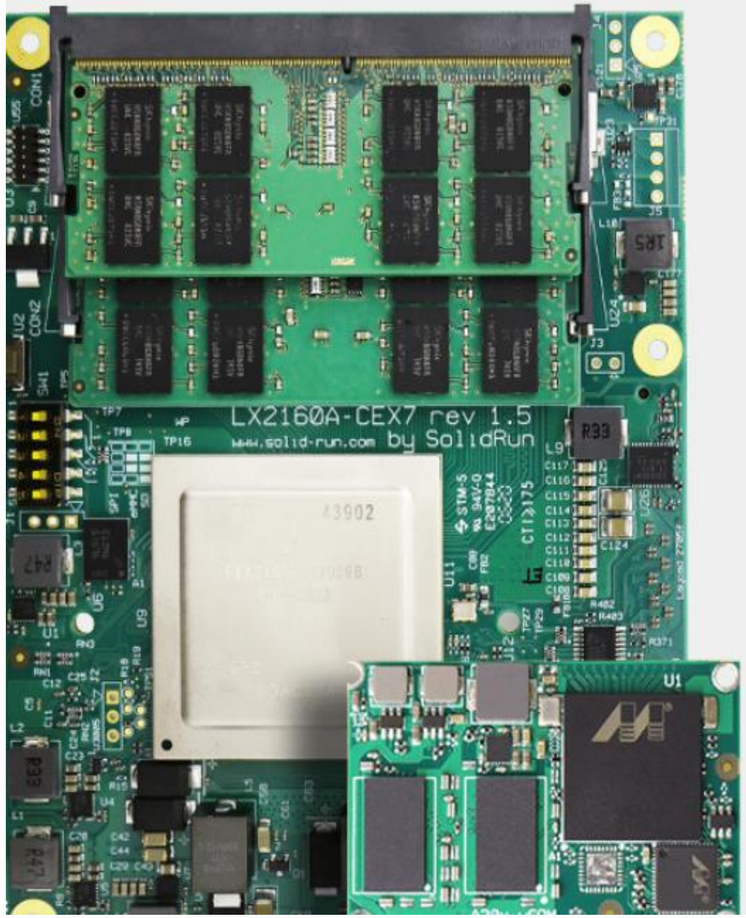
CN9130 COM Express type 7

CN9130 SOM ***New***

ARMADA A388 SOM



i.MX8M Mini SOM

i.MX6 SOM

AM64x SOM ***New***

Edge Gateways

SolidSense N6 Indoor

SolidSense N6 Outdoor

SolidSense N6 Industrial

SolidSense N8 IoT Compact ***New***

PoE NVR Platforms

MACCHIATObin Mini ITX

SBC & Fanless Computers

HummingBoard i.MX8 SBC

HummingBoard i.MX6 SBC

HummingBoard AM64x SBC ***New***

ClearFog CN9130 SBC ***New***

ClearFog A388 SBC

CuBox Multimedia Series

NXP I.MX 8 FAMILY

New Standard of Embedded Multimedia & AI Acceleration

i.MX 8M Plus

Cortex® A53

4 x Arm Cortex-A53 cores, 1 x Cortex-M7
Integrated NPU (2.3 TOPs) for embedded AI/ML applications and edge inferencing
Dual to Quad-core options with onboard WiFi/BT, eMMC, MIPI-CSI, LVDS
Connect up to 2 MIPI cameras, 4K vision with HDR for detailed image processing

i.MX 8M

Cortex® A53

4 x Arm Cortex-A53 cores, 1 x Cortex-M4
Dual to Quad core ArmV8 64-bit processors up to 1.5GHz
Onboard Dual Band WiFi 802.11 a/b/g/n/ac with programmable 2.4Ghz SDR
Multimedia powerhouse with 4K and dual display support with high-speed USB 3.0 and PCIe interfaces, 1080p60 video decode/encode

i.MX 8M Mini

Cortex® A53

4 x Arm Cortex-A53 cores, 1 x Cortex-M4
Single to Quad-core ArmV8 64-bit processors up to 1.8GHz
Onboard Dual Band WiFi 802.11 a/b/g/n/ac with Bluetooth 5.0
Pin to Pin compatible with i.MX 8M Nano application

i.MX 8M Nano

Cortex® A53

i.MX8 Product Family

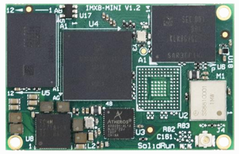
i.MX8M Plus

System on Module

- Integrated NPU (2.3 TOPs) for embedded AI/ML applications and edge inferencing
- Dual to Quad-core options with onboard WiFi/BT, eMMC, MIPI-CSI, LVDS
- Connect up to 2 MIPI cameras, 4K vision with HDR for detailed image processing

i.MX8M Mini

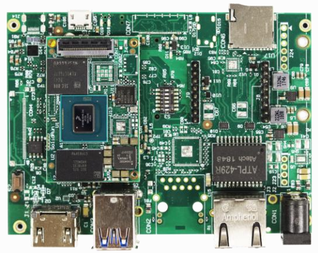
System on Module



- Single to Quad-core ArmV8 64-bit processors up to 1.8GHz
- Onboard Dual Band WiFi 802.11 a/b/g/n/ac with Bluetooth 5.0
- CPin to Pin compatible with i.MX 8M Nano application processor (Ordering option)

