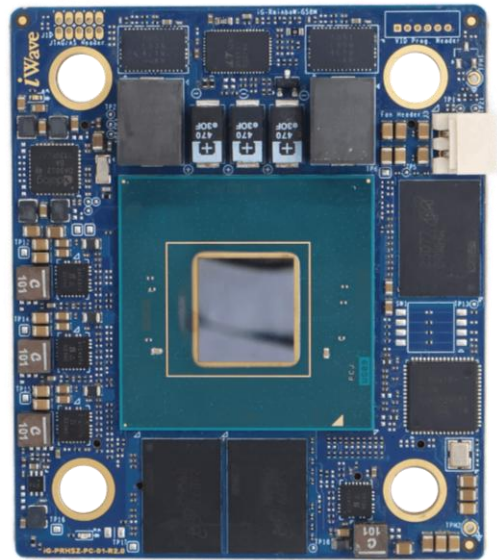


iG-RainboW- G58M

Agilex 5 (B32A) SoC FPGA System on Module

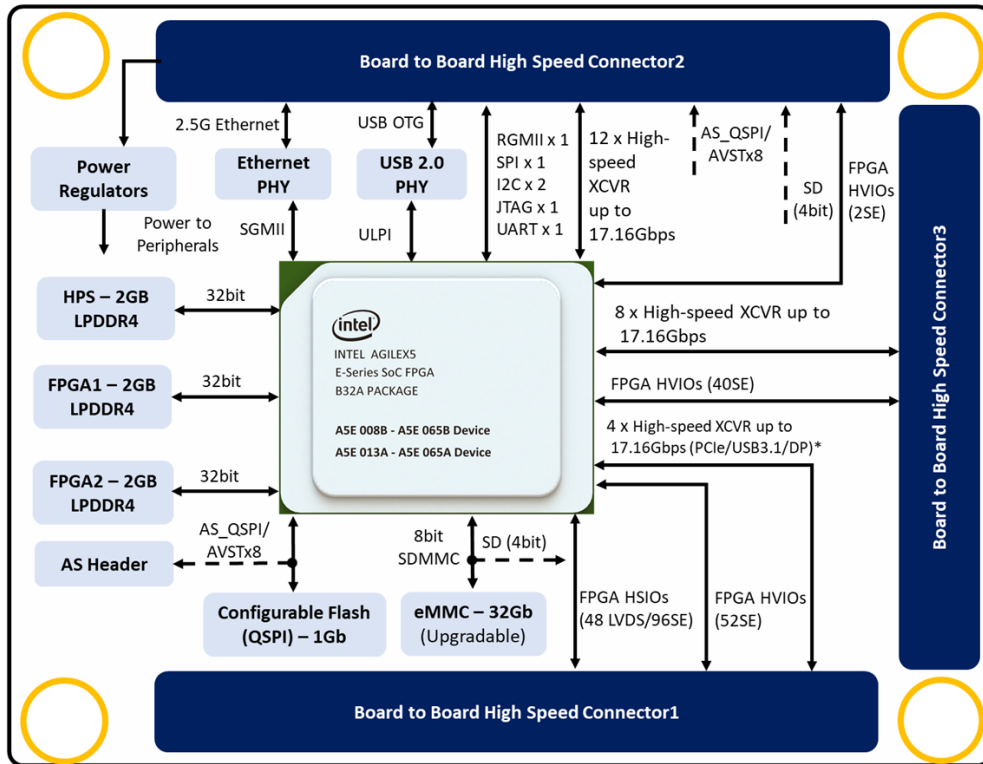
The Altera Agilex 5 E-Series SoC FPGA-based System on Module (SOM) supports multiple devices, categorized into Group A (A5E 065A, A5E 052A, A5E 043A, A5E 028A, and A5E 013A) and Group B (A5E 065B, A5E 052B, A5E 043B, A5E 028B, A5E 013B, and A5E 008B). It features a Hard Processor System (HPS) with a Dual core 64-bit Arm Cortex-A76 up to 1.8 GHz and a Dual core 64-bit Arm Cortex-A55 up to 1.5 GHz. The SOM is equipped with 2GB LPDDR4 memory for HPS (32-bit) and two 2GB LPDDR4 modules for FPGA (32-bit). It also includes USB 2.0 PHY, up to 2.5G Ethernet PHY, and onboard storage options such as eMMC, QSPI and EEPROM.



