Wroom ESP32

Inhaltsverzeichnis

DEVKIT-C1

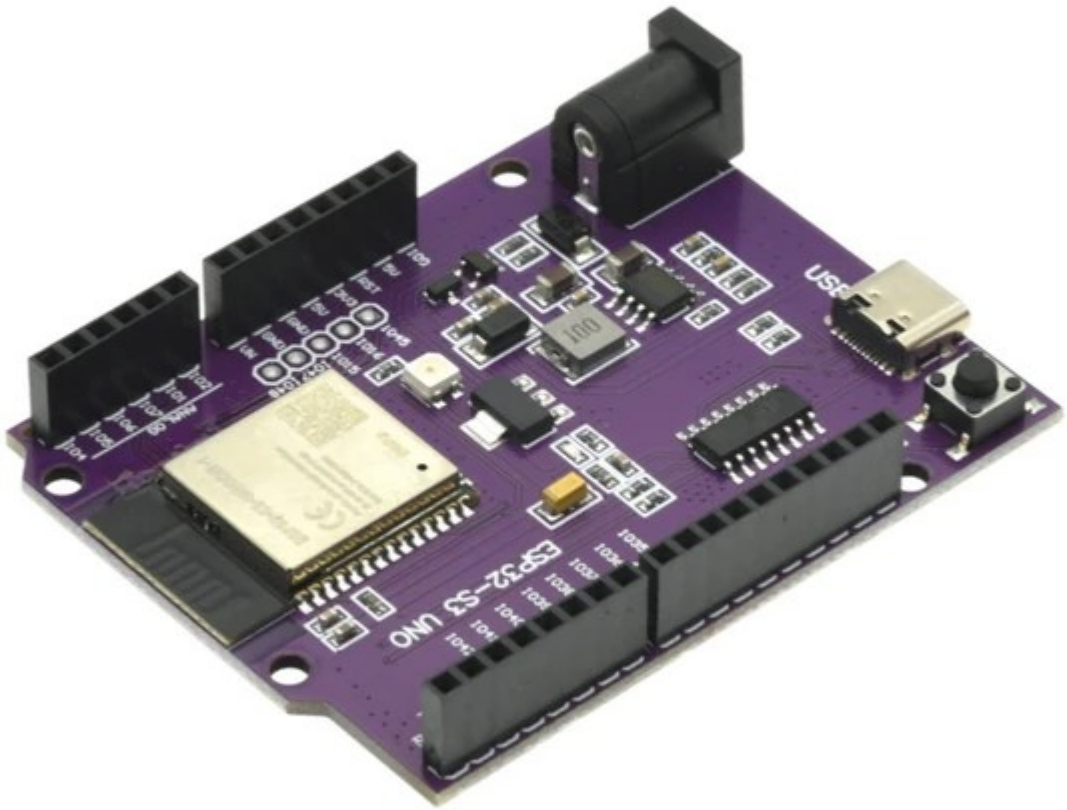
VisualCode Plugin für DEVKIT-C1

https://github.com/espressif/vscode-esp-idf-extension/blob/master/docs/tutorial/install.md

https://marketplace.visualstudio.com/items?itemName=espressif.esp-idf-extension

Programmierung

: IO0 muss auf GND, dann RESET und Programmierung über Serial Port



Welcome deal

D1 ESP32-S3 WiFi+Bluetooth-compatible Flash D1 R3 Board Module CH340 N16R8 For UNO ESP-32 Development Board Wireless Module

