

## ZU19/ZU17/ZU11 MPSoC based SmartNIC & Storage Card



iWave's SmartNIC & Storage Accelerator Card is 3/4 length PCIe Gen3 x16 card which provides high speed networking extension with Quad 100GbE Ethernet and high performance storage extension with Triple NVMe slots. This card is based on Xilinx's Zynq Ultrascale+ MPSoC ZU19/ZU17/ZU11 based SOM with inbuilt 72bit, 8GB PS DDR4 & 128bit, 16GB PL DDR4 memory bandwidth. Its uniqueness of having Quad A53 core processor and 1143K Logic cell FPGA gives flexible & reconfigurable to support any protocol/application offload. It has 10MHz & 1PPS input SMA option for time critical & Synchronous IEEE 1588v2 application.

**APPLICATIONS:** Server, Data Center, Cloud, Mobile Wireless Base Station, Network Function Virtualization, Storage

### iW-RainboW-G35P

#### HIGHLIGHTS

Xilinx's ZU19/17/11 Zynq Ultrascale+ (Quad A53+FPGA)

Maximum RAM Bandwidth:

8GB, 72bit PS DDR4-2400 RAM with ECC

16GB, 128bit PL DDR4-26666 RAM

3/4 Length PCIe Gen3 x16 Host Interface

Dual Front Panel QSFP-DD/QSFP28 Cages (200GbE/100GbE)

Single Front Panel QSFP-DD/QSFP Cages (40GbE/10GbE)

Triple M.2 NVMe Slots (High Performance Storage)

Server, Cloud, Synchronous Datacentre Applications

Wireless Base Station Applications

Network Function Virtualization

Flexible Reconfigurable to any Protocol

#### SPECIFICATIONS

##### ZU19/ZU17/ZU11 - Zynq Ultrascale + MPSoC

##### Processing System (PS/Processor)

Quad/Dual ARM Cortex-A53 @ 1.5GHz, Dual Cortex - R5 @ 600MHz

H.264/H.265 Video Encoder/Decoder (VCU)

ARM Mali-400MP2 GPU @ 677MHz

##### Programming Logic (PL/FPGA)

Up to 1143K Logic cells & 522K LUTs

##### RAM Memory

64bit, 4GB DDR4RAM with ECC for PS (Upgradable upto 8GB)

Dual 64bit, 4GB DDR4 RAM for PL (Upgradable upto 16GB)

##### On Board Flash

8GB eMMC Flash for Boot & OS Storage (Upgradable)

Micro SD Slot

##### Host Interface

PCIe Gen3 x 16

##### High Speed Network

##### Dual Front Panel QSFP-DD Cages

2 x 200GbE/4 x 100GbE Ethernet

Backward Compatible with QSFP28/QSFP+

Low Jitter User Configurable Clock

##### Single Front Panel QSFP-DD Cages

Dual 40GbE/10GbE Ethernet

Backward Compatible with QSFP+

Low Jitter User Configurable Clock

##### High Performance Storage

Dual M.2 NVMe Slot with PCIe Gen3 x 4

M.2 NVMe Slot with PCIe Gen2 x 4

##### Time Synchronization (Optional)

Silicon Lab's Si5389 IEEE 1588v2

1 PPS Input/Output through front panel SMA

10MHz Clock Input through front panel SMA

SyncE Phase & Frequency Synchronization

##### Debug

USB TypeC Debug Port for PS in Front Panel

Rj45 1GbE Ethernet for PS in Back Panel

Dual Stack LED in Front Panel

##### Thermal

Dual Width Active cooling ( by default)

Dual/Single width Passive cooling (Optional)

