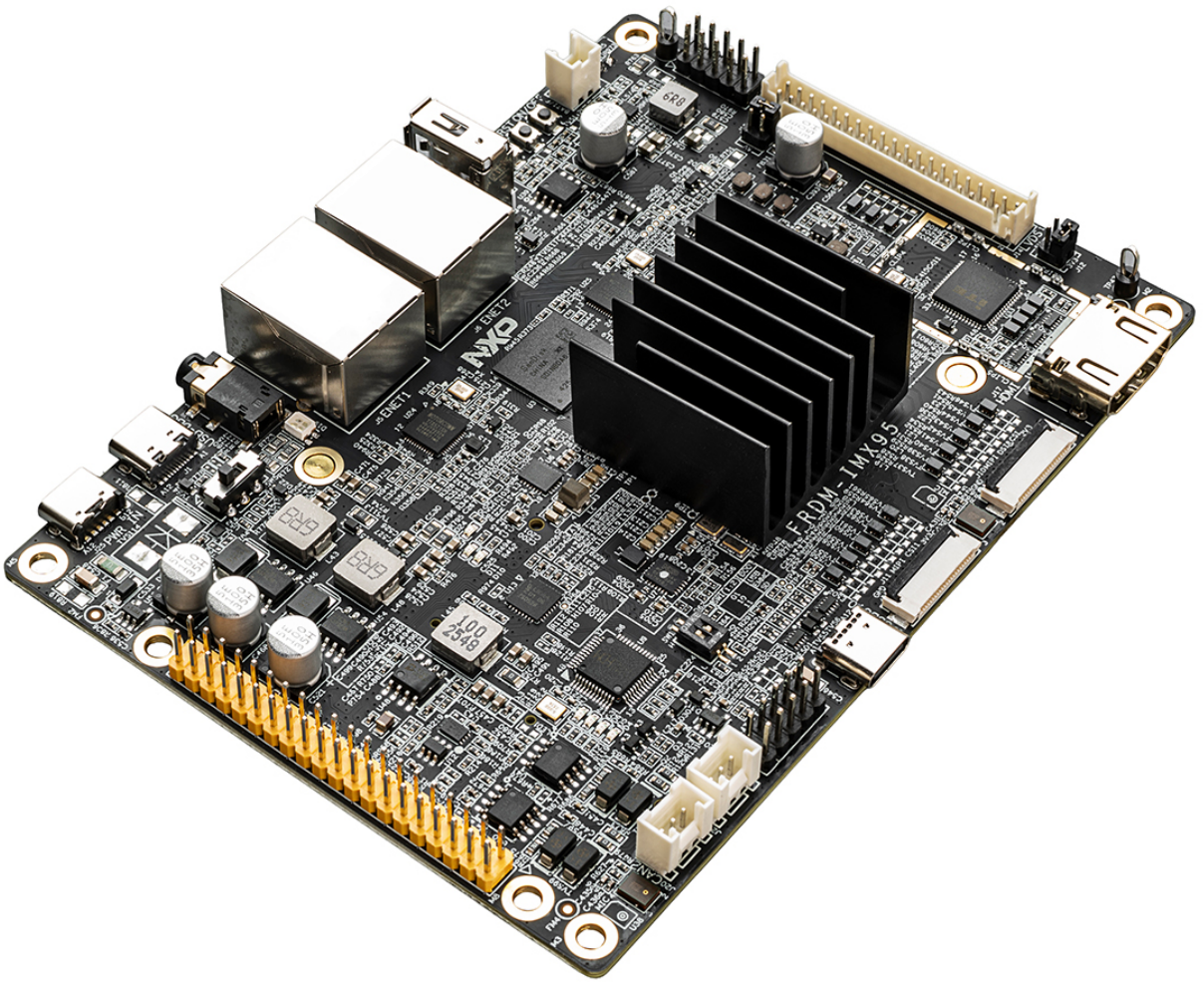
Quick Start Guide
FRDM-IMX95

FRDM i.MX 95 development board



The FRDM i.MX 95 development board is a low-cost, compact development platform featuring the i.MX 95 applications processor in a 15 mm x 15 mm package. It includes an M.2 Key-E IW612 module for wireless connectivity. Designed for developing modern industrial and IoT applications, the board supports GoPoint for i.MX applications processors, accelerating time-to-market with comprehensive demos for a wide range of use cases.

