / 160</td>
<td>170 / 160</td>
<td></td>
</tr>
<tr>
<td>Internal Speaker</td>
<td>AMP 5W x 5W</td>
<td>AMP 10W x 10W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Type</td>
<td>Resistive 5-wire Touch / Projected Capacitive Touch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10°C to 60°C</td>
<td>-10°C to 60°C</td>
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### 16:9 SERIES

**Thin Frame**

<table>
<thead>
<tr>
<th>Model</th>
<th>VIO-W215</th>
<th>VIO-W221</th>
<th>VIO-W224</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Size</td>
<td>15.6”</td>
<td>21.5”</td>
<td>23.8”</td>
</tr>
<tr>
<td>Max. Resolution</td>
<td>1920 x 1080 (Full HD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brightness (cd/m²)</td>
<td>400</td>
<td>300</td>
<td>350</td>
</tr>
<tr>
<td>Contrast Ratio</td>
<td>700:1</td>
<td>5000:1</td>
<td>1000:1</td>
</tr>
<tr>
<td>LCD Color</td>
<td>16.7M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pixel Pitch (mm)</td>
<td>0.17925 (H) x 0.17925 (V)</td>
<td>0.248 (H) x 0.248 (V)</td>
<td>0.274 (H) x 0.274 (V)</td>
</tr>
<tr>
<td>Viewing Angle (H-V)</td>
<td>160 / 160</td>
<td>178 / 178</td>
<td></td>
</tr>
<tr>
<td>Internal Speaker</td>
<td>AMP 10W x 10W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Type</td>
<td>Resistive 5-wire Touch / Projected Capacitive Touch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10°C to 60°C</td>
<td>-10°C to 60°C</td>
<td>-10°C to 60°C</td>
</tr>
</tbody>
</table>
## PC100-J1900 Series

- **Intel® Celeron® J1900 Processor** (Quad Core, 2.0GHz)
- Dual Independent Display support by VGA and DisplayPort
- Rich I/O Features including the Support up to 8x RS-232/422/485, 1x USB 3.2 Gen1, 3x USB 2.0, 2x Full-size
- Mini PCIe, 2x LAN, 8x DI & 8x DO
- Power Ignition Management Built-in
- Wide Operating Temperature -40°C to 70°C

### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>PC100-J1900</th>
<th>PC100-J1900-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Onboard</td>
<td>Intel® Celeron® J1900</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>1x 204-pin DDR3L-1666/1333 50-DIMM, up to 8GB</td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x VGA, 1x DisplayPort</td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td></td>
</tr>
<tr>
<td>USB, Serial &amp; Digital I/O</td>
<td>1x USB 3.2 Gen1 (5 Gbps), 3x USB 2.0, 4x RS-232/422/485 (2x external), 1x isolated digital I/O</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>9-50 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>Line-out / Mic-in Phone Jack</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 70°C</td>
<td></td>
</tr>
<tr>
<td>Universal Expansion Slot</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

## PC100-EHL Series

- **Intel® Atom® x6425E or Intel® Celeron® Processor J6413**
- Triple Independent Display support by DisplayPort, HDMI and LVDS
- Rich I/O Features with up to 8x RS-232/422/485, 2x USB 3.2 Gen2, 1x Full-size Mini PCIe, 2x LAN, 8x DI & 8x DO
- Wide Operating Temperature -40°C to 70°C
- Compatible with All Premio VIO Series Display Module
- Aluminum Die-casting Front Frame
- Front Panel IP65 Rating
- Optional PCIe/PCI expansion slot

### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>PC100-EHL</th>
<th>PC100-EHL-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Onboard</td>
<td>Support Intel® EHL Processor (Up to 12W TDP) Intel® Atom® Processor x6425E, Quad Core, 1.5 MB Cache, 2.0 GHz, ECC supported Intel® Celeron® Processor J6413, Quad Core, 1.5 MB Cache, 1.8 GHz</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>1x 260-Pin DDR4 2400/2667/3200MT/s 50-DIMM, Max. up to 32 GB</td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x DisplayPort, 1x Dual Channel 24-bit LVDS, 1x HDMI (Optional)</td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td></td>
</tr>
<tr>
<td>USB, Serial &amp; Digital I/O</td>
<td>2x USB 3.2 Gen2 (10 Gbps), 4x USB 2.0 (2x external), 4x RS-232/422/485 (2x external), 1x isolated digital I/O</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1x 2.5” SATA HDD Bay with RAID 0, 1, support, 1x mSATA (shared by 1x Mini PCIe)</td>
<td></td>
</tr>
<tr>
<td>M.2</td>
<td>1x M.2 (B Key, PCIe x1, USB 2.0, 2x30) 1x M.2 (B Key, PCIe x1, USB 2.0, 32-bit, 2236/2242/2260/2280)</td>
<td></td>
</tr>
<tr>
<td>Internal Expansion Slot</td>
<td>1x Full-size Mini PCIe (USB 2.0, SATA)</td>
<td></td>
</tr>
<tr>
<td>PCIe/PCI Expansion</td>
<td>1x PCIe x4 (PCIe x1 lanes) or 1x PCIe</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>9-36 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>Line-out / Mic-in Phone Jack</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 70°C</td>
<td></td>
</tr>
<tr>
<td>Universal Expansion Slot</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
PC100-KBL-U SERIES

- 7th Generation Intel® Core™ i5/i3 Processor onboard (Kabylake-U)
- Triple Independent Display support by VGA, DisplayPort, and LVDS
- Rich I/O Features with up to 6x RS-232/422/485, 4x USB 3.2 Gen1, 2x Full-size Mini PCIe, 2x LAN, 8x DI & 8x DO, CFast
- Wide Operating Temperature -40°C to 70°C
- Compatible with All Premis ViO Series Display Module
- Aluminum Die-casting Front Frame
- Front Panel IP65 Rating

<table>
<thead>
<tr>
<th>Model</th>
<th>PC100-KBL-U</th>
<th>PC100-KBL-U-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Onboard</td>
<td>Intel® 7th Gen. (Kabylake-U) Processor Core™ i5-7300U, Core™ i3-7100U</td>
<td>PC Module based on Intel® Kabylake-U processors with two universal I/O bracket</td>
</tr>
<tr>
<td>Memory</td>
<td>1x 260-Pin DDR4 1866/2133MHz SODIMM, Max. up to 16GB</td>
<td></td>
</tr>
<tr>
<td>Graphic Output</td>
<td>1x VGA, 1x DisplayPort, 1x Dual Channel 24 bit LVDS</td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>2x GbE RJ45 (Support Wake-on-LAN and PXE)</td>
<td></td>
</tr>
<tr>
<td>USB, Serial, &amp; Digital I/O</td>
<td>4x USB 3.2 Gen1 (5 Gbps), up to 6x RS-232/422/485, 16x isolated digital I/O</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1x 2.5&quot; SATA HDD Bay with RAID 0, 1 support, 1x mSATA (shared by 1x Mini PCIe), 1x CFast (shared by 1x mSATA)</td>
<td></td>
</tr>
<tr>
<td>Internal Expansion Slot</td>
<td>2x Mini PCIe</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>9-50 VDC, AT/ATX Select, 3-pin Terminal Block</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>Line-out / Mic-in Phone Jack</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 70°C</td>
<td></td>
</tr>
</tbody>
</table>

Universal Expansion Slot 0

MX100H SERIES

- Configure System by Demand
- 9 to 48 VDC Wide Range Power Input
- Aluminum Die-casting Front Frame
- Front Panel IP65 Rating

<table>
<thead>
<tr>
<th>Model</th>
<th>MX100H</th>
</tr>
</thead>
<tbody>
<tr>
<td>VGA</td>
<td>1x VGA Input</td>
</tr>
<tr>
<td>HDMI</td>
<td>1x HDMI Input</td>
</tr>
<tr>
<td>DisplayPort</td>
<td>1x DisplayPort Input</td>
</tr>
<tr>
<td>USB</td>
<td>1x USB 2.0 Input</td>
</tr>
<tr>
<td>COM Port</td>
<td>1x COM Port Input (Resistive Touch Only)</td>
</tr>
<tr>
<td>Audio</td>
<td>1x Audio Input</td>
</tr>
<tr>
<td>Power</td>
<td>9-48 VDC, AT/ATX Select, 3-pin Terminal Block</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10°C to 60°C</td>
</tr>
</tbody>
</table>
**WIO-W221C-KBL-U SERIES**

