ADA-VA330

Datasheet Revision: 1.1
25th November 2025

AD01566

Applications

- RF Signal Sampling/Generation
- Electromagnetic Spectrum Operations (EMSO)
- Radar Systems
- MilCom
- RF Signal Sampling/Generation
- Beamforming
- Signal Detection/Jamming
- Pre-6G Systems

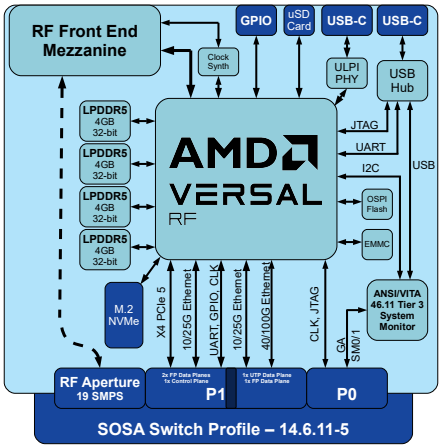
Board Features

- 14-bit x 16 ADC and 16 DAC channels capable of Multi-Gigasample data conversion
- AMD Versal hardened and re-configurable logic and DSP processing
- AMD Versal multi-core control and computation Processing System
- 18GHz front end bandwidth

Summary

This Versal RF, 14.6.11 SOSA-Aligned 3U VPX module delivers all the advantages of AMD's latest RF platform in a common industry standard and deployable form factor.

Versal RF offers 16 DACs and 16 ADCs at 14-bit resolution with up to 18GHz badwidth combined with powerful hardened IP for FFT, channelization, LDPC decode, and resample. Alpha Data is proud to deliver these uncompromised design resources in an industry standard 3U VPX SOSA-Aligned form factor. Features include: 32 channel wideband ADC/DAC connectivity (subset of 19 selectable), RF clock reference inputs, PCIe Gen5x4 or PCIe Gen4x8, NVMe storage, 10G/40G/100G Ethernet, GPIO, USB host, system monitoring, USB JTAG programming.



Target Device

AMD Versal RF
VR1602 (VSVA2488)

FPGA Specification

Cells = 1.2M
DSPs = 2256
BRAM = 39Mb
URAM = 100Mb

16x 14-bit 8GSPS RF-ADC
16x 14-bit 16GSPS RF-DAC
2x ARM® Cortex™-A72 (APU)
2x ARM® Cortex™-R5F (RPU)
2x 100G Multirate Ethernet MAC
1x PCIe Gen5x4 (or Gen4x8)
4x DDR5 Memory Controllers

Application Data Memory

4x 32Gb LPDDR5 SDRAM - 32-bit
1x 16GB 50MHz microSD

Configuration Memory

OSPI 2Gb

Configuration Modes

PS - Configured via OSPI or uSD

Host Interface

PCI Express Gen5x4(or Gen4x8)
2x Ethernet
(100G/50G/40G/4x25G/4x10G/1x10G)

Input/Output Interfaces

High-Frequency Analogue Inputs (VPX Aperture)
16x 14-bit 8GSPS RF-ADC BW 18GHz
Resolution: 14-bit
Max Sample Freq: 8Gsps
Connector: SMPS (Aperture H)

High-Frequency Analogue Outputs (VPX Aperture)
16x 14-bit 16GSPS RF-DAC BW 18GHz
Resolution: 14-bit
Max Sample Freq: 16Gsps
Connector: SMPS (Aperture H)

Digital I/O (VPX Aperture)
8x Reference Clocks and Synchronization

General Purpose I/O (P1)
1x GPIO (single ended)

Low-Speed Serial I/O (P1)
2x Maintenance Port (2)

High-Speed Serial I/O (P1)
1x Control Plane - 10G Ethernet
1x Data Plane - 10/25/40/100G Ethernet
1x Data Plane - 10G Ethernet
1x Expansion Plane - x4 PCIe Gen 5

Serial Low-Speed Comms (P0)
2x IPMC compliant redundant I2C

Onboard USB Comms (Front I/O)
1x JTAG and System Monitor
1x FPGA USB Interface

uSD Configuration Interface (Front I/O)
1x uSD Configuration Interface

General Purpose I/O (Front I/O)
34 x GPIO (Differential or Single Ended)

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Support

Targeted Reference Design and Board Support Package.

Deliverables

ADA-VA330 Board
One Year Warranty
One Year Technical Support

Board Format

3U VPX (SOSA Aligned - VITA 46 and 65)
WxHxD = 149mm x 74mm x 12.72mm
Weight = TBDg

Environmental Specification

Cooling	Operating Temperatures		Storage Temperatures	
Option	Min	Max	Min	Max
CC1	-40°C	+85°C	-55°C	+100°C

Operating Humidity : Up to 95% (non-condensing)

Order Code: ADA-VA330(d)(s)(r)(c)(a)		
Device	d	/1602 = XCVR1602 /1652 = XCVR1652
Speed Grade	s	-2MSE = -2MSE
RF Front I/O	r	/WB = Wideband high-density from I/O /PASS = Pass-through passive I/O
Cooling	c	/CC1 = conduction cooled industrial
Conformal Coating	a	blank = no conformal coating /A = Acrylic /P = Polyurethane
Note	Please Contact sales for other options.	

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