

# ADRV9009-ZU11EG

## RF System-on-Module

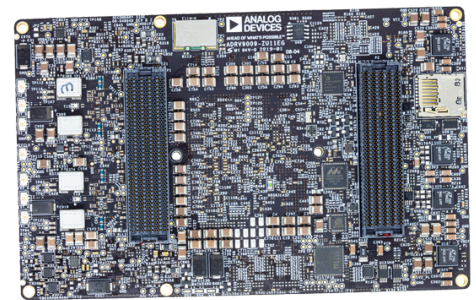
### Product Overview

07-15-2021

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

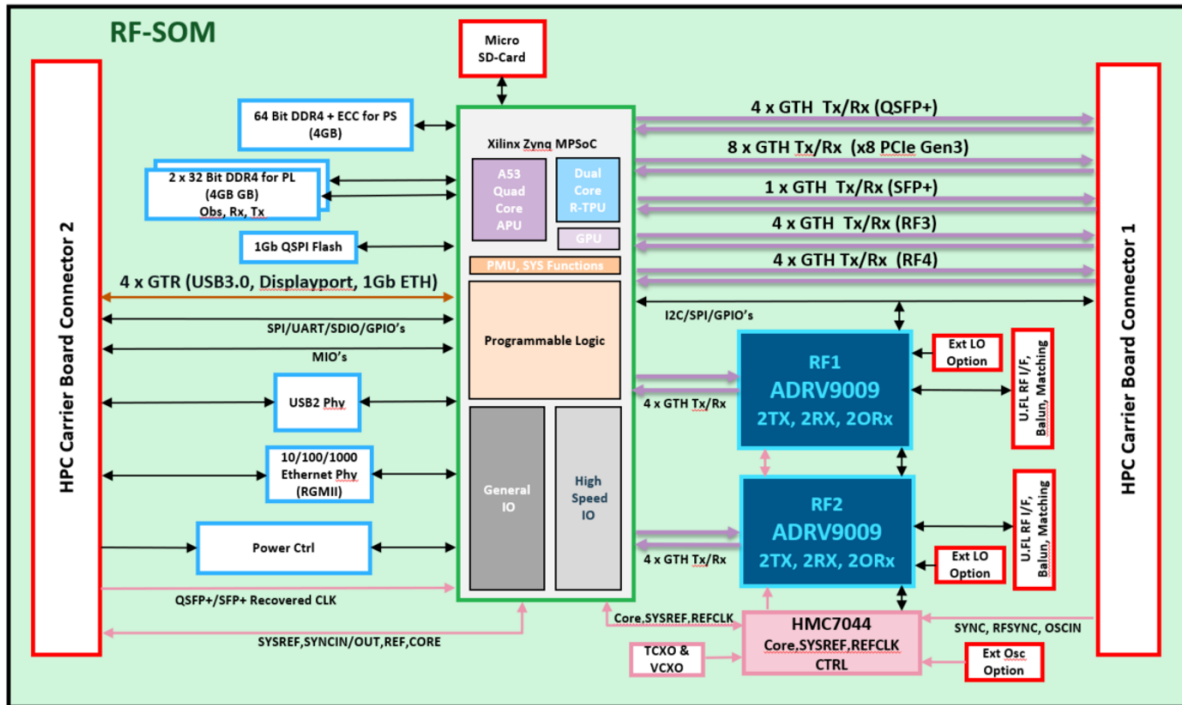
Analog Devices Inc. ADRV9009-ZU11EG RF System-on-Module offers wide bandwidth and tuning range for a broad range of applications. The device contains 2x Wideband ADRV9009 Dual Transceivers and Quad-core ARM® Cortex™-A53 MPCore™. ADRV9009-ZU11EG RF System-on-Module can be synchronized together enabling a complete prototyping solution for complex multi-stream applications ensuring end-to-end deterministic latency. Features 4GB of DDR4 (with ECC) is dedicated to the programming system, while 2x2GB banks are dedicated to programmable logic, offering flexibility for developing custom applications. Carrier board ADRV2CRR-FMC is required to evaluate the ADRV9009-ZU11EG RF SOM and that can be ordered separately.



