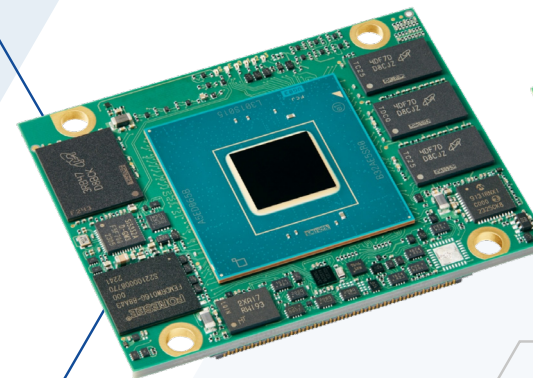




enCLUSTRA
FPGA SOLUTIONS

Selection Guide

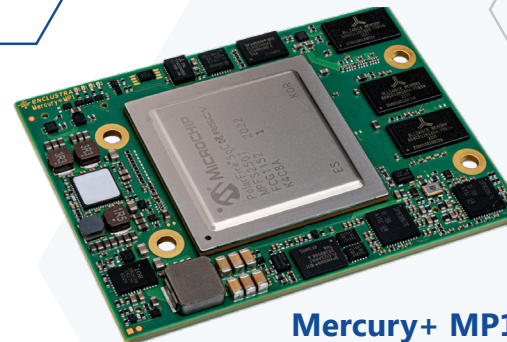
Spring 2025



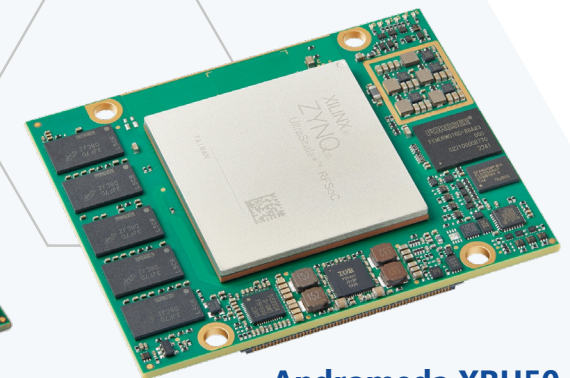
Andromeda IAE50



Pluto XZU20



Mercury+ MP1



Andromeda XRU50

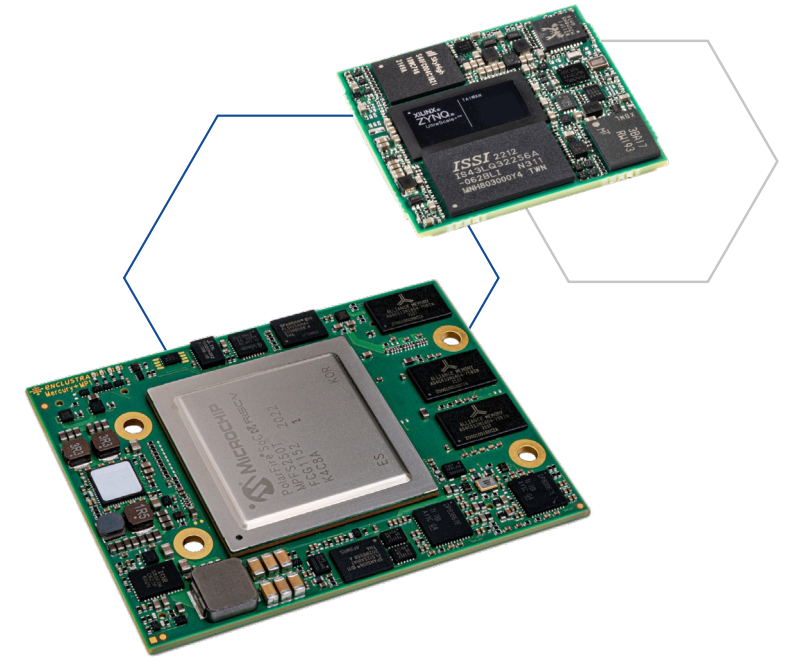


Everything FPGA

Enclustra offers FPGA solutions from development to implementation

Our Purpose

At Enclustra, our purpose is to shape the future through innovation. We are dedicated to pushing the boundaries of FPGA technology, delivering cutting-edge solutions that drive progress and transform industries. Our commitment to innovation is at the heart of everything we do. By leveraging our expertise in FPGA-based system development, we create high-performance, cost-effective solutions that meet the evolving needs of our clients. From high-speed hardware and HDL firmware to embedded software, we cover every aspect of the development process with precision and excellence.



Development Services

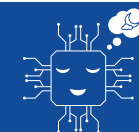
- > HDL Development
- > Hardware Development
- > Custom Base Board
- > Digital Signal Processing
- > Software Development
- > Board Industrialization and Lifecycle
- > Management
- > Vendor-independent

Our Core Markets

- > Aerospace & Defense
- > Medical & Science
- > Test & Measurement
- > Vision Systems
- > Wireless Communications

System-on-Modules & Base Boards

- | | |
|------------------------|-----------------|
| > Pluto | ST11 |
| > Andromeda SoC | PE5 |
| > Andromeda RFSoc | ST9 |
| > Mercury and Mercury+ | PE1 / ST1 / PE3 |
| > Mars | ST3 |



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Products
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Important to Know

If one of our modules nearly meets your requirements, but you have specific interfacing or device needs, please let us know. We frequently customize our products to meet unique specifications.

Our FPGA Manager IP solution is designed to make data streaming to Windows/Linux embedded or host PCs via Ethernet, USB, and PCIe a simple and straightforward process. We also offer production data backup and module production licenses. For more information, please get in touch with us.

Please visit the product webpage for a comprehensive overview of all available speed and temperature grades.

For non-preferred models, please contact us for more details regarding the minimum order quantity MOQ.

Please ensure that adequate signal integrity is obtained over the full signal path when using MGTs at high performance.

Not all features are available simultaneously. Please check the documentation to know the applicable constraints.

Please verify component specifications with vendors' datasheets.

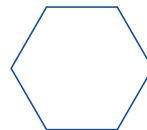
The product lifetime is an estimated value and may change without notice. We inform our customers about the last opportunity to buy.

Enclustra maintains an errata and revision history document for each product. Please also check the errata of the FPGA device and other components.

Some interfaces like CAN need additional components on the base board.

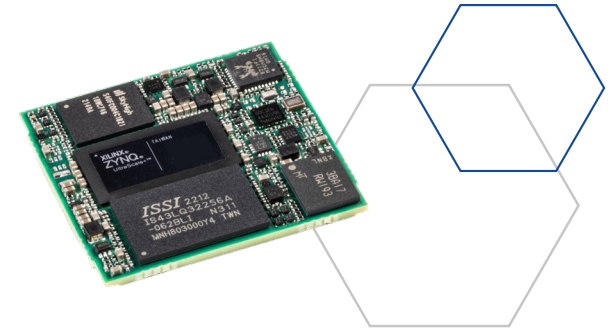
Waiver:

The technical information presented herein is for informational purposes only and does not constitute any form of warranty, either express or implied.



Our Product Status:

- > **Active:** Product model can be ordered.
- > **Development:** Product series currently under development. Please contact us for more details.
- > **Early Access:** Product model available as EAP Early Access Program. Please contact us for more details.



Explanatory Notes:

For more straightforward comparability, functional similar parts are named the same for all vendors:

- > **MOQ:** Minimum Order Quantity
- > **MGT:** Multi-Gigabit-Transceivers, including all variants.
- > **MB:** 1'048'576 bytes
- > **Preferred Model:** The product variant that is typically in stock and available without a minimum order quantity.

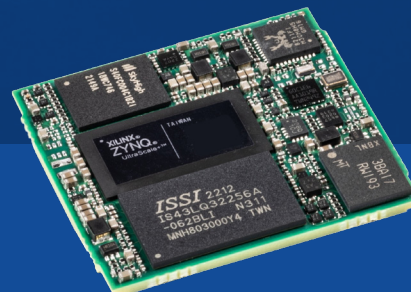


Watch
the Video



Pluto

Portable Embedded Intelligence
Limitless Applications



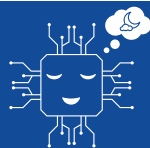
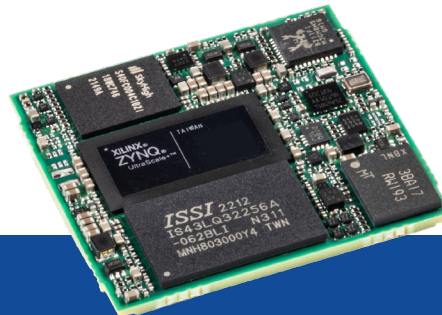
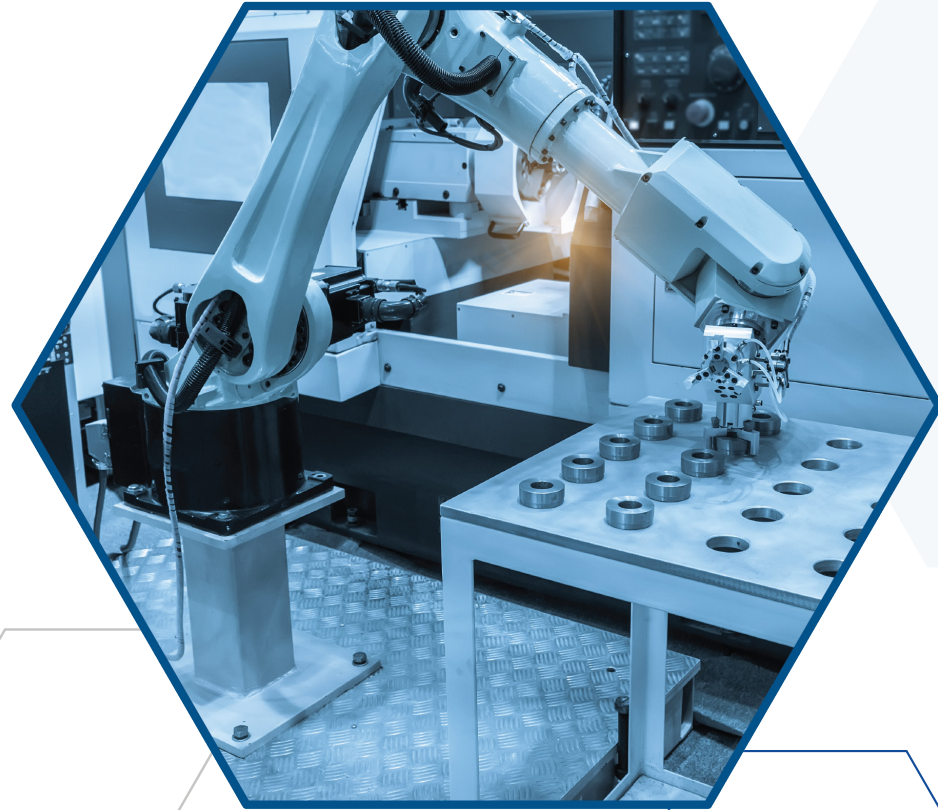