HummingBoard Mate

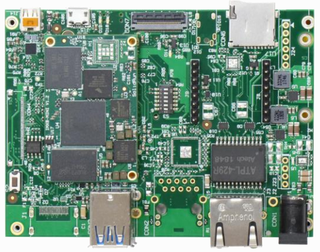
Up to 4 x Arm Cortex-A53 cores



- SoC: NXP i.MX8M Plus based Dual to Quad Core SOM Cortex A53 / NXP i.MX8M Mini based Single to Quad Core SOM Cortex A53
- Storage: 8GB eMMC
- Temperature: Commercial (0C to 70C), Industrial (-40C to 85C)Temperature: Commercial (0C to 70C), Industrial (-40C to 85C)

HummingBoard Ripple

Up to 4 x Arm Cortex-A53 cores



- SoC: NXP i.MX8M Mini based Single to Quad Core SOM Cortex A53 / NXP i.MX8M Plus based Dual to Quad Core SOM Cortex A53
- Memory: Up to 4GB, Storage: 8GB eMMC
- Temperature: Commercial (0C to 70C), Industrial (-40C to 85C)

HummingBoard Pulse

Up to 4 x Arm Cortex-A53 cores

- SoC: NXP i.MX8M Mini based Single to Quad Core SOM Cortex A53 / NXP i.MX8M Plus based Dual to Quad Core SOM Cortex A53
- Memory: Up to 4GB, Storage: 8GB eMMC, PoE sink support 802.3af Class 0
- Temperature: Commercial (0C to 70C), Industrial (-40C to 85C)

i.MX8 Product Family

CuBox-M

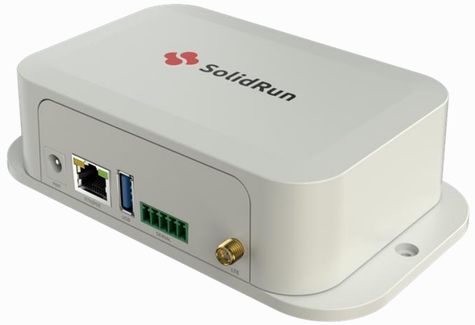
Micro-edge computer

NXP i.MX 8M Plus Processor

- Integrated NPU (2.3 TOPs) for embedded AI/ML applications and edge inferencing
- Quad-core with onboard WiFi/BT, PoE, eMMC
- Small footprint

