Applications
- Digital Signal Processing
- Radar/Sonar Beamforming
- ELINT
- Image/Video Processing
- Data Encryption

Board Features
- Air-Cooled/Conduction-Cooled Options
- Separate PCI Express Bridge
- XRM2 I/O Interface

FPGA Features
- 2x PCI Express cores (Gen2 or Gen3 - FPGA dependent)

Summary
The ADM-XRC-7V1 is a high performance reconfigurable XMC (compliant to VITA Standard 42.0 and 42.3) based on the Xilinx Virtex-7 range of Platform FPGAs.

Features include PCI Express Gen2 interface, external memory, high density I/O, system monitoring and flash boot facilities.

A comprehensive cross platform API with support for Microsoft Windows, Linux and VxWorks provides access to the full functionality of these hardware features.

Placing the PCI Express bridge in bypass allows the creation of a Gen 2 x8 PCI Express endpoint design directly into the target FPGA. Target FPGAs VX330T and VX690T can also support Gen3 x8 PCI Express designs.

The optional fitting of the Pn4 connector provides an additional 64 General Purpose IO (GPIO) links to the carrier card.

The ADM-XRC-7V1 is available in a cost reduced form for high-volume production orders (the build option removes the Virtex-6 Bridge device).

Target Devices
Xilinx Virtex-7: XC7V585T (FF(G)1761
LUTs = 582k(326k)
FFs = 728k(408k)
DSPs = 1260(1120)
BRAM = 28Mb(27Mb)
2x PCI Express cores (Gen2 or Gen3 - FPGA dependent)

Application Data Memory
4x SDRAM 512MB DDR3-1600

FPGA Configuration Memory
BPI 512MBit Flash Memory

FPGA Configuration Modes
PCI Express direct to SelectMAP port
From Flash direct on power up
External JTAG connector

Deliverables
ADM-XRC-7V1 Board
One Year Warranty
One Year Technical Support

Host Interface
PCI Express Gen2 x1, x2 or x4 link to separate bridge device with 2GB/s local link to user FPGA
4 DMA Controllers
Interrupt Controller

Board Format
XMC (Switched Mezzanine Card, VITA 42)

Input/Output Interfaces
146x LVCMOS/LVDS I/O (programmable to 1.2
8x High-Speed Serial Links to XRM2
10x High-Speed Serial Links via Pn6 connector
38x LVCMOS 3.3V GPIO connections via Pn6 connector (VITA 46.9 X8d+X12d+X38s compatible pinout)
64x Multiple LVCMOS/LVDS GPIO connections via optional PMC Pn4 connector (1.8V levels with 2.5V compatible inputs)
only available with Pn4 Build Option selected
Support

The ADM-XRC-7V1 is supplied with the ADMXRCG3 Support & Development kit (SDK) along with ADB3 Driver for Windows / Linux / VxWorks.

Environmental Specification

Temperature Ranges

<table>
<thead>
<tr>
<th>Cooling Option</th>
<th>Operating Temperatures</th>
<th>Storage Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>AC0</td>
<td>0°C</td>
<td>55°C</td>
</tr>
<tr>
<td>ACE</td>
<td>0°C</td>
<td>70°C</td>
</tr>
<tr>
<td>AC1</td>
<td>-40°C</td>
<td>70°C</td>
</tr>
<tr>
<td>CC0</td>
<td>0°C</td>
<td>55°C</td>
</tr>
<tr>
<td>CCE</td>
<td>0°C</td>
<td>70°C</td>
</tr>
<tr>
<td>CC1</td>
<td>-40°C</td>
<td>70°C</td>
</tr>
</tbody>
</table>

Operating Humidity: Up to 95% (non-condensing)

EMC Standards

FCC 47CFR Part 2
EN55022:2010 Equipment ClassB

Conformal Coating Options

Acrylic or Polyurethane
Contact sales for specification of coatings.

Ordering Information

Order Code: ADM-XRC-7V1/z-y(m)(c)(a)(p)(t)

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
<th>Description of Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtex-7 device</td>
<td>z</td>
<td>V585T=XC7V585T, VX330T=XC7VX330T, VX485T=XC7VX485T, VX690T=XC7VX690T</td>
</tr>
<tr>
<td>Virtex-7 speed</td>
<td>y</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Memory</td>
<td>m</td>
<td>blank = 2GBytes on board SDRAM (Four banks of 512MBytes), /4 = 4GByte on board SDRAM (Four banks of 1GByte)</td>
</tr>
<tr>
<td>Cooling</td>
<td>c</td>
<td>blank = air cooled commercial, /ACE = air cooled Extended, /AC1 = air cooled industrial, /CC0 = conduction cooled Commercial, /CCE = conduction cooled Extended, /CC1 = conduction cooled industrial</td>
</tr>
<tr>
<td>Conformal Coating</td>
<td>a</td>
<td>blank = no conformal coating, A = Acrylic, P = Polyurethane</td>
</tr>
<tr>
<td>Pn4 Fitted</td>
<td>p</td>
<td>blank = not fitted, /Pn4 = Pn4 Connector fitted</td>
</tr>
<tr>
<td>XMC Connector Type</td>
<td>t</td>
<td>blank = XMC (VITA 42) Connectors , /X2 = XMC2 (VITA 61) Connectors</td>
</tr>
</tbody>
</table>

Note

not all FPGA speed grades available in all configurations.
Contact Alpha Data for full details.

Address: Suite L4A, 160 Dundee Street, Edinburgh, EH11 1DQ, UK
Telephone: +44 131 558 2600
Fax: +44 131 558 2700
email: sales@alpha-data.com
website: http://www.alpha-data.com

Address: 611 Corporate Circle, Suite H Golden, CO 80401
Telephone: (303) 954 8768
Fax: (866) 820 9956 - toll free
email: sales@alpha-data.com
website: http://www.alpha-data.com