- 21.5" TFT FHD 16:9 LCD with Projected Capacitive Touch
- Support 7th Gen. Intel® Core™ i5/i3 Processor
- 1x 260-pin DDR3L SO-DIMM. Max up to 8GB
- 1x mSATA (shared by 1x Mini PCIe), 2x internal SIM socket
- Single display supported by 1x VGA (waterproof connector)
- 2x USB 3.2 Gen1 (5 Gbps, waterproof connector)
- 9 to 50 VDC wide range power input
- -10°C to 60°C extended operating temperature
- Full system IP66 compliant
- Two 10W internal speakers built-in
- Multi-language OSD built-in

**CPU Onboard**
- Intel® 7th Gen. (Kaby Lake-U) Processor Core™ i5-7300U, Core™ i3-7100U

**Memory**
- 8GB DDR4 SO-DIMM

**Graphic Output**
- 1x Waterproof VGA

**LAN**
- 2x LAN by M12 X-Code 8-pin

**USB & Serial**
- 2x USB 3.2 Gen1 (5 Gbps, Waterproof connector), 1x RS-232/422/485 by M12 D-Code 8-pin

**Storage**
- 1x 128GB mSATA SSD
- 1x Full-size Mini PCIe

**Power**
- 9-50 VDC, M12 A-code 6-pin

**Operating Temperature**
- -10 °C to 60 °C

**LCD Size**
- 21.5" (16:9) Full HD

**Brightness (cd/m²)**
- 300
- 1000 nits (Optional)

**Touch Type**
- Projected Capacitive Touch, 5 Points, 7H Surface Hardness

---

**SIO-200-J1900 SERIES**

- 12", 15", 15.6", 21.5", 23.8" TFT FHD 16:9 LCD with resistive 5-wire / projected capacitive touch
- Intel® Celeron® processor J1900, 2.0 GHz or Intel® Core™ i5-8365UE Processor
- 1x 4GB DDR3L 5-DIMM, 1x 64GB mSATA
- 1x M12 LAN, 2x USB 2.0 by M12 8-pin, 1x M12 CSM
- 1x Full-size Mini PCIe for expansion
- Support 110V to 240V AC power input by M12 Power Connector
- -20°C to 60°C operating temperature

**CPU Support**
- Intel® Celeron® Processor J1900, Quad Core, 2MB Cache, 2.0 GHz

**Memory**
- 4GB DDR3L 5-DIMM

**LAN**
- 1x LAN by M12 X-Code 8-pin

**USB & Serial**
- 2x USB 2.0 by M12 A-code 8-pin, 1x RS-232/422/485 by M12 X-Code 8-pin

**Storage**
- 1x 64GB mSATA SSD
- 1x Full-size Mini PCIe

**Power**
- AC IN 110V-240V 60Hz, M12 A-code 4-pin

**Operating Temperature**
- -20°C to 60°C

**LCD Size**
- 12.1" (4:3) XGA
- 15" (4:3) XGA
- 15.6" (16:9) Full HD
- 21.5" (16:9) Full HD
- 23.8" (16:9) Full HD

**Brightness (cd/m²)**
- 600
- 300
- 450

**Touch Type**
- Resistive 5-wire Touch / Projected Capacitive Touch / 7H Surface Hardness
Premio’s line of industrial motherboards and single board computers represent the standard of embedded computing as well as the future of data processing and I/O connectivity. From OEM/ODM enterprise computing designs to embedded single board computer applications, Premio provides reliability and longevity with standard off-the-shelf industrial grade motherboards for the most challenging embedded deployments.

