iWave
Embedding Intelligence

System On Module iW-RainboW-G27M

i.MX 8 QM/QP SMARC Module

The i.MX 8 QM/QP SMARC System On Module integrates Dual Cortex A72 + Quad Cortex A53 Cores, Dual GPU systems, 4K H.265 capable VPU dual failover-ready display controller based i.MX 8 QM/QP SoC with on SOM Dual 10/100/1000 Mbps Ethernet PHY, USB 3.0 hub and IEEE 802.11 a/b/g/n/ac/ax* Wi-Fi & BT 5.0 module. The i.MX 8 QM/QP SMARC System On Module is aimed to offer maximum performance with higher efficiency for complex embedded application of consumer, medical and industrial embedded computing applications.

APPLICATIONS:

Intelligent Industrial Control Systems,Industrial Human-Machine interface, Ultra-portable Devices,Hom Energy Management Systems,Portable Medical Devices, 4k Digital Signage,Media streaming, Augmented & Virtual Reality, Home Automation & Entertainment, Drones, Secure POS and Video and analytics.

iW-RainboW-G27M HIGHLIGHTS

Dual Complex Core System:

Complex 1: 4 x Cortex-A53 @ 1.2 GHZ

Complex 2: 2 x Cortex-A72 @ 1.6 GHZ

2 x Cortex-M4F @ 264 MHZ for advanced system control

ARM v8 64-bit instruction capability; Fully 32-bit capable

Integrated Full Chip Hardware Virtualization capabilities

16-Shader 3D (Vec4)

4K H.265 decode & 1080p H.264 encoder/deccapable VPU

Enhanced Vision Capabilities (via GP)

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

Dual 1000/100/10 Mbps Ethernet

LPDDR4 - Up to 8GB

SMARC v2.1.1 compatible

SPECIFICATIONS

SOC: i.MX 8 QM/QP
Dual Complex Core System:
Complex 1: 4 x Cortex-A53 @ 1.2 GHz
Complex 2: 2 x Cortex-A72 @ 1.6 GHz
2 x Cortex-M4F @ 264 MHz for advanced system control
ARM v8 64-bit instruction capability; Fully 32-bit capable
Integrated Full Chip Hardware Virtualization capabilities
16-Shader 3D (Vec4)
4K H.265 decode & 1080p h.264 enc/ deccapable VPU
Memory:
LPDDR4 - Up to 8GB
eMMC Flash - 16GB(Expandable upto 256GB)
Micro SD slot (Optional)
QSPI Flash - (Optional)
Communication:
Gigabit Ethernet PHY Transceiver x 2
USB 3.0 High Speed 4-Port Hub
IEEE 802.11 a/b/g/n/ac/ax* Wi-Fi & BT 5.0
SMARC Edge Connector Interfaces:
Gigabit Ethernet x 2 Ports
USB 3.0 Host x 2 Ports
PCIe x 2 Ports
SATA x 1 Port

USB 2.0 OTG x 1 Port
USB 2.0 Host x 2 Ports
SD (4bit) x 1 Port
LVDS1/MIPI_DSI x 2 Channels
HDMI/DP Transmitter x 1 Port
SAI/I2S (Audio Interface) x 2 Ports
Debug UART
Data UART (with CTS & RTS) x 1 Port
Data UART (without CTS & RTS) x 1 Port
CAN x 2 Ports
SPI x 2 Ports
I2C x 1 Port
GPIO, Control & Status Signals
Expansion Connector interfaces*:
LVDS0 x 2 Channels
MLB x 1 Channel
HDMI Receiver X 1 Port (Optional)
CAN x 1 port
SPDIF x 1 port
ESAI x 1 port
GPIOs
OS: Linux 4.14.98 (or higher), Android Pie 9.0.0 (or higher), QNX 7.0.0 (or higher)
Temperature support: -40°C to +85°C
Form Factor:
82mm x 50mm, SMARC v2.1.1 compatible
REACH & RoHS3 Compliant

