

Discovery kit with STM32F407VG MCU



Picture is not contractual.

Product status link

STM32F4DISCOVERY

Features

- STM32F407VGT6 microcontroller featuring 32-bit Arm® Cortex®-M4 with FPU core, 1-Mbyte Flash memory and 192-Kbyte RAM in an LQFP100 package
- USB OTG FS
- ST MEMS 3-axis accelerometer
- ST-MEMS audio sensor omni-directional digital microphone
- Audio DAC with integrated class D speaker driver
- User and reset push-buttons
- Eight LEDs:
 - LD1 (red/green) for USB communication
 - LD2 (red) for 3.3 V power on
 - Four user LEDs, LD3 (orange), LD4 (green), LD5 (red) and LD6 (blue)
 - Two USB OTG LEDs, LD7 (green) V_{BUS} and LD8 (red) over-current
- Board connectors:
 - USB with Micro-AB
 - Stereo headphone output jack
 - 2.54 mm pitch extension header for all LQFP100 I/Os for quick connection to prototyping board and easy probing
- Flexible power-supply options: ST-LINK, USB V_{BUS} , or external sources
- External application power supply: 3 V and 5 V
- Comprehensive free software including a variety of examples, part of STM32CubeF4 MCU Package, or STSW-STM32068 for using legacy standard libraries
- On-board ST-LINK/V2-A 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

Description

The STM32F4DISCOVERY Discovery kit leverages the capabilities of the STM32F407 high-performance microcontrollers, to allow users to develop audio applications easily. It includes an ST-LINK/V2-A embedded debug tool, one ST-MEMS digital accelerometer, one digital microphone, one audio DAC with integrated class D speaker driver, LEDs, push-buttons, and a USB OTG Micro-AB connector.

Specialized add-on boards can be connected by means of the extension header connectors.

1 Ordering information

To order the **STM32F4DISCOVERY** 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
STM32F407G-DISC1 ⁽¹⁾	MB997	UM1472	STM32F407VGT6

1. *STM32F407G-DISC1 with ST-LINK/V2-A replaces the obsolete STM32F4DISCOVERY order code with ST-LINK/V2.*

1.1 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: “MBxxx-Variant-yyz”, where “MBxxx” 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.

1.2 Codification

The meaning of the codification is explained in [Table 2](#).

Table 2. Codification explanation

STM32F4XXY-DISC1	Description	Example: STM32F407G-DISC1
STM32F4	MCU series in STM32 32-bit Arm Cortex MCUs	STM32F4 Series
XX	MCU product line in the series	STM32F407
Y	STM32 Flash memory size: • G for 1 Mbyte	1 Mbyte
DISC1	Discovery kit	Discovery kit

2 Development environment

STM32 32-bit microcontrollers are based on the Arm® Cortex®-M processor.

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



2.1 System requirements

- Windows® OS (7, 8, and 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.
All other trademarks are the property of their respective owners.

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	Version	Changes
15-Sep-2011	1	Initial version.
28-Jan-2013	2	Added URL for expanding functionality in <i>Description</i> .
15-Jul-2013	3	Modified to apply to STM32F407/417. Added LIS3DSH accelerometer.
29-Sep-2014	4	Updated <i>Section : Features</i> and <i>Section : Description</i> to introduce STM32CubeF4 and STSW-STM32078. Updated <i>Section : System requirements</i> and <i>Section : Development toolchains</i> .
25-Feb-2016	5	Updated Features, Description and System requirements to introduce STM32F407G-DISC1.
28-Oct-2016	6	Updated <i>Features</i> and <i>Description</i> to remove reference to Mbed™ and to add information on the new order code.
12-Oct-2020	7	Removed all references to the obsolete STM32F4DISCOVERY order code. Updated ST MEMS descriptions in <i>Features</i> . Reorganized the entire document: <ul style="list-style-type: none"> Updated <i>Features</i>, <i>Description</i>, <i>Ordering information</i> and <i>Development environment</i> Added <i>Codification</i>

IMPORTANT NOTICE – PLEASE 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 acknowledgement.

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, please 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.

© 2020 STMicroelectronics – All rights reserved