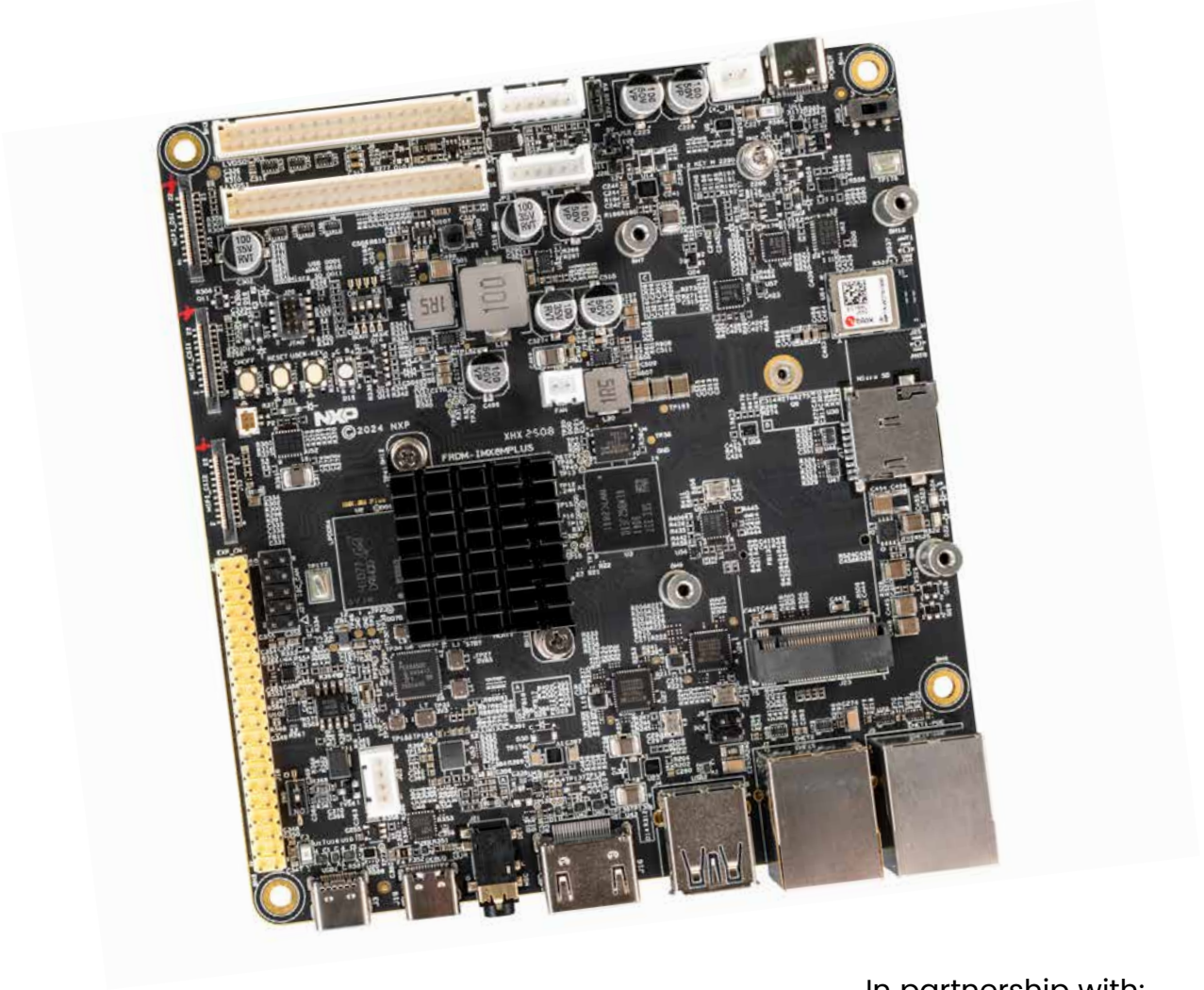
Quick Start Guide
FRDM-IMX8MPLUS

FRDM i.MX 8M PLUS development board



In partnership with:

winbond

The FRDM i.MX 8M Plus development board is a low-cost and compact development board featuring the i.MX 8M Plus applications processor. Equipped with an onboard IW612 module. The board is ideal for developing modern Industrial and IoT applications, and supports GoPoint for i.MX Applications Processors, which accelerates the time to market by providing comprehensive demos for a variety of use cases.

