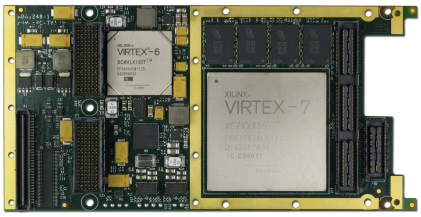
ADM-XRC-7V1

Datasheet Revision: 1.7
31st May 2023

AD01248



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

Summary

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

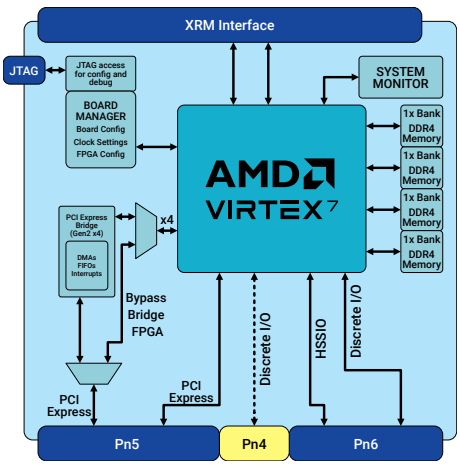
Features include PCI Express Gen2 interface, external memory, high density I/O, system monitoring and flash boot facilities.

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

AMD Virtex-7
XC7V585T, XC7VX485T, XC7VX690T (FF(G) 1761

FPGA Specification

LUTs = 582k(485k)
FFs = 728k(607k)
DSPs = 1260(2800)
BRAM = 28Mb(37Mb)

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

Application Data Memory

4x 512MB DDR3-1600 SDRAM

Configuration Memory

BPI 512MBit

Configuration Modes

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

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

Input/Output Interfaces

Discrete Digital (XRM2)
146x LVCMOS/LVDS I/O (programmable to 1.2, 1.5 or 1.8V)

High-Speed|Serial Links (XRM2)
8x High-Speed Serial Links to XRM2
10x High-Speed Serial Links via Pn6 connector

Discrete Digital (Pn6)
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)

ALPHA DATA
www.alpha-data.com

UK Office
Address: 160 Dundee Street, Edinburgh, EH11 1DQ, UK
Telephone: +44 131 558 2600
Email: sales@alpha-data.com

USA Office
10822 West Toller Drive, Suite 120,
Deer Creek Technology Center, Littleton, CO 80127
(303) 954 8768
sales@alpha-data.com

Support

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

Deliverables

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

Board Format

XMC (Switched Mezzanine Card, VITA 42)

Environmental Specification

Cooling	Operating Temperatures		Storage Temperatures	
Option	Min	Max	Min	Max
AC0	0°C	+55°C	-40°C	+85°C
AC1	-40°C	+85°C	-55°C	+100°C
CC0	0°C	+55°C	-40°C	+85°C
CC1	-40°C	+85°C	-55°C	+100°C

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

Conformal Coating Options

Acrylic or Polyurethane
Contact sales for specification of coatings.

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

Virtex-7 device	z	V585T=XC7V585T, VX485T=XC7VX485T, VX690T=XC7VX690T
Virtex-7 speed	y	1, 2, 3
Memory	m	blank = 2GBytes on board SDRAM (Four banks of 512MBytes), /4 = 4GByte on board SDRAM (Four banks of 1GByte)
Cooling	c	blank = air cooled commercial, /ACE = air cooled Extended, /AC1 = air cooled industrial, /CC0 = conduction cooled Commercial, /CCE = conduction cooled Extended, /CC1 = conduction cooled industrial
Conformal Coating	a	blank = no conformal coating, A = Acrylic, P = Polyurethane
Pn4 Fitted	p	blank = not fitted, /Pn4 = Pn4 Connector fitted
XMC Connector Type	t	blank = XMC (VITA 42) Connectors , /X2 = XMC2 (VITA 61) Connectors
Note	not all FPGA speed grades available in all configurations. Contact Alpha Data for full details.	

www.alpha-data.com

UK Office
Address: 160 Dundee Street,
Edinburgh, EH11 1DQ, UK
Telephone: +44 131 558 2600
Email: sales@alpha-data.com

USA Office
10822 West Toller Drive, Suite 120,
Deer Creek Technology Center, Littleton, CO 80127
(303) 954 8768
sales@alpha-data.com