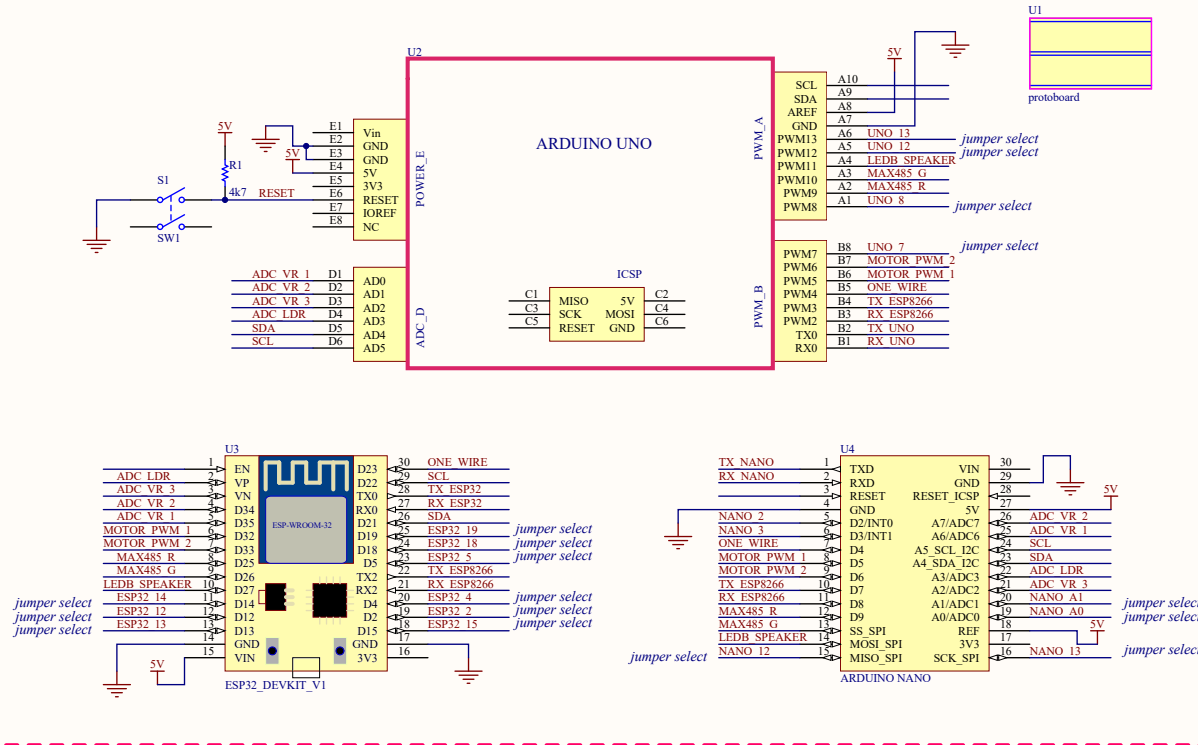
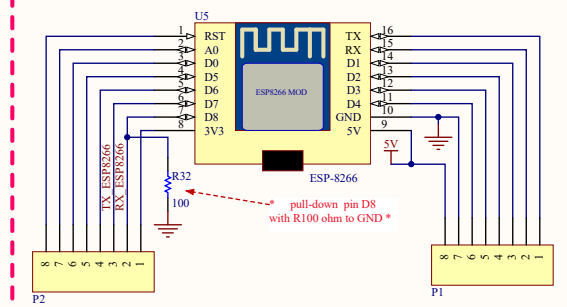