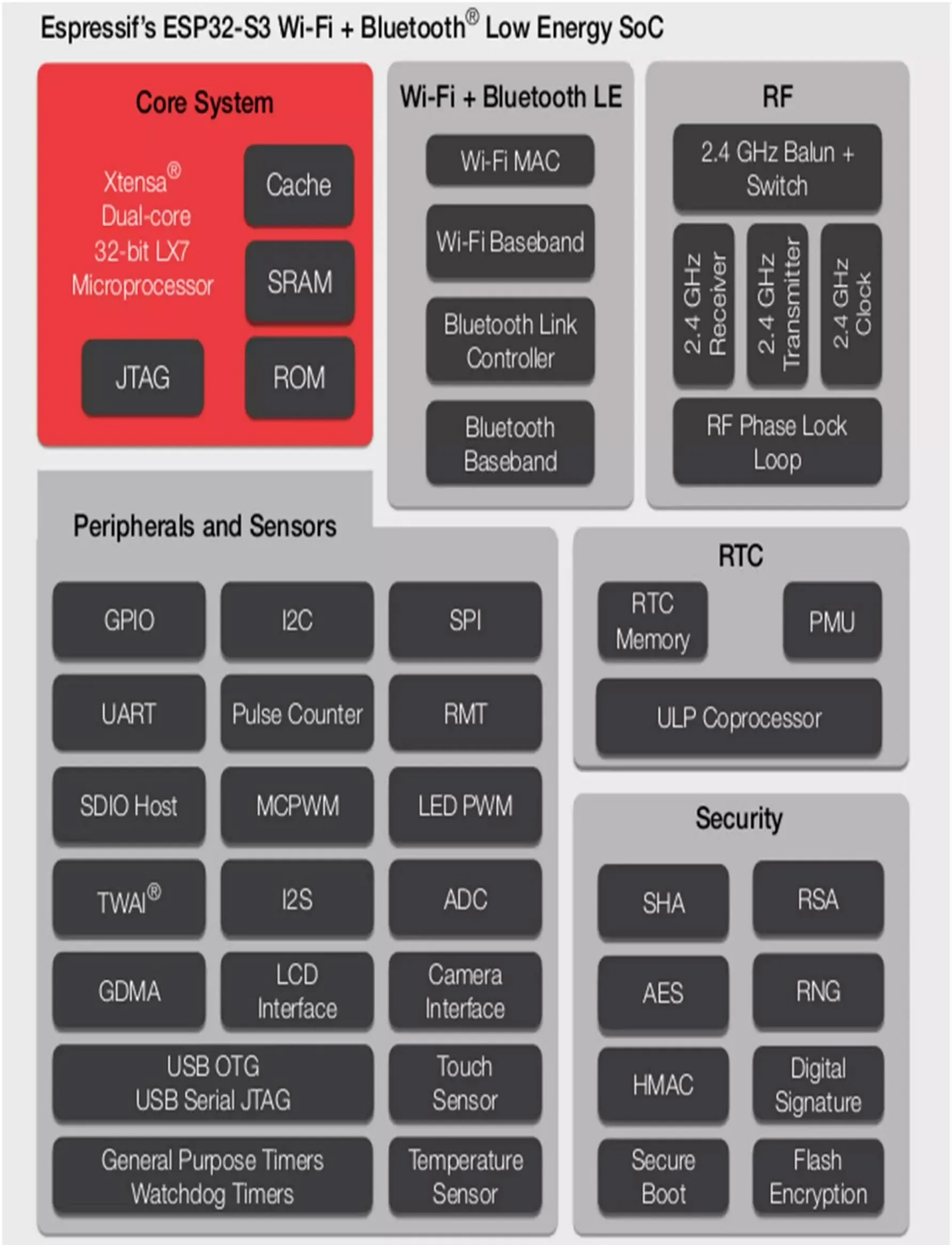
Description

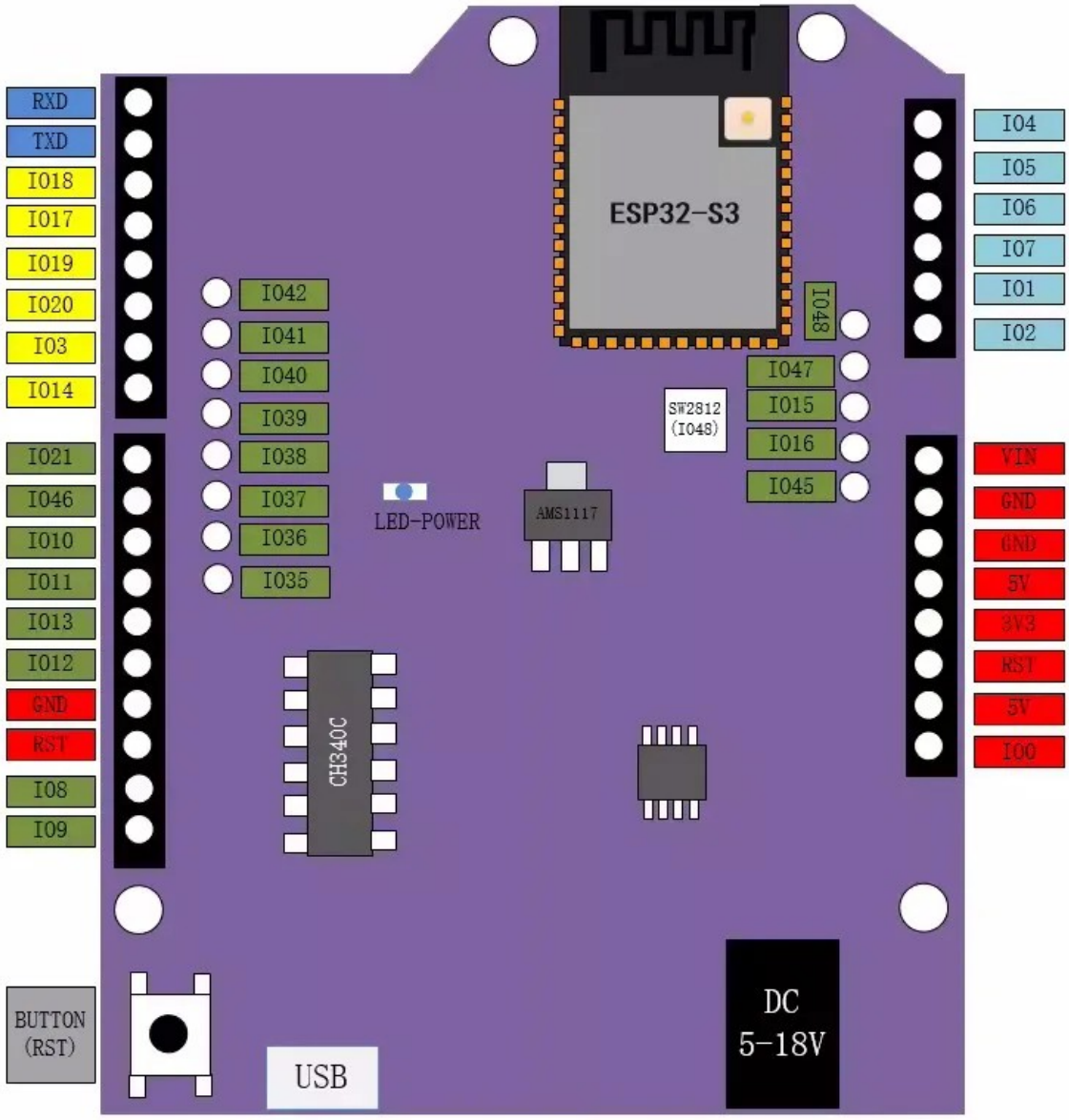
Report Item

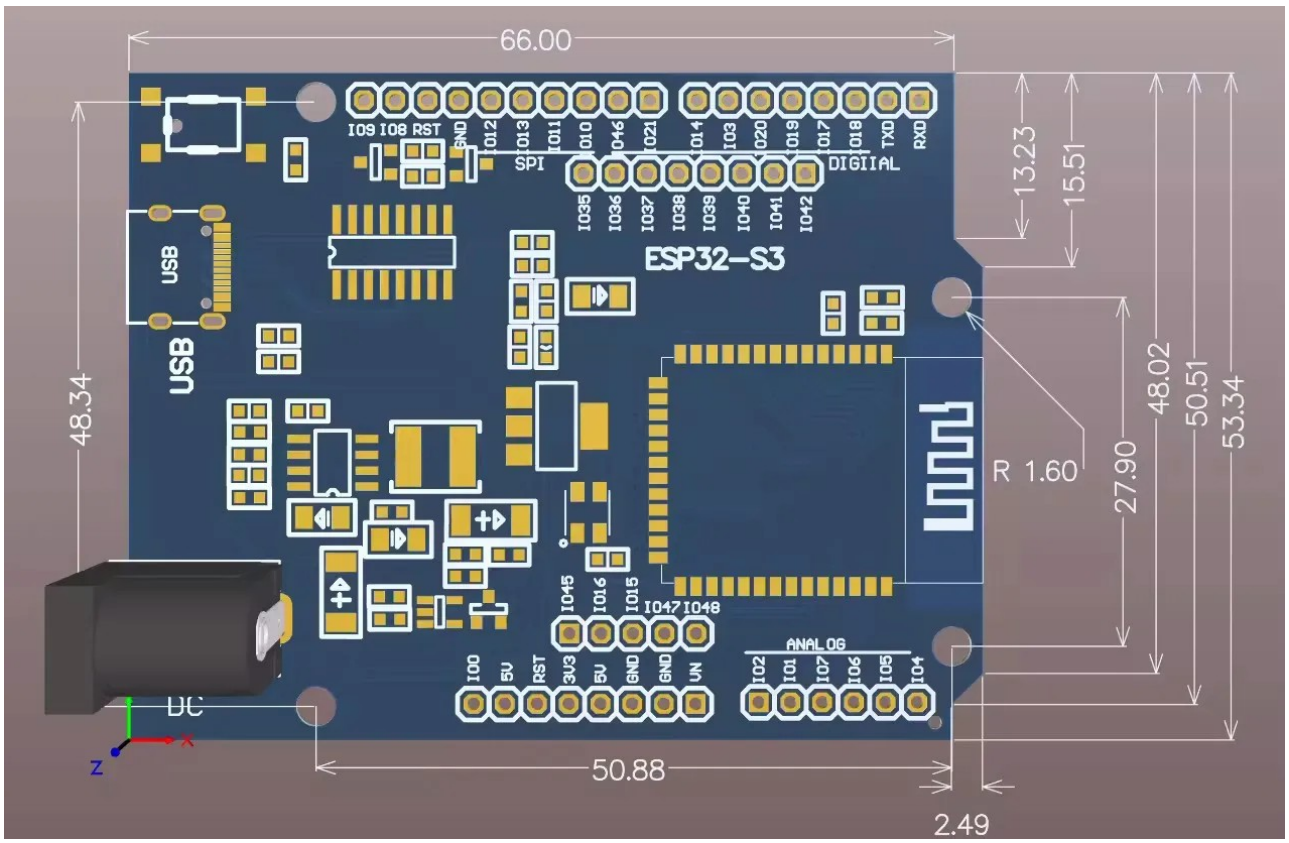
- **CPU:** Xtensa® 32-bit LX7 dual-core processor, up to 240 MHz
- **RAM:**512 KB
- **ROM:**384 KB

- **Flash:**8 MB or 16 MB
- **Wi-Fi:**IEEE 802.11b/g/n/ax, 2.4 GHz, up to 1.5 Gbps
- **Bluetooth:**Bluetooth® 5.0, BLE
- **Interfaces:**UART, SPI, I2C, SDIO, USB, GPIO
- **Power:**3.3 V
- **Dimensions:**20 mm x 20 mm
  Here are some additional details about the ESP32-S3 module's parameters:
- **CPU:**The ESP32-S3 uses a Xtensa® 32-bit LX7 dual-core processor with a maximum clock speed of 240 MHz. This provides the module with excellent performance for a variety of applications.
- **RAM:**The ESP32-S3 has 512 KB of RAM, which is sufficient for most applications.
- **ROM:**The ESP32-S3 has 384 KB of ROM, which is enough for storing firmware and other data.
- **Flash:**The ESP32-S3 is available with 8 MB or 16 MB of flash memory. This allows you to store large amounts of data, such as images, audio, or video.
- **Wi-Fi:**The ESP32-S3 supports IEEE 802.11b/g/n/ax Wi-Fi with a maximum speed of 1.5 Gbps. This makes it ideal for applications that require high-speed wireless connectivity.
- **Bluetooth:**The ESP32-S3 supports Bluetooth® 5.0, which provides a wide range of features and capabilities.
- **Interfaces:**The ESP32-S3 has a variety of interfaces, including UART, SPI, I2C, SDIO, USB, and GPIO. This makes it easy to connect the module to other devices and systems.
- **Power:** The ESP32-S3 operates at 3.3 V.

