Evaluation boards with STM32MP157 MPUs

STM32MP157C-EV1 top view. Picture is not contractual.

Product status link
STM32MP157A-EV1
STM32MP157C-EV1

Features

- STM32MP157 Arm®-based dual Cortex®-A7 32 bits + Cortex®-M4 32 bits MPU in LFBGA448 package
- ST PMIC STPMIC1
- 2 × 4-Gbit DDR3L, 16 bits, 533 MHz
- 2 × 512-Mbit Quad-SPI Flash
- 32-Gbit eMMC v5.0
- 8-Gbit SLC NAND, 8 bits, 8-bit ECC, 4-KB PS
- 1-Gbit/s Ethernet (RGMII) compliant with IEEE-802.3ab
- USB Host 4-port hub
- USB OTG HS
- CAN FD
- 5.5" TFT 720×1280 pixels with LED backlight, MIPI DSI℠ interface, and capacitive touch panel
- SAI audio codec
- 5-megapixel, 8-bit camera
- 4 × ST-MEMS digital microphones
- Smartcard
- microSD™ card
- 2 user LEDs
- 2 user and reset push-buttons, 1 wake-up button
- 4-direction joystick with selection button
- 5 V / 4 A power supply
- Board connectors:
  - Ethernet RJ45
  - 4 × USB Host Type-A
  - USB OTG Micro-AB
  - SPDIF RCA input and output
  - CAN FD
  - Stereo headset jack including analog microphone input
  - Audio jack for external speakers
  - Motor control
  - External I^{2}C
  - LTDC
  - Trace, JTAG, RS-232
  - GPIO expansion connector (Raspberry Pi® shields capability)
  - MEMS-microphone daughterboard expansion connector
- On-board ST-LINK/V2-1 debugger/programmer with USB re-enumeration capability: Virtual COM port and debug port
- STM32CubeMP1 and full mainline open-source Linux® STM32 MPU OpenSTLinux Distribution (such as STM32MP1Starter) software and examples
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR™, Keil®, GCC-based IDEs

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Description

The STM32MP157A-EV1 and STM32MP157C-EV1 Evaluation boards are the full-feature demonstration and development platforms for STMicroelectronics Arm®-based dual Cortex®-A7 32 bits and Cortex®-M4 32 bits MPUs in the STM32MP1 Series. They leverage the capabilities of STM32MP1 Series microprocessors to allow users develop applications using STM32 MPU OpenSTLinux Distribution software for the main processor and STM32CubeMP1 software for the co-processor.

They include an ST-LINK embedded debug tool, LEDs, push-buttons, one joystick, 1-Gbps Ethernet, CAN FD, one USB OTG Micro-AB connector, four USB Host Type-A connectors, LCD display with touch panel, camera, stereo headset jack with analog microphone input, four digital microphones, one SPDIF Rx/Tx, smartcard, microSD™ card, and eMMC, NOR and NAND Flash memories.

To expand the functionality of the STM32MP157A-EV1 and STM32MP157C-EV1 Evaluation boards, two GPIO expansion connectors are also available for motor control and Raspberry Pi® shields.

1 Ordering information

To order an STM32MP157 Evaluation board, refer to Table 1. For a detailed description of each board, refer to its user manual on the product web page. Additional information is available from the datasheet and reference manual of the target STM32.

Table 1. List of available products

Order code	Board reference	User manual	Target STM32	Differentiating feature
STM32MP157A-EV1	• MB1262: mother board • MB1263: MPU subsystem daughterboard • MB1230: DSI display board • MB1379: camera board	UM2535	STM32MP157AAA3	Basic security.
STM32MP157C-EV1			STM32MP157CAA3	Secure Boot and cryptography.

1.1 Product marking

Evaluation tools marked as "ES" or "E" are not yet qualified and therefore not ready to be used as reference design or in production. Any consequences deriving from such usage will not be at ST charge. In no event, ST will be liable for any customer usage of these engineering sample tools as reference design or in production.

"E" or "ES" marking examples of location:

• On the targeted STM32 that is soldered on the board (for illustration of STM32 marking, refer to the STM32 datasheet "Package information" paragraph at the *www.st.com* website).
• Next to the evaluation tool ordering part number that is stuck or silk-screen printed on the board.

1.2 Codification

The meaning of the codification is explained in Table 2.

Table 2. Codification explanation

STM32MP1XXY-EVZ	Description	Example: STM32MP157C-EV1
STM32MP1	MPU series in STM32 Arm Cortex MPUs	STM32MP1 Series
XX	MPU product line in the series	STM32MP157
Y	Security option: • A: basic security • C: Secure Boot and cryptography	Secure Boot and cryptography
EVZ	Evaluation board configuration • EV1: with PMIC	PMIC

The order code is mentioned on a sticker placed on the top side of the board.

2 Development environment

STM32 Arm Cortex MPUs are based on the Arm® Cortex®-A and Cortex®-M processors.

Note: *Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*

2.1 System requirements

- Windows® OS (7, 8 and 10), Linux® 64-bit, or macOS®
- USB Type-C™ to Type-A cable
- USB Type-A to Micro-B cable
- USB Type-A to Micro-AB cable

Note: *macOS® is a trademark of Apple Inc. registered in the U.S. and other countries.*

2.2 Development toolchains

- Keil® MDK-ARM (see note)
- IAR™ EWARM (see note)
- GCC-based IDEs
- GCC

Note: *On Windows® only.*

2.3 Demonstration software

The STM32 MPU OpenSTLinux Distribution and STM32CubeMP1 base demonstration software is preloaded in the microSD™ for easy demonstration of the device peripherals in standalone mode. The latest versions of the demonstration source code and associated documentation can be downloaded from *www.st.com*.

3   Technology partners

NANYA

- 4-Gbit DDR3L, 16-bit, part number NT5CC256M16ER-EK

TOSHIBA

- 32-Gbit eMMC, part number THGBMNG5D1LBAIL

MICRON

- SLC NAND 8Gb/8bits/8ECC/4K PS, part number MT29F8G08ABACAH4-ITS:C

MACRONIX

- 512-Mbit Quad-SPI NOR Flash memory device, part number MX25L51245G-XD

Revision history

Table 3. Document revision history

Date	Version	Changes
5-Feb-2019	1	Initial release.
26-Aug-2019	2	Updated ST PMIC in Features. Reorganized Ordering information.

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