SolidSense N8 Compact

IoT Edge Gateway

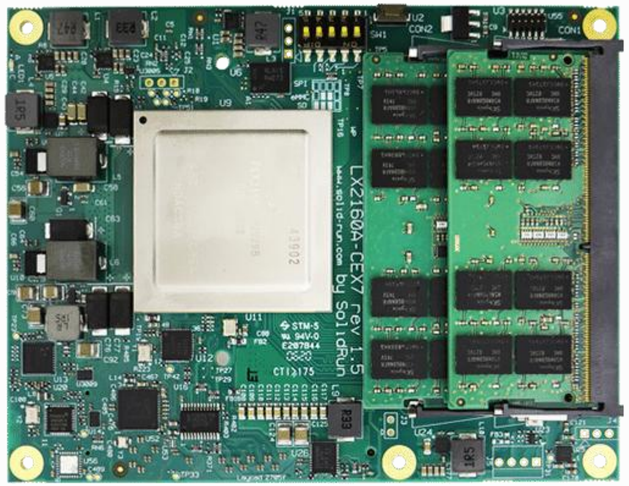


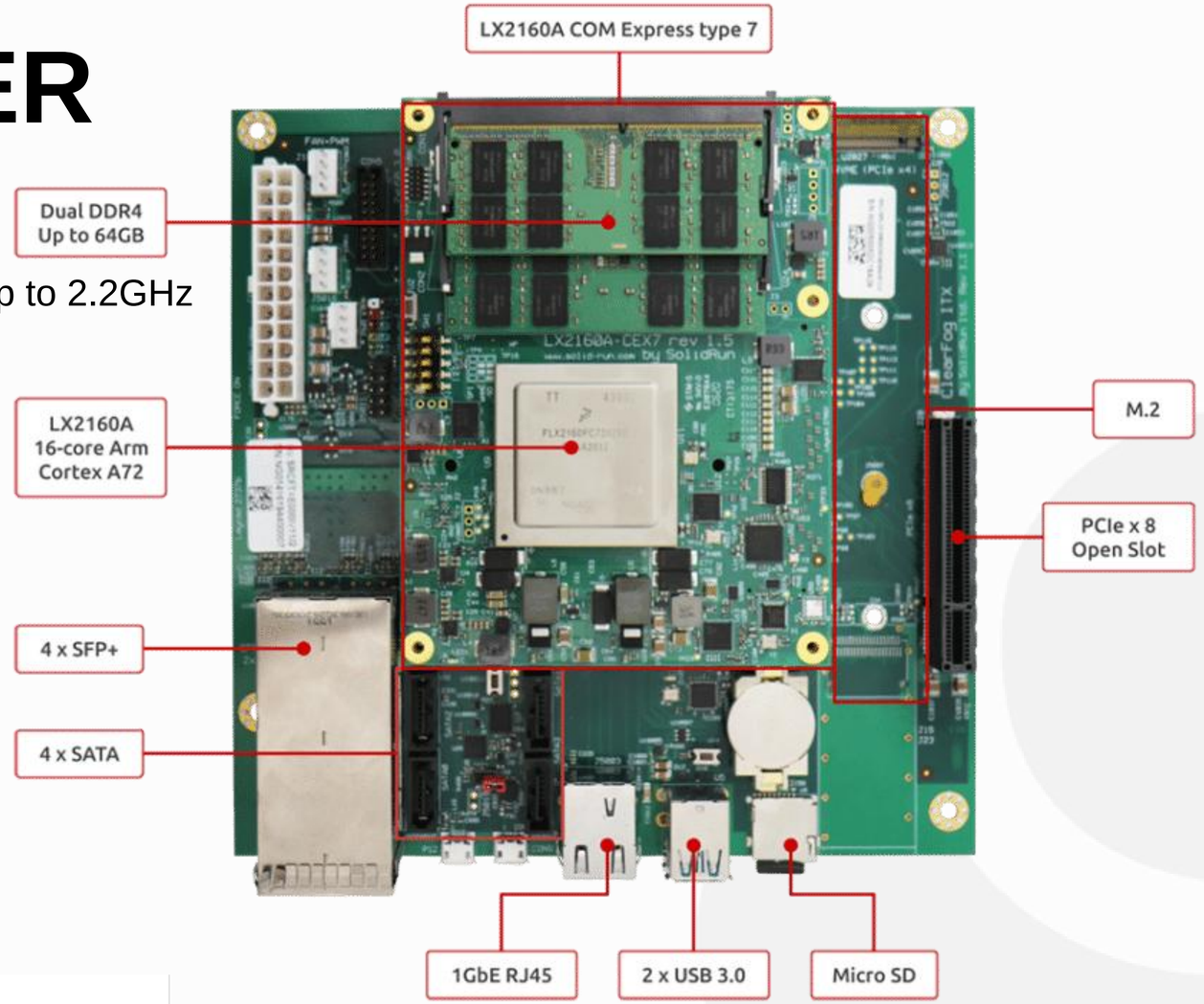
NXP i.MX 8M Nano Processor

- Sensor to cloud IoT gateway platform – Support BLE 5.0 and Wirepas protocol, optional expansion header to support additional protocols.
- Compact footprint with multiple RF functions including Wifi,BT, LTE (Cat 4/Cat 1).
- Features include ; USB, GbE, RS485/CAN, PoE, wide range input (9V-36V)
- Cost optimized for large scale deployments

LX2160A COMPUTER ON MODULE

COM Express Type 7, Up to 16 Cortex-A72 CPU cores, up to 2.2GHz
Up to 100GbE (4 x SFP28)
Up to 64GB DDR4 64 bit dual-channel
Full virtualization support





NXP Layerscape LX2160A 16 x Cortex A72	NXP Layerscape LX2120A 12 x Cortex A72	NXP Layerscape LX2080A 8 x Cortex A72

i.MX 8M Plus	i.MX 8M	i.MX 8M Mini / Nano	i.MX 8	i.MX 8X
NPU, Dual Camera ISP, HiFi4 DSP, GB Ethernet with TSN, High reliability with DRAM inline ECC and ECC on-chip RAM	4k Ultra HD Video with HDR, 6x SAI and 1x SPDIF, Dual Camera Interfaces, USB 3.0, HDMI	MIPI DSI or LVDS Display, 3D/2D GPU, Video encoding: 1080p60 AVC/H.264/VP8, Multi-Channel SAI	High Performance: up to 28.000 DMIPs, Multi-Display support: 2x LVDS, 2x MIPI DSI, 1x HDMI, Vision Extensions, PCIe 3.0, FlexCAN	Multi-Display support: 2x LVDS or 2x MIPI DSI, 24-bit parallel Industrial connectivity: 2x GB Ethernet, 3x CAN-FD, PCIe 3.0
phyCORE-i.MX 8M Plus Alpha Kit	**phyBOARD-Polaris Kit**	**phyBOARD-Polis Kit**	**phyCORE-i.MX 8QM Alpha Kit**	**phyCORE-i.MX 8X Alpha Kit**

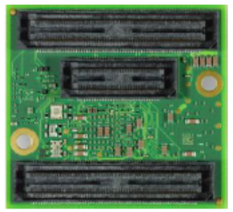
phyBOARD-Polaris Kit	phyBOARD-Polis Kit	phyCORE-i.MX 8QM Kit
Development Kit	Development Kit	Alpha Rapid Development Kit
phyCORE-i.MX 8M	phyCORE-i.MX 8M Mini	phyCORE.i.MX 8QM
FTGA	FTGA	Connector insertion
i.MX 8M Quad	i.MX 8M Mini Quad	i.MX8 QuadMax
4x 1.3 GHz + 400 MHz	4x 1.6 GHz + 400 MHz	2x 1.6 GHz (A72), 4x 1.26 GHz (A53), 2x 266 MHz (M4F)
1 GB LPDDR4 RAM, 8 GB eMMC, 4 kB EEPROM	2 GB LPDDR4 RAM, 8 GB eMMC, 64 MB SPI NOR Flash 4 kB EEPROM	2 GB LPDDR4 RAM, 8 GB eMMC 5.1, 2x 4 kB EEPROM
1x 10/100/1000 Mbit/s	1x 10/100/1000 Mbit/s	2x 10/100/1000 Mbit/s

