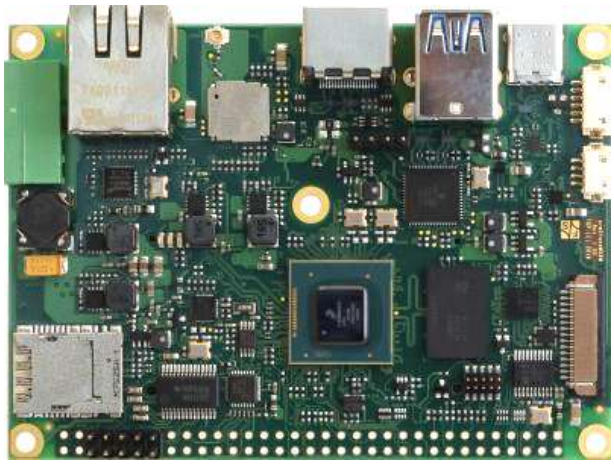
armStone™MX8M

Single Board Computer with NXP i.MX 8M Prozessor

Characteritics

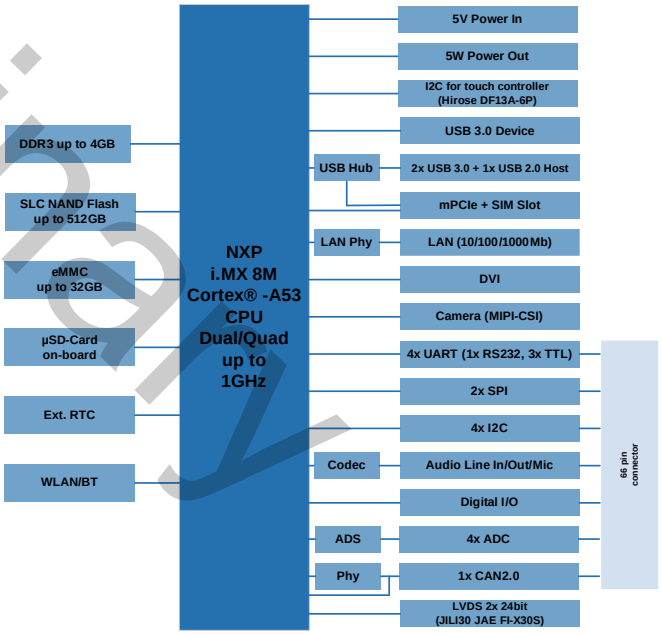
- NXP i.MX 8M Dual/Quad
  ARM® Cortex®-A53 - 1GHz & Cortex®-M4
- up to 8GB LPDDR4 RAM
- up to 1GB SLC NAND Flash and 32GB eMMC
- TFT via 2x LVDS and DVI
- Vulkan
- MPEG2, MPEG4p2 H 263 up to 4Kp60
- 1x Ethernet 10/ 100/ 1000Mbit
- 1x USB 3.0 OTG (USB-C)
- 2x USB 3.0 Host & 2x USB 2.0 Host
- 1x CAN 2.0, 4x I²C, 2x SPI
- 3x Serial (1x RS232, 2x TTL)
- 1x micro-SD Card or WLAN/BT4.1
- 1x mPCIe with SIM Card Slot
- 1x MIPI-CSI Camera
- Audio Line IN/ OUT/ MIC, Touch via I²C
- Linux (Buildroot, Yocto),



Description

armStone™MX8M is a high-performance Single Board Computer in PicoITX form factor. The module will be available for 10 – 15 years. Aus der i.MX 8 CPU Familie wird eine The Cortex®-A53 CPU (64 Bit) from the i.MX 8 processor family is available in Dual or Quad, as well as with an additional Cortex®-M4. The processor is very well suited for multimedia applications (video decoding up to 4k UltraHD is possible) and the Cortex®-M4 core can be used for real-time processing.
armStone™MX8M offers all communication interfaces common for the industrial and medical sector: CAN, USB3.0, USB2.0, SPI, UART, I²C, Gigabit Ethernet etc. It also has a camera interface. LVDS (2-channel up to FullHD) and DVI (**up to 4k resolution**) are available for display connection.
Touch panels (resistive as well as PCAP) can be connected via I²C. Linux runs on the Cortex®-A53 and FreeRTOS on the Cortex®-M4. Power supply is 5V.

Block Diagram



On-Board Operating System

The F&S Linux BSP (uboot, Buildroot, Yocto, QT, GStreamer) contains the customized kernel and all interface drivers including source.
A Cross Compiler Toolchain is also available for the creation of own bootloaders, kernels or other software.

For a quick start into software development, the following workshops are offered:
Linux on F&S Modules (Standard Workshop)

Additional workshops:
Linux – Qt5 Workshop
Linux – Asymmetric Multiprocessing
Linux – Secure Boot

Starterkit

The armStone™MX8M starterkit is available with Linux. It consists of an armStone™MX8M-V3 board, a cable kit, as well as access data to documentation and software. Our support forum with more than 3000 registered customers is always online for help.
Start your development fast and easy by attending one of our workshops.

