System On Module iW-RainboW-G51M
Agilex 7 (R24C) SoC FPGA SOM

Intel Agilex 7 R24C SoC FPGA based System on Modules features Agilex F-Series R24C Package Family - AGF 006, AG 008, AGF 012, AGF 014, AGF 019, AGF 022, AGF 023, AGF 027 Supports a Hard Processor System comprising of Quad-core 64-bit ARM CortexA53 up to 1.4GHz.

The Intel Agilex 7 R24C SOM features 8GB DDR4 with ECC for HPS (64bit + 8bit) and 8GB DDR4 with ECC for FPGA (64bit + 8bit), 2 x 144MB QDR-IV for FPGA (18Bit), USB2.0 PHY, Gigabit Ethernet PHY, eMMC and QSPI on SOM.

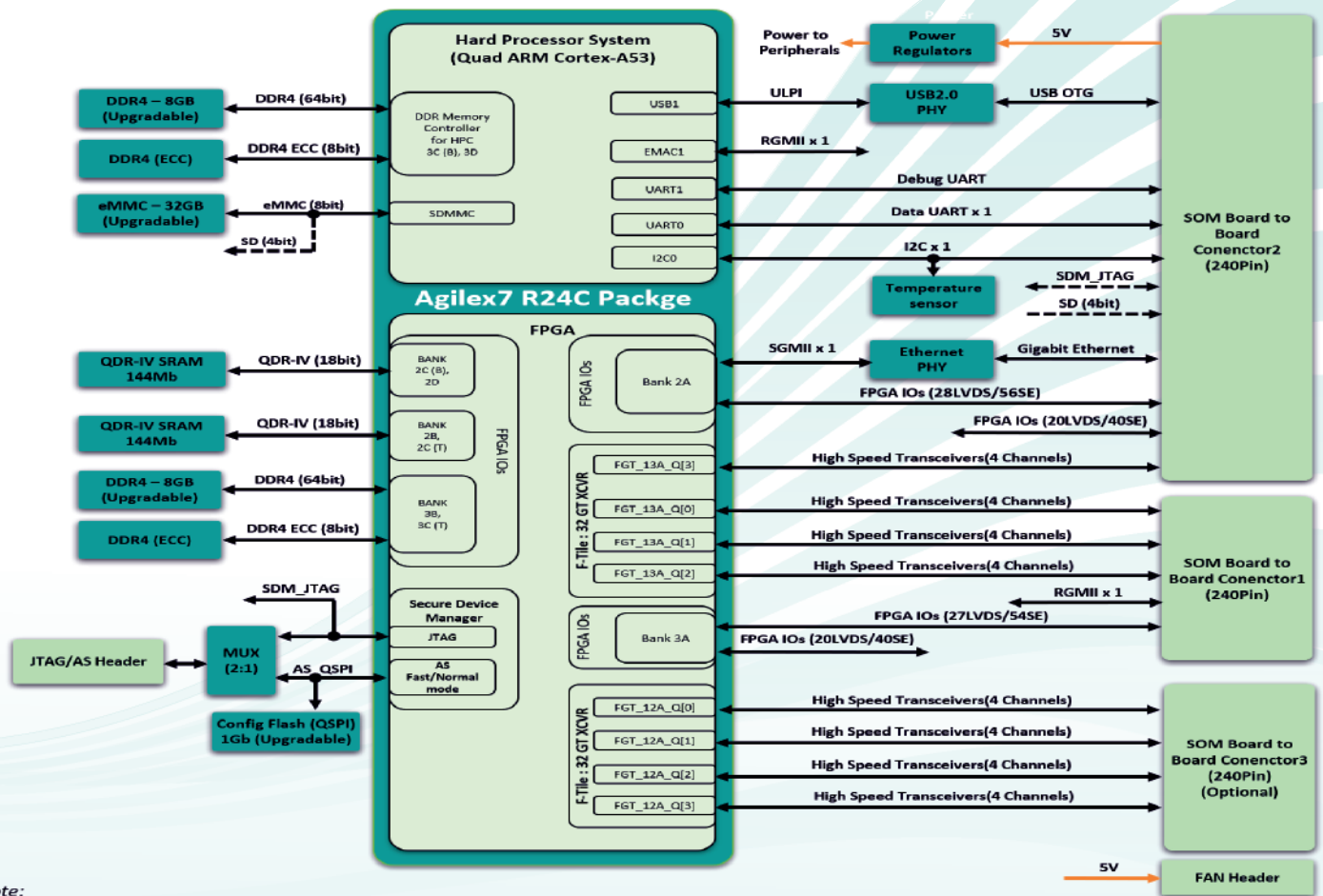The SOM Supports 32 x FGT transceivers up to 32Gbps speed in NZR mode and up to 58Gbps speed in PAM4 Mode.

iW-RainboW-G51M HIGHLIGHTS

Quad ARM Cortex A53 Processor

32GB eMMC (Expandable up to 128GB)

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

8GB DDR4 with ECC for FPGA (64bit + 8bit

2 x 144MB QDR-VI for FPGA (18bit)

32 x FGT transceivers up to 58Gbps

FPGA IOs (Up to 75LVDS/150SE)

10+ Years long term support

SPECIFICATIONS

SoC
R24C Family devices - AGF 006, AG 008, AGF 012, AGF 014, AGF 019, AGF 022, AGF 023, 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)
8GB DDR4 with ECC for FPGA (64bit + 8bit)
2 x 144MB QDR-IV for FPGA (18Bit)
1Gb QSPI Configuration flash (Expandable)
4Kb EEPROM
On SOM Features
SGMII Ethernet PHY Transceiver
USB2.0 ULPI Transceiver
Temperature sensor
FAN Header
Board to Board Connector interfaces
From HPS (Hard Processor System)
USB2.0 OTG x 1 (through On-SOM USB2.0 transceiver)
RGMII x 1

Debug UART x 1
SD x 1 (Optional)
I2C x 1
Data UART x 1
From SDM (Secure Device Manager)
JTAG x 1
AS x 1 (Active Serial x4)
From HPS to FPGA
Gigabit Ethernet x 1 (through On-SOM Gigabit Ethernet PHY)
From FPGA
32 x FGT transceivers up to 58Gbps
FPGA IOs (Up to 75LVDS/150SE)
OS Support
Linux BSP 5.15.9 / Quartus 23.1
Power Supply:
5V through B2B Connector
Operating Temperature
-40°C to +85°C (Industrial)
Form Factor:
110mm x 75mm
Environment Specification:
REACH & RoHS3 Compliant

iWave

Agilex R31B/R31C SoC FPGA SOM Block Diagram

Note:
* R24C Package supports AGF 006, AGF 008, AGF 012, AGF 014, AGF 019, AGF 023, AGF 022, AGF 027 Devices
* Crypto Block supported in AGF 019 & AGF 023 Device Only

OS SUPPORT	DELIVERABLES	OPTIONAL KITS/Modules	CUSTOM DEVELOPMENT
Linux BSP 5.15.9 Quartus 23.1	Agilex 7 (R24C) SoC FPGA SOM Board Support Package User Manual	Agilex 7 (R24C) SoC FPGA SOM Module + Development Kit Heat Sink	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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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.

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Agilex 7 (R24C) SoC FPGA SOM
The device can be ordered online from the iWave Website
https://www.iwavesystems.com/product/agilex7-r24c-soc-fpga-system-on-module/
Or from our Local Partners in your region
http://www.iwavesystems.com/about-us/business-partner.html

iW-G51M-BR-R1.0

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