

## Evaluation board with STM32H7B3LI MCU



STM32H7B3I-EVAL top view. Picture is not contractual.

## Features

- STM32H7B3LIH6Q Arm® Cortex® microcontroller with 2 Mbytes of Flash memory and 1.4 Mbytes of RAM in TFBGA225 package
- 7" 800x480 WVGA TFT color LCD module with RGB parallel interface and capacitive touch panel with I<sup>2</sup>C interface
- 1/4" color CMOS QSXGA (5 Mpixels) camera module with DCMI and I<sup>2</sup>C interface
- USB OTG\_HS and USB OTG\_FS
- On-board current measurement
- I<sup>2</sup>S / SAI audio codec
- 512-Mbit Octal-SPI NOR Flash, 8 Mx32bit SDRAM, 1 Mx16bit SRAM, and 8 Mx16bit NOR Flash
- 4 color user LEDs
- Reset, Wake Up and Tamper push-buttons
- 4-direction joystick with a selection button
- Potentiometer
- Coin-battery cell holder for power backup
- Power-metering and temperature-monitoring demonstration with 2 dual-channel, sigma-delta modulators
- Wi-Fi® module compliant with 802.11 b/g/n
- Board connectors:
  - 2 USB Micro-AB
  - 2 microSD™ cards
  - OCSPi NOR Flash module connector
  - Stereo Line OUT headset jack including analog microphone input
  - Stereo Line IN headset jack
  - 2xDB9 for external RS-232 port and CAN FD
  - JTAG and ETM trace debugger
  - Connectors for ADC and DAC
  - I/O expansion connectors
  - DFSDM microphones daughterboard expansion connector
  - Motor-control interface expansion connector
  - I<sup>2</sup>C expansion connector
- Flexible power-supply options: ST-LINK, USB V<sub>BUS</sub> or external sources
- On-board STLINK-V3E debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Comprehensive free software libraries and examples available with the STM32Cube MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR™, Keil®, and GCC-based IDEs

Product status link

[STM32H7B3I-EVAL](#)

## Description

The [STM32H7B3I-EVAL](#) Evaluation board is a complete demonstration and development platform for the Arm® Cortex®-M7-based [STM32H7B3LIH6QU](#) microcontroller. The STM32H7B3I-EVAL Evaluation board provides access to all the STM32 peripherals for user applications, and include an embedded STLINK-V3E debugger/programmer.

The full range of the STM32H7B3I-EVAL hardware features helps to develop applications and evaluate all the peripherals, such as USB OTG\_HS and FS, CAN FD, USART, ADC and DAC, digital microphones, SRAM, SDRAM, NOR Flash memory, Octo-SPI Flash memory with OTFDEC, microSD™ 3.0 card, 7" 800x480 WVGA TFT color RGB LCD with capacitive touch panel (I<sup>2</sup>C), and DCMI camera.

The expansion connectors provide an easy way to add specialized features, while ETM trace is supported through external probes.

# 1 Ordering information

To order the STM32H7B3I-EVAL Evaluation board, 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 STM32.

**Table 1. List of available products**

Order code	Board references	User manual	Target STM32
STM32H7B3I-EVAL	<ul style="list-style-type: none"> <li>MB1331</li> <li>MB1370<sup>(1)</sup></li> <li>MB1379<sup>(2)</sup></li> <li>MB1486<sup>(3)</sup></li> </ul>	UM2662	STM32H7B3LIH6QU

1. LCD board
2. Camera module
3. Wi-Fi<sup>®</sup> module

## 1.1 Product marking

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](http://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](#). The order code is mentioned on a sticker placed on the top side of the board.

**Table 2. Codification explanation**

STM32TXXY-EVAL	Description	Example: STM32H7B3I-EVAL
STM32TT	MCU series in STM32 32-bit Arm Cortex MCUs	STM32H7 Series
XX	MCU product line in the series	STM32H7B3
Y	STM32 Flash memory size: <ul style="list-style-type: none"> <li>I for 2 Mbytes</li> </ul>	2 Mbytes

## 2 Development environment

STM32H7B3I-EVAL runs with the STM32H7B3LIH6QU 32-bit microcontroller based on the Arm® Cortex®-M7 core.

*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 to Micro-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

- Keil® MDK-ARM (see [note](#))
- IAR™ EWARM (see [note](#))
- GCC-based IDEs

*Note:* 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](http://www.st.com).

## Revision history

**Table 3. Document revision history**

Date	Version	Changes
17-Jan-2020	1	Initial release