

# Zynq UltraScale+ RFSoc Development Kit with Qorvo RF Front End



## 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/rfsoc](https://mathworks.com/rfsoc)

#### 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
  - RFS3713 - Digital Step Attenuator
  - QPA9903 - 0.5 Watt High-Efficiency Linearizable Power Amplifier
  - QPQ1297 - Band 3 BAW Duplexer
- Receive signal chain (2x):
  - QPQ1297 - 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/rfsocket](https://avnet.com/rfsocket)



### 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

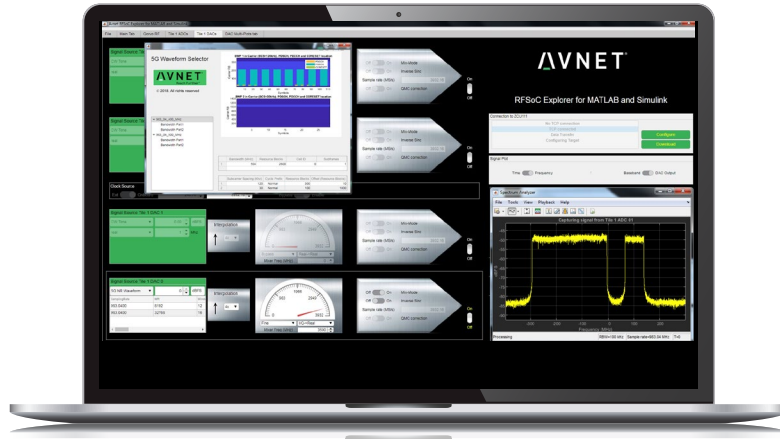
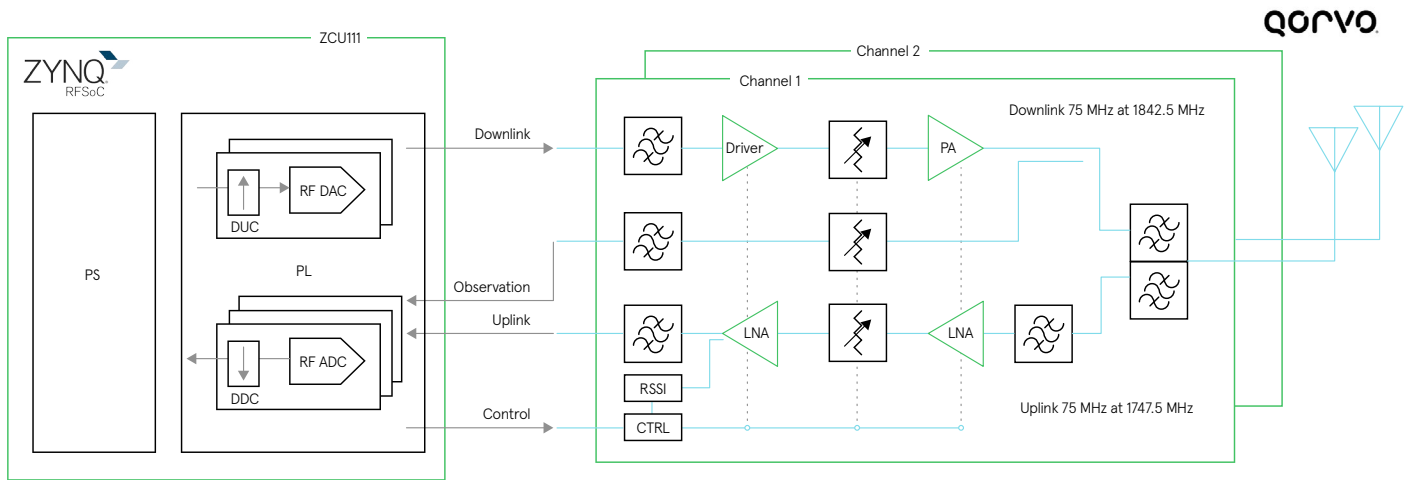
- Cellular Testers
- Channel sounding

#### 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.

## BLOCK DIAGRAM



## FEATURED MANUFACTURERS



## PARTS

Part Number	Description	Resale
AES-ZU-RFSOC-SK-G	Avnet Zynq UltraScale+ RFSoc Development Kit with Qorvo RF Front End	\$9,495 USD
AES-LPA-QRF1800-G	Qorvo 2x2 Small Cell RF Front-end 1.8GHz Card (no kit)	\$795 USD

Countries Available for Purchase: Americas, EMEA, Asia, Japan

## CONTACT INFORMATION

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