Highlights

- ❖ Agilex™ 5 E-Series family with B32A Package
- ❖ Dual core ARM Cortex A76 and Dual core ARM Cortex A55 Processor
- ❖ 32GB eMMC (Expandable)
- ❖ 2GB LPDDR4 for HPS (32bit)
- ❖ 2 x 2GB LPDDR4 for FPGA (32bit)
- ❖ 24 x transceivers up to 17.16 Gbps for Group B devices (28.1 Gbps when using Group A devices)
- ❖ FPGA HSIO (Up to 48LVDS/96SE)
- ❖ FPGA HVIO (Up to 94)
- ❖ Up to 656K Logic elements

Block Diagram



*Channel3 Optionally connected to B2B connector1

Technical Specifications

SoC	- Group A devices - ASE 065A, ASE 052A, ASE 043A, ASE 028A and ASE 013A - Group B devices - ASE 065B, ASE 052B, ASE 043B, ASE 028B, ASE 013B and ASE 008B - Dual core 64-bit Arm Cortex-A76 up to 1.8 GHz - Dual core 64-bit Arm Cortex-A55 up to 1.5 GHz
Memory & Storage	32GB eMMC (Expandable) 2GB LPDDR4 for HPS (32bit) 2 x 2GB LPDDR4 for FPGA (32bit) 1Gb QSPI Configuration flash
On SOM Features	- SGMII Ethernet PHY Transceiver - USB2.0 ULPI Transceiver - FAN Header
Headers	JTAG/AS Header (Optional), FAN
Board to Board Connector interfaces	From HPS (Hard Processor System) - RGMII x 1 - USB2.0 OTG x 1 (through On-SOM USB2.0 transceiver) - Debug UART x 1

Board to Board Connector interfaces	From HPS (Hard Processor System) - SD x 1 (Optional) - I2C x 1 - GPIOs x 4
Board to Board Connector interfaces	From SDM (Secure Device Manager) - JTAG x 1 - Active Serial x 1 (Optional)
Board to Board Connector interfaces	From HPS to FPGA 2.5G Ethernet x 1 (through On-SOM Ethernet PHY) - USB 3.1 x 1 - SPI x 1 (With 2 Chip select) - I2C x 1
Board to Board Connector interfaces	From FPGA 24 x transceivers up to 28Gbps - FPGA HSIO (Up to 48LVDS/96SE) - FPGA HVIO (Up to 94)
Operating System	Linux BSP for ARM Cortex
Operating Temp.	-40°C to +85°C (Industrial)
Form Factor	60mm x 70mm
Power Input	5V through B2B Connector
Environment Spec.	REACH & RoHS3 Compliant

Ordering Information

iG58M-E065B5-4L002G-E032G-EBA-ES

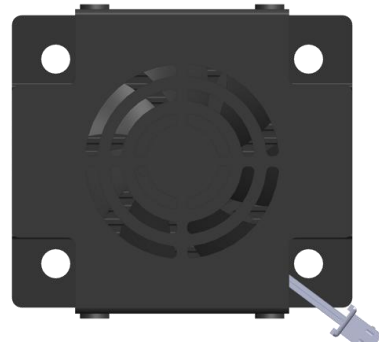
A5E065B (-5 speed) B32A Agilex 5 SOC SOM with 2GB HPS LPDDR4, Dual 2GB FPGA LPDDR4, 32GB eMMC SOM, Extended Temperature

Product accessories



Development Kit

Agilex 5 SoC FPGA Devkit offers high-speed connectivity with Ethernet, PCIe, USB, DP, HDMI, SDI, and expansion options like FMC+, QSFP+, and PMOD.



Thermal Solutions

For any highly integrated System On Modules, thermal design is very important factor. iWave Supports FANSINK solution for Agilex 5 SoC FPGA SOM.

Applications

Industrial

The Altera Agilex 5 is used in industrial applications like robotics, edge computing, Motor drive, computer numerical control (CNC) and machine vision and AI.

Video and Vision

Video and Vision Processing provides robust capabilities for AI-driven computer vision, low-latency video analytics, and real-time object detection making it ideal for edge computing, automotive and industrial applications that require high-quality video and vision processing.

Military and Secure Communication

Altera Agilex 5 FPGAs facilitate advanced military communication systems by enabling waveform adaptability, software updates, enable modular communication system for voice and data, efficient in multi waveforms and channels processing and energy-efficient radios.

Wireless

Altera Agilex 5 FPGAs power advanced wireless systems by enabling efficient 5G signal processing, flexible waveform adaptability, and low-latency communication for modern 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.

mktg@iwave-global.com

iWave

Bangalore, India

iWave USA

Campbell, California

iWave Global

Ras Al Khaimah, UAE

iWave Global GmbH

Ratingen, Germany

iWave Europe

Rotterdam, Netherlands

iWave Japan

Yokohama, Kanagawa

iWave Korea

Gyeonggi,-do, Korea

iWave APAC

Taipei City, Taiwan

iWave
Global