Dual Intel® Core™ i7 Gen5, 6U OpenVPX™ Single Board Computer

- Dual Intel® Core™ i7 Gen5
- Conduction-cooled ruggedization (-40°C to +85°C)
- PCIe Gen3 x8 with support for NTB port
- Gigabit Ethernet and 10 Gigabit Ethernet
- SATA III - USB 3.0

The CIO5-2040 is a 6U OpenVPX Single Board Computer (SBC) integrating two Intel Core i7 Gen5 processors. It is specifically designed for the most demanding networking and computing applications deployed in space-constrained environments requiring conduction-cooled equipment.

The CIO5-2040 is built to withstand extreme temperatures, shock and vibrations with an operating temperature range of -40°C to +85°C. With six SATA III, four GbE and four 10GbE it offers high data throughput to access storage and communicate over Ethernet.

Mercury’s BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury’s solutions power a wide variety of critical defense and intelligence programs.
BuiltSAFE for Avionics

Mercury’s expertise and experience in safety certifiable solutions has been built on successful execution of dozens of programs over three decades. This domain knowledge is the foundation of our BuiltSAFE portfolio of open architecture modules, systems and software for avionics, communications, video servers, and mission computing.

Technical Specifications

**Compliance**
- 6U VPX (VITA 46)/OpenVPX (VITA 65)
- Conduction-cooled (VITA 48.2)
- Slot profile SLT6-PAY-4F1Q2U2T-10.2.1

**Power Consumption**
- Typical 110W

**Processor**
- 2x Intel Core i7 Gen5 (E5860EQ) @ 2.7 GHz (4 cores)
  - Intel QM87 Express chipset

**Memory**
- 2x 16GB DDR3L ECC (one per CPU node)
- 2x removable storage mezzanines with two independent 32GB flash

**I/Os**
- High speed Links
  - 2x GbE 1000Base-T (one per CPU node)
  - 2x GbE 1000Base-X (one per CPU node)
  - 4x 10GbE 10GBase-KX4, Intel 82599 NIC (two per CPU node)
  - 3x PCIe x8 Gen3 links

**Connections**
- 6x SATA @ 6Gbps (three per CPU node)
- 2x USB 3.0 (one per CPU node)
- 8x USB 2.0 (four per CPU node)

**Video**
- Four HDMI (two per CPU node)

**Other**
- GPIOs
  - Serial port RS232 (one per CPU node)

**Software**

- Board support package
  - Windows
  - Linux

- Built-in Tests (PBIT, CBIT and IBIT)

**Product Ordering**

- CIO5-2040AA40LC Dual Intel Core i7 Gen5 6U OpenVPX Single Board Computer with two 16GB of DDR3L ECC, 0.85” pitch

**Environmental Specifications**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Limits, standards</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-operating temperature</td>
<td>-55°C to 105°C (C4)</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>-1,500 to 60,000 feet</td>
<td>May require conformal coating</td>
</tr>
<tr>
<td>Fungus resistance</td>
<td>No nutrient materials</td>
<td></td>
</tr>
<tr>
<td>Workmanship</td>
<td>IPC-A-160 class 3</td>
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<tr>
<td>Soldering</td>
<td>IPC-J-STD-001 class 3</td>
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<tr>
<td>PCB Manufacturing</td>
<td>IPC-A-600 class 3</td>
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<tr>
<td>Conformal coating</td>
<td>IPC-CC-830</td>
<td>Optional</td>
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<tr>
<td>Materials</td>
<td>REACH compliant</td>
<td>ROHS variants as an option</td>
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<tr>
<td>Flammability</td>
<td>UL 94 Class V-0</td>
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<tr>
<td>Quality</td>
<td>EN 9100:2008</td>
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