

## STM32F4DISCOVERY **Discovery kit with STM32F407VG MCU**

The STM32F4DISCOVERY Discovery kit allows users to easily develop applications with the STM32F407 high performance microcontrollers with ARM®Cortex®-M4 32-bit core. It includes everything required either for beginners or for experienced users to get quickly started.

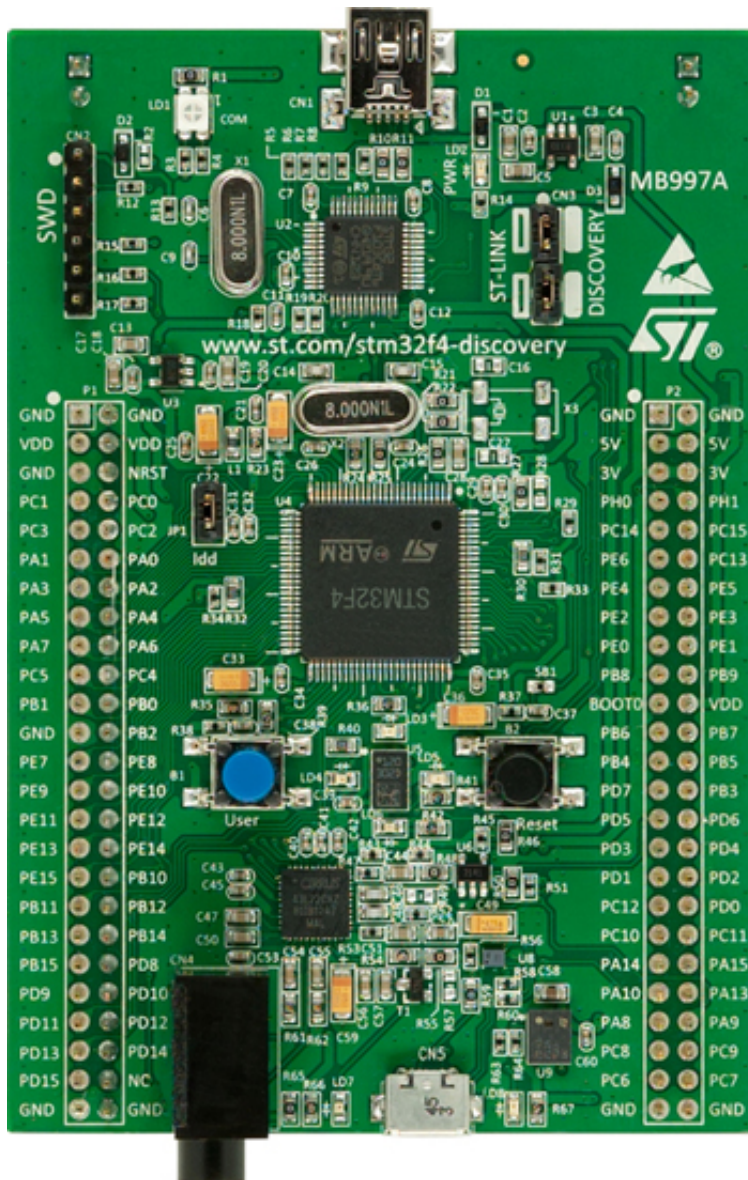
Based on the STM32F407VGT6, it includes an ST-LINK/V2 or ST-LINK/V2-A embedded debug tool, two ST MEMS digital accelerometers, a digital microphone, one audio DAC with integrated class D speaker driver, LEDs and push buttons and an USB OTG micro-AB connector.

To expand the functionality of the STM32F4DISCOVERY Discovery kit with the Ethernet connectivity, LCD display and more, visit the [www.st.com/stm32f4dis-expansion](http://www.st.com/stm32f4dis-expansion) webpage.

