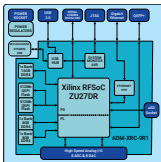


AD01427



Prime Application

Adaptable RF Processing Node

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.

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

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) - 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)

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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