Development Kit iW-RainboW-G42P
Zynq UltraScale+ RFSoC SOM

iWave's Zynq UltraScale+ RFSoC development kit comprises of the Xilinx UltraScale+ RFSoC SOM and a PCIe-based RFSoC Carrier board. The SOM is equipped with a 64-bit 8GB DDR4 RAM with 8-bit ECC for the PS (Processing System) and a 64-bit 8GB DDR4 RAM for the PL (Programmable Logic). The Zynq UltraScale+ RFSoC development kit carrier board is equipped with 4 right-angle SMA connectors, 12 straight-angle SMA connectors, and balun circuits to validate the ADC (Analog-to-Digital Converter) interface, as well as 4 right-angle SMA connectors, 12 straight-angle SMA connectors, and balun circuits to validate the DAC (Digital-to-Analog Converter) interfaces.

Additionally, a required set of features, including an HPC FMC+ connector, a DisplayPort connector, an M.2 NVMe PCIe connector, and a Gigabit Ethernet connector. These features are designed to validate high-speed PL & PS interfaces.

Applications: 5G and LTE Wireless, satellite communication, Aerospace & Defense.

## iW-RainboW-G42P HIGHLIGHTS

Xilinx's ZU49/39/29 Zynq Ultrascale+ RFSoC

Quad-core ARM Cortex-A53 MPCore upto 1.3GHz

Integrated SyncE & PTP Network Synchronization

Integrated Ultra low-noise programmable RF PLL

3/4 Length PCIe Gen4 x8 Host Interface

M.2 NVme slot for high performance storage

16 SMA Connectors with balun circuits for ADC

16 SMA Connectors with balun circuits for DAC

SPECIFICATIONS

ZU49/ZU39/ZU29 Zynq US+ RFSoC SOM
Processing System (PS/Processor)
Quad Arm Cortex A53 @ 1.3GHz
Dual Cortex R5F upto 533MHz
16 ADC Channels support upto 2.5Gsps
16 DAC Channels support upto 10Gsps
Programmable Logic (PL/FPGA)
Up to 930K Logic cells & 425K LUTs
RAM Memory
64bit, 8GB DDR4RAM with 8bit ECC for PS
64bit, 8GB DDR4 RAM for PL
On Board Flash
32GB eMMC Flash (Upgradable)
256MB QSPI Flash (Upgradable)
Micro SD
Host Interface
PCIe Gen4 x 8
Low Speed Interfaces
M.2 NVMe Slot with PCIe Gen2 x 2
4K Display Port
Clock Generators
Integrated SyncE & PTP Network Synchronization
Ultra Low-noise Programmable RF PLL

Front Panel
4 Right angle SMA with balun circuits for ADC
4 Right angle SMA with balun circuits for DAC
USB Type-C Debug Port for PS
SMA Connectors
12 Straight angle SMA with balun circuits for ADC
12 Straight angle SMA with balun circuits for DAC
1 PPS IN & 10MHz Reference clock IN through straight angle SMA Connector
FMC+ Connector
8 GTY Transceiver @28.21Gbps
48 LVDS/96 SE PL IOs
10MHz Reference Clock Out
1 PPS Out
Back Panel
Rj45 1GbE Ethernet for PS
Power
75W Max from PCIe x 8 Host
8 Pin ATX Power Connector in Back Panel Droop Sharing (as per power requirement)
Form Factor
254mm x 111.5mm (3/4 Length PCIe)
Operating Temperature
-40°C to +85°C (Industrial grade)
Compliance:
RoHS Compliant , REACH Compliant & CE* * Under Progress

