MYC-JX8MX CPU Module

- *NXP i.MX 8M Quad Application Processor based on 1.3 GHz Arm Cortex-A53 and 266MHz Cortex-M4 Cores*
- *1GB / 2GB LPDDR4, 8GB eMMC Flash, 256Mbit QSPI Flash*
- *On-board Gigabit Ethernet PHY*
- *ROHM Power Management IC (PMIC)*
- *0.5mm pitch 314-pin MXM 3.0 Expansion Connector*
- *Supports Working Temperature Ranging from -30°C to 80°C*
- *Supports Running Linux 4.9.88 OS*

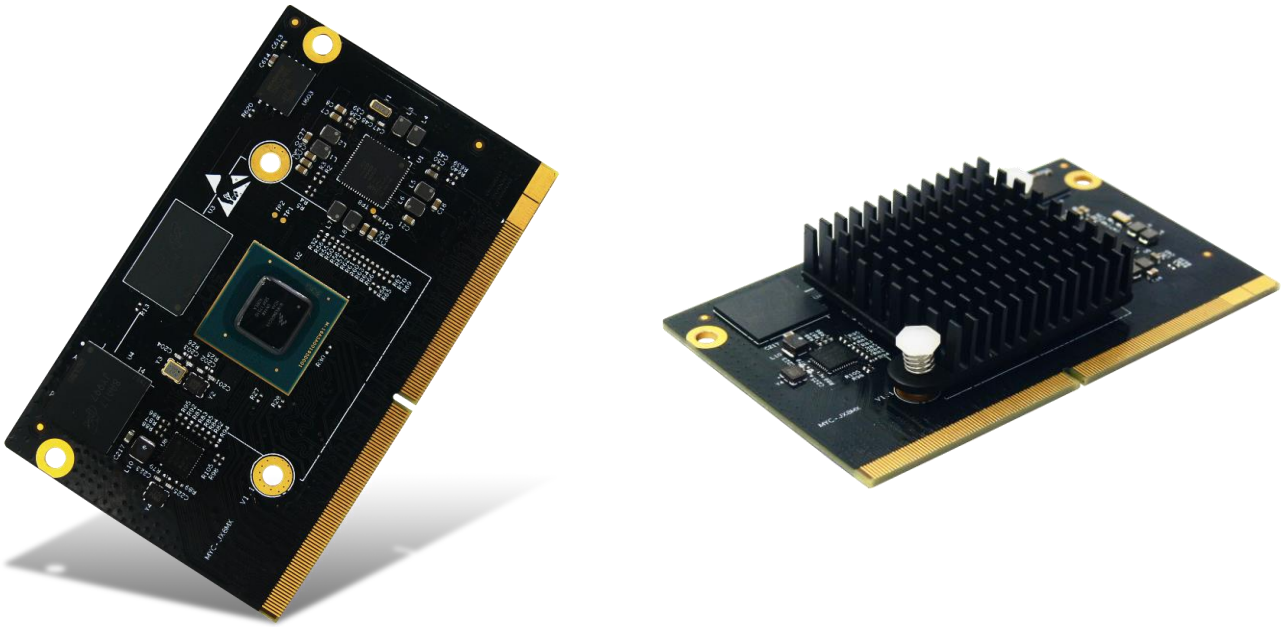

Figure 1-1 MYC-JX8MX CPU Module (delivered with installed heatsink by default)

Measuring 82mm by 52mm, the MYC-JX8MX CPU Module provides an outstanding embedded solution for Scanning/Imaging, Building Automation and Smart Home, Human Machine Interface (HMI), Machine Vision and more other consumer and industrial applications which requires high multi-media performance.

The MYC-JX8MX is based on NXP i.MX8M Quad processor featuring 1.3GHz quad ARM Cortex-A53 cores and a real-time ARM Cortex-M4 co-processor. It is a minimum system integrated with CPU, LPDDR4, eMMC, QSPI Flash, GigE PHY and PMIC. All controller signals are brought out through one 0.5mm pitch 314-pin MXM 3.0 Expansion Connector. It is a Linux-ready ARM SoM ideal for your next embedded design.

