The i.MX 8M Plus family focuses on machine learning and vision, advanced multimedia, and industrial automation with high reliability. It is built to meet the needs of Smart Home, Building, City and Industry 4.0 applications.

- Powerful quad or dual Arm® Cortex®-A53 processor with a Neural Processing Unit (NPU) operating at up to 2.3 TOPS.
- Dual image signal processors (ISP) and two camera inputs for an effective advanced vision system.
- The multimedia capabilities include video encode (including h.265) and decode, 3D/2D graphic acceleration, and multiple audio and voice functionalities.
- Real-time control with Cortex-M7. Robust control networks supported by dual CAN FD and dual Gigabit Ethernet with Time Sensitive Networking (TSN).
- High industrial reliability with DRAM inline ECC.

i.MX 8 applications processors are part of NXP's EdgeVerse™ edge computing platform.
i.MX 8M Plus Processors Block Diagram

Security
- Arm® TrustZone®
- DRM Ciphers
- Secure Clock
- eFuse Key Storage
- Random Number
- 32 KB Secure RAM

System Control
- Smart DMA x3
- XTAL
- PLLs
- Watchdog x 3
- PWM x 4
- Timer x 6
- Secure JTAG
- Temperature Sensor

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)

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

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 I²S TDM 32 bit at 768 kHz
- SP/DIF 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® 802.3at (XAVB)
- ASRC
- 1 x PCIe® Gen 3 – 1-lane L1 Substates
- 4 x UART 5 Mbit/s 5 x I²C, 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)

View additional information for i.MX 8M Plus – Arm® Cortex®-A53, Machine Learning, Vision, Multimedia and Industrial IoT.

Note: The information on this document is subject to change without notice.

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