



Single Board Computer iW-RainboW-G34S i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC

The i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC integrates Quad Arm® Cortex®-A53 core which operates at speeds of up to 1.6 GHz, a general purpose Cortex®-M4 core, 1080p60 VP9 Profile, 1080p60 HEVC/H.265 Decoder, 1080p60 AVC/H.264, 1080p60 VP8, 1080p60 AVC/H.264 Encoder, MIPI DSI(4-lane) display interface, MIPI-CSI (4-lane) camera interface based i.MX 8M Mini or i.MX 8M Nano SoC with on board 10/100/1000 Mbps Ethernet PHY,USB 2.0 hub, 802.11n Wi-Fi & BT 5.0 module, MIPI-DSI to LVDS/HDMI bridge & GNSS module (optional).

This board is aimed to offer applications such as Industrial HMI, Audio/Video Streaming devices, Digital Signage, Home Automation, and General Embedded applications. With the 100mm x 72mm Pico-ITX form factor, the SBC is packed with all the necessary on-board connectors.

Rs232 x 1 (Optional)

Audio/Video Features

HDMI Output through HDMI (Type A)

2 Lane MIPI DSI Display (Optional) Expansion Connector Interfaces

Rs485 x 1

Connector 10.1" LVDS Display

I2S Audio Codec 3.5mm Audio IN/OUT

I2C x 1(Optional) SAI x 1(Optional) SPI x 1(Optional) Debug UART x 1 Port PWM x 1 Port

JTAG Header RTC Battery Connector M.2 Connector Key B

Power Supply

Miscellaneous Interfaces Debug UART Connector (Optional)

> PCle x 1 (Optional)⁴ USB 2.0 x 1 I2S x 1 I2C x 1

Nano SIM Connector

Environment Specification:

RoHS2 and REACH Compliance

12V,2A input through External Adaptor ⁶ Form Factor: 100mm X 72mm Operating Temperature: -40°C to +85°C

MIPI CSI x 1 Channel

CAN x 1

iW-RainboW-G34S HIGHLIGHTS

i.MX 8M Mini or i.MX 8M Nano Q/QL/D/DL/S/SL CPU 64-bit ARMv8 Architecture 10+ years of Product Longevity Program IEEE 802.11a/b/g/n/ac Wi-Fi & Bluetooth 5.0 1000/100/10 Mbps Ethernet

SPECIFICATIONS

SOC: i.MX 8M Mini ¹ Quad: 4 x Cortex - A53, 1 x Corte

GPU & VPU
QuadLite: 4 x Cortex - A53, 1 x Cortex - M4 & GPU
Dual: 2 x Cortex - A53, 1 x Cortex - M4@, GPU &VPU
Dual Lite: 2 x Cortex - A53, 1 x Cortex - M4, GPU
Solo: 1 x Cortex - A53, 1 x Cortex - M4, GPU & VPU
Solo Lite: 1 x Cortex - A53, 1 x Cortex - M4, GPU
SOC: i.MX 8M Nano ¹
Quad: 4 x Cortex - A53, 1 x Cortex - M7 & GPU
QuadLite: 4 x Cortex - A53, 1 x Cortex - M7
Dual: 2 x Cortex - A53, 1 x Cortex - M7 & GPU
Dual Lite: 2 x Cortex - A53, 1 x Cortex - M7
Solo: 1 x Cortex - A53, 1 x Cortex - M7 & GPU
Solo Lite: 1 x Cortex - A53, 1 x Cortex - M7
Memory & Storage
LPDDR4 - 1GB (Expandable Up to 4GB (Mini) / 2GB (Nano)) 2,3
eMMC Flash - 8GB (Expandable upto 128GB)
Micro SD slot
Network & Communication
WiFi 802.11a/b/g/n/ac + Bluetooth 5.0 Module
Gigabit Ethernet PHY Transceiver x 1
PCIe to Gigabit Ethernet PHY Transceivers x 1^{4}
USB 2.0 Hub through dual stack Type - A Connector $^{\rm 5}$
USB 2.0 OTG port through - micro AB Receptacle Connector ⁵

GNSS Module (Optional)

Note:

1. There are six configurations of i.MX 8M Mini or i.MX 8M Nano SoC supported by NXP, hence in this document i.MX 8M Mini or i.MX 8MNano Q/QL/D/DL/S/SL is used to represent either of one based on SBC Part Number.

2. The i.MX 8M Mini CPU can support up to 8GB RAM but considering the available LPDDR4 Chips, SBC can support up to 4GB (32 GB) RAM

3. Memory Size will differ based on iWave's SBC Product Part Number.

4. PCIe is NC in i.MX 8M Nano SoC.

5. Since USB2 is NC in i.MX 8M Nano SoC, USB2.0 lines are supported through a switch

6. The i.MX 8M Mini or i.MX 8M Nano SBC can support input power 7V to 24V. By default it is designed to support 12V.





i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC Block Diagram



OS SUPPORT

Linux 5.10.72 Android 11 Ubuntu 20.04 LTS Buildroot 2021.02.8 LTS

DELIVERABLES

i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC Board Support Package User Manual

OPTIONAL KITS/Modules

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

*Optional items not included in the standard deliverables.

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

INDIA

iWave Systems Technologies Pvt Ltd. #7/B, 29th Main, BTM Layout 2nd Stage, Bangalore - 560 076 mktg@iwavesystems.com

www.iwavesystems.com

JAPAN

Wave Japan Inc. 8F Kannai Sumiyoshi Building, 3-29 Sumiyoshi-cho,Naka -ku, Yokohama Kanagawa, Japan mktg@iwavesystems.com

i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC

The device can be ordered online from the iWave Website https://www.iwavesystems.com/product/i-mx-8m-mini-nano-pico-itx-sbc/ Or from our Local Partners in your region http://www.iwavesystems.com/about-us/business-partner.html

EUROPE

International Sales & Marketing Europe Venkelbaan 55 2908KE Capelle aan den Ijssel, The Netherlands info@iwavesystems.eu USA iWave USA 1692 Westmont Ave. Campbell Ca95008 USA info@iwavesystems.us