

iW-RainboW-G24M[®]

Arria[®] 10 SoC FPGA

System on Module

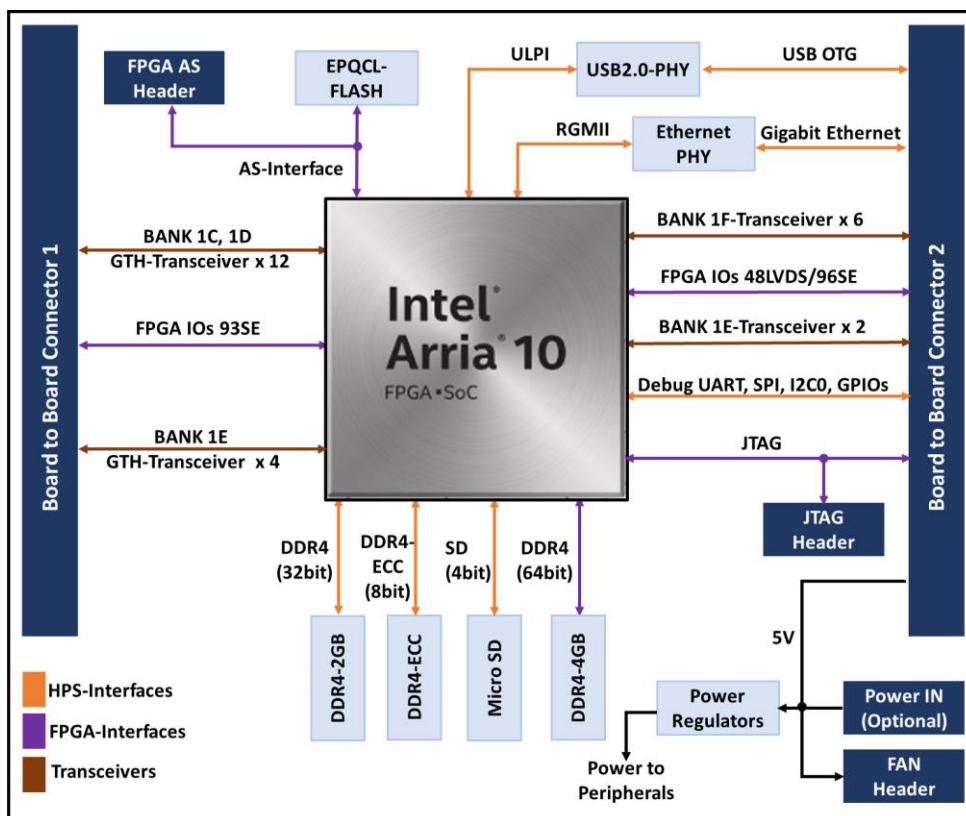
The Arria 10 SoC FPGA System on Module (SoM) integrates an Intel[®] Arria 10 SoC/FPGA device combining dual-core Arm Cortex-A9 processors with high-performance programmable logic, making it ideal for heterogeneous embedded applications. It supports DDR4 memory with options up to 4 GB for the HPS and up to 8 GB for the FPGA, along with onboard eMMC flash and configuration storage. The module features up to 24 high-speed transceivers operating at up to 17.4 Gbps and extensive I/O (LVDS and single-ended) exposed via high-speed board-to-board connectors, delivering flexible connectivity for data-intensive systems. With Gigabit Ethernet, USB 2.0, SPI, UART, and GPIO interfaces, rugged industrial-grade operation, and a compact form factor, the SoM is well-suited for communication systems, test & measurement, industrial automation, and other performance-driven embedded solutions.



Highlights

- ❖ Arria[®] 10 SoC – SX270, SX320, SX480, SX570, SX660
- ❖ Arria[®] 10 FPGA – GX270, GX320, GX480, GX570, GX660, GX900, GX1150
- ❖ 32bit, 4GB HPS DDR4 with ECC & 64bit, 8GB FPGA DDR4
- ❖ 24 Channels High Speed Transceivers up to 17.4Gbps
- ❖ Up to 1150K Logic Elements

Block Diagram



Technical Specifications

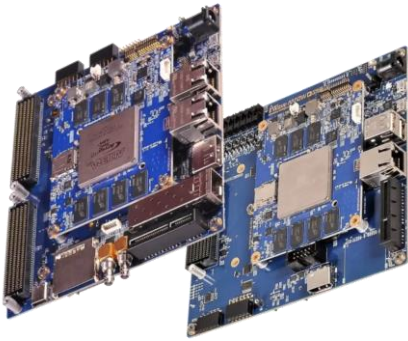
SoC	- Compatible Arria10 SoC family – SX270, SX320, SX480, SX570, SX660 - Compatible Arria10 FPGA family – GX270, GX320, GX480, GX570, GX660, GX900, GX1150	From FPGA Block - FPGA High Speed Transceivers (up to 17.4Gbps) x 24 FPGA IOs 91 LVDS IOs/189 Single ended (SE) 7 General Purpose Clock Input LVDS Pair/Single Ended 8 General Purpose Clock Output LVDS Pair/Single Ended
Memory & Storage	32bit, 2GB DDR4 RAM with ECC for HPS (Upgradable up to 4GB) 64bit, 4GB DDR4 RAM for FPGA (Upgradable up to 8GB) 8GB eMMC Flash (Upgradable)	
Two 240pin High Speed Board to Board Connectors Interfaces	From HPS Block - Gigabit Ethernet x 1 (through On-SOM Gigabit Ethernet PHY) - USB2.0 OTG x 1 (through On-SOM USB2.0 transceiver) - SPI x 1, Debug UART x 1 - I2C x 1, GPIOs x 14	Headers HPS/FPGA JTAG, FPGA AS headers Power Input 5V through B2B Connector Operating Temp. -40°C to +85°C (Industrial Grade) Form Factor 75mm x 95mm Environment Spec. RoHS & REACH Compliant Compliance CE*

Ordering Information

iW-G24M-CU2F-4E001G-S000G-BIG

SX270 Arria 10 SoC, -3 speed (Dual ARM Cortex A9 + 270K LE), 1GB
HPS DDR4, Industrial temp (boot code version)

Product accessories



Development Kit

Arria 10 Dual FMC & FMC+ Development Kit offers high-speed connectivity with Ethernet, PCIe, USB, HDMI, SDI, and expansion options like FMC+, and PMOD.



Thermal Solutions

For any highly integrated System on Modules, thermal design is very important factor. iWave Supports Heat Sink and Fan Sink Solution for Arria10 SoC FPGA SOM.

Applications

- **Edge**
Military, Radar, RF Test, Communications Test, and Video Routers & Switchers.
- **Data Center**
High Performance Computing (Hpc), Custom Servers, and Data Center interconnect.
- **Wireless/Wireline**
Optical Transport Networks (OTNs), Metro Optical Networks, and 5g Wireless Networks.

A Global Leader in Embedded Systems Engineering and Solutions

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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