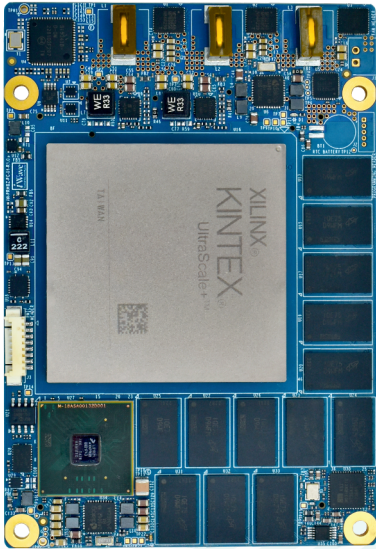


System On Module iW-RainboW-G47M

Kintex Ultrascale+ FPGA SOM



Kintex Ultrascale+ FPGA System On Module supports Kintex Ultrascale+ FPGA and ARM Cortex A7 processor. The SOM features FPGA with programmable logic cells up to 1842K and Power-efficient 32-bit Dual Arm Cortex-A7 core processor, running up to 1.2 GHz.

The SOM is compatible with KU19P Kintex Ultrascale+ FPGA and KU095 & KU115 Kintex Ultrascale FPGAs. The module is capable of high speed connectivity peripherals such as 100G Ethernet, PCIe, USB3.0, SATA3.1, Gigabit Ethernet and dual 64-bit DDR4 with ECC and 32-bit DDR4 with ECC.

APPLICATIONS:

Data Centre Network Acceleration, Industrial IoT, Cloud Computing

iW-RainboW-G47M

HIGHLIGHTS

- Xilinx Kintex Ultrascale+ FPGA with B2104 package
- Dual 4GB FPGA-DDR4 with ECC (64bit + 8bit)
- 48 channels of GTY transceivers up to 32Gbps
- Two 240pin High-Speed Connectors with 172 user I/Os
- Dual ARM Cortex-A7 core processor of 1.2GHz speed
- 2GB DDR4 for CPU with ECC (32bit+4bit)
- QorIQ Trust Architecture and Arm TrustZone
- 4 lanes of 6Gbps SERDES from CPU
- Industrial Grade Availability

SPECIFICATIONS

Kintex UltraScale+ FPGA

- Kintex Ultrascale+ with B2104 package
- Upto 1,842K Logic Cells
- Upto 1,080 DSP Slices

CPU

- Dual ARM Cortex-A7 core processor
- Operation frequency of 1.2GHz
- QorIQ Trust Architecture and Arm TrustZone
- High-speed serial interfaces (SERDES) x4 @6Gbps

Memory Interfaces

From FPGA

- Dual 64-bit DDR4 with ECC
- 128MB QSPI flash

From CPU

- 32bit DDR4 with ECC
- 256MB parallel NOR Flash
- 4MB MRAM
- 512KB SRAM via SPI

On SOM Features

- 10/100/1000 Ethernet PHY
- Temperature Sensor
- TPM2.0 Module via SPI

Quad Board to Board Connector interfaces

From FPGA

- GTY Transceiver x32 up to 32Gbps
- 46 LVDS Pairs
- 80 SE FPGA I/Os

From CPU

- SERDES x3 @6Gbps (PCIe, SATA, SGMII)
- Gigabit Ethernet x 1
- USB 2.0 OTG x 1
- USB 3.0 x1
- I2C x 2
- Debug UART
- UART x 2
- JTAG

Operating Systems

- Linux

Power Supply

- 5V through Board to Board connector

Temperature Support

- 40°C to +85°C (Industrial grade operation)