Specifications

- i.MX 95 applications processor with:
  - 6x Arm® Cortex®-A55
  - 1x Arm Cortex-M33
  - 1x Arm Cortex-M7
  - 2.0 TOPS NPU
- LPDDR4X 32-bit 8 GB
- eMMC 5.1, 32 GB
- Power management ICs (PF09, PF53)
- MicroSD 3.0 card slot
- One USB 2.0 Type-A connector
- One USB 3.0 Type-C connector
- One USB 2.0 Type-C for debug
- One USB Type-C PD only
- M.2 Key-E for Wi-Fi®/BT/802.15.4
- M.2 Key-M for AI card and SSD
- Two MIPI-CSI connectors
- Multiple display interfaces:
  - MIPI-DSI connector (muxed with one MIPI-CSI connector)
  - HDMI connector
  - LVDS connector
- Three CAN ports (one shared with 2 x 5 pin header)
- Two 1 Gbps Ethernet connectors
- Two PDM microphones
- Audio MQS interface
- External RTC w/ coin cell connector
- 2 x 20 pin expansion IO header
- 2 x 5 pin NXP custom interface for 2x ADC, 1x I^2C and 1x CAN

Note: Wireless functionality is only available when an optional Wi-Fi card is installed in M.2 Key-E slot.

Kit contents

FRDM-IMX95	FRDM i.MX 95 development board
USB cable	1x USB Type-C male to USB Type-A male 1x USB Type-C male to USB Type-C male
M.2 module	2EL M.2 module, Wi-Fi/Bluetooth®/IEEE802.15.4
Fastener	4x M3 nylon screws/4x M3 x 32 mm nylon standoffs/ 4x M3 x 15 mm nylon standoffs
Software	Linux® BSP image programmed in eMMC
Documentation	Quick start guide

Software and expansion boards

Software and documentation are available at:
nxp.com/FRDM-IMX95

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

See complete instructions for **getting started** at
nxp.com/FRDM-IMX95/start

Recommended expansion boards

EXPI-OS08A20	High-resolution 4K CMOS camera module
RPI-CAM-MIPI	AR0144 sensor module + converter board with a bypassable ISP AP1302
DY1212W-4856	12.1" (WXGA) TFT LCD display with capacitive touch panel (CTP)
MX93AUD-HAT	Audio expansion board with multiple features
ARA2-M2-16G-GT	Ara240 16 GB M.2 M-Key AI accelerator module