We also provide end-to-end engineering services to ensure your configuration requirements and solve your mechanical design challenges. From a full custom solution to a small change in the I/O, we can adapt each motherboard to comply with your specifications without compromising performance.
## BOARDS SERIES

Premio offers industrial-grade scalability with standard motherboards and OEM system design. Standard form factors include: Single board computers (1.8” Femto-ITX, 2.5” Pico-ITX, and 3.5” SBCs); Mini-ITX; and Micro-ATX.

### 1.8” FEMTO ITX SERIES

<table>
<thead>
<tr>
<th>Model</th>
<th>CT-NR101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>DDR4-2666 signal channel Memory down, up to 8GB, Default 4GB</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI SPI 64Mbit</td>
</tr>
<tr>
<td>TPM</td>
<td>TP 2.0</td>
</tr>
<tr>
<td>Display Interface</td>
<td>2x Micro HDMI</td>
</tr>
<tr>
<td>Rear I/O</td>
<td>1x RJ45, 2x Micro HDMI, 1x Type C USB 3.1 Gen 2</td>
</tr>
<tr>
<td>Internal I/O</td>
<td>1x Front Panel, 1x 8-bit DIO (4-in/4-out)</td>
</tr>
<tr>
<td>Power</td>
<td>2-pin Terminal Block</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to 60°C</td>
</tr>
<tr>
<td>Dimension</td>
<td>86 x 55 mm</td>
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</tbody>
</table>

### 2.5” PICO ITX SERIES

<table>
<thead>
<tr>
<th>Model</th>
<th>CT-PB101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>1x 266-Pin DDR3L, 1064/1333MHz SO-DIMM</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI 64Mbit SPI BIOS</td>
</tr>
<tr>
<td>Watchdog</td>
<td>Software Programmable Supports 1-255 sec. System Reset</td>
</tr>
<tr>
<td>Display Interface</td>
<td>1x HDMI, 1x LVDS</td>
</tr>
<tr>
<td>Rear I/O</td>
<td>1x LVDS &amp; 1x LVDS background, 1x RS-232/242/485, 1x RS-232, 2x USB 2.0</td>
</tr>
<tr>
<td>Internal I/O</td>
<td>1x LVDS, 1x LVDS background, 1x RS-232/242/485, 1x RS-232, 2x USB 2.0, 1x SATA 3.0bit/s, 1x Front panel audio, 1x 8-bit DIO (4-in/4-out), 1x Front panel, 1x SMBus</td>
</tr>
<tr>
<td>Power</td>
<td>12V DC Input, 1x 2-pin power connector</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-10°C to 70°C</td>
</tr>
<tr>
<td>Dimension</td>
<td>100 x 72mm</td>
</tr>
</tbody>
</table>

### 3.5” SBC SERIES

<table>
<thead>
<tr>
<th>Model</th>
<th>CT-DWL01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>1x 266-Pin DDR3L SO-DIMM slot, Max. up to 32GB</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI uEFI 256MB SPI flash</td>
</tr>
<tr>
<td>Display Interface</td>
<td>1x DisplayPort, 1x LVDS, 1x HDMI</td>
</tr>
<tr>
<td>Rear I/O</td>
<td>4x USB 3.2 Gen 2, 2x RJ45 10/100 LAN, 1x DisplayPort, 1x HDMI</td>
</tr>
<tr>
<td>Internal I/O</td>
<td>1x LVDS, 1x DisplayPort, 1x HDMI</td>
</tr>
<tr>
<td>Power</td>
<td>12V DC Input, 1x 2-pin power connector</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to 70°C</td>
</tr>
<tr>
<td>Dimension</td>
<td>146 x 102 mm</td>
</tr>
</tbody>
</table>

**Motherboards**

**Model**

- **CT-NR101**
- **CT-PB101**
- **CT-DWL01**
- **CT-DBT02**
- **CT-DR101**

**Processor**

- **AMD Ryzen™ Embedded R1000/V1000 Series Processor**
- **Intel® Atom™ Processor**
- **Intel® Celeron® Processor J1900**
- **Intel® Core™ i7-8665UE, i5-8365UE, i3-8145UE or Intel® Celeron® Processor 4305UE**