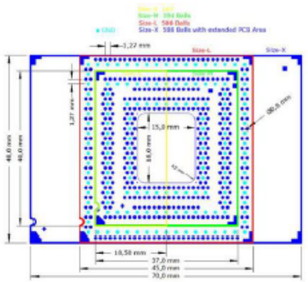
phyCORE i.MX 8M Plus

Why Choose Phytec

Power Efficient & Scalable SOM

- On-board Power Management
- IO-Voltage selectable between 1.8V and 3.3V
- All processor interfaces available
- Direct Solder Connect or Samtec Connector
  - Both with same size (except for hight)
  - Reduce cost & maximum flexibility
  - Maybe SMARC as well…
- Small form factor: 40mm * 37mm





Memory

SPI NOR Flash	4 MB up to 256 MB Quad SPI Flash
eMMC	4 GB up to 64 GB eMMC 5.1
LPDDR4 RAM	256 MB up to 8 GB (32 Bit)
EEPROM	4 kB - 32 kB

Interfaces

Ethernet	1x Gbit/s with on board Phy 1x Gbit/s RGMII interface (TSN capable)
USB	2x USB 3.0, 2x USB 2.0 OTG
UART	4x
CAN	2x FlexCAN (CAN-FD only **I-Temp**)
PCIe	1x (Gen 3)
I^2C	3x
SPI	3x ECSPI
MMC/SD(IO)	3x SDIO (1x for eMMC onboard)
PWM	4x PWM, 6x Timer
Display	2x LVDS, 1x MIPI DSI-2, 1x HDMI
Audio	SAI, SPDIF, I2S, AC'97, TDM
Camera	2x MIPI CSI-2

phyCORE i.MX 8M Plus

Standard Versions:

Variant	Features	Article Number
Kit Variant	Quad 1,6GHz full Featured (ISP. NPU,VPU) , 2GB Ram, 8 GB EMMC, CanFD, 64MB SPI Nor, No Temp Sens, 3,3V IO, Industrial Temp	PCM-070-0F3243I
Minimal Variant	Quad 1,8GHz minimal (NO ISP, NO NPU, No VPU,) 1GB Ram, 4GB EMMC, NoCanFD, Remove One connector, No SPI Nor, No Temp Sens 3V3 IO, No RTC, Commercial Temp	PCM-070-102101C
Full Featured Variant	Quad 1,6GHz full Featured (ISP. NPU,VPU) , 4GB RAM , 32GB EMMC, CANFD, 128MB SPI Nor, No Temp Sens, 3V3 IO, Industrial Temp	PCM-070-0F5453I

phyCORE- i.MX 8M Plus

Alpha Kit / AI Kit

phyBOARD-Pollux Alpha kit

- Article Number: KPB-03123-ALPHA.A0
- Processor Platform: phyCORE i.MX 8M Plus
- phyBoard Pollux – Alpha Version (2GB RAM, 16GB eMMC)

Kit Contents

- Ethernet & MicroUSB cable
- Cable and power supply
- QuickStart Information

Add On‘s

- PEB-WLBT-05 Sterling WIFI-Bluetooth Expantion 2.4GHz / 5GHz
- KLCD-AC168 Display kit for 10" LVDS Display Direct Connection
- KPEB-AV-10 Audio/Video-LVDS Adapter for phyBOARD Pollux, Polis
- XK048 / XK049 Heat Spreader/ Heat Sink

phyBOARD Pollux AI Kit

- Article Number: KPB-03123-AI-Alph.A0
- Processor Platform: phyCORE i.MX 8M Plus

Kit Contents:

- phyCORE I.MX8M Plus
- phyBOARD-Pollux i.MX8M Plus Full Featured SBC
- MIPI VM016 camera
- OpenCV, GStreamer software libraries preinstalled
- Linux Yocto BSP
- Ethernet & USB cable
- Cable and power supply
- QuickStart Instructions

