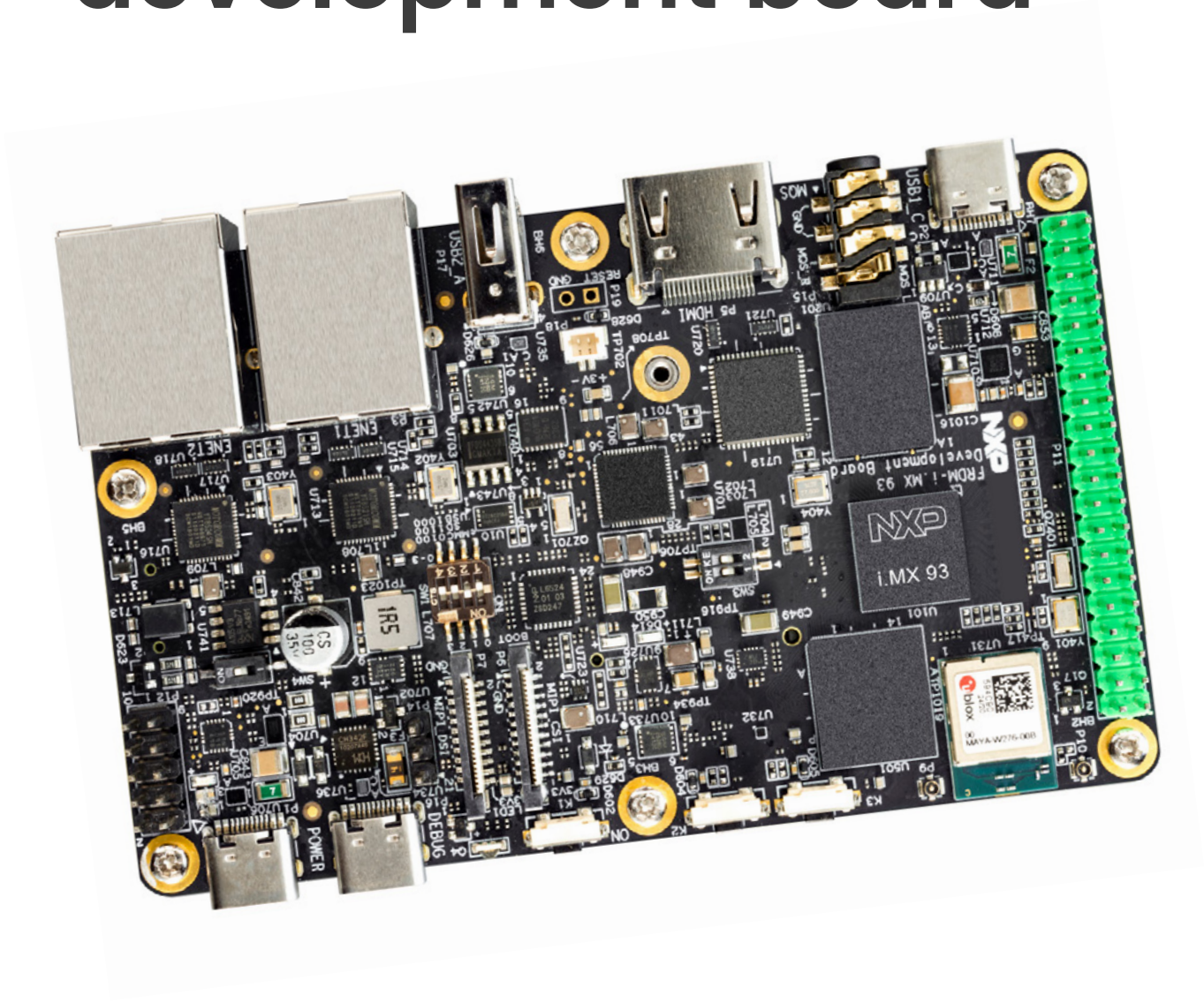
Quick Start Guide
FRDM-IMX93

FRDM i.MX 93 development board



Specifications

- i.MX 93 applications processor with:
  - 2x Arm® Cortex®-A55
  - 1x Arm Cortex-M33
  - 0.5 TOPS NPU
- LPDDR4X 16-bit 2 GB
- eMMC 5.1, 32 GB
- Power management IC (PMIC)
- MicroSD 3.0 card slot
- One USB 2.0 Type-C connector
- One USB 2.0 Type-C for Debug
- One USB 2.0 Type-A connector
- One USB Type-C PD only
- On-board Wi-Fi 6 / BT5.4 module
- One MIPI-CSI connector
- One CAN port
- Two channels for ADC
- On-board EEPROM
- I^2C expansion connector
- Two 1 Gbps Ethernet
  - Port0 supports ETER
  - Port1 supports TSN
- Multiple display interface:
  - MIPI-DSI connector
  - HDMI connector
- External RTC w/ coin cell connector
- 40 pin (2x20 expansion I/O)

Kit contents

FRDM-IMX93	FRDM i.MX 93 development board
USB Type-C to Type-C Cable	USB Type-C to Type-C cable for power delivery. USB Type-C PD 45W, 9V/3A; 15V/3A; 20V/2.25A supported. *__Note:__ A USB Type-C PD wall adapter is required for proper operation. Wall adapter is not included.
USB Type-C to Type-A Cable	USB 2.0 Type-C male to USB 2.0 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-IMX93

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

See complete instructions for **Getting Started** in
nxp.com/FRDM-IMX93/start

Recommended expansion boards

TM050RDH03	Parallel LCD DISPLAY MODULE 5" TFT 800X480 RGB
RPI-CAM-MIPI	IAS camera to RPi camera adapter (AR0144 sensor)
MX93AUD-HAT	Audio expansion board with multiple features

