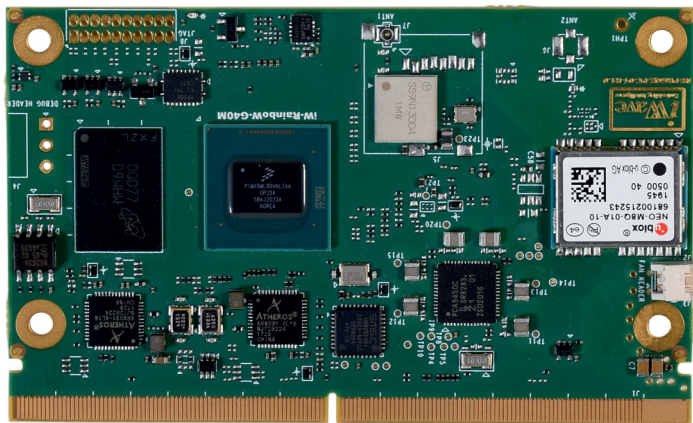


System On Module iW-RainboW-G40M

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.

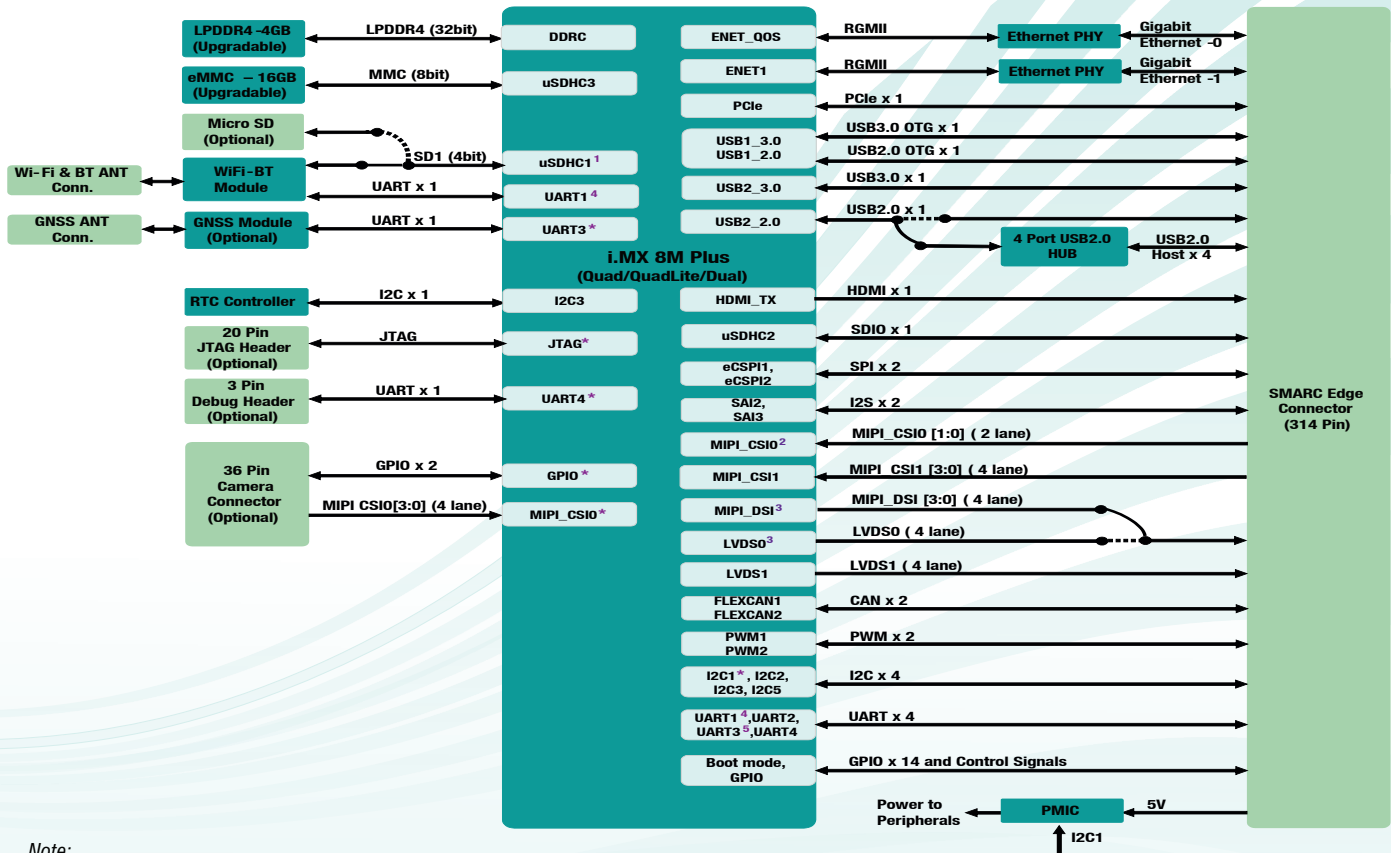
iW-RainboW-G40M HIGHLIGHTS

- 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

SoC	
i.MX 8M Plus Quad : 4 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP	
i.MX 8M Plus Quad Lite : 4 x Cortex-A53, 1 x Cortex-M7 & GPU	
i.MX 8M Plus Dual : 2 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP	
Memory & Storage	
LPDDR4 -4GB (Expandable up to 8GB)	
eMMC Flash - 16GB(Expandable upto 128GB)	
Micro SD slot (Optional)	
Other	
IEEE 802.11a/b/g/n/ac Wi-Fi & BLE 5.0	
GNSS receiver Module –GPS/GLONASS/ Galileo/BeiDou(Optional)	
Edge Connector Features	
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
	Optional Camera Connector Features
	4 lane MIPI CSI0 x 1 (Optional)
	I2C x 1 (Optional)
	GPIOs (Optional)
	OS Support
	Linux 5.4.24 (or higher)
	Android 10 (or higher)
	Ubuntu 20.04 (or higher)
	General Features
	Power Input
	5V, 2.5A through SMARC EDGE Connector
	Form Factor
	82mm x 50mm
	Operating Temperature
	-40°C to +85°C
	Environment Specification
	REACH & RoHS3 Compliant

i.MX 8M Plus SMARC SOM Block Diagram



- Note:**
1. uSDHC1 is default connected to Wi-Fi module and Optionally connected to microSD Connector.
 2. 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.
 3. MIPI_DSI and LVDS0 is shared in SMARC Edge Connector where MIPI_DSI is default connected and LVDS0 is optionally connected to SMARC edge.
 4. 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.
 5. 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

