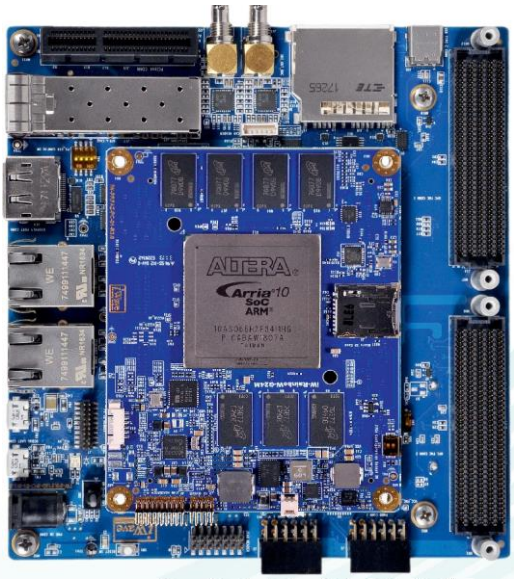
iWave
Embedding Intelligence

Development Platform iW-RainboW-G24D

Arria 10 SoC/FPGA Development Kit



iWave's Arria 10 SoC / FPGA Development kit comprises of Arria 10 SoC / FPGA SOM and High Performance carrier Card. Arria 10 SoC / FPGA Development Kit enables, customers to develop rapid prototypes and validate the highspeed interfaces and I/Os. The SOM is equipped with 4GB DDR4 RAM (64bit) from FPGA and 2GB DDR4 SDRAM (32bit) with ECC from HPS (Expandable). Arria10 SoC / FPGA Development Kit Carrier board supports wide range of highspeed interfaces like FMC (HPC) Connectors, SATA, SFP+, PCIex4 connector, SFP, Display port, SDI IN & OUT connectors to validate Arria10 FPGA high speed transceivers and other on-board connectors to validate Arria10 SoC (HPS) interfaces.

APPLICATIONS: Test and measurement equipment, Control and intelligence equipment, Diagnostic medical imaging equipment, Wireless infrastructure equipment, Compute and storage equipment, Broadcast and distribution equipment.

iW-RainboW-G24D HIGHLIGHTS

Arria 10 SoC & FPGA device compatibility
- SX270, SX320, SX480, SX570, SX660
- GX270, GX320, GX480, GX570, GX660

32-bit DDR4 support with ECC for HPS

64-bit DDR4 support for FPGA

4-Bit Micro SD for HPS booting

QSPI configuration Flash

20 High Speed Transceivers x 17.4Gbps

FMC HPC Connector x 2

Dual 12-Bit PMOD Connectors

SFP+ Connector

SDI Video In & Out HD Connector

SATA Connector

Dispaly Port Connector

PCIe x 4 Connector

SPECIFICATIONS

Arria 10 SoC/FPGA SOM:
Compatible Arria10 SoC Family - SX270,SX320,SX480,SX570,SX660
Compatible Arria10 FPGA Family- GX270,GX320,GX480,GX570,GX660
2GB DDR4 SDRAM(32bit) with ECC for HPS(Expandable)[1,2]
4GB DDR4 SDRAM(64bit) for FPGA
MicroSD Connector for HPS booting [1,3]
eMMC Flash for HPS booting (Optional)[1,3]
Configuration Flash for FPGA
Gigabit Ethernet PHY
USB2.0 Transceivers
20 Transceivers x 17.4Gbps
JTAG, FPGA AS Header
FAN Header
93 SEIOs from Bank2A & Bank3A
48 LVDS Pairs/96 SEIO's from Bank3B & Bank3C
Operating System: Linux 4.9.78
Arria 10 SoC/FPGA Carrier Board
Debug Console - 1 Port
USB2.0 OTG- 1 Port
10/100/1000 Ethernet - 1 Port
High Speed Connectors:
FMC High Pin Count (HPC) Connector: 1
FPGA High Speed Transceivers x 8
21 LVDS IOS/42 SEIO'S and 33 SEIO'S
Four General Purpose Clock Input LVDS Pair/Single Ended
Two General Purpose Clock Output LVDS Pair/Single Ended
FMC High Pin Count (HPC) Connector: 2
FPGA High Speed Transceivers x 6
15 LVDS IOS/30 SEIO's and 4 Sing Ended IO's
Two General Purpose Clock Input LVDS Pair/Single Ended
One- General Purpose Clock Input LVDS Pair/Single Ended
12-Pin PMOD Connectors x 2 (4LVDS Pair/8SE IO's per Connector)
SFP+ Connector
SDI Video In & Out Connectors
SATA Connector
Display Port Connector
PCIe x 4 Connector
Power Jack (12V DC Input)
Operating Temperature: -20 ℃ to +85 ℃
Additional features:
Power ON/OFF Switch
Reset Switch
20Pin HPS IO Header
JTAG Header
Power Supply: 12V Power Input Jack
Form Factor: 130mm X140mm