**Memory**

- **1x 266-Pin DDR3L, 1064/1333MHz SO-DIMM**
- **Up to 32GB**
- **Supports 8th Gen Intel® Core™ Processor (15 TDP)**
- **Inteli® Atom™ Processor, Celeron® Processor J1900**
- **Max. up to 256GB**

**BIOS**

- **AMI uEFI 256Mbit SPI Flash**
- **AMI uEFI 8MB SPI Flash**
- **AMI uEFI 8MB SPI Flash**

**Watchdog**

- **Software Programmable Supports 1-255 sec. System Reset**
- **H/W Reset, 0-255 steps Step = 1 sec. or 1 min**

**Temperature**

- **-40°C to 70°C**
- **-20°C to 70°C**
- **-40°C to 70°C**

**Dimension**

- **86 x 55 mm**
- **100 x 72mm**
- **146 x 102 mm**
**MINI ITX SERIES**

**Model:** CT-XCL01
- LGA 1151 Socket supporting 6th Gen Intel® Core™ Desktop Processor, Intel® Core™ i7-6700TE / i5-6500TE / i3-6100TE
- Memory 2x 260-Pin DDR4 1866/2133MHz DIMM
- BIOS AMI uEFI 128MB SPI flash
- Watchdog Software Programmable Supports 1~255 sec. System Reset
- Display Interface 1x VGA, 1x DVI-D, 1x DisplayPort
- Rear IO 1x VGA, 1x DVI-D, 2x RS-232/422/485, 4x USB 3.2 Gen1 (5 Gbps), 2x USB 2.0, 1x Line-out, 1x Mic-in, 1x PS/2 KB/MS
- Internal I/O 1x 8-bit DIO (4-in/4-out)
- Power ATX power, 1x DisplayPort (DP 1.2)
- Operating Temperature 0°C to 60°C
- Dimension 244 x 244mm

**Model:** CT-XSL01
- LGA 1151 socket supporting 6th Gen Intel® Core™ Desktop Processor, Intel® Core™ i7-9700E / i5-9500E / i3-9100E or Intel® Pentium® G5400T, G5400
- Memory 4x 288-Pin DDR4 1866/2133MHz DIMM
- BIOS AMI uEFI 256MB SPI flash
- Watchdog Software Programmable Supports 1~255 sec. System Reset
- Display Interface 1x VGA, 1x DVI-D, 2x DisplayPort (DP 1.2)
- Rear IO 1x VGA, 1x DVI-D, 2x RS-232/422/485, 4x USB 3.2 Gen2, 2x USB 2.0, 1x Line-out, 1x Mic-in
- Internal I/O 1x 8-bit DIO (4-in/4-out)
- Power ATX power, 2x12-pin and 2x2-pin power connector
- Operating Temperature 0°C to 60°C
- Dimension 244 x 244mm

**MICRO ATX SERIES**

**Model:** CT-MSL01
- LGA 1151 socket supporting 6th Gen Intel® Core™ Desktop Processor, Intel® Core™ i7-9700TE / i5-9500TE / i3-9100TE
- Memory 4x 288-Pin DDR4 1866/2133MHz DIMM
- BIOS AMI uEFI 128MB SPI flash
- Watchdog Software Programmable Supports 1~255 sec. System Reset
- Display Interface 1x VGA, 1x DVI-D, 2x DisplayPort
- Rear IO 1x VGA, 1x DVI-D, 4x RS-232/422/485, 4x USB 3.2 Gen2, 2x RJ45, 1x Line-out, 1x Mic-in
- Internal I/O 1x 8-bit DIO (4-in/4-out)
- Power ATX power, 1x DisplayPort (DP 1.2)
- Operating Temperature 0°C to 60°C
- Dimension 244 x 244mm

**Model:** CT-MCL01
- LGA 1151 socket supporting 8th Gen Intel® Core™ i3/i5/i7 Processor
- Memory 4x 288-Pin DDR4 1866/2133MHz DIMM
- BIOS AMI uEFI 256MB SPI flash
- Watchdog Software Programmable Supports 1~255 sec. System Reset
- Display Interface 1x VGA, 1x DVI-D, 2x DisplayPort
- Rear IO 1x VGA, 1x DVI-D, 4x RS-232/422/485, 4x USB 3.2 Gen2, 2x RJ45, 1x Line-out, 1x Mic-in
- Internal I/O 1x 8-bit DIO (4-in/4-out)
- Power ATX power, 2x12-pin and 2x2-pin power connector
- Operating Temperature 0°C to 60°C
- Dimension 264 x 264mm
KCO-2000-CFL SERIES

