

SOMDEVICES

μSMARC

iMX8M PLUS



SOMDEVICES μSMARC i.MX8M Plus product is based on i.MX8M Plus NXP processor family (Quad core ARM Cortex-A53 and ARM Cortex-M7) and equipped with WiFi/BT, 2x Gigabit ethernet, 2D/3D Graphics, Full HD @ 60fps multimedia and **Artificial Intelligence (AI) machine learning neural processing unit (NPU)**.

i.MX8M Plus provides the first entry point to process AI algorithms and machine learning on embedded edge-computing, dual vision, cost-effective integration and affordable performance for smart, connected, power-efficient devices requiring graphics, video encoding/decoding, voice control, intelligent sensing and general-purpose processing.

SOMDEVICES presents μSMARC, a NEW smaller mechanical concept form factor beyond SMARC module standard but 100% compatible up to SMARC 2.1.

Benefits

- Artificial intelligence (AI) machine learning and vision
- Powerful multimedia
- Video encoding / decoding
- Fast time to market
- Industrial grade
- Customizable
- Long term support
- Warranty
- Full open source ecosystem

Security Arm® TrustZone® DRM Ciphers Secure Clock eFuse Key Storage Random Number 32 KB Secure RAM	Main CPU Platform 4 x Arm® Cortex®-A53 32 KB I-cache 32 KB D-cache Arm NEON™ FPU 512 KB L2 Cache (ECC) Secondary Cores Tensilica® HiFi 4 DSP Cortex-M7 768 KB On-chip RAM (ECC)	Display HDMI 2.0a Tx (eARC) with PHY MIPI-DSI (4-lane) with PHY 1 x LVDS Tx (4 or 8-lane) with PHY Audio 18 x I ² S TDM 32 bit at 768 kHz SPDIF Tx and Rx eARC (HDMI) ASRC 8-ch. PDM Microphone Input Connectivity and I/O 2 x USB 3.0/2.0 OTG with PHY 2 x Gbit Ethernet with IEEE® 1588, AVB (One also supports TSN) 2 x CAN FD 1 x PCIe® Gen 3 – 1-lane L1 Substates 4 x UART 5 Mbit/s 5 x I ² C, 3 x SPI External Memory x16/x32 LPDDR4/DDR4/DDR3L (Inline ECC) 3 x SDIO3.0/MMC5.1 Dual-ch. QuadSPI (XIP) or 1 x OctalSPI (XIP) NAND Controller (BCH62)
System Control Smart DMA x3 XTAL PLLs Watchdog x 3 PWM x 4 Timer x 6 Secure JTAG Temperature Sensor	Machine Learning Machine Learning Accelerator: 2.25 TOPS Graphics 3D Graphics: GC7000UL 2D Graphics: GC520L Video 1080p60 H.265, H.264, VP9, VP8 decoder 1080p60 H.265, H.264 encoder Vision Camera ISP (2 x 187 MP/1 x 375 MP) dewarp 2 x MIPI-CSI (4-lane) with PHY	

Specifications

Processor	Up to 4x ARM Cortex-A53 1.6 GHz up to 1.8 GHz 1x Cortex-M7 up to 800MHz
Memory	RAM: From 512MB up to 8GB LPDDR4 FLASH: From 4GB up to 128GB eMMC
PMIC	NXP PCA9450
Video	Up to 2x LVDS or MIPI-DSI (4 lanes) 1x HDMI 2.0a (up to 4k@30fps) Video decode 1080p60 (h.265, VP9, h.264, VP8) Video encode 1080p60 (h.264, h.265)
2D/3D	GC7000UL 3D GPU OpenVG 1.1, Open GL ES3.1, Vulkan, and Open CL 1.2 FP GC520L 2D GPU
Machine learning	Neutral Processing Unit (NPU) 2.3 TOPS 1x MIPI CSI2 (4 lanes) 1x MIPI CSI2 (2 lanes)
Peripherals	1x 10/100/1000 Mbps Ethernet (TSN) 1x 10/100/1000 Mbps Ethernet 2x CAN 1x I2S 3x I2C 1x SPI 1x QSPI 3x UART (2x flow-control 4-wire, 2x 2-wire) 13x GPIOs 1x SDIO 1x USB 3.0 OTG 1x USB 3.0 HOST Up to 3x PWM 1x PCIe (1 lane)
Wireless	Wifi: WiFi 802.11 a/b/g/n/ac Bluetooth: 5.1
Mechanical	New μ SMARC form factor 82x30 mm
Mounting	MXM 3.0 314 pin SMARC connector
Temperature	-40°C to 85°C
Humidity	93% relative Humidity at 40°C, non-condensing (IEC 60068-2-78)
Support	Linux (Yocto, Ubuntu or Debian)

Ordering information

C0P4-V10	SOMDEVICES μ SMARC iMX8M PLUS FULL (Quad 1600MHz/2048MB LPDDR4/16GB eMMC/WiFi/BT/2x ETH)
C0P4-V11	SOMDEVICES μ SMARC iMX8M PLUS NO WIFI (Quad 1600MHz/2048MB LPDDR4/16GB eMMC/2x ETH)
C0P4-V1?	SOMDEVICES μ SMARC iMX8M PLUS custom (Contact sales to assemble custom made products such as better project adjustment or large volumes. We are manufacturers.)