



# INTEL® AGILEX™ F-SERIES FPGA AND SOC FPGA PRODUCT TABLE

PRODUCT LINE		AGF 004	AGF 006	AGF 008	AGF 012	AGF 014	AGF 022	AGF 027
Resources	Logic elements (LEs)	391,996	573,480	764,640	1,178,525	1,437,240	2,208,075	2,692,760
	Adaptive logic modules (ALMs)	132,880	194,400	259,200	399,500	487,200	748,500	912,800
	ALM registers	531,520	777,600	1,036,800	1,598,000	1,948,800	2,994,000	3,651,200
	eSRAM memory blocks	0	0	0	2	2	0	0
	eSRAM memory size (Mb)	0	0	0	36	36	0	0
	M20K memory blocks	1,900	2,844	3,792	5,900	7,110	10,900	13,272
	M20K memory size (Mb)	38	56	74	110	139	210	259
	MLAB memory count	6,644	9,720	12,960	19,975	24,360	37,425	45,640
	MLAB memory size (Mb)	4	6	8	12	15	23	28
	Variable-precision digital signal processing (DSP) blocks	1,150	1,640	2,296	3,743	4,510	6,250	8,528
	18 x 19 multipliers	2,300	3,280	4,592	7,486	9,020	12,500	17,056
	Single-precision or half-precision tera floating point operations per second (TFLOPS)	1.7 / 3.4	2.5 / 5.0	3.5 / 6.9	6.0 / 12.0	6.8/13.6	9.4 / 18.8	12.8/25.6
Maximum Available Device Resources	Maximum differential (RX or TX) pairs	192	192	288	384	384	384	384
	ALB interfaces	2	2	2	2	2	4	4
	Memory devices supported	DDR4, QDR IV, RDRAM 3						
	Secure data manager	AES-256/SHA-256 bitstream encryption/authentication, physically unclonable function (PUF), ECDSA 256/384 boot code authentication, side channel attack protection						
	Hard processor system	Quad-core 64 bit Arm® Cortex®-A53 up to 1.41GHz with 32 KB I/D cache, NEON® coprocessor, 1 MB L2 cache, direct memory access (DMA), system memory management unit, cache coherency unit, hard memory controllers, USB 2.0x2, 1G EMAC x3, UART x2, serial peripheral interface (SPI) x4, I2C x5, general purpose timers x7, watchdog timer x4						
Tile Resources	F-Tile	PCI Express* (PCIe*) hard IP block (Gen4 x16 ) or Bifurcateable 2x PCIe Gen4 x8 (EP) or 4x Gen4 x4 (RP) Transceiver channel count : 16 channels at 32 Gbps (NRZ) /12 channels at 58 Gbps (PAM4) - RS & KP FEC Advanced networking support: - Bifurcatable 400 GbE hard IP block (10/25/50/100/200/400 GbE FEC/PCS/MAC) - Bifurcatable 200 Gb hard IP block (10/25/50/100/200 Gbps FEC/PCS) 600G Interlaken IEEE 1588 v2 support PMA direct						
	E-Tile	Transceiver channel count : Up to 24 channels at 28.9 Gbps (NRZ) / 12 channels at 57.8 Gbps (PAM4) - RS & KP FEC¹ Networking support : - 400GbE (4 x 100GbE hard IP blocks (10/25 GbE FEC/PCS/MAC)) IEEE 1588 v2 support PMA direct						
	H-Tile	PCIe hard IP block (Gen3x8) Transceiver channel count: Up to 16 channels at 28.3 Gbps (NRZ) & 8 channels at 17.4 Gbps (NRZ) Networking Support : - Hard IP block (50/100GbE PCS/MAC) SR-IOV 4PF / 2kVF PMA Direct						
	P-Tile	PCIe hard IP block (Gen4 x16) or Bifurcateable 2x PCIe Gen4 x8 (EP) or 4x Gen4 x4 (RP) SR-IOV 8PF / 2kVF VirtIO support Scalable IOV						

Note 1: Only 4 instances of KP-FEC are supported when using 100GE MAC



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<b>F-Tile - Package Options and I/O Pins</b>	<b>Tile Configuration</b>	<b>GPIO (LVDS) / F-Tile 32G NRZ (58G PAM4)</b>						
F1149A (29 mm x 29mm, 0.8 mm Grid)	F-Tile x1	360(180)/16(12)	360(180)/16(12)					
R1615A (45 mm x 32 mm, 1.0 / 0.92 mm Hex)	F-Tile x2	384(192)/32(24)	384(192)/32(24)	384(192)/32(24)				
R2013A (47 mm x 38 mm, 1.0 / 0.92 mm Hex)	F-Tile x2	384(192)/32(24)	384(192)/32(24)	576(288)/32(24)	576(288)/32(24)	576(288)/32(24)		
R2470A (47 mm x 46 mm, 1.0 / 0.92 mm Hex)	F-Tile x2				744(372)/32(24)	744(372)/32(24)	744(372)/32(24)	744(372)/32(24)
R3179C (56 mm x 45 mm, 0.92 mm Hex)	F-Tile x4						720(360)/64(48)	720(360)/64(48)
<b>H-Tile and P-Tile - Package Options and I/O Pins</b>	<b>Tile Configuration</b>	<b>GPIO (LVDS) / H-Tile 28.3G/17.4G NRZ / P-Tile 16G PCIe</b>						
R1785A (42.5 mm x 35 mm 0.92mm Mixed)	H-Tile x1 and P-Tile x1					480(240)/16(8)/16		
<b>E-Tile and P-Tile - Package Options and I/O Pins</b>	<b>Tile Configuration</b>	<b>GPIO (LVDS) / E-Tile 28.9G NRZ (57.8G PAM4) / P-Tile 16G PCIe</b>						
R2486A (55 mm x 42.5 mm, 1.0 mm Hex)	E-Tile x1 and P-Tile x1				768(384)/16(8)/16	768(384)/16(8)/16		
R2581A (50 mm x 42.5 mm, 0.92 mm Hex)	E-Tile x1 and P-Tile x2						624(312)/24(12)/32	624(312)/24(12)/32