Specifications

- i.MX 8M Plus applications processor with up to five cores:
  - 4× Arm® Cortex®A53
  - 1× Arm Cortex-M7
- LPDDR4 32-bit 4GB
- eMMC 5.1, 32GB
- QSPI NOR flash, 32 MB
- Power Management IC (PMIC)
- MicroSD 3.0 card slot
- One USB 3.0 Type-C connector
- One USB 2.0 Type-C for debug
- One USB 3.0 Type-A connector
- One USB Type-C PD only
- Onboard Wi-Fi® 6 + Bluetooth®/Bluetooth® LE 5.4/802.15.4 module
- Optional M.2 Key-E for Wi-Fi/ BT/802.15.4
- M.2 Key-M for NPU card and SSD
- Multiple display interface:
  - MIPI-DSI connector
  - 2x4 data lane LVDS w/ Backlight
  - HDMI connector
- Two MIPI-CSI connectors
- One 2x5 Pin NXP custom interface with
  - one CAN Port
  - I^2C expansion
- Two 1 Gbps Ethernet
  - Port0 supports POE
  - Port1 supports TSN
- External RTC with coin cell connector
- 40 pin (2 x 20) expansion I/O

Kit contents

FRDM-IMX8MPLUS	FRDM i.MX 8M Plus development board
USB Type-C to USB Type-C cable	USB 3.0 Type-C Male to USB 3.0 Type-C Male
USB Type-C to USB Type-A cable	USB 3.0 Type-C Male to USB 3.0 Type-A Male
Software	Linux® BSP image programmed in eMMC
Documentation	Quick Start Guide

Software and expansion boards

Software and documentation available at:
nxp.com/FRDM-IMX8MPLUS

See a variety of demos and develop faster with GoPoint: nxp.com/GoPoint

Recommended Expansion Boards

RPI-CAM-MIPI	IAS camera to RPi camera adapter (AR0144 sensor)
8MIC-RPI-MX8	8-microphone array proto board for voice enablement
LVDS LCD: DY1212W-4856	12.1"(WXGA) TFT LCD Display with Capacitive Touch Panel (CTP)

