



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)

FPGA Specification

LUTs = 582k
FFs = 728k
DSPs = 1260
BRAM = 28Mb

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)

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

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC0	0°C	55°C	-40°C	85°C
ACE	0°C	70°C	-55°C	100°C
AC1	-40°C	70°C	-55°C	100°C
CC0	0°C	55°C	-40°C	85°C
CCE	0°C	70°C	-55°C	100°C
CC1	-40°C	70°C	-55°C	100°C

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)

Option	Code	Description of Options
Vertex-7 device	z	V585T=XC7V585T, VX330T=XC7VX330T, VX485T=XC7VX485T, VX690T=XC7VX690T
Vertex-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.

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