iWave
Embedding Intelligence

# Development Platform iW-RainboW-G27D

# i.MX8 QM/QP/DM SMARC Development Kit

The i.MX8 QM/QP/DM (Quad Max/Quad Plus/DualMax) SMARC Development platform combines the NXP i.MX8 QM/QP/DM application processor based SMARC SOM and iWave's Generic SMARC Carrier Card to offer maximum performance with higher efficiency for complex consumer, medical and industrial embedded computing applications. The board is highly packed with all necessary onboard connectors to validate i.MX8 QM/QP/DM SoC features to the fullest.

**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-G27D HIGHLIGHTS

- i.MX8 QM/QP/DM SoC
- 802.11ac Wi-Fi & BT 4.1
- Dual Gigabit Ethernet
- 4GB LPDDR4 memory
- HDMI and 5.5'' HD AMOLED MIPI DSI Display
- 4 lane MIPI CSI Camera
- I2S Audio Codec
- SMARC R2.0 compatible

## SPECIFICATIONS

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|---|
| **i.MX8 QM/QP/DM SMARC SOM** |
| **Processor:** |
| i.MX8 QuadMax : 2 x Cortex-A72, 4 x Cortex-A53 & 2 x Cortex-M4F<br>i.MX8 QuadPlus : 1 x Cortex-A72, 4 x Cortex-A53 & 2 x Cortex-M4F<br>i.MX8 DualMax : 2 x Cortex-A72 & 2 x Cortex-M4F |
| LPDDR4 - 4GB (Expandable) |
| eMMC Flash - 16GB (Expandable) |
| Micro SD slot |
| OctaSPI Flash - 256MB (Optional) |
| Gigabit Ethernet PHY Transceiver x 2 |
| USB 3.0 High Speed 4-Port Hub |
| 802.11n Wi-Fi & BT 4.0 |
| **OS Support:** |
| Android Oreo 8.1.0 & Linux 4.9.51 |
| **SMARC Carrier Board:** |
| Gigabit Ethernet Jack- 2 Port |
| PCIe x1 slot / MiniPCIe slot - 1 Port |
| SATA x 1 Port |
| USB 3.0 Host TypeA Connector - 2 Ports |
| USB 2.0 Host TypeA Connector - 2 Ports |
| USB 2.0 OTG MicroB Connector - 1 Port |
| Standard SD slot - 1 Port |
| HDMI/DP - 1 Port |
| CAN - 2 Ports |
| 5.5'' HD AMOLED MIPI DSI display |
| Capacitive Touch screen |

| |
|---|
| 4 lane MIPI CSI Camera Connector |
| SSI/I2S Codec |
| General Purpose I2C- 1 Port |
| Full Function UART - 1 Port |
| RTC with backup battery |
| Debug Micro USB Port |
| SMARC GPIOs – 12 Nos |
| **Expansion Connector interfaces:** |
| QSPI x 1 port |
| UART x 1 port |
| I2C x 1 port |
| 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 |
| GPIOs |
| **A&V Expansion Connector interfaces:** |
| 4 lane MIPI DSI display |
| 4 lane MIPI CSI Camera Connector |
| HAD/12S x 1 Port |
| I2C x 2 Ports |
| GPIOs |
| **Power Input:** 12V DC |
| **Operating Temperature:** 0°C to +70°C |
| **Form Factor:** 120mmx120mm Nano ITX Size |



