iG-G60M

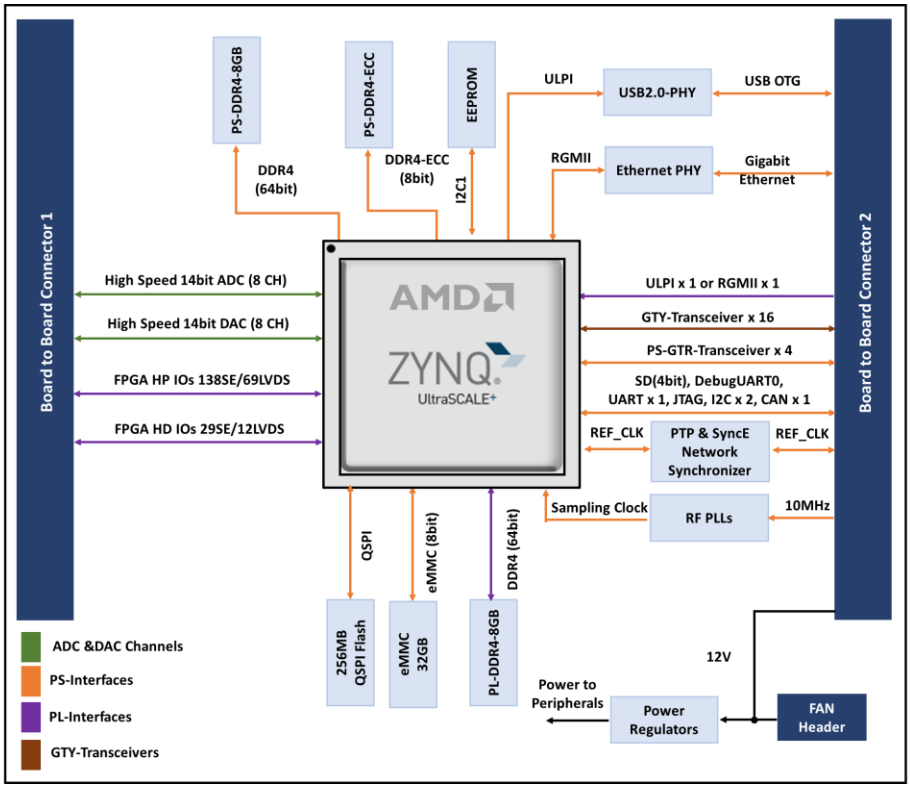
ZU48/ZU47/ZU43/ZU28/ZU27/ZU25DR RFSoC System on Module

The Zynq UltraScale+ RFSoC SOM integrates ZU48/47/43/28/27/25DR devices (FFVG1517 package) with Quad Cortex-A53 (1.3GHz) and Dual Cortex-R5F (533MHz). It supports up to 8 RF-ADC channels (5Gsps) and 8 RF-DAC channels (9.85Gsps) with excellent noise spectral density. Features include SD-FEC for error correction, SyncE & PTP synchronization, an ultra-low-noise RF PLL, and high-speed connectivity options like PCIe, USB 3.0, SATA 3.1, DisplayPort, and Gigabit Ethernet. With 8GB PL DDR4, 8GB PS DDR4 (ECC), and 16 GTY transceivers supporting up to 28.21Gbps, it is ideal for high-performance applications.

Highlights

- Zynq UltraScale+ RFSoC Family Compatible with ZU48/47/43/28/27/25DR
- 8GB DDR4 RAM for PS with ECC & 8GB DDR4 RAM for PL
- 32GB eMMC Flash (Expandable up to 128GB)
- 8 x 14bit ADC Channels Support up to 5GSPS
- 8 x 14bit DAC Channels Support up to 9.85GSPS
- Integrated SD-FEC Block
- 16 GTY high speed Transceivers can support up to 28.21Gbps
- On SOM syncE & PTP synchronization and ultra-low-noise programmable RF PLL

