

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+, PClex4 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
- Display Port Connector
- PCIe x 4 Connector

## SPECIFICATIONS

<b>Arria 10 SoC/FPGA SOM:</b>	21 LVDS IOS/42 SE IO'S and 33 SE IO'S
Compatible Arria10 SoC Family - SX270,SX320,SX480,SX570,SX660	Four General Purpose Clock Input LVDS Pair/Single Ended
Compatible Arria10 FPGA Family- GX270,GX320,GX480,GX570,GX660	Two General Purpose Clock Output LVDS Pair/Single Ended
2GB DDR4 SDRAM (32bit) with ECC for HPS (Expandable) <sup>1,2</sup>	<b>FMC High Pin Count (HPC) Connector: 2</b>
4GB DDR4 SDRAM (64bit) for FPGA	FPGA High Speed Transceivers x 6
MicroSD Connector for HPS booting <sup>1,3</sup>	15 LVDS IOS/30 SE IO's and 4 Sing Ended IO's
eMMC Flash for HPS booting (Optional) <sup>1,3</sup>	Two General Purpose Clock Input LVDS Pair/Single Ended
Configuration Flash for FPGA	One- General Purpose Clock Input LVDS Pair/Single Ended
Gigabit Ethernet PHY	12-Pin PMOD Connectors x 2 (4LVDS Pair/8SE IO's per Connector)
USB2.0 Transceivers	SFP+ Connector
20 Transceivers x 17.4Gbps	SDI Video In & Out Connectors
JTAG, FPGA AS Header	SATA Connector
FAN Header	Display Port Connector
93 SE IOs from Bank2A & Bank3A	PCIe x 4 Connector
48 LVDS Pairs/96 SE IO's from Bank3B & Bank3C	Power Jack (12V DC Input)
Operating System: Linux 4.9.78	Operating Temperature: -20°C to +85°C
<b>Arria 10 SoC/FPGA Carrier Board</b>	<b>Additional features:</b>
Debug Console - 1 Port	Power ON/OFF Switch
USB 2.0 OTG - 1 Port	Reset Switch
10/100/1000 Ethernet - 1 Port	20Pin HPS IO Header
<b>High Speed Connectors:</b>	JTAG Header
<b>FMC High Pin Count (HPC) Connector: 1</b>	<b>Power Supply:</b> 12V Power Input Jack
FPGA High Speed Transceivers x 8	<b>Form Factor:</b> 130mm X 140mm

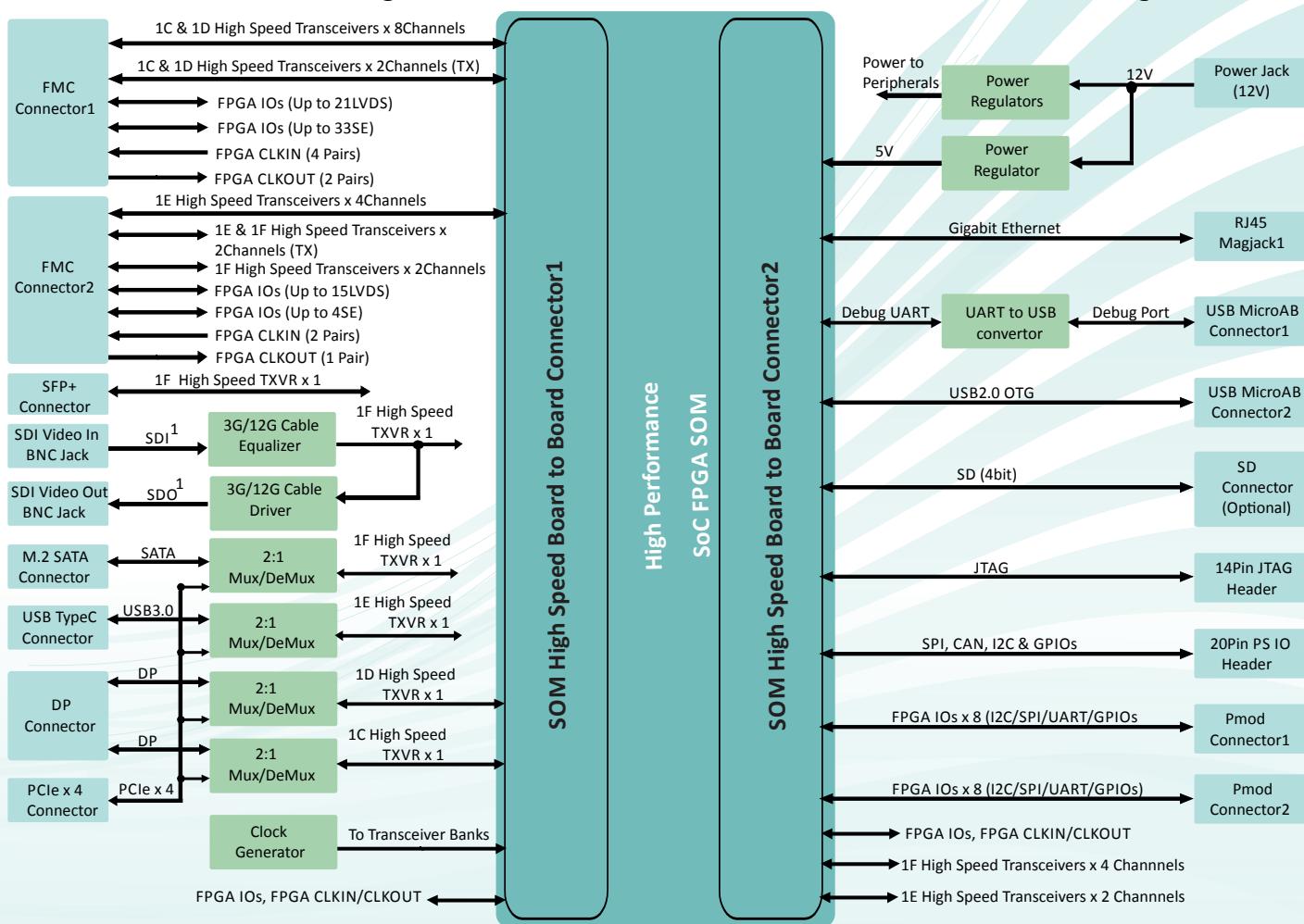
*Note1: In Arria10 SoC/FPGA SOM, these interfaces can be supported only if Arria10 SoC family devices which supports Hard Processor System (HPS) are used.*

*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..*

## High Performance SoC FPGA SOM Carrier Board Block Diagram



### 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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