TensorFlowLite
PYTORCH
ONNX
eIQ™

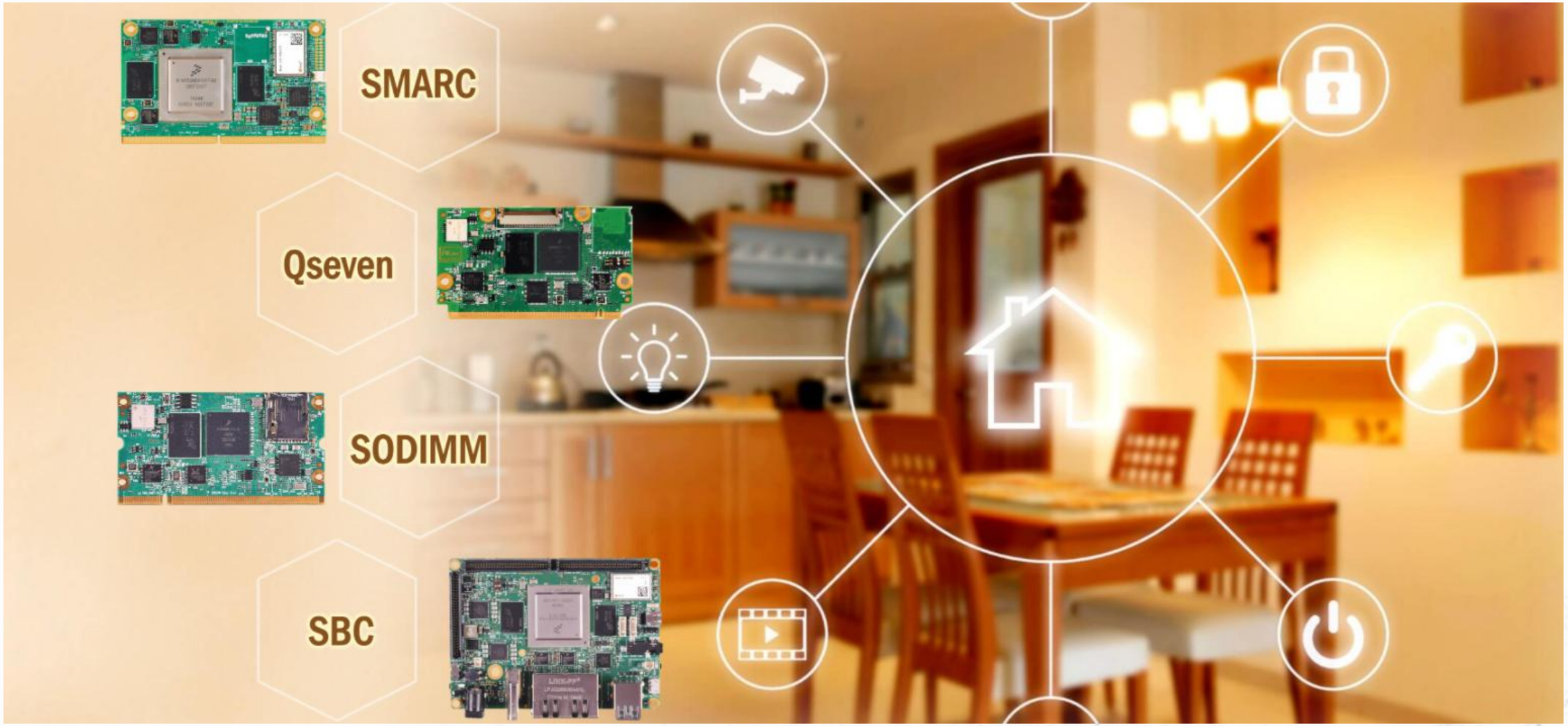
phyCORE i.MX 8M Plus & phyBOARD Pollux

Highlights:

Series Ready Single Board Computer for Industrial Usage

- 2 x Gbit Ethernet
  - 1 x RGMII with TSN on SBC
  - 1x on-board phy on SOM
- 2 x CAN FD
- 2x MIPI CSI-2 camera interface via phyCAM-M Connectors
  - Trigger / Strobe
  - Connect 2 individual cameras at same Time
  - Synchronized dual camera operation possible
  - Modern low EMI camera interface
  - Very high data rates
- Debug UARTS via USB
- USB-PD (USB Power Delivery)
- RS232 / RS485 Switchable on same connector
- High precision voltage supervisor circuit for additional safe operation of SOM.

- Onboard measurement of SOM power consumption
  - Enables customers to make unique power consumption measurements
- Supports GLYN Display Family Displays (PEB-AV-10)
- All processor interfaces available
- Temp Range -40°C up to +85°C
- Vibration tested according to DIN EN 60068
- Onboard TPM Security Chip



