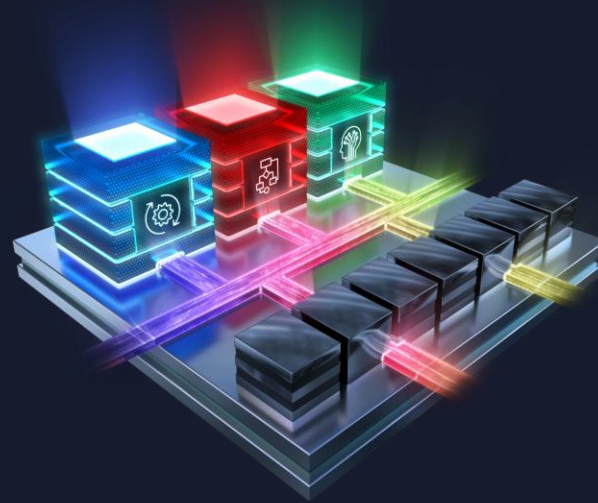


Versal ACAP Prime Series Product Selection Guide



Industry's First Adaptive Compute Acceleration Platform (ACAP)

			VM1102	VM1302	VM1402	VM1502	VM1802	VM2502	VM2602	VM2702	VM2902	
Intelligent Engines	DSP Engines		472	736	1,504	1,312	1,968	3,984	1,880	2,500	3,080	
	System Logic Cells (K)		352	572	1,002	797	1,968	2,030	1,263	1,805	2,154	
Adaptable Engines	LUTs		161,024	261,376	457,984	364,544	899,840	927,872	577,536	825,000	984,576	
	Distributed RAM (Mb)		5	8	14	11	27	28	18	25	30	
Memory	Total Block RAM (Mb)		8	16	40	19	34	48	55	74	90	
	Total UltraRAM (Mb)		27	47	47	60	130	197	119	169	204	
	Total SRAM Capacity (Mb)		35	63	87	80	164	245	174	243	294	
Scalar Engines	Application Processing Unit		Dual-core Arm® Cortex-A72, 48KB/32KB L1 Cache w/ parity & ECC; 1MB L2 Cache w/ ECC									
	Real-time Processing Unit		Dual-core Arm Cortex-R5, 32KB/32KB L1 Cache, and 256KB TCM w/ECC									
	Memory		256KB On-Chip Memory w/ECC									
	Connectivity		Ethernet (x2); USB 2.0 (x1); UART (x2); SPI (x2); I2C (x2); CAN-FD (x2)									
Foundational Platform	NoC Master / NoC Slave Ports		5	16	16	14	28	28	16	26	26	
	DDR Bus Widths		64	128	256	128	256	288	384	384	384	
	DDR Memory Controllers		1	2	4	2	4	5	6	6	6	
	CCIX & PCIe® w/DMA (CPM)		-	-	-	1 x Gen4x16, CCIX	1 x Gen4x16, CCIX	1 x Gen4x16, CCIX	1 x Gen4x16, CCIX	1 x Gen4x16, CCIX	1 x Gen4x16, CCIX	
	PCI Express®		1 x Gen4x8	2 x Gen4x8	2 x Gen4x8	4 x Gen4x8	4 x Gen4x8	1 x Gen4x8	1 x Gen4x8	2 x Gen4x8	2 x Gen4x8	
	Multirate Ethernet MAC		1	2	2	4	4	1	2	2	2	
Package Footprint	Package Dimensions (mm)	Ball Pitch (mm)	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	XPIO, HDIO, MIO GTY, GTM	
	B625	21x21	0.8	216, 22, 78 4, 0								
	B1024	31x31	0.92	216, 22, 78 12, 0	216, 44, 78 16, 0	324, 44, 78 16, 0						
	B1369	35x35	0.92		216, 44, 78 24, 0	324, 44, 78 24, 0	324, 44, 78 24, 0					
	A1760	40x40	0.92		432, 44, 78 24, 0	648, 44, 78 24, 0			756, 22, 78 20, 0			
	C1760	40x40	0.92				378, 44, 78 44, 0	378, 44, 78 44, 0	378, 22, 78 20, 32	378, 44, 78 24, 32	378, 44, 78 24, 32	
	D1760	40x40	0.92					648, 44, 78 24, 0				
	A2197	45x45	0.92					648, 44, 78 44, 0	648, 44, 78 16, 16			
	A2785	50x50	0.92						702, 44, 78 16, 28	702, 22, 78 20, 32	702, 44, 78 32, 44	702, 44, 78 40, 52

Versal™ Prime Series – Figures of Merit

			VM1102	VM1302	VM1402	VM1502	VM1802	VM2502	VM2602	VM2702	VM2902
Intelligent Engines	DSP Engine Peak Perf – INT8	TOPs	3.3	5.1	10.4	9.1	13.6	27.5	13.0	17.3	21.3
	DSP Engine Peak Perf – INT24	TOPs	1.1	1.7	3.5	3.0	4.5	9.2	4.3	5.8	7.1
	DSP Engine Peak Perf – CINT18	Complex TOPs	0.5	0.7	1.5	1.3	1.9	3.9	1.8	2.5	3.0
	DSP Engine Peak Perf – FP32	TFLOPs	0.8	1.2	2.4	2.1	3.2	6.4	3.0	4.0	5.0
Adaptable Engines	Adaptable Engine Peak Perf – INT1	TOPs	168	273	479	381	941	970	604	863	1,029
	Adaptable Engine Peak Perf – INT2	TOPs	77	125	219	175	431	445	277	395	472
	Adaptable Engine Peak Perf – INT4	TOPs	20	32	57	45	112	115	72	103	122
	Adaptable Engine Peak Perf – INT8	TOPs	5	8	15	12	29	30	18	26	31
Scalar Engines	Arm Cortex-A72 Performance	DMIPs	15,980	15,980	15,980	15,980	15,980	15,980	15,980	15,980	15,980
	Arm Cortex-R5 Performance	DMIPs	2,505	2,505	2,505	2,505	2,505	2,505	2,505	2,505	2,505
Memory	Total Bandwidth – Block RAM	Tb/s	26	55	138	67	118	167	190	257	315
	Total Bandwidth – UltraRAM	Tb/s	10	18	18	23	49	74	45	64	77
	Total SRAM Bandwidth	Tb/s	37	73	155	90	168	242	235	321	392
I/O	Transceiver Bandwidth	Tb/s	0.39	0.79	0.79	1.44	1.44	0.52	0.66	2.10	1.31
	Sensor I/O Bandwidth	Gb/s	269	0	614	0	0	1,824	1,037	0	1,037
Platform Engines	DDR4 Memory Bandwidth	Gb/s	208	408	816	408	816	920	1,232	1,232	1,232
	LPDDR4 Memory Bandwidth	Gb/s	272	544	1,096	544	1,096	1,232	1,640	1,640	1,640
	NoC Cross-sectional Bandwidth	Tb/s	0.6	0.6	1.2	1.2	2.5	2.5	1.2	1.2	1.2

Prime Series: Figures of Merit

All parameters listed are maximum values. Verify all data in this document with the device data sheets or product guides found at: www.xilinx.com. XMP453 (v1.0.1)