

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.

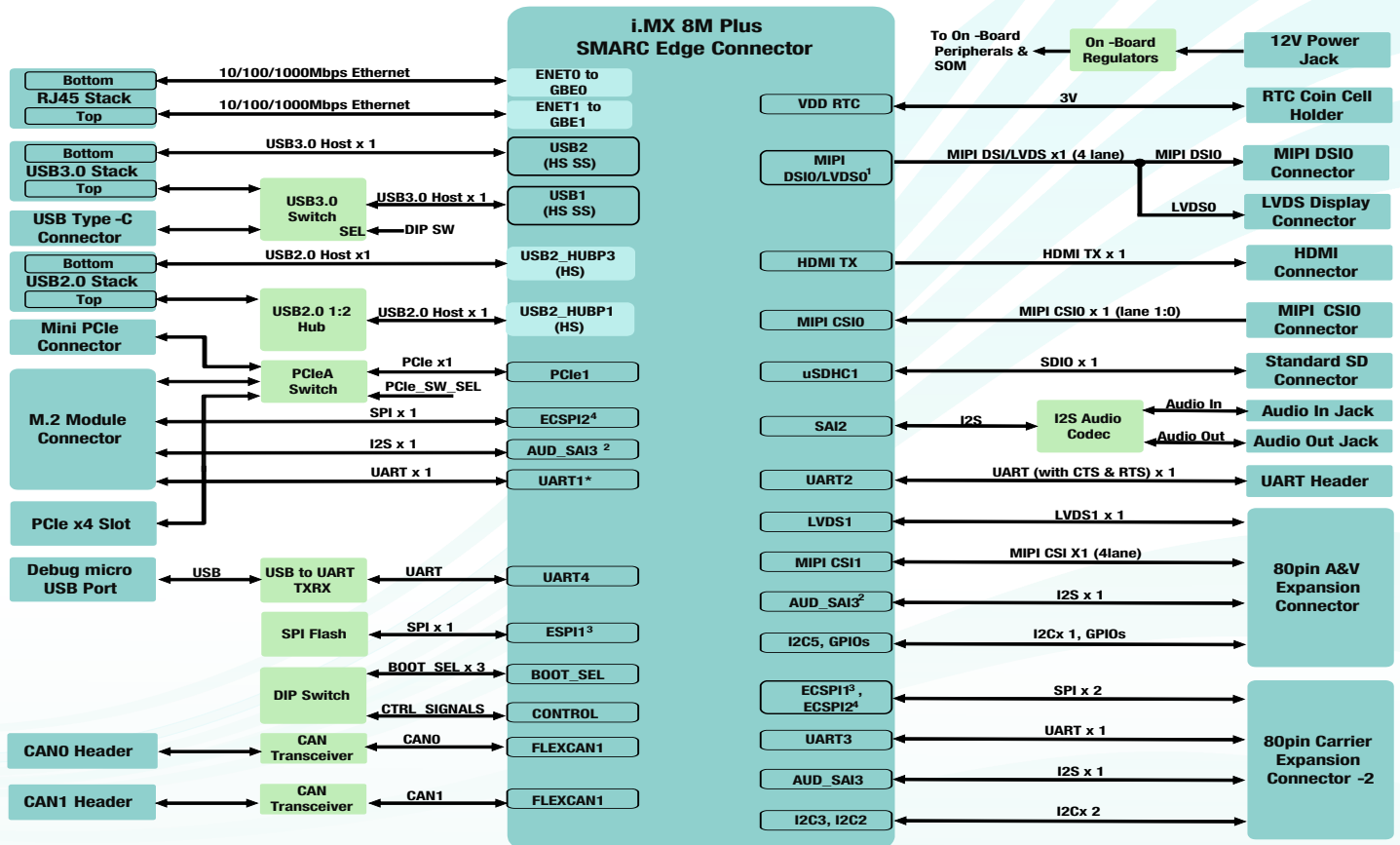
iW-RainboW-G40D HIGHLIGHTS

- 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	
i.MX 8M Plus Quad : 4 x Cortex-A53, 1 x Cortex-M7, GPU, VPU, NPU, ISP & HiFi4 Audio DSP	USB 2.0 Host TypeA Connector - 2 Ports
i.MX 8M Plus Quad Lite : 4 x Cortex-A53, 1 x Cortex-M7 & GPU	USB 3.0 OTG Type-C Connector - 1 Port
i.MX 8M Plus Dual : 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
OS Support	Debug Micro USB Port
Linux 5.4.70, Android 11	Carrier Expansion Connector
SMARC Carrier Board	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)	A&V Expansion Connector interfaces
	4 lane LVDS, 4 lane MIPI CSI
	SAI/I2S x 1 Port
	I2C x 1 Port, GPIOs
	Power Input
	12V, 2A DC
	Operating Temperature
	0°C to +60°C
	Form Factor
	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

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.

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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 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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