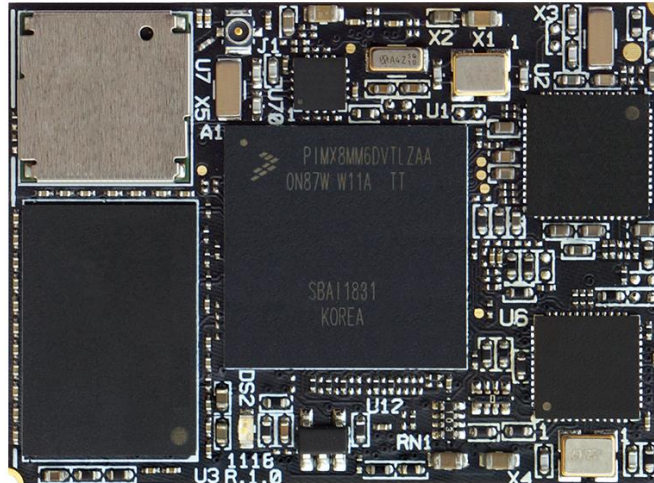


Computer on Module

UCM-iMX8M-Mini

Datasheet v1.1

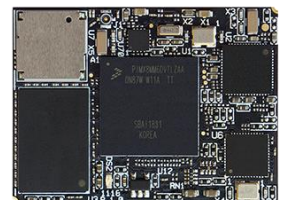


UCM-iMX8M-Mini is an ultra-miniature Computer-on-Module (CoM) features high performance graphics and imaging capabilities as well as impressive power efficiency. Ideal for a wide range of space constrained applications such as wearable healthcare monitors and medical devices and portable handheld devices and instrumentation equipment.

Measuring just 28mm x 38mm 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 85 GPIOs. Display and camera connectivity is supported with MIPI-DSI and MIPI-CSI interfaces. In addition, UCM-iMX8M-Mini features on-board WiFi 802.11ac and Bluetooth 4.2 interfaces implemented with a pre-certified module.

Key Features:

- Miniature size – 28mm x 38mm
- Quad Core ARM Cortex A-53 CPU at 1.8GHz
- Integrated 2D/3D GPU and 1080p VPU
- Up to 4GB LPDDR4 and 64GB eMMC
- MIPI-DSI interface up to 1920 x 1080
- Gbit Ethernet, Wifi 802.11a/b/g/n/ac and Bluetooth 4.2
- PCIe, 2 x USB2.0, 4 x UART, 85 x GPIO



UCM-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 (MAC+PHY) | E |
| WiFi | Certified 802.11ac WiFi interface Broadcom BCM43353 chipset | WB |
| Bluetooth | Bluetooth 4.2 BLE | WB |

UCM-iMX8M-Mini Audio

| Feature | Specification | Option |
|---------------|---------------------|--------|
| Digital Audio | Up to 3 x I2S/SAI | + |
| | S/PDIF input/output | + |

