

# System On Module iW-RainboW-G40D i.MX 8M Plus SMARC Development Board



The i.MX 8M Plus SMARC Development Platform incorporates i.MX 8M Plus SoC based SMARC SOM and SMARC Carrier board for complete validation of i.MX 8M Plus SoC functionality. The Development board can be used for quick prototyping of various applications targeted by the i.MX 8M Plus Applications Processor. With the 120mmx120mm Nano ITX size, SMARC Carrier board is highly packed with all the necessary on-board connectors to validate the features of i.MX 8M Plus SMARC SOM.

**APPLICATION:** Applications focusing on Machine Learning and Artificial Intelligence, NPU & Vision System, advanced multimedia and industrial automation, Vision and advanced sensing, Factory Automation, Machine Vision and more.

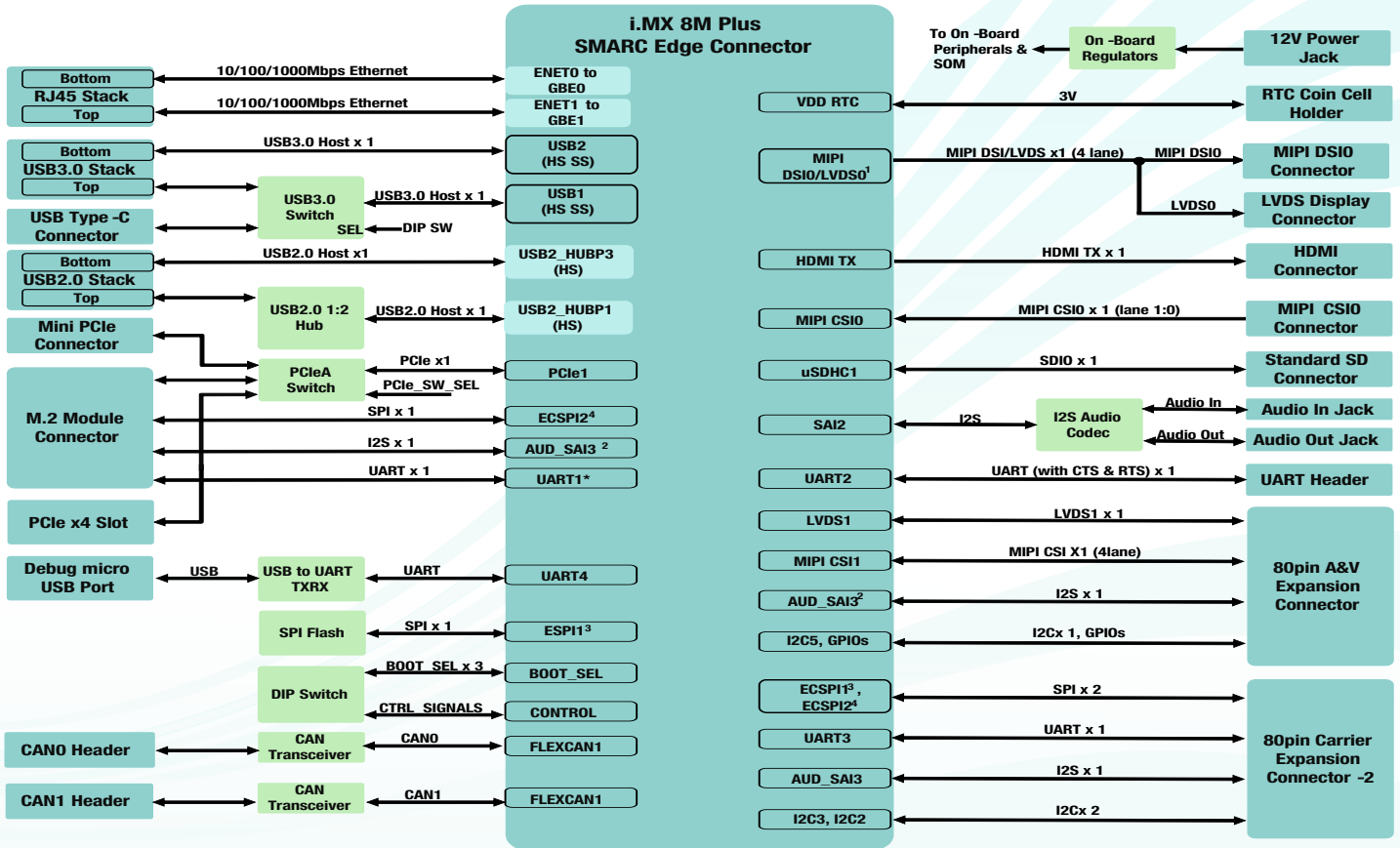
## iW-RainboW-G40D HIGHLIGHTS

- i.MX 8M Plus Q/QL/D SoC with 64-bit ARMv8-A Architecture
- Dual or Quad-core ARM Cortex-A53 up to 1.8GHz & M7 at 800MHz
- NPU with up to 2.3 TOP/s Neural Network performance
- Excels in ML vision, edge intelligence & advanced multimedia applications
- 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)
- 4K HDMI & 5.5" HD AMOLED MIPI DSI Display
- Quick customization services in a very shorter period.
- 10+ years of Product Longevity Program

## SPECIFICATIONS

SoC	
<b>i.MX 8M Plus Quad</b> : 4 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP	USB 2.0 Host TypeA Connector - 2 Ports
<b>i.MX 8M Plus Quad Lite</b> : 4 x Cortex-A53, 1 x Cortex-M7 & GPU	USB 3.0 OTG Type-C Connector - 1 Port
<b>i.MX 8M Plus Dual</b> : 2 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU ,ISP & HiFi4 Audio DSP	Standard SD slot - 1 Port
LPDDR4 -2GB (Expandable up to 4GB)	SPI Flash - 1
eMMC Flash - 16GB(Expandable upto 128GB)	HDMI2.0 - 1 Port
On SOM Micro SD slot (Optional)	CAN FD - 2 Ports