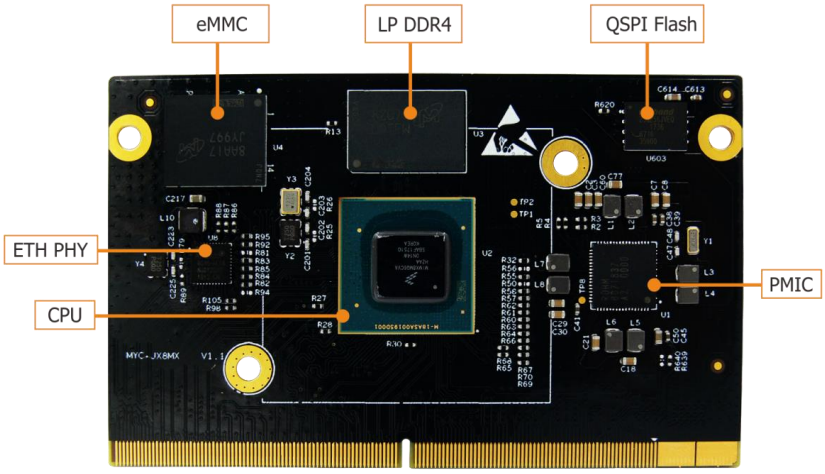

Figure 1-2 MYC-JX8MX CPU Module

A development board MYD-JX8MX is also available for evaluating the MYC-JX8MX CPU Module. It takes full features of the i.MX8M processor to provide rich peripheral interfaces and signals through connectors and headers. It is a solid reference design for users to develop their own carrier boards when using the MYC-JX8MX as their controller boards; it is also a complete evaluation platform for i.MX8M based solutions. MYIR offers MY-CAM003M MIPI Camera Module as an option for the board.

