

# Uporaba modula ESP32-DEVKITM-1 – “hitri začetek”


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 **ESP32-DEVKITM-1**

**Digi-Key Part Number** 1965-ESP32-DEVKITM-1-ND

**Manufacturer** [Espressif Systems](#)

**Manufacturer Product Number** ESP32-DEVKITM-1

**Description** DEV KIT MINI ESP32

**Manufacturer Standard Lead Time** 8 Weeks

**Detailed Description** ESP32 ESP32 Transceiver; 802.11 b/g/n (Wi-Fi, Wi-Fi, WLAN), Bluetooth® Smart Ready 4.x Dual Mode 2.4GHz Evaluation Board

**Customer Reference**

**Datasheet** [Datasheet](#)

**In-Stock: 269**

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Dokumentacija za dobavljen modul ESP32-DevKitM-1 se nahaja na uradni strani proizvajalca:



<https://www.espressif.com/en/products/devkits>

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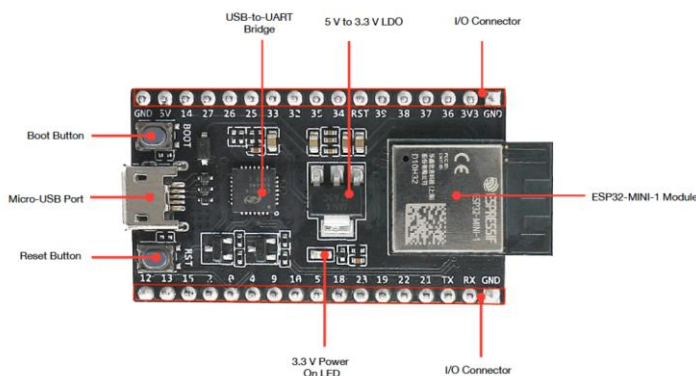
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Boards	Buy	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
	<a href="#">Buy</a>	ESP32-DevKitC is an entry-level development board. It has all the ESP32 pins exposed and is easy to connect and use.	4 / 8 MB Flash	I/O USB	Buttons, LEDs	<a href="#">ESP32-WROOM-32E</a> <a href="#">ESP32-WROOM-32UE</a> <a href="#">ESP32-WROOM-DA</a> <a href="#">ESP32-WROVER-E</a> <a href="#">ESP32-WROVER-IE</a>	<a href="#">Getting Started Demo Code</a>
	<a href="#">Buy</a>	ESP32-DevKitM-1 is a ESP32-MINI-1-based development board produced by Espressif. Most of the I/O pins are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-DevKitM-1 on a breadboard.	4 MB Flash	I/O USB	Buttons, LEDs	<a href="#">ESP32-MINI-1</a> <a href="#">ESP32-MINI-1U</a>	<a href="#">User Guide</a>

The ESP-WROVER-KIT comes with an ESP32-WROVER-E module by default.



ESP32-DevKitM-1 - front

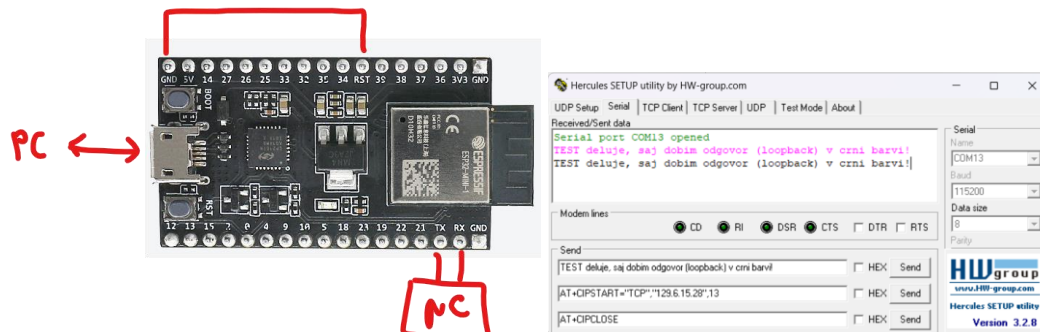
## ESP32-DevKitM-1 kot "USB to RS232 (TTL) dongle" vmesnik

Onemogočim oglašanje modula ESP32 (povežem GND z RST)

Testiram delovanje:

Tx povežem z RX (loop back)

Modul priključim na PC (preverim dodeljeni virtualni serijski port) in testiram s programom za serijsko komunikacijo (npr. Putty, Hercules, ReaTerm,...)



