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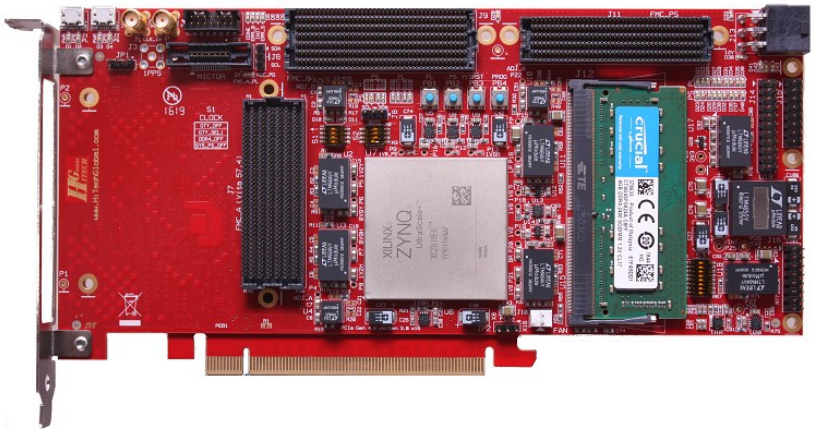
Product Updates

Related Links

►FPGA Boards Selection Guide

►FMC Modules Selection Guide

HTG-Z922: Xilinx ZYNQ® UltraScale+™ MPSoC PCI Express Development Platform

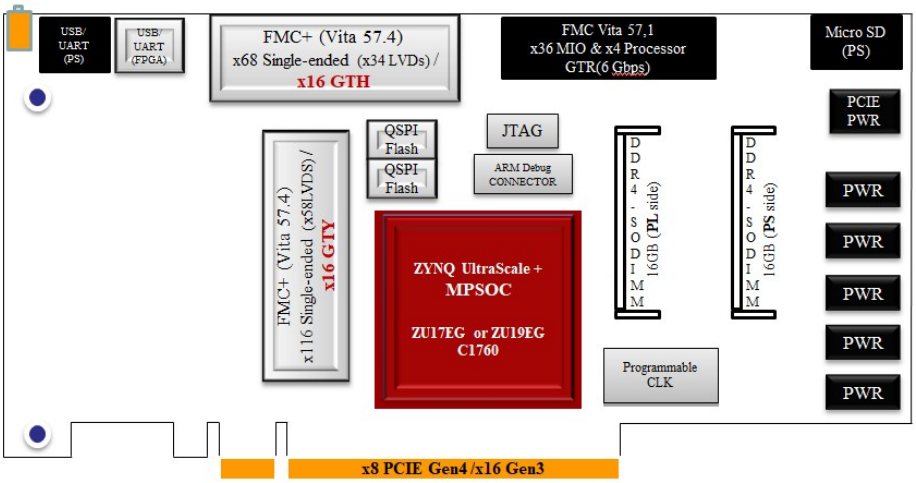


Populated with one Xilinx ZYNQ **UltraScale+** ZU17-2 or ZU19-2 FPGA, the HTG-Z922 provides access to large FPGA gate densities, wide range of I/Os and expandable DDR4 memory for variety of different programmable applications.

The HTG-Z922 architecture allows easy and versatile functional expansion through two Vita 57.4 compliant FMC+ ports (PL side) and one Vita57.1 compliant FMC port (PS side) . The FMC+ ports provide access to total of 184 single-ended FPGA I/Os , 16 GTY (30.5Gbps) and 16 GTH (16Gbps) serial transceivers. The FMC port provides access to 36 MIOs (processor) and 4 GTR (6Gbps) serial transceivers.

The HTG-Z922 is supported by two 72-bit ECC DDR4 SODIMM sockets providing access to up to 32 GB of SDRAM memory (16GB for the PL side and 16GB for the PS side). The board is also supported by the HiTech Global 4GB Hybrid Memory Cube (HMC) FMC+ module for high-performance serial memory.

The HTG-Z922 can be used in PCI Express or Standalone mode and powered through its 6-pin Molex connector.