Note1: In Arria10 SoC/FPGA SOM, these interfaces can be supported only if Arria10 SoC family devices which supports Hard Processor System (HPS) are used.
Note2: In Arria10 SoC/FPGA SOM, if Arria10 SoC family device is not used and FPGA family device is used, then also 32bit DDR4 can be supported from FPGA fabric.
Note3: In Arria10 SoC/FPGA SOM, these interfaces can be supported only if Arria10 SoC family devices are used because these interfaces are supported through Dedicated I/O pins of Hard Processor System (HPS).
Note4: Optional features not supported by default. Contact iWave for more Details..

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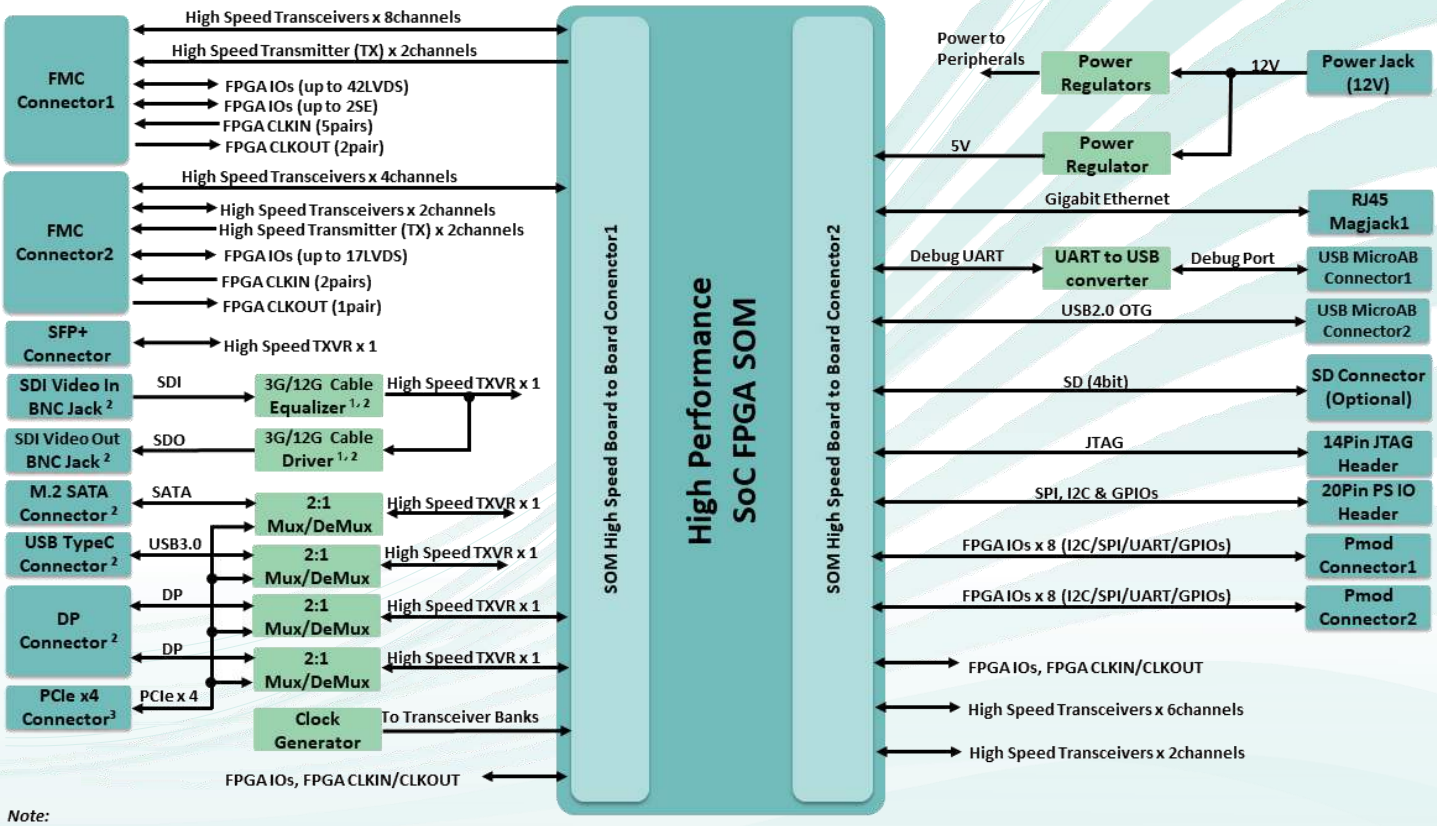
High Performance SoC FPGA SOM Carrier Board Block Diagram