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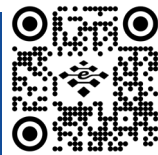
Pluto



	Pluto XZU20
FPGA Family	AMD Zynq™ UltraScale+™
FPGA Device Name	ZU3EG
FPGA Speed Grade	2
FPGA Part Number	XCZU3EG-2UBVA530I
CPU Cores	4 × ARM®Cortex®-A53 2 × Cortex®-R5
CPU Frequency @ MHz	1'333 533
PS Peripherals	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII
PS Ethernet USB	1 Gbps 1 x USB 3.0
PS SDRAM Size (MB)	1'024
PS SDRAM Type Bandwidth (MB/s)	LPDDR4 4'264
PL System Logic Cells	154'100
PL Total Block RAM (Mbit)	7.6
PL UltraRAM (Mbit)	–
PL DSP Slices DSP Systolic FIR (GMAC/s)	360 279
PL MGT Transceivers @ Gbps	–
PL Peripherals	–
PL Ethernet USB	–
PL SDRAM Size (MB)	–
PL SDRAM Type Bandwidth (MB/s)	–
Flash Memory	64 MB QSPI 4 GB eMMC
Connector Pins IO Pins	596 LGA pins 100
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	24 54 – 22
Module Dimensions (mm)	30 × 30
Temperature Range	-40°C – +85°C
Boot Modes	QSPI
Product Status	Early Access
Estimated Product Lifetime	2039+
Preferred Model MOQ	Yes 1
Product Model	PL-XZU20-3EG-2I-D3



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Product Details





Watch
the RFSoc
Video



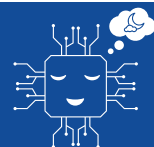
Andromeda AMD

Nano-second Applications
Power of Potential

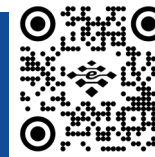
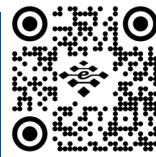




	Andromeda XZU65		Andromeda XZU70	
FPGA Family	AMD Zynq™ UltraScale+™		AMD Zynq™ UltraScale+™	
FPGA Device Name	ZU7EV	ZU11EG	ZU7EV	ZU11EG
FPGA Speed Grade	2	2	2	2
FPGA Part Number	XCZU7EV-2FFVC1156I	XCZU11EG-2FFVC1156I	XCZU7EV-2FFVF1517I	XCZU11EG-2FFVF1517I
CPU Cores	4 × ARM® Cortex®-A53 2 × Cortex®-R5		4 × ARM® Cortex®-A53 2 × Cortex®-R5	
CPU Frequency @ MHz	1'333 533		1'333 533	
PS Peripherals	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN		Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN	
PS Ethernet USB	1 Gbps 1 × USB 3.0		1 Gbps 1 × USB 3.0	
PS SDRAM Size (MB)	4'096 + ECC		8'192 + ECC	
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200		DDR4 19'200	
PL System Logic Cells	504,000	653,100	504,000	653,100
PL Total Block RAM (Mbit)	11	21	11	21
PL UltraRAM (Mbit)	27	22.5	27	22.5
PL DSP Slices DSP Systolic FIR (GMAC/s)	1'728 1'340	2'928 2'270	1'728 1'340	2'928 2'270
PL MGT Transceivers @ Gbps	20 @ 16.375		24 @ 16.3	32 @ 16.3
PL Peripherals	PCIe® Gen3 ×16 H.265 Codec	PCIe® Gen3 ×16	1 × PCIe® Gen3 ×16 1 × PCIe® Gen3 ×8	2 × PCIe® Gen3 ×16 2 × PCIe® Gen3 ×8 1 × 150G Interlaken 2 × 100G Ethernet
PL Ethernet USB	1 Gbps		1 Gbps	
PL SDRAM Size (MB)	4'096		Ch0 8'192 Ch1 4'096	Ch0 8'192 Ch1 8'192
PL SDRAM Type Bandwidth (MB/s)	DDR4 19'200		DDR4 31'992	DDR4 42'656
Flash Memory	128 MB QSPI 16 GB eMMC		128 MB QSPI 16 GB eMMC	
Connector Pins IO Pins	720 202		720 202	
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	24 156 – 22		24 156 – 22	
Module Dimensions (mm)	68 × 52		78 × 54	
Temperature Range	-40°C – +85°C		-40°C – +85°C	
Boot Modes	QSPI SD Card eMMC		QSPI SD Card eMMC	
Product Status	Active		In Development	
Estimated Product Lifetime	2039+		2039+	
Preferred Model MOQ	Yes 1		Yes 1	
Product Model	AM-XZU65-7EV-2I-D3E	AM-XZU65-11EG-2I-D3E	AM-XZU70-7EV-2I-D4E	AM-XZU70-11EG-2I-D4E



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Product Details



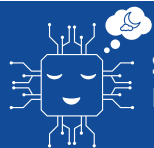
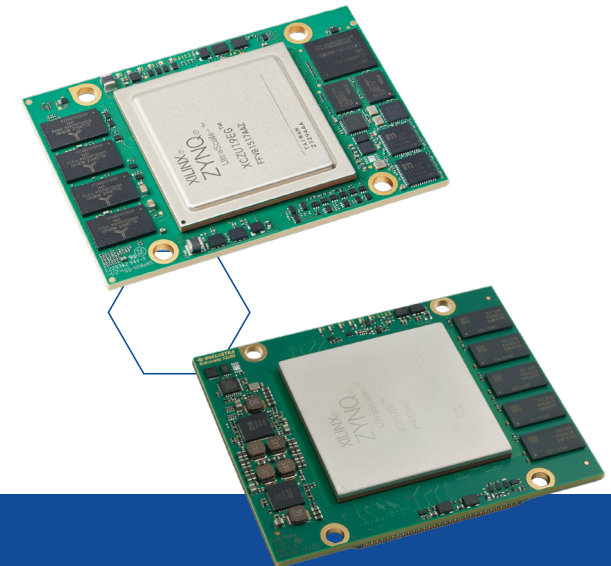


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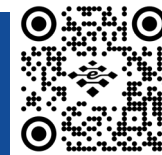
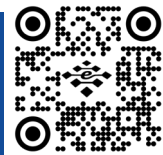
Andromeda



	Andromeda XZU80	Andromeda XZU90	
FPGA Family	AMD Zynq™ UltraScale+™	AMD Zynq™ UltraScale+™	
FPGA Device Name	ZU19EG	ZU17EG	ZU19EG
FPGA Speed Grade	2	1	2
FPGA Part Number	XCZU19EG-2FFVB1517I	XCZU17EG-1FFVD1760E	XCZU19EG-2FFVD1760I
CPU Cores	4 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5	
CPU Frequency @ MHz	1'333 533	1'200 500	1'333 533
PS Peripherals	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMIi CAN	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMIi CAN	
PS Ethernet USB	1 Gbps 1 × USB 3.0	1 Gbps 1 × USB 3.0	
PS SDRAM Size (MB)	4'096 + ECC	4'096 + ECC	
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200	DDR4 19'200	
PL System Logic Cells	1'143'450	926'194	1'143'450
PL Total Block RAM (Mbit)	34.6	28	34.6
PL UltraRAM (Mbit)	36	28.7	36
PL DSP Slices DSP Systolic FIR (GMAC/s)	1'968 1'526	1'590 1'026	1'968 1'526
PL MGT Transceivers @ Gbps	16 @ 16.3	28 @ 25 + 44 @ 12.5	28 @ 28 + 44 @ 16.3
PL Peripherals	3 × PCIe® Gen3 ×16 2 × PCIe® Gen3 ×8 4 × 150G Interlaken 4 × 100G Ethernet	3 × PCIe® Gen3 ×16 1 × PCIe Gen3 ×8 2 × 150G Interlaken 2 × 100G Ethernet	3 × PCIe® Gen3 ×16 2 × PCIe® Gen3 ×8 4 × 150G Interlaken 4 × 100G Ethernet
PL Ethernet USB	1 Gbps	1 Gbps	
PL SDRAM Size (MB)	Ch0 4'096 Ch1 4'096	-	
PL SDRAM Type Bandwidth (MB/s)	DDR4 21'328	-	
Flash Memory	128 MB QSPI 16 GB eMMC	128 MB QSPI 16 GB eMMC	
Connector Pins IO Pins	960 382	1440 306	
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	48 312 - 22	24 260 - 22	
Module Dimensions (mm)	78 × 54	80 × 64	
Temperature Range	-40°C – +85°C	0°C – +85°C	-40°C – +85°C
Boot Modes	QSPI SD Card eMMC	QSPI SD Card eMMC	
Product Status	In Development	Active	
Estimated Product Lifetime	2039+	2039+	
Preferred Model MOQ	Yes 1	Yes 1	
Product Model	AM-XZU80-19EG-2I-D3E	AM-XZU90-17EG-1E-D12E	AM-XZU90-19EG-2I-D12E



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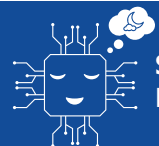
Andromeda RFSoc



