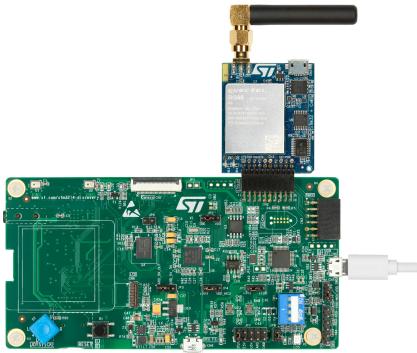## STM32 Discovery pack for LTE IoT cellular to cloud

P-L496G-CELL02 top view. Picture is not contractual.

Product status link
P-L496G-CELL02

Features

- STM32L496AGI6 Arm® Cortex®-M3 core-based microcontroller with 1 Mbyte of flash memory and 320 Kbytes of RAM in a UFBGA169 package
- USB OTG HS
- On-board current measurement
- SAI audio codec
- ST-MEMS digital microphones
- 8-Mbit PSRAM
- Two user LEDs
- User and reset push-buttons
- 4-direction joystick with selection button
- Board connectors:
  - 8-bit camera
  - LCD flat cable
  - USB Micro-B
  - Stereo headset jack including analog microphone input
  - microSD™ card
  - ARDUINO® Uno V3 expansion connector
  - STMod+ expansion connector
- Board expansion features:
  - Quectel BG96 worldwide cellular modem LTE Cat M1/Cat NB1/EGPRS module 300 kbps downlink, 375 kbps uplink
  - Modem reset red LED and modem signaling green LED
  - Switchable SIM interface: eSIM and micro SIM
  - Pulse SMA antenna for frequency ranges: 824 / 900 / 1800 / 1900 / 2100 MHz. May this antenna not be suitable for your LTE band, use the Pulse SPDA24700 antenna instead.
- Flexible power-supply options: ST-LINK USB V_{BUS}, USB connector, or external sources
- 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 MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Description

The STM32 Discovery pack for LTE IoT cellular to cloud (P-L496G-CELL02) is a turnkey development platform for cellular and cloud technology-based solutions.

The pack contains an STM32L496AG-based low-power Discovery main board with preloaded firmware and an STMod+ cellular LTE IoT worldwide expansion board with an antenna.

1 Ordering information

To order the P-L496G-CELL02 ultra-low-power 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
P-L496G-CELL02	• MB1261[1] • MB1329[2]	UM2365	STM32L496AGI6

1. *Main board*
2. *Cellular 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
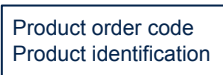
- Second sticker: board reference with revision and serial number, available on each PCB.
  Example:

  > MBxxxx-Variant-yzz
  > syywwxxxxx
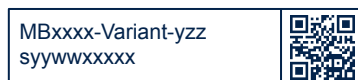
On the first sticker, the first line provides the product order code, and the second line the product identification.

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.

2 Development environment

The P-L496G-CELL02 Discovery pack runs on STM32L4 Series microcontrollers based on the Arm® Cortex®-M3 core.

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 Micro-B 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.*

Revision history

Table 2. Document revision history

Date	Revision	Changes
15-Feb-2018	1	Initial release.
22-May-2018	2	Updated *Features* to add ST Incard™ eSIM, *Demonstration software* for precisions, and *Technology partners* to replace EMNIFY with AVSystem.
23-Dec-2022	3	Document reshuffled from Features to Development environment sections to the latest standards. Removed *Demonstration software* and *Technology partners*.

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.