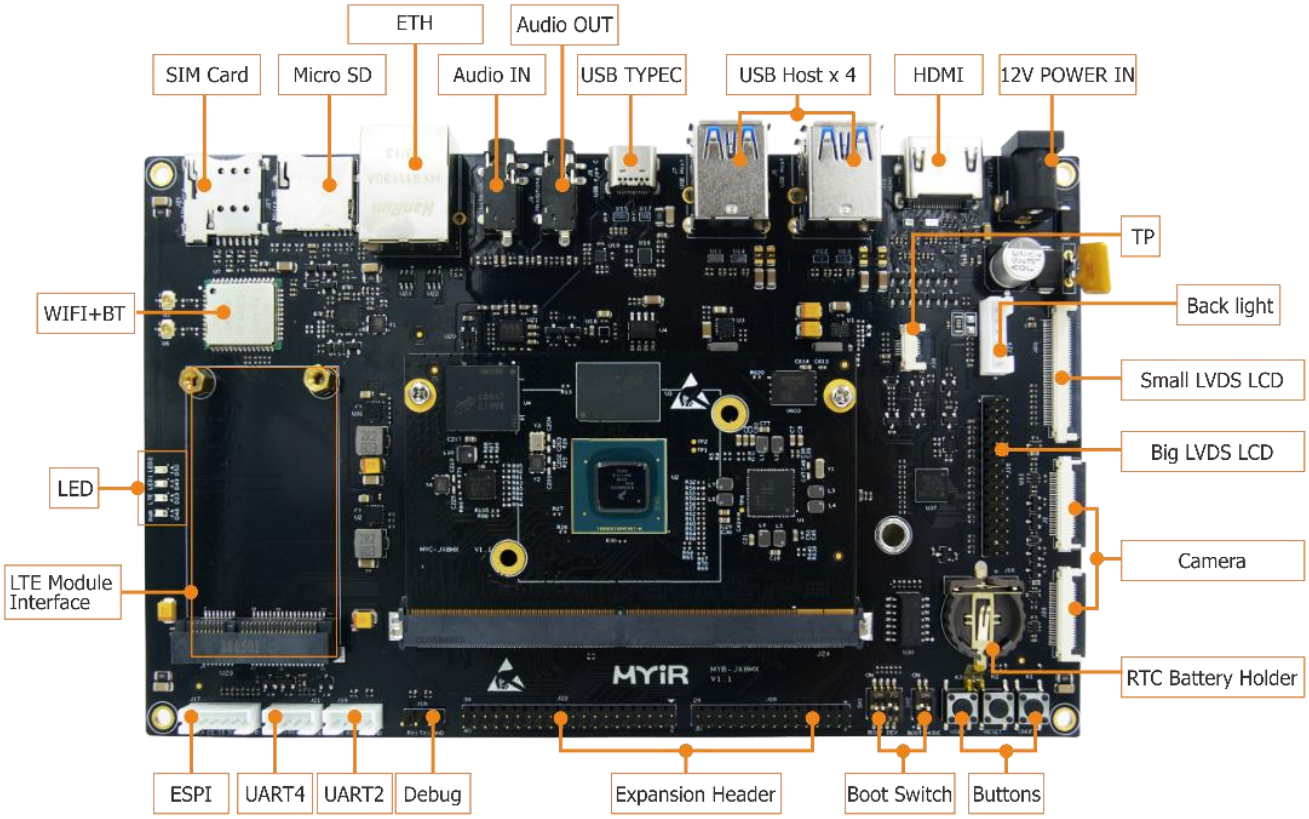

Figure 1-3 MYD-JX8MX Development Board Top-view

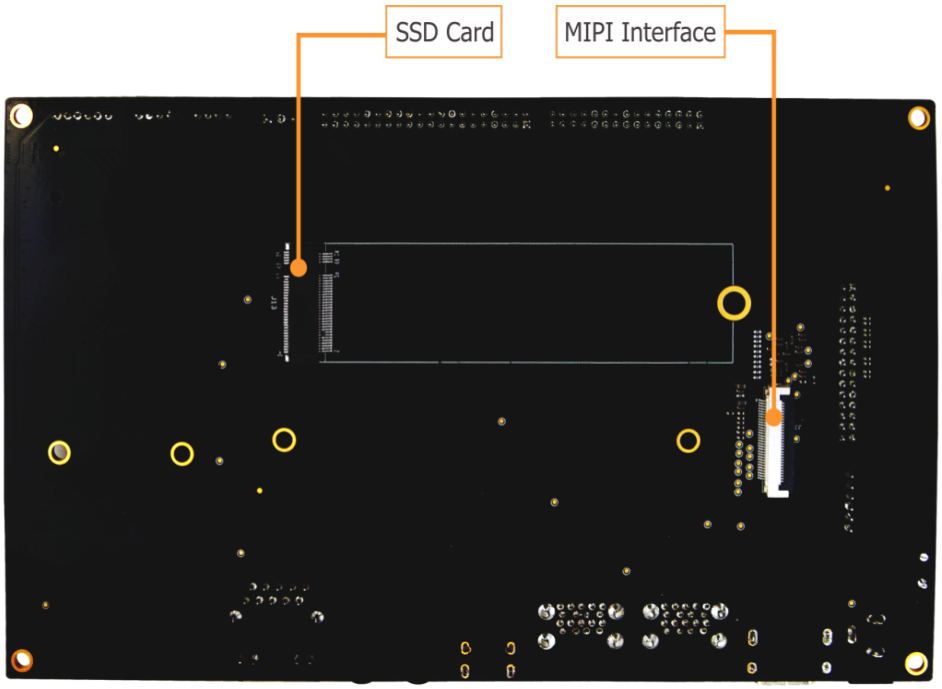

Figure 1-4 MYD-JX8MX Development Board Bottom-view

Hardware Specification

The MYC-JX8MX CPU Module is using NXP's 17 x 17 mm, 0.65 mm pitch, FCBGA bare die package i.MX 8M Quad Application Processor (MIMX8MQ6CVAHZAB) which is based on 1.3GHz quad Arm Cortex-A53 and 266MHz Cortex-M4 cores.