Get to know the FRDM i.MX 95 development board

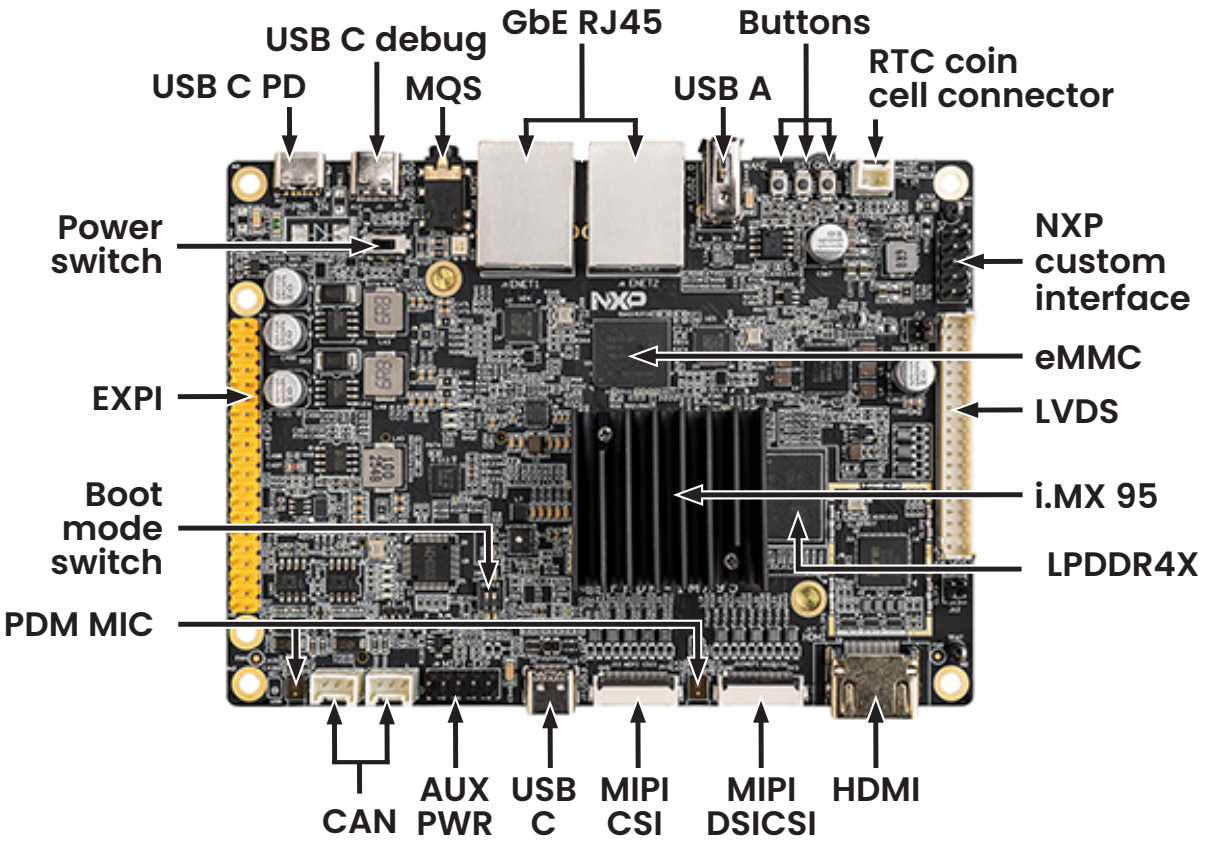


Figure 1: Top view of the FRDM i.MX 95 development board

Get to know the FRDM i.MX 95 development board

(continued)