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ARDUINO & ESP32 Module

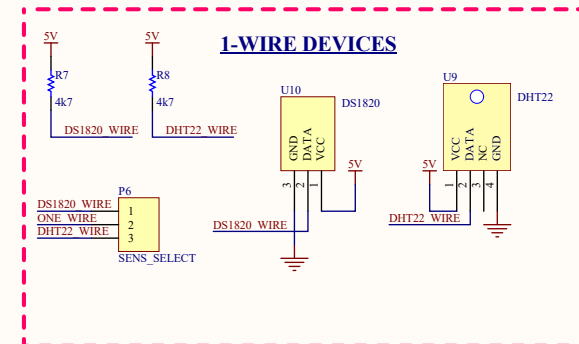
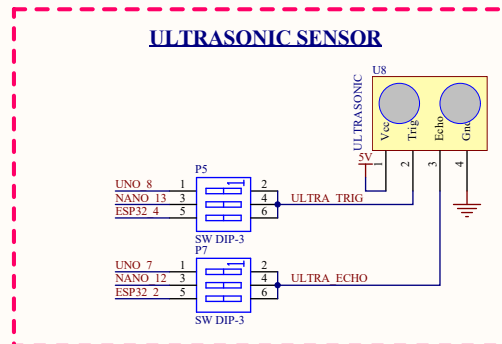
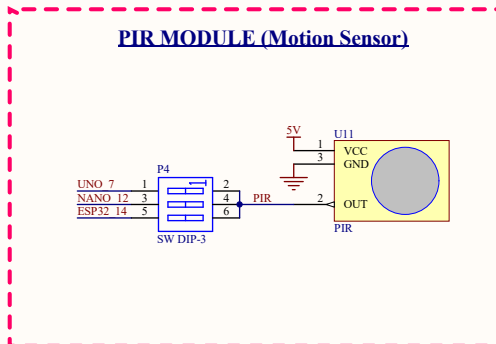
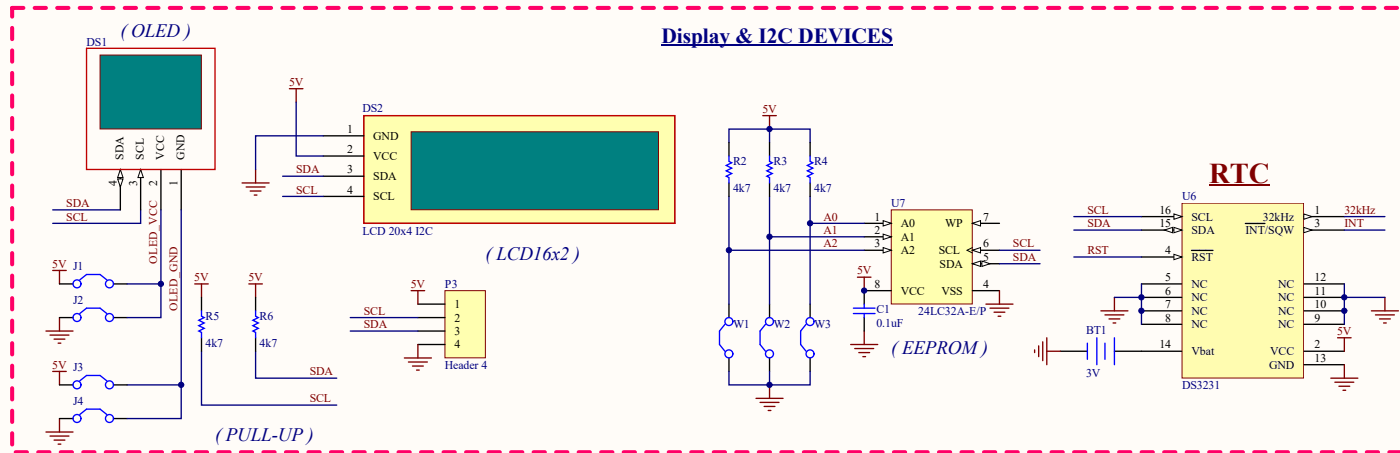


ESP8266 WeMOS WIFI



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RS485 COMMUNICATION

The rule of CMOS is "input output must go some where"

Use this resistor only in sleep mode

The diagram illustrates an RS485 communication circuit. It features a MAX485 transceiver (U13) connected to two RS485 modules (P8). The transceiver's VCC (pin 8) is connected to a 5V supply, and its GND (pin 5) is connected to ground. A 0.1uF capacitor (C2) is connected between VCC and GND. The transceiver's RO (pin 1) and DI (pin 4) are connected to the MAX485 RX and TX lines, respectively. The MAX485 RX and TX lines are connected to a network of SN74HC04N inverters (U12A, U12B, U12C, U12D, U12E, U12F). U12A is configured as a voltage divider, with its input connected to VCC and its output connected to the MAX485 RX line. U12B and U12C are connected in series between the MAX485 RX and TX lines. U12D and U12E are connected in series between the MAX485 TX and RX lines. U12F is connected between the MAX485 TX line and ground. A 1k resistor (R12) and a 0.01uF capacitor (C3) are connected between the MAX485 TX line and ground. A 5V supply is connected to the MAX485 RX line through a 20k resistor (R9). A 120 ohm resistor (R10) is connected between the MAX485 RX and TX lines. A 20k resistor (R11) is connected between the MAX485 TX line and ground. The RS485 modules (P8) are connected to the MAX485 RX and TX lines through a 120 ohm resistor (R10).

LED RGB & SPEAKER

This circuit diagram illustrates the connection for the LED RGB and SPEAKER components. It includes two 3-pin DIP switches (S2 and S3) and a 5V power source.