### Key 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 or ST-LINK/V2-A on STM32F407G-DISC1
- ARM®mbed™ -enabled (<http://mbed.org>) with ST-LINK/V2-A only
- USB ST-LINK with re-enumeration capability and three different interfaces:
  - Virtual com port (with ST-LINK/V2-A only)
  - Mass storage (with ST-LINK/V2-A only)
  - Debug port
- 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 for legacy standard libraries usage

## Image




## Design Resources<sup>Top</sup>




Quick Links

Technical Documentation

### Product Specifications


Description	Version	Size
 <b>DB1421:</b> Discovery kit with STM32F407VG MCU	5.0	291 KB

### Application Notes



Description	Version	Size
 <b>AN3364:</b> Migration and compatibility guidelines for STM32 microcontroller applications	3.0	128 KB
 <b>AN3990:</b> Upgrading STM32F4DISCOVERY board firmware using a USB key	1.4	204 KB
 <b>AN3997:</b> Audio playback and recording using the STM32F4DISCOVERY	1.1	169 KB

 <b>AN3998:</b> PDM audio software decoding on STM32 microcontrollers	1.2	91 KB
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### Technical Notes & Articles


Description	Version	Size
 <b>TN0830:</b> How to use EWARM 6.2x with projects built with EWARM 6.1 and previous versions	1.1	97 KB

### User Manual


Description	Version	Size
 <b>UM1467:</b> Getting started with software and firmware environments for the STM32F4DISCOVERY Kit	1.4	1 717 KB
 <b>UM1472:</b> Discovery kit with STM32F407VG MCU	5.0	1 189 KB

### Hardware Resources


#### Board Manufacturing Specification

Description	Version	Size
 STM32F4DISCOVERY gerber files		409 KB

#### Bill of Materials

Description	Version	Size
 STM32F4DISCOVERY BOM	1.0.0	11 KB

#### Schematic Pack

Description	Version	Size
 STM32F4DISCOVERY schematics	1.0.0	300 KB


### Related Tools and Software

#### Related Tools and Software


Part Number	Description
<a href="#">STSW-STM32068</a>	STM32F4DISCOVERY board firmware package, including 22 examples (covering USB Host, audio, MEMS accelerometer and microphone) (AN3983)
<a href="#">STM-STUDIO</a>	Run-time variables monitoring and visualization tool for STM8 and STM32 microcontrollers
<a href="#">STM32CubeF4</a>	Embedded software for STM32F4 series (HAL low level drivers, USB, TCP/IP, File system, RTOS, Graphic - coming with examples running on ST boards: STM32 Nucleo, Discovery kits and Evaluation boards)
<a href="#">STSW-STM32142</a>	Using STM32F4 MCU power modes with best dynamic efficiency (AN4365)
<a href="#">STSW-LINK009</a>	ST-Link, ST-Link/V2, ST-Link/V2-1 USB driver signed for XP, Windows7, Windows8
<a href="#">STSW-LINK007</a>	ST-LINK/V2-1 firmware upgrade

### Publications and Collaterals

## Flyer


Description	Version	Size
 STM32 for makers Releasing your creativity	15.10	1 128 KB

## Brochure

Description	Version	Size
 STM32 32-bit MCU family - Leading supplier of ARM® Cortex®-M microcontrollers	16.02	1 184 KB

## Legal

### License Agreement

Description	Version	Size
 Evaluation products license agreement	1.0	126 KB

## Sample & Buy<sup>Top</sup>

Part Number	Marketing Status	Specific features	Order From ST	Unit Price (US\$)* @ 1	Distributor Availability												
STM32F407G-DISC1	Active		<a href="#">Buy Direct</a>	19.5	Distributor reported inventory date: 2016-0 <table border="1"> <thead> <tr> <th>Distributor Name</th> <th>Regio</th> </tr> </thead> <tbody> <tr> <td>ARROW</td> <td>AME</td> </tr> <tr> <td>ARROW</td> <td>EUR</td> </tr> <tr> <td>Farnell Element14</td> <td>EUR</td> </tr> <tr> <td>DIGIKEY</td> <td>WOF</td> </tr> <tr> <td>MOUSER</td> <td>WOF</td> </tr> </tbody> </table>	Distributor Name	Regio	ARROW	AME	ARROW	EUR	Farnell Element14	EUR	DIGIKEY	WOF	MOUSER	WOF
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(\*) Suggested Resale Price per unit (USD) for BUDGETARY USE ONLY. For quotes, prices in local currency, please contact your local [ST Sa](#)

(\*\*) The Material Declaration forms available on st.com may be generic documents based on the most commonly used package within a packa [support](#) for information on specific devices.