The DART-MX8M-PLUS transforms the future of smart embedded systems. Delivered in a compact form factor of 55x30mm, the DART-MX8M-PLUS is based on a 1.8GHz Quad Cortex™-A53 NXP i.MX 8M Plus processor with 800MHz Cortex™-M7 Real-time co-processor.

This is the first i.MX processor with an Artificial Intelligence and Machine Learning accelerators, featuring an integrated Neural Processing Unit (NPU) and an intelligent vision processing system based on Image Signal Processor (ISP) and camera interfaces. The SoM includes advanced multimedia features, such as: H.265/264 HD video encode and decode engines, advanced 2D/3D graphic acceleration, HDMI, LVDS, MIPI-DSI display, 2x CAN-FD, and dual cameras inputs.

The DART-MX8M-PLUS provides various interfaces and connectivity options: certified dual-band Wi-Fi 802.11 ac/a/b/g/n, BT/BLE, dual GbE, dual USB3, PCIe, SPI, and UART.

The SoM is a member of the DART Pin2Pin family, which offers a wide scalability range; from the i.MX8M Mini platform, up to the i.MX8M Plus.

The VAR-DT8MCustomBoard carrier board complements an attractive, full-reference kit of the DART-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
- Up to 4GB LPDDR4-4000 memory, up to 64GB eMMC storage
- 2D/3D GPU GC7000UL/ GC520L

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

Networking
- 2x10/100/1000Mbps ethernet
- Certified 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

Camera
- Dual MIPI CSI2 serial input

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

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

OS Support
- Linux
- Android

Power
- Single 3.45-5V

Dimensions (W x L x H)
- 30.0 mm x 55.0 mm x 4.44 mm

-40 to 85°C industrial temperature support

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

Variscite
Complementing the DART-MX8M-PLUS

DART-MX8M-PLUS Evaluation Kit

The VAR-DVK-MX8M-PLUS allows full performance and capability evaluation, serving as evaluation, development, and production platform for hardware and software teams.

Evaluation kit content
- VAR-DT8MCustomBoard populated with DART-MX8M-PLUS
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package

VAR-DT8MCustomBoard

VAR-DT8MCustomBoard - Supporting the DART Pin2Pin Family and optimized for the DART-MX8M-PLUS

The VAR-DT8MCustomBoard 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
- DSI, dual LVDS display
- HDMI (extension board)

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

Audio
- Headphone
- Line-in
- Digital mic

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

Camera (extension board)
- 2x MIPI CSI 4-lane serial

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

Debug
- Micro USB
- JTAG connector

RTC backup battery
- CR1225 coin battery socket

Power
- 5V DC input

Size
- 15.0cm x 9.0cm

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.

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