iWave Systems Technologies is an ISO 9001:2015 certified company, head quartered in Bangalore India established in the year 1999. The company focuses on providing embedded solution and services for Industrial, Medical, Automotive and various other Embedded Computing applications. iWave Systems offers wide range of System On Modules and Single Board Computers built using wide range of CPU and FPGA SoC platforms with different form factors such as Qseven, SMARC, SODIMM and HPC by closely working with Tier-1 silicon companies such as NXP, Xilinx, Intel etc.

iWave Systems offers various state of art ready ODM solutions such as Connected Telematic Control Unit / OBD II devices for the automotive edge analytics, Comprehensive ARINC818 solutions for the low latency Aerospace applications and Rugged IP rated performance scalable HMI solutions for Industrial applications.

iWave Systems also provides comprehensive Engineering design services involving Embedded Hardware, FPGA and Software development. iWave offers carrier board and custom hardware development with manufacturing and certification services. iWave's Hardware expertise spans complex board design up to 30 layers; Analog, Digital & RF Designs; FPGA Development up to 3+ million gates and VHDL / Verilog RTL Development & Verification. Our Software expertise ranges from OS Porting, Firmware & Device Drivers Development and Wireless & Protocol Stacks.

*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
<https://www.iwavesystems.com/product/i-mx-8m-plus-smarc-som/>
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