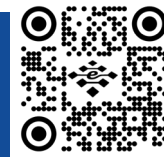
In Development



	Andromeda XRU30				Andromeda XRU50
FPGA Family	AMD Zynq™ UltraScale+™ RFSoc				AMD Zynq™ UltraScale+™ RFSoc
FPGA Device Name	ZU42DR	ZU47DR	ZU65DR	ZU67DR	ZU48DR
FPGA Speed Grade	1	2	2	2	2
FPGA Part Number	XCZU42DR-1FSVE1156I	XCZU47DR-2FSVE1156I	XCZU65DR-2FSVE1156I	XCZU67DR-2FSVE1156I	XCZU48DR-2FVG1517I
CPU Cores	4 × ARM® Cortex®-A53 2 × Cortex®-R5				4 × ARM® Cortex®-A53 2 × Cortex®-R5
CPU Frequency @ MHz	1'200	1'333	1'333	1'333	1'333
PS Peripherals	Mali DisplayPort PCIe® Gen2 x4 SATA SGMII CAN				Mali DisplayPort PCIe® Gen2 x4 SATA SGMII CAN
PS Ethernet USB	1Gbps USB 3.0				1Gbps USB 3.0
PS SDRAM Size (MB)	4'096 + ECC	8'192 + ECC	8'192 + ECC	8'192 + ECC	8'192 + ECC
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200				DDR4 19'200
RF Data Converter 14-bit RF-ADC w/DDC # of ADCs Max Rate (Gsp/s)	8 2.5	2 5.0	8 5.0	6 5.9	8 5.0
RF Data Converter 14-bit RF-DAC w/DUC # of DACs Max Rate (Gsp/s)	8 9.85	8 9.85	6 10.0	8 10.0	8 9.85(3)
SD-FEC	0	0	0	0	8
RF Input Freq max. (GHz)	6		7.125		6
PL System Logic Cells	489	930	489	489	930
PL Total Block RAM (Mbit)	22.8	38.0	22.8	22.8	38.0
PL UltraRAM (Mbit)	45.0	22.5	45.0	45.0	23
PL DSP Slices DSP Systolic FIR (GMAC/s)	1'872 1'206	4'272 3'311	1'872 1'451	1'872 1'451	4'272 3'311
PL MGT Transceivers @ Gbps	8 @ 25.7	8 @ 28.2	8 @ 28.2	8 @ 28.2	16 @ 28.2
PL Peripherals	-	2 x PCIe® Gen3x16/Gen4 x8 / CCIX 1x 150G Interlaken 2 x 100G Ethernet	1 x 100G Ethernet	1 x 100G Ethernet	2 x PCIe® Gen3x16/Gen4 x8 / CCIX 1 x 150G Interlaken 2 x 100G Ethernet
PL Ethernet USB	-	-	-	-	1 Gbps
PL SDRAM Size (MB)	-	-	-	-	8'192
PL SDRAM Type Bandwidth (MB/s)	-	-	-	-	DDR4 21'328
Flash Memory	64 MB QSPI 16 GB eMMC				64 MB QSPI 16 GB eMMC
Connector Pins IO Pins	720 162				1'200 202
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	36 104 - 22				24 156 - 22
Module Dimensions (mm)	68 × 52 mm				80 × 64 mm
Temperature Range	-40°C – +85°C				-40°C – +85°C
Boot Modes	QSPI SD Card eMMC				QSPI SD Card eMMC
Product Status	In Development				Early Access
Estimated Product Lifetime	2039+				2039+
Preferred Model MOQ	No -	No -	Yes 1	Yes 1	Yes 1
Product Model	AM-XRU30-42DR-1I-D3E	AM-XRU30-47DR-2I-D4E	AM-XRU30-65DR-2I-D4E	AM-XRU30-67DR-2I-D4E	AM-XRU50-48DR-1I-D3E



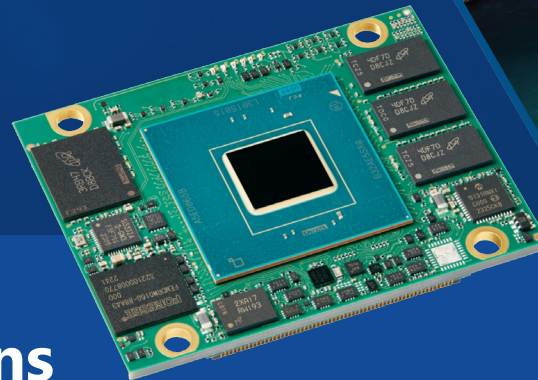
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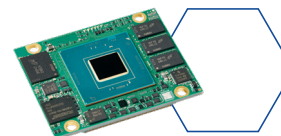




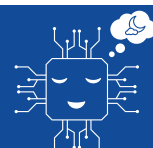
Andromeda Altera

Real-time Processing of Data
Broadcast and Vision Applications

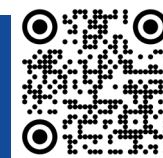




	Andromeda IAE50							
FPGA Family	Altera Agilex™ E-Series							
FPGA Device Name	A5ED028A		A5ED028B		A5ED065A		A5ED065B	
FPGA Speed Grade	3		4		2		4	
FPGA Part Number	A5ED028AB32AI3V		A5ED028BB32AI4S		A5ED065AB32AI2V		A5ED065BB32AI4S	
CPU Cores	2 × ARM® Cortex®-A76 2 × ARM® Cortex®-A55							
CPU Frequency @ MHz	1'400 1'250				1'600 1'330		1'400 1'250	
HPS Cores & Peripherals	–							
HPS Ethernet USB	1 Gbps USB 3.0							
HPS SDRAM Size (MByte)	2'048 + ECC				4'096+ ECC			
HPS SDRAM Type Bandwidth (MB/s)	DDR4 10'664		DDR4 9'600		DDR4 10'664		DDR4 9'600	
FPGA System Logic Elements	282'256		282'256		656'080		656'080	
FPGA Block RAM (Mbit)	13.98				31.46			
FPGA UltraRAM (Mbit)	–				–			
FPGA DSP Slices DSP Systolic FIR (GMAC/s)	752 432		752 420		1'692 1'109		1'692 945	
FPGA MGT Transceivers @ Gbps	12 @ 28.1		12 @ 17.1		24 @ 28.1		24 @ 17.1	
FPGA Peripherals	–							
FPGA Ethernet USB	1 Gbps							
FPGA SDRAM Size (MB)	-				Ch0 2'048 Ch1 2'048			
FPGA SDRAM Type Bandwidth (MB/s)	-				LPDDR5 29'856		LPDDR5 17'056	
Flash Memory	64 MB QSPI 16 GB eMMC							
Connector Pins IO Pins	720 270							
FPGA 3.3V FPGA 1.8V Pins HPS Pins	124 92 – 12							
Module Dimensions (mm)	68 × 52							
Temperature Range	-40°C – +85°C							
Boot Modes	QSPI SD Card eMMC							
Product Status	In Development							
Estimated Product Lifetime	2039+							
Preferred Model MOQ	Yes 1		Yes 1		Yes 1		Yes 1	
Product Model	AM-IAE50-028A-I3V-D3E		AM-IAE50-028B-I4S-D3E		AM-IAE50-065A-I2V-D4E		AM-IAE50-065B-I4S-D4E	



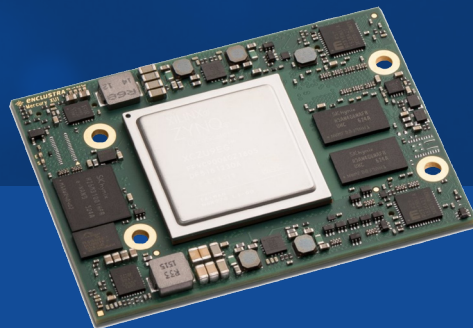
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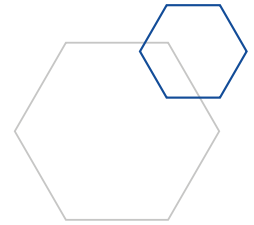


Mercury AMD

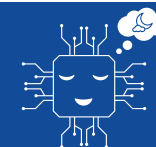
Real-time Vision
Life-saving Applications



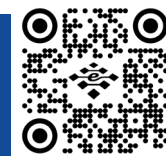




	Mercury+ XU1				
FPGA Family	AMD Zynq™ UltraScale+™				
FPGA Device Name	ZU6CG		ZU6EG		ZU9EG
FPGA Speed Grade	1		1		1
FPGA Part Number	XCZU6CG-1FFVC900E		XCZU6EG-1FFVC900I		XCZU9EG-1FFVC900E
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5		4 × ARM®Cortex®-A53 2 × Cortex®-R5		
CPU Frequency @ MHz	1'200 500				
PS Peripherals	DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN		Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN		
PS Ethernet USB	2 × 1 Gbps 2 × USB 3.0				
PS SDRAM Size (MB)	2'048 + ECC				
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200				
PL System Logic Cells	469'446			599'550	
PL Total Block RAM (Mbit)	25.1			32.1	
PL UltraRAM (Mbit)	–			–	
PL DSP Slices DSP Systolic FIR (GMAC/s)	1'973 1'273			2'520 1'626	
PL MGT Transceivers @ Gbps	16 @ 12.5	12 @ 12.5	16 @ 12.5	12 @ 12.5	16 @ 12.5
PL Peripherals	–				
PL Ethernet USB	–				
PL SDRAM Size (MB)	–				
PL SDRAM Type Bandwidth (MB/s)	–				
Flash Memory	64 MB QSPI 16 GB eMMC				
Connector Pins IO Pins	504 194				
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 128 – 14				
Module Dimensions (mm)	74 × 54				
Temperature Range	0°C – +85°C		-40°C – +85°C		0°C – +85°C
Boot Modes	QSPI SD Card eMMC				
Product Status	Active				
Estimated Product Lifetime	2039+				
Preferred Model MOQ	Yes 1	No -	No -	Yes 1	No -
Product Model	ME-XU1-6CG-1E-D11E-G1	ME-XU1-6CG-1E-D11E	ME-XU1-6EG-1I-D11E-G1	ME-XU1-6EG-1I-D11E	ME-XU1-9EG-1E-D11E-G1



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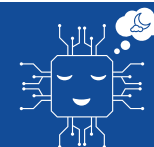
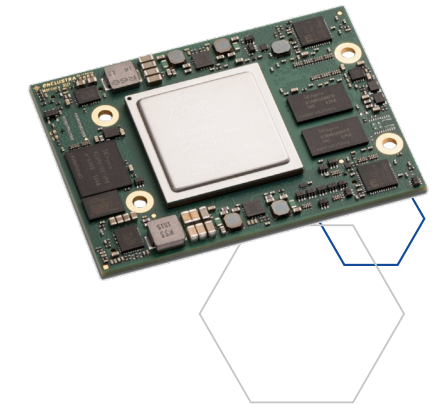




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Mercury

	Mercury+ XU1 (cont.)			
FPGA Family	AMD Zynq™ UltraScale+™			
FPGA Device Name	ZU9EG	ZU15EG	ZU15EG	
FPGA Speed Grade	3	1	2	
FPGA Part Number	XCZU9EG-3FFVC900E	XCZU15EG-1FFVC900E	XCZU15EG-2FFVC900I	
CPU Cores	4 × ARM® Cortex® - A53 2 × Cortex® -R5			
CPU Frequency @ MHz	1'500 600	1'200 500	1'333 533	
PS Peripherals	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN			
PS Ethernet USB	2 × 1 Gbps 2 × USB 3.0			
PS SDRAM Size (MB)	4'096 + ECC			
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200			
PL System Logic Cells	599'550	746'550		
PL Total Block RAM (Mbit)	32.1	26.2		
PL UltraRAM (Mbit)	31.5			
PL DSP Slices DSP Systolic FIR (GMAC/s)	2'520 2'246	3'528 2'276	3'528 2'735	
PL MGT Transceivers @ Gbps	12 @ 15	16 @ 12.5	12 @ 15	16 @ 15
PL Peripherals	–			
PL Ethernet USB	–			
PL SDRAM Size (MB)	–			
PL SDRAM Type Bandwidth (MB/s)	–			
Flash Memory	64 MB QSPI 16 GB eMMC			
Connector Pins IO Pins	504 214			
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 148 – 14			
Module Dimensions (mm)	74 × 54			
Temperature Range	0°C – +85°C		-40°C – +85°C	
Boot Modes	QSPI SD Card eMMC			
Product Status	Active			
Estimated Product Lifetime	2039+			
Preferred Model MOQ	No -	Yes 1	Yes 1	No -
Product Model	ME-XU1-9EG-3E-D12E	ME-XU1-15EG-1E-D12E-G1	ME-XU1-15EG-2I-D12E	ME-XU1-15EG-2I-D12E-G1

