i.MX 95 Applications Processor Family: High-Performance, Safety Enabled Platform with eIQ® Neutron NPU

i.MX95

Preproduction
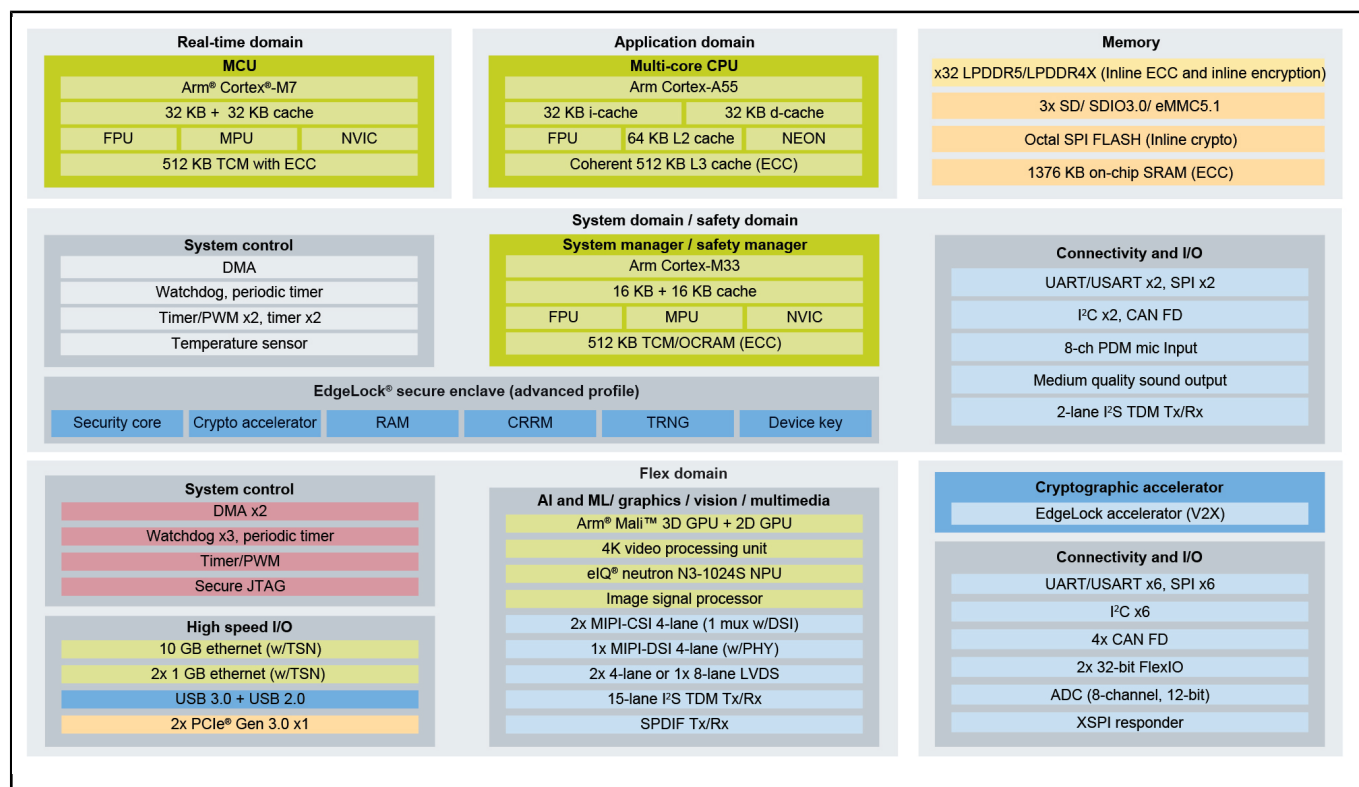
Last Updated: Apr 1, 2025

The i.MX 95 applications processor family delivers safe, secure, power efficient edge computing for use in aerospace, automotive edge, commercial IoT, industrial, medical, and network platforms. It combines powerful AI-accelerated vision processing and immersive graphics abilities with functional safety, advanced security, and high-performance connectivity.

i.MX 95 Applications Processor Block Diagram

Real-time domain

MCU
Arm® Cortex®-M7

32 KB + 32 KB cache

FPU	MPU	NVIC

512 KB TCM with ECC

Application domain

Multi-core CPU
Arm Cortex-A55

32 KB i-cache	32 KB d-cache

FPU	64 KB L2 cache	NEON

Coherent 512 KB L3 cache (ECC)

Memory

- x32 LPDDR5/LPDDR4X (Inline ECC and inline encryption)
- 3x SD/ SDIO3.0/ eMMC5.1
- Octal SPI FLASH (Inline crypto)
- 1376 KB on-chip SRAM (ECC)

System domain / safety domain

System control

- DMA
- Watchdog, periodic timer
- Timer/PWM x2, timer x2
- Temperature sensor

System manager / safety manager

Arm Cortex-M33

16 KB + 16 KB cache

FPU	MPU	NVIC

512 KB TCM/OCRAM (ECC)

Connectivity and I/O

- UART/USART x2, SPI x2
- I²C x2, CAN FD
- 8-ch PDM mic Input
- Medium quality sound output
- 2-lane I²S TDM Tx/Rx

EdgeLock® secure enclave (advanced profile)

Security core	Crypto accelerator	RAM	CRRM	TRNG	Device key

Flex domain

System control

- DMA x2
- Watchdog x3, periodic timer
- Timer/PWM
- Secure JTAG

High speed I/O

- 10 GB ethernet (w/TSN)
- 2x 1 GB ethernet (w/TSN)
- USB 3.0 + USB 2.0
- 2x PCIe® Gen 3.0 x1

AI and ML/ graphics / vision / multimedia

- Arm® Mali™ 3D GPU + 2D GPU
- 4K video processing unit
- eIQ® neutron N3-1024S NPU
- Image signal processor
- 2x MIPI-CSI 4-lane (1 mux w/DSI)
- 1x MIPI-DSI 4-lane (w/PHY)
- 2x 4-lane or 1x 8-lane LVDS
- 15-lane I²S TDM Tx/Rx
- SPDIF Tx/Rx

Cryptographic accelerator

- EdgeLock accelerator (V2X)

Connectivity and I/O

- UART/USART x6, SPI x6
- I²C x6
- 4x CAN FD
- 2x 32-bit FlexIO
- ADC (8-channel, 12-bit)
- XSPI responder

View additional information for i.MX 95 Applications Processor Family: High-Performance, Safety Enabled Platform with eIQ® Neutron NPU.

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