## Features

- Quad transmitters
- Quad receivers
- Quad input Observation Receiver for DPD
- 75MHz to 6GHz wide tuning range
- Max receiver BW 200MHz
- Max transmitter synthesis BW 450MHz
- Max observation receiver BW 450MHz
- Integrated LO and Phase synch between all channels
- Platform development environment support includes:
  - Industry-standard Linux Industrial I/O applications
  - MATLAB®
  - Simulink®
  - GNU radio
  - Streaming interfaces for custom C, C++, Python, and C# applications
- HDL reference designs and drivers to allow zero day development

## Block Diagram



## Hardware Overview

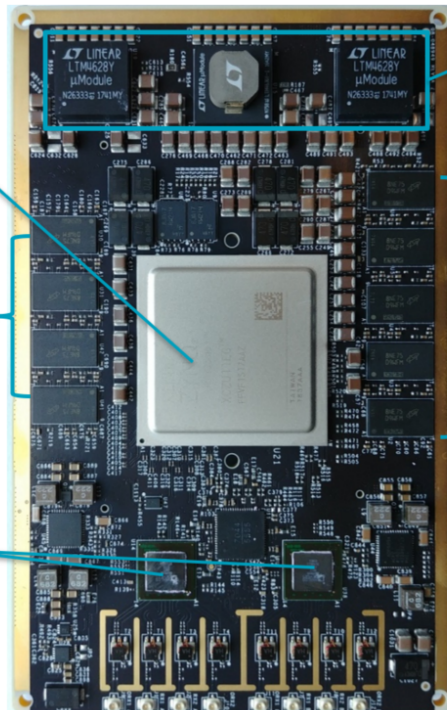
### ADRV9009-ZU11EG RF SOM : \$7999

- Processor
  - Quad Core ARM Cortex A53 (1.5 GHz each)
  - L1 cache : 32 KB Instruction, 32 KB Data
  - L2 cache : 512 KB
- Processor
  - Dual ARM R5 (600 MHz each)
  - L1 cache : 32 KB Instruction, 32 KB Data
  - 128KB Memory per core
- GPU : Mali-400 MP2 up to 667MHz
- L2 Cache 64KB
- FPGA
  - Kintex Ultrascale+ Fabric
  - 653k Logic Cells
  - 52.7 Mb Block RAM
  - 2,928 DSP Slices
  - Vivado license required
- 2 Banks of 2 Gbyte (x32) DDR4 for PL (Radio)
- 128 Mbyte SPI Flash
- MicroSD Card (lockable)

Xilinx ZU11EG

- ADRV9009 RF Transceiver
  - 245.76 MSPS Rx (200 MHz Bandwidth)
  - 491.52 MSPS Tx (450 MHz Bandwidth)
  - 491.52 MSPS Observer (450 MHz Bandwidth)
  - 128-tap FIR Filters for equalization
  - Multi-chip phase synchronization for RF LO and baseband clocks
  - 75 – 6000 MHz tuning range
  - 2 Rx, 2 Tx, 2 Tx Monitor (per device)

ADI ADRV9009



- Power Modules (2x16A, 1x40A )
  - 12V input
- 4 Gbyte DDR4 + ECC for Processors
- 128 Mbyte SPI Flash
- USB 2.0 (OTG Controller + Phy)
- 4 x GTR share amount:
  - PCIe® Gen2 x4,
  - 2x USB3.0,
  - SATA 3.1,
  - DisplayPort,
- 4x Tri-mode Gigabit Ethernet
  - 1 x 10/100/1000 Ethernet Phy
- 2xUSB 2.0
  - 1 USB 2.0 Phy
- 2x SD/SDIO
  - 1x MicroSD Card (lockable)
- 2x UART,
- 2x CAN 2.0B,
- 2x I2C,
- 2x SPI,
- 4x 32b GPIO
- 24 x GTH (12.5 Gb/s)
  - 2x 100G Ethernet MAC/PCS w/RS-FEC
  - PCI Express® Gen 3 (x16)
  - External JESD204B ADRV9009 Devices
- Full Linux based reference design
- Fully integrated and tested system
- Common connector: HPC FMC
- Digital I/O pins :
- U.FL connectors : 15

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## Mouser Part Number(s)

[ADRV9009-ZU11EG](#)

To learn more, visit <https://www.mouser.com/new/analog-devices/adi-adrv9009-zu11eg-som/>