Processor AMC, 100G, Cavium with Virtex-7 FPGA – AMC738

KEY FEATURES
- Cavium™ Octeon II CN6880 multi-core
- 32GBytes of DDR3 with ECC
- Xilinx Virtex-7 FPGA
- 100GbE via CFP2
- Standard double module AMC form factor
- Complies to AMC.1, AMC.2 and AMC.4
- RTC with 8MB NOR
- On-board SDHC socket for mass storage
- Dual GbE on the front panel
- IPMI 2.0 compliant

Benefits of Choosing VadaTech
- 100G performance with CFP2 port to the front panel
- Combines Cavium multi core packet processing with Virtex-7 FPGA
- Design utilizes proven VadaTech subcomponents and engineering techniques
- Electrical, mechanical, software, and system-level expertise in house
- AS9100 and ISO9001 certified company

The AMC738 utilizes the 32 Core Cavium Octeon II Processor that combines with a Xilinx V7 (XC7VX690T) FPGA to provide 100GbE via the CFP2 module. The CFP2 module could utilize 4 x 25 Gbps lanes or 10 x 10 Gbps lanes. The module follows the AMC.1, AMC.2 and AMC.4 specification. The FPGA has a single bank of 64-bit wide DDR3 memory.

The module has dual GbE going to ports 1 and 2 with additional dual GbE on the front panel. Ports 4-7 are dedicated for PCIe or XAUI, while ports 8-11 run as XAUI.

Linux OS is standard on the AMC738, consult VadaTech for other options.
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: AMC738 Functional Block Diagram**

**Figure 2: Front Panel**
# SPECIFICATIONS

## Architecture

<table>
<thead>
<tr>
<th>Physical</th>
<th>Dimensions</th>
<th>Double module, full-size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>5.85 in. (148.5 mm)</td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>7.11 in. (180.6 mm)</td>
<td></td>
</tr>
</tbody>
</table>

## Standards

### AMC

- **Type**: AMC 100 GbE Ethernet

## Power

- **AMC738**: 82W

## Environmental

### Temperature

- Operating temperature: -5° to 55° C (air flow requirement of >200 LFM, industrial and military versions also available) (See environmental spec sheet)
- Storage Temperature: -40° to +85° C

### Altitude

- Chassis Dependent

### Relative Humidity

- 5 to 95 percent, non-condensing

## Mechanical

- Hot-swap extractor handle

## LEDs

- IPMI management, Activity, GPIO

## Conformal Coating

- Humiseal 1A33 Polyurethane (Optional)
- Humiseal 1B31 Acrylic (Optional)

## Other

### MTBF

- MIL Hand book 217-F @ TBD Hrs

### Certifications

- Designed to meet FCC, CE and UL certifications where applicable

### Standards

- VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards

### Warranty

- Two (2) years

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### ORDERING OPTIONS

**AMC738 – ABC – DEF – GHJ**

<table>
<thead>
<tr>
<th>A = CPU Core</th>
<th>B = CPU Speed</th>
<th>C = Front Panel Size</th>
<th>D = DDR3 Memory w/ECC</th>
<th>E = CFP2 Transceivers</th>
<th>F = Ports 4-7</th>
<th>G = FPGA Speed</th>
<th>H = Operating Temperature</th>
<th>J = Conformal Coating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = CN6880AAP (32 Core)</td>
<td>0 = 800 MHz</td>
<td>1 = Reserved</td>
<td>0 = 32 GB</td>
<td>0 = None</td>
<td>0 = PCIe</td>
<td>0 = High</td>
<td>0 = Commercial (-5° to +55° C)</td>
<td>0 = None</td>
</tr>
<tr>
<td>1 = 1.2 GHz</td>
<td>1 = Reserved</td>
<td>2 = Reserved</td>
<td>1 = 850 nm, 100GBASE-SR10</td>
<td>1 = 850 nm, 100GBASE-LR4</td>
<td>1 = XAUI</td>
<td>1 = Highest</td>
<td>1 = Industrial (–20° to +70° C)</td>
<td>1 = Humiseal 1A33 Polyurethane</td>
</tr>
<tr>
<td>3 = Full-size (6HP)</td>
<td></td>
<td>3 = Full-size (6HP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 = Humiseal 1B31 Acrylic</td>
</tr>
<tr>
<td>4 = Extended-size (8HP)</td>
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* Edge of module for conduction-cooled

### RELATED PRODUCTS

- **AMC534 100G FPGA**
- **VT899 7U Chassis Cube**
- **UTC002 MCH**

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