iWave
Embedding Intelligence

System On Module iW-RainboW-G45M

Startix 10 GX/SX SoC FPGA SOM

Intel Stratix 10 GX/SX SoC FPGA based System on Modules features the SX SoC FPGA Family devices - SX850, SX1100, SX1650, SX2100, SX2500 and SX2800 supports a Hard Processor System comprising of Quad-core 64-bit ARM Cortex-A53 up to 1.5GHz and Intel Stratix 10GX FPGA Family devices - GX850, GX1100, GX1650, GX2100, GX2500 & GX2800 with the NF43 -F1760 package. The Intel Stratix 10 SX SOM features 64-bit DDR4 for HPS with ECC and 2 x 64bit DDR4 for FPGA, USB2.0 PHY, Gigabit Ethernet PHY, eMMC and QSPI on SOM. USB2.0, Gigabit Ethernet, FPGA IOs and 48 High speed transceivers are made available to the Carrier Board through High-Speed Board to Board Connectors. The GXT Transceivers on Board are capable of supporting up to 28.3Gbps speed. Furthermore, the SOM features SMARTVID feature that adjusts the voltage as per the temperature and performance requirements thus lowering the Power Consumption of the device.

iW-RainboW-G45M HIGHLIGHTS

Quad-Core 64bit ARM Cortex -A53 with MPU up to 1500MHz

32GB eMMC Flash (Upgradable)

1Gb QSPI Flash (Upgradable)

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

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

On SOM Gigabit Ethernet PHY

Industrial Grade availability

SPECIFICATIONS

On Board Features
Supported CPU Devices
Stratix10 SX SoC:
SX850, SX1100, SX1650, SX2100, SX2500, SX2800
Quad Core 64bit ARM Cortex -A53 with MPU
Up to 2753K Logic Elements & 9,33,120 ALMs
Stratix10 GX FPGA:
GX850, GX1100, GX1650, GX2100, GX2500, GX2800
Up to 2753K Logic Elements & 9,33,120 ALMs
Stratix 10 SX SoC FPGA HPS Interfaces
32GB eMMC Flash (Upgradable)
1GB QSPI Flash (Upgradable)
8GB DDR4 for HPS with ECC (64bit + 8bit) (Upgradable)
2 x 8GB DDR4 for FPGA (64bit + 64bit) (Upgradable)
On SOM Features
Gigabit Ethernet PHY for HPS
USB2.0 OTG Transceiver for HPS
JTAG/ Active Serial Header, Fan Header

Stratix 10 SX HPS Features
Gigabit Ethernet x 1 Port
USB2.0 OTG x 1 Port
SPI/UART x 1 Port
I2C x 1 Port
SDMMC x 1 Port
Debug UART
Stratix 10 GX/SX SDM Features
QSPI Flash x 1 Port
PMBus X 1 Port
JTAG x 1 Port
Control Signals
OS Support
Linux
Power Input
5V
Operating Temperature
-40°C to +85°C (Industrial Grade)
Form factor
110mm x 75mm
Environment Specification
RoHS3 & REACH Compliant

