



iWave's Arria 10 SoC System on Module is based on the Arria 10 SX family device with F34 package. The module is equipped with 32-bit DDR4 memory support for HPS with ECC and 64-bit DDR4 support for FPGA. All the IOs and high speed transceiver blocks will be available on the SOM board to board connectors.

**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-G24M

#### HIGHLIGHTS

Arria10 SOC & FPGA device compatibility

- SX270, SX320, SX480, SX570, Sx660
- GX270, GX320, GX480, GX570, Gx660

4GB DDR4 for FPGA

24 high speed transceivers @ 17.4Gbps

48/96 LVDS from BANK 3B & 3C

93 SE from BANK 2A & 3A

Industrial grade availability

10+ Years availability

#### SPECIFICATIONS

##### SOC: Arria10 SoC/FPGA

Dual Core, Cortex - A9 CPU @ 1.5GHz  
SX480 (10AS048) FPGA Fabric

##### Memory

2GB DDR4 with ECC for HPS  
4GB DDR4 for FPGA  
Micro SD for HPS boot  
8GB eMMC Flash for HPS boot (Optional)  
QSPI Flash for FPGA

##### Communication:

10/100/100 Ethernet PHY For HPS  
USB2.0 transceiver for HPS

##### Power Supply:

5V through SOM B2B connector 2

##### Temperature support:

-40°C to +85°C Industrial

##### Dual 240 Pin Board to Board Connector:

##### Arria10 SoC HPS IO interfaces:

Gigabit Ethernet x 1 Port  
USB 2.0 OTG x 1 Port  
SD (4bit) x 1 Port (optional)  
SPI x 1 Port  
I2C x 1 Port  
HPS Dedicated UART Console  
GPIOs-14 Nos

##### Arria10 SoC FPGA IO interfaces:

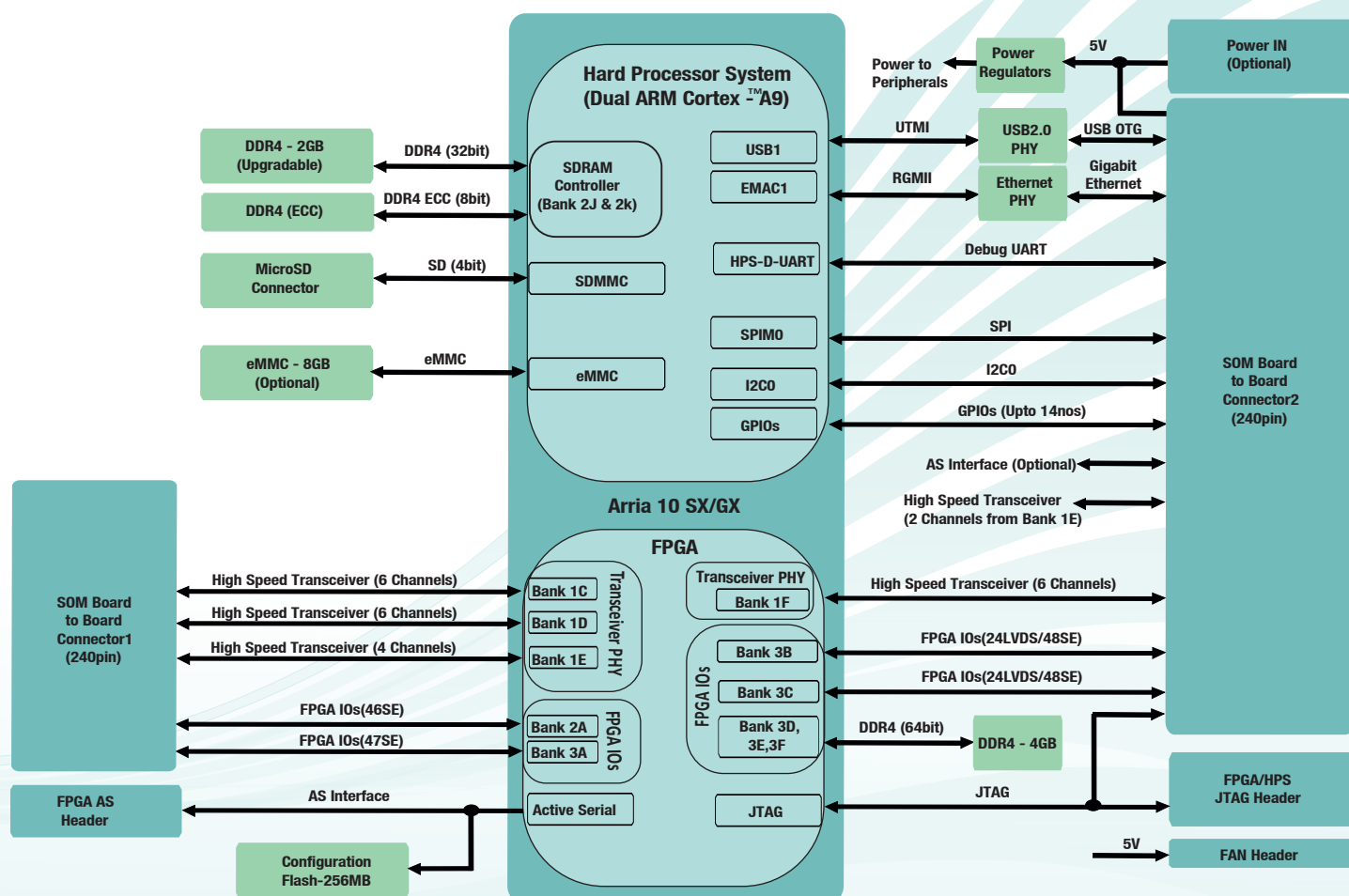
24 high - speed transceivers  
48/96 LVDS from BANK 3B & 3C  
93 SE from BANK 2A & 3A

**Headers:** HPS/FPGA JTAG, FPGA AS headers

**OS Support:** Linux 4.9.78

**Form Factor:** 95mm x 75mm

## Arria 10 SoC SOM - BLOCK DIAGRAM



**Note:**

- HPS (Hard Processing System) is supported only in Arria10 SX devices.
- All I/Os in SOM Expansion connectors are 1.8V tolerant I/Os. Bank 3B, 3C, 3A supports variable I/O level setting from PMIC (1.8V, 1.5V, 1.35V, 1.2V).
- Each FPGA I/O Bank (2A, 3A, 3B, 3C) which goes to Expansion connectors support two General Purpose Clock Input (1 in 2A) & two General Purpose Clock Output (LVDS/SE).
- Since 3D, 3E & 3F banks are available only in some version of Arria10 parts, FPGA DDR4 (64bit) can be supported only where these banks supported devices are used.

### OS SUPPORT

Linux 4.9.78

### DELIVERABLES

Arria 10 SoC SOM  
Board Support Package  
User Manual

### OPTIONAL KITS/Modules

Arria 10 SoC Development Kit

### 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's expertise has brought out multiple SOMs based on ARM NXP, Intel Atom, Marvell and TI Processors.

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 SoC SOM

The SOM Module can be ordered online from the iWave Website  
<http://www.iwavesystems.com/webforms>

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