

iMX8M Nano uCOM Board Feature Highlights

- NXP i.MX 8M Nano, Quad-core ARM Cortex-A53 and Cortex-M7, up to 1.5GHz/750MHz
- High performance, up to 13 800 DMIPS
- 1 GByte DDR4 2400 MT/s, 16-bit databus
- 8 GByte eMMC on-board Flash
- MIPI-DSI graphical output, MIPI-CSI camera input
- USB2.0, Gigabit Ethernet and more
- Optional Murata 1MW Wi-Fi/BT module supporting 802.11 a/b/g/n/ac and BT/BLE 5.0
- Linux BSP
- 42 x 45 mm small form factor
- Long term availability

Introduction

The **iMX8M Nano uCOM board** provides a quick and easy solution for implementing a high-performance ARM quad-core Cortex-A53 / Cortex-M7 based design. The Cortex-A53 / Cortex-M7 heterogeneous architecture enables the system to run an OS like **Linux on the quad-core Cortex-A53** and a **Real-Time OS (RTOS) on the Cortex-M7**.

The i.MX 8M Nano has a 3D Graphical Processing Unit (GPU) for applications requiring advanced graphics and has MIPI-DSI display output (supporting up to 1080p60 resolution) and MIPI-CSI camera input.

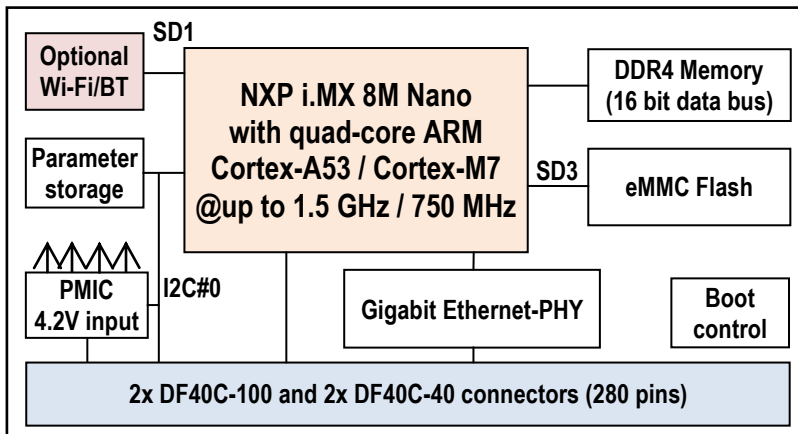
The design is a **low-power implementation** with DDR4 memories and a PMIC supporting DVFS techniques. Typical applications are media streaming, general graphical interface solutions, communication solutions and connected real-time systems.

Specification

Processor	Cores	NXP i.MX 8M Nano Quad-core ARM Cortex-A53 and Cortex-M7
	Frequency	1.4/1.5 GHz on Cortex-A53 (industrial/commercial temperature range) 600/750 MHz on Cortex-M7
Memory	SDRAM	1 GByte DDR4 2400 MT/s, 16-bit databus
	NAND FLASH	8 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)
	2D/3D Graphics Engine	GC7000UL, supporting OpenGL® ES2.0/3.0/3.1, OpenCL™ 1.2, Vulkan®
Graphics input	CMOS sensor interface (camera)	1x MIPI-CSI2, 4 lanes
Ethernet		1x Gigabit Ethernet interface based on Atheros AR8031 Ethernet PHY
Wi-Fi/BT		Murata LBEE5HY1MW (1MW) Wi-Fi/BT module, 802.11 a/b/g/n/ac and BT/BLE 5.0, SDIO interface
I/O (all functions are not available at the same time)	USB	1x USB2.0 OTG
	QSPI/FlexSPI	1x QuadSPI supporting XIP
	UART, SPI, I2C, Audio	4x UART, 3x SPI, 4x I2C, 5x SAI, 8x PDM inputs, SPDIF
	GPIO	Unused digital I/Os can be used as GPIOs
	Memory card	2x SD3.0/MMC5.1 (1x if Wi-Fi/BT module mounted)
Other	Boot parameters	E2PROM storing board information including Ethernet MAC address
	Watchdog	On-board watchdog functionality
	RTC	On-board RTC via PMIC (BD71847MWV)
	Power Management (PMIC)	PMIC (BD71847MWV) supporting DVFS techniques for low power modes
Power	Supply voltage	+4.2V
	Power consumption	TBD
Environment	Operating Temperature	0 - 70° and -40 - 85° Celsius
	Operating Humidity	5 - 90% relative humidity, non-condensing

Mechanical	Dimensions (W x H x D)	42 x 45 x 5 mm, EAuCOM form factor
Connectors		2x DF40C-100 and 2x DF40C-40 connectors, 0.4 mm pitch. 280 pins in total Optional u.fl. antenna connector if Wi-Fi/BT module mounted

Block Diagram



Ordering Information

Part No. ^[1]	CPU	Corex-A53 / M7 Top Core Frequency	SDRAM	eMMC	Wi-Fi/BT Module	Operating Temperature
EAC00357	MIMX8MN6DVTJZAA	1.5GHz / 750 MHz	1 GByte DDR4	8 GByte	No	0 - 70° C
EAC00358	MIMX8MN6CVTIZAA	1.4GHz / 600 MHz	1 GByte DDR4	8 GByte	No	-40 - 85° C
EAC00359	MIMX8MN6CVTIZAA	1.4GHz / 600 MHz	1 GByte DDR4	8 GByte	Yes	-20 - 70° C, limited by Wi-Fi/ BT module

[1] Standard configuration listed. Wi-Fi/BT, dual-core, single-core versions and other memory configurations on request.

Support Highlights

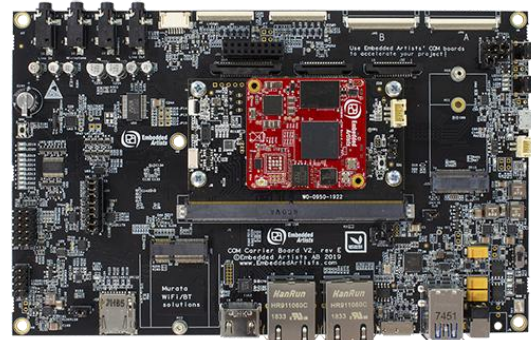
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- Driver and application development

Development Kit

The iMX8M Nano uCOM Board is supported by the **iMX8M Nano uCOM Developer's 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. **EAK00360**



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