iWave
Embedding Intelligence

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

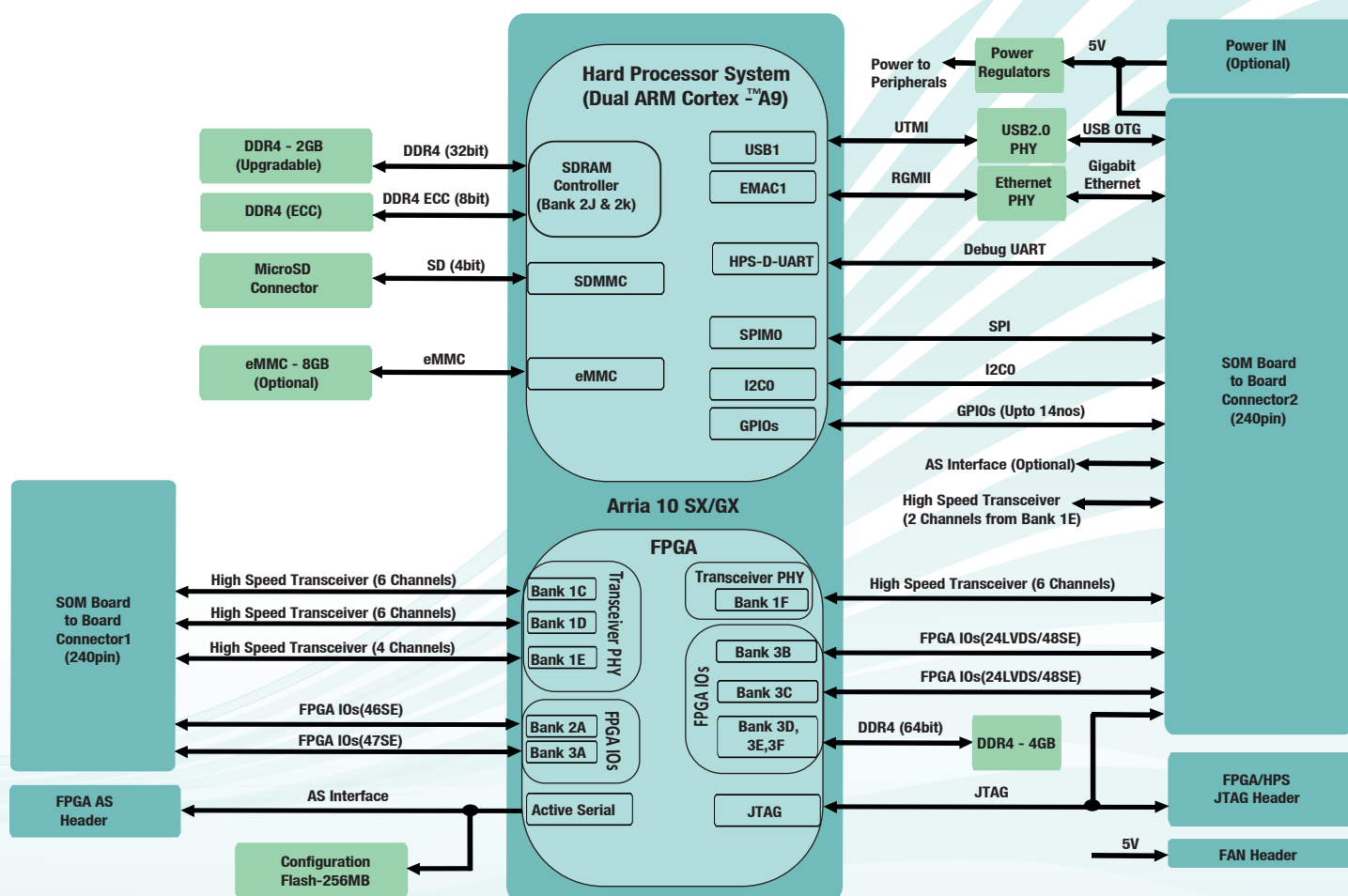| Dual 240 Pin Board to Board Connector: |
|---|
| **Arria10 SoC HPS IO interfaces:** |
| Gigabit Ethernet x 1 Port |
| USB 2.0 OTG x 1 Port |
| SD (4bit) x 1 Port (optional) |
| SPI x 1 Port |
| I2C x 1 Port |
| HPS Dedicated UART Console |
| GPIOs-14 Nos |
| **Arria10 SoC FPGA IO interfaces:** |
| 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

iWave — Embedding Intelligence

intel FPGA Design Solutions Network — Platinum

Block diagram labels:

Hard Processor System (Dual ARM Cortex ™A9)

- DDR4 - 2GB (Upgradable) — DDR4 (32bit) → SDRAM Controller (Bank 2J & 2k)
- DDR4 (ECC) — DDR4 ECC (8bit)
- MicroSD Connector — SD (4bit) → SDMMC
- eMMC - 8GB (Optional) — eMMC → eMMC

USB1 — UTMI → USB2.0 PHY — USB OTG
EMAC1 — RGMII → Ethernet PHY — Gigabit Ethernet
Power Regulators — 5V — Power IN (Optional)
Power to Peripherals

HPS-D-UART — Debug UART
SPIM0 — SPI
I2C0 — I2C0
GPIOs — GPIOs (Upto 14nos)

AS Interface (Optional)
High Speed Transceiver (2 Channels from Bank 1E)

SOM Board to Board Connector2 (240pin)

Arria 10 SX/GX — FPGA

Transceiver PHY / FPGA IOs

- SOM Board to Board Connector1 (240pin)
- High Speed Transceiver (6 Channels) → Bank 1C
- High Speed Transceiver (6 Channels) → Bank 1D
- High Speed Transceiver (4 Channels) → Bank 1E
- FPGA IOs(46SE) → Bank 2A
- FPGA IOs(47SE) → Bank 3A

- Transceiver PHY → Bank 1F — High Speed Transceiver (6 Channels)
- Bank 3B — FPGA IOs(24LVDS/48SE)
- Bank 3C — FPGA IOs(24LVDS/48SE)
- Bank 3D, 3E,3F — DDR4 (64bit) → DDR4 - 4GB
- JTAG — JTAG → FPGA/HPS JTAG Header

- FPGA AS Header — AS Interface → Active Serial → Configuration Flash-256MB

FAN Header — 5V

Note:
- HPS (Hard Processing System) is supported only in Arria10 SX devices.
- All IOs in SOM Expansion connectors are 1.8V tolerant Ios. Bank 3B, 3C, 3A supports variable IO level setting from PMIC (1.8V, 1.5V, 1.35V, 1.2V).
- Each FPGA IO 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

iW-G24M-BR-R2.0

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for System-On-Modules - SOM *category:*

Click to view products by iWave *manufacturer:*

Other Similar products are found below :

COMX-CORE-310 COMX-P4040-4G-ENP2 PICOIMX6U10R1GBNI4G PICOIMX6U10R1GBNI4GBW RM-F6SO1-SMC MC27561-TIGER MC27561-LION AM335XBBLK-SYSTEM MC27561-FOX CC-WMX6UL-SMPL CB-52-PUS-110-SX BD63725BEFV-EVK-002 A00150 COMX_P4080 A20-SOM-EVB RK3188-SOM RK3188-SOM-4GB PICOIMX6Q10R1GBNI4G PER-TAICX-A10-001 PER-TAIX2-A10-2280 EDL-mPCIe-MA2485 SOM-5897C7-U0A1E SOM-5897C7-U8A1E SOM-6896C7-U2A1E Q7M311-N4200-4GB SCM180-Dual-2G_Industrial SCM180-Quad-4G-Industrial 3354-HX-X38-RC 5728-PJ-4AA-RC 6455-JE-3X5-RC ET876-X7LV IFC6301-10-P2 IFC6502-00-P1 IFC67A1-00-P1 iW-G27M-SCQM-4L008G-E032G-BIG iW-G33M-SCMQ-4L002G-E008G-BII CS-DEPTHAI-04 MYC-C8MMQ6-8E2D-180-C MYC-Y7Z020-4E512D-766-I MYD-C4378-4E512D-100-I MOD5213-100IR MODM7AE70-100IR A20-SOM204-1GS16ME16G-MC AM3352-SOM-EVB BS2-IC 102110278 SLS16Y2_792C_256R_256N_0SF_I SLS12RT52_528C_0R_4QSPI_0SF_I SLS12RT52_528C_32R_16QSPI_0SF_I SLS12RT62_528C_0R_4QSPI_0SF_I