32L0538DISCOVERY

Data brief

Discovery kit with STM32L053C8 MCU

Picture is not contractual.

Features

- STM32L053C8T6 microcontroller with 64 Kbytes of Flash memory and 8 Kbytes of RAM, in an LQFP48 package
- 2.13" E-paper display, 122×250 pixels
- USB 2.0 FS
- One linear touch sensor or four touchkeys
- Reset and user push-buttons
- Four color LEDs including two user LEDs
- I_{DD} current measurement
- Board connectors:
  - USB Mini-B connector
  - NFC expansion connector for the PLUG-CR95HF-B daughterboard
  - 2.54 mm pitch expansion header for direct access to various features of the STM32L053C8T6 microcontroller and easy probing of the LQFP48 I/Os
- Flexible power-supply options: ST-LINK USB V_{BUS}, USB connector, or external sources
- External application power supply: 3 V and 5 V
- Comprehensive free software libraries and examples available with the STM32CubeL0 MCU Package
- On-board ST-LINK/V2-1 debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Product status link
32L0538DISCOVERY

Description

The STM32L053 Discovery kit (32L0538DISCOVERY) helps users to discover the ultra-low-power microcontrollers in the STM32L0 Series with the Arm® Cortex®-M0+ core. It offers everything required for beginners and experienced users to get started quickly and develop applications easily.

Based on the STM32L053C8T6, it includes an embedded ST-LINK/V2-1 debugger/programmer, linear touch sensor, touchkeys, I_{DD} current measurement, 2.13” E-paper display, NFC connector for the PLUG-CR95HF-B board, LEDs, push-buttons and a user USB Mini-B connector.

1 Ordering information

To order the 32L0538DISCOVERY Discovery kit, 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 microcontroller.

Table 1. List of available products

Order code	Board reference	User manual	Target STM32
STM32L0538-DISCO	MB1143	UM1775	STM32L053C8T6

1.1 Product marking

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

- Product order code and product identification for the first sticker
- Board reference with revision, and serial number for the second sticker

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.

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.

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.

In order to use the same commercial stack in his application, a developer may 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

STM32L0XXY-DISCO	Description	Example: STM32L0538-DISCO
STM32L0	MCU series in STM32 32-bit Arm Cortex MCUs	STM32L0 Series
XX	MCU product line in the series	STM32L0x3 includes the STM32L053xx MCUs
Y	STM32 Flash memory size: • 8 for 64 Kbytes	64 Kbytes
DISCO	Discovery kit	Discovery kit

2 Development environment

The 32L0538DISCOVERY runs with the STM32L053C8T6 32-bit microcontroller based on the Arm® Cortex®-M0+ core.

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 Mini-B cable

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

2.2 Development toolchains

- IAR Systems® - IAR Embedded Workbench®(1)
- Keil® - MDK-ARM(1) (2)
- STMicroelectronics - STM32CubeIDE

1. *On Windows® only.*
2. *Free MDK-ARM for Arm® Cortex®-M0/M0+ cores.*

Revision history

Table 3. Document revision history

Date	Revision	Changes
19-June-2014	1	Initial release.
20-Oct-2014	2	Updated title to extend document scope to STM32L0 Series. Updated *Section : Features* and *Section : Description* to introduce STM32CubeL0. Added *Section : System requirements* and *Section : Development toolchains*.
12-Jan-2016	3	embed-enabled logo added to the cover page. Mbed-enabled added to *Features*. Free AC6 and Arm® Mbed™online added to *Section : Development toolchains*.
8-Sep-2021	4	Revised the entire document: • Updated title, *Features*, *Description*, *Ordering information*, *System requirements* and *Development toolchains* • Removed *Demonstration software* • Added *Product marking* and *Codification*
6-Dec-2021	5	Removed the references to Arm® Mbed™.