

# Single Board Computer iW-RainboW-G40S

## i.MX 8M Plus Pico ITX SBC



The i.MX 8M Plus Pico ITX SBC integrates NXP's i.MX 8M Plus offerings Quad/ QuadLite /Dual Cortex A53 @ up to 1.8GHz, NPU with up to 2.3 TOP/s, HDR capable Image Signal Processor (ISP) with IEEE 802.11 a/b/g/n/ac/ax Wi Fi & BT 5.0 module (ax is Optional), 10/100/1000 Mbps Ethernet PHY, MIPI-DSI, LVDS and HDMI Display support, MIPI CSI Camera support and GNSS Module. The i.MX 8M Plus SBC is aimed to offer for applications mainly focusing on Machine Learning, NPU and vision system, advanced multimedia and industrial automation with high performance. With the 100mm x 72mm Pico-ITX form factor, the SBC is packed with all the necessary on-board connectors.

### iW-RainboW-G40S HIGHLIGHTS

- i.MX 8M Plus Q/QL/D CPU with 64-bit ARMv8 Architecture
- NPU with up to 2.3 TOP/s Neural Network performance
- Up to 8GB LPDDR4 Memory
- Multi-OS Platform Support
- 10+ years of Product Longevity Program
- IEEE 802.11a/b/g/n/ac/ax Wi-Fi (ax is optional) & Bluetooth 5.0
- Dual 1000/100/10 Mbps Ethernet
- +40°C to +85°C Operation

