



# Zynq UltraScale+ RFSoc Kit Selection Guide



# Zynq® UltraScale+™ RFSoc Boards & Kits Portfolio

## Gen 1 4GHz

### ZCU111 Evaluation Kit



### ZU28DR

**Application Development and Performance Evaluation of:**  
**ADCs:** 8x 12-bit 4.096GSPS  
**DACs:** 8x 14-bit 6.554GSPS  
**SD-FEC:** 8



### Avnet RFSoc Kit Development Kit



### ZU28DR

**Wireless Application Development Leveraging:**  
**Xilinx ZCU111 Evaluation Kit**  
**Avnet Qorvo 2x2 Small Cell RF Front End 1.8GHz Card**  
**Avnet RFSoc Explorer with MATLAB and Simulink**



### ZCU1275 Characterization Kit



### ZU29DR

**Ideal for Tone Testing and Data Sheet Verification of:**  
**ADCs:** 16x 12-bit 2.058GSPS  
**DACs:** 16x 14-bit 6.554GSPS



## Gen 2 5GHz

### ZCU1285 Characterization Kit



### ZU39DR

**Ideal for Tone Testing and Data Sheet Verification of:**  
**ADCs:** 16x 12-bit 2.220GSPS  
**DACs:** 16x 14-bit 6.554GSPS



## Gen 3 6GHz

### ZCU208 Evaluation Kit



### ZU48DR

**Application Development and Performance Evaluation of:**  
**ADCs:** 8x 14-bit 5.0GSPS  
**DACs:** 8x 14-bit 10.0GSPS  
**SD-FEC:** 8



### ZCU216 Evaluation Kit



### ZU49DR

**Application Development and Performance Evaluation of:**  
**ADCs:** 16x 14-bit 2.5GSPS  
**DACs:** 16x 14-bit 10.0GSPS



# Zynq UltraScale+ RFSoc Boards & Kits: Resources

		Gen 1 (4GHz)			Gen 2 (5GHz)	Gen 3 (6GHz)	
	Feature	ZCU111	Avnet Dev Kit	ZCU1275	ZCU1285	ZCU208	ZCU216
Xilinx Device	Zynq UltraScale+ RFSoc	ZU28DR	ZU28DR	ZU29DR	ZU39DR	ZU48DR	ZU49DR
	System Logic Cells	930k	930k	930k	930k	930k	930k
	Package, Speed, and Temperature Grade	2FFVG1517E	2FFVG1517E	2FFVF1760E	2FFVF1760I	2F5VG1517E	2FFVF1760E
RF-ADC w/DDC	# of 12-bit ADCs (Max Rate)	8R (4.096GSPS)	8R (4.096GSPS)	16R (2.058GSPS)	16R (2.220GSPS)	-	-
	# of 14-bit ADCs (Max Rate)	-	-	-	-	8R (5GSPS)	16R (2.5GSPS)
RF-DAC w/DUC	# of 14-bit DACs (Max Rate)	8T (6.554GSPS)	8T (6.554GSPS)	16T (6.554GSPS)	16T (6.554GSPS)	8T (10GSPS)	16T (10GSPS)
RF Data Converter	Interpolation / Decimation	1, 2, 4, 8			1, 2, 4, 8	1, 2, 3, 4, 5, 8, 10, 12, 16, 20, 24, 40	
Error Correction	Soft-Decision FEC (SD-FEC)	8	8	-	-	8	-
Boot / Code Storage	SD Boot	Yes			Yes	Yes	Yes
	QSPI Boot	Yes			Yes	Yes	Yes
	JTAG Boot	Yes			Yes	Yes	Yes
Communications & Networking	RJ-45	1	1	-	-	1	1
	SFP/SFP+/zSFP+/SFP28	4	4	-	-	4	4
	USB 3.0	1	1	-	-	1	1
	USB-UART/JTAG	1	1	1 UART, 1 JTAG	1 UART, 1 JTAG	1	1
	QSPI	2	2	1	1	2	2
	I2C	2	2	2	2	2	2
Control & User Interaction	Bullseye Connector ADC/DAC	-	-	2	2	-	-
	Bullseye Connector GTY	-	-	4	4	-	-
	Bullseye Connector GTR	-	-	1	1	-	-
	PMBus	Yes	Yes	Yes	Yes	Yes	Yes
Debug	JTAG PC4 Header	1	1	1	1	1	1
Expansion Connectors	FMC	2 HPC	2 HPC	1 HPC, 1 LPC	1 HPC, 1 LPC	2 FMC HPC	2 FMC HPC
	RFMC	2 RFMC 1.0	2 RFMC 1.0	-	-	2 RFMC 2.0	2 RFMC 2.0
	PMOD	2	2	-	-	-	2
Memory	PS DDR4	4GB 64-bit	4GB 64-bit	-	-	4GB 64-bit	4GB 64-bit
	PS DDR3	-	-	2GB 64-bit	2GB 64-bit	-	-
	PL DDR	4GB 64-bit	4GB 64-bit	-	-	4GB 64-bit	4GB 64-bit
	SD CARD	Yes	Yes	Yes	Yes	Yes	Yes
	M.2 SATA Connector	Yes	Yes	-	-	Yes	Yes
Add-on Cards	Breakout Balun Card	XM500 (4GHz 8T8R)	XM500 (4GHz 8T8R)	RF100 (4GHz 16T16R)	RF200 (5GHz 16T16R)	XM655 (6GHz 16T16R)	XM655 (6GHz 16T16R)
	Loop Back Card	-	-	-	-	XM650 (16T16R)	XM650 (16T16R)
	Clock Module Card	-	-	CLK101, CLK103	CLK101, CLK103	CLK104	CLK104
	Qorvo 2x2 1.8GHz Card	-	1	-	-	-	-
Software Tools	Avnet RFSoc Explorer for MATLAB® and Simulink®	-	Yes	-	-	-	-
	RF Analyzer	Yes	Yes	Yes	Yes	Yes	Yes
	RF Evaluation Tool	Yes	Yes	-	-	Yes	Yes
	Power Advantage Tool	Yes	Yes	-	-	Yes	Yes
Design Files	Reference Designs	Yes	Yes	-	-	Yes	Yes