

Standard SPI Protocol		Extended SPI Protocol	
Full-Duplex SPI Signal	Half-Duplex SPI Signal	FSPI Bus Signal	
MOSI	MOSI	FSPID 7	
MISO	(MISO)	FSPIQ 2	
CS	CS	FSPICS0 ~ 510	
CLK	CLK	FSPICLK 6	
_	_	FSPIWP	
	1	FSPIHD	

Name	Type ¹	Function	
G	G	Ground	
3V3	Р	3.3 V power supply	
3V3	Р	3.3 V power supply	
RST	Į.	CHIP_PU	
G	G	Ground	
4	I/O/T	GPIO4, ADC1_CH4, FSPIHD, MTMS	
5	I/O/T	GPIO5, ADC2_CH0, FSPIWP, MTDI	
6 CLK	I/O/T	GPIO6, FSPICLK, MTCK	
7 MOSI	I/O/T	GPIO7, FSPID, MTDO	
G	G	Ground	
8	I/O/T	GPIO8 ² , RGB LED	
9	I/O/T	GPIO9 ²	
5V	Р	5 V power supply	
5V	Р	5 V power supply	
G	G	Ground	

Function

Ground

Ground

Ground

Ground

GPIO18

GPIO19

Ground

GPIO3, ADC1_CH3

GPIO10, FSPICSO

GPIO20, UORXD

GPIO21, U0TXD

GPIO0, ADC1_CH0, XTAL_32K_P

GPIO1, ADC1_CH1, XTAL_32K_N
GPIO2 ², ADC1_CH2, FSPIQ

G

1/O/T

I/O/T

I/O/T

I/O/T G

2 MISO

10 cs I/O/T

G

I/O/T

1/O/T

I/O/T

I/O/T

G

G

G

G

RX

TX

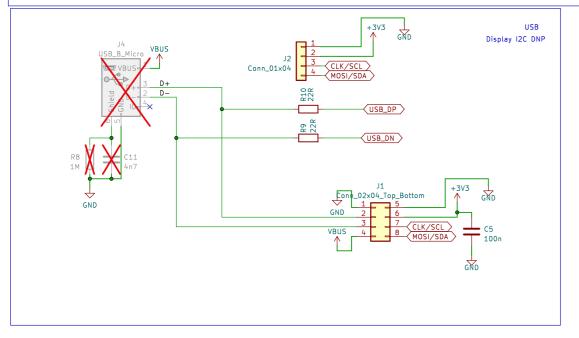
G

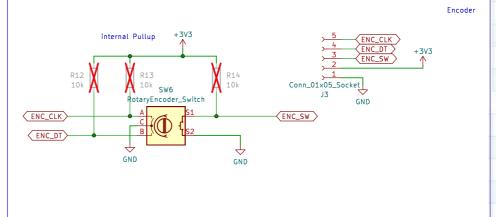
18

19

G

+3V3			ESP
	+3V3 ↑	3 Conn 01v03	
R5 10k EN		GNDS00R USR_BTN_MIDDLE USR_BTN_RIGHT 300RR16	
+ C10	C6 100n	USR_BTN_RIGHT 300RR16	
1u R7	U1 GND → ESP32−C3−WROOM−02		
EN/CHI	IP_PU S GPI020/U0RXD GPI021/U0TXD	11 2	
GND DUOLED 1 18 CDUOL	ADC1_CH0/XTAL_32K_P GPI018/USB_D- ADC1_CH1/XTAL_32K_N GPI019/USB_D+	13 14 USB_DN	
SW2 R2 R3	ADC1_CH1/XTAL_32K_N GPI019/USB_D+ GPI02/ADC1_CH2	16 Boot GPI02/LED	
	-C3-WROOM-02 GPI03/ADC1_CH3 GPI04/ADC1_CH4	3 FNC DT	
GND THE POPULATION OF THE POPU	GPI05/ADC2_CH0 GPI06	5 CLK/SCL	
Zweifarb-LED D6	GPI07 GPI08	6 MOSI/SDA Button_Left 8 +3V3	
, z z	GPI09 GPI010	10 GPI010	alt 4k7
GND	₽	R6 R4	
+3V3 J6 J7 ↑	GND	10K	۱ ا
GPI010 Conn ₁ 01x09 Pin		GND	642
RX/Button_Middle 2 2 EN TX/Button_Right 3 3 (FNC		SW5 Boot	C12 100n
LICE DN 4 4 ENC.			
USB_DP 5 - 5 CLK,	/SCL >		- I
GPI02/LED 7 7 MUS DUOLED_2 8 8 8	Button_Left Boot	GND	
DUOLED_1 9 9	5500		
<u></u>			
GND			





6 Peripheral Schematics

This is the typical application circuit of the module connected with peripheral components (for example, power supply, antenna, reset button, JTAG interface, and UART interface).

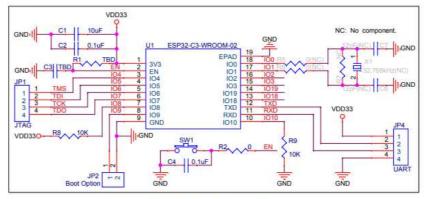


Figure 4: Peripheral Schematics

- Soldering the EPAD to the ground of the base board is not a must, though doing so can get optimized thermal
 performance. If you do want to solder it, please ensure that you apply the correct amount of soldering paste.
- To ensure the power supply to the ESP32-C3 family chip is stable during power-up, it is advised to add an RC delay circuit at the EN pin. The recommended setting for the RC delay circuit is usually R = $10 \text{ k}\Omega$ and C = $1 \mu\text{F}$. However, specific parameters should be adjusted based on the power-up timing of the module and the power-up and reset sequence timing of the chip. For power-up and reset sequence timing diagram of the ESP32-C3 family chip, please refer to Section Power Scheme in ESP32-C3 Family Datasheet.



Spotify Controller V0.91 Pia Piekarek