**µTCA Virtex-5 Data Processing “CoBo” AMC – CM044**

**KEY FEATURES**

- Data Processing CoBo (Concentration Board) in AMC format
- Double module, full-size compliant to MicroTCA.0
- Virtex-5 FPGA (XC5VFX100T in FFG 1136 package)
- 256 MB DDR3 DDR2 SDRAM and 32 MB Flash
- Dual VHDCI, two dual-coax LEMO, and one micro USB connector via the front panel
- Port 0 and Port 4 for GbE
- Port 1 for GET Clocks
- Ports 8-11 for GET Data
- Activity and MGT LEDs
- Slow/Fast control of ASIC ADC
- Partial reconfiguration and firmware upgrade support
- Advanced diagnostic, monitoring and debugging

**Benefits of Choosing VadaTech**

- Data processing performance of Virtex-5 FPGA with ASIC A/D Converter
- Electrical, mechanical, software, and system-level expertise in house
- Full ecosystem of front and rear boards, enclosures, specialty modules, and test/dev products from one source
- AS9100 and ISO9001 certified company

The CM044 AMC-based Concentration Board (CoBo) is a high-performance data processor designed according to the PICMG MTCA.0 specifications. The board is targeted for General Electronics (GET) for Time Projection Chamber (TPC) project. The AMC module intelligently reads, reduces and concentrates the high data throughput of TPC detectors.

The CoBo AMC interfaces to external ASIC ADCs, timing boards, controller and storage farms. The module comes in the double module, full-size AMC format with 1GbE on ports 0, 4. Port 1 is used for GET Clocks and Ports 8-11 are used for GET Data.

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COMPLETE MICRO TCA SYSTEM (GET COMPATIBLE)

For a complete MicroTCA system (GET compatible, the following products are needed from VadaTech:

- MicroTCA Chassis: VT893-123-000-000
- 792W DC Power Supply: UTC010-200-000-010
- MCH: UTC002-210-400-010
- Optional JTAG Module: UTC008-000-000-000

BLOCK DIAGRAM

![Block Diagram](image)

Figure 1: Block Diagram

FRONT PANEL

![Front Panel](image)

Figure 2: Representative Front Panel
# SPECIFICATIONS

<table>
<thead>
<tr>
<th><strong>Architecture</strong></th>
<th><strong>Dimensions</strong></th>
<th>Double module, full-size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>AMC Data Processing Module</td>
<td>Xilinx Virtex-5 XC5VFX100T DDR2 memory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Standards</strong></th>
<th><strong>AMC</strong></th>
<th>Type</th>
<th>AMC.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MTCA</strong></td>
<td>Type</td>
<td>MTCA.0</td>
<td></td>
</tr>
<tr>
<td><strong>Module Management</strong></td>
<td>IPMI</td>
<td>IPMI version 2.0</td>
<td></td>
</tr>
<tr>
<td><strong>Ethernet</strong></td>
<td>GbE</td>
<td>GbE on Ports 0 and 4</td>
<td></td>
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<thead>
<tr>
<th><strong>Configuration</strong></th>
<th><strong>Power</strong></th>
<th>CM044</th>
<th>36 watts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td>Temperature</td>
<td>Operating Temperature: -5° to 55°C (air flow &gt; 400LFM) industrial and military versions also available. (See environmental spec sheet) Storage Temperature: -40° to +85°C</td>
<td></td>
</tr>
<tr>
<td>Vibration</td>
<td>Operating 9.8 m/s² (1.0 G), 5 to 500Hz</td>
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<tr>
<td>Shock</td>
<td>30Gs on each axis</td>
<td></td>
<td></td>
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<tr>
<td>Relative Humidity</td>
<td>5 to 90 per cent, non-condensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Front Panel</strong></td>
<td>Interface Connectors</td>
<td>2x Dual VHDCI Connectors, RS-232 and Dual LEMO Connectors</td>
<td></td>
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<tr>
<td><strong>LEDs</strong></td>
<td>IPMI management control</td>
<td></td>
<td></td>
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<tr>
<td><strong>Mechanical</strong></td>
<td>Hot swap ejector handle</td>
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<tr>
<th><strong>Conformal Coating</strong></th>
<th>Humiseal 1A33 Polyurethane Optional</th>
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<tbody>
<tr>
<td></td>
<td>Humiseal 1B31 Acrylic (Optional)</td>
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<thead>
<tr>
<th><strong>Other</strong></th>
<th><strong>MTBF</strong></th>
<th>MIL Hand book 217-F @ TBD Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Certifications</strong></td>
<td>Designed to meet FCC, CE and UL certifications where applicable</td>
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<tr>
<td><strong>Standards</strong></td>
<td>VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards</td>
<td></td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>Limited hardware warranty from VadaTech. Contact factory for details.</td>
<td></td>
</tr>
<tr>
<td><strong>Trademarks and Disclaimer</strong></td>
<td>The VadaTech logo is a registered trademark of VadaTech, Inc. Other registered trademarks are the property of their respective owners. AdvancedTCA™ and the AdvancedMC™ logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice</td>
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ORDERING OPTIONS

CM044 – 000 – 000 – 00J

*See CoBo specification document for list of collaborators.

RELATED PRODUCTS

VT893
MTCA Chassis

UTC002 MCH

UTC010 Power Module

CONTACT US

VadaTech Corporate Office
198 N. Gibson Road,
Henderson, NV 89014
Email: info@vadatech.com
Telephone: +1 702 896-3337
Fax: +1 702 896-0332

Asia Pacific Sales Office
7 Floor, No. 2, Wenhu Street, Neihu District,
Taipei 114, Taiwan
Email: info@vadatech.com
Telephone: +886-2-2627-7655
Fax: +886-2-2627-7792

VadaTech European Sales Office
Ocean Village Innovation Centre, Ocean Way,
Ocean Village, Southampton, SO14 3JZ
Email: info@vadatech.com
Telephone: +44 2380 381962
Fax: +44 2380 381983

J = Collaborators
1 = Collaborators*
2 = Non-collaborators

*See CoBo specification document for list of collaborators.