See more compatible expansion boards in
mcuxpresso.nxp.com/eb-hub

Get to know the FRDM i.MX 93 development board

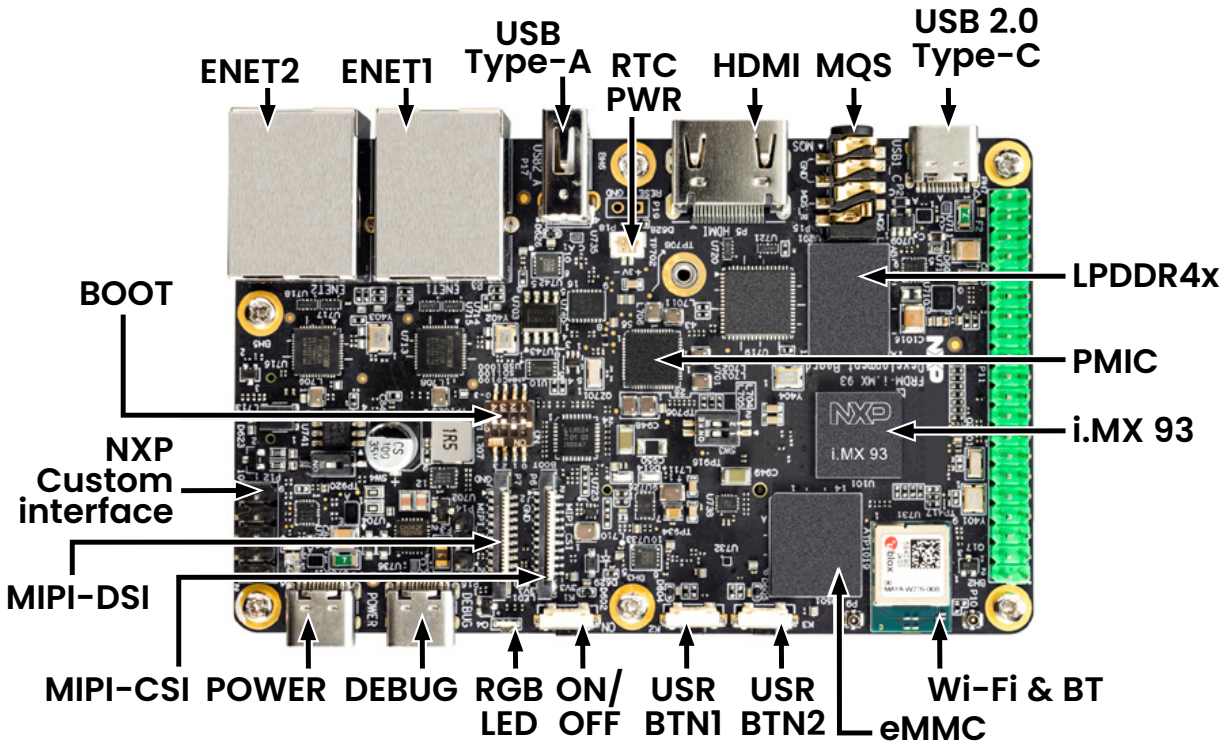


Figure 1: Top view of the FRDM i.MX 93 development board

