AMC FPGA Carrier for Dual FMC with Virtex-7 – AMC525

The AMC525 is an AMC FPGA Carrier with dual FMC (VITA 57) interfaces. The AMC525 is compliant to the AMC.1, AMC.2 and/or AMC.4 specification. The unit has an on-board, re-configurable FPGA which interfaces directly to the AMC FCLKA, TCLKA-D, FMC DP0-9 and all FMC LA/HA/HB pairs. The FPGA has interface to DDR3 memory channels (64-bit wide and 16-bit wide). This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC525 has Dual FMC sites per VITA-57 allowing the versatility of various FMC modules to be implemented.

The on-board quad core P2040 can run at 1.2 GHz with 1 GB of DDR3, 128 MB of Boot Flash, and a 32 GB SD Card. The PPC has 4x PCIe interface to the FPGA in addition to its local bus. The PPC has its dual GbE routed to ports 0 and 1 of the AMC via a mux to allow FPGA routing as well.

The AMC525 has Serial over LAN (SOL) per IPMI specification. It has a hardware RNG for secure session.

VadaTech can modify this product to meet special customer requirements. Contact us to discuss your application.
INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and μTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

BLOCK DIAGRAM

Figure 1: AMC525 Block Diagram
# Specifications

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Dimensions</th>
<th>Double module, mid or full-size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Width</td>
<td>5.85&quot; (148.5 mm)</td>
</tr>
<tr>
<td></td>
<td>Depth</td>
<td>7.11&quot; (180.6 mm)</td>
</tr>
<tr>
<td>Type</td>
<td>AMC FPGA Carrier</td>
<td>Xilinx Virtex-7 device, optional on-board CPU</td>
</tr>
<tr>
<td></td>
<td>One bank of DDR3 (64-bit)</td>
<td>Dual FMC slots</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards</th>
<th>Type</th>
<th>AMC.1, AMC.2, and AMC.4 (FPGA programmable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMC</td>
<td>Type</td>
<td>IPMI version 2.0</td>
</tr>
<tr>
<td>Module Management</td>
<td>IPMI</td>
<td>IPMI version 2.0</td>
</tr>
<tr>
<td>PCIe</td>
<td>Lanes</td>
<td>Dual x4 via FPGA to AMC</td>
</tr>
<tr>
<td>SRIO/Aurora</td>
<td>Lanes</td>
<td>Dual x4 via FPGA to AMC</td>
</tr>
<tr>
<td>Ethernet</td>
<td>10 GbE and GbE</td>
<td>Dual 10 GbE via FPGA and Dual 1000-BaseBX from PPC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Power</th>
<th>AMC525</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AMC525 Carrier is ~20W (without mezzanine) application specific</td>
<td></td>
</tr>
<tr>
<td>Environmental</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)</td>
</tr>
<tr>
<td></td>
<td>Storage Temperature: -40° to +85°C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vibration</td>
<td>Operating 9.8 m/s² (1.0 G), 5 to 500Hz</td>
</tr>
<tr>
<td></td>
<td>Shock</td>
<td>30Gs on each axis</td>
</tr>
<tr>
<td></td>
<td>Relative Humidity</td>
<td>5 to 95 per cent, non-condensing</td>
</tr>
<tr>
<td>Front Panel</td>
<td>Interface Connectors</td>
<td>Dual front panel FMC, MGT RS-232, CPU RS-232, JTAG</td>
</tr>
<tr>
<td></td>
<td>LEDs</td>
<td>IPMI management control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 user defined LEDs, 5 general status LEDs</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Hot swap ejector handle</td>
<td></td>
</tr>
<tr>
<td>Software Support</td>
<td>Operating System</td>
<td>Linux, VxWorks and Windows</td>
</tr>
<tr>
<td>Conformal Coating</td>
<td>Humiseal 1A33 Polyurethane (Optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Humiseal 1B31 Acrylic (Optional)</td>
<td></td>
</tr>
</tbody>
</table>

Other

<table>
<thead>
<tr>
<th>MTFB</th>
<th>MIL Hand book 217-F @ TBD Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certifications</td>
<td>Designed to meet FCC, CE and UL certifications where applicable</td>
</tr>
<tr>
<td>Standards</td>
<td>VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards</td>
</tr>
<tr>
<td>Warranty</td>
<td>Two (2) years</td>
</tr>
<tr>
<td>Trademarks and Dismissal</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>
</tr>
</tbody>
</table>
AMC FPGA Carrier for Dual FMC with Virtex-7 – AMC525

ORDERING OPTIONS

AMC525 – ABC – 0EF – G0J

A = FPGA DDR3 Memory
0 = 2 GB
1 = Reserved

B = QorIQ CPU Sub-system
0 = None (FPGA loaded via flash)
1 = P2040

C = Front Panel
1 = Reserved
2 = Mid-size
3 = Full-size
4 = Reserved
5 = Mid-size, MTCA.1 (captive screw)
6 = Full-size, MTCA.1 (captive screw)
*Common configuration
**Edge of module for conduction-cooled boards

E = FPGA Speed
1 = Reserved
2 = High*
3 = Highest

F = PCIe Option
0 = No PCIe
1 = PCIe on ports 4 – 7
2 = PCIe on ports 8 – 11
3 = PCIe on ports 4 – 11
*Common configuration

G = Clock Holdover Stability
0 = Standard (XO)
1 = Stratum-3 (TCXO)

J = Temperature Range and Coating
0 = Commercial (–5° to +55° C), No coating
1 = Commercial (–5° to +55° C), Humiseal 1A33 Polyurethane
2 = Commercial (–5° to +55° C), Humiseal 1B31 Acrylic
3 = Industrial (–20° to +70° C), No coating
4 = Industrial (–20° to +70° C), Humiseal 1A33 Polyurethane
5 = Industrial (–20° to +70° C), Humiseal 1B31 Acrylic
6 = Military (–40° to +85° C), Humiseal 1A33 Polyurethane*
7 = Military (–40° to +85° C), Humiseal 1B31 Acrylic*

RELATED PRODUCTS

VT899 Cube Chassis
FMC223 High Speed FMC for DAC
FMC108 Dual QSFP+

G = Clock Holdover Stability
0 = Standard (XO)
1 = Stratum-3 (TCXO)

J = Temperature Range and Coating
0 = Commercial (–5° to +55° C), No coating
1 = Commercial (–5° to +55° C), Humiseal 1A33 Polyurethane
2 = Commercial (–5° to +55° C), Humiseal 1B31 Acrylic
3 = Industrial (–20° to +70° C), No coating
4 = Industrial (–20° to +70° C), Humiseal 1A33 Polyurethane
5 = Industrial (–20° to +70° C), Humiseal 1B31 Acrylic
6 = Military (–40° to +85° C), Humiseal 1A33 Polyurethane*
7 = Military (–40° to +85° C), Humiseal 1B31 Acrylic*

CONTACT US

VadaTech Corporate Office
198 N. Gibson Rd., 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 381982
Fax: +44 2380 381983