Block Diagram



Technical Specifications

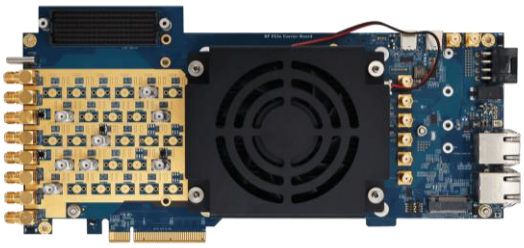
SoC	• AMD Xilinx Zynq US+ RFSoC ZU48/47/43/28/27/25DR • Quad Cortex A53 @1.3GHz • Dual Cortex R5F up to 533MHz
Memory	• 8GB DDR4 (64bit) PS with ECC • 8GB DDR4 (64bit) for PL from BANK 64,65,66 • 32GB eMMC Flash (Expandable) • 256MB QSPI • EEPROM
On SOM Features	• Integrated syncE & PTP Network Synchronization • Integrated Ultra low-noise programmable RF PLL • 10/100/1000 PTP supported Ethernet PHY for PS • USB 2.0 OTG Transceivers for PS • Fan Header
Dual Board to Board Connector Interfaces:	**Zynq UltraScale+ RFSoC RF Data Converter** • 8ADC channels up to 5Gsps • 8ADC channels up to 9.85Gsps • Integrated SD-FEC Block

Dual Board to Board Connector Interfaces:	**Zynq UltraScale+ RFSoC PL Interfaces** • PL GTY Transceivers x 16 @ 28.21Gbps • 69 LVDS / 138SE from HP BANKs • 12 LVDS / 29SE from HD BANKs
Dual Board to Board Connector Interfaces:	**Zynq UltraScale+ RFSoC PS Interfaces** • Gigabit Ethernet x 1 Port • USB 2.0 OTG x 1 Port • I2C X 2 Ports • SD X 1 Port • Debug UART • DATA UART x 1 Port • RGMII or ULPI Interface x 1 Port • PS Transceivers x 4 @6Gbps
Operating System	Linux
Operating Temp.	-40°C to +85°C (Industrial Grade)
Form Factor	100mm x 82mm
Power Input	12 V through Board-to-Board Connector 2
Environment Spec.	REACH & RoHS3 Compliant

Ordering Information

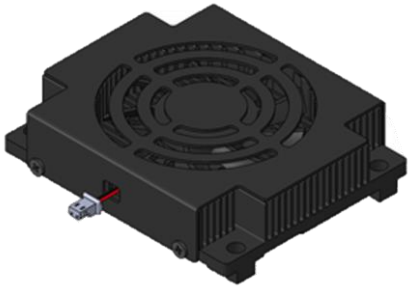
iG60M-ZU4801-4E008G-E032G-IAA	ZU48DR -1 RFSoC with 8GB PS DDR4, 8GB FPGA DDR4, 32GB eMMC SOM, Industrial grade
iG60M-ZU4701-4E008G-E032G-IAA	ZU47DR -1 RFSoC with 8GB PS DDR4, 8GB FPGA DDR4, 32GB eMMC SOM, Industrial grade
iG60M-ZU4301-4E008G-E032G-IAA	ZU43DR -1 RFSoC with 8GB PS DDR4, 8GB FPGA DDR4, 32GB eMMC SOM, Industrial grade

Product accessories



Development Kit

The development board can be used for quick prototyping of RF & various applications targeted by the Zynq Ultrascale+ RFSoC with the ¾ PCIe card size, carrier board is packed with all the necessary on-board connectors to validate the features.



Thermal Solutions

For any highly integrated System on Modules, thermal design is very important factor. iWave Global Supports heat Spreader and Fan Sink solution for RFSoC based System on Module.

Applications

- **5G and LTE Wireless**

  Wireless infrastructure deployment using RFSoC SOM with integrated SD-FEC cores and high DSP density for 5G baseband, fixed wireless access, mobile backhaul and massive MIMO.

- **Satellite Communication**

  Designers can build high-speed multi-function instruments for signal generation analysis by using direct RF-sampling, highly flexible, reconfigurable logic & software programmability

- **Phased Array Radar/Digital Array RADAR**

  For scalable, multi-function, phased array radar, the Zynq UltraScale+ RFSoC SOM enables low latency transmit and receive for optimal response time in early warning scenarios.

- **Remote-PHY for Cable Access DOCSIS 3.1**

  Enables cable access multi-service operators (MSOs) to move PHY layer processing closer to home with remote PHY nodes, increasing network capacity.

- **LiDAR**

  Highly integrated Light Detection & Ranging (LiDAR) systems can be implemented

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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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