# SparkFun ESP32 Thing Plus (USB-C) (WRL-20168)

PCB Antenna

RGB LED (WS2812)
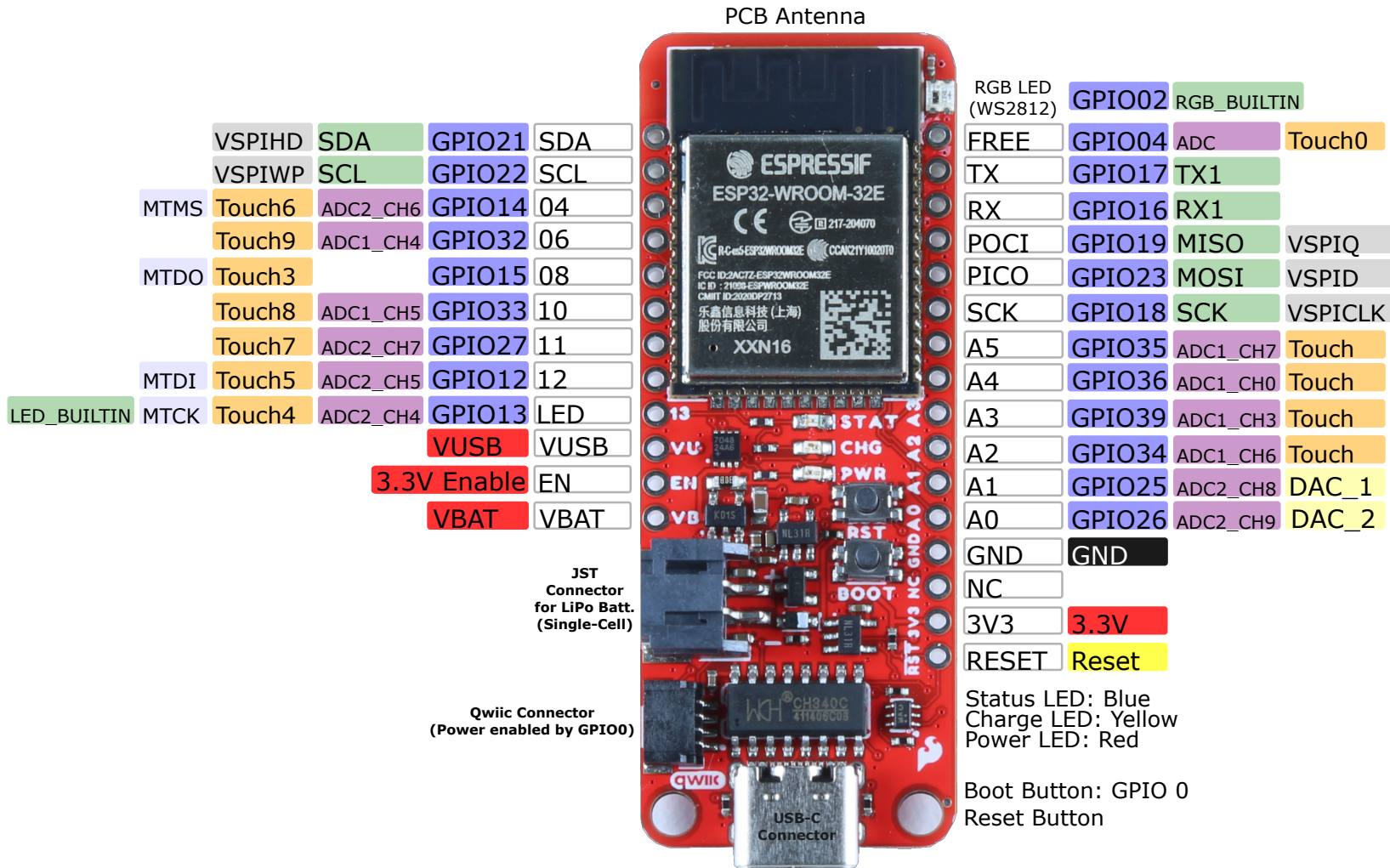
**Legend:**
- Name
- Power
- GND
- Control
- Arduino
- GPIO
- ADC
- DAC
- SPI
- UART
- Touch
- Misc

