iWave
Embedding Intelligence

System On Module iW-RainboW-G33M

i.MX8M Q/QL/D SMARC Module

The i.MX8M Quad, Quad Lite, Dual based SMARC System On Module integrates Quad/Dual Cortex A53 @ up to 1.5GHz, H.265 4K60 decode, GC7000 Lite GPU, MIPI CSI/DSI, HDMI2.0 TX, USB3.0, PCIe2.0 with on SOM 10/100/1000 Mbps Ethernet PHY and IEEE 802.11a/b/g/n/ac Wi-Fi & BT 5.0 Module. The i.MX8M SMARC System On Module is aimed to offer applications such as Digital Media Adaptors, HD Digital signage, Industrial HMI, Building Automation, Imaging & Scanning, Audio/Video Streaming devices and Machine Vision.

iW-RainboW-G33M HIGHLIGHTS

4 x Cortex-A53 @ upto 1.5 GHz

1 x Cortex-M4F @ 266 MHZ

64-bit Armv8-A architecture

4Kp60(h.265,VP9),4Kp30(h.264), 1080p60(MPEG2,MPEG4p2, Vc1,Vp8, Rv9, AVS/AVS+, h.263, DiVX) VPU decoder

OpenGL®/ES 3.1, OpenGL® 3.0, Vulkan® 1.0,

OpenCL™ 1.2 (via GPU)

IEEE 802.11 a/b/g/n/ac Wi-Fi & BT 5.0 Module

Dual 1000/100/10 Mbps Ethernet (AVB support on one port)

2GB LPDDR4 memory (Expandable)

SMARC V2.0 compatible

SPECIFICATIONS

SOC: i.MX8M Q/QL/D
SOC: i.MX8M Quad,QuadLite,Dual
i.MX8M Quad: 4 x Cortex-A53,1 x Cortex-M4, GPU & VPU Decode
i.MX8M QuadLite:4 x Cortex-A53 & 1 x Cortex-M4 & GPU
i.MX8M Dual: 2 x Cortex-A53, 1 x Cortex-M4, GPU & VPU Decode
1xCortex-M4F @ 266 MHz for advanced system control
64-bit Armv8-A architecture
4Kp60 (h.265, VP9), 4Kp30 (h.264), 1080p60 (MPEG2, MPEG4p2, Vc1, VP8, RV9, AVS/AVS+, h.263, DiVX) VPU decoder
OpenGL®/ES 3.1, OpenGL® 3.0, Vulkan®1.0 &
OpenCL™ 1.2 (via GPU)
Memory:
LPDDR4 - 2GB (Expandable)
eMMC Flash - 8GB (Expandable)
Micro SD slot (Optional)
QSPI Flash - 256MB (Optional)
Communication:
Gigabit Ethernet PHY Transceiver x 1
PCIe to Ethernet controller with PHY x 1
USB 2.0 High-Speed 4-Port Hub
IEEE 802.11 a/b/g/n/ac Wi-Fi & BT 5.0
Expansion Connector Interfaces (Optional):
SAI x 1 port
MIPI CSI0 (2nd 2lane)
GPIOs
REACH & RoHS Complaint:

SMARC Edge Connector Interfaces:
Gigabit Ethernet x 2 Ports (AVB support on one port)
USB3.0 OTG x 1 Port (including 2.0 OTG)
USB3.0 Host x 1 Port
USB 2.0 Host x 4 Port
PCIe x 1 Port
SD (4bit) x 1 Port (Optional)
MIPI DSI x 1 Port
HDMI/DP Transmitter x 1 Port
MIPI CSI0 (2lane) x 1 Port
MIPI CSI1 (4lane) x 1 Port
I2S (Audio Interface) x 2 Ports
Debug UART
Data UART (with CTS & RTS) x 1 Port
Data UART (without CTS & RTS) x 1 Port
I2C x 4 Ports
PWM x 3 Ports
SPI x 1 Port
QSPI x 1 Port
12 GPIO's Control & Status Signals
Power Supply:
5V through SOM edge connector
Form Factor:
82mm x 50mm
Temperature Support: Industrial: -40°C to +85°C
OS Support:
Linux 4.14.98
Android Pie 9.0.0, QNX7.0.0