i.MX 8M Plus SMARC SOM

i.MX 8M Quad/QuadLite/Dual SMARC SOM

i.MX 8 QuadMax/QuadPlus Qseven SOM

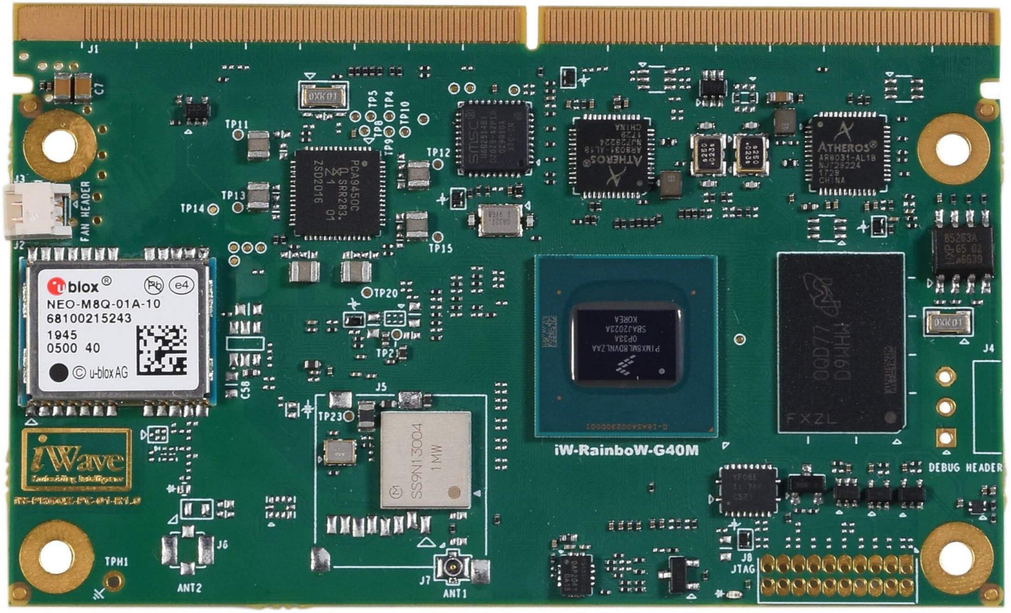
i.MX 8M Mini or i.MX 8M Nano uQseven SOM

i.MX 8M Mini or i.MX 8M Nano SODIMM SOM

i.MX 8 QuadMax/QuadPlus SMARC SOM

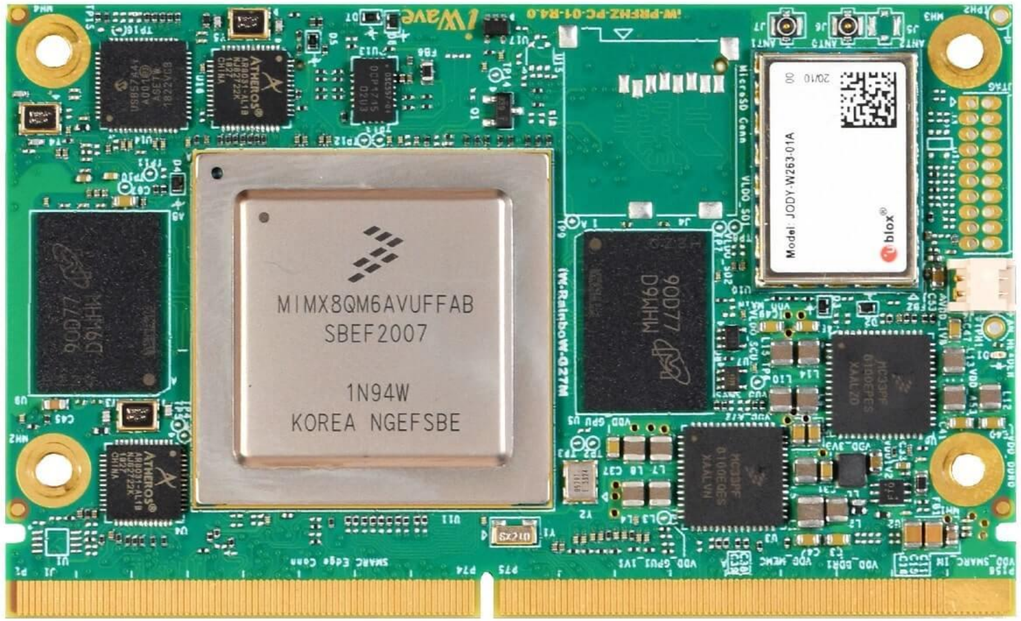
i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC

i.MX 8 QM/QP Pico ITX SBC



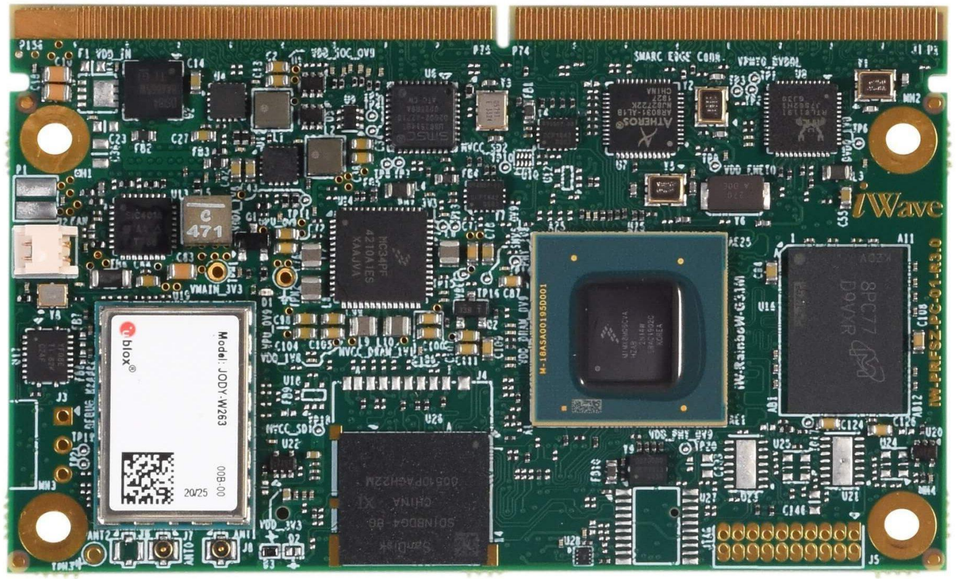
i.MX 8M Plus SMARC SOM iW-RainboW-G40M®

- **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**



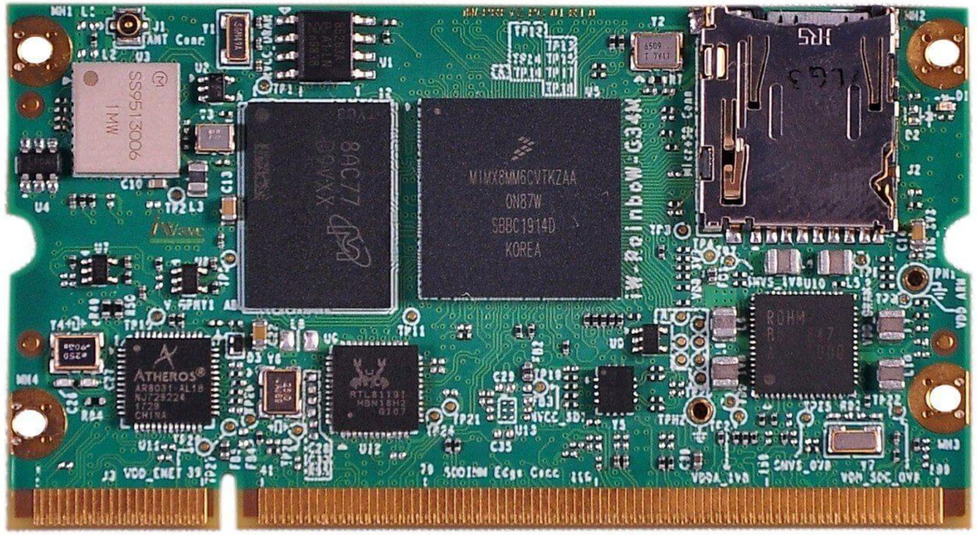
- **i.MX 8 QuadMax/QuadPlus SMARC SOMiW-RainboW-G27M®**

- **Dual Complex Core System:**
- **Complex 1: 4 x Cortex-A53 @ 1.2 GHZ**
- **Complex 2: 2 x Cortex-A72 @ 1.6 GHZ**
- **2 x Cortex-M4F @ 264 MHZ for advanced system control**
- **ARM v8 64-bit instruction capability; Fully 32-bit capable**
- **Integrated Full Chip Hardware Virtualization capabilities**
- **16-Shader 3D (Vec4)**
- **4K H.265 decode & 1080p H.264 encode/decode capable VPU**
- **Enhanced Vision Capabilities (via GP)**
- **IEEE 802.11 a/b/g/n/ac/ax* Wi-Fi & BT 5.0 Module**



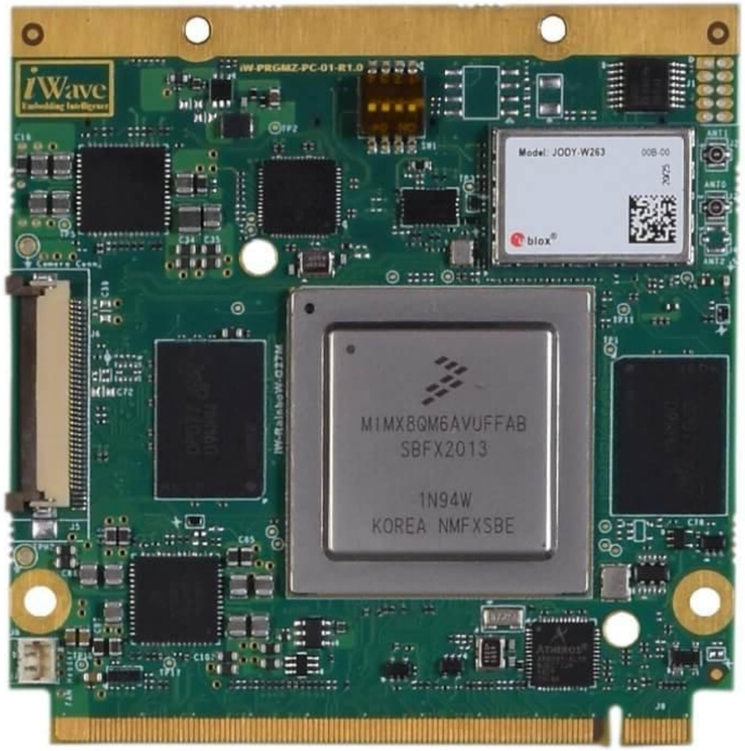
i.MX 8M Quad/QuadLite/Dual SMARC SOM iW-RainboW-G33M®

- i.MX 8M Q/QL/D CPU with 64-bit ARMv8 Architecture
- Up to 4GB LPDDR4 Memory
- 10+ years of Product Longevity Program
- IEEE 802.11a/b/g/n/ac/ax Wi-Fi & Bluetooth 5.0
- Dual 1000/100/10 Mbps Ethernet
- SMARC v2.1 Compatible SOM

