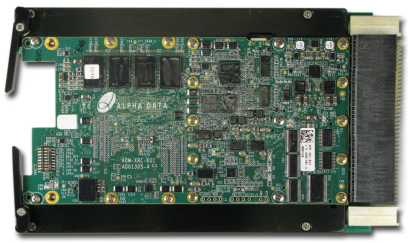
ADA-VPX3-KU1

Datasheet Revision: 2.2
7th November 2025

AD01271



Applications

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

Board Features

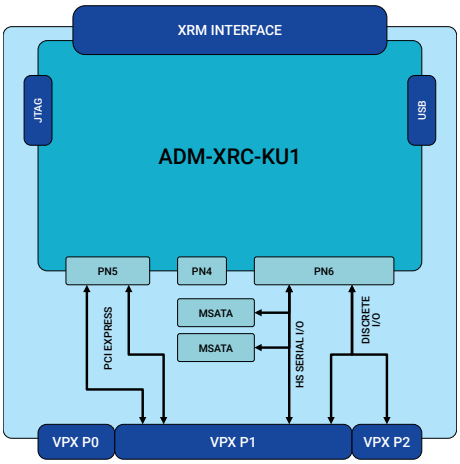
- OpenVPX 65.0 14.2.2 Slot Profile
- Customised conduction-cooled heatplate
- Air-Cooled/Conduction-Cooled Options
- Separate PCI Express Bridge
- XRM2 I/O Interface

Summary

The **ADA-VPX3-KU1** assembly is based on the AMD Kintex UltraScale range of Platform FPGAs, bringing together the power and configurability of the **ADM-XRC-KU1** FPGA module in a 3U VPX format.

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 KU060 and KU115 can also support Gen3 x8 PCI Express designs.
The conduction-cooled variant uses a single-piece heatplate, profiled to match both the carrier and FPGA boards and provide optimal cooling performance.



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 PCI Express Gen3 x8 cores (6 for 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 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 (XRM2)
146x LVCMOS/LVDS I/O (programmable to 1.2, 1.5 or 1.8V) to XRM2

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

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Support

The ADA-VPX3-KU1 is supplied with the ADMXRCG3 Support & Development kit (SDK) along with ADB3 Driver for Windows / Linux / VxWorks.

Deliverables

ADA-VPX3-KU1 Board
One Year Warranty
One Year Technical Support

Board Format

3U VPX (OpenVPX Compliant)

Environmental Specification

Cooling	Operating Temperatures		Storage Temperatures	
Option	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)

Conformal Coating Options

Acrylic or Polyurethane
Contact sales for specification of coatings.

Order Code: ADA-VPX3-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

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