The i.MX 8M family of applications processors (i.MX 8M Dual / 8M QuadLite / 8M Quad) represent NXP's latest market of connected streaming audio/video devices, scanning/imaging devices, and various devices requiring high-performance, low-power processors. The i.MX 8M processors feature advanced implementation of a dual/quad Arm® Cortex®-A53 core, which operates at speeds of up to 1.3 GHz. A general-purpose Cortex®-M4 core processor is for low-power processing. The DRAM controller supports 32-bit/16-bit LPDDR4, DDR4, and DDR3L memory. There are a number of other interfaces for connecting peripherals, such as WLAN, Bluetooth, GPS, displays, and camera sensors. The i.MX 8M Quad and i.MX 8M Dual processors have hardware acceleration for video playback up to 4K, and can drive the video outputs up to 60 fps. Although the i.MX 8M QuadLite processor does not have hardware acceleration for video decode, it allows for video playback with software decoders if needed.

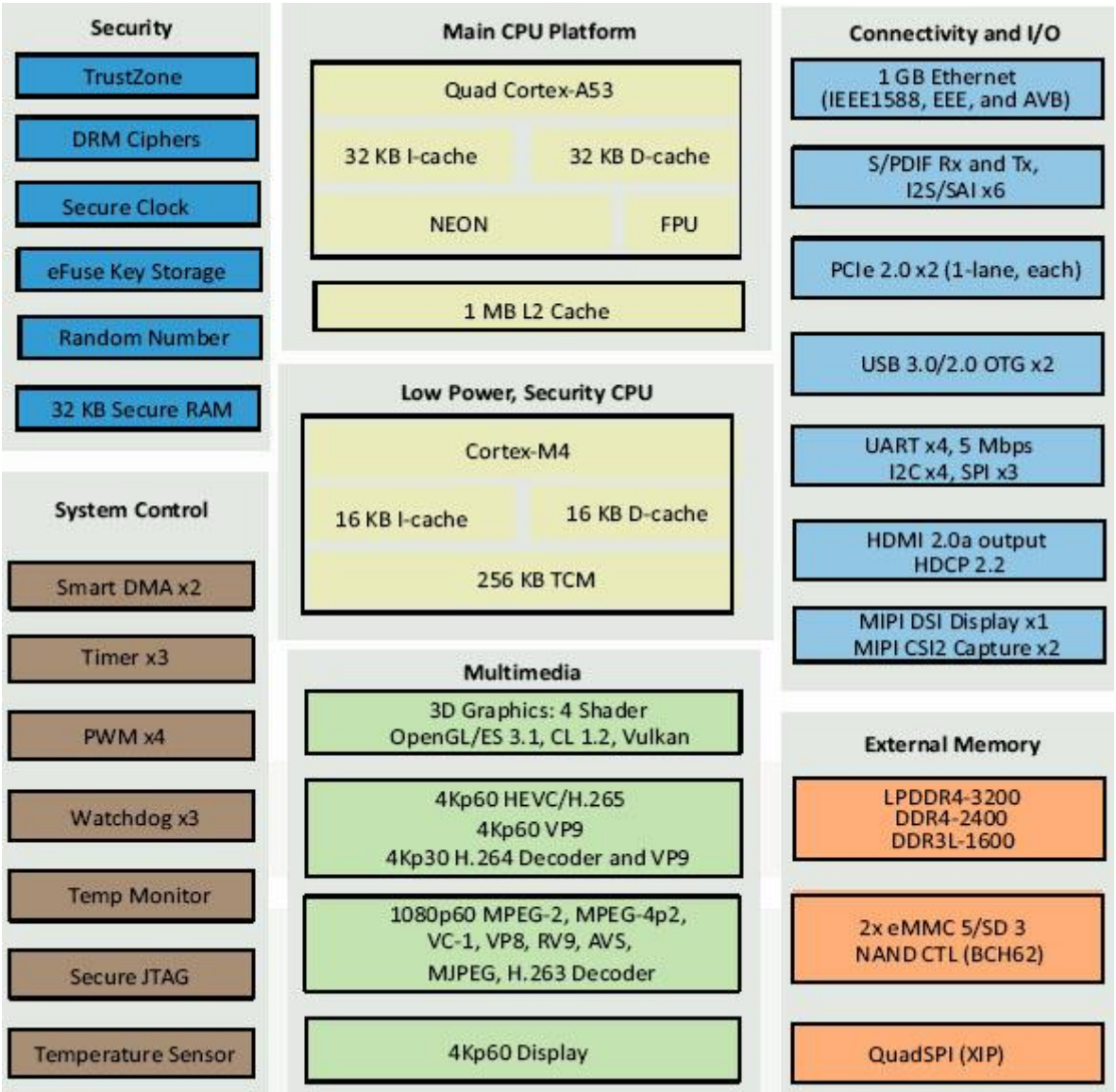

