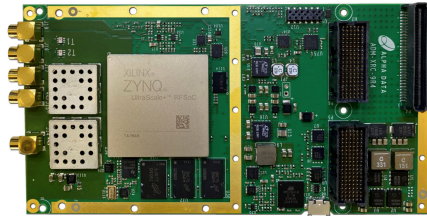AD01481

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 Xilinx 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.
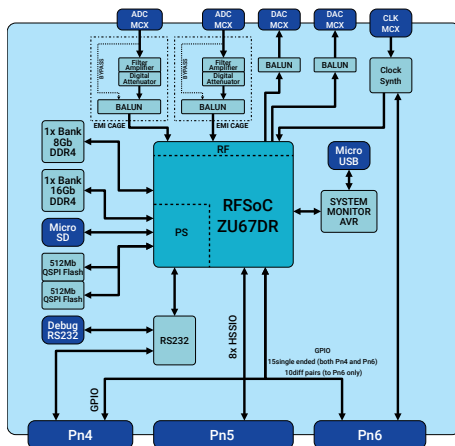
Target Device

AMD Xilinx 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
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)

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)

EMC Standards

FCC 47CFR Part 2
EN55022:2010 Equipment ClassB

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	

ALPHA DATA

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	UK Office	**USA Office**
Address:	Suite L4A, 160 Dundee Street, Edinburgh, EH11 1DQ, UK	10822 West Toller Drive, Suite 250 Littleton, CO 80127
Telephone:	+44 131 558 2600	(303) 954 8768
Fax:	+44 131 558 2700	(866) 820 9956 - toll free
email:	sales@alpha-data.com	sales@alpha-data.com