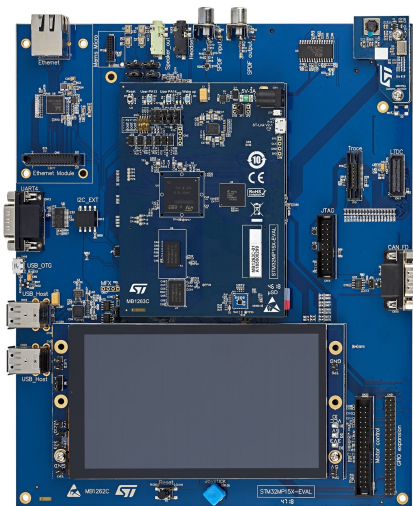# Evaluation boards with increased-frequency 800 MHz STM32MP157 MPUs

STM32MP157F-EV1 top view. Picture is not contractual.

Product status link
STM32MP157D-EV1
STM32MP157F-EV1

Features

- STM32MP157 Arm®-based dual Cortex®-A7 800 MHz 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 memory
- 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 Embedded Workbench®, MDK-ARM, and STM32CubeIDE

DB4021 - Rev 2 - October 2020
For further information contact your local STMicroelectronics sales office.

www.st.com

1 Description

The STM32MP157D-EV1 and STM32MP157F-EV1 Evaluation boards are the full-feature demonstration and development platforms for STMicroelectronics increased-frequency 800 MHz 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 STM32MP157D-EV1 and STM32MP157F-EV1 Evaluation boards, two GPIO expansion connectors are also available for motor control and Raspberry Pi® shields.

2 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
STM32MP157D-EV1	• MB1262: mother board • MB1263: MPU subsystem daughterboard • MB1230: DSI display board • MB1379: camera board	UM2648	STM32MP157DAA1	Basic security
STM32MP157F-EV1			STM32MP157FAA1	Secure Boot and cryptography

2.1 Product marking

The sticker located on the top or bottom side of the PCB board shows the information about product identification such as board reference, revision, and serial number.

The first identification line has the following format: "MBxxxx-Variant-yzz", where "MBxxxx" is the board reference, "Variant" (optional) identifies the mounting variant when several exist, "y" is the PCB revision and "zz" is the assembly revision: for example B01.

The second identification line is the board serial number used for traceability.

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 designs or in production.

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

• On the targeted STM32 that is soldered on the board (For an 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.

2.2 Codification

The meaning of the codification is explained in Table 2.

Table 2. Codification explanation

STM32MP1XXY-EVZ	Description	Example: STM32MP157F-EV1
STM32MP1	MPU series in STM32 Arm Cortex MPUs	STM32MP1 Series
XX	MPU product line in the series	STM32MP157
Y	Options: • D: basic security, 800 MHz increased frequency • F: Secure Boot, cryptography hardware, 800 MHz increased frequency	Secure Boot, cryptography hardware, 800 MHz increased frequency
EVZ	Evaluation board configuration • EV1: with PMIC	PMIC

3 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.*

arm

3.1 System requirements

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

Note: *macOS® is a trademark of Apple Inc. registered in the U.S. and other countries.*
All other trademarks are the property of their respective owners.

3.2 Development toolchains

- IAR Systems - IAR Embedded Workbench®[1]
- Keil® - MDK-ARM[1]
- STMicroelectronics - STM32CubeIDE
- GCC

1. *On Windows® only.*

3.3 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*.

4   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
8-Jun-2020	1	Initial release.
27-Oct-2020	2	Document scope extended to the STM32MP157D-EV1: updated the cover page, Description and Ordering information.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Development Boards & Kits - ARM *category:*

Click to view products by STMicroelectronics *manufacturer:*

Other Similar products are found below :

SAFETI-HSK-RM48 PICOHOBBITFL CC-ACC-MMK-2443 TWR-MC-FRDMKE02Z EVALSPEAR320CPU EVB-SCMIMX6SX MAX32600-KIT# TMDX570LS04HDK TXSD-SV70 OM13080UL EVAL-ADUC7120QSPZ OM13082UL TXSD-SV71 YGRPEACHNORMAL OM13076UL PICODWARFFL YR8A77450HA02BG 3580 32F3348DISCOVERY ATTINY1607 CURIOSITY NANO PIC16F15376 CURIOSITY NANO BOARD PIC18F47Q10 CURIOSITY NANO VISIONSTK-6ULL V.2.0 80-001428 DEV-17717 EAK00360 YR0K77210B000BE RTK7EKA2L1S00001BE MAX32651-EVKIT# SLN-VIZN-IOT LV18F V6 DEVELOPMENT SYSTEM READY FOR AVR BOARD READY FOR PIC BOARD READY FOR PIC (DIP28) EVB-VF522R3 AVRPLC16 V6 PLC SYSTEM MIKROLAB FOR AVR XL MIKROLAB FOR PIC L MINI-AT BOARD - 5V MINI-M4 FOR STELLARIS MOD-09.Z BUGGY + CLICKER 2 FOR PIC32MX + BLUETOOT 1410 LETS MAKE PROJECT PROGRAM. RELAY PIC LETS MAKE - VOICE CONTROLLED LIGHTS LPC-H2294 DSPIC-READY2 BOARD DSPIC-READY3 BOARD MIKROBOARD FOR ARM 64-PIN MIKROLAB FOR AVR