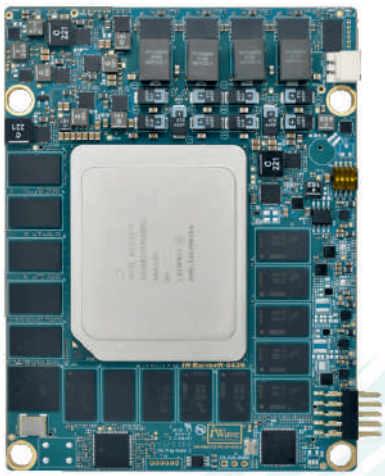
System On Module iW-RainboW-G43M

Agilex 7 (R31B/R31C) SoC FPGA SOM



Intel Agilex 7 R31B/R31C SoC FPGA based System on Modules features.
R31B Family devices - AGI 019, AGI 023, AGI 022 and AGI 027
R31C Family devices - AGF 019, AGF 023, AGF 022 and AGF 027
Supports a Hard Processor System comprising of Quad-core 64-bit ARM CortexA53 up to 1.4GHz.

The Intel Agilex 7 R31B/R31C SOM features 8GB DDR4 with ECC for HPS (64bit + 8bit) and 2 x 8GB DDR4 with ECC for FPGA (64bit + 8bit), USB2.0 PHY, Gigabit Ethernet PHY, eMMC and QSPI on SOM and On SOM PTP & SyncE Network Synchronizers.

The SOM Supports 64 x FGT transceivers up to 58Gbps speed and 8 x FHT transceivers up to 112Gbps speed.

iW-RainboW-G43M HIGHLIGHTS

Quad ARM Cortex A53 Processor

32GB eMMC (Expandable)

8GB DDR4 with ECC for HPS (64bit + 8bit)

2 x 8GB DDR4 with ECC for FPGA (64bit + 8bit)

64 x FGT transceivers up to 58Gbps

8 x FHT transceivers up to 116Gbps

On SOM PTP & SyncE Network Synchronizers

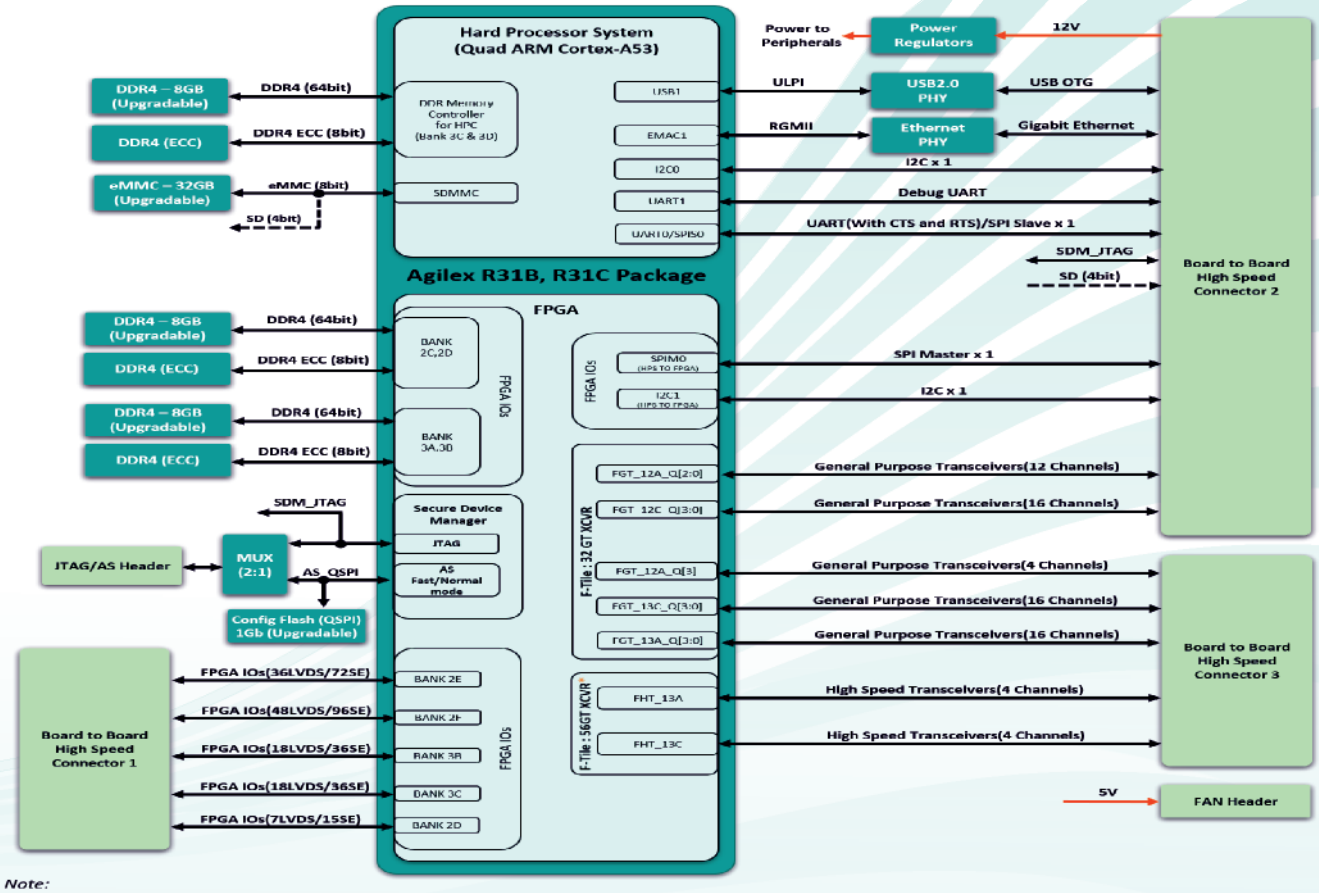
FPGA IOs (Up to 126LVDS/252SE)