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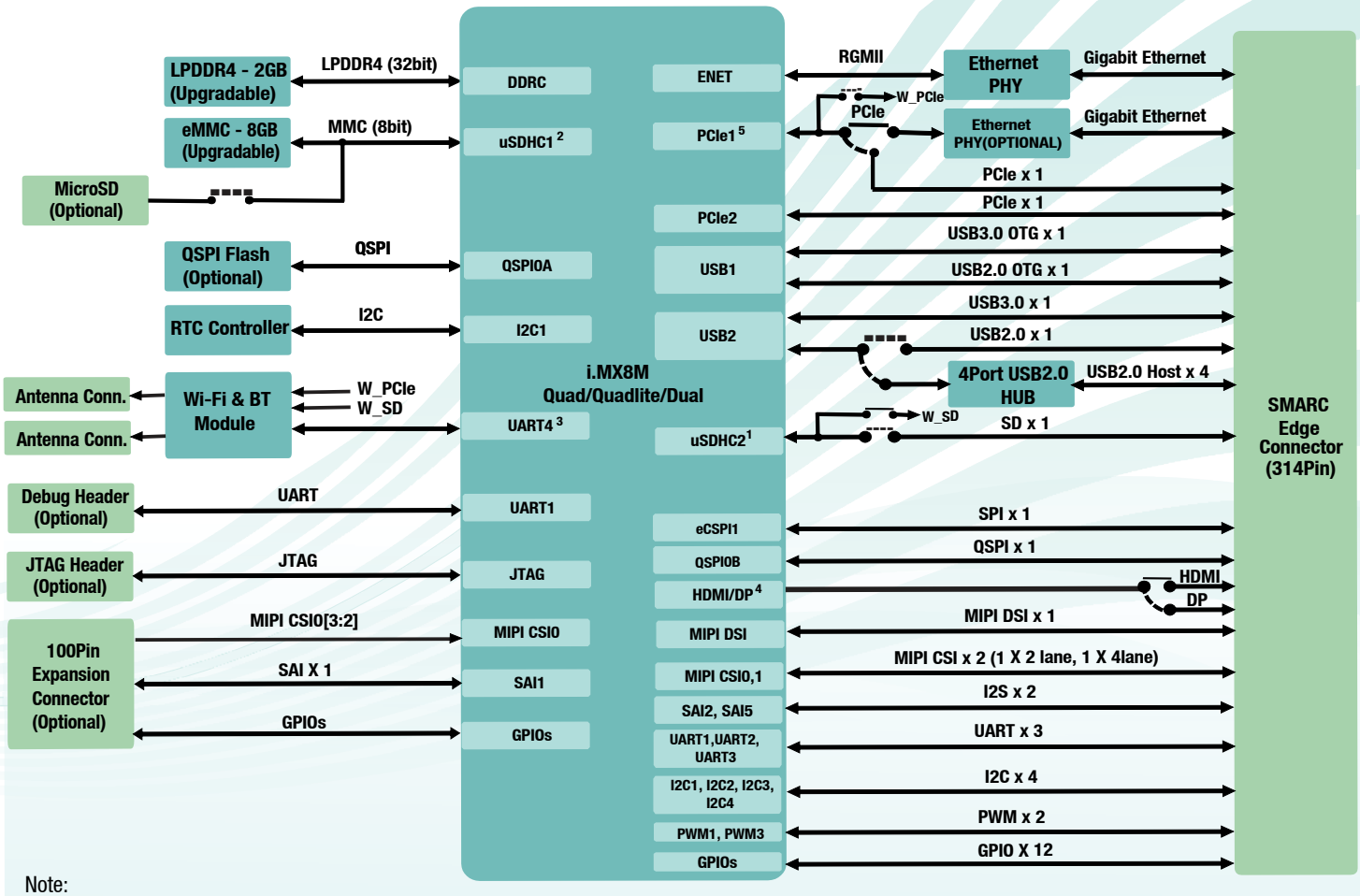
i.MX8M Q/QL/D SMARC SOM Block Diagram

Proven Partner



Note:

1.JODY-W2 Wi-Fi is supported by using uSDHC2 interface, hence SMARC SD will be an optional feature.PCIe based Wi-Fi can be supported only with JODY-W3 Modules.
2.Either eMMC or MicroSD can be supported. In default configuration eMMC supported.
3.In default Configuration UART4 interface of i.MX8 is connected to on SOM Bluetooth module,hence SMARC SER2 will be an optional feature.
4.Either HDMI or Display Port can be supported. In default configuration HDMI is supported.
5.In default configuration PCIe1 interface of i.MX8 is connected to on SOM Ethernet controller, hence Wi-Fi PCIe or SMARC PCIe_B will be an optional feature.

OS SUPPORT

Linux 4.14.98
Android Pie 9.0.0
QNX 7.0.0

DELIVERABLES

i.MX8M SMARC Module
Board Support Package
User Manual

OPTIONAL KITS/Modules

i.MX8M Development Kit
5.5" Cap touch Display
Heat Sink
Camera Module

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.*

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i.MX8M SMARC Module

The device can be ordered online from the iWave Website
http://www.iwavesystems.com/webforms
Or from our Local Partners in your region
http://www.iwavesystems.com/about-us/business-partner.html

iW-G33M-BR-R1.1

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