STM32MP257F-EV1

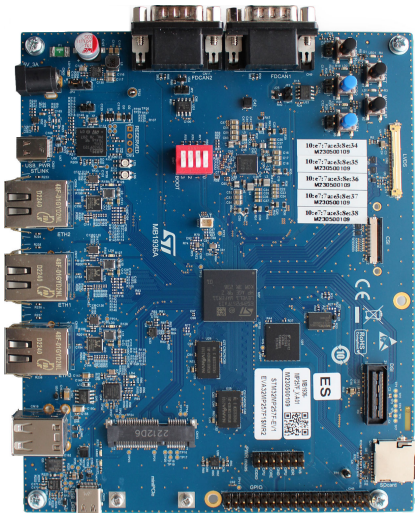## Evaluation board with STM32MP257F MPU

STM32MP257F-EV1 top view. Picture is not contractual.

Product status link
STM32MP257F-EV1

Features

- STM32MP257FAI3 microprocessor based on the Arm® dual-core Cortex®-A35 1.5 GHz and Cortex®-M33 400 MHz in a TFBGA436 package
- ST power management STPMIC25
- Two 16-Gbit DDR4 DRAMs
- 512-Mbit S-NOR flash memory
- 32-Gbit eMMC v5.0
- Three 1-Gbit/s Ethernet (RGMII) with TSN switch compliant with IEEE-802.3ab
- USB Host 2-port hub
- USB Type-C® DRP
- Four user LEDs
- Two user, one tamper, and one reset push-buttons
- One wake-up button
- Four boot pin switches
- Board connectors:
  - Three Ethernet RJ45
  - Two USB Host Type-A
  - USB Type-C®
  - microSD™ card holder
  - Mini PCIe
  - Dual-lane MIPI CSI-2® camera module expansion connector
  - Two CAN FD
  - LVDS
  - MIPI10
  - GPIO expansion connector
  - mikroBUS™ expansion connector
  - VBAT for power backup
- On-board STLINK-V3EC debugger/programmer with USB re-enumeration capability: Virtual COM port, and debug port
- Mainlined open-source Linux® STM32 MPU OpenSTLinux distribution and STM32CubeMP2 software with examples
- Linux® Yocto project, Buildroot, and STM32CubeIDE as development environments

DB5260 - Rev 1 - June 2024
For further information contact your local STMicroelectronics sales office.

www.st.com

1 Description

The STM32MP257F-EV1 Evaluation board is designed as a complete demonstration and development platform for the STMicroelectronics STM32MP257FAI3 based on the Arm® Cortex® A35 and M33.
The product leverages the capabilities of STM32MP2 series microprocessors to allow users to develop applications using STM32 MPU OpenSTLinux distribution software for the main processor (Arm®dual core Cortex®-A35) and STM32CubeMP2 software for the coprocessor (Arm® Cortex®-M33).
The product includes an ST-LINK embedded debug tool, LEDs, push-buttons, three 1 Gbit/s Ethernet, two CAN FD, one USB Type-C® DRD connector, two USB Host Type-A connectors, one mini PCIE connector, one LCD LVDS display connector, one LCD DSI connector, one camera connector, microSD™ card, eMMC, and NOR flash memory. To expand the functionality of the STM32MP257F-EV1 Evaluation board, one GPIO expansion connector is also available for Raspberry Pi® shields, and one mikroBUS™ expansion connector.

2 Ordering information

To order the STM32MP257F-EV1 Evaluation board, refer to Table 1. For a detailed description, 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 references	User manual	Target STM32
STM32MP257F-EV1	• MB1936[1]	UM3359	STM32MP257FAI3

1. Subsequently called main board in the rest of the documentation.

2.1 Product marking

The stickers located on the top or bottom side of all PCBs provide product information:

- First sticker: product order code and product identification, generally placed on the main board featuring the target device.
  Example:

  > Product order code
  > Product identification
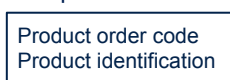
- Second sticker: board reference with revision and serial number, available on each PCB.
  Example:

  > MBxxxx-Variant-yzz
  > syywwxxxxx
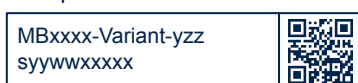
On the first sticker, the first line provides the product order code, and the second line the product identification.

On the second sticker, the first 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 line shows the board serial number used for traceability.

Parts marked as *"ES"* or *"E"* are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event will ST be liable for the customer using any of these engineering samples in production. ST's Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.

"ES" or *"E"* 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.

Some boards feature a specific STM32 device version, which allows the operation of any bundled commercial stack/library available. This STM32 device shows a *"U"* marking option at the end of the standard part number and is not available for sales.

To use the same commercial stack in their applications, the developers might need to purchase a part number specific to this stack/library. The price of those part numbers includes the stack/library royalties.

2.2 Codification

The meaning of the codification is explained in Table 2.

Table 2. Codification explanation

STM32MP2XXY-EV1	Description	Example: STM32MP257F-EV1
STM32MP2	MPU series in STM32 Arm Cortex MPUs	STM32MP2 series
XX	MPU product line in the series	STM32MP257 product line
Y	Option: • F: Secure boot, cryptography hardware, maximal frequency	Secure boot, cryptography hardware, 1.5 GHz
EV1	Evaluation board	Evaluation board

3   Development environment

The STM32MP257F-EV1 board runs with the STM32MP257FAI3 microprocessor based on the Arm® dual-core Cortex®-A35 1.5 GHz and Cortex®-M33 400 MHz.

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

arm

3.1   System requirements

- Multi-OS support: Linux® 64-bit
- USB Type-A or USB Type-C® to USB Type-C® cable

Note: *Linux® is a registered trademark of Linus Torvalds.*

3.2   Development toolchains

- Linux® Yocto project
- Buildroot
- STMicroelectronics - STM32CubeIDE

3.3   Demonstration software

The STM32 MPU OpenSTLinux distribution and STM32CubeMP2 base demonstration software are 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*.

Revision history

Table 3. Document revision history

Date	Revision	Changes
04-Jun-2024	1	Initial release.

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.