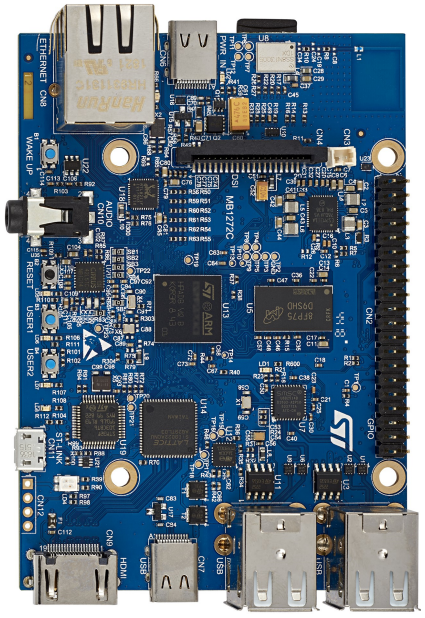
STM32MP157D-DK1 STM32MP157F-DK2

Data brief

Discovery kits with increased-frequency 800 MHz STM32MP157 MPUs



STM32MP157F-DK2 top view with display removed. Picture is not contractual.

Product status link
STM32MP157D-DK1
STM32MP157F-DK2

Features

- Common features
  - STM32MP157 Arm®-based dual Cortex®-A7 800 MHz 32 bits + Cortex®-M4 32 bits MPU in TFBGA361 package
  - ST PMIC STPMIC1
  - 4-Gbit DDR3L, 16 bits, 533 MHz
  - 1-Gbps Ethernet (RGMII) compliant with IEEE-802.3ab
  - USB OTG HS
  - Audio codec
  - 4 user LEDs
  - 2 user and reset push-buttons, 1 wake-up button
  - 5 V / 3 A USB Type-C® power supply input (not provided)
  - Board connectors:
    - Ethernet RJ45
    - 4 × USB Host Type-A
    - USB Type-C® DRP
    - MIPI DSI℠
    - HDMI®
    - Stereo headset jack including analog microphone input
    - microSD™ card
    - GPIO expansion connector (Raspberry Pi® shield capability)
    - ARDUINO® Uno V3 expansion connectors
  - 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
- Board-specific features
  - 4" TFT 480×800 pixels with LED backlight, MIPI DSI℠ interface, and capacitive touch panel
  - Wi-Fi® 802.11b/g/n
  - Bluetooth® Low Energy 4.1

1 Description

The STM32MP157D-DK1 and STM32MP157F-DK2 Discovery kits leverage the capabilities of the increased-frequency 800 MHz microprocessors in the STM32MP1 Series to allow users easily 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 Ethernet 1-Gbps connector, one USB Type-C® OTG connector, four USB Type-A Host connectors, one HDMI® transceiver, one stereo headset jack with analog microphone, and one microSD™ connector.

To expand the functionality of the STM32MP157D-DK1 and STM32MP157F-DK2 Discovery kits, two GPIO expansion connectors are also available for ARDUINO® and Raspberry Pi® shields.

Additionally, the STM32MP157F-DK2 Discovery kit features an LCD display with a touch panel, and Wi-Fi® and Bluetooth® Low Energy capability.

2 Ordering information

To order an STM32MP157 Discovery kit, 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-DK1	• MB1272	UM2637	STM32MP157DAC1	• Basic security
STM32MP157F-DK2	• MB1272 • MB1407(1)		STM32MP157FAC1	• Secure Boot and cryptography • LCD • Wi-Fi® • Bluetooth® Low Energy

1. *LCD extension board.*

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-DKZ	Description	Example: STM32MP157F-DK2
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
DKZ	Discovery kit configuration: • DK1: basic • DK2: LCD, Wi-Fi®, and Bluetooth® Low Energy	LCD, Wi-Fi®, and Bluetooth® Low Energy

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.

3.1 System requirements

- Windows® OS (7, 8 and 10), Linux® 64-bit, or macOS®
- USB Type-C® to USB Type-C® charger 5 V / 3 A
- USB Type-C® to Type-A cable
- USB Type-A or USB Type-C® to Micro-B 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

MICRON

- 4-Gbit DDR3L, 16 bits, part number MT41K256M16TW-107-P-V00H

MURATA

- Wi-Fi® 802.11b/g/n + Bluetooth® Low Energy 4.1, part number LBEE5KL1DX-883

Revision history

Table 3. Document revision history

Date	Version	Changes
27-Oct-2020	1	Initial release.