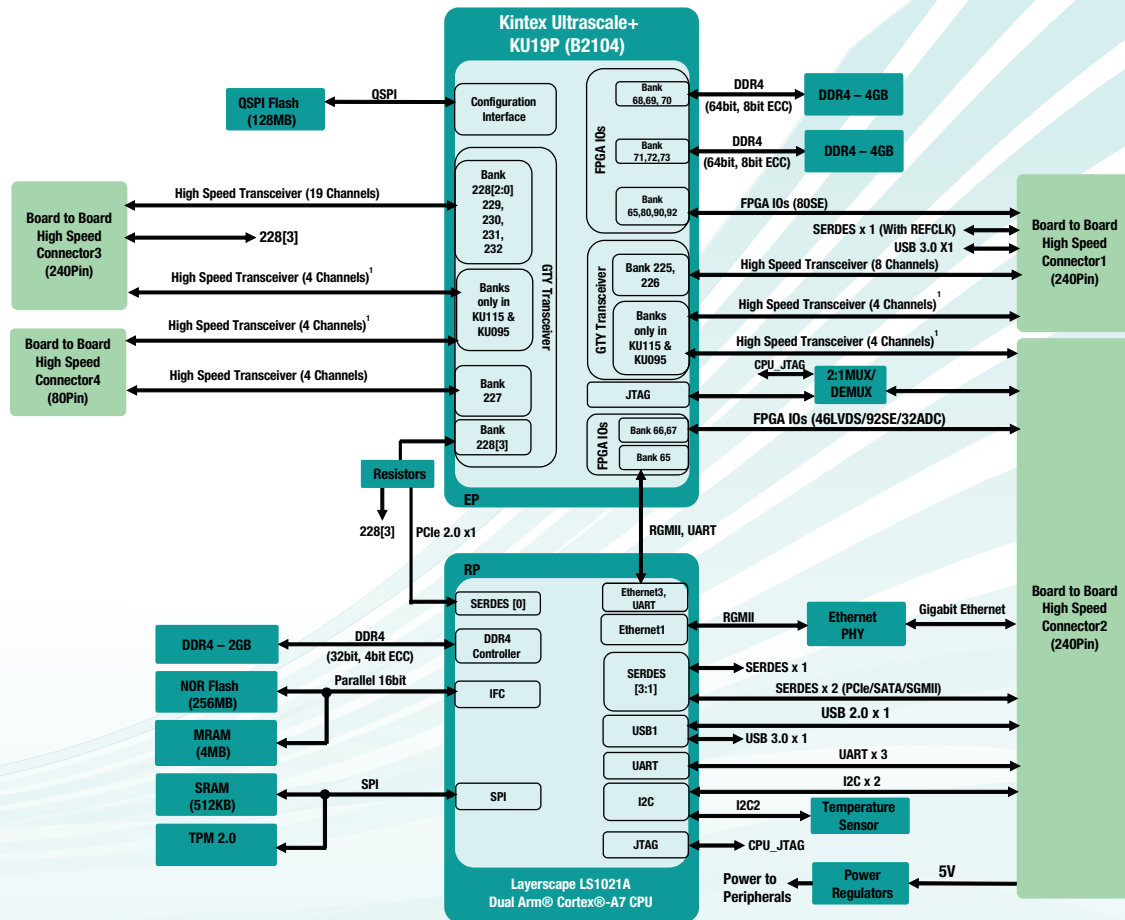
Form Factor

- 75mm x 110mm

Environmental Specifications

- REACH & RoHS3

Kintex Ultrascale+ FPGA SOM Block Diagram



Compatible FPGAs:

KU19P Kintex Ultrascale+ FPGA and KU115 & KU095 Kintex Ultrascale FPGAs. Also compatible with VU13P, VU11P, VU09P, VU07P, VU05P, VU190, VU160, VU125, VU080 & VU095. Bank Numbers mentioned in the block diagram is as per KU19P Bank Number & Performance may vary for other compatible FPGAs.

Notes

¹ These Transceiver Banks are not available in KU19P and available only in KU115 & KU095.

² Transceiver speed is limited to 16Gbps for Transceivers in Board to Board connector1 & 2 because of connector speed limit.

OS SUPPORT

Linux

DELIVERABLES

Kintex UltraScale + FPGA Module
Board Support Package
Example FPGA Design
User Manuals

OPTIONAL KITS/Modules

Kintex UltraScale+ Development Kit
Heat Spreader

CUSTOM DEVELOPMENT

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

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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iWave Systems also provides comprehensive Engineering design services involving Embedded Hardware, FPGA and Software development. iWave offers carrier board and custom hardware development with manufacturing and certification services. iWave's Hardware expertise spans complex board design up to 30 layers; Analog, Digital & RF Designs; FPGA Development up to 3+ million gates and VHDL / Verilog RTL Development & Verification. Our Software expertise ranges from OS Porting, Firmware & Device Drivers Development and Wireless & Protocol

*Optional items not included in the standard deliverables.

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Kintex Ultrascale+ FPGA SOM

The device can be ordered online from the iWave Website

<https://www.iwavesystems.com/product/ku19p-fpga-system-on-module/>

Or from our Local Partners in your region

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

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