mpn	内置sram	内置rom	外扩psram	外扩flash
ESP32-S3-WROOM-1-N4	512K	384K	0M	4M
ESP32-S3-WROOM-1-N8	512K	384K	0M	8M
ESP32-S3-WROOM-1-N16	512K	384K	0M	16M
ESP32-S3-WROOM-1-N4R8	512K	384K	8M	4M
ESP32-S3-WROOM-1-N4R2	512K	384K	2M	4M
ESP32-S3-WROOM-1-N8R2	512K	384K	2M	8M
ESP32-S3-WROOM-1-N16R2	512K	384K	2M	16M
ESP32-S3-WROOM-1-N8R8	512K	384K	8M	8M
ESP32-S3-WROOM-1-N16R8	512K	384K	8M	16M


Espressif's ESP32-S3 Wi-Fi + Bluetooth® Low Energy SoC
Core System
Xtensa® Dual-core 32-bit LX7 Microprocessor
Cache
SRAM
JTAG
ROM
Wi-Fi + Bluetooth LE
Wi-Fi MAC
Wi-Fi Baseband
Bluetooth Link Controller
Bluetooth Baseband
RF
2.4 GHz Balun + Switch
2.4 GHz Receiver
2.4 GHz Transmitter
2.4 GHz Clock
RF Phase Lock Loop
Peripherals and Sensors
GPIO
I2C
SPI
UART
Pulse Counter
RMT
SDIO Host
MCPWM
LED PWM
TWAI®
I2S
ADC
GDMA
LCD Interface
Camera Interface
USB OTG
USB Serial JTAG
Touch Sensor
General Purpose Timers
Watchdog Timers
Temperature Sensor
RTC
RTC Memory
PMU
ULP Coprocessor
Security
SHA
RSA
AES
RNG
HMAC
Digital Signature
Secure Boot
Flash Encryption


RXD
TXD
IO18
IO17
IO19
IO20
IO3
IO14
IO21
IO46
IO10
IO11
IO13
IO12
GND
RST
IO8
IO9
BUTTON
(RST)
IO42
IO41
IO40
IO39
IO38
IO37
IO36
IO35
LED-POWER
AMS1117
ESP32-S3
IO48
SW2812
(IO48)
IO47
IO15
IO16
IO45
IO4
IO5
IO6
IO7
IO1
IO2
VIN
GND
GND
5V
3V3
RST
5V
IO0
CH340C
USB
DC
5-18V

