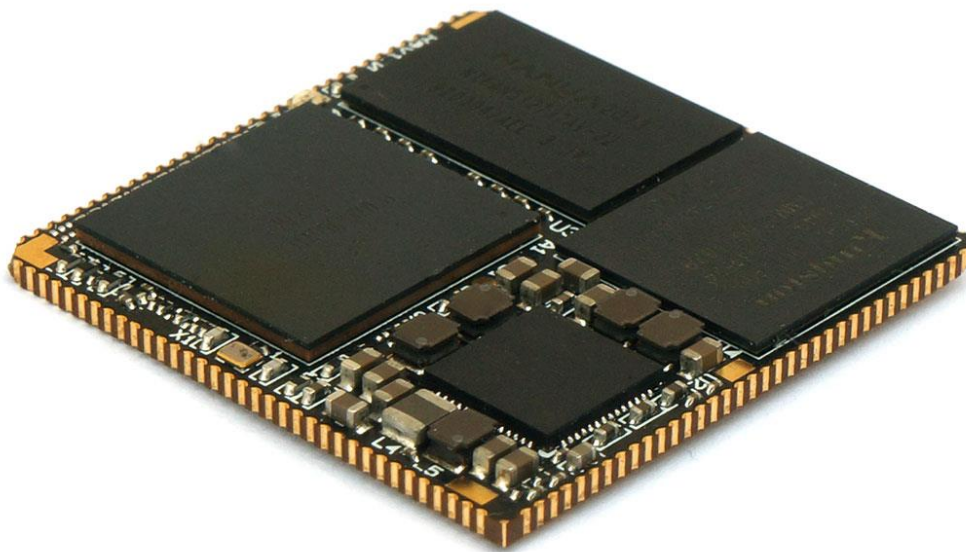


Computer on Module

MCM-iMX8M-Mini

Datasheet v1.1

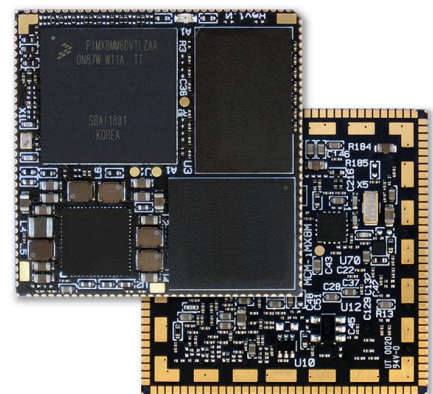


MCM-iMX8M-Mini is an ultra-miniature soldered Computer-on-Module (CoM) which features high performance graphics and imaging capabilities as well as impressive power efficiency.

Ideal for a wide range of space constrained applications such as wearable healthcare monitors and medical devices, portable handheld devices and instrumentation equipment. Measuring just 30mm x 30mm this tiny module brings out the full capabilities of the i.MX8M Mini quad core offering up to 4GB RAM and 64GB eMMC, Gbit Ethernet, PCIe, 2 USB ports, 4 UARTs and up-to 86 GPIOs. Display and camera connectivity is supported with MIPI-DSI and MIPI-CSI interfaces.

Key Features:

- NXP i.MX8M Mini processor, 1.8GHz
- Up to 4GB LPDDR4 and 64GB eMMC
- Integrated 2D/3D GPU and 1080p VPU
- PCIe, 2x USB, RGMII, 4x UART, 86x GPIO
- Tiny form-factor: 30 x 30mm, 140-pin QFN, 0.8mm pitch
- Yocto Linux and Debian Linux



MCM-iMX8M-Mini

System and Graphics

Note:

- "Option" column specifies the configuration code required to have the particular feature.
- "+" means that the feature is always available

Feature	Specification	Option
CPU	NXP i.MX8M Mini DualLite, dual-core ARM Cortex-A53, 1.8GHz	C1800D
	NXP i.MX8M Mini Dual, dual-core ARM Cortex-A53, 1.8GHz	C1800DM
	NXP i.MX8M Mini Quad, quad-core ARM Cortex-A53, 1.8GHz	C1800QM
Video	Decode: 1080p60 H.265, H.264, VP8, VP9	C1800DM or C1800QM
	Encode: 1080p60 H.264, VP8	C1800DM or C1800QM
GPU	GC NanoUltra GPU OpenGL ES 2.0, Open VG 1.1	+
Real-Time Coprocessor	ARM Cortex-M4	+
RAM	1GB – 4GB, LPDDR4	D
Storage	eMMC flash, 4GB – 64GB	N

Display & Camera

Display	MIPI-DSI, 4 data lanes, up to 1920 x 1080 @60Hz	+
Touchscreen	Capacitive touch-screen support through SPI and I2C interfaces	+
Camera	MIPI-CSI, 4 data lanes	+

Network

Ethernet	GbE Ethernet port (RGMII)	+
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Audio