I/O

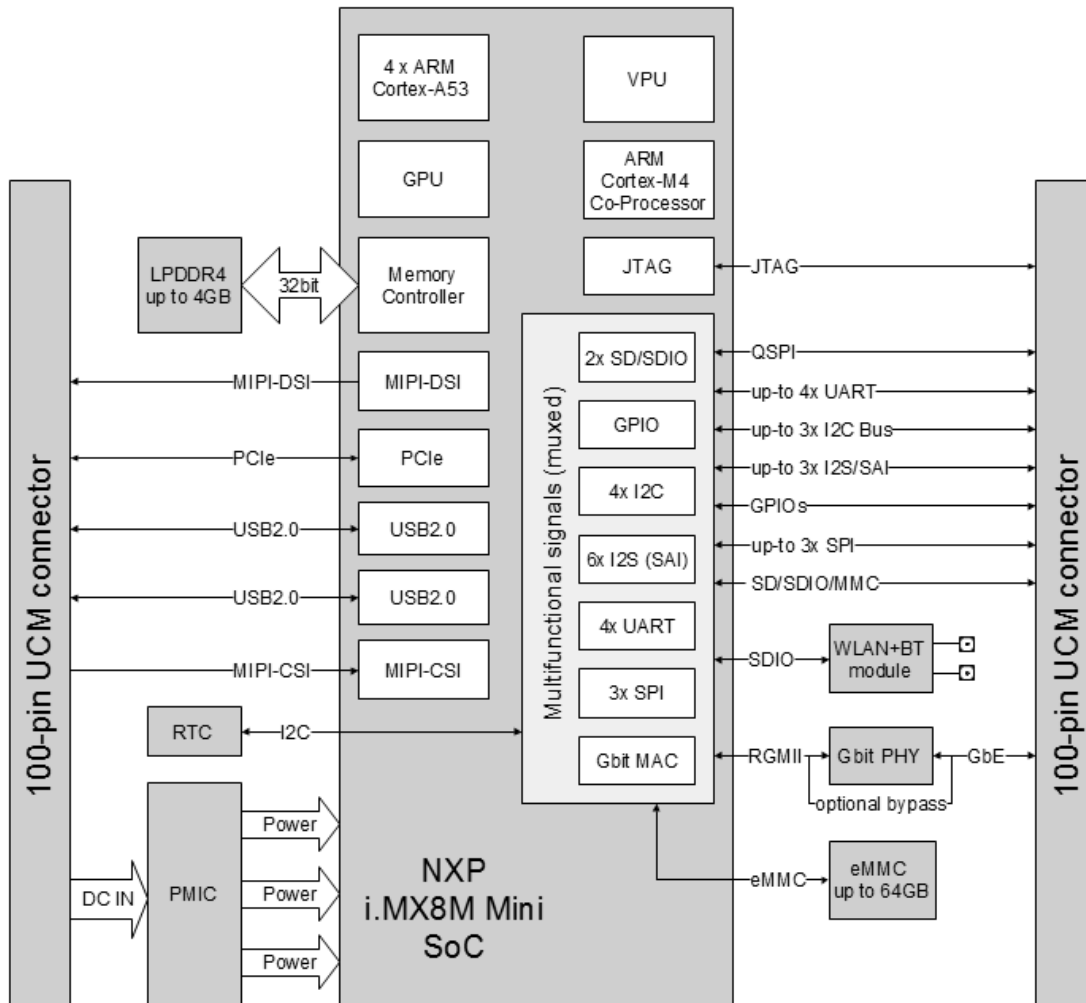
| | | |
|-------------|--|---|
| PCI Express | PCIe x1 Gen. 2.1 | + |
| USB | 2x USB2.0 dual-role ports | + |
| UART | Up to 4x UART ports | + |
| MMC/SD/SDIO | Up to 1x MMC/SD/SDIO | + |
| SPI | Up to 3x SPI | + |
| I2C | Up to 3x I2C | + |
| PWM | Up to 4x general purpose PWM signals | + |
| GPIO | Up to 85x 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 | 3.55V to 4.4V |
| Digital I/O Voltage | 3.3V |
| Active Power Consumption | TBA |
| Dimensions | 28 x 38 x 4 mm |
| Weight | 7 gram |
| Connectors | 2 x 100 pin, 0.4mm pitch |
| 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 |

UCM-iMX8M-Mini

Block Diagram



UCM-iMX8M-Mini

UCM-iMX8M-Mini and SBC-iMX8M-Mini Evaluation Kit

Package contents

- 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. Eval Kit will be accepted for refund if the user finds the product not suitable for his needs.

Hardware

- UCM-iMX8M-C1800QM-D2-N16-E-WB
- SB-UCMIMX8 carrier board
- 5" WXGA LCD with capacitive touch panel
- WiFi antenna and cable
- Serial port cable
- USB cable and adapter
- LI-OV5640 camera module
- 12V power supply