## Omogočitev in testiranje ukazov AT

Downloading Guide

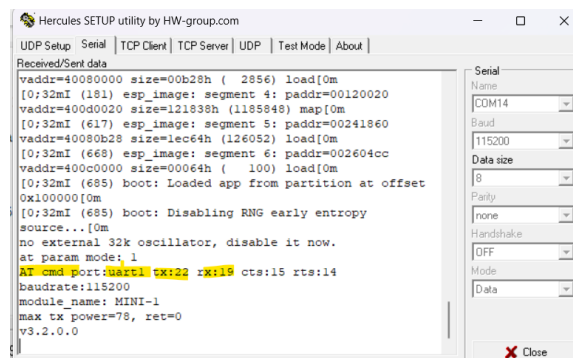
[https://docs.espressif.com/projects/esp-at/en/latest/esp32/Get\\_Started/Downloading\\_guide.html](https://docs.espressif.com/projects/esp-at/en/latest/esp32/Get_Started/Downloading_guide.html)

ESP-AT Firmware Differences (pini za AT commands)

[https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile\\_and\\_Develop/esp-at\\_firmware\\_differences.html](https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile_and_Develop/esp-at_firmware_differences.html)

Privzete nastavitve modula: UART0 -> debug port, UART1 -> AT commands

Prek USB vrat povežem modul na PC (omogočim modul ⇔ odstranim povezavo GND-RST), zažnem npr. "Hercules Utility" in resetiram modul. Preko UART0 ("debug" port) modul sporoči uporabljene pine za UART1 (AT commands):

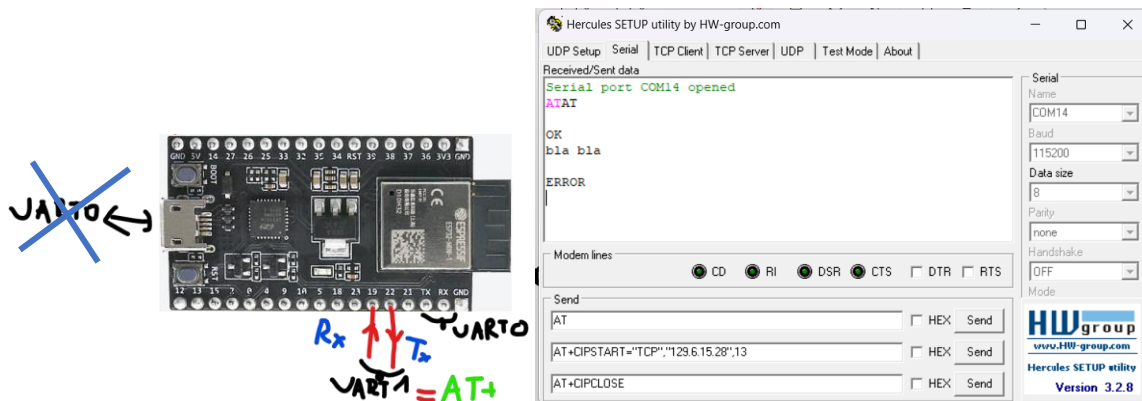


## Izvajanje ukazov AT:

Hitra in učinkovita navodila za delo z ukazi AT (**Espressif ESP8266EX: AT COMMAND EXAMPLES**), so v spletni učilnici (naloge iz UART), lahko pa jih pod tem naslovom najdete tudi na spletu.

### 1. NAČIN

Preko vrat USB je privzeto omogočena komunikacija z UART0 (debug port), kjer ne moremo izvajati ukazov AT. Ukaze AT je mogoče izvajati preko vrat UART1, ki se nahajajo na priključkih 22 (TX) in 19 (RX). Za komunikacijo s PC-je, lahko uporabim zunanji „dongle“ (USB- to UART pretvornik). Če pa želim izvajati ukaze AT kar iz mikrokrmilnika (uC), povežem UART1 (pina 19, 22 in GND) na uC (npr. UART STM32). Modul se odziva na ukaze AT.



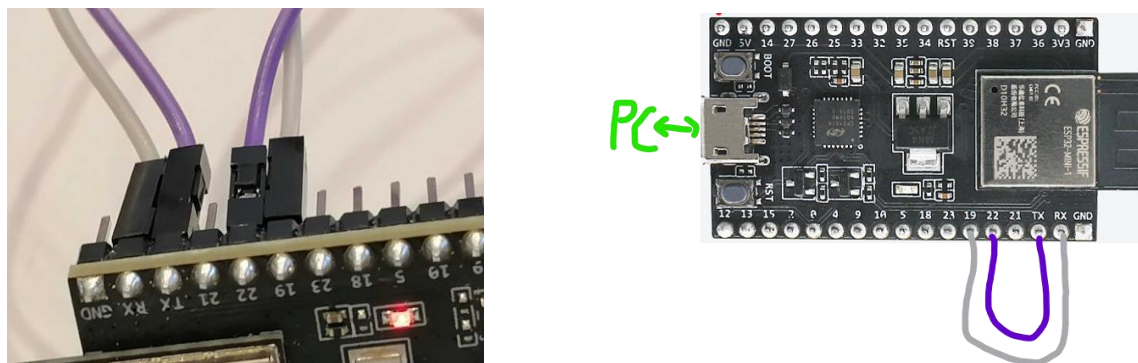
### Hardware Connection (Connection of Components for ESP-AT Testing)

