PicoCore™MX8MM

Computer On Module with NXP i.MX 8M Mini

Characteristics

- NXP i.MX 8M Mini ARM® Cortex®-A53 Solo/ Dual/ Quad @1800MHz & ARM® Cortex®-M4 @400MHz
- TFT MIPI-DSI, alternatively LVDS
- 2D, 3D and Video Hardware Acceleration
- Touch (4 wire-/ PCAP Touch) via I^2C
- up to 4GB LPDDR4 RAM, 512MB SLC NAND Flash or 32GB eMMC
- Audio Line In/Out, Mic, Headphone (I^2S also available)
- USB 2.0 Device, USB 2.0 Host
- 2x Gigabit Ethernet or RGMII, PCIe, MIPI-CSI
- 2x SPI, 4x I^2C, 4x Serial, (CAN)
- I/O, PWM, 2x SDIO (SD-Card), RTC
- 5V with 3W typ.
- 0°C - +70°C
- WLAN/BT 2.4/ 5GHz, BT 5.0 LE
- 2x100pin, 1.5mm up to 3mm hight
- available until minimum 2034

Original Size

Description

This member of the new and compact PicoCore™ Computer On Module product family is offered with NXP i.MX 8M Mini CPU. The size of 35 x 40mm only, allows usage in compact housings. The module comes with high performance and is very well suited for secure cloud connections.
The i.MX 8M Mini is NXP's first embedded hetergeneous multi-core applications processor. It brings together high-performance computing, power efficiency, enhanced system reliability and embedded security needed to drive the growth of fast-growing edge node computing, streaming multimedia, and machine learning applications. The heart of the processor is a scalable core complex with up to four ARM® Cortex®-A53 cores with up to 2GHz, plus one Cortex®-M4 for real-time processing with 400+ MHz. The i.MX 8M Mini also packs-in hardware 1080p video acceleration to enable two-way video applications, 2D and 3D graphics to provide a rich visual HMI experience.
Displays can be connected via MIPI-DSI and LVDS.
The PicoCore™ standard uses two plug connectors (Hirose DF40C) with 100 pins each. This enables a compact construction and low board-to-board distance.

Block Diagram

On-Board Operating System

The F&S Linux BSP (uboot, buildroot, Yocto, QT, GStreamer) includes a customized kernel and all interface drivers incl. source.

A Cross Compiler Toolchain is available to create own bootloaders, kernels or other software.

Starterkit

The PicoCore™MX8MM starterkit is available with Linux.
The starterkit contains of a base board with PicoCore™MX8MM module, a cable kit and access data to the F&S download area.
The forum with 3000+ registered customers offers example programs and is always online for support requests.
For an easy start of development we also offer workshops.

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PicoCore™MX8MM Baseboard

J1 : PicoCore
J2 : JTAG
J3 : 2x USB Host
J4 : Audio (HP + MIC)
J5 : USB OTG
J6 : µSD
J7 : CAN
J8 : UART_A (RXD / TXD)
J9 : UART_B (RXD / TXD)
J10: UART_C (Komplett)
J11: GPIO
J12: MIPI-CSI (Camera)
J13: MIPI-DSI (2CH / 4Lanes)
J14: Display (BLPWM...)
J15: I2C für Touch
J16: 2x ETH
J17: MPCIe (Bottom)
J18: SIM (Bottom)
J19: Power
T11: On/Off oder Reset
T12: Reset
T13: BOOTSEL

Workshops

For an easy start we offer multiple Linux workshops.

- Linux on F&S modules
- Linux – Qt5 workshops
- Linux – asymmetric multiprocessing
- Linux – Secure Boot

More accessories can be found on our website.

Standard Versions/ Order Notations

PicoCoreMX8MMr2-V1-LIN
Cortex®-A53 – 1800MHz Quad-Core, 1GB RAM, 4GB eMMC, I2S, Ethernet **(RGMII),** MIPI-DSI, 0°C - +70°C, Linux, **MOQ 500pcs**.

PicoCoreMX8MMr2-V2-LIN
Cortex®-A53 – 1800MHz Quad-Core, 1GB RAM, 4GB eMMC, Audio, 1x Ethernet, LVDS, 0°C - +70°C, Linux

PicoCoreMX8MMr2-V3-LIN
Cortex®-A53 – 1800MHz Quad-Core, 1GB RAM, 512MB NAND Flash, Audio, 1x Ethernet, **WLAN/BT**, LVDS, 0°C - +70°C, Linux

PicoCoreMX8MMr2-V4-LIN
Cortex®-A53 – 1800MHz Quad-Core, 1GB RAM, 4GB eMMC, Audio, 1x Ethernet, **WLAN/BT**, LVDS, 0°C - +70°C, Linux

PicoCoreMX8MM-V5-LIN
Cortex®-A53 – 1800MHz Quad-Core, 512MB RAM, 256MB NAND Flash, Audio, **2x Ethernet, CAN**, LVDS, 0°C - +70°C, Linux

PicoCoreMX8MM-V6-LIN
Cortex®-A53 – 1800MHz Quad-Core, 512MB RAM, 256MB NAND Flash, EEPROM, Audio, **2x Ethernet**, **CAN**, **MIPI-DSI**, **Security chip**, 0°C - +70°C, Linux

Technical Data

Power Supply:	5V
Power Consumption:	3W typ.
Interfaces-Fix:	1-2x Ethernet or RGMII 2x Serial, 1x USB Host, 1x USB Device, 1x I²C, Audio Line In/ Out/ Mic/ HP
Display:	LVDS 24Bit up to FullHD or MIPI-DSI up to 4 lanes
Camera:	MIPI-CSI up to 4 lanes
Interfaces-Flex: **(All feature cannot be used simultaneously due to multiple occupancy of pins. Please refer to list in hardware documentation.)**	2x Serial, 3x I²C, 1x CAN, 2x SPI, 2x SDIO, 8x PWM, Watchdog, 1x SPDIF, 1x ESAI, 1x SAI,1x SSI,
RAM:	LPDDR4/ DDRL3 up to 4GB
Program Memory:	SLC NAND up to 512MB or eMMC up to 32GB
Processor:	Solo/ Dual/ Quad ARM® Cortex®-A53-1800MHz & ARM® Cortex®-M4 -400MHz
WLAN/BT	WLAN 802.11ac/ BT 5.0
Temperature Range:	0°C - +70°C
Size:	35mm x 40mm x 8mm
Plug Connector:	2x 100pol Hirose DF40C
Weight:	about 10g

Standard Versions/ Order Notations

PicoCore™MX8MM-SKIT-LIN
Starterkit with PicoCoreMX8MMr2-V3-LIN, base board, cable kit, access data to BSP and documentation

Minimum Order Quantity for Special Versions:
Customer-specific software: 500 pieces
Assembly Variant: 1000 pieces

Änderungen, die dem technischen Fortschritt dienen, vorbehalten.
Cortex ist eingetragenes Warenzeichen der ARM Ltd..
i.MX 8 is a trademark of NXP Semiconductors Netherlands B.V.
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