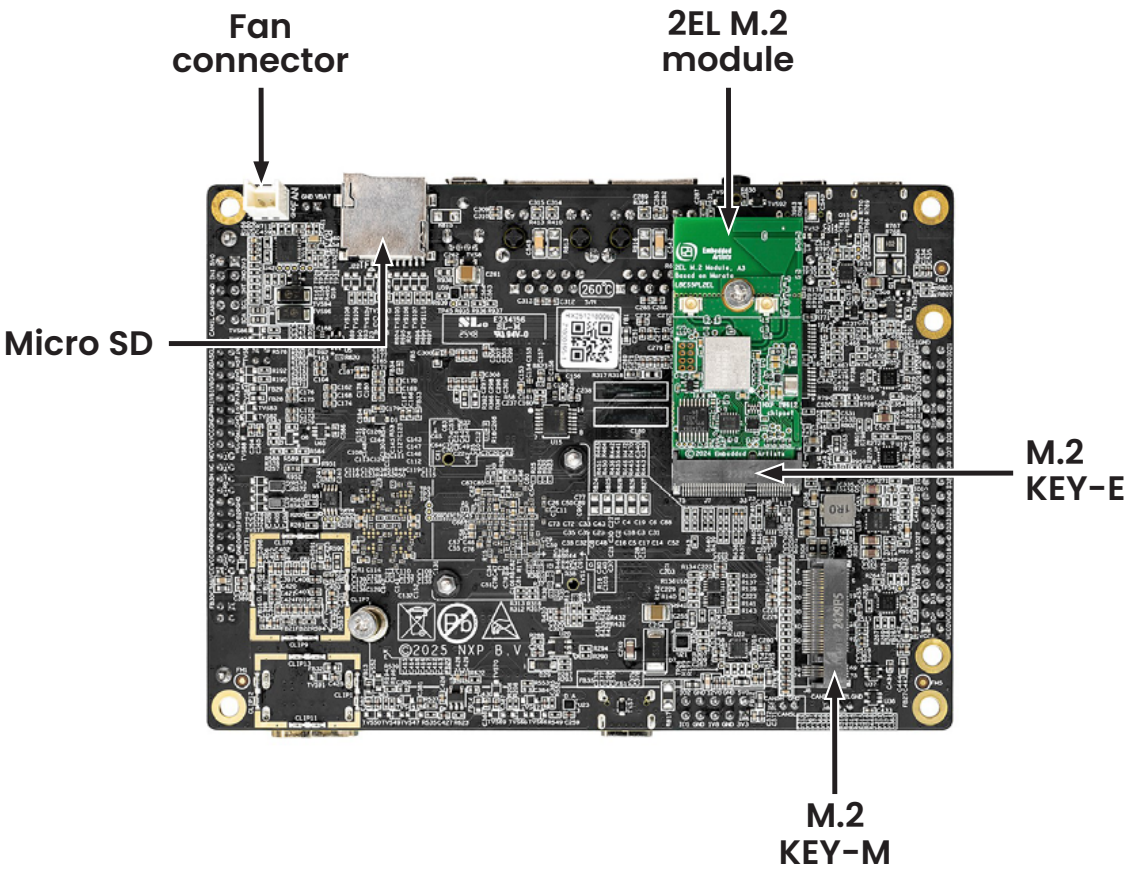


Figure 2: Bottom view of the FRDM i.MX 95 development board

Setting up the system

Follow these steps to run the pre-loaded Linux image on the FRDM i.MX 95 development board:

1 Confirm boot switches

Boot switches should be set to boot from “eMMC” (SW1[1-2] are used for boot, see figure 3). See the table below:

Boot device	SW1 [1-2]
eMMC/uSDHC1	10

Note: 1 = ON 0 = OFF

2 Connect USB debug cable

Connect the supplied USB cable to port J1 (see figure 3) and connect the other end to the host computer. Four UART connections will display on the host computer. Open a terminal window, to begin debugging the A55, M33 and M7 core systems.

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

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

3 Connect peripherals

Connect an HDMI cable to HDMI connector J17 (see figure 3), then connect a mouse to the USB Type-A port J4.

4 Connect power supply

Connect a USB PD adapter to J25 (see figure 3) using the USB Type-C to Type-C cable. Then power up the board by sliding the power switch SW5.

Note: the maximum power of the USB PD adapter should be no less than 65W

Setting up the system (continued)

5 Board boot up

As the board boots up, penguin icons appear in the top-left corner of the display, followed by the Linux terminal icon in the top-left and the time in top-right corner.

Congratulations, you are up and running!

See complete instructions for Getting Started at: **nxp.com/FRDM-IMX95/start**

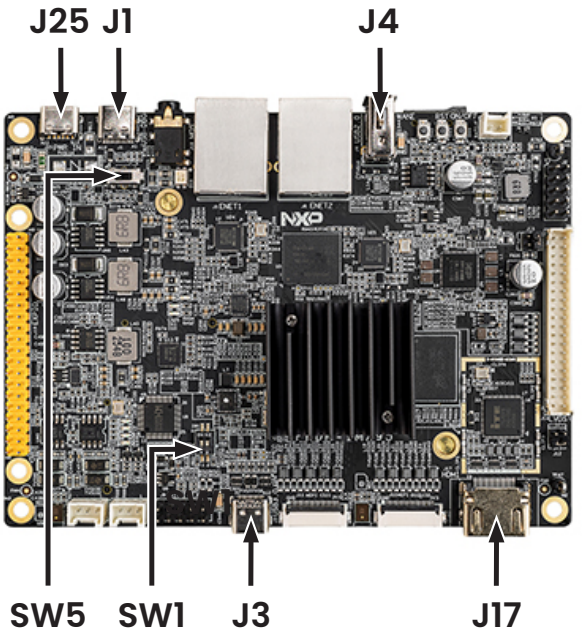


Figure 3: Available connections and switches to get started with the FRDM i.MX 95 development board

Additional information

Boot switches

SW1 [1-2] is the boot configuration switch. By default, the boot device is eMMC/uSDHC1. To select a different boot device, set the boot switches to the values specified in the table below.

Boot device	Boot mode 3	Boot mode 2	Boot mode 1 SW1-1	Boot Mode 0 SW1-2
Serial downloader	x	0	0	1
USDHC1 8-bit eMMC 5.1	x	0	1	0
USDHC2 4-bit SD3.0	x	0	1	1

Note: 1 = ON 0 = OFF

Support

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

Warranty

Visit **nxp.com/warranty** for complete warranty information.

Home page

Visit **nxp.com/FRDM-IMX95** for more information.

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 20 cm between the radiator and your body.

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