GPIO 3.3V tolerant only

**Left side pins (top to bottom):**

| | | | | |
|---|---|---|---|---|
| VSPIHD | SDA | GPIO21 | SDA | |
| VSPIWP | SCL | GPIO22 | SCL | |
| MTMS | Touch6 | ADC2_CH6 | GPIO14 | 04 |
| | Touch9 | ADC1_CH4 | GPIO32 | 06 |
| MTDO | Touch3 | | GPIO15 | 08 |
| | Touch8 | ADC1_CH5 | GPIO33 | 10 |
| | Touch7 | ADC2_CH7 | GPIO27 | 11 |
| MTDI | Touch5 | ADC2_CH5 | GPIO12 | 12 |
| LED_BUILTIN | MTCK | Touch4 | ADC2_CH4 | GPIO13 | LED |
| | | VUSB | VUSB | |
| | | 3.3V Enable | EN | |
| | | VBAT | VBAT | |

**Right side pins (top to bottom):**

| | | | | |
|---|---|---|---|---|
| | GPIO02 | RGB_BUILTIN | | |
| FREE | GPIO04 | ADC | Touch0 | |
| TX | GPIO17 | TX1 | | |
| RX | GPIO16 | RX1 | | |
| POCI | GPIO19 | MISO | VSPIQ | |
| PICO | GPIO23 | MOSI | VSPID | |
| SCK | GPIO18 | SCK | VSPICLK | |
| A5 | GPIO35 | ADC1_CH7 | Touch | |
| A4 | GPIO36 | ADC1_CH0 | Touch | |
| A3 | GPIO39 | ADC1_CH3 | Touch | |
| A2 | GPIO34 | ADC1_CH6 | Touch | |
| A1 | GPIO25 | ADC2_CH8 | DAC_1 | |
| A0 | GPIO26 | ADC2_CH9 | DAC_2 | |
| GND | GND | | | |
| NC | | | | |
| 3V3 | 3.3V | | | |
| RESET | Reset | | | |

JST Connector for LiPo Batt. (Single-Cell)

Qwiic Connector (Power enabled by GPIO0)

Status LED: Blue
Charge LED: Yellow
Power LED: Red

Boot Button: GPIO 0
Reset Button

USB-C Connector

## Power
ESP32 VCC Range: 3.0V-3.6V
VBAT: Direct to battery (and charger)
VUSB: Direct to USB (5V)
3V3: Direct to 3.3V regulator (700mA)
ESP32-S2 Current Consumption:
· WiFi: 380mA (peak)
· Light-Sleep: 800µA
· Deep-Sleep: 10-150µA

## Power Control
EN pin - Power for board
GPIO0 - Power to Qwiic Connector

## ESP32-WROOM
Dual-Core Xtensa 32-bit LX7
Up to 240MHz
520KB SRAM
16MB SPI Flash

### Multiplexed I/Os allow up to
13x 12-bit ADC Channels
3x SPI Interfaces
3x UART Interfaces
2x I2C Interfaces
2x I2S Interface
16x 20-bit PWM Channels
2x 8-bit DACs
8x Capacitive Touch Inputs

## Wireless
WiFi: 802.11 b/g/n (up to 150Mbps)
WPA/WPA2/WPA2-Enterprise/SPS
Bluetooth:Bluetooth 4.2/BLE

## Other*
Temp sensor (-40°C to 125°C)
Hall Sensor
SD/SDIO/MMC Host Controller
· µSD card slot CS: GPIO05 SS
CAN Bus

*On datasheet, but may not be supported yet

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