EXPLORE THE ZYNQ ULTRASCALE+ RFSoC FROM ANTENNA TO DIGITAL

The Avnet Zynq® UltraScale+™ RFSoC Development Kit enables system architects to explore the entire signal chain from antenna to digital using tools from MathWorks and industry-leading RF components from Qorvo. We extend the functionality of the Xilinx Zynq UltraScale+ RFSoC ZCU111 Evaluation Kit by adding a Qorvo 2x2 Small Cell RF front-end 1.8 GHz card for over-the-air transmission, plus native connection to MATLAB® & Simulink® with Avnet’s RFSoC Explorer® application.

KIT INCLUDES

Free MATLAB Trial Package for Wireless Communications
- mathworks.com/rf soc

Xilinx Zynq UltraScale+ RFSoC ZCU111 Evaluation Board
- Rapid prototyping platform using the XCZU28DR-2EFFVG1517 device
- Supports 8x 4GSPS 12-bit ADCs, 8x 6.5GSPS 14-bit DACs, and 8 soft-decision forward error correction (SD-FECs)
- 4GB DDR4 memory for large sample buffer storage
- On-board reference PLL (LMK04208) and RF PLLs (LMX2594) generate RF-ADC and RF-DAC sample clocks
- Two Samtec LPAF connectors for access to RF-ADC/RF-DAC clocking and data path signals

XM500 Balun Board
- Add-on card providing SMA connection to 8 ADC/DAC channels

Qorvo 2x2 Small Cell RF Front-end 1.8 GHz Card
- Two channels, each with Tx, Rx and DPD (Digital Pre Distortion) Observation path
- Default tuning to LTE 1800 MHz FDD System
- Transmit signal chain (2x):
  - TQQ0303 - 1842.5 MHz RF BAW Filter
  - TQL9092 - driver amplifier
  - RFSA3713 - Digital Step Attenuator
  - QPA9903 - 0.5 Watt High-Efficiency Linearizable Power Amplifier
  - QPO1297 - Band 3 BAW Duplexer
- Receive signal chain (2x):
  - QPO1297 - Band 3 BAW Duplexer
  - TQQ0302 - 1747.5 MHz RF BAW Filter - Band 3 Uplink
  - TQP4M9017 - Fast Digital Step Attenuator
  - RMS Power Detector
  - QPL9096 - Ultra Low-Noise Bypass LNA

TE Multi-band Stub Antennae
Avnet RFSoC Explorer for MATLAB and Simulink
Downloadable documentation and reference designs

To purchase this kit, visit avnet.com/rfsockit

FEATURE LIST

Avnet RFSoC Explorer for Signal Capture & Analysis with MATLAB and Simulink
- Radio-in-the-loop co-simulation (Gigabit Ethernet)
- Over-the-air testing with 2x2 LTE 1800MHz FDD front end
- Direct-RF sampling without an external RF mixer

TARGET APPS

3G/4G/5G Commercial wireless communications
- Heterogeneous small cells
- Satellite communications
- Software Defined Radio
- Pre-Distortion Power Amplifier Linearization

Test and measurement / instrumentation
- Cellular Testers
- Channel sounding

Aerospace and Defense
- Tactical radio
- Mil Sat Com
- Cockpit Radios
- UAV

Compliance Notice - This kit can radiate radio frequency energy and has not been tested for CE, FCC, or IC compliance. The intended use is for demonstration, engineering development, or evaluation purposes.
**FEATURED MANUFACTURERS**

**MathWorks**

**Qorvo**

**Samtec**

**Xilinx**

**PARTS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Resale</th>
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<tbody>
<tr>
<td>AES-ZU-RFSOC-SK-G</td>
<td>Avnet Zynq UltraScale+ RFSoC Development Kit with Qorvo RF Front End</td>
<td>$9,495 USD</td>
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<tr>
<td>AES-LPA-QRF1800-G</td>
<td>Qorvo 2x2 Small Cell RF Front-end 1.8GHz Card (no kit)</td>
<td>$795 USD</td>
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Countries Available for Purchase: Americas, EMEA, Asia, Japan

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