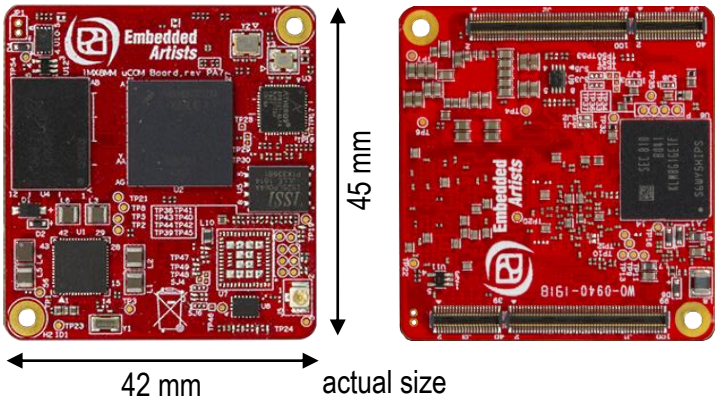
Embedded Artists'

iMX8M Mini uCOM Board rev A1

The Art of Embedded Systems Development – **made Easy™**

Document status: Preliminary



iMX8M Mini uCOM Board Feature Highlights

- NXP i.MX 8M Mini, Quad-core ARM Cortex-A53 and Cortex-M4F, up to 1.8GHz/400MHz
- High performance, up to 16500 DMIPS
- 1 GByte LPDDR4 3000 MT/s, 32-bit databus
- 8 GByte eMMC on-board Flash
- MIPI-DSI graphical output
- PCIe, USB2.0, Gigabit Ethernet and more
- Optional Murata 1ZM Wi-Fi/BT module supporting 802.11 a/b/g/n/ac and BT/BLE 5.1
- Linux BSP
- 42 x 45 mm small form factor
- Long term availability

Introduction

The **iMX8M Mini uCOM Board** provides a quick and easy solution for implementing a high-performance ARM quad-core Cortex-A53 / Cortex-M4F based design. The Cortex-A53 / Cortex-M4F 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-M4F**.

The i.MX 8M Mini supports **1080p video encoding/decoding** in HW and has MIPI-DSI display output and MIPI-CSI camera input. The design is a **low-power implementation** with LPDDR4 memory and 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 Mini Quad-core ARM Cortex-A53 and Cortex-M4F
	Frequency	1.6/1.8 GHz on Cortex-A53 (industrial/commercial temperature range) 400 MHz on Cortex-M4F
Memory	SDRAM	1 GByte LPDDR4 3000 MT/s, 32-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)
	Video Engine	Decode: 1080p60, Encode: 1080p60
	2D/3D Graphics Engine	GCNanoUltra/GC320, OpenVG 1.1, OpenGL ES 2.0
Graphics input	CMOS sensor interface (camera)	1x MIPI-CSI2, 4 lanes
Ethernet		1x Gigabit Ethernet interface based on Realtek RTL8211FDI Ethernet PHY
Wi-Fi/BT		Murata LBEE5QD1ZM (1ZM) Wi-Fi/BT module, 802.11 a/b/g/n/ac and BT/BLE 5.1, SDIO interface, based on NXP chipset 88W8987. Other available on request.
I/O (all functions are not available at the same time)	PCIe	1x PCIe Gen2, 1x lane
	USB	2x USB2.0 OTG
	QSPI/FlexSPI	1x QuadSPI supporting XIP
	UART, SPI, I2C, Audio	4x UART, 3x SPI, 4x I2C, 5x SAI (12Tx + 16 Rx external I2S lanes), 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 (BD71847AMWV)
	Power Management (PMIC)	PMIC (BD71847AMWV) supporting DVFS techniques for low power modes
Power	Supply voltage	+4-5V
	Power consumption	TBD

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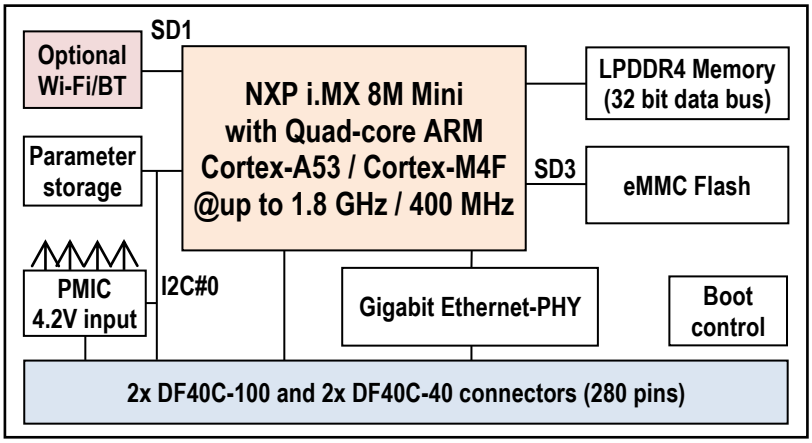
Environment	Operating Temperature	0 - 70° and -25 - 85° Celsius
	Operating Humidity	5 - 90% relative humidity, non-condensing
Mechanical	Dimensions (W x H x D)	42 x 45 x 5 mm, EAuCOM form factor
Connectors		2x DF40C-100 and 2x DF40C-40 connectors, 0.4 mm pitch. 280 pins in total
		Optional u.fl. antenna connector if Wi-Fi/BT module mounted

Block Diagram



Ordering Information

Part No.[1]	CPU	Corex-A53 Top Frequency	SDRAM	eMMC	Wi-Fi/BT Module	Operating Temperature
EAC00437	MIMX8MM6DVTLZAA	1.8GHz	1 GByte LPDDR4	8 GByte	No	0 - 70° C
EAC00432	MIMX8MM6CVTKZAA	1.6GHz	1 GByte LPDDR4	8 GByte	No	-25 - 85° C

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

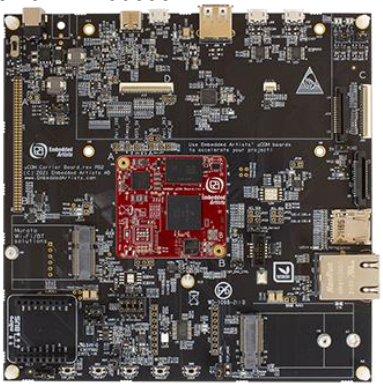
Support Highlights

Embedded Artists is a reliable and competent 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 COM Board is supported by the ***iMX8M Mini uCOM Developer's Kit V3*** that provides a quick path to get started with development and integration work. The kit provides reference implementations of key interfaces. Ordering part No. **EAK00393**



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