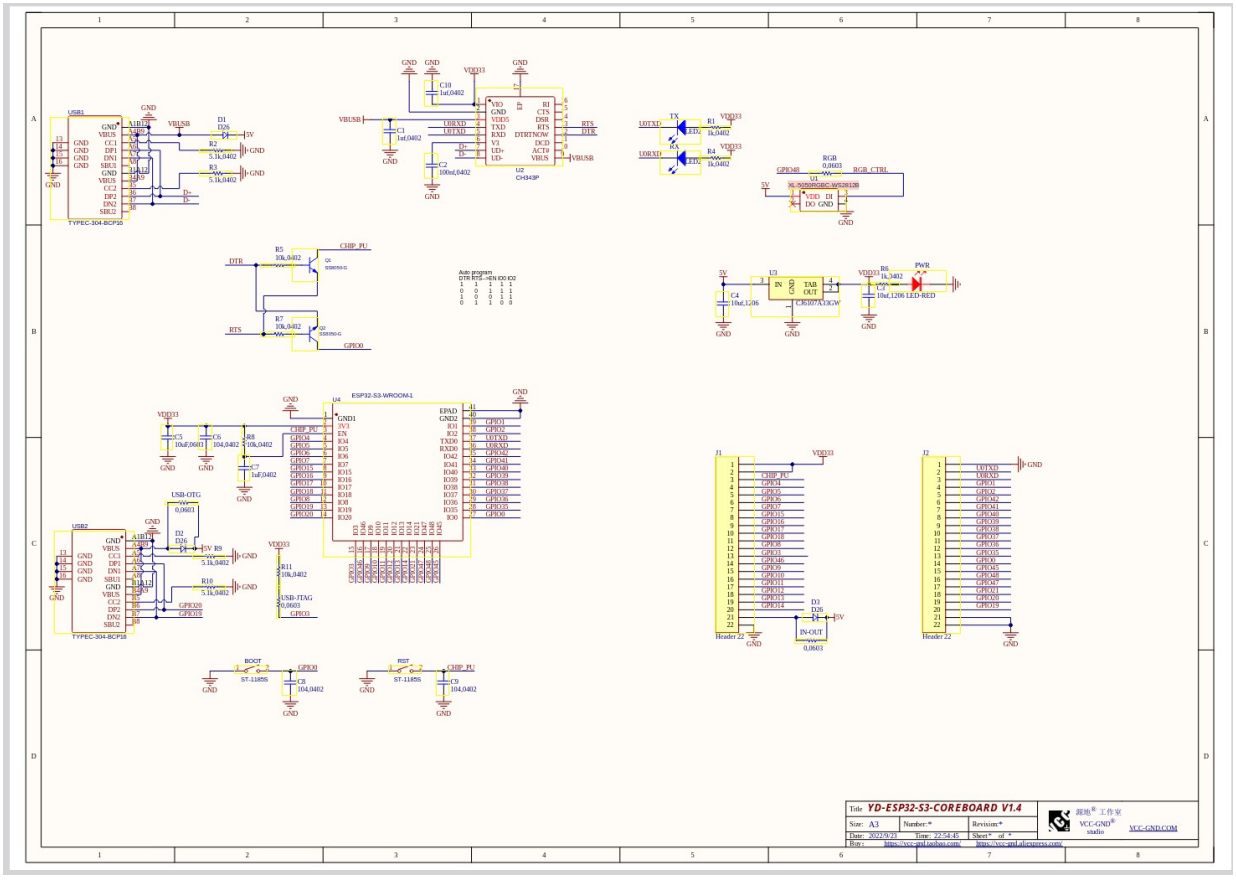

66.00
48.34
50.88
2.49
13.23
15.51
48.02
50.51
53.34
27.90
R 1.60
ESP32-S3
USB
USB
DC
SPI
DIGIIAL
ANALOG
IO9 IO8 RST GND IO12 IO13 IO11 IO10 IO46 IO21 IO14 IO3 IO20 IO19 IO17 IO18 TXD RXD
IO35 IO36 IO37 IO38 IO39 IO40 IO41 IO42
IO45 IO16 IO15 IO47 IO48
IO0 5V RST 3V3 5V GND GND VN
IO2 IO1 IO7 IO6 IO5 IO4
Z
X