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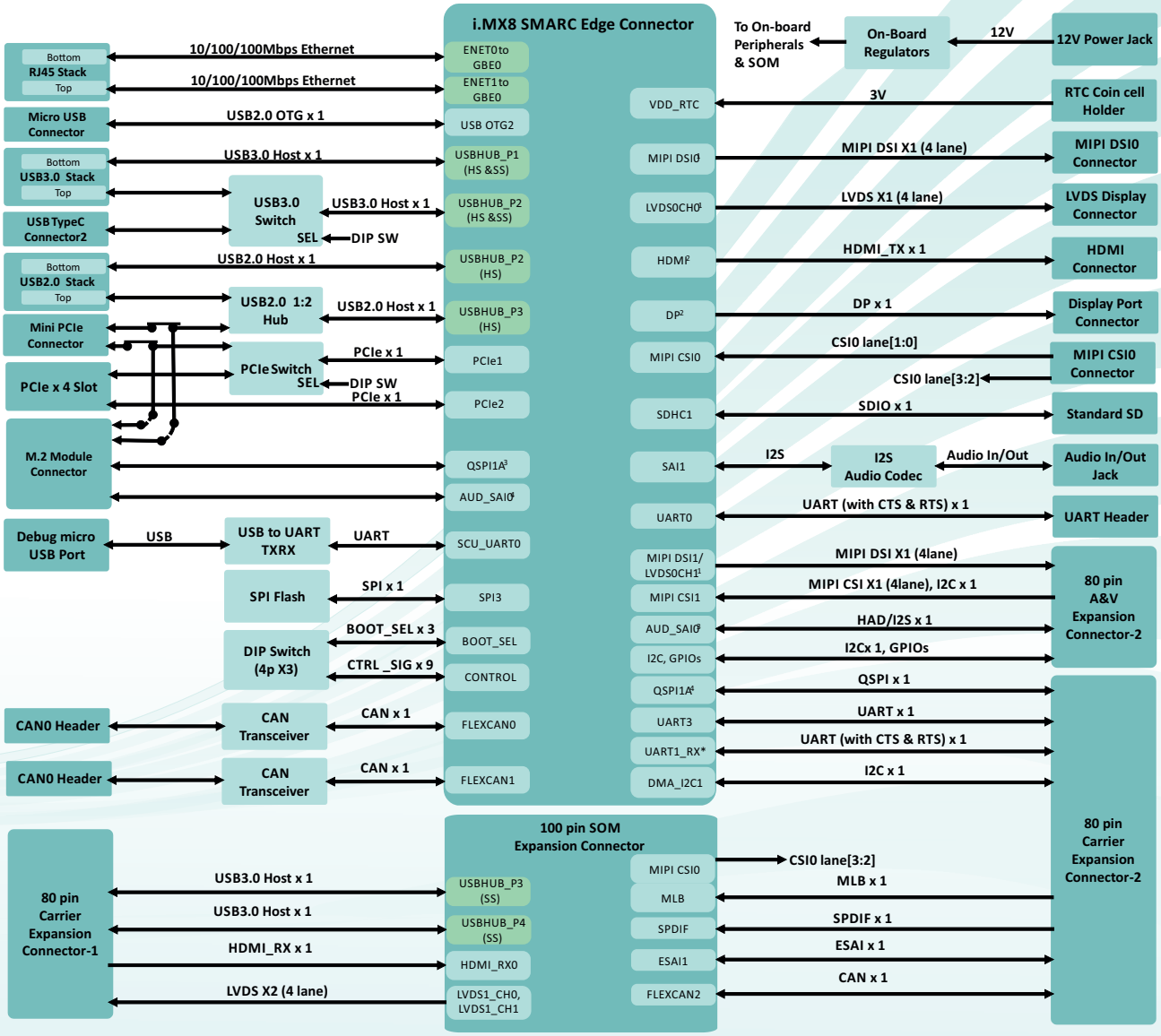
# i.MX8QM SMARC Development Board - Block Diagram




*Note 1. Either MIPI_DSI or LVDS can be supported on SOM, in default configuration MIPI_DSI is supported.*
*Note 2. Either HDMI or DP can be supported on SOM, in default configuration HDMI is supported.*
*Note 3. Shared between M.2 Connector and A&V Expansion Connector*
*Note 4. Shared between M.2 Connector and Expansion Connector*

## OS SUPPORT
Android Oreo 8.1.0 &
Linux 4.9.51

## DELIVERABLES
i.MX8QM SMARC Development Kit
Hardware User Manuals

## OPTIONAL KITS/Modules
Qseven 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.

*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 i.MX8QM SMARC Kit

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-G27D-BR-R1.1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