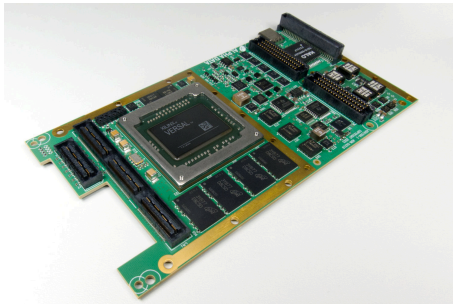


AD01506



Applications

- AI Inference for Edge Applications
- High Performance Data Capture and Processing
- Low-Latency Networking and Analytics
- Radar/Sonar Beamforming
- ELINT/ISR
- Image/Video Processing
- Machine Vision
- Digital Signal Processing
- Data Encryption

Board Features

- AMD Versal Prime and Versal Core options available
- VITA 88 XMC+ connectors
- Quad ARM® Cortex™-A53 MPCore™
- Dual ARM® Cortex™-R5 MPCore™
- On-board microcontroller accessible via USB provides power rail monitoring; temperature monitoring; and clock programming
- XRM2 I/O interface
- Conduction and Air-Cooled options
- SOSA alignment with VPX carrier

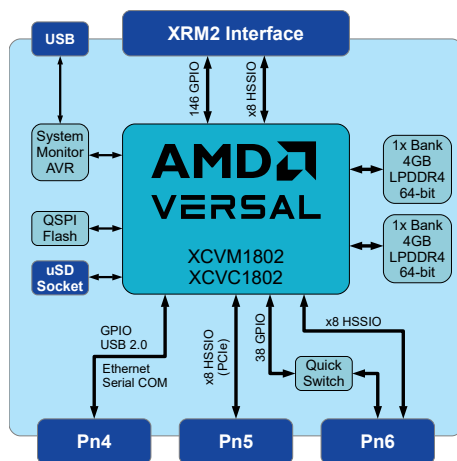
Summary

The **ADM-XA210** is an adaptable XMC form factor AMD Versal™ ACAP Data Processing Unit suitable for programs seeking a complete hardware path from development to rapid deployment of solutions based on the AMD Versal ACAP VC1802 AI Core device.

The XMC form factor can be migrated between PCIe, VME, and VPX carriers for use in desktop, lab, rack mount and fully ruggedized, SOSA-aligned, Air Transport Rack (ATR) deployment chassis in industrial temperature ranges. Additionally, the board can optionally be deployed stand-alone without any reliance on a host Single Board Computer (SBC) or CPU. The XRM2 interface on the board allows off-chip support of the many standard and custom interfaces that can be supported by the Versal ACAP through the very wide range of Alpha Data IO adapters available.

Flexible reference designs, allowing customers to access the full IO flexibility of the chip, are provided for both the Vivado and Vitis toolchains.

The board allows access to a large number of configurable IO pins and Gigabit Transceiver ports, which can connect to built-in hard-IP cores for 100G Multi-rate Ethernet, PCIe and DDR4, or can be controlled by custom IO logic in the programmable fabric, supporting an incredibly wide range of communication standards and applications.



Target Device

AMD Versal
XCV1802-2LLI or XCVC1802-2LLI (D1760)

Host Interface

PCI Express Gen4 x8
2x Ethernet (100G/50G/40G/4x25G/4x10G)

FPGA Specification

Cells = 1586k-1968k
DSPs = 1600-1968 DSP58s
BRAM = 28-34Mb
URAM = 91-130Mb

300x AI Engines (XCVC1802 only)
1x Dual-core Arm Cortex-A72 APU
1x Dual-core Arm Cortex-R5F RPU
4x PCI Express Gen4 x4 (or 2x8)
2x 100G Multi-rate Ethernet MAC

Application Data Memory

2x 512M x 64 bit (4 GiB) Banks SDRAM - LPDDR4 (3900MHz)
1x SD Card specific SDC microSD

Configuration Memory

8 bit QSPI 2048 Mb

Configuration Modes

Configured via QSPI, uSD, or JTAG (P5 or onboard).

Input/Output Interfaces

XRM2 High-Speed Serial (XRM2)

8x 8x High-Speed Serial Input Output (HSSIO) Links

XRM2 Low-Speed GPIO (XRM2)

146x 146x LVCMOS/LVDS I/O

P5 High-Speed Serial (P5)

8x Gen4x8 or 2x Gen4x4

P6 High-Speed Serial (P6)

8x 2x Multi-rate Ethernet MACs (100G/50G/40G/4x25G/4x10G) PCIe Aurora JESDE204 etc.

P6 Low-Speed GPIO (P6)

38x 38x 3.3 V level translated GPIO to PL

P4 Ethernet (P4)

1x 1000Base-T Ethernet from the Processor System (PS)

P4 USB 2.0 (P4)

2x 2x USB (from PS ULPI)

P4 Serial COM (P4)

2x 2x RS232/RS422/RS485 from PS

P4 GPIO (P4)

4x 4x General Purpose I/O (GPIO) from PS

Support

Comprehensive reference designs for the Adaptive SoC, covering Standalone and PCIe use cases and including a host driver and API support

Deliverables

ADM-XA210 Board
One Year Warranty
One Year Technical Support

Board Format

XMC+ (Switched Mezzanine Card, VITA 88) with option for traditional XMC (Vita 42) connectors
WxHxD = 149mm x 12.72mm x 74mm
Weight = TBCg

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
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-XA210/(d)(x)(c)(a)

Order Code: ADM-XA210/(d)(x)(c)(a)		
Device	d	/M18-2MSI = VM1802-2MSI /C18-2MSI = VC1802-2MSI
XMC Connector Type	x	/V42 = XMC Connectors /V88 = XMC+ Connectors
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.	