F&S Elektronik Systeme GmbH · Untere Waldplätze 23 · 70569 Stuttgart · Germany
☎ +49 (0) 711 123 722 0 · 🖷 +49 (0) 711 123 722 99
www.fsembedded.com · info@fsembedded.com

Pin Assignment

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J1 – Feature Connector											
1	VCC3.3	12	*XGPIO8/I2C4_DAT*	23	XGPIO19/ROW5	34	Backlight On	45	LINEOUT_R	56	RTS2 (RS232)
2	VCC5	13	XGPIO9/TXD3	24	XGPIO29/ROW6	35	*XGPIO28*/I2C3_RST/ADC_IN3	46	GND	57	TXD2 (RS232)
3	XGPIO0/COL0	14	*XGPIO10/I2C4_SCL*	25	XGPIO21/ROW7	36	*XGPIO29*/RXD4	47	GND	58	CTS2 (RS232)
4	*XGPIO1/COL1/SPI1_CLK*	15	XGPIO11/RXD3	26	GPIO1	37	GND	48	LINEIN_L	59	nc
5	XGPIO2/COL2	16	*XGPIO12/I2CLK/I2C4_IRQ*	27	GND	38	*XGPIO30*/TXD4	49	LINEOUT_L	60	nc
6	*XGPIO3/COL3/SPI1_CSn*	17	*XGPIO13/I2C_RST/CTS4/*	28	XGPIO22/PWMOUT0	39	VCC3.3	50	GND	61	GND
7	XGPIO4/COL4	18	XGPIO14/ROW0/TXD1	29	*XGPIO23*/I2C3_SDA/ADC_IN0	40	VCC5	51	RESETBTN	62	VCC5 (COM keypin)
8	*XGPIO5/COL5/SPI1_MOSI*	19	XGPIO15/ROW1	30	XGPIO24/PWMOUT1	41	MIC1 (Audio pin 1)	52	VCC3.3	63	CAN1RX/CAN1L
9	XGPIO6/COL6	20	XGPIO16/ROW2/RXD1	31	*XGPIO25*/I2C3_SCL/ADC_IN1	42	GND	53	PWRBTN	64	CAN1TX/CAN1H
10	*XGPIO7/COL7/SPI1_MISO*	21	XGPIO17/ROW3	32	*XGPIO26*/PWMOUT2	43	nc	54	nc	65	BOOTSEL
11	GND	22	XGPIO18/ROW4	33	*XGPIO27*/I2C3_IRQ/ADC_IN2	44	LINEIN_R	55	RXD2 (RS232)	66	BOOTSEL

Accessories

Displaykit LVDS
Bestellnr. SINTF-LVDS2
7“ WVGA Display mit LVDS Interface und dazu passendem LVDS Kabel mit JAE FI-X30 Stecker

armStone Erweiterung
Bestellnr. aStone-ADP-UNI1
Leitet die Schnittstellen des 66pin Steckverbinders auf Standardstecker

Detaillierte Informationen zum Zubehör finden Sie auf unserer Homepage.

Technical Data

Power Supply:	+5V$_{DC}$/ ± 5%
Power Consumption:	t.b.d.
Digital I/ O:	max. 66 I/ O ports
Touch Panel:	4-wire, analog resistive and capacitive touch via I^{2}C
Interfaces:	1x 10/100/1000 Mbit Ethernet 3x Serial (1x RS232/ 2x TTL) 2x USB3.0 Host & 2x USB2.0 Host 1x USB3.0 OTG (USB-C socket) 4x I^{2}C, 2x SPI, 1x CAN 1x uSD Slot on-board (alternatively to WLAN/ BT4.1LE) 1x Audio (IN/ OUT/ MIC) 1x miniPCIe with SIMCard Slot 1x MIPI-CSI camera
TFT-LCD Interface:	2x 18/ 24bit LVDS
Screen:	DVI up to 4k resolution
RAM:	up to 8GB LPDDR4
Program Memory:	up to 1GB SLC NAND + 32GB eMMC
Processor:	NXP i.MX 8M Cortex-A53 (Dual/ Quad) up to 1GHz and Cortex-M4
Operating Temperature:	0°C - +70°C (opt. -20°C - +85°C)
Size:	100mm x 72mm x 15mm (l x b x d)
Weight:	about 40g

Standard Versions/ Order Notations

armStoneMX8M-V3-LIN
t.b.d.

armStoneMX8M-V4-LIN
i.MX 8M Quad, 2GB RAM, 256MB Flash, 4GB eMMC, Audio, Ethernet, CAN, mPCIe, MIPI-CSI camera, WLAN/BT4.1, LVDS, DVI, RTC, 0°C-+70°C, Linux

Minimum order quantity for custom versions:
300 pieces

Standard Versions/ Order Notations

armStoneMX8M-SKIT-LIN
armStoneMX8M-V4-LIN,
Anschlusskabel und Zugangsdaten zu Dokumentation und Software

F&S Elektronik Systeme GmbH · Untere Waldplätze 23 · 70569 Stuttgart · Germany
☎ +49 (0) 711 123 722 0 · 🖷 +49 (0) 711 123 722 99
www.fsembedded.com · info@fsembedded.com