



# Zynq UltraScale+ RFSoc Kit Selection Guide



# Zynq® UltraScale+™ RFSoc Boards & Kits Portfolio

Gen 1  
4GHz

## ZCU111

Evaluation Kit  
EK-U1-ZCU111-G



ZU28DR

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

Production Available

## Avnet RFSoc Kit

Development Kit  
AES-ZU-RFSOC-SK-G



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®

Production Available

Gen 2  
5GHz

## ZCU1285

Characterization Kit  
CK-U1-ZCU1285-G



ZU39DR

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

Production Available

Gen 3  
6GHz

## ZCU208

Evaluation Kit  
EK-U1-ZCU208-V1-G



ZU48DR

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

Production Available

## ZCU216

Evaluation Kit  
EK-U1-ZCU216-V1-G



ZU49DR

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

Production Available

DFE  
7.125GHz

## ZCU670

Evaluation Kit  
EK-U1-ZCU670-V2-G



ZU67DR

Ideal for 5G Wireless NR Application Evaluation:  
**ADCs:** 8x 2.95GSPS and 2x 5.9GSPS  
**DACs:** 8x 10GSPS

Production Available

# Zynq UltraScale+ RFSoc Boards & Kits: Resources

		Gen 1 (4GHz)		Gen 2 (5GHz)	Gen 3 (6GHz)		DFE (7.125GHz)
Feature		ZCU111	Avnet Dev Kit	ZCU1285	ZCU208	ZCU216	ZCU670
Xilinx Device	Zynq UltraScale+ RFSoc	ZU28DR	ZU28DR	ZU39DR	ZU48DR	ZU49DR	ZU67DR
	System Logic Cells	930k	930k	930k	930k	930k	489k
	Package, Speed, and Temperature Grade	2FFVG1517E	2FFVG1517E	2FFVF1760I	2FSVG1517E	2FFVF1760E	2FSVE1156I
RF-ADC w/DDC	# of 12-bit ADCs (Max Rate)	8R (4.096GSPS)	8R (4.096GSPS)	16R (2.220GSPS)	-	-	-
	# of 14-bit ADCs (Max Rate)	-	-	-	8R (5GSPS)	16R (2.5GSPS)	8 (2.95GSPS)   2 (5.9GSPS)
RF-DAC w/DUC	# of 14-bit DACs (Max Rate)	8T (6.554GSPS)	8T (6.554GSPS)	16T (6.554GSPS)	8T (10GSPS*)	16T (9.85GSPS)	10 (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	Yes
	QSPI Boot	Yes		Yes	Yes	Yes	Yes
	JTAG Boot	Yes		Yes	Yes	Yes	Yes
Communications & Networking	RJ-45	1	1	-	1	1	1
	SFP/SFP+/zSFP+/SFP28	4	4	-	4	4	4
	USB 3.0	1	1	-	1	1	1
	USB-UART/JTAG	1	1	1 UART, 1 JTAG	1	1	1
	QSPI	2	2	1	2	2	2
	I2C	2	2	2	2	2	2
Control & User Interaction	Bullseye Connector ADC/DAC	-	-	2	-	-	-
	Bullseye Connector GTY	-	-	4	-	-	-
	Bullseye Connector GTR	-	-	1	-	-	-
	PMBus	Yes	Yes	Yes	Yes	Yes	Yes
Debug	JTAG PC4 Header	1	1	1	1	1	1
Expansion Connectors	FMC+	1	1	1 HPC, 1 LPC	1	1	1
	RFMC	2 RFMC 1.0	2 RFMC 1.0	-	2 RFMC 2.0	2 RFMC 2.0	2 RFMC 2.0
	Pmod	2	2	-	-	2	2
Memory	PS DDR4	4GB 64-bit	4GB 64-bit	-	4GB 64-bit	4GB 64-bit	4GB 64-bit
	PS DDR3	-	-	2GB 64-bit	-	-	-
	PL DDR	4GB 64-bit	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	Yes
Add-on Cards	Breakout Balun Card	XM500 (4GHz 8T8R)	XM500 (4GHz 8T8R)	RF200 (5GHz 16T16R)	XM655 (6GHz 16T16R)	XM655 (6GHz 16T16R)	XM755 (7.125GHz 16T16R)
	Loop Back Card	-	-	-	XM650 (16T16R)	XM650 (16T16R)	XM650 (16T16R)
	Clock Module Card	-	-	CLK101, CLK103	CLK104	CLK104	Optional 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	Yes (Stand-alone)
Design Files	Reference Designs	Yes	Yes	-	Yes	Yes	Yes

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