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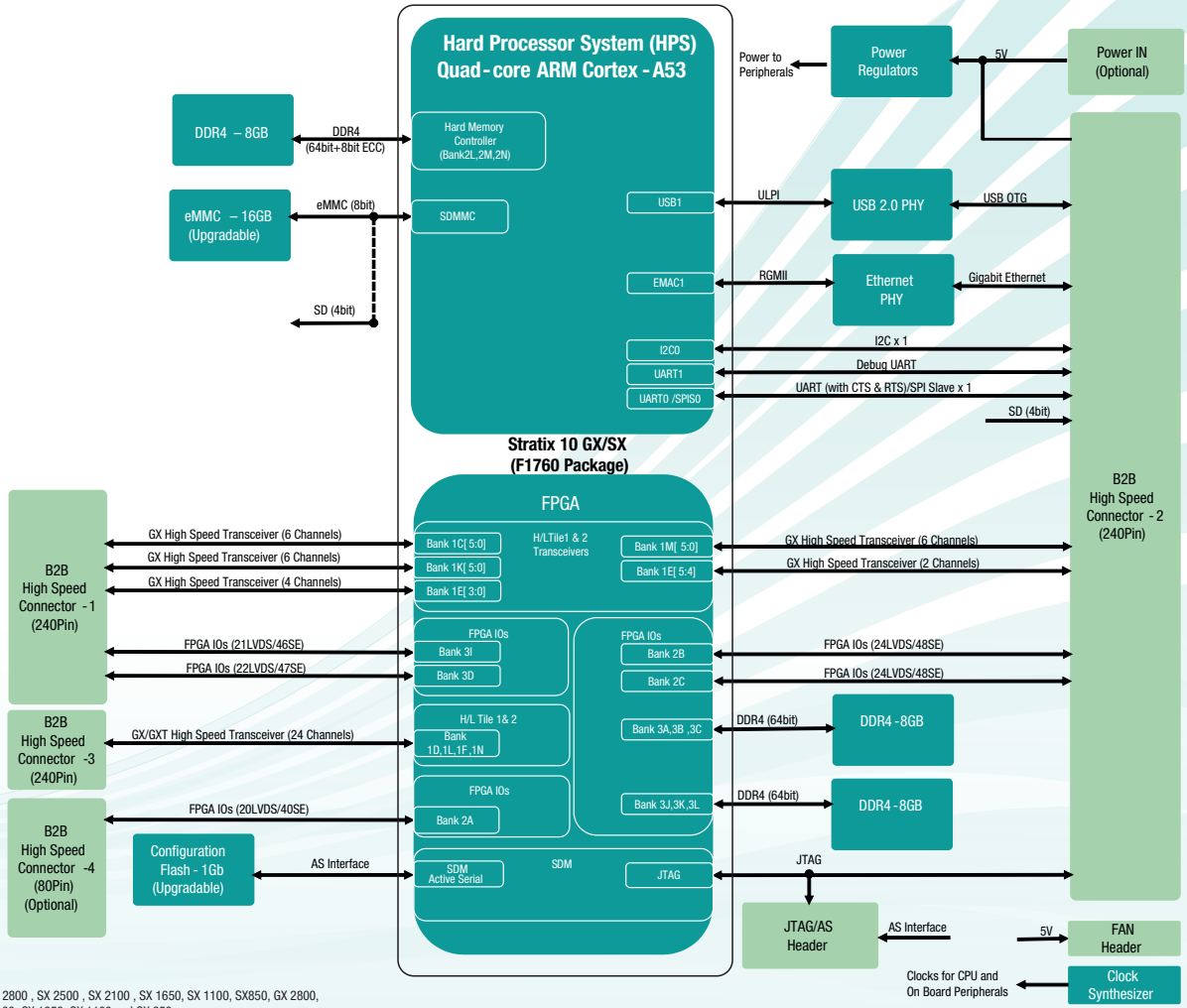
Stratix 10 GX/SX SoC FPGA SOM Block Diagram



Compatible SoC: SX 2800 , SX 2500 , SX 2100 , SX 1650, SX 1100, SX850, GX 2800, GX 2500, GX 2100, GX 1650, GX 1100 and GX 850.
H-Tile supports upto 24 GX channels @ upto 17.4Gbps and upto 16 GXT channels @ 28.3GbpsL-Tile supports upto 24 GX channels @ upto 17.4Gbps for Chip to chip & 12.5Gbps for Backplane. And upto 8 GXT channels @ 26.6Gbps for Chip to chip & 12.5Gbps for Backplane. for both Chip to chip & Backplane.
In H-Tile, only Channels 0, 1, 3, and 4 (of transceiver Bank) & in L-Tile, only Channels 2 and 3 (of transceiver Bank) can be configured as GXT channels
Bank 2A, 2B & 2C is for SX2800,SX2500,SX2100,SX1650,GX2800,GX2500,GX2100 & GX1650 devices. Bank 2C, 2F & 2K is for SX1100,SX850,GX2110,GX1660,GX1100 & GX850 devices.

OS SUPPORT
Linux

DELIVERABLES
Stratix 10 GX/SX SoC FPGA SOM
Board Support Package
User Manual

OPTIONAL KITS/Modules
Stratix 10 GX/SX SoC FPGA Development Kit
Fan 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.

iWave Systems offers various state of art ready ODM solutions such as Connected Telematic Control Unit / OBD II devices for the automotive edge analytics, Comprehensive ARINC818 solutions for the low latency Aerospace applications and Rugged IP rated performance scalable HMI solutions for Industrial applications.

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.*

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

Stratix 10 GX/SX SoC FPGA SOM

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

iW-G45M-BR-R1.1

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