Certification-ready industrial computers are embedded computing solutions that serve as key building blocks for enterprise and IoT applications that require processing. The KCO Series of industrial computers is a commercial off-the-shelf (COTS) computing solution that provides reliability, regulatory safety, and embedded longevity with Premio’s extended lifecycle support. These certification-ready industrial computers are deployable in IoT applications in markets for kiosks, ATMs, security and surveillance, metrology and automation inspection, and mobile medical carts.

- 2U Slim Form Factor (SFF) Chassis Tool-less Mounting Options
- Micro-ATX Motherboard Q270 Chipset
- Support Intel 8th/9th Gen Core Processors
- DDR4 Memory up to 128GB
- 1x Hot-swappable 2.5” SATA drive

Model | KCO-2000-CFL
--- | ---
CPU Support | Support 8th/9th Gen Intel® CFL-R S Processor (LGA 1151, 35W TDP)
Memory | 4x 288-Pin DDR4 2133/2400/2666MHz DIMM. Max. up to 128GB
Graphic Output | 1x VGA, 1xDVI, 2x DP
LAN | GbE1: Intel I219LM (Support Wake-on-LAN and PXE) GbE2: Intel I210-AT (Support Wake-on-LAN and PXE)
USB & Serial | 2x RS-232/422/485 + 2x RS-232, 6x USB 3.2 Gen1 (5 Gbps), 7x USB 2.0
Storage | 1x Hot-swappable 2.5” SATA Drive Bay (support H=7mm)
Internal Expansion Slot | 1x PCIe x16 slot (low profile, up to 9” card length)
Power | AT, ATX
Audio | Line-out / Mic-in Phone Jack
Operating Temperature | 0°C to 35°C
Dimensions (WxDxH) | 12.75” x 10.75” x 3.45”
Weight | 11 lbs (barebone w/ chassis, mb, and PSU only)
Certifications | CE, FCC, UL Certified

KCO-3000-CFL SERIES

- 3U Compact Chassis with Rack Mount Options
- Micro-ATX Motherboard Q370 Chipset
- Support Intel 8th/9th Gen Core Processors
- DDR4 Memory up to 128GB
- Expansion Slots: 1x PCIe x16 full height, up to 10” card length, 2x PCIe x4
- 13 USB Ports for IoT devices
- 1x 3.5” SATA HDD drive or 2x 2.5” SSD/HDD
- 1x M.2 (M Key), 1x M.2 (E Key)
- Tool-less Washable Dust Filter
- CE, FCC, UL Certified

Model | KCO-3000-CFL
--- | ---
CPU Support | Support 8th/9th Gen Intel® CFL-R S Processor (LGA 1151, 35W TDP)
Memory | 4x 288-Pin DDR4 2133/2400/2666MHz DIMM. Max. up to 128GB
Graphic Output | 1x VGA, 1x DVI, 2x DP
LAN | GbE1: Intel I219LM (Support Wake-on-LAN and PXE) GbE2: Intel I210-AT (Support Wake-on-LAN and PXE)
USB & Serial | 2x RS-232/422/485 + 2x RS-232, 6x USB 3.2 Gen1 (5 Gbps), 7x USB 2.0
Storage | 1x 3.5” SATA HDD drive or 2x 2.5” SSD/HDD up to 15mm
Internal Expansion Slot | 1x PCIe x16 full height, up to 10” card length, 1x PCIe x4, 1x PCIe x4
Power | AT, ATX
Audio | Line-out / Mic-in Phone Jack
Operating Temperature | 0°C to 45°C
Dimensions (WxDxH) | 13.15” x 11.78” x 5.23”
Weight | 12.5 lbs (barebone w/ chassis, mb, and PSU only)
Certifications | CE, FCC, UL Certified