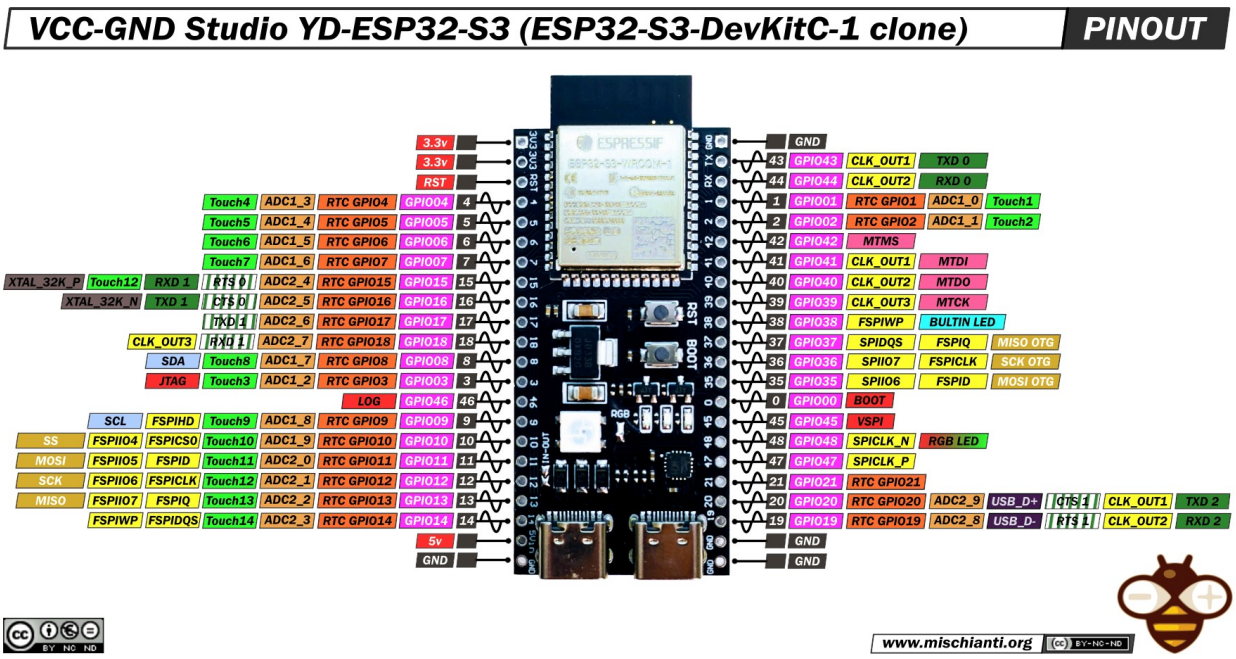
ESP32-S3-DevKitC-1 Board, APKLVSR WROOM-1-N16R8

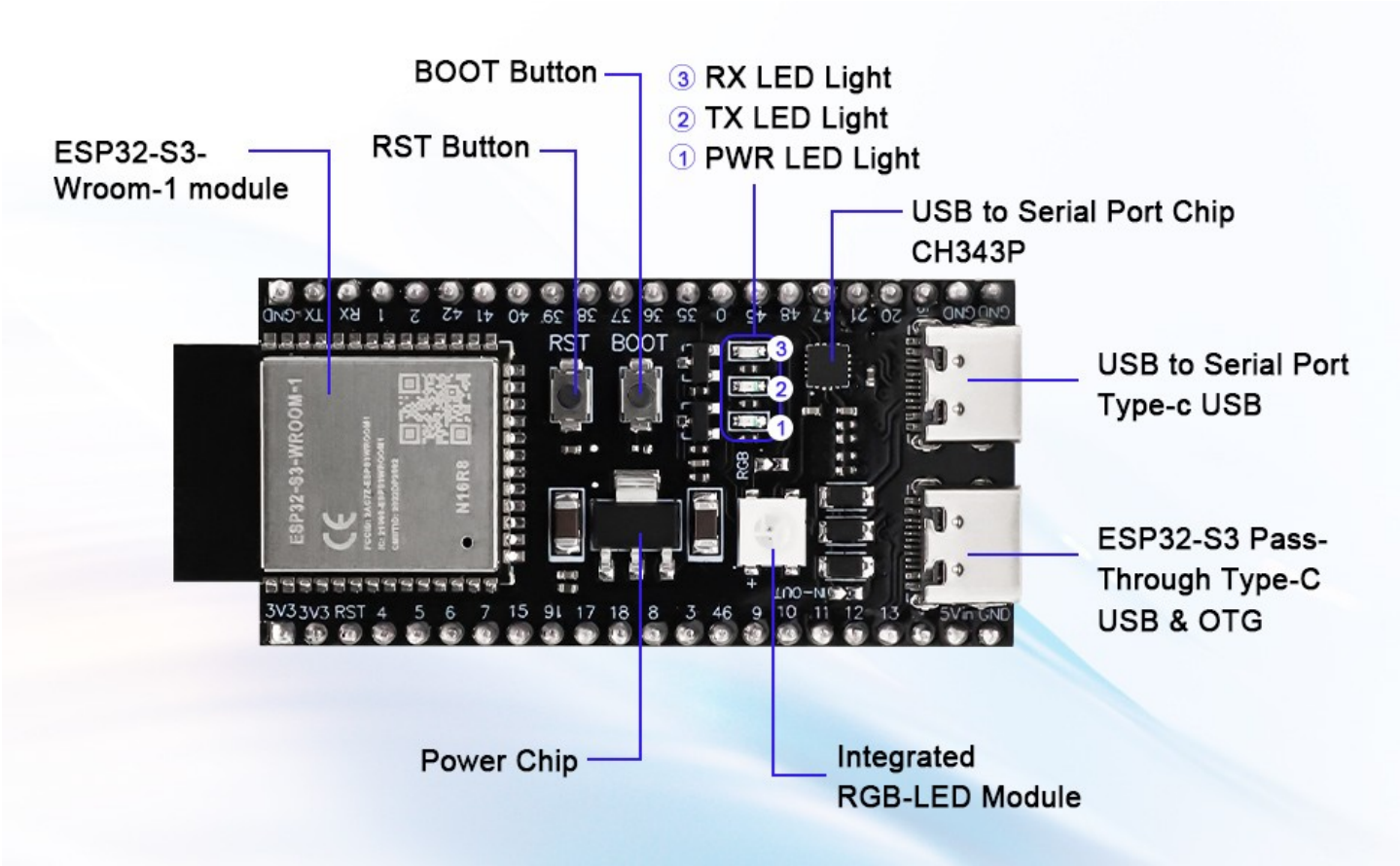
https://www.amazon.de/dp/B0CQNB74R9/ref=pe_27091401_487024491_TE_item