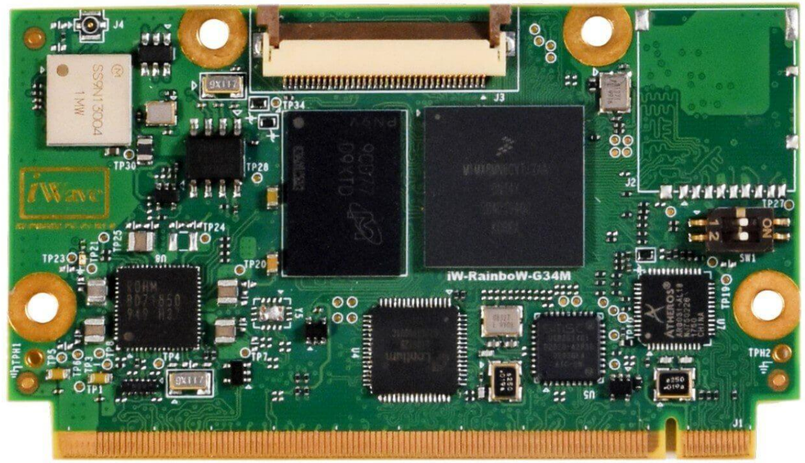


i.MX 8M Mini or i.MX 8M Nano SODIMM SOM iW-RainboW-G34M/G37M®

- i.MX 8M Mini Q/QL/D/DL/S/SL CPU
- i.MX 8M Nano Q/QL/D/DL/S/SL CPU
- 10+ years of Product Longevity Program
- IEEE 802.11a/b/g/n/ac Wi-Fi & Bluetooth 5.0
- Power and Cost Optimised
- Modular & Compact SODIMM form factor 67.6mm X 37mm



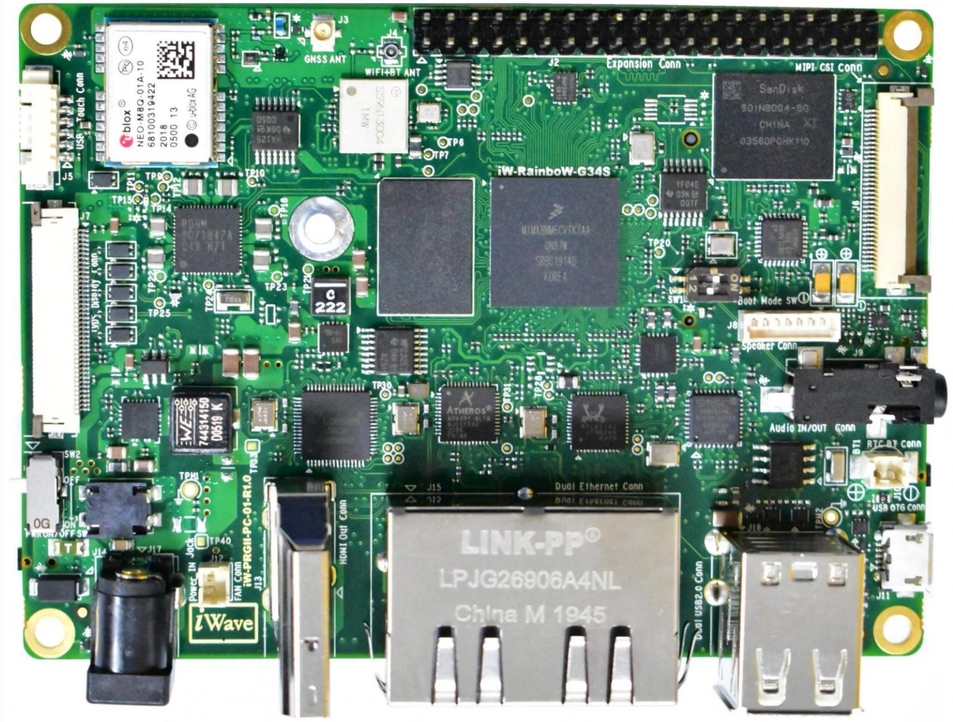
i.MX 8 QuadMax/QuadPlus Qseven SOM iW-RainboW-G27M
•i.MX 8 QM/QP CPU with 64-bit ARMv8 Architecture
•Multi-OS Platform Support
•10+ years of Product Longevity Program
•IEEE 802.11a/b/g/n/ac/ax Wi-Fi & Bluetooth 5.0
•Dual 1000/100/10 Mbps Ethernet
•Q7 v2.1 Compatible SOM



i.MX 8M Mini or i.MX 8M Nano uQseven SOM
iW-RainboW-G34M/G37M-Q7®
• 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
•Modular & Compact µQseven form factor 70m$_{m\ X\ 40mm}$

i.MX 8 QM/QP Pico ITX SBC iW-RainboW-G27S®

- **i.MX 8 QM/QP CPU with 64-bit ARMv8 Architecture**
- **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 & Bluetooth 5.0**
- **Dual 1000/100/10 Mbps Ethernet**



i.MX 8M Mini or i.MX 8M Nano Pico ITX SBC iW-RainboW-G34S/G37S®

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