

iW-RainboW-G47V

Kintex™ UltraScale+™ FPGA 3U VPX Plug-in Module (Payload Profile)

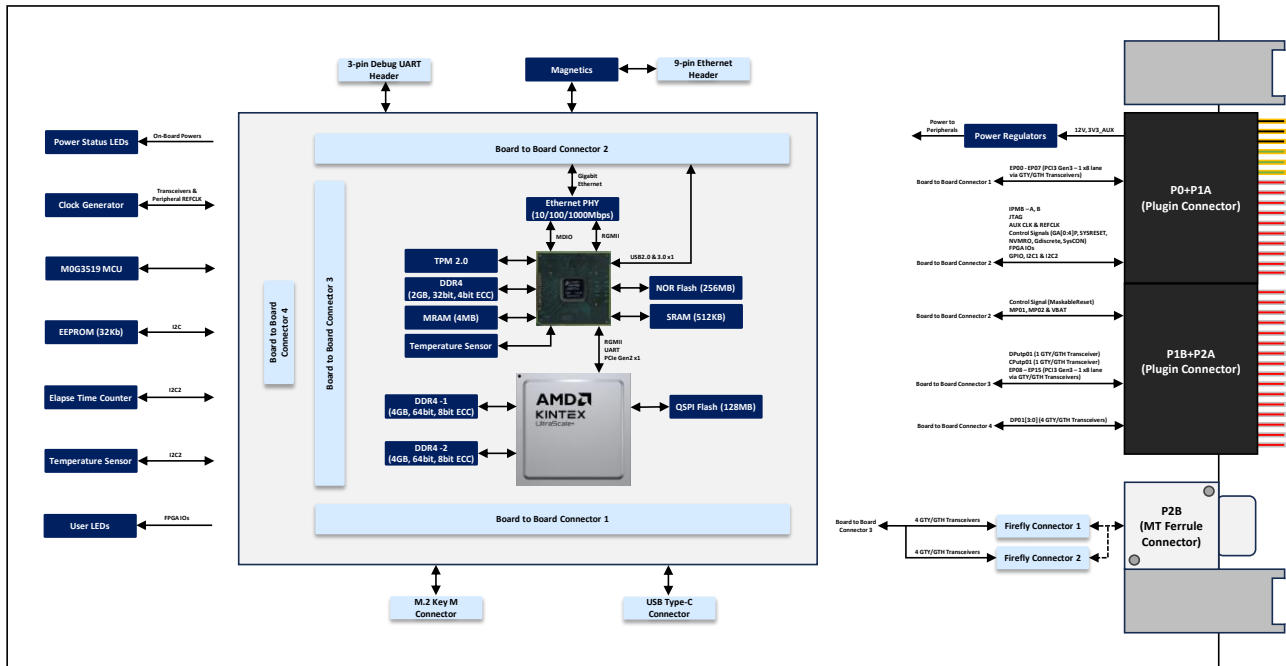
iWave's Kintex™ UltraScale+™ 3U VPX Plug-in Module comprises of Kintex™ UltraScale+™ FPGA SOM and 3U VPX Carrier Board. Kintex™ UltraScale+™ FPGA SOM is compatible with KU19P, KU095 & KU115 Devices. It has 1842.75K FPGA Logic Cells, 842.4k LUTs and Dual-core Arm® Cortex®-A7 @up to 1.2GHz. It is equipped with 3U VPX Connectors (P0, P1A+P1B & P2A) based on VITA 46.0 and MT Ferrule Connector (P2B) based on VITA 67.3. It has Dual 64-bit, 4GB FPGA DDR4 with 8-bit ECC & 128MB QSPI Flash for FPGA and 2GB DDR4 with 4-bit ECC, 256MB NOR Flash, 4MB MRAM & 512KB SRAM for CPU.



Highlights

- ❖ SOSA aligned Kintex™ UltraScale+™ FPGA 3U VPX Plug-in Module
- ❖ Compatible with KU19P, KU095 & KU115 Devices
- ❖ Dual 64-bit, 4GB FPGA DDR4 & Single 32-bit, 2GB CPU DDR4
- ❖ Supports SOSA Aligned Payload Profiles
- ❖ IPMC with Arm® 32-bit Cortex®-M0+ CPU @up to 80MHz
- ❖ LS1021A with Dual-core Arm® Cortex®-A7 @up to 1.2GHz
- ❖ 10+ years Long Support

Block Diagram



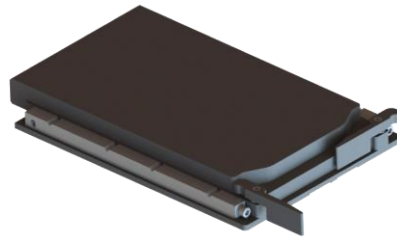
Profile Specifications:

- Slot Profile: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0 (Without Fibre ports)
- Module Profile as per AMPS: MODA3-16.6.13-1-0-F2C-(E8-E7)(P3D-P3D)(E7)(N)
- Slot Profile: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-4 (With 12 Fibre ports)
- Module Profile as per AMPS: MODA3-16.6.13-1-4-F2C-(E8-E7)(P3D-P3D)(E7)(E12)

Technical Specifications

SoC/FPGA	Kintex™ UltraScale+™ FPGA with B2104 Package Compatible with KU19P, KU095 & KU115 Devices Up to 1842.75K FPGA Logic Cells & 842.4K LUTs	3U VPX Backplane: Connector - P1A+P1B	Data Plane Port-01 • DP01[3:0] - Up to 40G Ethernet Data Plane Port • DP01 - Up to 10G Ethernet Control Plane Port • CP01 - Up to 10G Ethernet Expansion Plane • EP[0:7] – PCIe Gen3 x8 Control Signals (MaskableReset, Gdiscrete,SysCON) MP01, MP02 & VBAT
CPU	LS1021A with Dual-core Arm® Cortex®-A7 @up to 1.2GHz	3U VPX Backplane: Connector – P2A	Expansion Plane • EP[8:15] – PCIe Gen3 x8
Memory & Storage	FPGA • Dual 64-bit, 4GB DDR4 with 8-bit ECC (Upgradable up to 8GB) • 128MB QSPI Flash CPU • Single 32-bit, 2GB DDR4 with 4-bit ECC • 256MB NOR Flash • 4MB MRAM & 512KB SRAM	3U VPX Backplane: Connector – P2B	MT Ferrule Optical Interconnect with Aperture Pattern J Supports MM12F - 12 Fibre ports
IPMC	IPMC with Arm® 32-bit Cortex®-M0+ CPU @up to 80MHz Up to 512KB of Flash Memory & 128KB of Total SRAM	VPX On-Board Features	32Kb EEPROM x1 PCIe Gen2 x1 through M.2 (Key-M) Connector x1 Temperature Sensor x1 Elapse Time Counter x1 On-Board Clock Generators
SoC/FPGA to CPU Interfaces	PCIe Gen2 x1 RGMII UART	Profile Specification	• Slot Profile: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0 (Without Fibre ports) • Module Profile as per AMPS: MODA3-16.6.13-1-0-F2C-(E8-E7)(P3D-P3D)(E7)(N) • Slot Profile: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-4 (With 12 Fibre ports) • Module Profile as per AMPS: MODA3-16.6.13-1-4-F2C-(E8-E7)(P3D-P3D)(E7)(E12)
VPX Front Panel Features	USB3.0 & USB 2.0 through USB Type-C Connector x1 10/100/1000Mbps Ethernet through 9-Pin Header x1 3-Pin Console UART Header x1	General Specification	• Slot Pitch: 1 Inch Conduction Cooled • BSP Support: Linux/Vivado 2024 or above • Environmental Specification: RoHS & REACH Compliant
3U VPX Backplane: Connector - P0	Utility Plane • IPMB - A, B • JTAG • System Reference Clocks (REF_CLK, AUX_CLK) • Power Input (12V VDC, 3.3V_AUX) • Control Signals (GA[0:4]P,SYSRESET,NVMRO)		

Product Accessories



Thermal Solutions

For any highly integrated FPGA VPX Plug-in Module, thermal design is a very important factor. iWave supports a VITA 65.0 compliant 3U Conduction Cooled Heat Spreader

Applications

▪ Military & Aerospace Systems

Designed for Military & Aerospace systems, It delivers high-performance processing, secure computing, and rugged reliability for mission-critical applications.

▪ Embedded Computing

Optimized for embedded computing, It delivers high-performance processing, low-latency data handling, and scalable integration for advanced embedded systems..

▪ Data Center & Network Infrastructure

Ideal for Data Center & Network Infrastructure, it enables high-speed data processing, low-latency networking, and scalable acceleration for next-generation communication systems.

▪ Sensor Networks and Telecommunications

Optimized for Sensor Networks and Telecommunications, it delivers high-speed signal processing, real-time data analytics, and reliable connectivity for advanced communication systems.

A Global Leader in Embedded Systems Engineering and Solutions

Since 1999, we have pioneered leadership in embedded systems technology, establishing ourselves as a strategic embedded technology partner for advanced solutions. Our comprehensive portfolio encompasses ARM and FPGA System on Modules, COTS FPGA solutions, and ODM solutions which include Telematics, Gateways & HMI Solutions.

Beyond our robust product ecosystem, we provide comprehensive ODM support with specialized custom design and manufacturing capabilities, enabling customers to accelerate and optimize their product development roadmaps. With a strategic focus on industrial, automotive, medical, and avionics markets, we deliver innovative technology solutions to global clients.

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