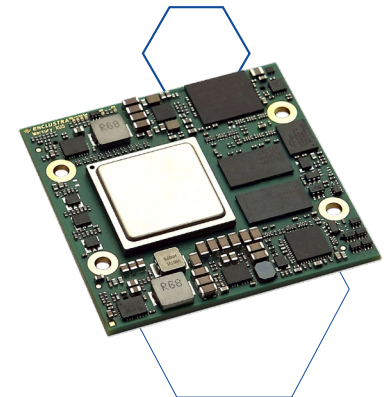


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	Mercury XU5			
FPGA Family	AMD Zynq™ UltraScale+™			
FPGA Device Name	ZU2CG	ZU2EG	ZU3EG	ZU4CG
FPGA Speed Grade	1	1	2	1
FPGA Part Number	XCZU2CG-1SFVC784E	XCZU2EG-1SFVC784I	XCZU3EG-2SFVC784I	XCZU4CG-1SFVC784E
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5		2 × ARM® Cortex®-A53 2 × Cortex®-R5
CPU Frequency @ MHz	1'200 500		1'333 533	1'200 500
PS Peripherals	DP PCIe® Gen2 ×4 SATA SGMII CAN	Mali DP PCIe® Gen2 ×4 SATA SGMII CAN		CAN
PS Ethernet USB	1 Gbps 2 × USB 3.0			1 Gbps 2 × USB 2.0
PS SDRAM Size (MB)	1'024	2'048 + ECC		
PS SDRAM Type Bandwidth (MB/s)	DDR4 9'600	DDR4 19'200		
PL System Logic Cells	103'320		154'350	192'150
PL Total Block RAM (Mbit)	5.3		7.6	4.5
PL UltraRAM (Mbit)	–		13.5	
PL DSP Slices DSP Systolic FIR (GMAC/s)	240 155		360 279	728 470
PL MGT Transceivers @ Gbps	–			4 @ 12.5
PL Peripherals	–			PCIe® Gen3 ×4
PL Ethernet USB	1 Gbps			
PL SDRAM Size (MB)	512			
PL SDRAM Type Bandwidth (MB/s)	DDR4 4'266		DDR4 4'800	DDR4 4'266
Flash Memory	64 MB QSPI 16 GB eMMC			
Connector Pins IO Pins	336 158			336 138
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 92 – 14			52 72 – 14
Module Dimensions (mm)	56 × 54			
Temperature Range	0°C – +85°C	-40°C – +85°C		0°C – +85°C
Boot Modes	QSPI SD Card eMMC			
Product Status	Active			
Estimated Product Lifetime	2039+			
Preferred Model MOQ	Yes 1	Yes 1	Yes 1	No -
Product Model	ME-XU5-2CG-1E-D10H	ME-XU5-2EG-1I-D11E	ME-XU5-3EG-2I-D11E	ME-XU5-4CG-1E-D11E-G1

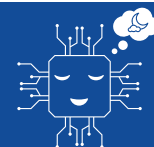
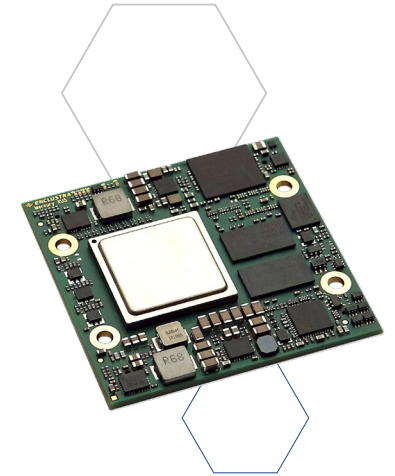




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Mercury

	Mercury XU5 (cont.)			
FPGA Family	AMD Zynq™ UltraScale+™			
FPGA Device Name	ZU4EV	ZU4EV	ZU5EV	ZU5EV
FPGA Speed Grade	1	1	2	2
FPGA Part Number	XCZU4EV-1SFVC784I	XCZU4EV-1SFVC784I	XCZU5EV-2SFVC784I	XCZU5EV-2SFVC784I
CPU Cores	4 × ARM® Cortex®-A53 2 × Cortex®-R5			
CPU Frequency @ MHz	1'200 500		1'333 533	
PS Peripherals	Mali DP PCIe® Gen2 x4 SATA SGMII CAN	Mali CAN	Mali DP PCIe® Gen2 x4 SATA SGMII CAN	Mali CAN
PS Ethernet USB	1 Gbps 2 × USB 3.0	1 Gbps 2 × USB 2.0	1 Gbps 2 × USB 3.0	1 Gbps 2 × USB 2.0
PS SDRAM Size (MB)	2'048 + ECC		4'096 + ECC	
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200			
PL System Logic Cells	192'150		256'200	
PL Total Block RAM (Mbit)	4.5		5.1	
PL UltraRAM (Mbit)	13.5		18	
PL DSP Slices DSP Systolic FIR (GMAC/s)	728 470		1'248 968	
PL MGT Transceivers @ Gbps	4 @ 12.5			
PL Peripherals	H.265 Codec PCIe® Gen3 ×4			
PL Ethernet USB	1 Gbps			
PL SDRAM Size (MB)	512		1'024	
PL SDRAM Type Bandwidth (MB/s)	DDR4 4'266		DDR4 4'800	
Flash Memory	64 MB QSPI 16 GB eMMC			
Connector Pins IO Pins	336 138			
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 72 – 14			
Module Dimensions (mm)	56 × 54			
Temperature Range	-40°C – +85°C			
Boot Modes	QSPI SD Card eMMC			
Product Status	Active			
Estimated Product Lifetime	2039+			
Preferred Model MOQ	Yes 1	Yes 1	Yes 1	No -
Product Model	ME-XU5-4EV-1I-D11E	ME-XU5-4EV-1I-D11E-G1	ME-XU5-5EV-2I-D12E	ME-XU5-5EV-2I-D12E-G1

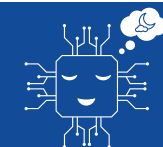
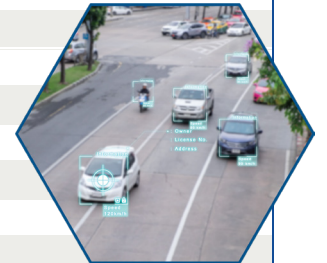


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	Mercury+ XU6					
FPGA Family	AMD Zynq™ UltraScale+™					
FPGA Device Name	ZU2CG	ZU2EG	ZU3EG	ZU4CG	ZU4EV	ZU5EV
FPGA Speed Grade	1	1	2	1	1	2
FPGA Part Number	XCZU2CG-1SFVC784E	XCZU2EG-1SFVC784I	XCZU3EG-2SFVC784I	XCZU4CG-1SFVC784E	XCZU4EV-1SFVC784I	XCZU5EV-2SFVC784I
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5		2 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5	
CPU Frequency @ MHz	1'200 500		1'333 533		1'200 500	
PS Peripherals	DP PCIe® Gen2 ×4 SATA SGMII CAN	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN		DP PCIe® Gen2 ×4 SATA SGMII CAN	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN	
PS Ethernet USB	1 Gbps USB 3.0					
PS SDRAM Size (MB)	1'024	8'192 + ECC	2'048	4'096		4'096 + ECC
PS SDRAM Type Bandwidth (MB/s)	DDR4 9'600	DDR4 19'200				
PL System Logic Cells	103'320		154'350		192'150	
PL Total Block RAM (Mbit)	5.3		7.6		4.5	
PL UltraRAM (Mbit)	–		–		13.5	
PL DSP Slices DSP Systolic FIR (GMAC/s)	240 155		360 279		728 470	
PL MGT Transceivers @ Gbps	–			4 @ 12.5		
PL Peripherals	–			PCIe® Gen3 ×4 PCIe® Gen3 ×4 H.265 Codec		
PL Ethernet USB	–					
PL SDRAM Size (MB)	–					
PL SDRAM Type Bandwidth (MB/s)	–					
Flash Memory	64 MB QSPI 16 GB eMMC					
Connector Pins IO Pins	504 254					
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	96 144 – 14					
Module Dimensions (mm)	65 × 54					
Temperature Range	0°C – +85°C	-40°C – +85°C		0°C – +85°C		-40°C – +85°C
Boot Modes	QSPI SD Card eMMC					
Product Status	Active					
Estimated Product Lifetime	2039+					
Preferred Model MOQ	Yes 1	Yes 1	No -	Yes 1	No -	Yes 1
Product Model	ME-XU6-2CG-1E-D10H	ME-XU6-2EG-1I-D13E	ME-XU6-3EG-2I-D11	ME-XU6-4CG-1E-D12	ME-XU6-4EV-1I-D12	ME-XU6-5EV-2I-D12E



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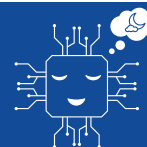
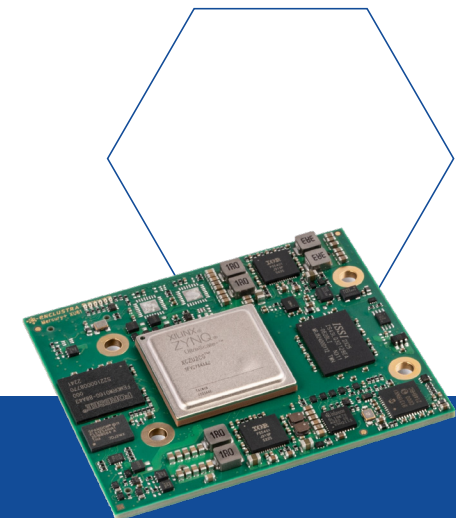


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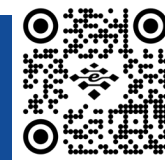
Mercury



	Mercury+ XU61		
FPGA Family	AMD Zynq™ UltraScale+™		
FPGA Device Name	ZU2CG	ZU2EG	ZU4CG
FPGA Speed Grade	1	1	1
FPGA Part Number	XCZU2CG-L1SFVC784I	XCZU2EG-L1SFVC784I	XCZU4CG-1SFVC784E
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5	2 × ARM® Cortex®-A53 2 × Cortex®-R5
CPU Frequency @ MHz	1'200 500		
PS Peripherals	DP PCIe® Gen2 ×4 SATA SGMII CAN	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN	DP PCIe® Gen2 ×4 SATA SGMII CAN
PS Ethernet USB	1 Gbps		1 Gbps USB 3.0
PS SDRAM Size (MB)	512		2'048
PS SDRAM Type Bandwidth (MB/s)	LPDDR4 9'600		
PL System Logic Cells	103'320		192'150
PL Total Block RAM (Mbit)	5.3		4.5
PL UltraRAM (Mbit)	–		13.5
PL DSP Slices DSP Systolic FIR (GMAC/s)	240 155		728 470
PL MGT Transceivers @ Gbps	–		4 @ 12.5
PL Peripherals	–		PCIe® Gen3 ×4
PL Ethernet USB	–		
PL SDRAM Size (MB)	–		
PL SDRAM Type Bandwidth (MB/s)	–		
Flash Memory	64 MB QSPI 16 GB eMMC		
Connector Pins IO Pins	504 254		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	92 148 – 14		
Module Dimensions (mm)	65 × 54		
Temperature Range	-40°C – +85°C		0°C – +85°C
Boot Modes	QSPI SD Card eMMC		
Product Status	Active		
Estimated Product Lifetime	2039+		
Preferred Model MOQ	No -	No -	Yes 1
Product Model	ME-XU61-2CG-L1I-D9-NU	ME-XU61-2EG-L1I-D9-NU	ME-XU61-4CG-1E-D11



