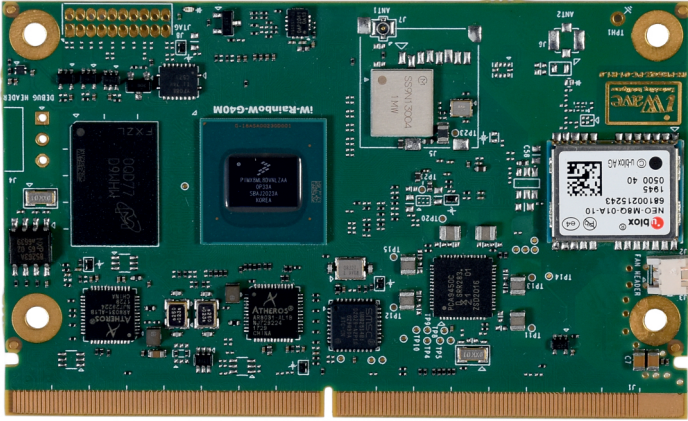


# System On Module iW-RainboW-G40M

## i.MX 8M Plus SMARC Module



The i.MX 8M Plus Quad/QuadLite/Dual SMARC System on Module integrates Quad/Dual Cortex A53 @ up to 1.8GHz, NPU with up to 2.3 TOP/s, two camera inputs and a HDR-capable Image Signal Processor (ISP) capable of 375 MPixels/s, H.265 1080p60 decode, 3D and 2D graphic acceleration, HiFi 4 DSP, MIPI DSI, LVDS (4/8-lane), HDMI TX, USB3.0, PCIe Gen3, on SOM Dual 10/100/1000 Mbps Ethernet PHY with TSN support on one port, IEEE 802.11 a/b/g/n/ac Wi-Fi & BT 5.0 module, USB 2.0 Hub and GNSS Module (optional). The i.MX 8M Plus SMARC System on Module is aimed to offer for applications mainly focusing on Machine Learning, NPU and vision system, advanced multimedia and industrial automation with high reliability.

### iW-RainboW-G40M

#### HIGHLIGHTS

i.MX 8M Plus Q/QL/D SoC with 64-bit ARMv8-A Architecture

NPU with up to 2.3 TOP/s Neural Network performance

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

Dual 1000/100/10 Mbps Ethernet (TSN support on one Port)

GNSS receiver Module –GPS/GLONASS/Galileo/BeiDou (optional)

