Unleash the Power of AI at the Edge
iMX8M Mini DX-M1 SOM

NXP Gold Partner
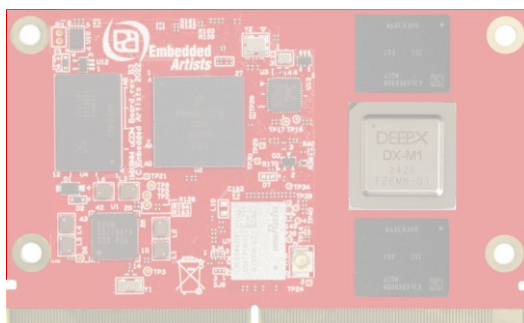
Experience a new level of intelligent performance with our new System-on-Module, seamlessly integrating the versatile power of the NXP i.MX8M Mini processor with the groundbreaking DEEPX DX-M1 AI Booster. This powerful combination delivers exceptional processing capabilities and unprecedented AI performance!

The NXP i.MX8M Mini provides a robust foundation, offering high-end graphics with both 3D and 2D engines, plus hardware accelerator for smooth 1080p video. This multimedia capability is perfectly complemented by the revolutionary AI acceleration of the DX-M1.

The DEEPX DX-M1 redefines the landscape of edge AI, achieving unparalleled cost-efficiency (inference/$), power-efficiency (TOPS/W), and performance efficiency (FPS/TOPS). Delivering 25 TOPS at just 5 Watts, it's ideal for diverse applications from smart factory robotics and vision to edge computing and smart mobility. Unlock the full potential of AI at the edge with our new SOM!

Specification

Processor	Cores	NXP i.MX 8M Mini Quad-core ARM Cortex-A53 and Cortex-M4F
	Frequency	1.6/1.8 GHz on Cortex-A53 (industrial/commercial temp. range), 400 MHz on Cortex-M4F
Memory	SDRAM	2 GByte LPDDR4 3000 MT/s, 32-bit/2ch databus
	NAND FLASH	16 GByte eMMC NAND Flash for OS and bootloader
Graphics output	MIPI-DSI	4 lanes with resolution up to 1920 x 1080 at 60 Hz (1080p60)
	Video Engine	Decode: 1080p60, Encode: 1080p60
	2D/3D Graphics Engine	GCNanoUltra/GC320, OpenVG 1.1, OpenGL ES 2.0
Graphics input	Camera interface	1x MIPI-CSI2, 4 lanes
Communication	Ethernet	1x Gigabit Ethernet interface based on Realtek RTL8211FDI Ethernet PHY
	Wi-Fi/BT	Optional Murata LBES5PL2EL (2EL), 802.11a/b/g/n/ac/ax SISO, Wi-Fi 6 and 5.3 BR/EDR/BLE, SDIO interface, based on NXP chipset IW612
AI Booster	NPU	DEEPX DX-M1 AI Booster, up to 25TOPS. Frequency up to 1 GHz
	SDRAM	4GByte LPDDR5 5600MT/s, 64-bit/4ch databus
Power	Supply voltage	4-5V
	Power Consumption	7-8 Watts peak (TBD)
Mechanical	Dimensions (W x H x D)	82 x 50 x 5 mm, EACOM form factor
Expansion		MXM3 format, 314 positions

Block Diagram
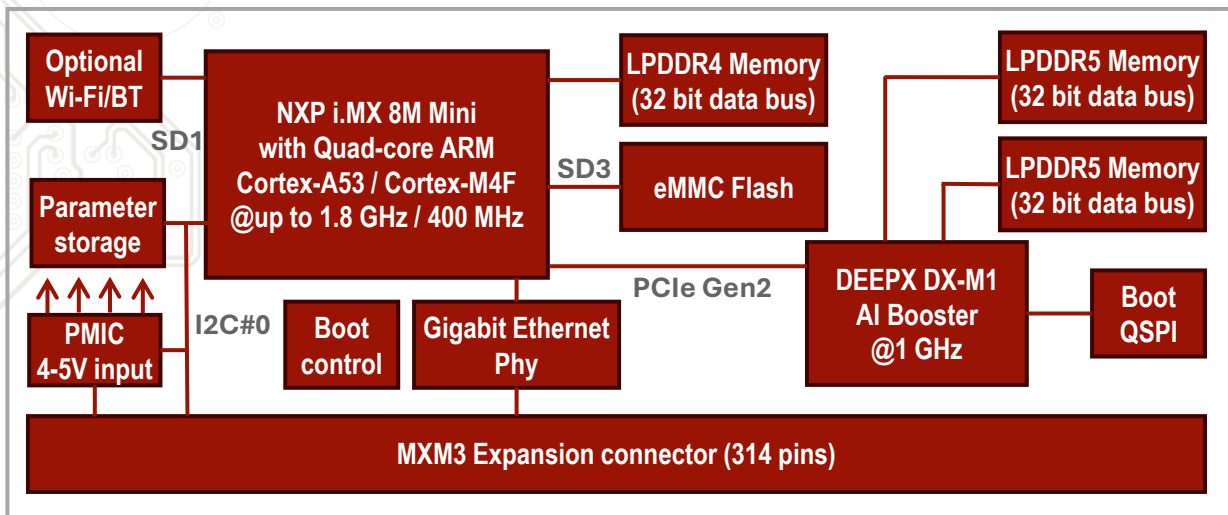
Ordering Information

Part No.[1]	CPU	Corex-A53 Frequency	SDRAM/ eMMC	NPU RAM	Wi-Fi/BT	Operating Temperature
EAC00520	MIMX8MM6DVTLZAA	1.8GHz	2/16 GByte	4 GByte	No	0 - 70° C
EAC00521	MIMX8MM6CVTKZAA	1.6GHz	2/16 GByte	4 GByte	No	-40 - 85° C

[1] Standard configuration listed. Wi-Fi/BT, other memory configurations and temperature ranges on request

Support and Customization

Embedded Artists is a reliable and competent development partner - we help you become successful!

- Professional and responsive support
- Pre-designed standard Carrier boards for integration
- Custom Carrier board design
- Customization
  - Different pinning, supply voltage, memory sizes, etc.
  - Single Board Computer (SBC) solutions
- Display solutions
- Mechanical solutions
- Schematic review of customer carrier board designs
- Driver and application development

Development Kit

The **iMX8M Mini DX-M1 SOM** is supported by the **DEEPX iMX8M Mini AI Kit** that provides a quick path to get started with development and integration work.

The kit provides reference implementations of key interfaces. Ordering part No. **EAK00516**