iWave
Embedding Intelligence

Zynq UltraScale+ RFSoC SOM Development Kit Block Diagram
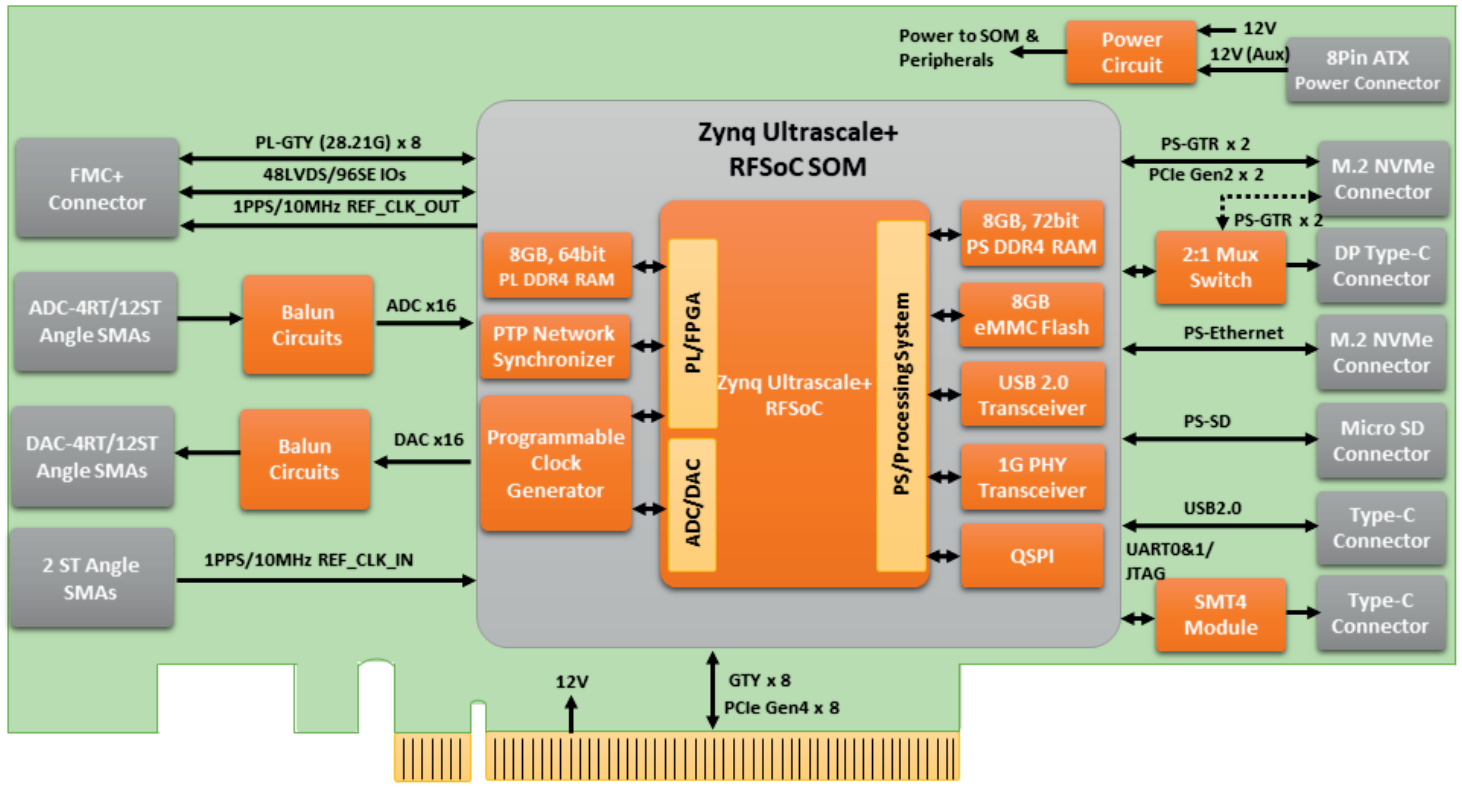
OS SUPPORT
Linux version 5.15.36
Xilinx-v2022.2

DELIVERABLES
Zynq UltraScale+ RFSoC Development Kit
12V AC-DC Adapter
Peta Linux BSP with Example FPGA Design

OPTIONAL KITS/Modules
SMA Cables
FMC+ Loopback Modules

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.

iWave Systems offers various state of art ready ODM solutions such as Connected Telematic Control Unit / OBD II devices for the automotive edge analytics, Comprehensive ARINC818 solutions for the low latency Aerospace applications and Rugged IP rated performance scalable HMI solutions for Industrial applications.

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.

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

Zynq UltraScale+ RFSoC SOM & Development Kit
The device can be ordered online from the iWave Website
https://www.iwavesystems.com/product/zynq-ultrascale-rfsoc-som/
Or from our Local Partners in your region
http://www.iwavesystems.com/about-us/business-partner.html

IW-G42P-BR-R0.1

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