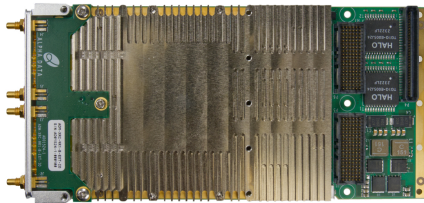


AD01510



Applications

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

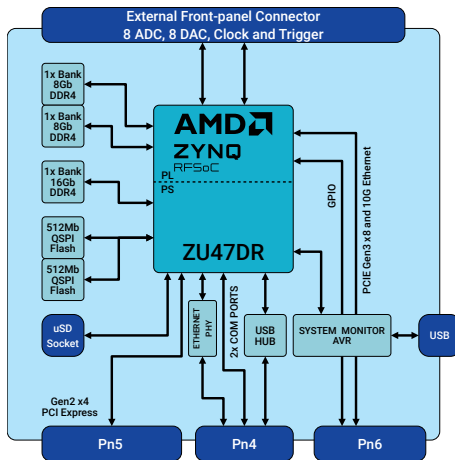
Board Features

- 8 ADC and DAC channels capable of Multi-Gigasample data conversion
- AMD Ultrascale+ re-configurable logic and DSP processing
- AMD Zynq ARM multi-core control and computation Processing System
- 10MHz to 6GHz front end bandwidth

Summary

The **ADM-XRC-9R1-B** is a high performance System On Module (SOM) based on the AMD Zynq Ultrascale+ 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. The module also supports the LVAUX SEL mitigation mode, when fitted with XQ grade devices, although the board remains as an Industrial Temperature grade solution



Target Devices

AMD Zynq Ultrascale+
XCZU47DR-2, XCZU48DR-2 (FFVE1156)

FPGA Specification

Logic Cells = 930k
DSPs = 4272
BRAM = 38Mb(38Mb) URAM = 22.5Mb (22.5Mb)

- 8x 14-bit 5GSPS RF-ADC
- 8x 14-bit 10GSPS RF-DAC
- 4x ARM® Cortex™-A53 MPCore™ - 1.5GHz
- 2x ARM® Cortex™-R5 MPCore™ - 533MHz
- 8x SD-FEC cores (ZU48 only)
- 1x PCIe Gen3x8 in Fabric
- 1x PCIe Gen2x4 to ARM PS

Application Data Memory

- 1x 16Gb DDR4 - 32bits wide (to PS)
- 2x 8Gb DDR4 - 8bits wide (to PL)
- 1x microSD

Configuration Memory

QSPI 2x512Mb Flash Memory

Configuration Modes

PS - Configured via QSPI or uSD

Deliverables

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

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

Input/Output Interfaces

High-Frequency Analogue Inputs

14-bit 5GSPS RF-ADC BW 10MHz-6GHz

Resolution: 14-bit

Max Sample Freq: 5GspS

Connector: Rosenberger Multiport Mini-Coax Locking Connector

High-Frequency Analogue Outputs

14-bit 10GSPS RF-DAC BW 10MHz-6GHz

Resolution: 14-bit

Max Sample Freq: 10GspS

Connector: Rosenberger Multiport Mini-Coax Locking Connector

High-Speed Digital IO

Reference Clocks and Synchronization

Low-Speed Digital IO

GPIO (19 single ended)

Low-Speed Serial IO

Two x 1 Gigabit Ethernet Ports

2 USB Interfaces

2 Serial Comms Ports

High-Speed Serial IO

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

Onboard USB Comms

USB Interface

Support

Software compatible with the ADM-XRC-9R1 utilizing its 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.

Board Format

XMC (Switched Mezzanine Card, VITA 42)

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC1	-40°C	+70°C	-55°C	+100°C
CC1	-40°C	+70°C	-55°C	+100°C

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

EMC Standards

Conformal Coating Options

Acrylic or Polyurethane
 Contact sales for specification of coatings.

Ordering Information

Order Code: ADM-XRC-9R1-B(d)(x)(c)(a)

Option	Code	Description of Options
Device	d	/Z47 = XCZU47DR-2, /Z48 = XCZU48DR-2 /XQZU48DR-1/PB = XQ-grade LVAUX support - leaded build not-RoHS
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