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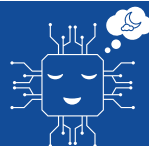


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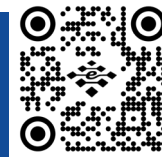
Mercury



	Mercury+ XU7		
FPGA Family	AMD Zynq™ UltraScale+™		
FPGA Device Name	ZU6EG	ZU9EG	ZU15EG
FPGA Speed Grade	1	2	2
FPGA Part Number	XCZU6EG-1FFVC900I	XCZU9EG-2FFVC900I	XCZU15EG-2FFVC900I
CPU Cores	4 × ARM® Cortex®-A53 2 × Cortex®-R5		
CPU Frequency @ MHz	1'200 500	1'333 533	
PS Peripherals	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN		
PS Ethernet USB	2 × 1 Gbps 2 × USB 3.0		
PS SDRAM Size (MB)	2'048 + ECC	4'096 + ECC	
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200		
PL System Logic Cells	469'446	599'550	746'550
PL Total Block RAM (Mbit)	25.1	32.1	26.2
PL UltraRAM (Mbit)	–	–	31.5
PL DSP Slices DSP Systolic FIR (GMAC/s)	1'973 1'273	2'520 1'953	3'528 2'735
PL MGT Transceivers @ Gbps	16 @ 12.5	16 @ 16.375	
PL Peripherals	–		
PL Ethernet USB	–		
PL SDRAM Size (MB)	1'024	2'048	
PL SDRAM Type Bandwidth (MB/s)	DDR4 9'600		
Flash Memory	64 MB QSPI 16 GB eMMC		
Connector Pins IO Pins	504 136		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 50 20 14		
Module Dimensions (mm)	74 × 54		
Temperature Range	-40°C – +85°C		
Boot Modes	QSPI SD Card eMMC		
Product Status	Active		
Estimated Product Lifetime	2039+		
Preferred Model MOQ	Yes 1	No -	Yes 1
Product Model	ME-XU7-6EG-1I-D11E	ME-XU7-9EG-2I-D12E	ME-XU7-15EG-2I-D12E



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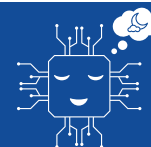
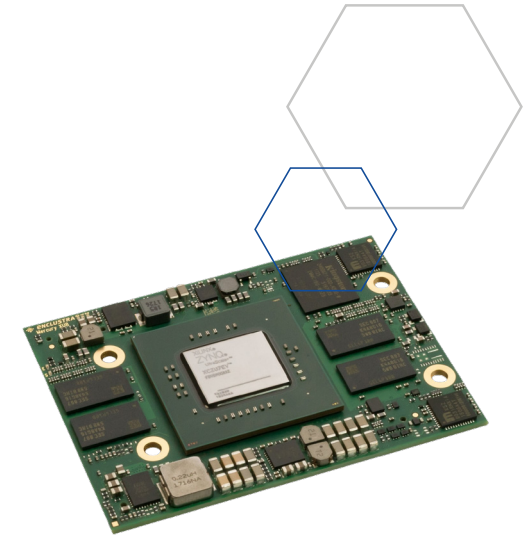


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Mercury



	Mercury+ XU8			
FPGA Family	AMD Zynq™ UltraScale+™			
FPGA Device Name	ZU4CG	ZU5EV	ZU7EV	
FPGA Speed Grade	1	1	1	2
FPGA Part Number	XCZU4CG-1FBVB900E	XCZU5EV-1FBVB900I	XCZU7EV-1FBVB900E	XCZU7EV-2FBVB900I
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5	4x ARM® Cortex®-A53 2x Cortex®-R5		
CPU Frequency @ MHz	1'200 500			1'333 533
PS Peripherals	DP PCIe® Gen2 x4 SATA SGMII CAN	Mali DisplayPort PCIe® Gen 2 x 4 SATA SGMII CAN		
PS Ethernet USB	2 × 1 Gbps 2 × USB 3.0			
PS SDRAM Size (MB)	2'048 + ECC	4'096 + ECC	2'048 + ECC	4'096 + ECC
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200			
PL System Logic Cells	192'150	256'200	504'000	
PL Total Block RAM (Mbit)	4.5	5.1	11	
PL UltraRAM (Mbit)	18	18	27	
PL DSP Slices DSP Systolic FIR (GMAC/s)	728 470	1'248 805	1'728 1'115	1'728 1'340
PL MGT Transceivers @ Gbps	16 @ 12.5			16 @ 16.375
PL Peripherals	PCIe® Gen3 x16	PCIe® Gen3 x16 H.265 Codec		
PL Ethernet USB	-			
PL SDRAM Size (MB)	1'024	2'048	1'024	2'048
PL SDRAM Type Bandwidth (MB/s)	DDR4 9'600			
Flash Memory	64 MB QSPI 16 GB eMMC			
Connector Pins IO Pins	504 136			
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 50 20 14			
Module Dimensions (mm)	74 × 54			
Temperature Range	0°C – +85°C	-40°C – +85°C	0°C – +85°C	-40°C – +85°C
Boot Modes	QSPI SD Card eMMC			
Product Status	Active			
Estimated Product Lifetime	2039+			
Preferred Model MOQ	Yes 1	No -	No -	Yes 1
Product Model	ME-XU8-4CG-1E-D11E	ME-XU8-5EV-1I-D12E	ME-XU8-7EV-1E-D11E	ME-XU8-7EV-2I-D12E



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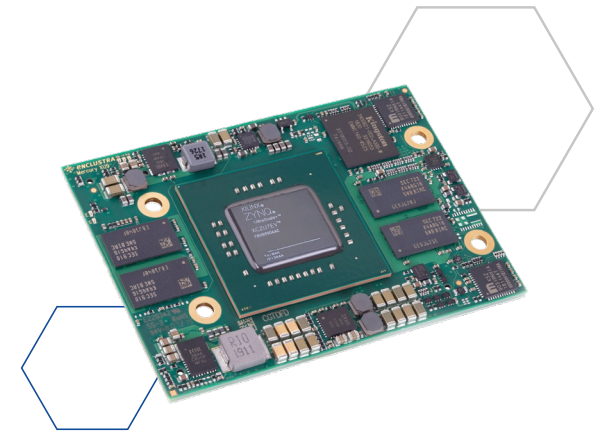




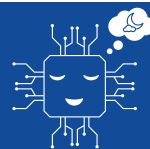


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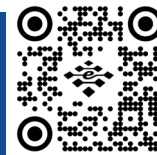
Mercury



	Mercury+ XU9		
FPGA Family	AMD Zynq™ UltraScale+™		
FPGA Device Name	ZU4CG	ZU5EV	ZU7EV
FPGA Speed Grade	1	1	2
FPGA Part Number	XCZU4CG-1FBVB900E	XCZU5EV-1FBVB900I	XCZU7EV-2FBVB900I
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5		
CPU Frequency @ MHz	1'200 500		1'333 533
PS Peripherals	DP PCIe® Gen2 ×4 SATA SGMII CAN	Mali DisplayPort PCIe® Gen2 ×4 SATA SGMII CAN	
PS Ethernet USB	2 × 1 Gbps 2 × USB 3.0		
PS SDRAM Size (MB)	2'048 + ECC	4'096 + ECC	
PS SDRAM Type Bandwidth (MB/s)	DDR4 19'200		
PL System Logic Cells	192'150	256'200	504'000
PL Total Block RAM (Mbit)	4.5	5.1	11.0
PL UltraRAM (Mbit)	13.5	18.0	27.0
PL DSP Slices DSP Systolic FIR (GMAC/s)	728 470	1'248 805	1'728 1'340
PL MGT Transceivers @ Gbps	16 @ 12.5		16 @ 16.375
PL Peripherals	PCIe® Gen3 ×16	PCIe® Gen3 ×16 H.265 Codec	
PL Ethernet USB	–		
PL SDRAM Size (MB)	2'048		
PL SDRAM Type Bandwidth (MB/s)	DDR4 19'200		
Flash Memory	64 MB QSPI 16 GB eMMC		
Connector Pins IO Pins	504 92		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	52 – 26 14		
Module Dimensions (mm)	74 × 54		
Temperature Range	0°C – +85°C	-40°C – +85°C	
Boot Modes	QSPI SD Card eMMC		
Product Status	Active		
Estimated Product Lifetime	2039+		
Preferred Model MOQ	No -	No -	Yes 1
Product Model	ME-XU9-4CG- 1E-D11E	ME-XU9-5EV- 1I-D12E-L11	ME-XU9-7EV- 2I-D12E-L11

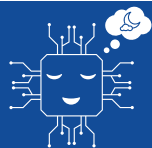


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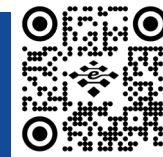




	Mercury ZX1			Mercury ZX5		
FPGA Family	AMD Zynq™ 7000 SoC			AMD Zynq™ 7000 SoC		
FPGA Device Name	Z-7030	Z-7035	Z-7045	Z-7015	Z-7030	
FPGA Speed Grade	2	1	2	2	1	3
FPGA Part Number	XC7Z030-2FBG676I	XC7Z035-1FBG676I	XC7Z045-2FFG676I	XC7Z015-2CLG485I	XC7Z030-1SBG485I	XC7Z030-3SBG485E
CPU Cores	2 × ARM® Cortex®-A9			2 × ARM® Cortex®-A9		
CPU Frequency @ MHz	800	667	800	766	667	1'000
PS Peripherals	2 × CAN			2 × CAN		
PS Ethernet USB	1 Gbps USB 2.0 OTG			1 Gbps USB 2.0 OTG		
PS SDRAM Size (MB)	1'024			1'024		
PS SDRAM Type Bandwidth (MB/s)	DDR3L 4'264			DDR3L 4'264		DDR3L 5'333
PL System Logic Cells	125'000	275'000	350'000	73'920	125'000	
PL Total Block RAM (Mbit)	9.3	17.6	19.2	3.3	9.3	
PL UltraRAM (Mbit)	-	-	-	-	-	-
PL DSP Slices DSP Systolic FIR (GMAC/s)	400 260	900 491	900 585	160 88	400 219	400 297
PL MGT Transceivers @ Gbps	4 @ 6.6	8 @ 6.6	8 @ 10.3125	4 @ 6.25	4 @ 6.6	
PL Peripherals	PCIe® Gen2 ×4	PCIe® Gen2 x8		PCIe® Gen2 ×4		
PL Ethernet USB	2 × 100 Mbps			-		
PL SDRAM Size (MB)	256			-		
PL SDRAM Type Bandwidth (MB/s)	DDR3L 2'133	DDR3L 1'600	DDR3L 3'200	-		
Flash Memory	64 MB QSPI 512 MB NAND			64 MB QSPI 512 MB NAND		
Connector Pins IO Pins	336 162	336 150		336 158		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	66 84 - 12	66 72 - 12		146 - - 12	54 92 - 12	
Module Dimensions (mm)	64 × 54			56 × 54		
Temperature Range	-40°C – +85°C			-40°C – +85°C		0°C – +70°C
Boot Modes	QSPI SD Card NAND			QSPI SD Card NAND		
Product Status	Active			Active		
Estimated Product Lifetime	2035+			2035+		
Preferred Model MOQ	Yes 1	Yes 1	Yes 1	Yes 1	Yes 1	No -
Product Model	ME-ZX1-30-2I-D10	ME-ZX1-35-1I-D10	ME-ZX1-45-2I-D10-P	ME-ZX5-15-2I-D10	ME-ZX5-30-1I-D10	ME-ZX5-30-3C-D10