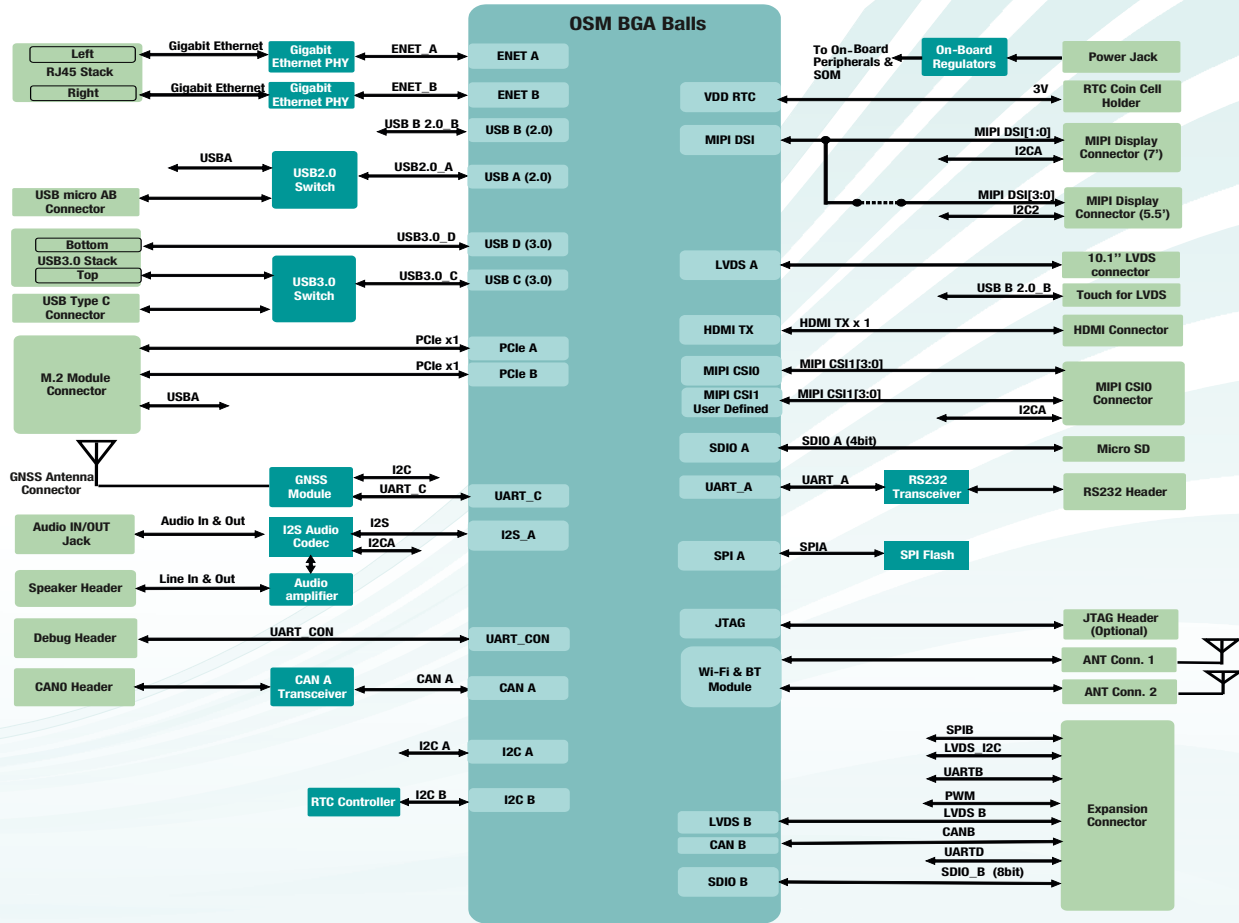
### SPECIFICATIONS

<b>CPU</b>	2 Lane MIPI DSI Display (Optional)
<b>i.MX 8M Plus Quad</b> : 4 x Cortex-A53, 1 x Cortex-M7, GPU, VPU	MIPI CSI Camera Connector
<b>i.MX 8M Plus Quad Lite</b> : 4 x Cortex-A53, 1 x Cortex-M7 & GPU	<b>Miscellaneous Interfaces</b>
<b>i.MX 8M Plus Dual</b> : 2 x Cortex-A53, 1 x Cortex-M7, GPU, VPU	Debug UART Connector
<b>Memory &amp; Storage</b>	RTC Battery Connector
LPDDR4 -2GB (Expandable up to 8GB)	JTAG Header
eMMC Flash - 16GB (Expandable up to 256GB)	M.2 Connector Key B
Micro SD Slot	PCIe 3.0 x 1
<b>Network &amp; Communication</b>	USB 2.0 x 1
Gigabit Ethernet x2 (Dual RJ45 Mag-jack Connector)	Nano SIM Connector
USB 3.0 x2 (Dual-stack Type-A Connector)	<b>Expansion Connector Features</b>
USB 2.0 OTG (micro AB Receptacle Connector)	4 lane MIPI DSI x 1
IEEE 802.11 a/b/g/n/ac/ax Wi-Fi & BT 5.0 (ax is optional)	UART x 1
GNSS receiver Module -GPS/GLONASS/Galileo/BeiDou	8 bit SD (optional)
RS232 Header x 1	4 lane LVDS x 1 Channel
USB Header x 1	SPI x 1 Port
CAN Header x 1	PWM x 1
<b>Audio/Video Features</b>	CAN x1 Port
HDMI Output through HDMI (Type A)	<b>OS Support</b>
LVDS Display Connector x 1	Linux 5.4.70
3.5mm Audio IN/OUT Jack	<b>General Features</b>
Speaker Out Header	<b>Power Input:</b>
5.5inch MIPI DSI Display	7V to 24V
	<b>Form Factor:</b>
	100mm x 72mm
	<b>Operating Temperature:</b>
	-40°C to +85°C
	<b>Environment Specification:</b>
	REACH & RoHS3 Compliant

**Note:**

Optional features are not supported in default configuration.

## i.MX 8M Plus Pico ITX SBC Block Diagram



Note:  
\*Supported through Vendor Defined pins.

### OS SUPPORT

Linux 5.4.70

### DELIVERABLES

i.MX 8M Plus Pico ITX SBC  
Board Support Package  
User Manual  
Quick Start Guide

### OPTIONAL KITS/Modules

i.MX 8M Plus OSM Development Kit  
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.

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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 Pico ITX SBC

The device can be ordered online from the iWave Website  
<https://www.iwavesystems.com/product/i-mx-8m-plus-osm-lga-module/>  
Or from our Local Partners in your region  
<http://www.iwavesystems.com/>

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