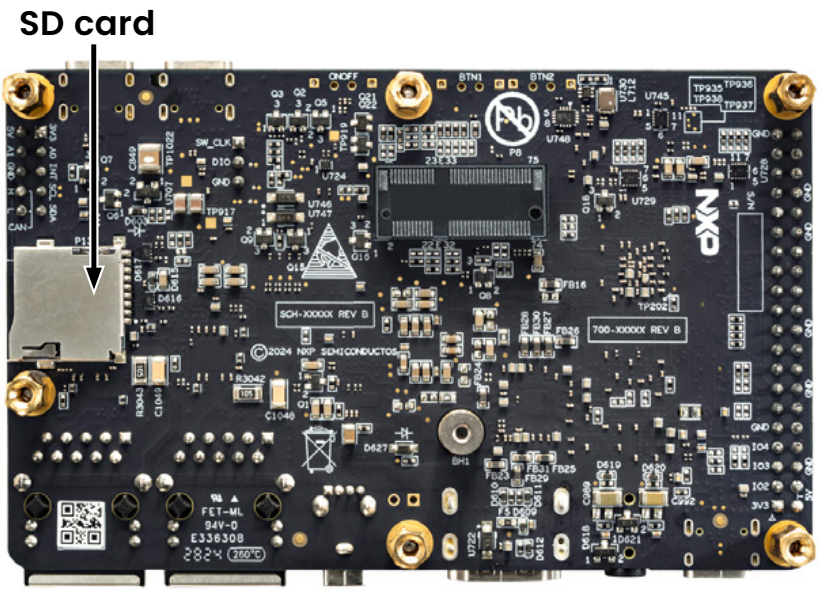
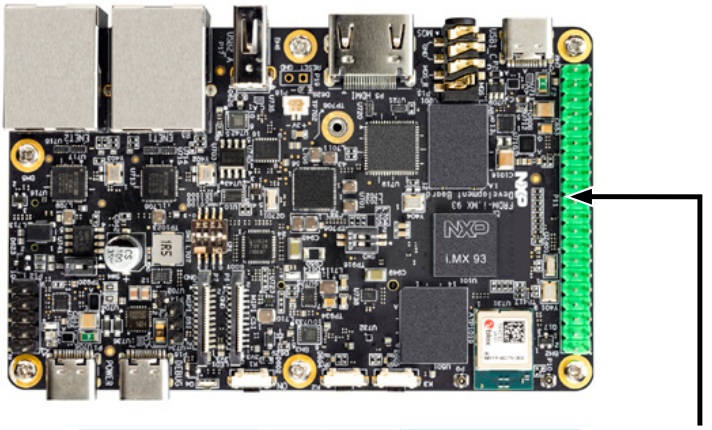


Figure 2: Bottom view of the FRDM i.MX 93 development board

Get to know the FRDM i.MX 93 development board

(continued)