Figure 1-5 i.MX 8M System Block Diagram

Mechanical Parameters

- Dimensions: 82mm x 50mm
- PCB Layers: 10-layer design
- Power supply: +5V/0.5A
- Working temperature: -30~80 Celsius

Processor

- NXP i.MX 8M Quad Processor based on 1.3GHz Quad ARM Cortex-A53 and 266MHz Cortex-M4 cores (MIMX8MQ6CVAHZAB by default)

Memory

- 1GB / 2 GB LPDDR4 (supports up to 4GB LPDDR4)
- 8GB eMMC Flash (supports up to 64GB eMMC)
- 256Mbit QSPI Flash

Peripherals and Signals Routed to Pins

MYC-JX8MX Pinouts Description

- One 10/100/1000M Ethernet PHY
- Power Management IC (ROHM BD71837MWV)
- 0.5mm pitch 314-pin MXM 3.0 Expansion Connector
  - 1 x 10/100/1000Mbps Ethernet
  - 3 x Serial ports
  - 3 x I2C
  - 2 x SPI
  - 4 x PWM
  - 3 x USB 3.0
  - 2 x PCIe
  - 6 x I2S / SAI
  - 2 x MIPI Camera Sensor Interface
  - 1 x JTAG
  - 1 x HDMI 2.0a output
  - Up to 108 GPIOs

  Note: the peripheral signals brought out to the expansion interface are listed in maximum number. Some signals are reused. Please refer to the processor datasheet.

