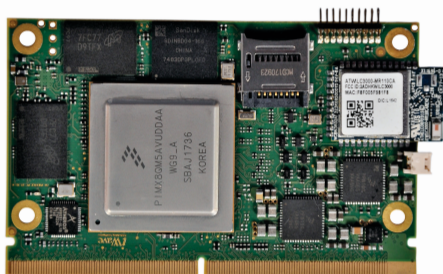


# System On Module iW-RainboW-G27M

## i.MX8QM/DP/DM SMARC Module



The i.MX8QM/DP/DM 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.MX8QM/DP/DM SoC with on SOM Dual 10/100/1000 Mbps Ethernet PHY, USB 3.0 hub and 802.11n Wi-Fi & BLE4.0 module. The i.MX8QM/DP/DM 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, Home Energy Management Systems, Portable Medical Devices, 4K Digital Signage, Media streaming, Augmented & Virtual Reality, Home Automation & Entertainment, Drones, Secure POS and Video analytics.

### iW-RainboW-G27M HIGHLIGHTS

#### Dual Complex Core System:

Complex 1: 4 x Cortex-A53 @ 1.2 GHz

Complex 2: 2 x Cortex-A72 @ 1.8 GHz

2 x Cortex-M4F @ 266 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

Enhanced Vision Capabilities (via GPU)

802.11ac Wi-Fi & BT 4.1

Dual 1000/100/10 Mbps Ethernet

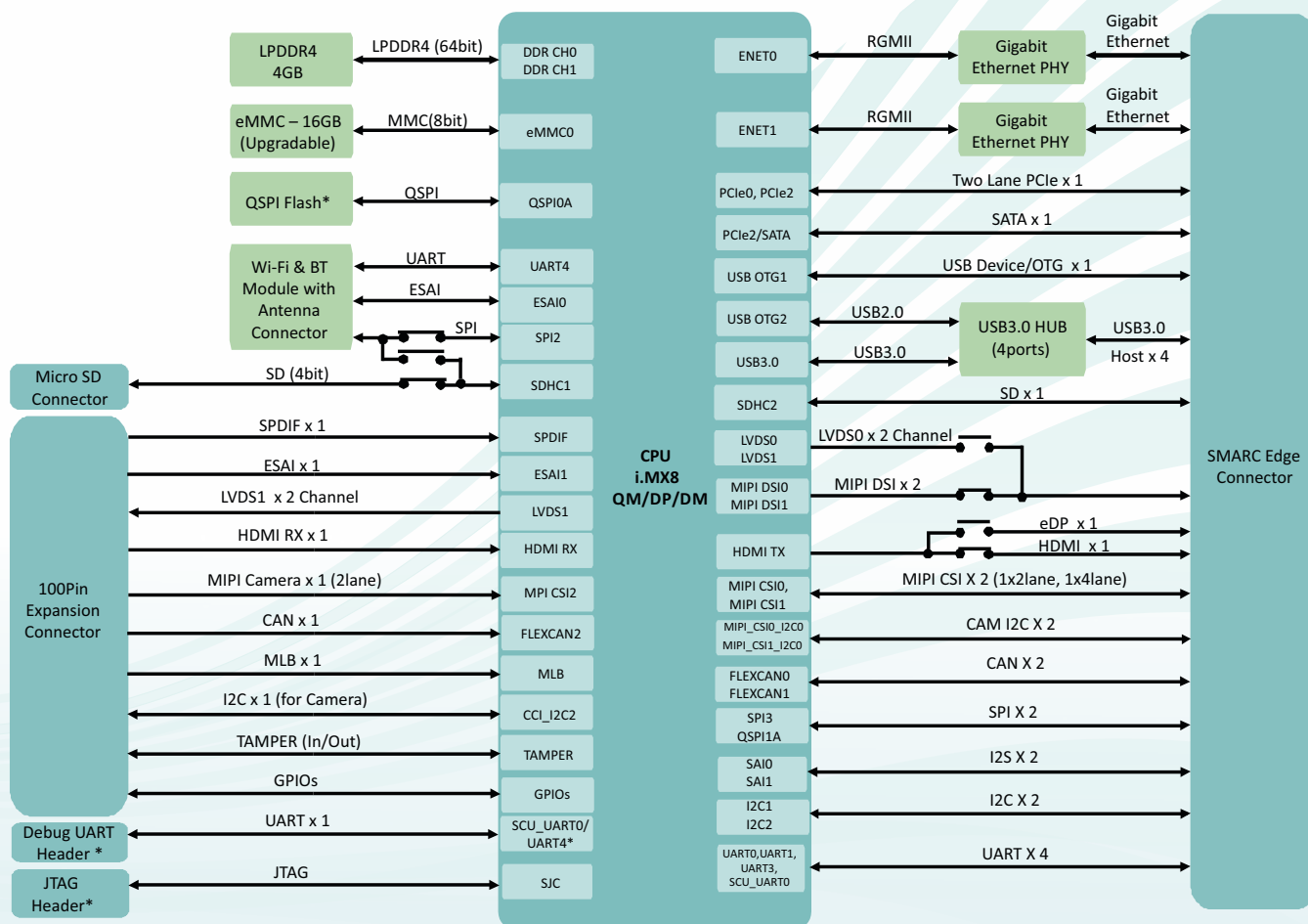
4GB LPDDR4 memory

SMARC R2.0 compatible

### SPECIFICATIONS

SOC: i.MX8QM/DP/DM	
Dual Complex Core System:	
Complex 1: 4 x Cortex-A53 @ 1.2 GHz	
Complex 2: 2 x Cortex-A72 @ 1.8 GHz	
2 x Cortex-M4F @ 266 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 - 4GB (Expandable)	
eMMC Flash - 16GB (Expandable)	
Micro SD slot	
QSPI Flash - 256MB (Optional)	
Communication:	
Gigabit Ethernet PHY Transceiver x 2	
USB 3.0 High Speed 4-Port Hub	
802.11n Wi-Fi + BLE 4.0 Module (Optional)	
SMARC Edge Connector Interfaces:	
Gigabit Ethernet x 2 Ports	
USB3.0 Host x 2 Ports	
PCIe x 1 Port	
SATA x 1 Port	
USB 2.0 OTG x 1 Port	
USB 2.0 Host x 4 Ports	
SD (4bit) x 1 Port	
LVDS/MIPI_DSI x 2 Channels	
HDMI/DP Transmitter x 1 Port	
SSI/I2S (Audio Interface) x 1 Port	
Debug UART	
Data UART (with CTS & RTS) x 2 Port	
Data UART (without CTS & RTS) x 1 Port	
CAN x 2 Ports	
QSPI x 1 Port	
SPI x 1 Port	
I2C x 2 Ports	
12 GPIO's	
Expansion Connector interfaces:	
HDMI RX x 1 port	
LVDS x 2 Channels	
MLB x 1 port	
CAN x 1 port	
SPDIF x 1 port	
ESAI x 1 port	
GPIO	
OS Support: Yocto Linux 4.9.51 & Android Oreo 8.0.0	
Power Supply: 5V through SOM edge connector	
Temperature support: -40°C to +80°C	
Form Factor:	
82mm x 50mm, SMARC R2.0 compatible	
REACH & RoHS Compliant	

## i.MX8QM/DP/DM SMARC SOM Block Diagram



Note: \* Optional

### OS SUPPORT

Yocto Linux 4.9.51  
Android Oreo 8.0.0

### DELIVERABLES

i.MX8QM/DP/DM SMARC Module  
Board Support Package  
User Manual

### OPTIONAL KITS/Modules

i.MX8QM/DP/DM 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.MX8 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>

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