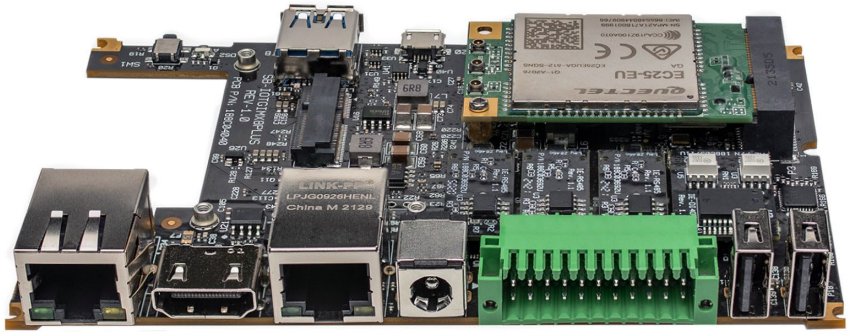
Single Board Computer

SBC-IOT-iMX8PLUS

Datasheet v1.1



SBC-IOT-iMX8-Plus is powerful Single Board Computer built around NXP i.MX8M-Plus. It features high performance graphics and image capabilities for a wide range of applications including **industrial control and monitoring, medical, IOT, digital signage and professional audio visual devices.**

This extremely powerful SBC offers a wide range of high-speed display interfaces including HDMI, LVDS. With up-to 4GB RAM and 128 eMMC, plus extended temperature range of -40°C to 80°C and a wide input voltage range of 8V to 36V: ideal for industrial and harsh environments. Featuring a rich I/O (see below) which can also be expanded via Custom I/O boards.

Key Features:

- NXP i.MX8M-Mini CPU, quad-core Cortex-A53
- Up-to 4GB RAM and 128GB eMMC
- LTE modem, Wi-Fi 802.11ax, Bluetooth 5.3
- 2x LAN, 2x USB2, 1 x USB3, Up-to 3x RS485 / RS232 and digital I/O, 2 x CAN bus
- Modbus RTU, Modbus TCP and MQTT
- Custom I/O expansion boards

Also available as a System-on-Module

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CPU Core

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 Plus QuadLite, quad-core ARM Cortex-A53, 1.8GHz	C1800Q
	NXP i.MX8M Plus Quad, quad-core ARM Cortex-A53, 1.8GHz	C1800QM
NPU	AI/ML Neural Processing Unit, up to 2.3 TOPS	C1800QM
Real-Time Co processor	ARM Cortex-M7, 8000Mhz	+

Memory and Storage

RAM	1GB – 4GB, LPDDR4	D
Primary Storage	16B – 128GB eMMC flash, soldered on-board	N
Secondary Storage	16GB-128GB eMMC flash, optional add-on module	FXN

Display and Graphics

Display Output	DVI-D, up to 1080p60	+
GPU and Video	GC7000UL GPU 1080p60 HEVC/H.265, AVC/H.264	CQ1800QM

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Network

Feature	Specification	Option
LAN	2 x 1000Mbps Ethernet ports, RJ45 connector	+
Wi-Fi and Bluetooth	802.11ax WiFi interface and Bluetooth 5.3 BLE Implemented with Intel Wi-Fi 6 AX210 module 2 x 2.4GHz/5GHz rubber duck antennas	WB
Wireless Mesh	Bluetooth mesh, Thread, Zigbee Implemented with Nordic Semiconductor nRF52840 module installed in expansion connector 2.4GHz rubber duck antenna	FXWMN
Cellular	4G/LTE CAT4 cellular module, Quectel EC25-E (EU bands) 4G/LTE CAT4 cellular module, Quectel EC25-A (US bands) 4G/LTE CAT4 cellular module, Quectel EG25-GGD (global bands) 4G/LTE CAT4 cellular module, Telit LE910C4 (global bands) SIM card socket Cellular rubber duck antenna	JEC25E JEC25A JEC25G JT910G + JEC25x or JEG25G
GNSS	GPS Implemented with Quectel EC25 module	JEC25x or JEG25G

