AMD Zynq™ 7000 SoC Product Selection Guide

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AMD Zynq 7000 SoCs – Resources

Important: Verify all data in this document with the device data sheets.

		Low-End Devices						Mid-Range Devices			
	Device Name	Z-7007S	Z-7012S	Z-7014S	Z-7010	Z-7015	Z-7020	Z-7030	Z-7035	Z-7045	Z-7100
	Part Number	XC7Z007S	XC7Z012S	XC7Z014S	XC7Z010	XC7Z015	XC7Z020	XC7Z030	XC7Z035	XC7Z045	XC7Z100
Processing System (PS)	Processor Core	Single-Core Arm® Cortex®-A9 MPCore™ Up to 766 MHz			Dual-Core Arm Cortex-A9 MPCore Up to 866 MHz			Dual-Core Arm Cortex-A9 MPCore Up to 1 GHz[1]			
	Processor Extensions	NEON™ SIMD Engine and Single/Double Precision Floating Point Unit per processor									
	L1 Cache	32 KB Instruction, 32 KB Data per processor									
	L2 Cache	512 KB									
	On-Chip Memory	256 KB									
	External Memory Support[2]	DDR3, DDR3L, DDR2, LPDDR2									
	External Static Memory Support[2]	2x Quad-SPI, NAND, NOR									
	DMA Channels	8 (4 dedicated to PL)									
	Peripherals	2x UART, 2x CAN 2.0B, 2x I2C, 2x SPI, 4x 32b GPIO									
	Peripherals w/ built-in DMA[2]	2x USB 2.0 (OTG), 2x Tri-mode Gigabit Ethernet, 2x SD/SDIO									
	Security[3]	RSA Authentication of First Stage Boot Loader, AES and SHA 256b Decryption and Authentication for Secure Boot									
	Processing System to Programmable Logic Interface Ports (Primary Interfaces & Interrupts Only)	2x AXI 32b Master, 2x AXI 32b Slave 4x AXI 64b/32b Memory AXI 64b ACP 16 Interrupts									
Programmable Logic (PL)	7 Series PL Equivalent	Artix™ 7	Artix 7	Artix 7	Artix 7	Artix 7	Artix 7	Kintex™ 7	Kintex 7	Kintex 7	Kintex 7
	Logic Cells	23K	55K	65K	28K	74K	85K	125K	275K	350K	444K
	Look-Up Tables (LUTs)	14,400	34,400	40,600	17,600	46,200	53,200	78,600	171,900	218,600	277,400
	Flip-Flops	28,800	68,800	81,200	35,200	92,400	106,400	157,200	343,800	437,200	554,800
	Total Block RAM (# 36 Kb Blocks)	1.8 Mb (50)	2.5 Mb (72)	3.8 Mb (107)	2.1 Mb (60)	3.3 Mb (95)	4.9 Mb (140)	9.3 Mb (265)	17.6 Mb (500)	19.2 Mb (545)	26.5 Mb (755)
	DSP Slices	66	120	170	80	160	220	400	900	900	2,020
	PCI Express®	—	Gen2 x4	—	—	Gen2 x4	—	Gen2 x4	Gen2 x8	Gen2 x8	Gen2 x8
	Analog Mixed Signal (AMS) / XADC[2]	2x 12 bit, MSPS ADCs with up to 17 Differential Inputs									
	Security[3]	AES & SHA 256b Decryption & Authentication for Secure Programmable Logic Config									
	Speed Grades: Commercial	-1			-1			-1			-1
	Speed Grades: Extended	-2			-2,-3			-2,-3			-2
	Speed Grades: Industrial	-1, -2			-1, -2, -1L			-1, -2, -2L			-1, -2, -2L

Notes:
1. 1 GHz processor frequency is available only for -3 speed grades in Z-7030, Z-7035, and Z-7045 devices. See DS190, *Zynq-7000 SoC Overview* for details.
2. Z-7007S and Z-7010 in CLG225 have restrictions on PS peripherals, memory interfaces, and I/Os. Please refer to UG585, *Zynq-7000 SoC Technical Reference Manual* for more details.
3. Security block is shared by the processing system and the programmable logic.

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AMD Zynq 7000 SoCs – Packaging

		Low-End Devices						Mid-Range Devices			
	Device Name	Z-7007S	Z-7012S	Z-7014S	Z-7010	Z-7015	Z-7020	Z-7030	Z-7035	Z-7045	Z-7100
Package Footprint[1]	Dimensions (mm)	HR I/O, HP I/O PS I/O[2], GTP Transceivers						HR I/O, HP I/O PS I/O[2], GTX Transceivers			
CLG225	13x13	54, 0 84[3], 0			54, 0 84[3], 0						
CLG400	17x17	100, 0 128, 0		125, 0 128, 0	100, 0 128, 0		125, 0 128, 0				
CLG484	19x19			200, 0 128, 0			200, 0 128, 0				
CLG485[4]	19x19		150, 0 128, 4			150, 0 128, 4					
SBG485[4]	19x19							50, 100 128, 4			
FBG484	23x23							100, 63 128, 4			
FBG676[1]	27x27							100, 150 128, 4	100, 150 128, 8	100, 150 128, 8	
FFG676[1]	27x27							100, 150 128, 4	100, 150 128, 8	100, 150 128, 8	
FFG900	31x31								212, 150 128, 16	212, 150 128, 16	212, 150 128, 16
FFG1156	35x35										250, 150 128, 16

Notes:
1. Devices in the same package are footprint compatible. FBG676 and FFG676 are also footprint compatible.
2. PS I/O count does not include dedicated DDR calibration pins.
3. PS DDR and PS MIO pin count is limited by package size. See DS190, *Zynq-7000 SoC Overview* for details.
4. CLG485 and SBG485 are pin-to-pin compatible. See product data sheets and user guides for more details. See DS190, *Zynq-7000 SoC Overview* for package details.

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AMD Zynq 7000 SoCs – Migration

Package Name	mm	Zynq®-7000 Family									
		Z-7007S	Z-7012S	Z-7014S	Z-7010	Z-7015	Z-7020	Z-7030	Z-7035	Z-7045	Z-7100
CLG225	13	■			■						
CLG400	17	■		■	■		■				
CLG484	19			■			■				
CLG485	19		■			■					
SBG485	19							■			
FBG484	23							■			
FBG676	27							■	■	■	
FFG676	27							■	■	■	
FFG900	31								■	■	■
FFG1156	35										■

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AMD Zynq™ 7000 Device Ordering Information

XC	7	Z	###	S	-1	FF	G	###	C
Commercial	Series	Zynq	Value Index	Single Core Indicator (Z-7007S Z-7012S Z-7014S only)	Speed Grade -1: Slowest -L1: Low Power -2: Mid -L2: Low Power -3: Fastest	Footprint CL: Wire-bond Molded (.8mm) SB: Flip-chip Lidless (.8mm) FB: Flip-chip Lidless (1mm) FF: Flip-chip Lidded (1mm)	V: RoHS 6/6 G (CLG) = RoHS 6/6 G (SBG, FBG, FFG) = RoHS Compliant	Package Pin Count	Temperature Grade (C, E, I)

C = Commercial (Tj = 0°C to +85°C)
E = Extended (Tj = 0°C to +100°C)
I = Industrial (Tj = –40°C to +100°C)

Refer to DS190, Zynq-7000 SoC Overview for additional information.

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