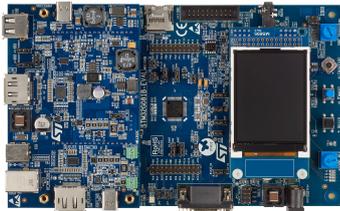## Evaluation board with STM32G081RB MCU

STM32G081B-EVAL Evaluation board with legacy peripheral daughterboard

STM32G081B-EVAL Evaluation board with UCPD daughterboard

*Pictures are not contractual.*

| Product status link |
| --- |
| STM32G081B-EVAL |

## Features

### Mother board

- STM32G081RBT6 microcontroller with 128 Kbytes of Flash memory and 32 Kbytes of RAM in LQFP64 package
- MCU voltage choice fixed 3.3 V or adjustable from 1.65 V to 3.6 V
- I$^2$C compatible serial interface
- RTC with backup battery
- 8-Gbyte or more SPI interface microSD™ card
- Potentiometer
- 4 color user LEDs and one LED as MCU low-power alarm
- Reset, Tamper and User buttons
- 4-direction control and selection joystick
- Board connectors:
    - 5 V power jack
    - RS-232 and RS485 communications
    - Stereo audio jack including analog microphone input
    - microSD™ card
    - Extension I$^2$C connector
    - Motor-control connector
- Board extension connectors:
    - Daughterboard connectors for legacy peripheral daughter board or USB-C daughterboard
    - Extension connectors for daughterboard or wire-wrap board
- Flexible power-supply options:
    - 5 V power jack
    - ST-LINK/V2-1 USB connector
    - Daughterboard
- On-board ST-LINK/V2-1 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 package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR™, Keil®, GCC-based IDEs

### Legacy peripheral daughterboard

- IrDA transceiver
- IR LED and IR receiver
- Light dependent resistor (LDR)
- Temperature Sensor
- Board connectors:
    - Two HDMI connectors with DDC and CEC
    - Smart card slot

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For further information contact your local STMicroelectronics sales office.

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**USB-C and Power Delivery daughterboard**

- Mux for USB3.1 Gen1 / DisplayPort™ input and Type-C port1 output
- Mux for Type-C port2 input and DisplayPort output / USB2.0
- VCONN on Type-C port1
- USB PD on Type-C port1
- Board connectors:
  - Type-C port1 DRP (dual-role port)
  - Type-C port2 Sink
  - DisplayPort input
  - DisplayPort output
  - USB 3.1 Gen1 Type-B receptacle
  - USB2.0 Type-A receptacle
  - 19 V power jack for USB PD

## Description

The STM32G081B-EVAL Evaluation board is a high-end development platform, for Arm® Cortex®-M0+ core-based STM32G081RBT6 microcontroller, with USB Type-C and power delivery controller interfaces (UCPD), compliant with USB type-C r1.2 and USB PD specification r3.0, two $I^2$Cs, two SPIs, five USARTs, one LP UART, one 12-bit ADC, two 12-bit DACs, two GP comparators, two LP timers, internal 32 KB SRAM and 128 KB Flash, CEC, SWD debugging support.

The full range of hardware features on the STM32G081B-EVAL Evaluation board includes a mother board, a legacy peripheral daughterboard and a USB-C and Power Delivery daughterboard, which help to evaluate all peripherals (USB Type-C connector with USB PD, motor control connector, RS232, RS485, Audio DAC, microphone ADC, TFT LCD, IrDA, IR LED, IR receiver, LDR, MicroSD card, CEC on two HDMI connectors, smart card slot, RF E2PROM & Temperature sensor…), and to develop applications.

The board integrates an ST-LINK/V2-1 as an embedded in-circuit debugger and programmer for the STM32 MCU.

The daughterboard and extension connectors provide an easy way to connect a daughterboard or wrapping board for the user's specific applications.

The USB-C and Power Delivery daughterboard features two independent USB-C ports controlled by an STM32G0. USB-C port 1 is dual role power (DRP) and can provide up-to 45 W. USB-C Port 2 is sink only. Both support USB PD protocol and alternate mode functionality.

Application firmware examples are provided to evaluate the USB-C technology through various use cases.

# 1 General information

The STM32G081B-EVAL runs on the STM32G081RBT6 32-bit microcontroller based on the Arm® Cortex®-M0+ core.

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

arm

# 2 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.*

# 3 Development toolchains

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

Note: *On Windows® only.*

# 4 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*.

# 5    Ordering information

To order the STM32G081B-EVAL Evaluation board, refer to Table 1:

**Table 1. Ordering information**

| Order code | Target STM32 |
|---|---|
| STM32G081B-EVAL | STM32G081RB |

# Revision history

**Table 2.** Document revision history

| Date | Version | Changes |
|------|---------|---------|
| 6-Nov-2018 | 1 | Initial release. |

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

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