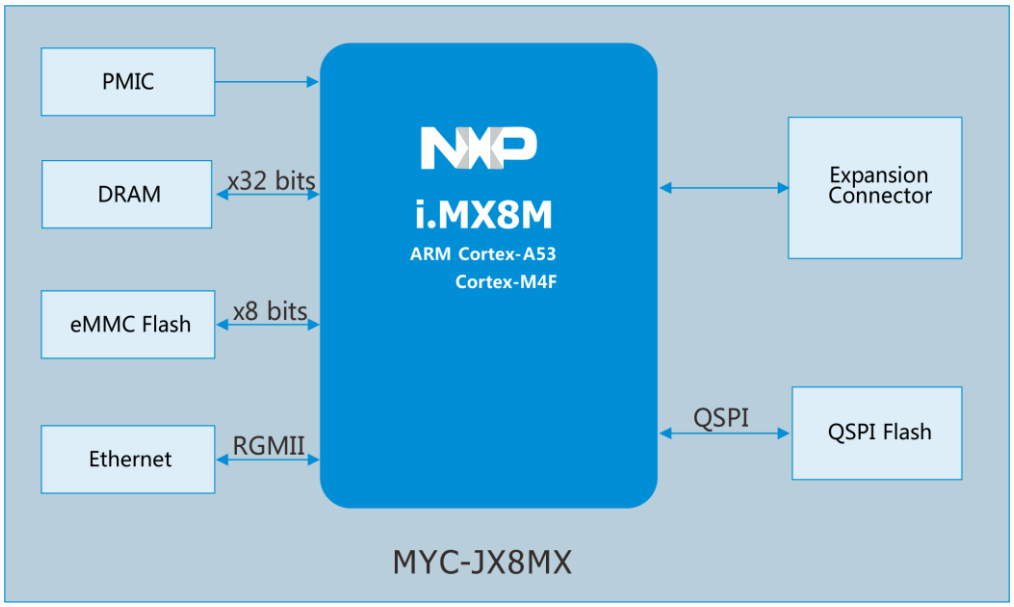

Figure 1-6 MYC-JX8MX CPU Module Function Block Diagram

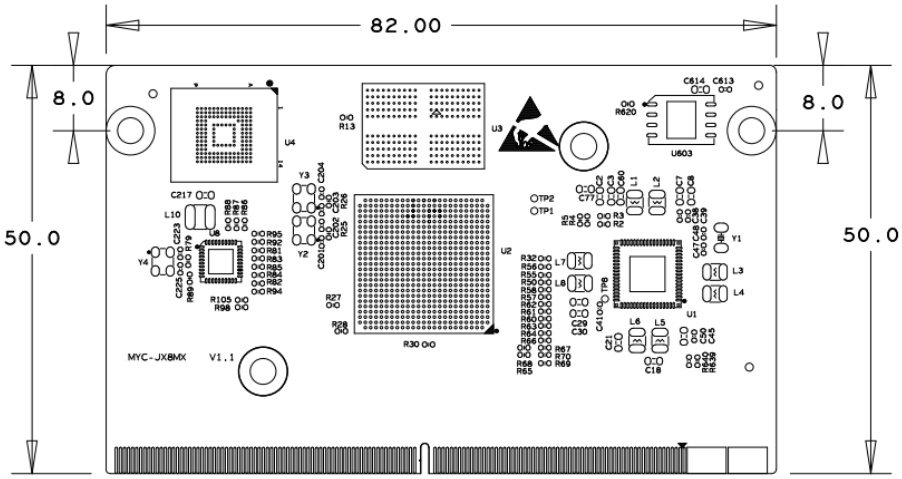

Figure 1-7 MYC-JX8MX Dimensions Chart

Software Features

MYIR's MYC-JX8MX CPU module is ready to run Linux OS and is provided with software packages. Many peripheral drivers are in source code to help accelerate customers' designs. The software package provided is characterized as following:

Item	Features	Description	Source Code Provided
Bootstrap program	U-boot	The primary bootstrap	YES
Linux kernel	Image	Based on NXP official imx_4.9.88_2.0.0_ga version	YES
Drivers	PMIC	BD71873PMIC driver	YES
	USB Host	USB Host driver	YES
	USB OTG	USB OTG driver	YES
	I2C	I2C Bus driver	YES
	SPI	SPI Bus driver	YES
	Ethernet	10/100/1000M Ethernet driver	YES
	MMC	MMC/eMMC/TF card driver	YES
	HDMI	HDMI Display driver	YES
	LCD	MIPI-LVDS driver	YES
	PWM	PWM driver	YES
	RTC	RTC driver	YES
	IO	GPIO driver	YES
	Touch	Capacitive touch screen driver	YES
	Audio	WM8904 driver	YES
	Camera	Ov5640 driver	YES
	WiFi & BT	QCA6174 driver	NO
	Watchdog	Watchdog driver	YES
	4G LTE Module	Supports Quectel's EC20 using USB driver	YES
	M.2	NVME driver	YES
File System	Yocto rootfs	Including QT5.9	YES
		Common file system for terminal	YES
Application Programs	GPIO KEY	Key example	YES
	GPIO LED	LED example	YES
	NET	TCP/IP Sokect C/S example	YES
	RTC	RTC example	YES
	RS232	RS232 example	YES
	Audio	Audio example	YES
	LCD	LCD example	YES
	Camera	Dual camera display example	YES
Compiler Tool Chain	Cross compiler	Yocto GCC 7.3.0 Hardfloat	BINARY

Table 1-1 Linux Software Features

Order Information

Product Item	Part No.	Packing List
MYC-JX8MX CPU Module	MYC-JX8MQ6-8E1D-130-E	➢ One MYC-JX8MX CPU Module ➢ One Product Disk (including user manual, datasheet, base board schematic pdf format and software packages) **Add-on Options** ➢ MYD-JX8MX Development Board ➢ MY-CAM003M Camera Module
	MYC-JX8MQ6-8E2D-130-E	
MYD-JX8MX Development Board	MYD-JX8MQ6-8E1D-130-E	
	MYD-JX8MQ6-8E2D-130-E	
MY-CAM003M Camera Module	MY-CAM003M	

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