

AD01427



Prime Application

Adaptable RF Processing Node

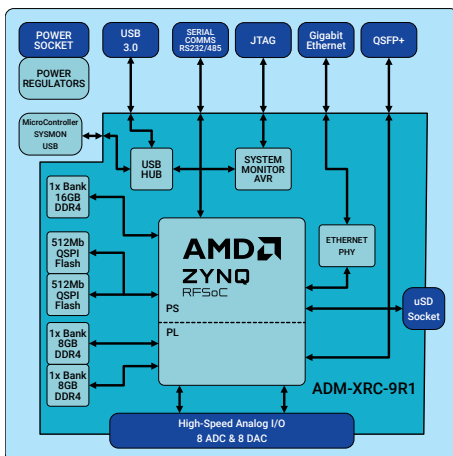
Board Features

- ADM-XRC-9R1
- 8x High-Speed 12/14-bit ADCs
- 8x High-Speed 14-bit DACs
- 4x ARM® Cortex™-A53 MPCore™
- 2x ARM® Cortex™-R5 MPCore™
- Gigabit Ethernet Port
- Microcontroller System Monitor
- USB and Serial Comms
- Fan cooling for the 9R1
- External Power connector

Summary

The **ADS-STANDALONE/9R1** is a standalone fully enclosed 8 channel ADC (5 GSPS@14 bit - Gen3 RFSoc) and 8 channel DAC (10 GSPS@14 bit - Gen3 RFSoc) data converter based on AMD RFSoc technology. This is a stand alone deployable platform enclosing an assembly of one ADM-XRC-9R1 and one ADC-XMC-STANDALONE carrier. Digital connection off chip is available through a choice of system interfaces including Ethernet, USB and High-Speed Serial Comms.

The ADS-STANDALONE/9R1 can be remotely powered on and off via the USB connection to the on-board system management controller that runs off the standby power supply.



Target Devices

AMD Zynq Ultrascale+
XCZU27DR-2 (Gen1), XCZU28DR-2 (Gen1),
XCZU47DR-2 (Gen3), XCZU48DR-2 (Gen3)
(FFVE1156 or FSVE1156)

FPGA Specification

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

4x ARM® Cortex™-A53 MPCore™ - 1.5GHz
2x ARM® Cortex™-R5 MPCore™ - 533MHz
8x 12/14 bit 4/5 GSPS RF-ADC (G1/G3)
8x 14 bit 6.5/10 GSPS RF_DAC (G1/G3)
8x SD-FEC cores (ZU28/ZU48 only)

Application Data Memory

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

Configuration Memory

QSPI 2x512MBit Flash Memory

Configuration Modes

PS - Configured via QSPI or uSD

Deliverables

ADS-STANDALONE/9R1 Board
One Year Warranty
One Year Technical Support
Reference Designs RD-9R1

Input/Output Interfaces

High-Frequency Analogue Inputs

12/14-bit 4/5GSPS RF-ADC (G1/G3)

Resolution: 12/14-bit
Max Sample Freq: 4/5 Gsps
Bandwidth: 4/6 GHz
Coupling: AC
Impedance: 50R

High-Frequency Analogue Outputs

14-bit 6.5/10GSPS RF-DAC (G1/G3)

Resolution: 14-bit
Max Sample Freq: 6.5/10 Gsps
Bandwidth: 4/6 GHz
Coupling: AC
Impedance: 50R

GPIO

External Clock in and clock out and 2
Bidirectional GPIO

Comms

1000BASE-T Ethernet
QSFP+ HSSIO (4 lanes)
Serial COM Port
USB3.0

Power

External power: 15V-30V (not included)

Support

Contact Alpha Data support for details of the ADM-XRC-9R1 reference design package.

Board Format

Assembly Dimensions (LxWxH): 220mm x 165mm x 52mm : Weight 1.4kg

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC0	0°C	+55°C	-40°C	+85°C

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

Ordering Information

Order Code: ADS-STANDALONE/t/x/(f)

Option	Code	Description of Options
XMC Connector Type	t	blank = XMC/VITA42, V88 = XMC+/VITA88 Connectors
FPGA Platform	x	9R1
RFSoc	f	27 = XCZU27DR-2, 28 = XCZU28DR-2, 47 = XCZU47DR-2, 48 = XCZU48DR-2
Carrier and Enclosure		ADC-XMC-STANDALONE/9R1/EC - The standalone carrier with ADM-XRC-9R1 adaptor board and desktop enclosure