I/O

Feature	Specification	Option
USB	2x USB2.0 ports, type-A connectors (back panel) 1 x USB3.0 port, type-A connector (front panel)	+ +
RS485/RS232	Up to 3x RS485 (half-duplex) / RS232 ports Isolated terminal-block connector	FxRS4/FxRS2
CAN bus	1 x CAN bus port - Isolated terminal block connector	+
	Additional 1 x CAN bus port - Isolated terminal block connector	FCCAN
Digital I/O	4x digital outputs + 4x digital inputs Isolated, 24V compliant with EN 61131-2, terminal-block connector	FDIO
Analog Input	4x analog inputs, 0...10V / 4...20mA Isolated, terminal block connector	FXADC
Debug	1x serial console via UART-to-USB bridge, micro-USB connector Support for NXP SDP/UUU protocol, micro-USB connector	+ +
Expansion Connector	Expansion connector for add-on boards LVDS, SDIO, USB, SPI, I2C, GPIOs	Not FXxx

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System

Feature	Specification	Option
RTC	Real time clock operated from on-board coin-cell battery	+
Watchdog	Hardware watchdog	+
Security	Secure boot, implemented with i.MX8M Plus HAB module	+
	TPM 2.0, Infineon SLB9670 * implemented with add-on board installed in expansion connector	FXTPM or FXADC or FXWMN or FXIMU
LEDs	2 x general purpose LEDs	+
PoE	Support for PoE (powered device)	POE
Accelerometer	6-axis MEMS MotionTracking, TDK ICM-42605 * implemented with add-on board installed in expansion connector	FXIMU

Electrical, Mechanical and Environmental Specifications

Feature	Specification
Supply Voltage	Unregulated 8V to 36V
Dimensions	125 x 80 x 25 mm
Heat-plate	Aluminium heat-plate, 130mm x 80mm *only with “H” configuration option
Weight	210 gram
MTTF	> 200,000 hours
Warranty	5 years
Operating temperature	Commercial: 0° to 60° C Industrial: -40° to 80° C.
Storage temperature	-40° to 85° C
Relative humidity	10% to 90% (operating) 05% to 95% (storage)

Software

BSP	Full Board Support Package and ready-to-run images
OS Support	Debian Linux, Yocto Project and U-Boot