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Product Details



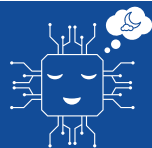
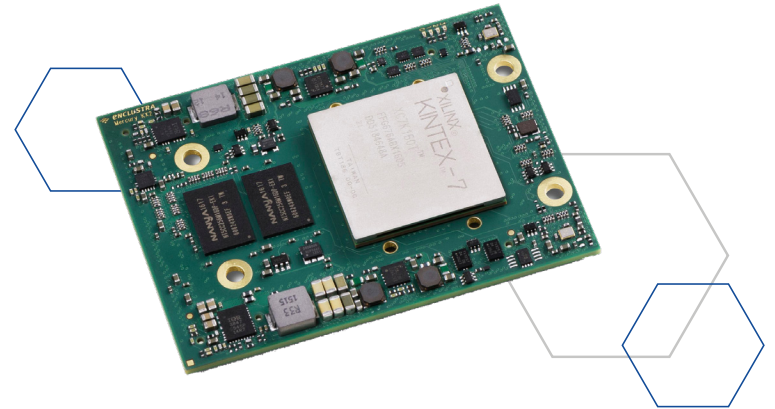
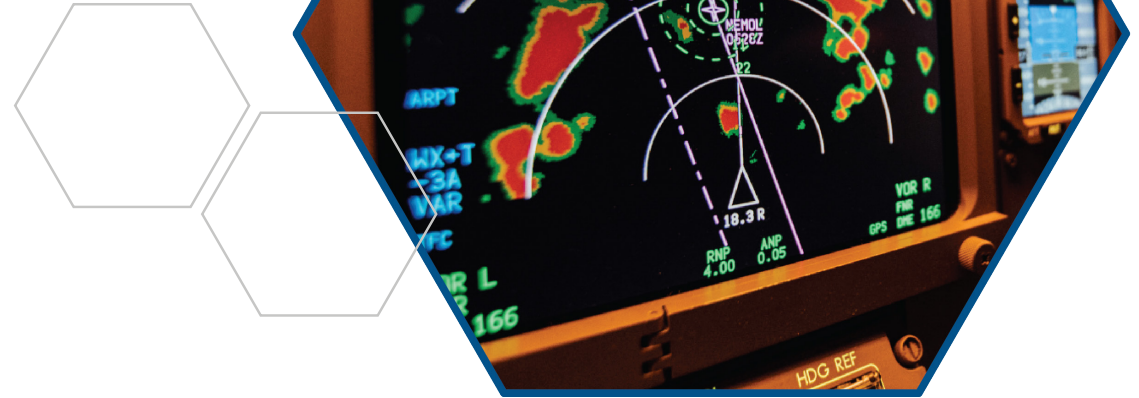


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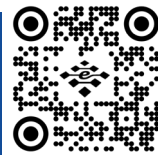
Mercury



	Mercury+ KX2	
FPGA Family	AMD Kintex® 7	
FPGA Device Name	XC7K160T	XC7K410T
FPGA Speed Grade	2	2
FPGA Part Number	XC7K160T-2FFG676I	XC7K410T-2FFG676I
CPU Cores	-	-
CPU Frequency @ MHz	-	-
PS Peripherals	-	-
PS Ethernet USB	-	-
PS SDRAM Size (MB)	-	-
PS SDRAM Type Bandwidth (MB/s)	-	-
PL System Logic Cells	162'240	406'720
PL Total Block RAM (Mbit)	11.70	28.62
PL UltraRAM (Mbit)	-	-
PL DSP Slices DSP Systolic FIR (GMAC/s)	600 390	1'540 1'001
PL MGT Transceivers @ Gbps	8 @ 10.3125	
PL Peripherals	PCIe® Gen2 x8	
PL Ethernet USB	2 × 1 Gbps FTDI USB 2.0	
PL SDRAM Size (MB)	2'048	
PL SDRAM Type Bandwidth (MB/s)	DDR3L 12'800	
Flash Memory	64 MB QSPI	
Connector Pins IO Pins	504 216	
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	216 - - -	
Module Dimensions (mm)	74 × 54	
Temperature Range	-40°C – +85°C	
Boot Modes	Slave Serial QSPI USB2	
Product Status	Active	
Estimated Product Lifetime	2030+	
Preferred Model MOQ	Yes 1	No -
Product Model	ME-KX2-160-2I-D11-P	ME-KX2-410-2I-D11-P



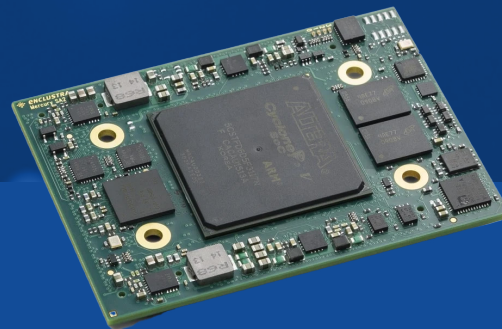
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Product Details





Mercury Altera

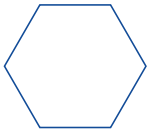
For Extremely Power-sensitive
Wireless Applications



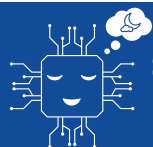
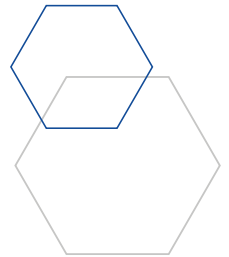


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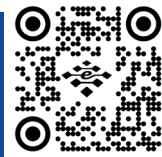
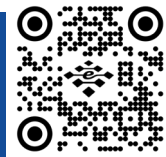
Mercury



	Mercury SA1	Mercury+ SA2	Mercury+ AA1		
FPGA Family	Altera Cyclone® V SX	Altera Cyclone® V ST	Altera Arria® 10		
FPGA Device Name	C6	D6	SX 270	SX 270	SX 480
FPGA Speed Grade	7	7	3	2	2
FPGA Part Number	5CSXFC6C6 U23I7N	5CSTFD6D5 F31I7N	10AS027E4 F29E3SG	10AS027E2 F29I2SG	10AS048E3 F29I2SG
CPU Cores	2 × ARM® Cortex®-A9	2 × ARM® Cortex®-A9	2 × ARM® Cortex®-A9		
CPU Frequency @ MHz	800	800	1'000	1'200	1'200
HPS Cores & Peripherals	2 × CAN	2 × CAN	–		
HPS Ethernet USB	1 Gbps USB 2.0 OTG	1 Gbps USB 2.0	1 Gbps USB 2.0		
HPS SDRAM Size (Mbyte)	1'024	2'048	2'048 + ECC		4'096 + ECC
HPS SDRAM Type Bandwidth (MB/s)	DDR3L 3'200	DDR3L 3'200	DDR4 7'464	DDR4 8'532	DDR4 8'532
FPGA System Logic Elements	110'000	110'000	480'000		
FPGA Block RAM (Mbit)	5.57	5.57	15		29
FPGA UltraRAM (Mbit)	-	-	-	-	-
FPGA DSP Slices DSP Systolic FIR (GMAC/s)	224 56	224 56	1'660 615	1'660 731	1'660 731
FPGA MGT Transceivers @ Gbps	6 @ 3.125	9 @ 6.144	12 @ 10.3125	12 @ 12.5	
FPGA Peripherals	PCIe® Gen1 ×4	PCIe® Gen2 ×4	PCIe® Gen3 ×8		
FPGA Ethernet USB	-	2 × 100 Mbps Cypress FX3 USB 3.0	-		
FPGA SDRAM Size (MB)	-	-	-		
FPGA SDRAM Type Bandwidth (MB/s)	-	-	-		
Flash Memory	64 MB QSPI 16 GB eMMC	64 MB QSPI 16 GB eMMC	64 MB QSPI 16 GB eMMC		
Connector Pins IO Pins	336 150	504 252	504 230		
FPGA 3.3V FPGA 1.8V Pins HPS Pins	134 – 16	234 – 18	– 212 18		
Module Dimensions (mm)	56 × 54	74 × 54	74 × 54		
Temperature Range	-40°C – +85°C	-40°C – +85°C	0°C – +85°C	-40°C – +85°C	-40°C – +85°C
Boot Modes	QSPI SD Card eMMC	QSPI SD Card USB 3.0	QSPI SD Card eMMC		
Product Status	Not Recommended New Design (NRND)	Active	Active		
Estimated Product Lifetime	2032+	2032+	2036+		
Preferred Model MOQ	Yes 1	Yes 1	Yes 1	No -	Yes 1
Product Model	ME-SA1-C6-7I-D10	ME-SA2-D6-7I-D11	ME-AA1-270-3E4-D11E-NFX3	ME-AA1-270-2I2-D11E-NFX3	ME-AA1-480-2I3-D12E-NFX3



