The i.MX 8M Mini is NXP’s first embedded multicore applications processor built using advanced 14LPC FinFET process technology, providing more speed and improved power efficiency. With commercial and industrial level qualification and backed by NXP’s product longevity program, the i.MX 8M Mini family may be used in any general purpose industrial and IoT application.

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

Multimedia
Graphics Processing Unit (GPU)
- 3D GPU - 1 shader, OpenGL ES 2.0, OpenVG 1.1
- 2D GPU - BitBlt and Composition Engine
- Video Processing Unit (VPU)
  - 1080p@30 HEVC/H.265, H.264, VP9, VP8 Decoder
  - 1080p@60 H.264, VP8 Encoder
- Display support up to 1080p

Connectivity & I/O
- 1 x PCIe 2.0 with 1 substates (1-lane)
- 2x USB2.0 Dual Role and PH
- 1x QEI Internal (with IEEE 1588, EEE & AVB support)
- 4x UART 9600bps
- 4x I²C
- 3x SPI
- 4x PWM

Display and Camera I/O
- 1x MIPI-CSI (4-lanes)
- 1x MIPI-CSI (4-lanes)
- 1x MIPI-DSI (4-lanes)

Audio I/O
- 20x IS
- SPDIF Tx & Rx
- DSD@12
- 8-ch, PDM Mic

System Control
- 2x Smart DMA
- 6x Timer, 3x Watch Dog
- Boot ROM
- Resource Domain Controller
- PMC interface
- Temp Monitor/Sensor

Security
- HAB, SRTC, SJTAG, TrustZone
- AES256, RSA 4096, SHA-256, 3DES, DES, Elliptic Curve (ECC), ARCC, MD5
- Secure Real Time Clock (RTC)
- eFuse Key Storage
- True Random Number Generator (RNG)
- 32 KB Secure RAM

External Memory
- x32/16 LPDDR4/DDR4/DDR3L
- Up to 3200 MT/s
- 3x SPI
- NAND CTL (SLC/MLC) - BCH62
- 1x QuadSPI (XIP)

Core Complex 1
- 1x2x4 Arm Cortex-A53 cores
- 32 KB L1 I-cache
- 32 KB L1 D-cache
- NEON
- FPU
- 512 KB L2 Cache

Core Complex 2
- 1x Arm Cortex-M4 core
- 16 KB L1 I-cache
- 16 KB L1 D-cache
- 256 KB TCM (SRAM)

Secure Real Time Clock (RTC)
- 6x Time, 3x Watchdog
- Boot ROM
- Resource Domain Controller
- PMC interface
- Temp Monitor/Sensor

View additional information for i.MX 8M Mini - Arm® Cortex®-A53, Cortex-M4, Audio, Voice, Video.

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

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