

System On Module iW-RainboW-G64M

Achronix Speedster7T SOM



iWave's FPGA SOM equipped with the Achronix Speedster7T Act1500 device, features a 2D-NoC and includes 8 independent GDDR6 memory controllers, along with one autonomous 64-bit DDR4 controller featuring ECC support. 32 SERDES transceivers, enabling connectivity for 400G Ethernet and PCIe Gen5.0 over high-speed board to board connectors.

In addition, iWave's OSM Module is integrated on som which have dual-core ARM Cortex-A35 and Cortex-M4F processor, for intercommunication between FPGA and other on SOM controll.

APPLICATIONS:

Computational Storage, AI/ML, Smart NIC

iW-RainboW-G64M HIGHLIGHTS

Achronix Speedster7t 1500t FPGA with F53 package

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

16GB GDDR6 (8x 2GB Devices)

32x SEDRES (with line rates of 53.125Gbps Raw SERDES & 106.25Gbps Ethernet)

Gigabit Ethernet from OSM

Dual Core iMX 8XLite OSM Module with 2GB LPDDR4 and 8GB eMMC Flash

Two 400pin High-Speed board to board Connectors

SPECIFICATIONS

Achronix FPGA

Achronix Speedster7t 1500t FPGA with F53 package

692K 6-input LUTs

2560 LRAMs and 2560 BRAMs

2560 MLPs

CPU

iWave OSM – SE LGA Module with i.MX 8XLite Processor

Memory Interfaces

8GB DDR4 with ECC

16GB GDDR6 RAM

2Gb SPI Flash

On SOM Features

iWave i.MX 8XLite OSM Module

Clock Synthesizer for On-SOM Clocks

PTP & SyncE Network Synchronizer

Temperature Sensor & Voltage Monitoring

TPM2.0 Module

Fan Header

FPGA to OSM Interfaces

PCIe Gen 3.0 x1 lane

RGMII

QSPI

UART

Board to Board Connector1 Interfaces

From FPGA

4x SERDES Channels(with line rates of 53.125 Gbps Raw SERDES & 106.25Gbps Ethernet)

FPGA IOs: 16 Differential pairs/32 Single-ended los

From OSM

GPIOs x7

Board to Board Connector2 Interfaces

From FPGA

28x SERDES Channels(with line rates of 53.125 Gbps Raw SERDES & 106.25Gbps Ethernet)

From OSM

Gigabit Ethernet x 1 Port

USB 2.0 OTG x 1

Debug UART

I2C

Power Supply:

12V through Board-to-board connector2

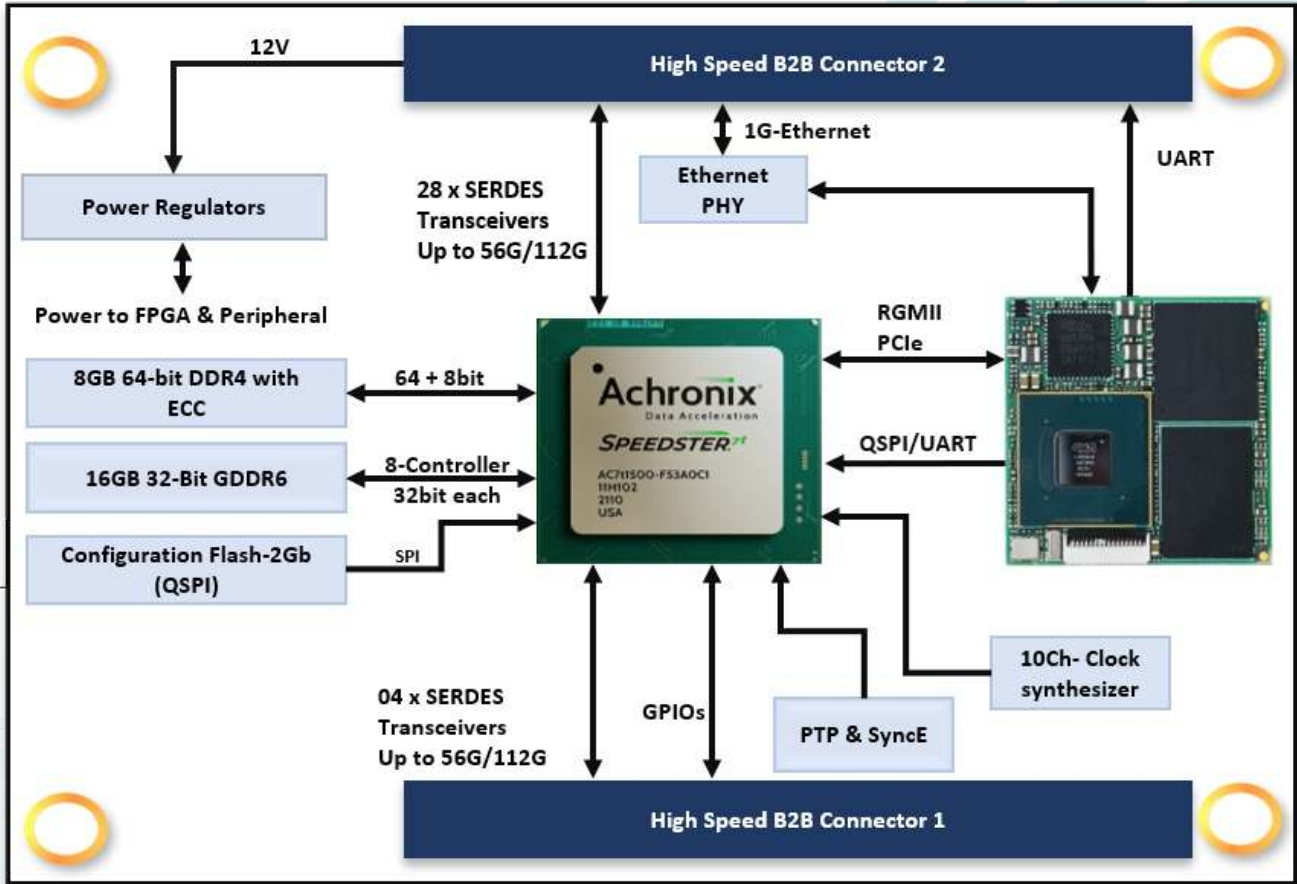
Operating Temperature

-40°C to +85°C

Form Factor:

120mm x 90mm

Achronix Speedster7T SOM Block Diagram



OS SUPPORT

Linux for OSM module

DELIVERABLES

Achronix Speedster7T SOM
Board Support Package
User Manual

OPTIONAL KITS/Modules

SMARTNIC card
Thermal Solution for SOM

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.*

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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>

INDIA

iWave Systems Technologies Pvt Ltd.
#7/B, 29th Main, BTM Layout
2nd Stage,
Bangalore - 560 076
mktg@iwavesystems.com

JAPAN

iWave Japan Inc.
8F Kannai Sumiyoshi Building,
3-29 Sumiyoshi-cho, Naka -ku,
Yokohama Kanagawa, Japan
mktg@iwavesystems.com

EUROPE

International Sales & Marketing Europe
Venkelbaan 55 2908KE Capelle
aan den IJssel,
The Netherlands
info@iwavesystems.eu

USA

iWave USA
1692 Westmont Ave. Campbell
Ca95008
USA
info@iwavesystems.us