Note:
[1] By default, 3G SDI IN/OUT is supported. Optionally, 12G SDI IN/OUT can be supported on request.
[2] Only Hardware option is provided for these features. Contact iWave for FPGA IP & Software Driver support.
[3] Arria10 DevKit supports only PCIex1 interfaces

OS SUPPORT

Linux 4.9.78

DELIVERABLES

Arria 10 SoC Development Kit
Board Support Package
User Manual

OPTIONAL KITS/Modules

Arria 10 SoC SOM

CUSTOM DEVELOPMENT

BSP Development/OS Porting
Custom SOM/Carrier Development
Custom Application/GUI Development
Design Review and Support

iWave Systems Technologies, established in 1999, focuses on Product Engineering Services involving Embedded Hardware, Software & FPGA. The company designs and develops cutting edge products and solutions. iWave has been an innovator in the development of highly integrated, high performance, low power and low cost System On Modules and Development Platforms.

iWave System has won the confidence of its customers over the years by being a reliable partner in developing innovative products. Our engineers combine outstanding System design experience to deliver Quality Solutions. iWave specializes across Industrial, Automotive and Medical domains. We support our customers by being time efficient, which in turn helps our customers accelerate time to market their products. iWave is a Windows embedded Silver partner and a winner of the Partner Excellence Award.

**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.

Ordering the Arria 10 Development Kit

The Development Kit can be ordered online from the iWave Website
http://www.iwavesystems.com/webforms

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iWave Systems Tech. Pvt. Ltd.,
7/B, 29th Main, BTM Layout 2 nd Stage,
Bangalore-560076, India.
Ph:+91-80-26683700, 26786245
Email: mktg@iwavesystems.com
www.iwavesystems.com

iWave Japan, Inc.
8F-B, Kannai Sumiyoshi Building,
3-29, Sumiyoshi-cho, Naka-ku,
Yokohama, Kanagawa, Japan.
Ph: +81-45-227-7626
Email: info@iwavejapan.co.jp
www.iwavejapan.co.jp

iWave Europe
Postbus 6197
3130 DD Vlaardingen
The Netherlands
Ph: +31 10 28403383
Email: info@iwavesystems.eu