APKLVSR ESP32-S3-DevKitC-1 Board mit WiFi, Bluetooth 5.0 kompatibel mit Arduino

1. https://mischianti.org/vcc-gnd-studio-yd-esp32-s3-devkitc-1-clone-high-resolution-pinout-and-specs/
2. Schematic https://mischianti.org/wp-content/uploads/2023/08/YD-ESP32-S3-SCH-V1.4.pdf







Wie man den ESP32-53 herunterlädt:

1.Der ESP32-S3 lädt die Burn-In-Programmdatei (Burn-In-Firmware) herunter, die über den direkten USB-Anschluss des ESP32 heruntergeladen werden kann.

2.Das Herunterladen kann auch über den integrierten Hardware-USB-zu-Seriell-Anschluss erfolgen.

- Kurz gesagt, beide TYPE-C USB-Ports auf dem Board können zum Herunterladen von Programmen verwendet werden.
- In der Windows-Umgebung können Sie über die offizielle flash_ download_ tool _xxx Software herunterladen.
- **Beachten Sie, dass die beiden USB-Port-Methoden einmal die USB-Methode und einmal die UART-Methode sind.

Features

Verschlüsselungs-Hardware-Beschleuniger:

- AES- 128/256 (FIPS PUB 197)
- Hash (FIPS PUB 180-4)
- Zufallszahlengenerator (RNG)
- RSA
- HMAC
- Digitale Unterschrift

Niedrige Energieverwaltung:

Power Management Einheit, fünf Stromverbrauchsmodi

Ultra-Low-Power-Prozessor (ULP):

ULP-RISC-V Koprozessor

ULP-FSM-Koprozessor

Sicherheitsmechanismus：

Sicherer Start

Flash-Verschlüsselung

4096 Bit OTP, Benutzer können bis zu 1652 Bit verwenden

ESP32-S3

WiFi & Bluetooth 5 (LE)

boardsbased ESP32-S3-WROOM-1

Tutorials

Get started with MicroPython [s3 series]

Get started with Arduino [s3 series]

Features

Based ESP32-S3-WROOM-1

2x Type-cusB(OTG,UART)

16MB Flash (Quad SPI)

8MB PSRAM (Octal SPI)

31x IO

ADC,DAC,I2C, SPI,UART,USB OTG

Compatible with MicroPython, Arduino and ESP-IDF

Default firmware: MicroPython

Technical specs

Operating Voltage	3.3V	PSRAM	8M bytes
Digital i/o Pin	31	Size	63.39*27.94mm
Clock speed	240MHz	weight	9g
Flash	16M Bytes		