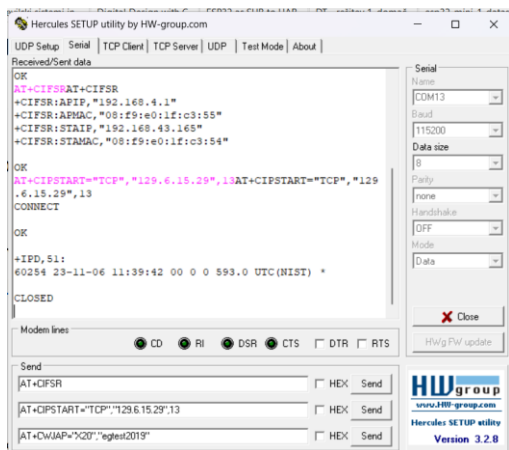
[https://docs.espressif.com/projects/esp-at/en/latest/esp32/Get\\_Started/Hardware\\_connection.html](https://docs.espressif.com/projects/esp-at/en/latest/esp32/Get_Started/Hardware_connection.html)

### 2. NAČIN

V trem načinu premostim tok podatkov iz UART0 (AT commands) na UART1 (povezan na USB konektor ⇔ debug port). Na PC-ju zaženem npr. „Hercules Utility“ in izvajam ukaze AT.

**Slabost:** Možnost mešanja “AT sporočil” iz UART1 z “debug” sporočili iz UART0.





<- Test delovanja

### 3. NAČIN

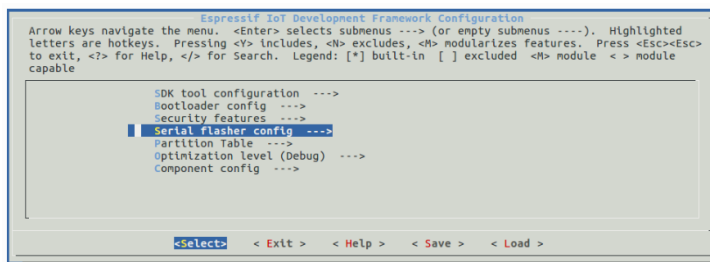
Sprememim konfiguracijo modula ESP32, ki omogoči izvajanje ukazov AT prek vrat UART0 (USB vrata).

*How to Set AT Port Pins (To modify the AT port pins of your ESP32)*

[https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile\\_and\\_Develop/How\\_to\\_set\\_AT\\_port\\_pin.html](https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile_and_Develop/How_to_set_AT_port_pin.html)

### Compile ESP-AT Project Locally

"It comes in handy when the *official released firmware* cannot meet your needs, for example, to customize the **AT port pins**, **Bluetooth LE services**, and **partitions**, and so on."



Project configuration - Home window

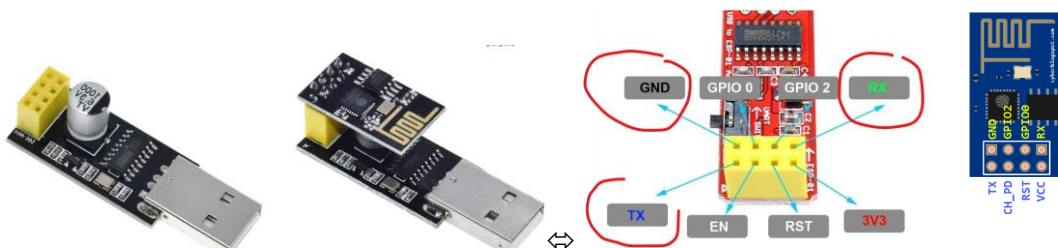
You are using this menu to set up project-specific configuration, e.g. changing AT port pins, enabling Classic Bluetooth function, etc. If you made no changes, it will run with the default configuration.

[https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile\\_and\\_Develop/How\\_to\\_clone\\_project\\_and\\_compile\\_it.html#esp-at-get-at-sdk](https://docs.espressif.com/projects/esp-at/en/latest/esp32/Compile_and_Develop/How_to_clone_project_and_compile_it.html#esp-at-get-at-sdk)

### OSTALO:

Uporaba vezja za programiranje ESP8266 kot "USB to UART dongle". Druga slika spodaj (levo) prikazuje vezje z na vrhu nataknenim modulom ESP8266-01.

Tretja /četrta/Slika prikazuje priključke **TX**, **RX**, **GND** uporabljenega vezja, ki jih lahko uporabimo za „virtualni port ↔ dongle“.



Glej tudi naslov zgoraj: „*ESP32-DevKitM-1 kot “USB to RS232 (TTL) dongle” vmesnik*“