STM32H7S78-DK

Discovery kit with STM32H7S7L8 MCU
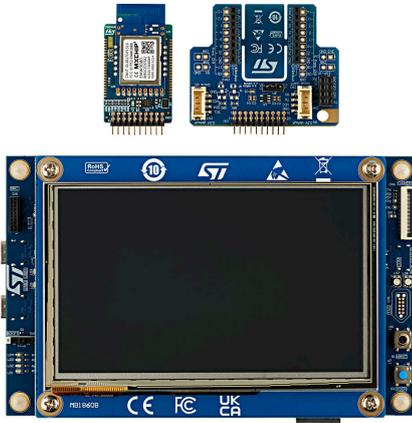
STM32H7S78-DK Discovery kit content. Picture is not contractual.

Product status link
STM32H7S78-DK

Features

- STM32H7S7L8H6H microcontroller based on the Arm® Cortex®-M7 featuring 64 Kbytes of flash memory and 620 Kbytes of SRAM in a TFBGA225 package
- 5" LCD module with capacitive touch panel
- USB Type-C® with USB 2.0 HS interface, dual-role-power (DRP)
- USB Type-C® with USB 2.0 FS interface, sink only
- Ethernet compliant with IEEE-802.3-2002
- I^{2}S audio codec
- One ST-MEMS digital microphone
- 1-Gbit Octo-SPI NOR flash memory
- 256-Mbit Hexadeca-SPI PSRAM
- Fan-out daughterboard
- Wi-Fi® module (802.11 b/g/n compliant)
- Four user LEDs
- User and reset push-buttons
- Board connectors:
    - Two USB Type-C®
    - Ethernet RJ45
    - Camera flexible printed circuit (FPC) connector
    - microSD™ card
    - Stereo headset jack including analog microphone input
    - Audio MEMS daughterboard expansion connector
    - ARDUINO® Uno V3 expansion connector
    - STMod+ expansion connector
    - Pmod™ expansion connector
- On-board STLINK-V3EC 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 Embedded Workbench®, MDK-ARM, and STM32CubeIDE

DB5171 - Rev 1 - February 2024
For further information contact your local STMicroelectronics sales office.
www.st.com

Description

The STM32H7S78-DK Discovery kit is a complete demonstration and development platform for the Arm® Cortex®-M7 core-based STM32H7S7L8H6H microcontroller.

The STM32H7S78-DK Discovery kit includes a full range of hardware features that helps the user to evaluate many peripherals, such as USB Type-C®, Octo-SPI flash memory and Hexadeca-SPI PSRAM devices, audio codec, digital microphones, ADC, flexible extension connectors, and user button. The four flexible extension connectors allow easy and unlimited expansion capabilities for specific applications such as wireless connectivity, analog applications, and sensors.

The STM32H7S7L8H6H microcontroller features three I^{2}C buses, six SPI ports, three USART ports, two SDMMC ports, two CAN ports, an Ethernet port, two SAI ports, two 12-bit ADCs, an embedded step-down converter, two Octo-SPI memory interfaces, one Hexadeca-SPI interface, USB OTG HS port with power delivery, LCD-TFT controller, flexible memory controller (FMC), 8- to 14-bit DCMI interface, JTAG, and SWD debugging support.

The STM32H7S78-DK Discovery kit integrates an STLINK-V3EC embedded in-circuit debugger and programmer for the STM32 MCU, with a USB Virtual COM port bridge and comes with the comprehensive MCU Package

1 Ordering information

To order the STM32H7S78-DK Discovery kit, refer to Table 1. For a detailed description of each board, 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 reference	User manual	Target STM32
STM32H7S78-DK	• MB1736[1] • MB1860[2] • MB1400[3] • MB1280[4]	• UM3289[1] • UM2695[4]	STM32H7S7L8H6H

1. *Main board*
2. *LCD daughterboard*
3. *Wi-Fi®-module daughterboard*
4. *Fan-out daughterboard*

1.1 Product marking

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

- First sticker: product order code and product identification, generally placed on the main board featuring the target device.
  Example:

  Product order code
  Product identification
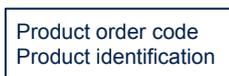
- Second sticker: board reference with revision and serial number, available on each PCB.
  Example:

  MBxxxx-Variant-yzz
  syywwxxxxx

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.

Parts marked as *"ES"* or *"E"* are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event will ST be liable for the customer using any of these engineering samples in production. ST's Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.

"ES" or *"E"* 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.

To use the same commercial stack in their applications, the developers might 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

STM32XXYYZ-DK	Description	Example: STM32H7S78-DK
XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32H7 series
YY	MCU product line in the series	STM32H7R7/7S7 product line
Z	STM32 flash memory size: • 8 for 64 Kbytes	64 Kbytes
DK	Discovery kit	Discovery kit

2 Development environment

The STM32H7S78-DK features the STM32H7S7L8 32-bit microcontroller based on the Arm® Cortex®-M7 processor.

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 USB Type-C® cable

Note: *macOS® is a trademark of Apple Inc., registered in the U.S. and other countries and regions.*

Linux® is a registered trademark of Linus Torvalds.

Windows is a trademark of the Microsoft group of companies.

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	Revision	Changes
09-Feb-2024	1	Initial release.

IMPORTANT NOTICE – 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 acknowledgment.

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, 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.