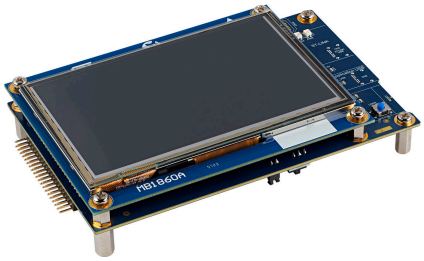
STM32U5G9J-DK2

Data brief

Discovery kit with STM32U5G9ZJ MCU



STM32U5G9J-DK2 global view.
Picture is not contractual.

Product status link
STM32U5G9J-DK2

Features

- Ultra-low-power STM32U5G9ZJT6Q microcontroller based on the Arm® Cortex®-M33 core with Arm® TrustZone®, featuring 4 Mbytes of flash memory, 3 Mbytes of SRAM, and SMPS, in an LQFP144 package
- 5" 800 × 480 pixels TFT LCD module with 16.7M color depth, parallel RGB interface, and capacitive touch panel
- USB Type-C® with USB 2.0 high-speed interface, UCPD Sink only
- Low-power system designed for VDD at 3.3 V only
- 1-Gbit Octo-SPI flash memory
- Two user LEDs
- User and reset push-buttons
- Board connectors:
  - ST-LINK USB Type-C®
  - User USB Type-C®
  - Arm® Cortex® MIPI10 connector (SWD/JTAG/trace)
  - Tag-Connect™ 10-pin footprint
  - ARDUINO® Uno V3 expansion
  - One double-row 2.54 mm pitch expansion connector for additional peripherals prototyping
- On-board STLINK-V3EC debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Comprehensive free software libraries and examples available with the STM32CubeU5 MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Description

The STM32U5G9J-DK2 Discovery kit is a complete demonstration and development platform for the STM32U5G9ZJT6Q microcontroller, featuring an Arm® Cortex®-M33 core with Arm® TrustZone®.

Leveraging the innovative ultra-low power-oriented features, 3 Mbytes of embedded SRAM, 4 Mbytes of embedded flash memory, and rich graphics features, the STM32U5G9J-DK2 Discovery kit enables users to prototype applications with state-of-the-art energy efficiency, as well as providing stunning and optimized graphics rendering with the support of a 2.5D Neo-Chrom accelerator, Chrom-ART Accelerator, and Chrom-GRC™ MMU.

The STM32U5G9J-DK2 Discovery kit integrates a full range of hardware features that help the user evaluate all the peripherals, such as a 5" RGB 800x480 pixels TFT colored LCD module with a 24-bit RGB interface and capacitive touch panel, USB Type-C® HS, Octo-SPI flash memory device, ARDUINO®, and STLINK-V3EC (USART console).

The STM32U5G9J-DK2 Discovery kit integrates an STLINK-V3EC embedded in-circuit debugger and programmer for the STM32 microcontroller with a USB Virtual COM port bridge and comes with the STM32CubeU5 MCU Package, which provides an STM32 comprehensive software HAL library as well as various software examples.

1 Ordering information

To order the STM32U5G9J-DK2 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
STM32U5G9J-DK2	• MB1918(1) • MB1860(2)	UM3223	STM32U5G9ZJT6Q

1. *Main board*
2. *LCD daughterboard*

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-DKT	Description	Example: STM32U5G9J-DK2
XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32U5 series
YY	MCU product line in the series	STM32U5F9/5G9 product line
Z	STM32 flash memory size: • J for 4 Mbytes	4 Mbytes
DK	Discovery kit	Discovery kit
T	Sequential number	Second Discovery kit version

2 Development environment

The STM32U5G9J-DK2 Discovery kit runs with the STM32U5G9ZJT6Q 32-bit microcontroller based on the Arm® Cortex®-M33 core with Arm® TrustZone®.

Note: Arm and TrustZone are registered trademarks 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
12-Oct-2023	1	Initial release.