i.MX 95 Applications Processor Family: High-Performance, Safety Enabled Platform with eIQ® Neutron NPU
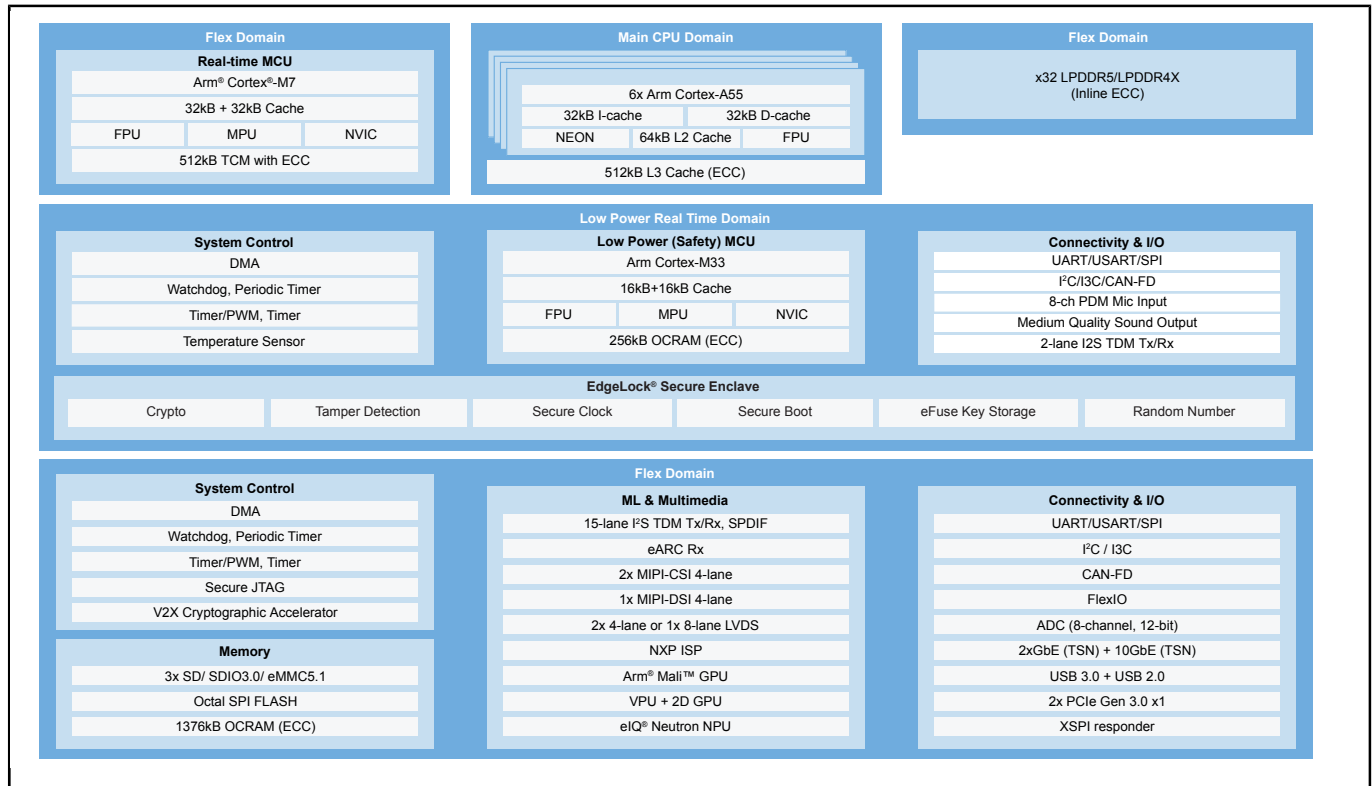
iMX95

Preproduction

Last Updated: Apr 25, 2024

The i.MX 95 applications processor family enables a broad range of edge applications from Automotive connectivity domain and eCockpit, to Industry 4.0 and IoT platforms. The family offers NXP SafeAssure® functional safety compliant platform development (ASIL-B, SIL2), 6x Arm® Cortex-A55 cores, Arm Mali GPU, 4K VPU, ISP, ML acceleration NPU, and Edgelock® secure enclave security.

The i.MX 95 family energy flex architecture provides scalable real-time, safety and application domains with high-speed connectivity (10GbE, USB 3, PCIe® Gen 3) to enable a wide range of platforms.

This page contains information on a preproduction product. Specifications and information herein are subject to change without notice.

i.MX 95 Applications Processor Block Diagram

Flex Domain			Main CPU Domain			Flex Domain	
Real-time MCU							
Arm® Cortex®-M7			6x Arm Cortex-A55			x32 LPDDR5/LPDDR4X (Inline ECC)	
32kB + 32kB Cache			32kB I-cache	32kB D-cache			
FPU	MPU	NVIC	NEON	64kB L2 Cache	FPU		
512kB TCM with ECC			512kB L3 Cache (ECC)				

Low Power Real Time Domain

System Control	Low Power (Safety) MCU	Connectivity & I/O
DMA	Arm Cortex-M33	UART/USART/SPI
Watchdog, Periodic Timer	16kB+16kB Cache	I²C/I3C/CAN-FD
Timer/PWM, Timer	FPU / MPU / NVIC	8-ch PDM Mic Input
Temperature Sensor	256kB OCRAM (ECC)	Medium Quality Sound Output
		2-lane I2S TDM Tx/Rx

EdgeLock® Secure Enclave

Crypto	Tamper Detection	Secure Clock	Secure Boot	eFuse Key Storage	Random Number

Flex Domain

System Control	ML & Multimedia	Connectivity & I/O
DMA	15-lane I²S TDM Tx/Rx, SPDIF	UART/USART/SPI
Watchdog, Periodic Timer	eARC Rx	I²C / I3C
Timer/PWM, Timer	2x MIPI-CSI 4-lane	CAN-FD
Secure JTAG	1x MIPI-DSI 4-lane	FlexIO
V2X Cryptographic Accelerator	2x 4-lane or 1x 8-lane LVDS	ADC (8-channel, 12-bit)
Memory	NXP ISP	2xGbE (TSN) + 10GbE (TSN)
3x SD/ SDIO3.0/ eMMC5.1	Arm® Mali™ GPU	USB 3.0 + USB 2.0
Octal SPI FLASH	VPU + 2D GPU	2x PCIe Gen 3.0 x1
1376kB OCRAM (ECC)	eIQ® Neutron NPU	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.