ADM-XRC-9R4

Datasheet Revision: 0.6
19th December 2023

AD01481

Applications

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

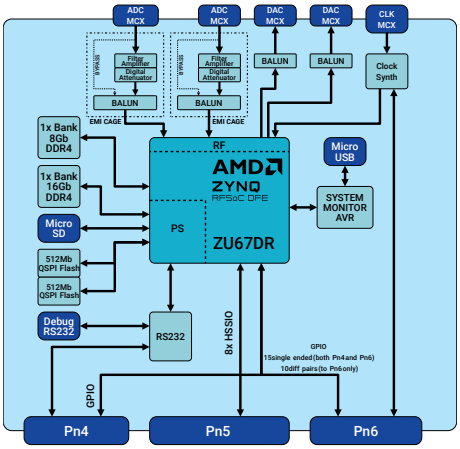
Board Features

- 2x 14 bit 5.9GSPS RF-ADC
- 2x 14 bit 10GSPS RF-DAC
- Digital Front-End Hard-IP
- On-board microcontroller accessible via USB

Summary

The **ADM-XRC-9R4** 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 (or XMC+) format and is available in Industrial temperature grades with Air or Conduction Cooling.



Target Device

AMD Zynq Ultrascale+
XCZU67DR-2 (FFVE1156)

FPGA Specification

Logic Cells = 489k
DSPs = 1872
BRAM = 22.8Mb URAM = 45Mb

4x ARM® Cortex™-A53 MPCore™ - 1.5GHz
2x ARM® Cortex™-R5 MPCore™ - 533MHz
2x 14 bit 5.9GSPS RF-ADC
2x 14 bit 10GSPS RF-DAC
1x Digital Front-End Hard-IP

Application Data Memory

1x 16Gb DDR4-2400 - (to PS)
1x 8Gb DDR4-2400 - (to PL)
1x microSD

Configuration Memory

QSPI 2x512Mb Flash Memory

Configuration Modes

PS - Configured via QSPI or uSD

Deliverables

ADM-XRC-9R4 Board
One Year Warranty
One Year Technical Support

Input/Output Interfaces

High-Frequency Analogue Inputs
Dual 14-bit 5.9GSPS RF-ADC with an external low-pass filter - amplifier - digital attenuator - Balun (all bar the Balun is bypassable)

Resolution: 14-bit
Max Sample Freq: 5.9Gsps
Bandwidth: 625MHz-2815MHz (bypass the LPF and attenuators to increase the bandwidth)
Impedance: 50Ω (AC coupled)
Connector: MCX

High-Frequency Analogue Outputs
Dual 14-bit 10GSPS RF-DAC driving a Balun to the output connector

Resolution: 14-bit
Max Sample Freq: 10Gsps
Bandwidth: 625MHz-2815MHz
Impedance: 50Ω (AC coupled)
Connector: MCX

External Clock Input
External Clock Source

Bandwidth: 1MHz to 500MHz
Impedance: 100Ω (AC coupled)
Connector: MCX

High-Speed Serial IO
HSSIO Links - 10G Ethernet

Onboard USB Comms
micro USB Interface to system monitor

Low-Speed Serial IO
Serial Comms Ports

Low-Speed Digital IO
15x single ended signals (to both Pn4 and Pn6)
10x differential pair signals (to Pn6 ONLY)

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Support

TBC

Board Format

XMC (Switched Mezzanine Card, VITA 42) or XMC+ (VITA 88)

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)

Conformal Coating Options

Acrylic or Polyurethane
Contact sales for specification of coatings.

Ordering Information		
Order Code: ADM-XRC-9R4(x)(c)(a)		
Option	Code	Description of Options
XMC+ Option	x	blank = Standard XMC connectors Fitted, /V88 = XMC+ connectors fitted
Cooling	c	/AC1 = air cooled industrial, /CC1 = conduction cooled industrial
Conformal Coating	a	blank = no conformal coating, A = Acrylic, P = Polyurethane
Note	Contact Sales for other options	

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