



Virtex UltraScale+ 3U-VPX Plug-in Module

iW-RainboW-G47V

iWave's 3U-VPX Plug-in Module based on Virtex UltraScale+ FPGA SOM, comprises of the Virtex UltraScale+ FPGA SOM and a 3U-VPX Carrier board. The SOM has a 64-bit Dual 4GB DDR4 RAM for the FPGA, featuring 8-bit ECC, and a 32-bit 2GB DDR4 RAM for the CPU, featuring 4-bit ECC.

The VU13P based 3U-VPX Plug-in Module is equipped with VPX Connectors (P0+P1A & P1B+P2A) and an MT Ferrule Connector (P2B). This VPX Module offers a seamless Ethernet interface, delivering 1GBase-KX/10GBase-KR connectivity to the Backplane. Furthermore, there's an optional feature for PCIe Gen3 support through the VPX Connector's Data Plane and Expansion Switch.

APPLICATIONS: Military & Aerospace Systems, Embedded Computing, Data Center & Network Infrastructure, Sensor Networks and Telecommunications

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HIGHLIGHTS

Virtex UltraScale+ FPGA

Compatible SoCs – VU13P, VU11P, VU9P,

VU5P, VU080, VU095, VU160 & VU190

Up to 3,780K Logic cells & 3,456K CLBs

Dual ARM Cortex A7 @1.2GHz CPU

2GB CPU DDR4 with ECC (32bit)

Dual 4GB FPGA DDR4 with ECC (64bit)

