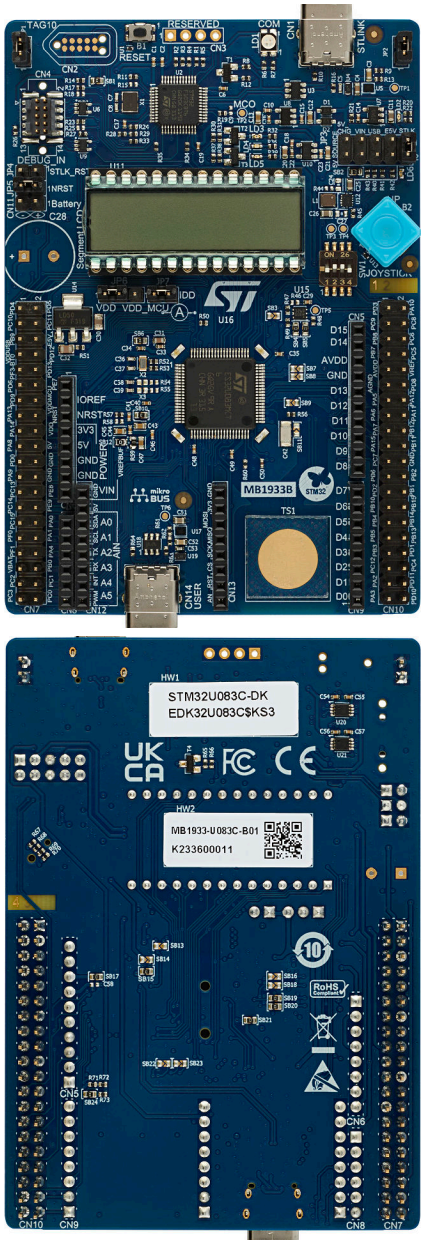
STM32U083C-DK

Data brief

Discovery kit with STM32U083MC MCU



STM32U083C-DK top and bottom views. Pictures are not contractual.

Product status link
STM32U083C-DK

Features

- Ultra-low-power STM32U083MC microcontroller based on the Arm® Cortex®-M0+ core, featuring 256 Kbytes of flash memory and 40 Kbytes of SRAM in an LQFP80 package
- 4×24-segment LCD
- Three user LEDs
- Reset push-button
- User joystick
- Touchkey
- Temperature sensor
- Board connectors:
  - ST-LINK USB Type-C® connector
  - User USB Device with USB Type-C® connector
  - mikroBUS™ connectors
  - MIPI® debug in connector (Arm® Cortex® 10-pin 1.27 mm-pitch debug connector over STDC14 footprint)
  - Extension connectors for full access to all STM32 I/Os
  - VBAT dedicated connector provides the capability to power the board on a battery
- Flexible power-supply options: ST-LINK USB V_{BUS}, USB connector, or external sources
- VDD power supply at 1.8 or 3.3 V by step-down converter
- On-board STLINK-V2EC debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Comprehensive free software libraries and examples available with the STM32Cube MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Description

The STM32U083C-DK Discovery kit is a complete demonstration and development platform for the STM32U083MCT6 microcontroller. It is used as a reference design for the user application development before porting to the final product.

The full range of hardware features on the board helps the user to evaluate all the peripherals (USB FS device, segment LCD, touchkey, temperature sensor, and others) and to develop applications. The ARDUINO® Uno V3, mikroBUS™, and extension connectors provide easy connection to extension shields or daughterboards for specific applications.

The STM32U083C-DK Discovery kit does not require any separate probe as it integrates the STLINK-V2EC debugger/programmer. It is operated by plugging it into a PC through a standard USB Type-A or USB Type-C® to USB Type-C® cable.

1 Ordering information

To order the STM32U083C-DK 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
STM32U083C-DK	• MB1933(1)	UM3292	STM32U083MCT6

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

1.1 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.

1.2 Codification

The meaning of the codification is explained in Table 2.

Table 2. Codification explanation

STM32XXYYZ-DK	Description	Example: STM32U083C-DK
XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32U0 series
YY	MCU product line in the series	STM32U083 product line
Z	STM32 flash memory size: • C for 256 Kbytes	256 Kbytes
DK	Discovery kit	Discovery kit

2 Development environment

The STM32U083C-DK Discovery kit features the STM32U083MC 32-bit microcontroller based on the Arm® Cortex®-M0+ processor.

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

2.1 System requirements

- Multi-OS support: Windows® 10, Linux® 64-bit, or macOS®
- USB Type-A or USB Type-C® to USB Type-C® cable

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

Linux® is a registered trademark of Linus Torvalds.

Windows is a trademark of the Microsoft group of companies.

2.2 Development toolchains

- IAR Systems® - IAR Embedded Workbench®(1)
- Keil® - MDK-ARM(1)
- STMicroelectronics - STM32CubeIDE

1. *On Windows® only.*

2.3 Demonstration software

The demonstration software, included in the STM32Cube MCU Package corresponding to the on-board microcontroller, is preloaded in the STM32 flash memory 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
07-Feb-2024	1	Initial release.