Get to know the FRDM i.MX 8M Plus development board

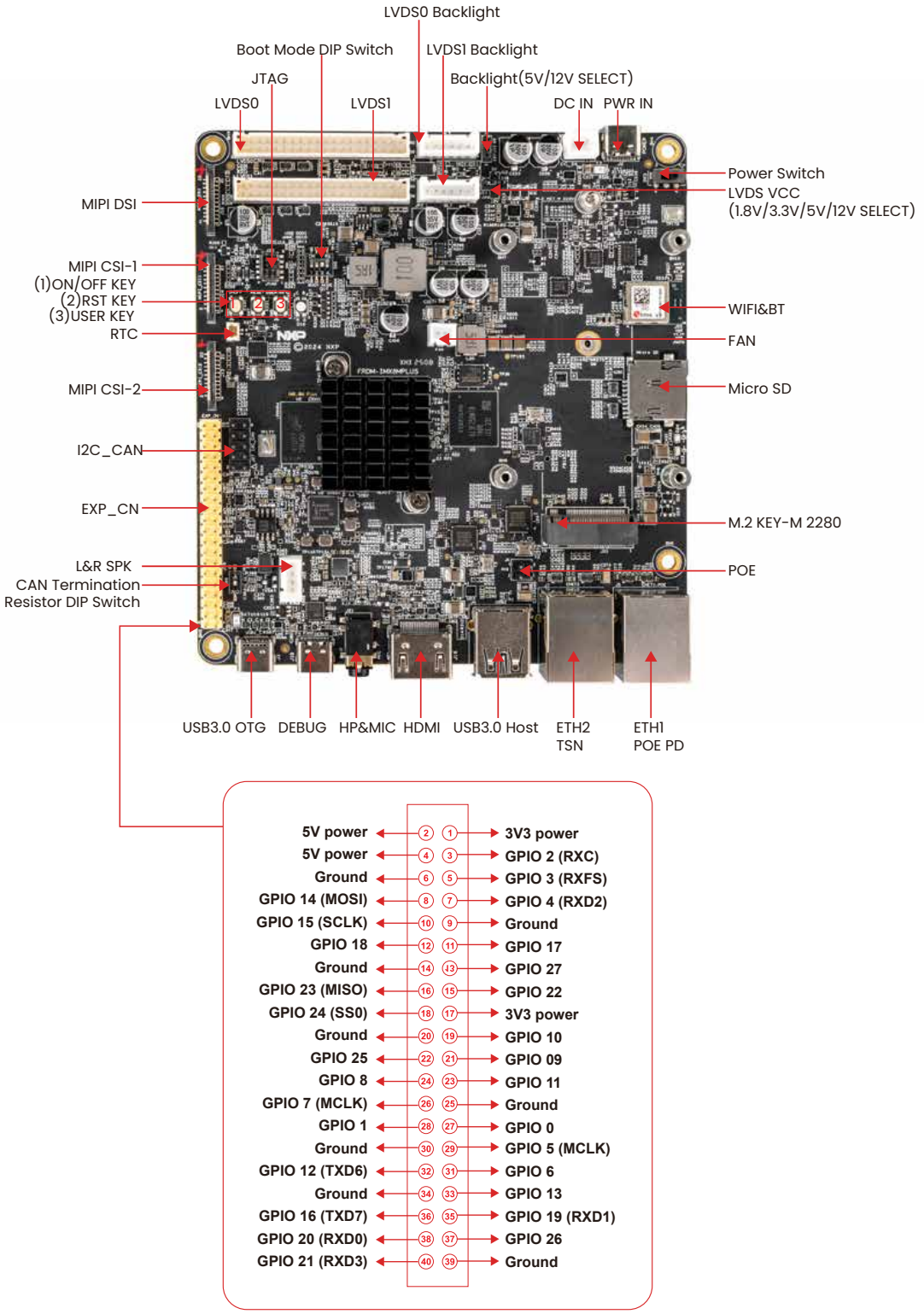


Figure 1: Top view of the FRDM i.MX 8M Plus development board

Get to know the FRDM i.MX 8M Plus development board continued

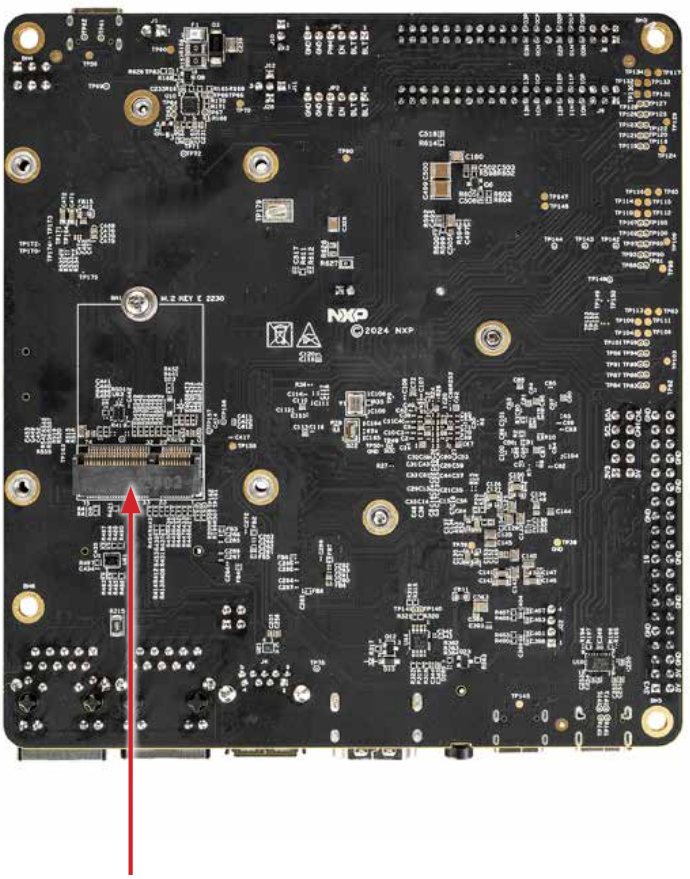


Figure 2: Bottom view of the FRDM i.MX 8M Plus development board

Setting up the system

Follow these steps to run the pre-loaded Linux® image on the FRDM i.MX 8M Plus development board:

1 Confirm boot switches

Boot switches should be set to boot from “eMMC” (SW5[1-4] are used for boot, see figure 3). See the table below:

BOOT Device	SW5 [1-4]
eMMC/uSDHC3	0010

Note: 1=ON 0=OFF

2 Connect USB debug cable

Connect the UART cable to port J19 (see figure 3) and into the PC (as a host terminal). UART connections display on the PC. Open a terminal window to begin debugging the A53 and M7 core systems

In the terminal window for debugging, use the following configuration:

- Baud rate: 115200bps
- Data bits: 8
- Parity: None
- Stop bits: 1

3 Connect peripherals

Connect an HDMI cable to the HDMI connector J16. Connect the other side of the cable to a HDMI display panel.

4 Connect Power Supply

Connect a USB PD charger to J2 using the USB type-C to type-C cable contained in the kit. Then power up the board by sliding the power switch SW3.