Supports 1GBase-KX/10GBase-KR

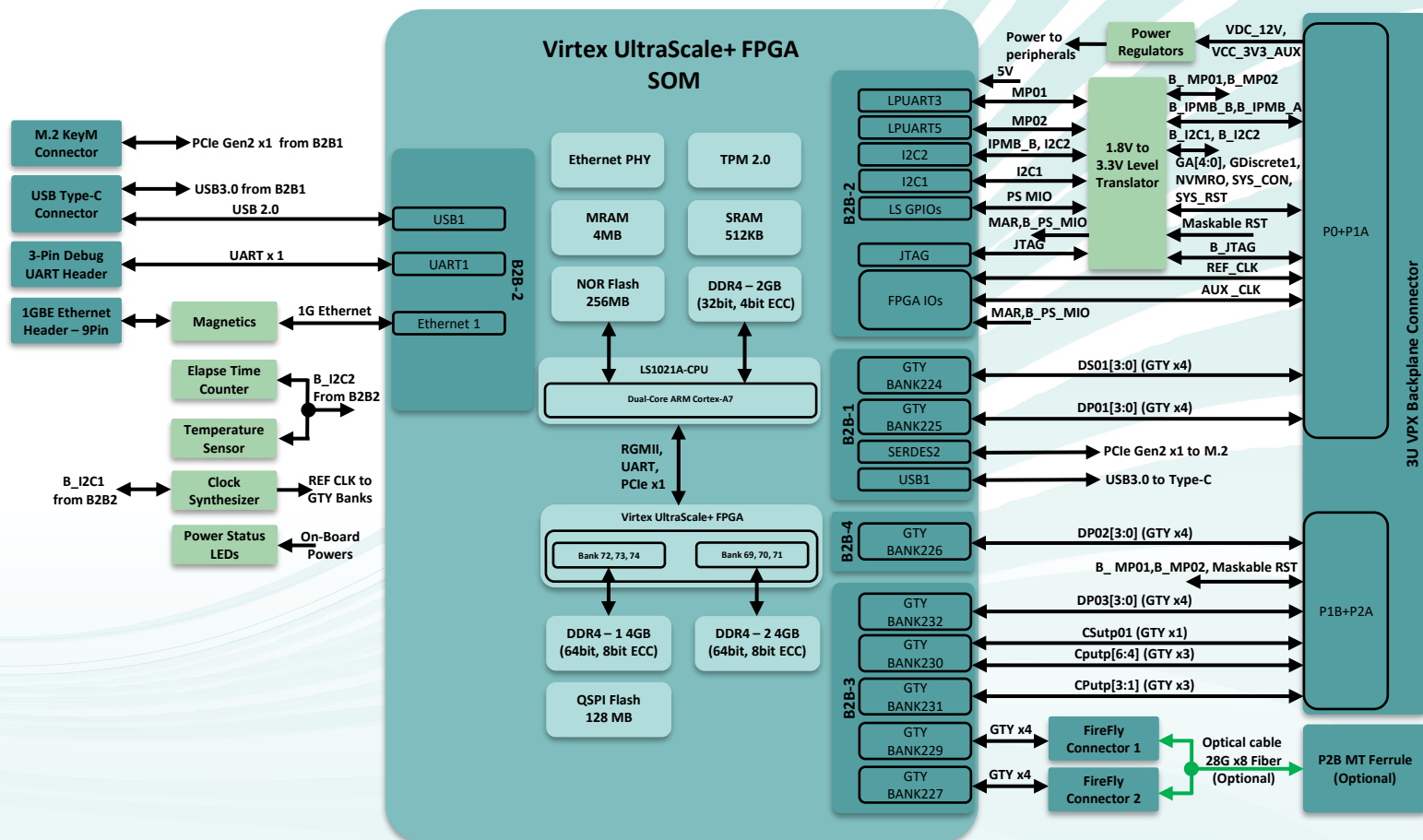
10+ Years long term support

SPECIFICATIONS

Virtex UltraScale+ FPGA
Compatible SoCs – VU13P, VU11P, VU9P , VU7P , VU5P, VU080, VU095, VU125, VU160 & VU190
Up to 3,780K Logic cells & 3,456K CLBs
CPU:
Dual ARM Cortex A7 @1.2GHz
32KB Instruction and Data L1 cache
512KB Coherent L2 Cache
RAM Memory:
2GB DDR4 for CPU with ECC
4GB DDR4 (64 Bit) for FPGA from BANK 72,73,74
4GB DDR4 (64 Bit) for FPGA from BANK 69,70,71
On-SOM Flash:
128MB QSPI Flash
256MB NOR Flash
4MB MRAM
512KB SRAM
3U-VPX Front Panel Features:
USB3.0 & USB 2.0 through USB Type-C Connector
Debug UART through 3-Pin Header
1G Ethernet through 9-Pin Header
Other On-Board Features:
PCIe Gen2 through M.2(Key-M) Connector
Temperature Sensor
Time Elapse Counter
Reset Switch
Clock Generators:
Clock Synthesizer with 10 Outputs
3 LVDS Clock Buffers for Transceivers reference Clocks
Slot Profile: SLT3-SWH-4F1U7U1J-14.8.7-n
Module Profile: MOD3-SWH-4F1U7U1J-16.8.7-n

3U-VPX Backplane Features
3U-VPX Connector (P0+P1A)
DP01[3:0] - 1G/2.5G/10G or PCIe Gen3 (using GTY Transceivers @ Upto 16Gbps/lane)
DS01[3:0] - 1G/2.5G/10G or PCIe Gen3 (using GTY Transceivers @ Upto 16Gbps/lane)
1 REF Clock Differential Pair Input
1 AUX Clock Differential Pair Input
I2C x 2
JTAG
Geographical Address (GA[0:4] & GP)
Control Signals
12V - 7 Power Pins
3U-VPX Connector (P1B+P2A)
DP02[3:0] - 1G/2.5G/10G Ethernet (using GTY Transceivers @ Upto 16Gbps/lane)
DP03[3:0] - 1G/2.5G/10G Ethernet (using GTY Transceivers @ Upto 16Gbps/lane)
CPUTP[6:1] - 1G/2.5G/10G/25G Ethernet (using GTY Transceivers @ Upto 25Gbps/lane)
Csutp01 - 1G/2.5G/10G/25G Ethernet (using GTY Transceivers @ Upto 25Gbps/lane)
MP01 and MP02
Maskable Reset
MT Ferrule Connector (P2B)
8 Fiber Optical Transceiver (4 x 2) Upto 28.125Gbps (Through two Firefly connectors)
Form Factor:
160mm X 100mm (3U-VPX Standard)
Power:
12V through 7 Power Pins of P0A
Compliance:
RoHS Compliant & REACH Compliant

Virtex UltraScale+ 3U-VPX Plug-in Module Block Diagram



OS SUPPORT

Linux 5.15.36
Xilinx-V2022.2

DELIVERABLES

Virtex UltraScale+ 3U VPX Plug-in Module
Petalinux BSP with Example FPGA Design
3U VPX Module Datasheet

OPTIONAL KITS/Modules

FireFly Optical Module*
9-Pin Header to Gigabit Magjack Cable
Custom JTAG Cable
Type-C loopback cable

CUSTOM DEVELOPMENT

BSP Development/OS Porting
Custom SOM/Carrier
Development Custom
Application/GUI Development
Design Review and Support

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*Optional items not included in the standard deliverables.

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The device can be ordered online from the iWave Website

<http://www.iwavesystems.com/webforms>

Or from our Local Partners in your region

<http://www.iwavesystems.com/about-us/business-partner.html>