Supported Devices:

			ZU11EG	ZU17EG	ZU19EG
Processing System (PS)	Application Processor Unit	Processor Core	**Quad-core** ARM® Cortex™-A53 MPCore™ up to 1.5GHz		
		Memory w/ECC	L1 Cache 32KB I / D per core, L2 Cache 1MB, on-chip Memory 256KB		
	Real-Time Processor Unit	Processor Core	**Dual-core** ARM Cortex-R5 MPCore™ up to 600MHz		
		Memory w/ECC	L1 Cache 32KB I / D per core, Tightly Coupled Memory 128KB per core		
	Graphic & Video Acceleration	Graphics Processing Unit	Mali™-400 MP2 up to 667MHz		
		Memory	L2 Cache 64KB		
	External Memory	Dynamic Memory Interface	x32/x64: DDR4, LPDDR4, DDR3, DDR3L, LPDDR3 with ECC		
		Static Memory Interfaces	NAND, 2x Quad-SPI		
	Connectivity	High-Speed Connectivity	PCIe® Gen2 x4, 2x USB3.0, SATA 3.1, DisplayPort, 4x Tri-mode Gigabit Ethernet		
		General Connectivity	2xUSB 2.0, 2x SD/SDIO, 2x UART, 2x CAN 2.0B, 2x I2C, 2x SPI, 4x 32b GPIO		
	Integrated Block Functionality	Power Management	Full / Low / PL / Battery Power Domains		
		Security	RSA, AES, and SHA		
		AMS - System Monitor	10-bit, 1MSPS - Temperature, Voltage, and Current Monitor		
PS to PL Interface			12 x 32/64/128b AXI Ports		
Programmable Logic (PL)	Programmable Functionality	System Logic Cells (K)	653	926	1,143
		CLB Flip-Flops (K)	597	847	1,045
		CLB LUTs (K)	299	423	523
	Memory	Max. Distributed RAM (Mb)	9.1	8.0	9.8
		Total Block RAM (Mb)	21.1	28.0	34.6
		UltraRAM (Mb)	22.5	28.7	36.0
	Clocking	Clock Management Tiles (CMTs)	8	11	11
	Integrated IP	DSP Slices	2,928	1,590	1,968
		PCI Express® Gen 3x16 / Gen4x8	4	4	5
		150G Interlaken	2	2	4
		100G Ethernet MAC/PCS w/RS-FEC	1	2	4
		AMS - System Monitor	1	1	1

Main Features:

► Xilinx Zynq UltraScale+ MPSOC ZU17EG, or ZU19EG in C1760 package (-2 speed grade)
► x8 PCI Express Gen4 or x16 PCI Express Gen3
► x2 Vita57.4 FPGA Mezzanine Connectors (FMC+) ports
- Front panel port: **116** single-ended (58 LVDS) I/Os and **16 GTY** (32.75Gbps) Serial Transceivers
- Upper left port: **68** single-ended (34 LVDS) I/Os and **16 GTH** (16 Gbps) Serial Transceivers
► x1 Vita57.1 FPGA Mezzanine Connector (FMC) with processor **36** MIOs and **4** GTR (6Gbps) Serial Transceivers
► x2 Independent DDR4 SODIMM ports for the PL and PS sides each supporting up to **16**GB of memory (shipped with two 4GB SODIMMS)
► Configuration Flash
► x1 MicroSD (Processor)
► x2 USB/UART (FPGA and Processor)
► Programmable Clocks (with default frequencies but programmable through I2C bus)
► ARM Debug Header
► FPGA JTAG Header
► External Synchronous Clock port
► 8.85" x 4.25" (225mm x 111.1mm)
► Low-profile heatsink and fan
► Supports both PCI Express and Standalone operations
- 12V/8A Power adapter for standalone operation

Kit Content:

Hardware:
- HTG-Z922Xilinx Zynq UltraScale+ platform

Reference Designs:

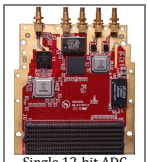
- x16 PCI Express
- DDR4 SODIMM Memory Controller (programmable side)
- DDR4 SODIMM Memory Controller (processor side)
- U-boot/Petalinux (unsupported sample)