Digital Audio	Up to 2 x I2S/SAI	+
	S/PDIF input/output	+

MCM-iMX8M-Mini

I/O

Feature	Specification	Option
PCI Express	PCIe x1 Gen. 2.1	+
USB	2x USB2.0 dual-role ports	+
UART	Up to 4x UART ports	+
MMC/SD/SDIO	Up to 2x MMC/SD/SDIO	+
SPI	Up to 3x SPI	+
I2C	Up to 3x I2C	+
GPIO	Up to 86x GPIO (multifunctional signals shared with other functions)	+
RTC	Real Time Clock, powered by external lithium battery	+
JTAG	JTAG debug interface	+

Electrical, Mechanical and Environmental Specifications

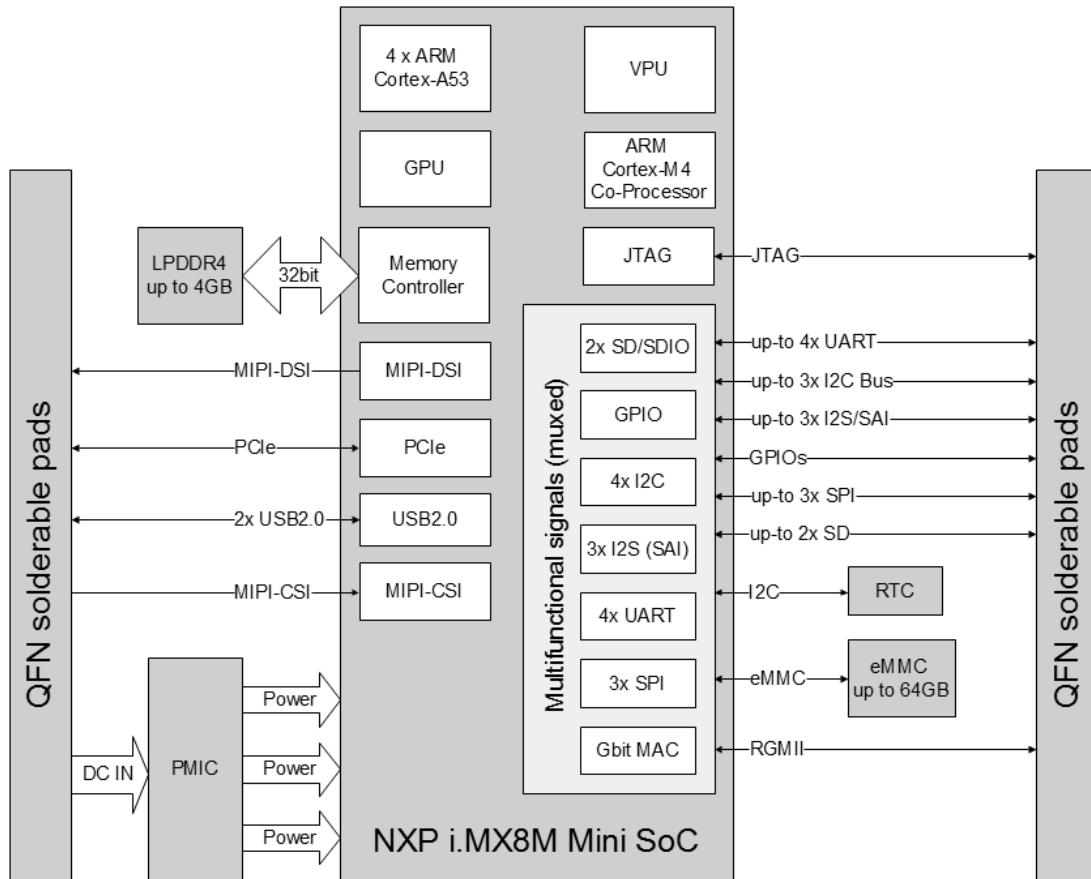
Supply Voltage	3.45V to 4.4V
Digital I/O Voltage	3.3V
Power Consumption	0.5 – 2.5W, depending on system load and board configuration
Dimensions	30 x 30 x 3 mm
Weight	5 gram
Footprints	140-pin, 0.8mm pitch QFN
MTTF	> 200,000 hours
Operating temperature (case)	Commercial: 0° to 70° C Extended: -20° to 70° C Industrial: -40° to 85° C.
Storage temperature	-40° to 85° C
Relative humidity	10% to 90% (operation) 05% to 95% (storage)
Shock	50G / 20 ms
Vibration	20G / 0 - 600 Hz

Software

BSP	Full Board Support Package and ready-to-run images
OS Support	Yocto Linux and Debian Linux

MCM-iMX8M-Mini

Block Diagram



MCM-iMX8M-Mini

MCM-iMX8M-Mini Evaluation Kit

Hardware

- MCM-iMX8M-C1800QM-D2-N16 SOM assembled on; SB-MCMIMX8M carrier-board
- 5" WXGA LCD with capacitive touch panel
- WiFi antenna and cable
- Serial port cable
- USB cable and adapter
- 12V power supply

Technical Support

- Technical support for 12 months.
- Schematics review of the customer's carrier board design.
- LCD panel compatibility verification and driver adaptation service.
- 45-day trial period. Evaluation Kit will be accepted for refund if the user finds the product is not suitable for their needs.