##### Power

75W max from PCIe x 16 Host

8 Pin ATX Power Connector in Back Panel Droop Sharing ( to maximize power when needed)

Power dissipation is application dependent

##### Form Factor

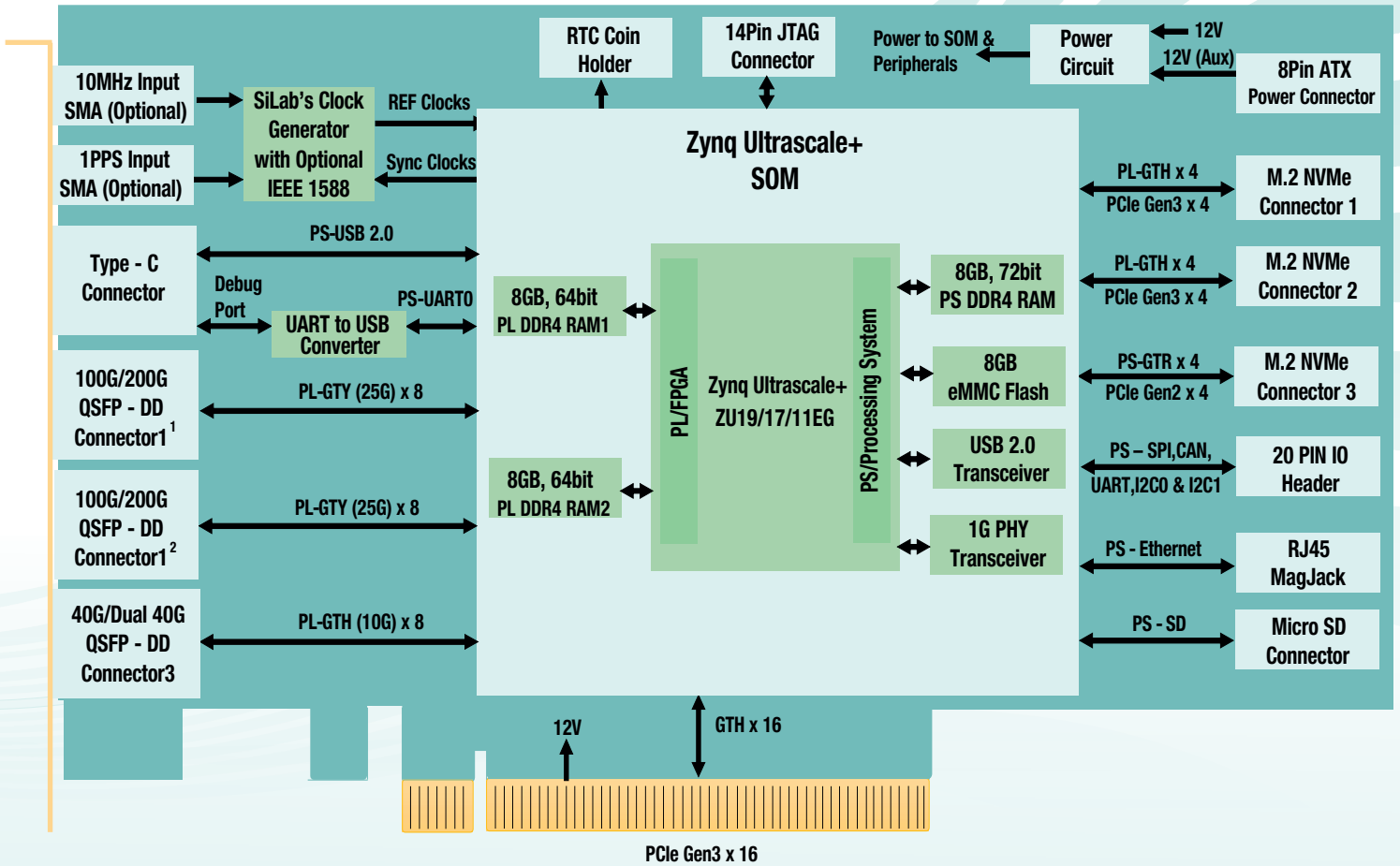
218mm x 106.65mm (3/4 Length PCIe)

##### Compliance

RoHS Compliant , REACH Compliant & CE\*

\* Under Progress

## Zynq ZU19/ZU17/ZU11+ SmartNIC & Storage Card Block Diagram



<sup>1</sup> QSFDP-DD connector is backward compatible with 100G QSFDP28 module

### OS SUPPORT

Linux 5.4.0

### DELIVERABLES

ZU19/17/11MPSoC SOM based PCIe Card  
Board Support Package  
User Manual

### OPTIONAL KITS/Modules

Metal Heatsink enclosure with Fan

iWave Systems Technologies is an ISO 9001:2015 certified company, head quartered in Bangalore India established in the year 1999. The company focuses on providing embedded solution and services for Industrial, Medical, Automotive and various other Embedded Computing applications. iWave Systems offers wide range of System On Modules and Single Board Computers built using wide range of CPU and FPGA SoC platforms with different form factors such as Qseven, SMARC, SODIMM and HPC by closely working with Tier-1 silicon companies such as NXP, Xilinx, Intel etc.

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\*Optional items not included in the standard deliverables.

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### ZU19/17/11 MPSoC SOM based PCIe card

The device can be ordered online from the iWave Website

<https://www.iwavesystems.com/product/smartnic-storage-accelerator-card-zynq-ultrascale/>  
Or from our Local Partners in your region

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

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