

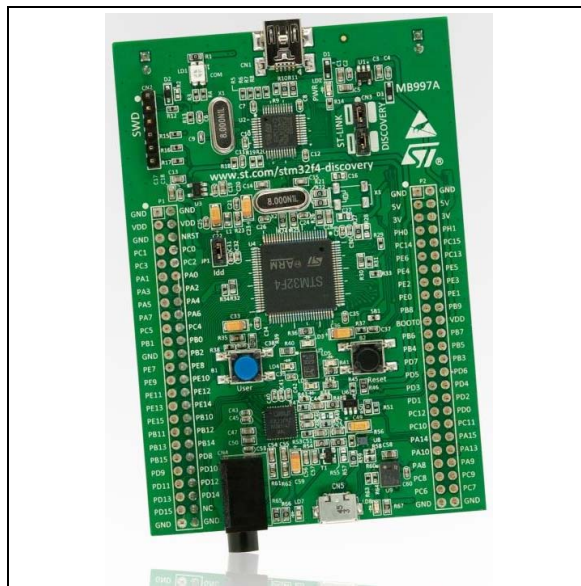
ST(意法) STM32F4DISCOVERY **PDF**

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<http://www.st-ic.com>

Features

- STM32F407VGT6 microcontroller featuring 32-bit ARM® Cortex®-M4 with FPU core, 1-Mbyte Flash memory, 192-Kbyte RAM in an LQFP100 package
- On-board ST-LINK/V2 on STM32F4DISCOVERY (old reference) or ST-LINK/V2-A on STM32F407G-DISC1 (new order code)
- USB ST-LINK with re-enumeration capability and three different interfaces:
 - Debug port
 - Virtual Com port (with new order code only)
 - Mass storage (with new order code only)
- Board power supply: through USB bus or from an external 5 V supply voltage
- External application power supply: 3 V and 5 V
- LIS302DL or LIS3DSH ST MEMS 3-axis accelerometer
- MP45DT02 ST-MEMS audio sensor omni-directional digital microphone
- CS43L22 audio DAC with integrated class D speaker driver
- 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)
 - 2 USB OTG LEDs LD7 (green) VBUS and LD8 (red) over-current
- Two push-buttons (user and reset)
- USB OTG FS with micro-AB connector
- Extension header for all LQFP100 I/Os for quick connection to prototyping board and easy probing
- Comprehensive free software including a variety of examples, part of STM32CubeF4 package or STSW-STM32068 to use legacy standard libraries.



1. Picture is not contractual.

Description

The STM32F4DISCOVERY kit leverages the capabilities of the STM32F407 high performance microcontrollers, to allow users to easily develop applications featuring audio.

It includes an ST-LINK embedded debug tool, one ST-MEMS digital accelerometer, a digital microphone, one audio DAC with integrated class D speaker driver, LEDs, push-buttons and an USB OTG micro-AB connector.

To expand the functionality of the STM32F4DISCOVERY kit with ethernet connectivity, LCD display and more, visit the www.st.com/stm32f4dis-expansion webpage.

With the latest board enhancement, the new order code STM32F407G-DISC1 has replaced the old reference STM32F4DISCOVERY.

System requirements

- Windows® OS (XP, 7, 8)
- USB type A to Mini-B cable

Development toolchains

- IAR® EWARM (IAR Embedded Workbench®)
- Keil® MDK-ARM™
- GCC-based IDEs (free AC6: SW4STM32, Atollic® TrueSTUDIO®,...)

Demonstration software

The demonstration software is preloaded in the board Flash memory. It uses the MEMS motion sensor to blink the four LEDs, according to the motion direction and speed. Connecting the board to a PC with a second USB 'type A to micro-B' cable, converts it into a standard mouse and the board motion controls the PC cursor.

The latest versions of the demonstration source code and associated documentation can be downloaded from the www.st.com/stm32f4-discovery webpage.

Product marking

Tools marked as "ES" or "E" are not yet qualified and as such, they may be used only for evaluation purposes. ST shall not be liable for any consequences related with other ways of use of such non-qualified tools, for example, as reference design or for production.

Examples of location of "E" or "ES" marking:

- on target STM32 microcontroller part mounted on the board (for illustration, refer to section "Package information" of a STM32 datasheet at www.st.com)
- next to the evaluation tool ordering part number, as a label stuck or a silk-screen printed on the board

Ordering information

To order the Discovery kit for the STM32F407 line of microcontrollers, refer to [Table 1](#).

Table 1. List of the order codes

Order code	ST-LINK version
STM32F4DISCOVERY	ST-LINK/V2
STM32F407G-DISC1	ST-LINK/V2-A

Revision history

Table 2. Document revision history

Date	Revision	Changes
15-Sep-2011	1	Initial version.
28-Jan-2013	2	Added URL for expanding functionality in Description .
15-Jul-2013	3	Modified to apply to STM32F407/417. Added LIS3DSH accelerometer.
29-Sep-2014	4	Updated Section : Features and Section : Description to introduce STM32CubeF4 and STSW-STM32078. Updated Section : System requirements and Section : Development toolchains .
25-Feb-2016	5	Updated Features , Description and System requirements to introduce STM32F407G-DISC1.
28-Oct-2016	6	Updated Features and Description to remove reference to mbed™ and to add information on the new order code.

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