

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

Summary

The **ADM-XRC-KU1** is a high performance reconfigurable XMC (compliant to VITA Standard 42.0 and 42.3) based on the AMD 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.

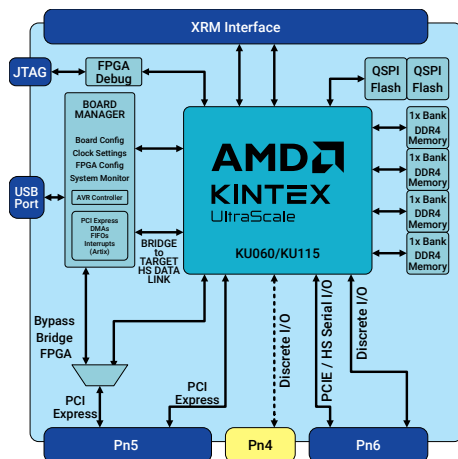
Board management is provided by the combination of the Artix FPGA and AVR Microcontroller. This allows the board to be managed via PCI Express or via USB.

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

AMD Kintex UltraScale
XCKU060, XCKU115 (FLVA1517)

FPGA Specification

LUTs = 221k(663k)
FFs = 663k(1326k)
DSPs = 2760(5520)
BRAM = 38.0Mb(75.9Mb)
3x PCIe Gen3 x8 cores (XCKU060)
6x PCIe Gen3 x8 cores (XCKU115)

Application Data Memory

4x 2GB DDR4-2400 SDRAM

Configuration Memory

BPI 1GBit
Configured as 2x Bridge, 2x Target,
1x VPD Data Zone
32Mb (bridge) 386Mb (Target)

Configuration Modes

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

Host Interface

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

Input/Output Interfaces

High-Speed Serial Links (XRM2)

8x High-Speed Serial Links to XRM2 (x8)

Discrete I/O (XRM2)

146x LVCMOS/LVDS I/O (programmable to 1.2,
1.5 or 1.8V) to XRM2 (x146)

High-Speed Serial Links (Pn6)

10x High-Speed Serial Links via Pn6 connector,
Standard build has 9 TX/RX data capable links
and one external clock input. There is a build
option available to use the external clock input as
a 10th TX/RX data link.

Discrete I/O (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)

Support

The ADM-XRC-KU1 is supplied with the ADM-XRC-KU1 Support & Development kit (SDK) along with ADB3 Driver for Windows / Linux / VxWorks.

Deliverables

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

Board Format

XMC (Switched Mezzanine Card, VITA 42)

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC0	0°C	+55°C	-40°C	+85°C
AC1	-40°C	+85°C	-55°C	+100°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-KU1/z-2(c)(a)(p)(IO)

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