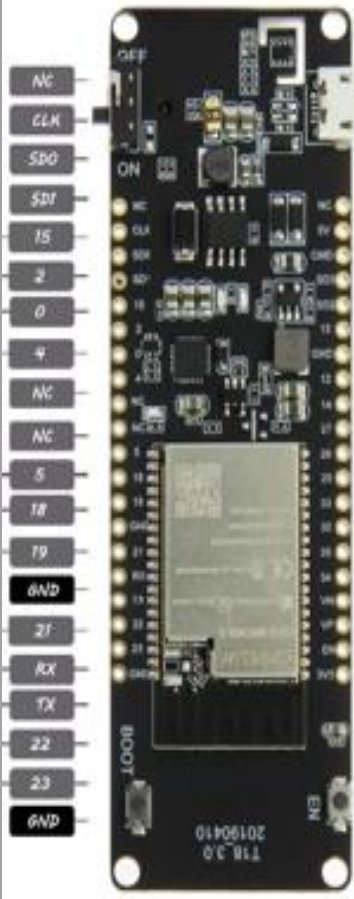


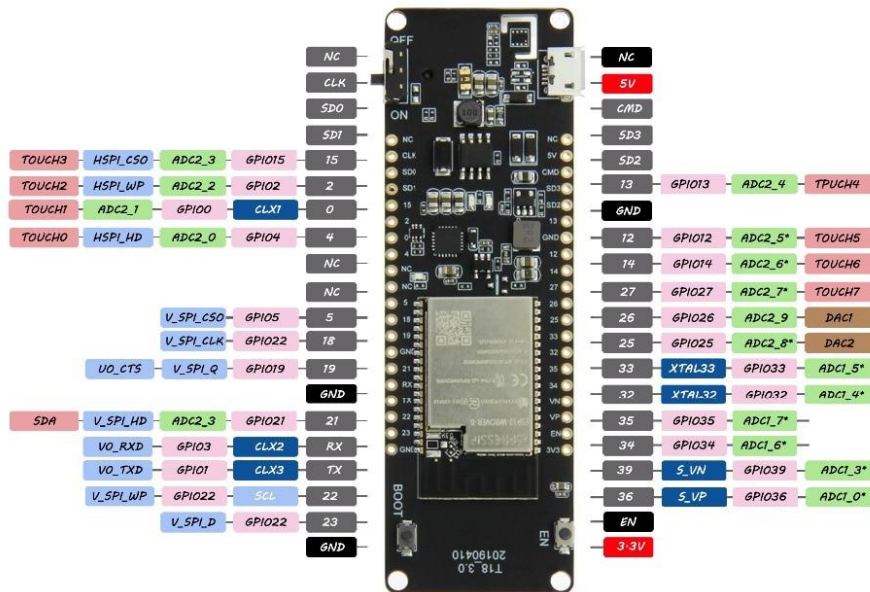
LoRa_Tiny_Net - wiring diagram

From ESP32 module there are connections to:

- LoRa RA02 module
- Rotary encoder with Pushbutton (A, B, Pushbutton and GND)
- 20x4 LCD Display with I2C expander (only 4 wires needed)

Connections	ESP32 Module Wiring diagram				Connections
	NC		NC		
	CLK		5V	DISP-I2C-VCC	
	SD0		CMD		
	SD1		SD3		
ROTARY-ENC-PUSHBUTTON	15		SD2		
RA02-5-DIO0	2		13		
	0		GND	DISP-I2C-GND	
RA02-4-RESET	4		12	ROTARY-ENC-A	
	NC		14	ROTARY-ENC-B	
	NC		27		
RA02-15-NSS	5		26		
RA02-12-SCK	18		25		
RA02-14-MISO	19		33		
RA02-9-GND	GND		32		
DISP-I2C-SDA	21		35		
	RX		34		
	TX		39		
DISP-I2C-SCL	22		36		
RA02-13-MOSI	23		EN		
RA02-1-GND, RA02-2-GND	GND		3V3	RA02-3-3V3	

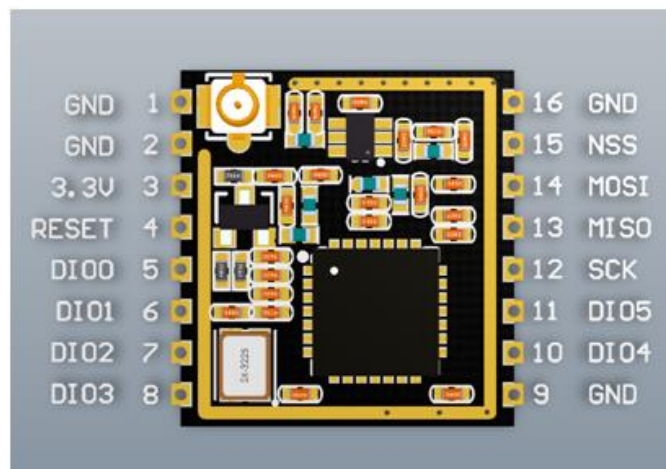
LILYGO® TTGO T-Energy ESP32 8MByte PSRAM WiFi & Bluetooth Module 18650 Battery ESP32-WROVER-B Development Board http://www.lilygo.cn/prod_view.aspx?TypeId=50033&Id=1170&FId=t3:50033:3



Wifi+Bluetooth Board
TTGO-T18 V3.0

LoRa module RA-02

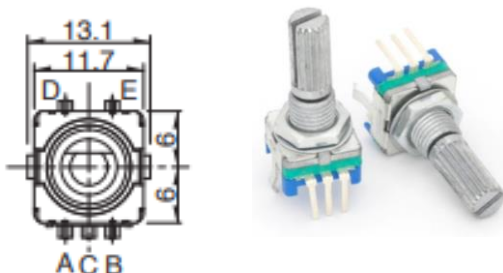
How to: <https://robotzero.one/arduino-ai-thinker-ra-02/>



Rotary Encoder EC11 or similar

D and E = pushbutton. Connect E to GND and D to ESP32 module

C = GND, A,B = pulses, connect to ESP32 module



20x4 LCD Display with I2C Expander