Note: the maximum power of the USB PD charger should be no less than 45W (preferably 65W)

5 Board boot up

The serial port starts to print log information to the PC, as the board boots up, four penguins will display in the top-left corner of the display, and then you will see the Linux terminal Icon on the top left and timer on right top corner.

Congratulations, you are up and running! See complete instructions for Getting Started in nxp.com/FRDM-IMX8MPLUS/start

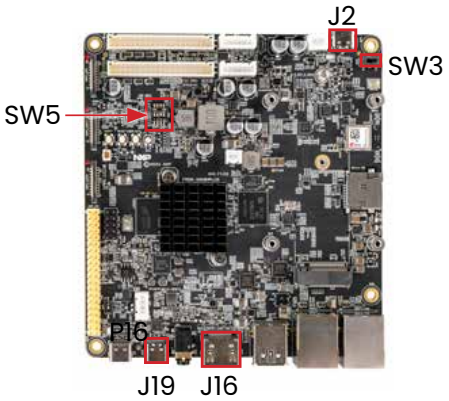


Figure 3: Available connections and switches to get started with the FRDM i.MX 8M Plus development board

Additional information

Boot Switch Configurations

SW5 [1-4] is the boot configuration switch. By default, the boot device is eMMC/uSDHC3.

Note: 1=ON 0=OFF

BOOT MODE	SW5-1	SW5-2	SW5-3	SW5-4
From internal fuses	0	0	0	0
Serial downloader	0	0	0	1
USDHC3 8-bit eMMC 5.1	0	0	1	0
USDHC2 4-bit SD3.0	0	0	1	1
NAND 8-bit single device 256 page	0	1	0	0
NAND 8-bit single device 512 page	0	1	0	1
QSPI 3B Read	0	1	1	0
QSPI Hyperflash 3.3V	0	1	1	1
ecSPI Boot	1	0	0	0

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined

by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

Support

Visit nxp.com/support for a list of phone numbers within your region.

Warranty

Visit nxp.com/warranty for complete warranty information.

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