10+ Years long term support

SPECIFICATIONS

SoC
R31B Family devices - AGI 019, AGI 023, AGI 022 and AGI 027
R31C Family devices - AGF 019, AGF 023, AGF 022 and AGF 027
Quad-core 64-bit ARM CortexA53 up to 1.4GHz
Memory & Storage
32GB eMMC (Expandable up to 128GB)
8GB DDR4 with ECC for HPS (64bit + 8bit)
2 x 8GB DDR4 with ECC for FPGA (64bit + 8bit)
1Gb QSPI Configuration flash
On SOM Features
RGMII Ethernet PHY Transceiver
USB2.0 ULPI Transceiver
PTP & SyncE Network Synchronizers
FAN Header
Board to Board Connector interfaces
From HPS
Gigabit Ethernet x 1 (through On-SOM Gigabit Ethernet PHY)
USB2.0 OTG x 1 (through On-SOM USB2.0 transceiver)
Debug UART x 1
SD x 1 (Optional)
I2C x 1
Data UART x 1
QSPI x 1 (From SDM Block)
JTAG x 1 (From SDM Block)
From FPGA
8 x FHT transceivers up to 116Gbps
64 x FGT transceivers up to 58Gbps
FPGA IOs (Up to 126LVDS/252SE)
OS Support
Linux BSP 5.15.9 / Quartus 23.1
Power Supply:
12V through B2B Connector
Operating Temperature
-40°C to +85°C (Industrial)
Form Factor:
120mm x 90mm
Environment Specification:
REACH & RoHS3 Compliant

Agilex R31B/R31C SoC FPGA SOM Block Diagram



Note:

- *F-Tile : 112GT XCVR Not Supported in AGF Devices*
- *R31C Package supports AGF 019, AGF 023, AGF 022, AGF 027 Devices*
- *R31B Package supports AGI 019, AGI 023, AGI 022, AGI 027 Devices*
- *Crypto Block supported in AGF 019, AGF 023 & AGI 019, AGI 023 Devices Only*

OS SUPPORT

Linux BSP 5.15.9
Quartus 23.1

DELIVERABLES

Intel Agilex-I Series R31B SoC based Module
Board Support Package
User Manual

OPTIONAL KITS/Modules

Intel Agilex-I Series R31B SoC based Module + Development Kit

Heat Sink

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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**Optional items not included in the standard deliverables.*

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Agilex 7 R31B/R31C SoC FPGA SOM

The device can be ordered online from the iWave Website
https://www.iwavesystems.com/product/agilex-7-soc-fpga-som/
Or from our Local Partners in your region
http://www.iwavesystems.com/about-us/business-partner.html

iW-G43M-BR-R1.0

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