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Mercury Microchip

FPGA Design Affordable
and Accessible



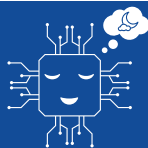
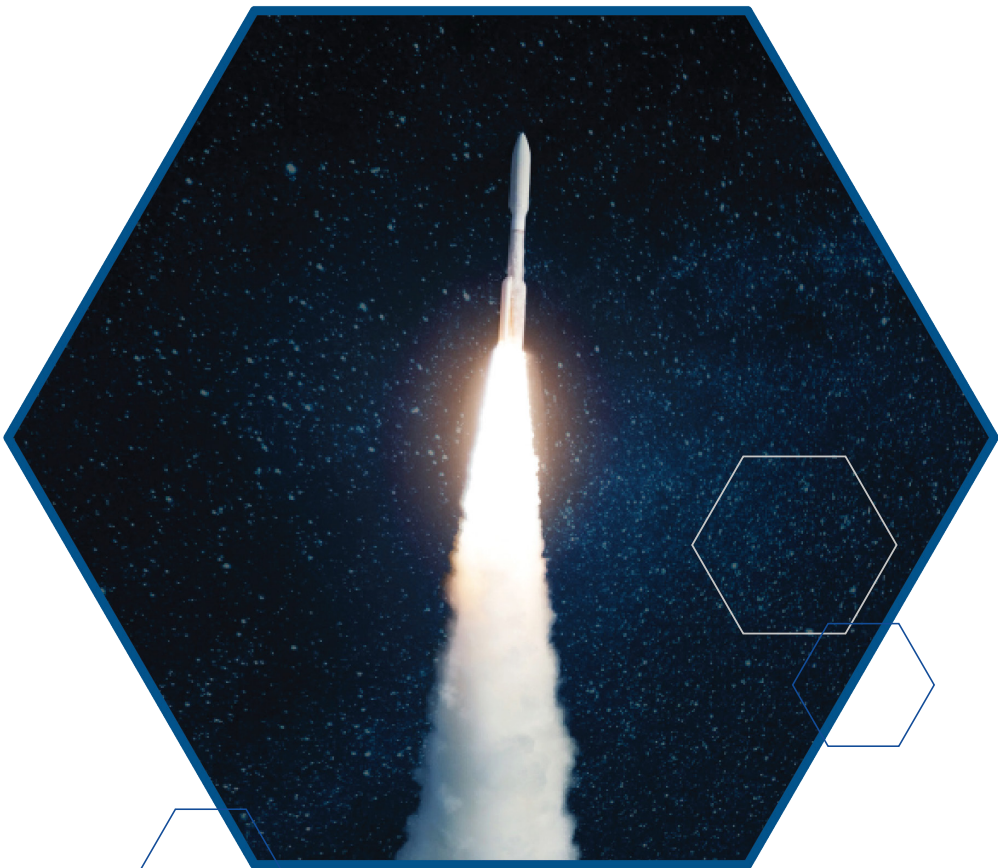


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Mercury



	Mercury+ MP1
FPGA Family	Microchip PolarFire®
FPGA Device Name	MPFS250T
FPGA Speed Grade	STD
FPGA Part Number	MPFS250TS-FCG1152I
CPU Cores	1 × E51 RISC-V RV64IMAC 4 × U54 RISC-V RV64GC
CPU Frequency @ MHz	625 625
HPS Cores & Peripherals	2x PCIe® Gen2 ×4 USB CAN
HPS Ethernet USB	1 Gbps USB 2.0
HPS SDRAM Size (MByte)	2'048 + ECC
HPS SDRAM Type Bandwidth (MB/s)	DDR4 6'400
FPGA System Logic Elements	17'600
FPGA Block RAM (Mbit)	17.6
FPGA UltraRAM (Mbit)	-
FPGA DSP Slices DSP Systolic FIR (GMAC/s)	-
FPGA MGT Transceivers @ Gbps	16 @ 12.5
FPGA Peripherals	-
FPGA Ethernet USB	-
PL SDRAM Size (MB)	-
PL SDRAM Type Bandwidth (MB/s)	-
Flash Memory	64 MB QSPI 16 GB eMMC
Connector Pins IO Pins	504 215
FPGA 3.3V FPGA 1.8V Pins HPS Pins	206 - - 9
Module Dimensions (mm)	65 × 54
Temperature Range	-40°C – +85°C
Boot Modes	QSPI SD Card eMMC
Product Status	Active
Estimated Product Lifetime	2036+
Preferred Model MOQ	No - Yes 1
Product Model	ME-MP1-250-SI-D3EN-E1 ME-MP1-250-SI-D3EN



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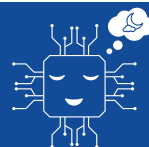
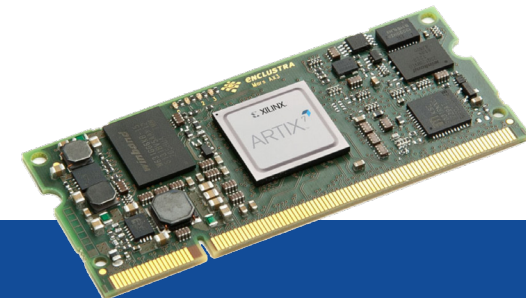
Mars

Simple and Low-cost
Integration





	Mars AX3		
FPGA Family	AMD Artix™ 7		
FPGA Device Name	XC7A35T	XC7A50T	XC7A100T
FPGA Speed Grade	1	1	2
FPGA Part Number	XC7A35T-1CSG324I	XC7A50T-1CSG324I	XC7A100T-2CSG324I
CPU Cores	-		
CPU Frequency @ MHz	-		
PS Peripherals	-		
PS Ethernet USB	-		
PS SDRAM Size (MB)	-		
PS SDRAM Type Bandwidth (MB/s)	-		
PL System Logic Cells	33'280	52'160	101'440
PL Total Block RAM (Mbit)	1.80	2.70	4.80
PL UltraRAM (Mbit)	-	-	-
PL DSP Slices DSP Systolic FIR (GMAC/s)	90 42	120 56	240 132
PL MGT Transceivers @ Gbps	-		
PL Peripherals	-		
PL Ethernet USB	1 Gbps		
PL SDRAM Size (MB)	256		
PL SDRAM Type Bandwidth (MB/s)	DDR3 1'600		
Flash Memory	64 MB QSPI		
Connector Pins IO Pins	200 108		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	108 - - -		
Module Dimensions (mm)	67.6 × 30		
Temperature Range	-40°C – +85°C		
Boot Modes	Slave Serial QSPI		
Product Status	Active		
Estimated Product Lifetime	2030+		
Preferred Model MOQ	Yes 1	No -	Yes 1
Product Model	MA-AX3-35-1I-D8	MA-AX3-50-1I-D8	MA-AX3-100-2I-D8

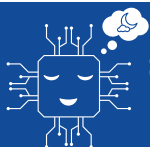
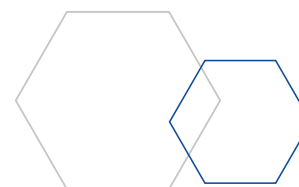


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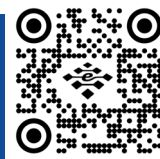


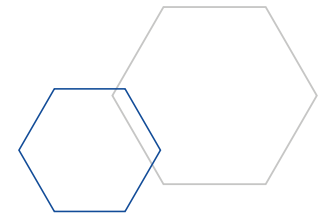


	Mars ZX2		Mars ZX3	
FPGA Family	AMD Zynq™ 7000		AMD Zynq™ 7000	
FPGA Device Name	Z-7010	Z-7020	Z-7020	
FPGA Speed Grade	2	2	1	2
FPGA Part Number	XC7Z010-2CLG400I	XC7Z020-2CLG400I	XC7Z020-1CLG484C	XC7Z020-2CLG484I
CPU Cores	2 × ARM® Cortex®-A9		2 × ARM® Cortex®-A9	
CPU Frequency @ MHz	766		667	766
PS Peripherals	2 × CAN		2 × CAN	
PS Ethernet USB	1 Gbps USB 2.0 OTG		1 Gbps (or PL) USB 2.0 OTG	
PS SDRAM Size (MB)	512		512	1'024
PS SDRAM Type Bandwidth (MB/s)	DDR3L 2'132		DDR3L 4'264	
PL System Logic Cells	28'160	85'120	85'120	
PL Total Block RAM (Mbit)	2.1	4.9	4.9	
PL UltraRAM (Mbit)	–	–	–	–
PL DSP Slices DSP Systolic FIR (GMAC/s)	80 44	220 121	220 103	220 121
PL MGT Transceivers @ Gbps	–		–	
PL Peripherals	–		–	
PL Ethernet USB	–		1 Gbps (or PS)	
PL SDRAM Size (MB)	–		–	
PL SDRAM Type Bandwidth (MB/s)	–		–	
Flash Memory	64 MB QSPI		64 MB QSPI 512 MB NAND	
Connector Pins IO Pins	200 108			
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	96 – – 12			
Module Dimensions (mm)	67.6 × 30			
Temperature Range	-40°C – +85°C		0°C – +70°C	-40°C – +85°C
Boot Modes	QSPI SD Card			
Product Status	Active			
Estimated Product Lifetime	2030+		2034+	
Preferred Model MOQ	Yes 1	Yes 1	Yes 1	Yes 1
Product Model	MA-ZX2-10-2I-D9	MA-ZX2-20-2I-D9	MA-ZX3-20-1C-D9	MA-ZX3-20-2I-D10

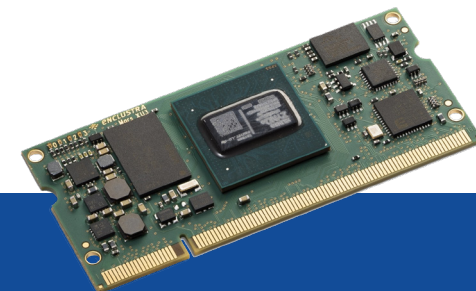
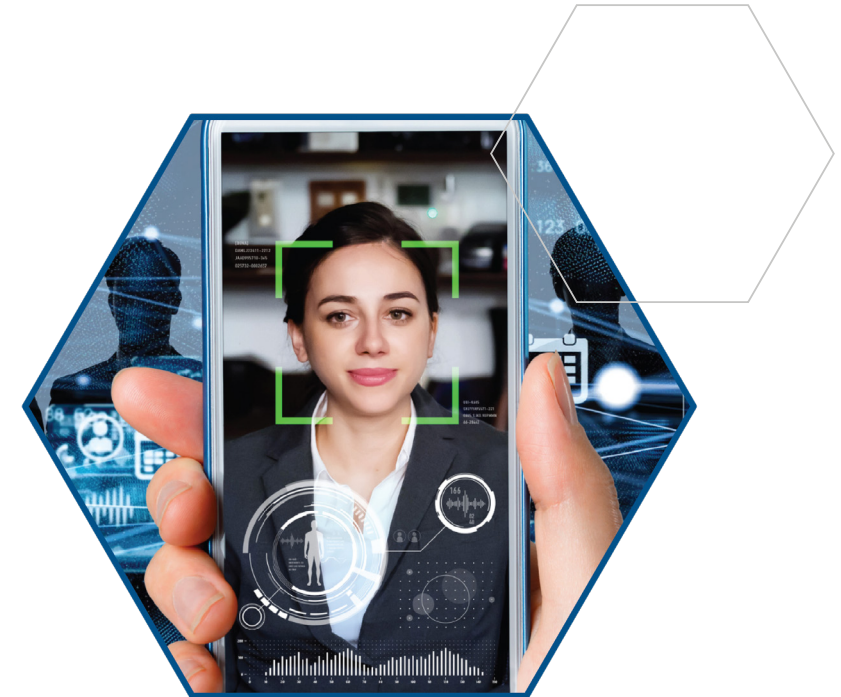


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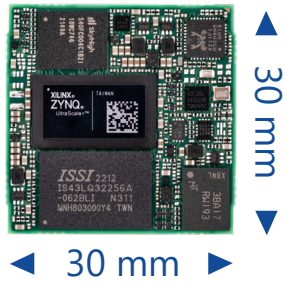
	Mars XU3		
FPGA Family	AMD Zynq™ UltraScale+™		
FPGA Device Name	ZU2CG	ZU2EG	ZU3EG
FPGA Speed Grade	1	1	2
FPGA Part Number	XCZU2CG-1SBVA484E	XCZU2EG-1SBVA484I	XCZU3EG-2SBVA484I
CPU Cores	2 × ARM® Cortex®-A53 2 × Cortex®-R5	4 × ARM® Cortex®-A53 2 × Cortex®-R5	
CPU Frequency @ MHz	1'200 500		1'333 533
PS Peripherals	SATA SGMII CAN	Mali DisplayPort PCIe® Gen2 x4 SATA SGMII CAN	
PS Ethernet USB	1 Gbps USB 3.0		
PS SDRAM Size (MB)	1'024		2'048
PS SDRAM Type Bandwidth (MB/s)	DDR4 4'264		
PL System Logic Cells	103'000		154'000
PL Total Block RAM (Mbit)	5.3		7.6
PL UltraRAM (Mbit)	–		–
PL DSP Slices DSP Systolic FIR (GMAC/s)	240 155		360 279
PL MGT Transceivers @ Gbps	–		
PL Peripherals	–		
PL Ethernet USB	–		
PL SDRAM Size (MB)	–		
PL SDRAM Type Bandwidth (MB/s)	–		
Flash Memory	64 MB QSPI 16 GB eMMC		
Connector Pins IO Pins	200 88		
PL 3.3V PL 1.8V PL 1.2V Pins PS Pins	24 52 – 12		
Module Dimensions (mm)	67.6 × 30		
Temperature Range	0°C – +85°C	-40°C – +85°C	
Boot Modes	QSPI SD Card eMMC		
Product Status	Active		
Estimated Product Lifetime	2035+		
Preferred Model MOQ	Yes 1	No -	Yes 1
Product Model	MA-XU3-2CG-1E-D10	MA-XU3-2EG-1I-D10	MA-XU3-3EG-2I-D11



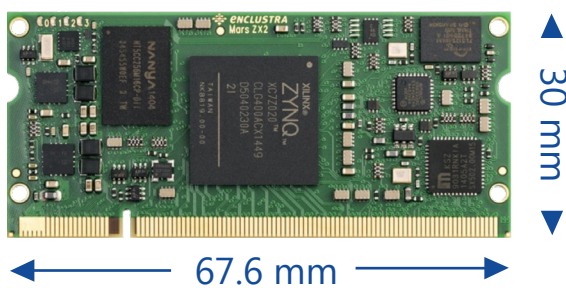
Form Factors

Our FPGA modules are developed with the aim of simplifying the overall design of your FPGA-based system, thus significantly reducing the time and cost to market.

Pluto Size



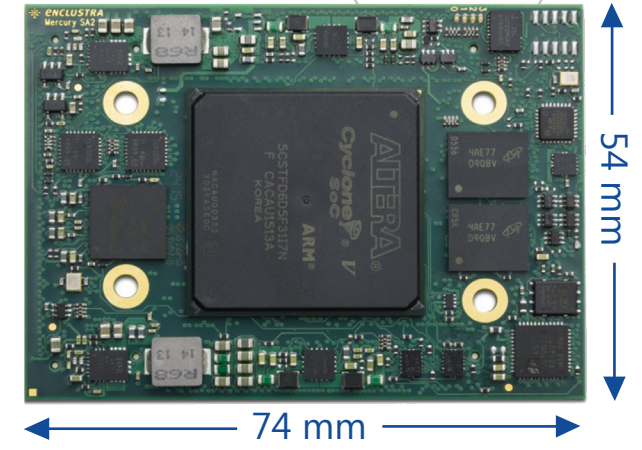
Mars Size



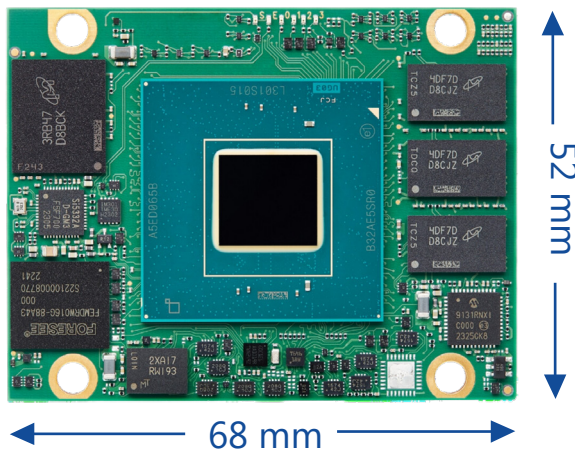
Mercury Size



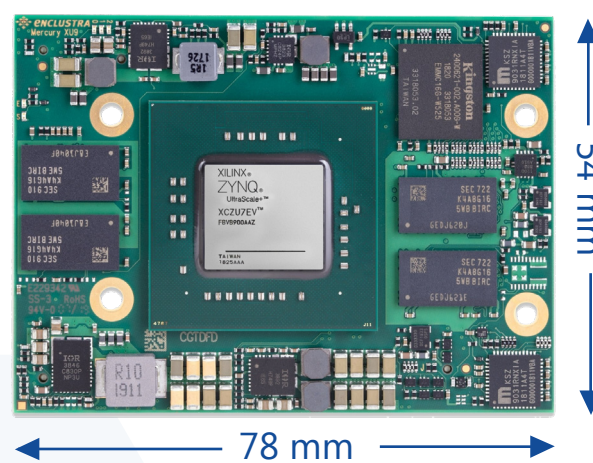
Mercury+ Size



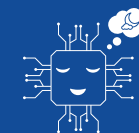
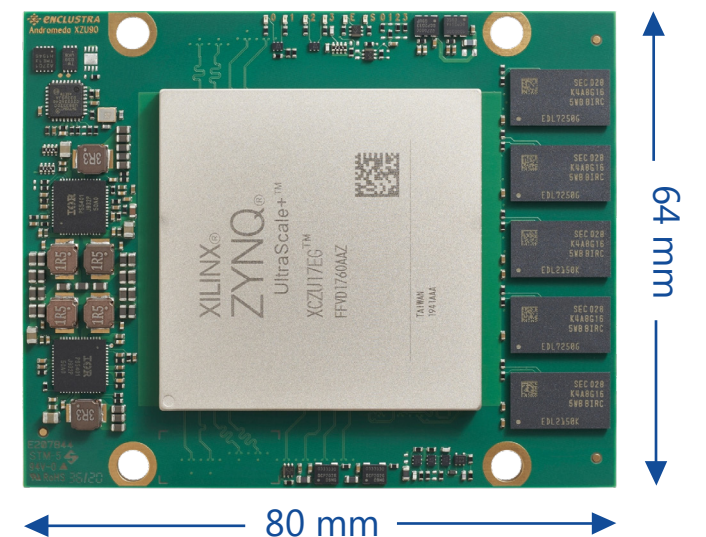
Andromeda M Size



Andromeda V Size

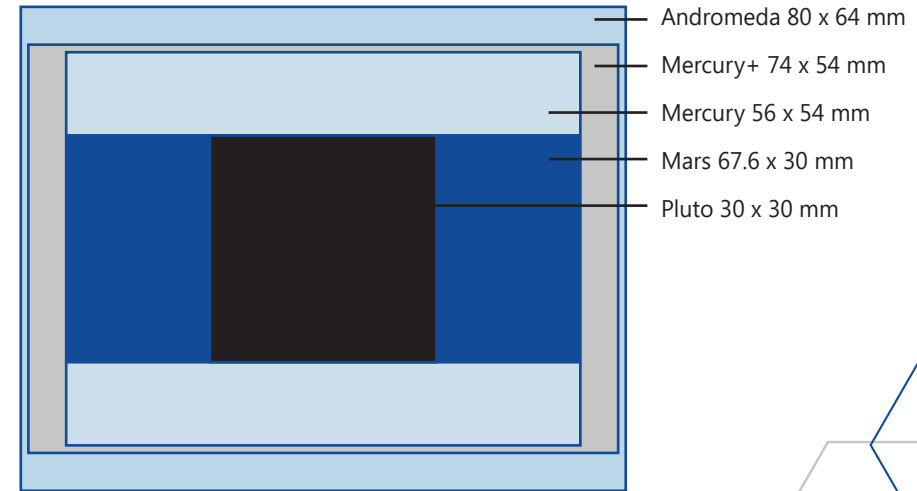


Andromeda L Size

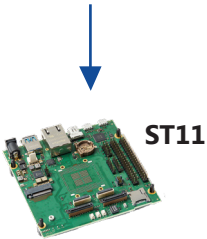


Base Boards Matching Guide

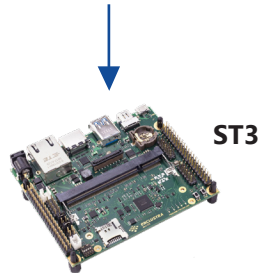
Our base boards, designed for use with our FPGA modules, provide a multitude of I/O interfacing options. They're well-suited for rapid prototyping and building low-quantity FPGA systems, without the need to build custom hardware.



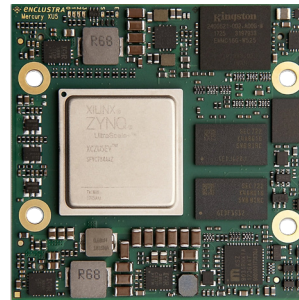
Pluto



Mars



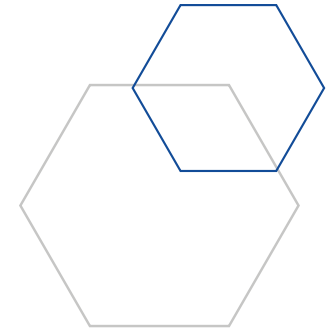
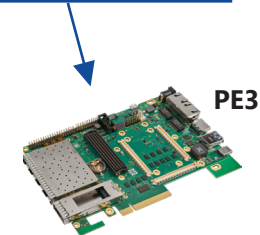
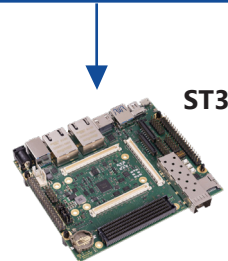
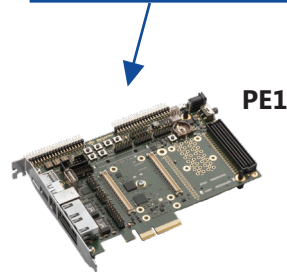
Mercury



Mercury+



Andromeda SoC --> PE5
Andromeda RFSoc --> ST9



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FPGA SOLUTIONS

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