Standard SD/MMC	5.5" HD AMOLED MIPI DSI display with Capacitive Touch Screen
Gigabit Ethernet PHY Transceiver x 2 (One with TSN support)	20pin LVDS Connector
USB 2.0 High-Speed 4-Port Hub	MIPI CSI Camera Connector
IEEE 802.11a/b/g/n/ac Wi-Fi & BLE 5.0	Audio In & Out Jack through I2S Codec x1
GNSS receiver Module –GPS/GLONASS/Galileo/BeiDou(Optional)	Full Function UART - 1 Port
4 Lane MIPI CSI Camera Connector (Optional)	RTC with backup battery
<b>OS Support</b>	Debug Micro USB Port
Linux 5.4.70, Android 11	<b>Carrier Expansion Connector</b>
<b>SMARC Carrier Board</b>	SPI x 2
Gigabit Ethernet Jack- 2 Port	UART x 1
PCIe x1 slot / MiniPCIe slot - 1 Port	I2S x 1, I2C x 2
USB 3.0 Host TypeA Connector - 2 Ports (Top Port muxed with type-C)	<b>A&amp;V Expansion Connector interfaces</b>
	4 lane LVDS, 4 lane MIPI CSI
	SAI/I2S x 1 Port
	I2C x 1 Port, GPIOs
	<b>Power Input</b>
	12V, 2A DC
	<b>Operating Temperature</b>
	0°C to +60°C
	<b>Form Factor</b>
	120mmx120mm Nano ITX Size

## i.MX 8M Plus SMARC Development Kit Block Diagram



Note: \* Optional

1. Either MIPI\_DSI or LVDS can be supported on SOM, in default configuration MIPI\_DSI is supported.
2. Shared between M.2 Connector and A&V Expansion Connector
3. Shared between SPI Flash and Expansion Connector-2
4. Shared between M.2 Connector and Expansion Connector-2

### OS SUPPORT

Linux 5.4.70  
Android 11

### DELIVERABLES

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

### OPTIONAL KITS/Modules

Camera Module  
Heat Sink / Heat Spreader

### 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 DevKit

The device can be ordered online from the iWave Website  
<https://www.iwavesystems.com/product/i-mx-8m-plus-smarc-som/>  
Or from our Local Partners in your region  
<http://www.iwavesystems.com/about-us/business-partner.html>

iW-G40D-BR-R2.1

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