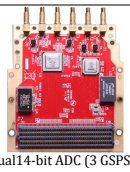
Documents:
- User Manual
- Schematics (in searchable .pdf format)
- FPGA pinouts
- XY Mechanical drawings
- FMC+ trace lengths

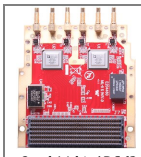
Ordering & Availability Information

HTG-Z922-17 , Price: [contact us]
HTG-Z922-19 , Price: [contact us]

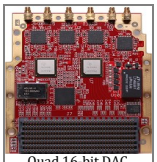
Accessories (FMC Modules)

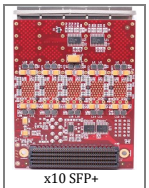

Single 12-bit ADC (10.25 GSPS)/ Dual 16-bit DAC (12.6 GSPS) FMC+ Module
More info...

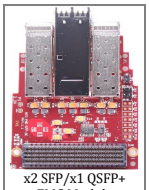

Dual14-bit ADC (3 GSPS)/ Dual 16-bit DAC (12.6 GSPS) FMC Module
More info..

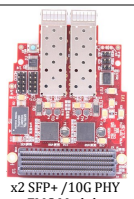

Quad 14-bit ADC (3 GSPS) FMC+ Module (Vita57.4)
More info..

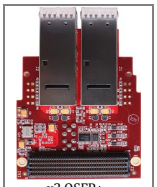

Quad 16-bit ADC FMC Module
More info..

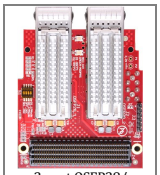

Quad 16-bit DAC FMC Module
More info.

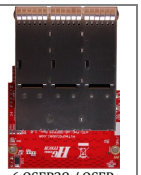

x10 SFP+ FMC Module
More info..


x2 SFP/x1 QSFP+ FMC Module
More info

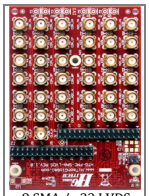

x2 SFP+ /10G PHY FMC Module
More info..

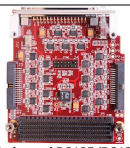

x2 QSFP+ FMC Module
More Info..


2-port QSFP28/ QSFP+ 56G) FMC Module More Info.


x6 QSFP28 / QSFP+ FMC+ Module
More info..

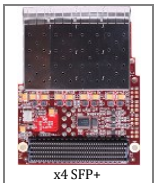

x4 QSFP28/QSFP+ FMC+ Module
More info..


x8 SMA / x33 LVDS FMC Module
More Info.

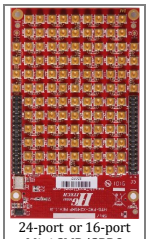

42-channel RS485/RS422 FMC Module
More Info..

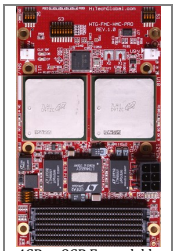

x8 PCIE RC FMC Module
More info..


X16 PCI Express Root Complex FMC Module
More info..


x4 SFP+ FMC Module
More Info..


Carrier board to daughter card and carrier board to carrier board FMC cable
More Info..

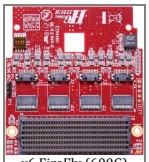

24-port or 16-port Mini SMP/GPPO / 34-pair LVDS FMC Module
More info..


4GB or 8GB Expandable /Standalone Hybrid Memory Cube (HMC)
More info...


U.2 (SFF-8639)/Display Port/ SATA/ Ethernet / USB FMC Module
More info..

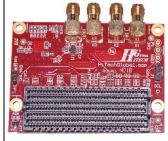

x4 RJ45 (SGMII) FMC Module
More Info..


2x300G (or 6x100G) LEAP FMC Module
More info..


x6 FireFly (600G) FMC+ Module



Vita 57.1(FMC)
x2 M.2 SSD FMC
Module
More info..



I/O Loopback FMC/FMC+ /
Clock Generator Module
More Info..



x4 SMA
FMC Module
More Info..



x2 CXP (12x12G+)
FMC Module
More info...





FMC+ to FMC Splitter Module
More info..

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