



AD01567



Applications

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

Board Features

- SOSA 14.6.11 slot profile
- SOSA IPMC adheres to VITA 46.11 Tier 3
- On-board microcontroller provides clock programming with power rail and temperature monitoring
- Separate PCI Express Bridge
- XRM2 I/O Interface

Summary

This SOSA-Aligned 14.6.11-0 3U VPX module hosts an AMD Kintex UltraScale FPGA for embedded high-performance compute and I/O intensive applications.

The module is provided in a rugged SOSA-Aligned 3U VPX format and is available in industrial temperature grades with conduction cooling. 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 bypass mode.

Target Devices

AMD Kintex UltraScale XCKU060, XCKU115 (FLVA1517)

Host Interface

SOSA 14.6.11
Default: Ethernet (40G)
Alternate: PCI Express Gen3 x8

Input/Output Interfaces

Front XRM IO (XRM2 I/O)
8x High-Speed Serial Links to XRM2 (x8)

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

Expansion Plane (PCI Express) (P1)
1x Gen2 x4 or Gen3 x8 (G2x4 from PS or G3x4/x8 from PL)

Ethernet (P1)
1x 40G Fat Pipe Ethernet
2x 1G/10G Ultra Thin Pipe Ethernet

Serial Low-Speed Comms (P1)
2x RS232 or UART from PS
2x IPMC-compliant redundant I2C

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

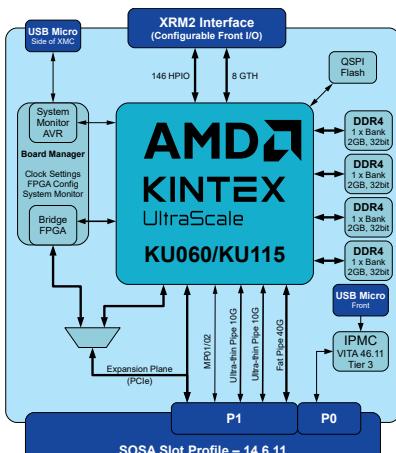
4x 2GB DDR4-2400 SDRAM

Configuration Memory

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

Configuration Modes

- PCI Express Bridge on power up
- Software via PCI Express Bridge
- Via External JTAG connector





Support

The ADA-V8201 is supplied with the compatible ADM-XRC-KU1 Support & Development kit (SDK) along with ADB3 Driver for Windows / Linux / VxWorks.

Deliverables

ADA-V8201 Board
One Year Warranty
One Year Technical Support

Board Format

3U VPX (SOSA Aligned 14.6.11-0 VITA 46 and 65)
WxHxD = 100mm x 19.55mm x 160mm
Weight = TBDg

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC1	-40°C	+70°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: ADA-V8201/z-2(c)(a)

Kintex Ultrascale device	z	KU060 = XCKU060 FPGA fitted KU115 = XCKU115 FPGA fitted
Cooling	c	/AC1 = air cooled industrial /CC1 = conduction cooled industrial
Conformal coating	a	blank = no conformal coating A = Acrylic P = Polyurethane
Note	Custom order codes are available for specific modifications, additional testing/screening, and enhanced ruggedization like tin-lead solder. Contact sales@alpha-data.com for more details.	



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