



**Product Brief**  
**R4M-100 Processor Card**

**Rev 0.5**

## Summary:

The JumpGen Systems R4M-100 Processor Card is a high-performance network processor AdvancedMC™ (PrAMC) card designed for use in ATCA or MicroTCA systems. The R4M-100 is compliant with PICMG AMC.0 Revision 2.0 Mid-Size or Full-Size form factor standards. Featuring the latest RMI XLS416 quad core processor with up to a 1.2GHz clock rate, the R4M-100 can be delivered with up to 8GB of 72-bit wide DDR2 ECC memory running up to 800 MHz. The RMI XLS416 is a multi-core, multi-threaded MIPS64® processor with a rich set of Integrated I/O

The RMI XLS416 also provides up to 2.5 Gbps of bulk encryption plus RSA and 2.5 Gbps Compression/Decompression via integrated security acceleration and compression/decompression engines available on the XLS416. The R4M-100 is ideal for security applications in wireless and wireline access points, switches and routers, radio network controllers, media gateways and video processing applications.

The R4M-100 will support the following configuration build options

- 1) Processor Options
  - a. 1.2V 1.2GHz XLS416 with up to 800MHz DDR2, or
  - b. 1.0V 1.0GHz XLS416 with up to 667MHz DDR2, or
  - c. 0.9V 800MHz XLS416 with up to 533MHz DDR2
- 2) I/O Options
  - a. Front Panel via AMC - 4 RJ-45s in Quad Assembly on AMC Front Panel Supporting 10/100/1000BaseT or
  - b. Rear I/O Support via RTM - 4 1000Base-BX Ports to lanes 17-20 for ATCA carriers that route lanes 17-20 to RTM
- 3) Fatpipes Interface
  - a. PCIe – x4 (lanes 4-7) or x1 (lane 4) or
  - b. SRIO – x4 (lanes 4-7) or x1 (lane 4)

## Features:

Central Processing Units (CPUs)	RMI XLS 416 Processor Family featuring Four 64 bit Processing Cores <ul style="list-style-type: none"> <li>• Up to 1.2 GHz with 1MB L2 cache</li> <li>• Up to 8GB of DDR2 memory w/ ECC on x72 bus</li> <li>• Autonomous Security Acceleration Engine® (SAE) @ 2.5 Gbps</li> <li>• Compression/Decompression Engine @ 2.5 Gbps</li> <li>• Network Hardware Acceleration with IEEE1588-compliant Precision Timing Protocol (PTP) Controller</li> </ul>
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I/O Capabilities	<p>AMC.2 Dual 1000Base-BX Ports configured as Type E2 (Lanes 0, 1)          AMC.2 Dual 1000Base-BX Ports configured as Type 2 (Lanes 8, 9)          Quad (4) Dual 10/100/1000Base-T Ports on Front Panel (RJ45) or          Quad (4) 1000Base-BX Ports to lanes 17-20 on AMC Connector for          Rear RTM I/O Support          AMC.1 PCIe Type 4 (Lanes 4-7) or Type 1 (Lane 4) or a build option          for AMC.4 SRIO (Lanes 4-7) or Type 1 (Lane 4)</p>
Mass Storage	Dual Redundant Soldered 256MB NANDFlash
Boot support	<p>Boot from NANDFlash or          Network boot (GigE ports)          Serial Console (via header only)</p>
Clocks	<p>PCIe Clock Input on AMC Connector – CLK3/FCLKA          Telco Clock Input on AMC Connector – TCLKA differential pair input          converted to single ended connection to XLS416</p>
Mechanical	Standard AMC Full-Size or Mid-Size form factor
LEDs	<p>Blue Hot Swap, Green Card Status and Red Out of Service Per AMC          specification          Each RJ-45 has integrated Green Link and Yellow Activity LEDs</p>
Environmental	<p>Operating temperature range: 0 to 55 °C          Humidity: 0 to 95% (non-condensing)          Typical power consumption: 38W          Worst-case power consumption: 44W</p>

# Block Diagram:

