



	Origami	Origami	PRELIMINARY Origami Square	PRELIMINARY Origami Square	PRELIMINARY Origami Square	PRELIMINARY Origami Square	PRELIMINARY Origami Square	PRELIMINARY Origami Square	PRELIMINARY Origami Square
	IM-M20	IM-B20	Reed <small>The Essential</small>	Hazel <small>The Mighty</small>	Sequoia <small>The Highway</small>	Ginkgo <small>The Matrix</small>	Bamboo <small>The Coder</small>	Cedar <small>The Bold</small>	Oak <small>The Freemind</small>

FPGA Device

Device	KU5P	KU060	KU5P	KU15P	VU35P	KU115	ZU7EV	ZU11EG	ZU28DR
Package	B676	A1156	B676	E1517	H2892	A2104	F1517	C1760	G1517
Speed Grade	-1	-2	-2	-2	-2	-2	-2	-2	-2
Temperature Grade	E	E	E	E	E	E	E	E	E

Module Flavor

Max Memory	.	.	●	●	●	●	.	.	.
Max Differential	●	.	.	●	.
Balanced	●	●	●	.	●

Module Interposer IO

GTY 25 Gbps / line	16	-	16	24	64	-	-	16	16
GTH 16 Gbps / line	-	28	-	32	-	52	24	32	-
RF-ADC 4GHz / RF line	-	-	-	-	-	-	-	-	8
RF DAC 6,5 GHz / RF line	-	-	-	-	-	-	-	-	8
SD-FEC	-	-	-	-	-	-	-	-	8
HPIO & HRIO Differential Pairs 1,2 Gbps / pair	48	96	24	44	188	164	48	120	72
HD-IO Pins 0,6 Gbps / IO	72	-	66	96	-	-	48	48	48

Module Memory

HB-RAM Capacity Giga bits - Total	-	-	-	-	64 Gb	-	-	-	-
HBRAM interface 3 680 Gbps - Total	-	-	-	-	16	-	-	-	-
PL - DDR4 Capacity Gigabits - Total	16	64	32	64	-	96	48	32	32
PL - DDR4 - 64 bits @ 2400 MT/s 154 Gbps / bank	-	2	1	2	-	3	1	1	1
PL - DDR4 - 32 bits @ 2400 MT/s 77 Gbps / bank	1	-	-	-	-	-	1	-	-
PS - DDR4 - Capacity Giga bits - Total	-	-	-	-	-	-	32	32	32
PS - DDR4 - 64 bits @ 2400 MT/s 154 Gbps / bank	-	-	-	-	-	-	1	1	1

FPGA Features

System Logic Cells (K)	475	726	475	1.143	1.907	1.451	504	653	930
DSP Slices	1.824	2.760	1.824	1.968	5.952	5.520	1.728	2.928	4.272
Video Codec 4K HEVC 4K60p 422-10bits	-	-	-	-	-	-	1	-	-
PCIe® Gen3 x16 256 Gbps / instance	1	3	1	5	1	6	2	4	2
PCIe® Gen3 x16 / Gen4 x8 / CCIX 256 Gbps / instance	-	-	-	-	4	-	-	-	-
150G Interlaken 256 Gbps / instance	-	-	-	4	2	-	-	1	1
100G Ethernet MAC/PCS w/RS-FEC 256 Gbps / instance	1	-	1	4	5	-	-	2	2

Embedded Processor

Quad-ARM Processor With GPU, RTU, 16GB eMMC	-	-	-	-	-	-	●	●	●
PS-MIO Pins 1,2 Gbps / IO	-	-	-	-	-	-	78	78	78
PS-GTR 6 Gbps / line	-	-	-	-	-	-	4	4	4
PS Flash Memory Capacity	-	-	-	-	-	-	16 Gbytes eMMC	16 Gbytes eMMC	16 Gbytes eMMC
PS Boot Mode	-	-	-	-	-	-	-	-	-



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	Origami IM-M20	Origami IM-B20	PRELIMINARY Origami Square Reed The Essential	PRELIMINARY Origami Square Hazel The Mighty	PRELIMINARY Origami Square Sequoia The Highway	PRELIMINARY Origami Square Ginkgo The Matrix	PRELIMINARY Origami Square Bamboo The Coder	PRELIMINARY Origami Square Cedar The Bold	PRELIMINARY Origami Square Oak The Freemind
			At 100 Gbps, the most cost effective link between video and IP.	From Sensor to network in one dense module!	A ton of hyper connected neurons, with an extremely FAST memory!	Cost effective, brainy and hyperconnected module	4K HEVC coding on a smart module	The all-in-one module to create 8K240p 100Gb connected camera.	The all-in-one module to build 5G camera for SNG/ENG
			Ultra Low Cost	Mighty for Image Processing	The most power ful FPGA module!	The perfect processing matrix	4K HEVC CODEC hard core	116 LVDS for direct sensor interface	On Board RF DAC, RF ADC & FEC
			100 Gb. Ethernet	100 Gb. Ethernet	8 GB HBM @ 3 Tera bits per second	52 Gigabit Transceivers	On board quad-core ARM	Powerful ARM System on Module	Powerful ARM System on Module
			16 High Speed Serial lines	2 bank of DDR4 on 64 bits bus	64 GTY = 1 600 Gbps connectivity!	158 LVDS Pairs	HDMI & Display Port, ... hard core	Whole User Interface Management	Remote Studio Connexion
			Designed for SMPTE 2110	Designed for Advanced Compression	Designed for AI	Designed for device interfacing	Designed for Broadcasting	Designed for 8K240p Sensors	Designed for 8K Field Cameras
FPGA Device									
Device Package	KU5P B676	KU060 A1156	KU5P B676	KU15P E1517	VU35P H2892	KU115 A2104	F1517	ZU11EG C1760	ZU28DR G1517
Speed Grade	-1	-2	-2	-2	-2	-2	-2	-2	-2
Temperature Grade	E	E	E	E	E	E	E	E	E
On board Clock									
On board Clock	0-350 MHz Configurable Clock based on TCXO @ 1.5 ppm	200 MHz ± 30 ppm 300 MHz ± 10 ppm	0-350 MHz Configurable Clock based on TCXO @ 1.5 ppm			0-350 MHz Configurable Clock based on TCXO @ 1.5 ppm			
Module Control									
On Board microcontroller Control	-	-	T.I. MSP430FG6626 (to be confirmed) - RISC 16 bit			T.I. MSP430FG6626 (to be confirmed) - RISC 16 bit			
via microcontroller Monitoring	-	-	Multi bitstream Management - Extra Flash - start stop control - REAL Time Clock - Power supply configuration interface to Sysmon - DC voltages and temperature			Multi bitstream Management - start stop control - Power supply configuration interface to Sysmon - DC voltages and temperature			
PL Flash Memory Capacity	1 Gbit - Up to 8 bitstream	1 Gbit - Up to 4 bitstream	1 Gbit - Up to 4 bitstream			1 Gbit - Up to 4 bitstream			
PL Boot Mode	JTAG via FPGA	JTAG via FPGA	Direct SPI - JTAG via FPGA - USB Via microcontroller			Direct SPI - JTAG via FPGA - USB Via microcontroller - External SD Card			
On Board Security	Dual QSPI	Dual QSPI	Dual QSPI			Dual QSPI			
Battery Powered	FPGA Encryption Key	Real time Clock FPGA Encryption Key	Real Time Clock in microcontroller			Real Time Clock in PS			
Power & Heat Management									
Power Consumption Maximum	15 W	35 W	30 W	40 W	180 W	85 W	40 W	50 W	55 W
Power Input	12V 1.25A	12V (1.25A) - 3,3V (0.5A)	12V (2.5 A)	12V (3.25 A)	12V (15.0 A)	12V (7.25 A)	12V (3.0 A)	12V (4.25 A)	12V (4.75 A)
Power Output	-		1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)	1,8V (200 mA) 3,3V (200 mA)
Heatsink efficiency Kelvin / Watt	1 K/W	1 K/W	1 K/W	1 K/W	Custom	Custom	1 K/W	Custom	Custom
Operating Ambient Temp.	Up to 65 °C	Up to 65 °C	Up to 65 °C	Up to 65 °C	Custom	Custom	Up to 65 °C	Custom	Custom
Dimension & Weight									
Bare Module	62,6 x 52,60 x 10 mm - 32 g	93,75 x 52,60 x 13 mm - 73 g	111 x 65 x 10 mm	111 x 88 x 10 mm	145 x 111 x 10 mm	145 x 111 x 10 mm	145 x 88 x 10 mm	145 x 88 x 10 mm	145 x 88 x 10 mm
Module with Heatsink	62,6 x 52,60 x 32 mm - 90 g	93,75 x 52,60 x 32 mm - 230 g	111 x 65 x 32 mm	111 x 88 x 32 mm	Custom	custom	145 x 88 x 32 mm	Custom	Custom