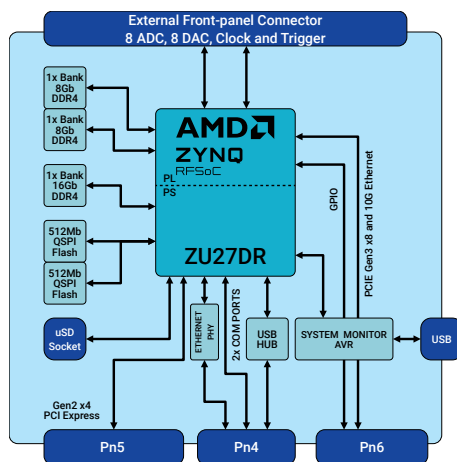
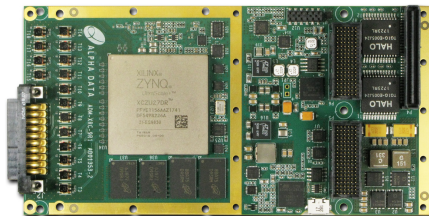


AD01353



Applications

- RF Signal Sampling/Generation
- Radar
- Beamforming
- MIMO (5G) communications Tx and Rx
- Signal Detection/Jamming

Board Features

- 8 ADC and DAC channels capable of Multi-Gigasample data conversion
- AMD Ultracale+ re-configurable logic and DSP processing
- AMD Zynq ARM multi-core control and computation Processing System
- 30MHz to 4GHz front-end bandwidth

Summary

The **ADM-XRC-9R1** is a high-performance System On Module (SOM) based on the AMD Zynq Ultracale+ RFSoC, which combines FPGA Fabric, ADC and DAC interfaces and ARM CPU cores in a single low-power device.

The module is provided in rugged XMC format and is available in Industrial temperature grades with Air or Conduction Cooling.

Target Devices

AMD Zynq Ultracale+
XCZU27DR-2, XCZU28DR-2, XCZU47DR-2,
XCZU48DR-2 (FFVE1156)

Host Interface

2x1GigE and 2 UART(P4)
PS - PCI Express Gen2 x4 (P5)
PL - PCI Express Gen3 x8 (P6)
or up to 8x10 GigE (P6)
or up to 2x100 GigE (P6) /V88 option required

FPGA Specification

Cells = 930k(930k)
DSPs = 4272(4272)
BRAM = 38Mb(38Mb)
URAM = 22.5Mb(22.5Mb)
8x 12/14 bit 4/5 GSPS RF-ADC
8x 14 bit 6.5/10 GSPS RF_DAC
4x ARM® Cortex™-A53 MPCore™ - 1.5GHz
2x ARM® Cortex™-R5 MPCore™ - 533MHz
8x SD-FEC cores (ZU28/ZU48 only)
1x PCIe Gen3x8 in Fabric
1x PCIe Gen2x4 to ARM PS

Input/Output Interfaces

High-Frequency Analogue Inputs (Front I/O)

8x 12/14-bit 4/5GSPS RF-ADC
Resolution: 12/14-bit
Max Sample Freq: 4/5Gsps
Connector: CMM Micro connectors

High-Frequency Analogue Outputs (Front I/O)

8x 14-bit 6.5/10GSPS RF-DAC
Resolution: 14-bit
Max Sample Freq: 6.5/10Gsps
Connector: CMM Micro connectors

High-Speed Digital IO (Front I/O)

2x Reference Clocks and Synchronization

Low-Speed Digital IO (P6)

19x GPIO (19 single-ended)

Low-Speed Serial IO (P4)

2x Two x 1 Gigabit Ethernet Ports
2x 2 USB Interfaces
2x 2 Serial Comms Ports

High-Speed Serial IO (P6)

8x HSSIO Links - 10/25/40/100G Ethernet or PCI Express Gen3 x8

Onboard USB Comms (Onboard)

1x USB Interface

Application Data Memory

1x 16Gb DDR4 SDRAM - 32bits wide (to PS)
2x 8Gb DDR4 SDRAM - 8bits wide (to PL)
1x SD Card specific SDC microSD - 8bits wide (to PL)

Configuration Memory

QSPI 2x512Mb

Configuration Modes

PS - Configured via QSPI or uSD

Support

ARM centric Targeted Reference Design and Board Support Package
Gen3x8 example PCIe reference design (via P6) compatible with the
ADXDMA driver and API for Windows and Linux.

Deliverables

ADM-XRC-9R1 Board
One Year Warranty
One Year Technical Support

Board Format

XMC (Switched Mezzanine Card, VITA 42)

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-XRC-9R1(d)(x)(c)(a)

Device	d	/Z27 = XCZU27DR-2, /Z28 = XCZU28DR-2, /Z47 = XCZU47DR-2, /Z48 = XCZU48DR-2
XMC Connector	x	blank = VITA42 XMC, /V88 VITA88 XMC+
Cooling	c	/AC1 = air cooled industrial, /CC1 = conduction cooled industrial
Conformal Coating	a	blank = no conformal coating, A = Acrylic, P = Polyurethane