

armStone™MX8M

Single Board Computer with NXP i.MX 8M Prozessor

Characteristics

- 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.

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:

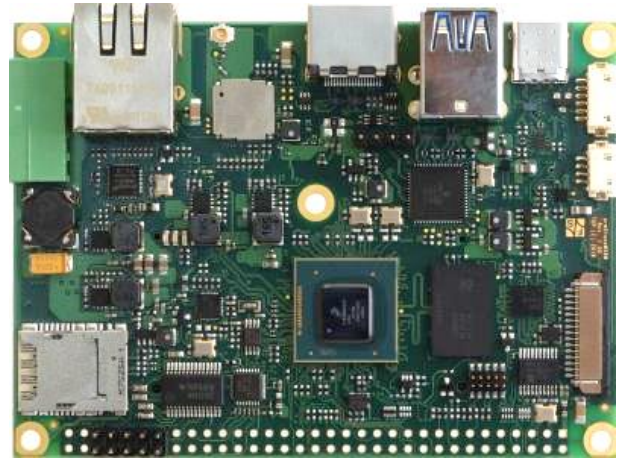
Linux on F&S Modules (Standard Workshop)

Additional workshops:

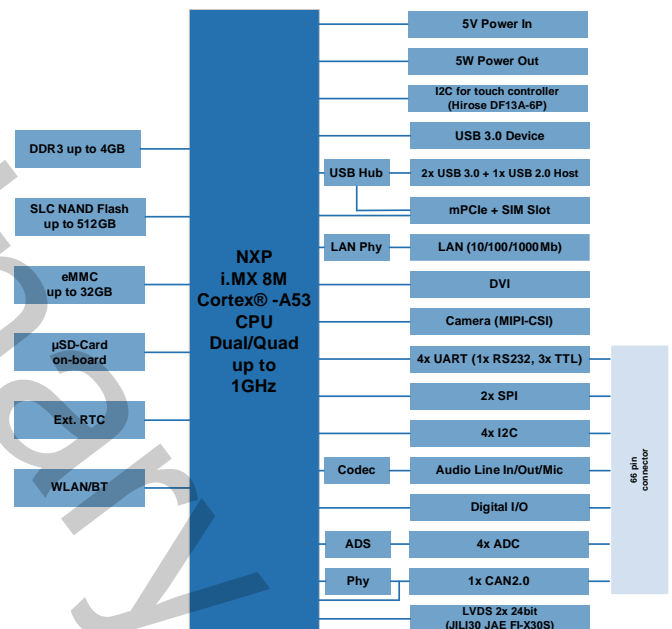
Linux – Qt5 Workshop

Linux – Asymmetric Multiprocessing

Linux – Secure Boot



Block Diagram



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.

Pin Assignment

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/A DC_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_C LK	15	XGPIO11/RXD3	26	GPIO1	37	GND	48	LINEIN_L	59	nc
5	XGPIO2/COL2	16	XGPIO12/I2CLK/I2C4_I RQ	27	GND	38	XGPIO30/TXD4	49	LINEOUT_L	60	nc
6	XGPIO3/COL3/SPI1_C Sn	17	XGPIO13/I2C_RST/CT S4/	28	XGPIO22/PWMOUT0	39	VCC3.3	50	GND	61	GND
7	XGPIO4/COL4	18	XGPIO14/ROW0/TXD1	29	XGPIO23/I2C3_SDA/A DC_IN0	40	VCC5	51	RESETBTN	62	VCC5 (COM keypin)
8	XGPIO5/COL5/SPI1_M OSI	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/AD C_IN1	42	GND	53	PWRBTN	64	CAN1TX/CAN1H
10	XGPIO7/COL7/SPI1_MI SO	21	XGPIO17/ROW3	32	XGPIO26/PWMOUT2	43	nc	54	nc	65	BOOTSEL
11	GND	22	XGPIO18/ROW4	33	XGPIO27/I2C3_IRQ/AD C_IN2	44	LINEIN_R	55	RXD2 (RS232)	66	BOOTSEL

Accessories

Disolavkit LVDS

7" WVGA Display mit LVDS Interface und dazu
passendem LVDS Kabel mit JAE FI-X30 Stecker

armStone Erweiterung

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 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-V4-LIN

i.MX8M Quad, 1GB RAM, 256MB Flash, 4GB eMMC,
Audio, Ethernet, CAN, mPCIe, MIPI-CSI Kamera, 2x
USB3.0, 1x USB 2.0, LVDS, DVI, RTC, 0°C-+70°C,
Linux

Standard Versions/ Order Notations

armStoneMX8M-SKIT-LIN

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

Minimum Order Quantity for Special Versions

Customer-Specific Software **500 pieces**
Assembly Variant **1000 pieces**