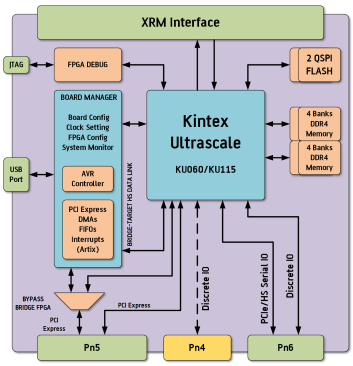
ADM-XRC-KU1

9th April 2019 **Datasheet Revision: 1.1**

AD01305



Applications

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

Board Features

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

FPGA Features

- 3x PCI Express Gen3 x8 cores (6 for XCKU115)

Summary

The **ADM-XRC-KU1** is a high performance reconfigurable XMC (compliant to VITA Standard 42.0 and 42.3) based on the Xilinx Kintex Ultrascale 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.
Board management is provided by the combination of the Artix FPGA and AVR Microcontroller. This allows the board to be managed via PCI Express or via USB.
The KU1 provides multiple communications modes:
PCI Express Gen2 x4 through the Artix FPGA with an optional Gen3 x4 PCI Express link direct to the target FPGA.
Gen3 x8 PCI Express link direct to the target when the bridge is in USB mode.
An optional Gen3 x8 PCI Express link provided through Pn6 using a compatible XMC carrier.

Target Devices

Xilinx Kintex UltraScale: XCKU060 (FLVA1517)

LUTs = 221k(663k)
FFs = 663k(1326k)
DSPs = 2760(5520)
BRAM = 38.0Mb(75.9Mb)

3x PCI Express Gen3 x8 cores (6 for XCKU115)

Application Data Memory

4x SDRAM 2GB DDR4-2400

FPGA Configuration Memory

BPI 1GBit Flash Memory
Configured as 2x Bridge

FPGA Configuration Modes

By PCI Express Bridge on power up
By software via PCI Express Bridge
Via External JTAG connector

Deliverables

ADM-XRC-KU1 Board
One Year Warranty
One Year Technical Support

Host Interface

PCI Express Gen2 x4 (Separate bridge FPGA) or Gen3 x8 (direct from Target FPGA)

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)

Note: only available with Pn4 Build Option selected

Support

The ADM-XRC-KU1 is supplied with the ADM-XRC-KU1 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
AC1	-40°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-KU1/z-2(c)(a)(p)(IO)

Option	Code	Description of Options
Kintex Ultrascale device	z	KU060 = XCKU060 FPGA fitted, KU115 = XCKU115 FPGA fitted
Pn4 Fitted	p	blank = not fitted, /Pn4 = Pn4 connector fitted
Cooling	c	blank = air cooled commercial, /AC1 = air cooled industrial, /CC1 = conduction cooled industrial
Conformal coating	a	blank = no conformal coating, A = Acrylic, P = Polyurethane
IO Option	IO	blank = One differential pair on Pn6 designated as an external clock input, /10RX = External clock input replaced by 10th data input

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