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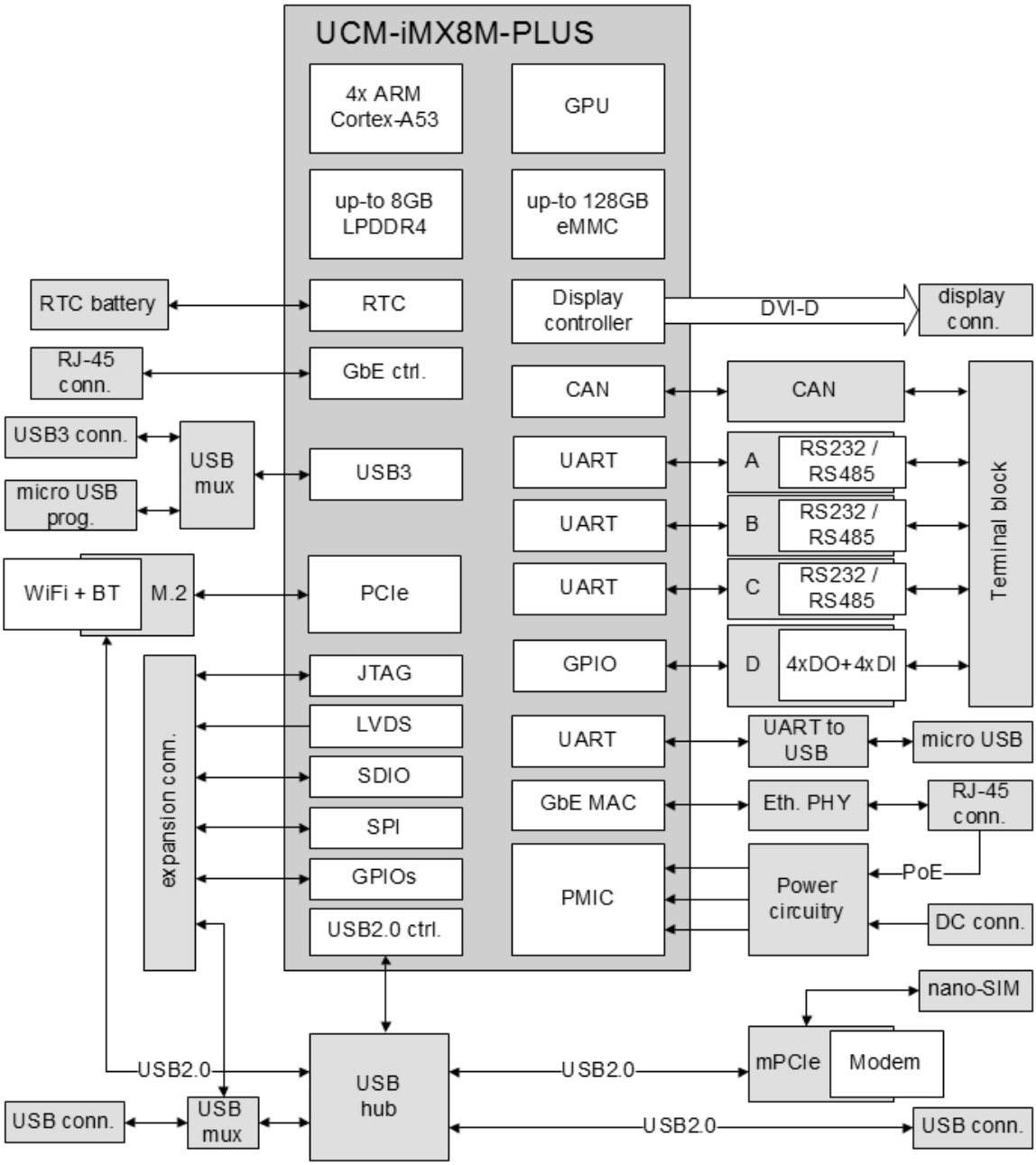
Block Diagram



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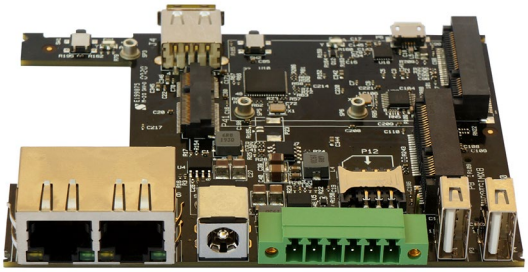
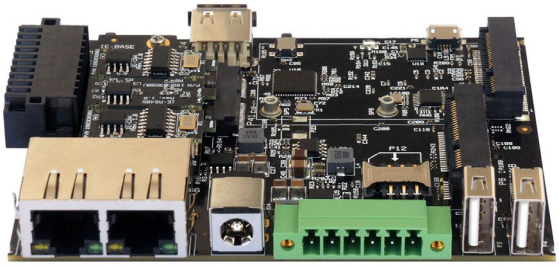
SBC-IOT-iMX8 Add-on boards



SBC-IOT-iMX8 without add-on board



SBC-IOT-iMX8 with add-on board

SBC-IOT-iMX8 can be optionally assembled with the industrial I/O add-on board. The industrial I/O add-on features up-to four separate I/O modules (A, B, C and D) which allow to implement different combinations of isolated, RS485, RS232, digital outputs and inputs. The following table shows the supported I/O combinations and ordering codes.

