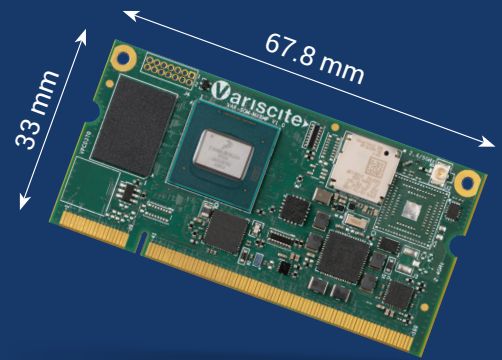# VAR-SOM-MX8M-PLUS

The new generation of System on Module with dedicated AI/ML capabilities

from $62

Based on NXP's i.MX 8M Plus with up to 1.8GHz Quad-core ARM Cortex-A53 Plus 800MHz Cortex-M7 real-time processor, the VAR-SOM-MX8M-PLUS is the first generation of System on Module with dedicated Artificial Intelligence (AI) / Machine Learning (ML) capabilities.

The SoM includes an integrated 2.3 TOPS Neural Processing Unit (NPU), an intelligent vision system with Image Signal Processor (ISP), and dual camera interfaces.

VAR-SOM-MX8M-PLUS supports advanced multimedia features along with extensive connectivity options such as H.265 HD video encode/decode, high performance 2D/3D GPU, up to 4K HDMI, Dual LVDS, DSI, certified dual-band Wi-Fi, BT/BLE, dual USB3, dual GbE, dual CAN-FD, and PCIe.

67.8 mm
33 mm

The VAR-SOM-MX8M-PLUS is a member of the VAR-SOM Pin2Pin product family, providing extensive scalability options and reduced development time, costs, and risks. Starting from i.MX 6UL/6ULL modules, through i.MX 6, i.MX 8M Nano, TI AM625x, i.MX 93, i.MX 8M Mini, up to i.MX 8X and i.MX 8QuadMax-based modules.

The Symphony carrier board complements an attractive full reference kit for the VAR-SOM-MX8M-PLUS, used by Variscite's customers for evaluation, development, and mass production.

Main Features

NXP i.MX 8M Plus
- 1.8GHz Quad-core ARM Cortex-A53
- Real-time 800MHz Cortex-M7 co-processor
- Neon Media Processor Engine (MPE)
- AI/ML NPU 2.3 TOPS
- 2D/3D GPU GC7000UL/ GC520L
- Up to 8GB LPDDR4 memory, up to 128GB eMMC storage

Display and Video Support
- 1080p60 H.265 / H.264 VP9 / VP8 decode, 1080p60 H.265 / H.264 encode
- Dual-channel LVDS display
- HDMI 2.0a
- MIPI DSI
- Resistive/capacitive touch screen

Networking
- 2x10/100/1000Mbps ethernet
- Certified dual-band Wi-Fi 802.11ac/a/b/g/n
- Bluetooth/BLE 5.2
- 2 x CAN-FD

High-speed Interfaces
- 1 x PCIe
- 2 x USB 3.0 OTG

Audio
- Headphone-out, line-in
- Digital microphone (stereo)
- Digital audio (SAI, SPDIF, RX TX, PDM 8CH)

Camera
- Dual MIPI CSI2 serial input
- Dual ISP (image sensor processor)

Other interfaces
- SD/MMC, UART, I2C, SPI, QSPI, PWM, GPIO, JTAG, timers

OS support
- Linux
- Android

Power
- Single 3.3V

Dimensions (W x L x H)
- 67.8 mm x 33 mm x 3.4 mm

-40 to 85°C industrial temperature support

Low-power consumption
- Optimized power consumption in both operational and suspend modes

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Complementing the VAR-SOM-MX8M-PLUS

VAR-SOM-MX8M-PLUS Evaluation Kit

The VAR-DVK-VS8M-PLUS allows full performance and capability evaluation, serving as an evaluation, development, and production platform for hardware and software teams.

Evaluation Kit content

- Symphony-Board populated with VAR-SOM-MX8M-PLUS
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package
- WiFi/BT antenna

Symphony-Board

Supporting the VAR-SOM Pin2Pin Family and optimized for the VAR-SOM-MX8M-PLUS

The Symphony-Board ensures a scalable and simplified development and reference board to achieve a short time-to-market for customer's designs and end-products.
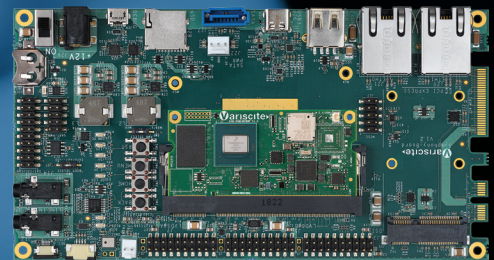
Display Support
- Dual LVDS display, DSI
- HDMI (extension board)

Touch panel
- Capacitive touch (6-pin FFC/FPC)
- Resistive touch (4-pin FFC/FPC)

Audio
- Headphone
- Line-in
- Digital mic

Storage
- SD/SDIO/MMC card socket

High Speed Interfaces
- USB 3.0/2.0 ports: 1x OTG (Type-C), 1x HOST
- 2 x 10/100/1000Mbps ethernet RJ45
- mPCIe

Camera (extension boards)
- Dual serial MIPI CSI

Additional Expansion Connectors
- SPI, SPDIF, GPIO
- UART, I2C, CAN-FD
- PWM
- SAI

Debug
- Micro USB

RTC backup battery
- CR1225 coin battery socket

Power
- 12V DC input

Size
- 16.9cm x 8.9cm

About Variscite

Variscite is a leading System on Modules (SoM) and Single-Board-Computer (SBC) design and manufacture company. A trusted provider of development and consulting services for a variety of embedded platforms, Variscite transforms clients' visions into successful products.

For more information contact:
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