	3V3	1	2	5V	
I2C4.SDA	GPIO_2	3	4	5V	
I2C4.SCL	GPIO_3	5	6	GND	
PDM.CLK	GPIO_4	7	8	GPIO_14	UART3.TXD
	GND	9	10	GPIO_15	UART3.RXD
	GPIO_17	11	12	GPIO_18	SAI3.RXBCLK
	GPIO_27	13	14	GND	
	GPIO_22	15	16	GPIO_23	
	3V3	17	18	GPIO_24	
SPI3.SOUT	GPIO_10	19	20	GND	
SPI3.SIN	GPIO_9	21	22	GPIO_25	
SPI3.SCK	GPIO_11	23	24	GPIO_8	SPI3.CS0
	GND	25	26	GPIO_7	SPI3.CS1
	GPIO_0	27	28	GPIO_1	
PDM.BITSTREAM_0	GPIO_5	29	30	GND	
PDM.BITSTREAM_1	GPIO_6	31	32	GPIO_12	PDM.BITSTREAM_2
PDM.BITSTREAM_3	GPIO_13	33	34	GND	
SAI3_RXSYNC	GPIO_19	35	36	GPIO_16	SAI3.TXBCLK
SPI3.TXSYNC	GPIO_26	37	38	GPIO_20	SAI3.RXDATA0
	GND	39	40	GPIO_21	SAI3.TXDATA0

Note: Please refer to i.MX 93 applications processor reference manual for more function alternation.

Setting up the system

Follow these steps to run the pre-loaded Linux® image on the FRDM i.MX 93 development board:

1 Confirm boot switches

Boot switches should be set to boot from “eMMC” (SW1[4-1] are used for boot, see figure 3). See the table below:

BOOT device	SW1 [4-1]
eMMC/uSDHC1	0010

Note: 1 = ON 0 = OFF

2 Connect USB debug cable

Connect the UART cable to port P16 (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 A55 and M33 core systems.

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

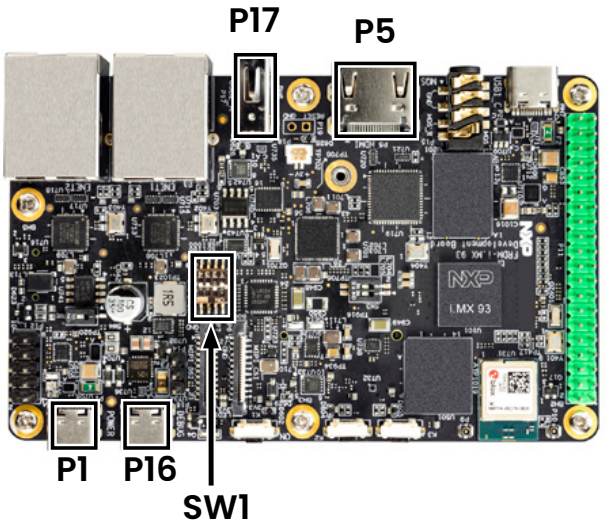
- Baud rate: 115200 bps
- Data bits: 8
- Parity: none
- Stop bits: 1

3 Connect peripherals

Plug the HDMI cable into P5 (see figure 3) then connect a mouse to the USB Type-A port (connector P17). Connect the power supply using the USB Type-C PD power supply to P1 (see figure 3).

4 Board boot up

As the board boots up, two penguins display in the top-left corner of the display interface, followed by the Linux terminal icon in the top-right corner. Congratulations, you are up and running!



Additional information

Boot switch configurations
SW1 [4-1] is the boot configuration switch. By default, the boot device is eMMC/uSDHC1.

Note: 1 = ON 0 = OFF

BOOT mode	BootCore	SW1-4	SW1-3	SW1-2	SW1-1
From internal fuses	Cortex-A55	0	0	0	0
Serial downloader	Cortex-A55	0	0	0	1
USDHC1 8-bit eMMC 5.1	Cortex-A55	0	0	1	0
USDHC2 4-bit SD3.0	Cortex-A55	0	0	1	1

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-IMX93** 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.

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. © 2025 NXP B.V.

Document Number: FRDMIMX93QSG REV 1
Aras Number: 926-10040 REV A1