I/O Module	Function	Ordering Code
Serial I/O add-on module A	RS232	FARS2
	RS485	FARS4
Serial I/O add-on module B	RS232	FBRS2
	RS485	FBRS4
Serial I/O add-on module C	RS232	FCRS2
	RS485	FCRS4
	CAN bus (additional port)	FCCAN
Digital I/O add-on module D	4 x DI, 4 x DO	FDIO

Examples of valid combinations:

- For 2x RS485 the ordering code will be IOTG-IMX8-…-FARS4-FBRS4-…
- For RS485 + 4xDI+4xDO the ordering code will be IOTG-IMX8-…-FARS4-FCDIO-…
- For only 4xDI+4xDO the ordering code will be IOTG-IMX8-…-FCDIO-…

SBC-IOT-iMX8PLUS Evaluation Kit

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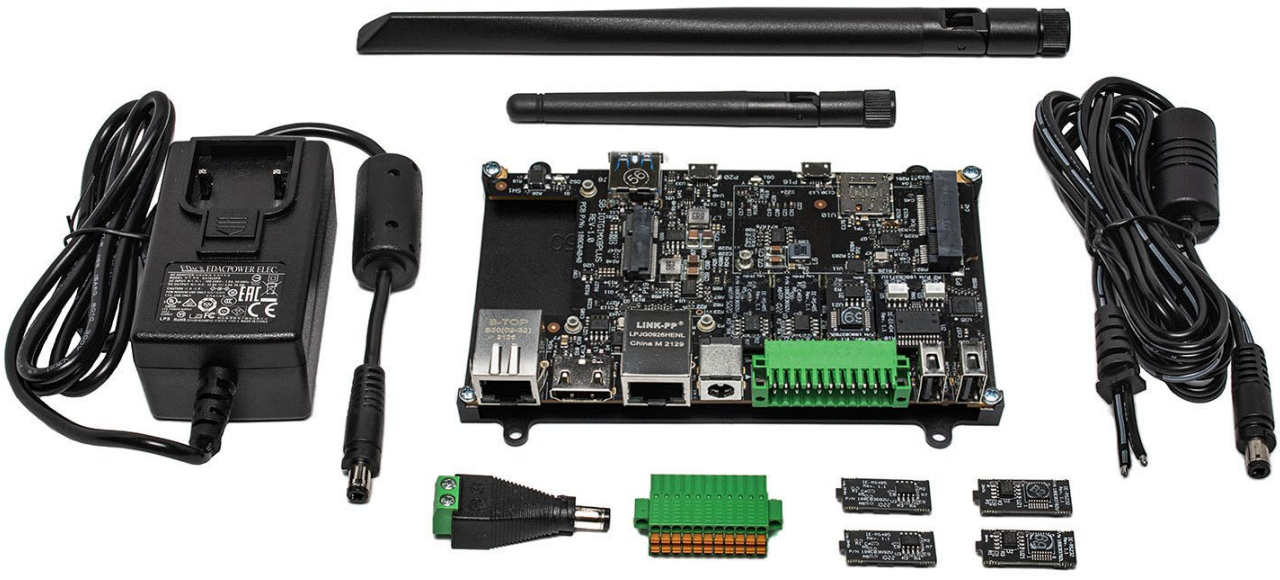
Hardware

- SBC-IOTIMX8PLUS-C1800QM-D4-N32-WB-FARS4-FBRS2-FDIO-POE-H-PS-XL-TIC
- 2 x Extra RS485 modules
- 2 x Extra RS232 modules
- DC terminal block adapter
- DC Y-cable
- USB cable

Technical Support

- Technical support for 12 months.
- 45-day trial period. Evaluation Kit will be accepted for refund if the user finds the product not suitable for their needs.



VERSION CONTROL		
Version	Date	Comment
1.0	30/03/2023	First release

SBC-IOT-iMX8PLUS

1.1	31/10/2025	Updated specifications (Storage, Network, IO, System, Mechanical). Updated add on boards.