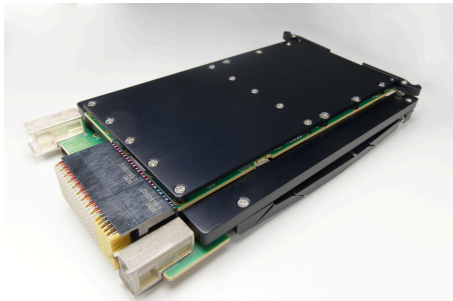


AD01506



### Applications

- AI Inference for Edge Applications
- SOSA Systems
- 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
- SOSA IPMC adheres to Vita 46.11 Tier 3
- 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

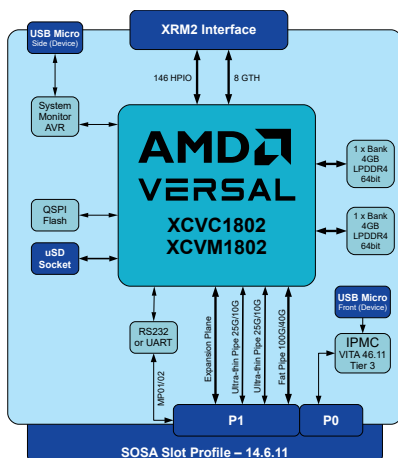
### Summary

This SOSA-Aligned 3U VPX module hosting an 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 Prime VM1802 or VC1802 AI Core device.

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

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  
XCVM1802-2MSI or XCVC1802-2MSI  
(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 High-Speed Serial Input Output (HSSIO) Links

#### XRM2 Low-Speed GPIO (XRM2)

146x LVCMOS/LVDS I/O

#### Expansion Plane (PCI Express) (P1)

1x Gen2 x4 or Gen3 x8 (G2x4 from PS or G3x4/ x8 from PL)

#### Ethernet (P1)

2x 40G/100G Fat Pipe Ethernet  
2x 1G/10G/25G Ultra Thin Pipe Ethernet

#### Serial Low-Speed Comms (P1)

2x RS232 or UART from PS  
2x IPMC compliant redundant I2C  
1x JTAG programming interface

#### P4 GPIO (P4)

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

ADA-VA210 Board  
One Year Warranty  
One Year Technical Support  
RD-XA210 Reference Designs

### Board Format

3U VPX (SOSA Aligned - VITA 46 and 65)  
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: ADA-VA210/(d)(c)(a)		
Device	d	/M18-2MSI = VM1802-2MSI /C18-2MSI = VC1802-2MSI
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.	