

AD01427



## Prime Application

**Adaptable RF Processing Node**

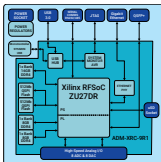
## Board Features

- 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 Xilinx 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

Xilinx 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)
- 2x 8Gb DDR4 (PL)

## Configuration Memory

QSPI 1024MBit 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

100BASE-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

**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)

**EMC Standards**

FCC 47CFR Part 2

EN55022:2010 Equipment ClassB

**Ordering Information**

**Order Code: ADS-STANDALONE/9R1/(f)**

Option	Code	Description of Options
RFSoc	f	27 = XCZU27DR-2, 28 = XCZU28DR-2, 47 = XCZU47DR-2, 48 = XCZU48DR-2

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