



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 4.096 GSPS
DACs: 8x 14-bit 6.554 GSPS
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 2.058 GSPS
DACs: 16x 14-bit 6.554 GSPS



Gen 2
5GHz

ZCU1285

Characterization Kit



ZU39DR

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



Gen 3
6GHz

ZCU216

Evaluation Kit



ZU49DR

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



Zynq UltraScale+ RFSoc Boards & Kits: Resources

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