Excels in ML vision, edge intelligence & advanced multimedia applications

Dual or Quad-core ARM Cortex-A53 up to 1.8GHz & M7 at 800MHz

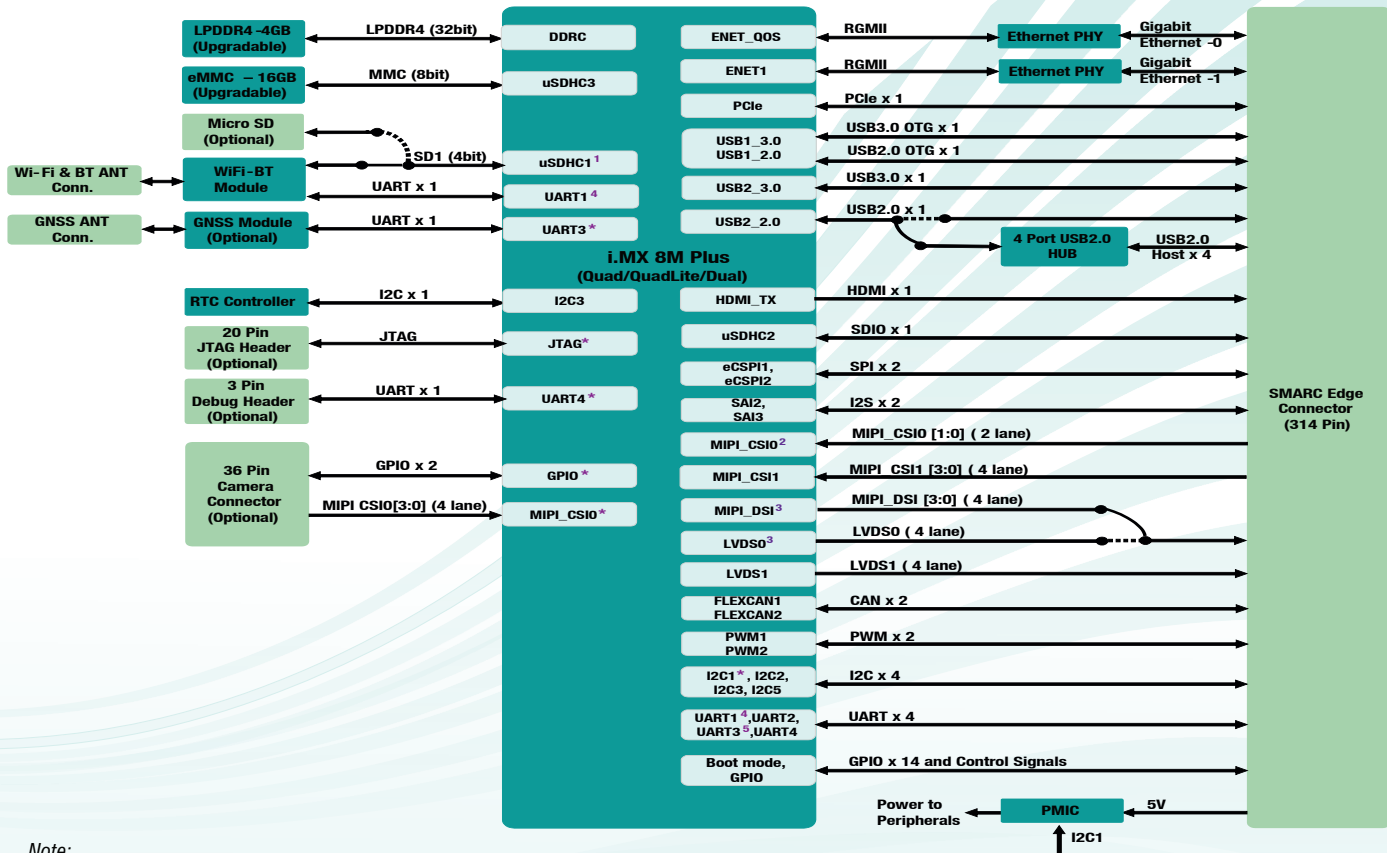
10+ years of Product Longevity Program

SMARC v2.1.1 Compatible SOM

#### SPECIFICATIONS

|  |  |
|--|--|
| <b>SoC</b>   |  |
| <b>i.MX 8M Plus Quad</b> : 4 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP |  |
| <b>i.MX 8M Plus Quad Lite</b> : 4 x Cortex-A53, 1 x Cortex-M7 & GPU                            |  |
| <b>i.MX 8M Plus Dual</b> : 2 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP |  |
| <b>Memory &amp; Storage</b>  |  |
| LPDDR4 -4GB (Expandable up to 8GB)   |  |
| eMMC Flash - 16GB(Expandable upto 128GB)   |  |
| Micro SD slot (Optional)   |  |
| <b>Other</b>   |  |
| IEEE 802.11a/b/g/n/ac Wi-Fi & BLE 5.0  |  |
| GNSS receiver Module –GPS/GLONASS/ Galileo/BeiDou(Optional)                                    |  |
| <b>Edge Connector Features</b>   |  |
| Gigabit Ethernet x 2 (TSN support on one port)   |  |
| PCIe 3.0 x 1   |  |
| USB 2.0 Host x 4   |  |
| USB 3.0 Host x 1 (Not including 2.0 lines)   |  |
| USB 3.0 OTG x 1  |  |
| SD 3.01 x 1  |  |
| HDMI 2.0a TX x 1   |  |
| 4 lane MIPI DSI x1 or LVDS0  |  |
|  | 4 lane LVDS1                               |
|  | 2 lane MIPI CSI0 x 1                       |
|  | 4 lane MIPI CSI1 x 1                       |
|  | I2C x 4 (Power Management I2C is optional) |
|  | CAN FD x 2                                 |
|  | SPI x 2                                    |
|  | I2S x 2                                    |
|  | UART x 4 (One is optional)                 |
|  | PWM x 2                                    |
|  | SMARC GPIOs                                |
|  | <b>Optional Camera Connector Features</b>  |
|  | 4 lane MIPI CSI0 x 1 (Optional)            |
|  | I2C x 1 (Optional)                         |
|  | GPIOs (Optional)                           |
|  | <b>OS Support</b>                          |
|  | Linux 5.4.24 (or higher)                   |
|  | Android 10 (or higher)                     |
|  | Ubuntu 20.04 (or higher)                   |
|  | <b>General Features</b>                    |
|  | <b>Power Input</b>                         |
|  | 5V, 2.5A through SMARC EDGE Connector      |
|  | <b>Form Factor</b>                         |
|  | 82mm x 50mm                                |
|  | <b>Operating Temperature</b>               |
|  | -40°C to +85°C                             |
|  | <b>Environment Specification</b>           |
|  | REACH & RoHS3 Compliant                    |

## i.MX 8M Plus SMARC SOM Block Diagram



- Note:**
- uSDHC1 is default connected to Wi-Fi module and Optionally connected to microSD Connector.
  - MIPI\_CSI0 1st 2 lanes MIPI\_CSI0[1:0] are default connected to SMARC Edge and MIPI\_CSI0[3:0] are Optionally connected to on SOM Camera Connector.
  - MIPI\_DSI and LVDS0 is shared in SMARC Edge Connector where MIPI\_DSI is default connected and LVDS0 is optionally connected to SMARC edge.
  - In default configuration UART1 interface of i.MX 8M plus is connected to on SOM Bluetooth module, hence SMARC SER2 will be an optional feature.
  - In default configuration UART3 interface of i.MX 8M plus is connected to SMARC SER1, hence on SOM GNSS module will be an optional feature.
- \* Optional Feature

### OS SUPPORT

Linux 5.4.24 (or higher)  
Android 10 (or higher)  
Ubuntu 20.04 (or higher)

### DELIVERABLES

i.MX 8M Plus SMARC Module  
Board Support Package  
User Manual

### OPTIONAL KITS/Modules

i.MX 8M Plus SMARC 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

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\*Optional items not included in the standard deliverables.

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### i.MX 8M Plus SMARC Module

The device can be ordered online from the iWave Website  
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