Note:
** optional*

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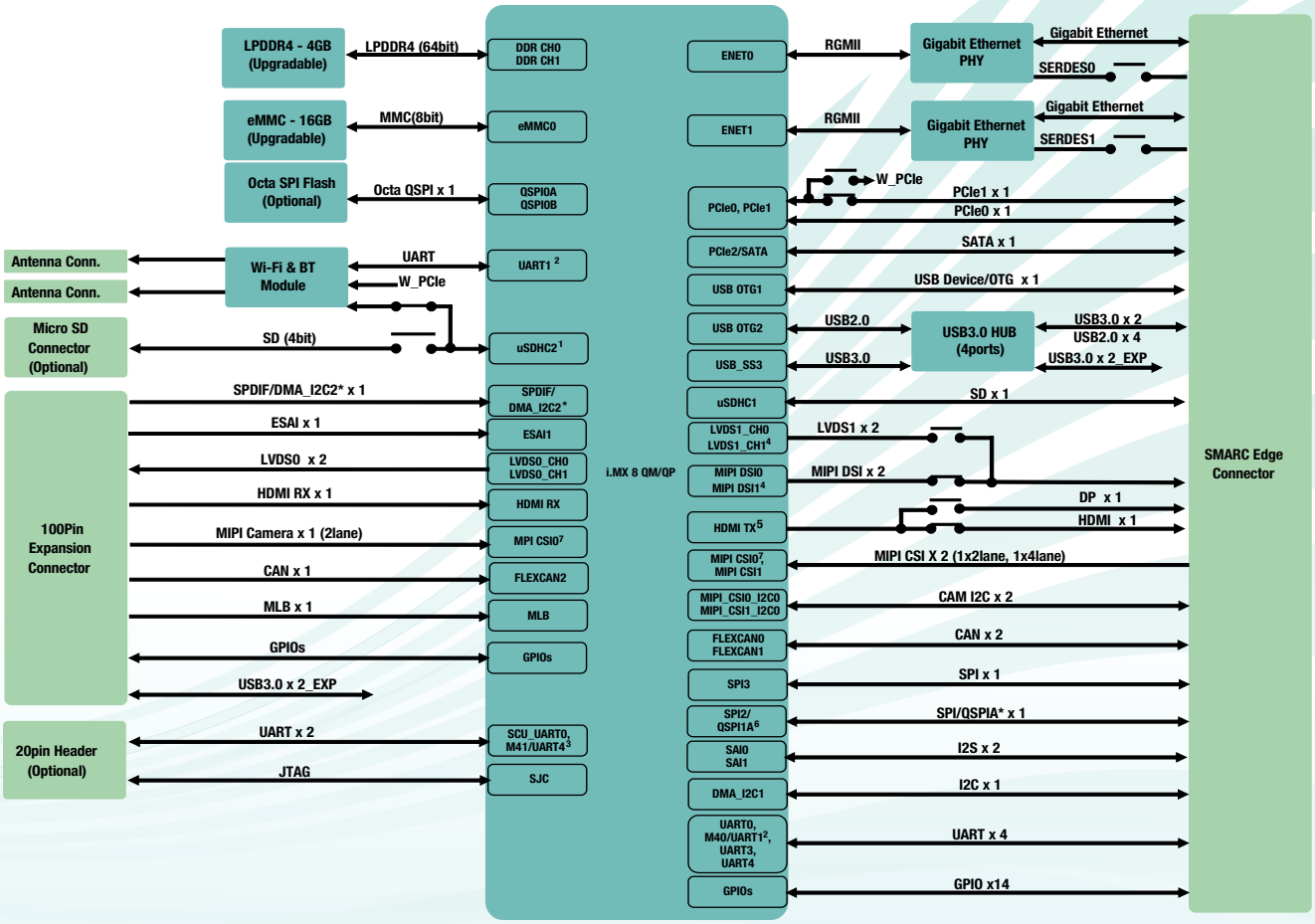
i.MX 8 QM/QP SMARC SOM Block Diagram



Note:

1. JODY-W2 Wi-Fi is supported by using SDHC2 interface, hence On SOM microSD will be an optional feature. PCIe based Wi-Fi can be supported only with JODY-W3 Modules.

2. In default configuration UART1 interface of i.MX 8 is connected to on SOM Bluetooth module. When UART1 is optional near edge connector, M40 UART0 can be supported at SMARC Edge connector.

3. Either M41 UART0 or UART4 can be supported at JTAG Connector

4. Either LVDS1_CH0 or MIPI DSI0 can be supported, similarly LVDS1_CH1 or MIPI DSI1 can be supported. In default configuration MIPI DSI 0 & 1 are supported at SMARC Edge Connector.

5. Either HDMI or Display Port can be supported. In default configuration HDMI is supported

6.Either i.MX 8 SPI2 or QSPIA can be supported. In default configuration SPI2 is supported at SMARC Edge Connector.

7.i.MX 8 MIPI CSI0 1st 2 Lanes are input from SMARC Edge Connector and next 2 Lanes are input from SOM Expansion Connector.

** Optional*

OS SUPPORT

Linux 4.14.98 (or higher)
Android Pie 9.0.0 (or higher)
QNX 7.0.0 (or higher)

DELIVERABLES

i.MX 8 QM/QP SMARC Module
Board Support Package
User Manual

OPTIONAL KITS/Modules

i.MX 8 QM/QP 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.*

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.

i.MX 8 QuadMax 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-G27M-BR-R2.0

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