MAX485 Connections:

- MAX485 R:** Pin 1 to SW DIP-3 (S2), Pin 3 to MAX485 RX, Pin 5 to LEDB SPEAKER.
- MAX485 G:** Pin 2 to SW DIP-3 (S2), Pin 4 to MAX485 TX, Pin 6 to SPEAKER.

LED Connections:

- LED R:** Pin 1 to SW DIP-3 (S3), Pin 2 to LED R, Pin 3 to LED R, Pin 5 to LED R.
- LED G:** Pin 2 to SW DIP-3 (S3), Pin 4 to LED G, Pin 6 to LED G.
- LED B:** Pin 3 to SW DIP-3 (S3), Pin 5 to LED B, Pin 6 to LED B.

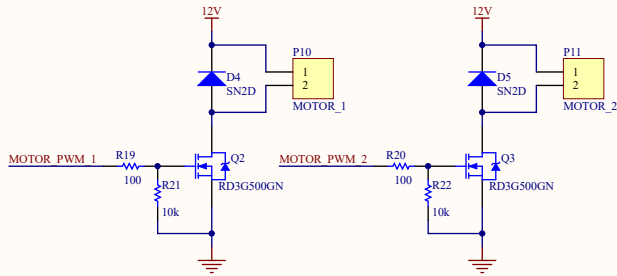
Speaker and Buzzer Connections:

- Speaker (SPEAKER):** Connected to the MAX485 TX pin (Pin 4) via a 1k resistor (R17) and a 10k resistor (R18) to ground.
- Buzzer (BZ1):** Connected to the MAX485 RX pin (Pin 1) via a 10k resistor (R16) and a 5V power source.

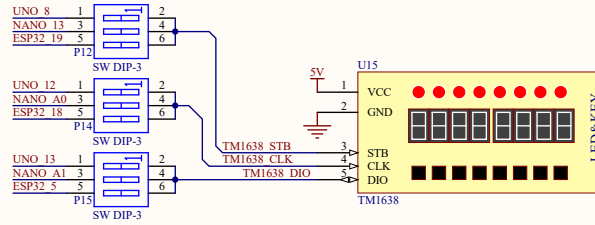


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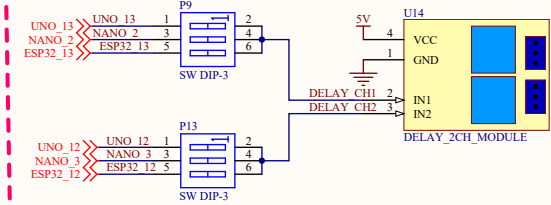
DC MOTOR PWN SIGNAL



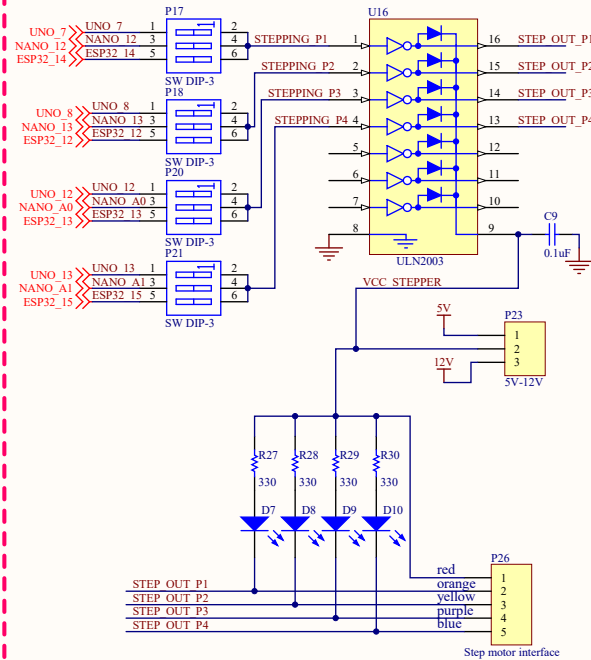
TM1638 7-SEGMENT MODULE



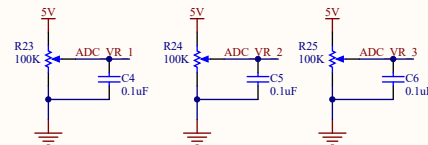
DELAY 2CH MODULE



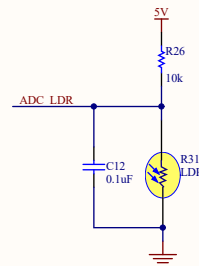
STEPPING MOTOR



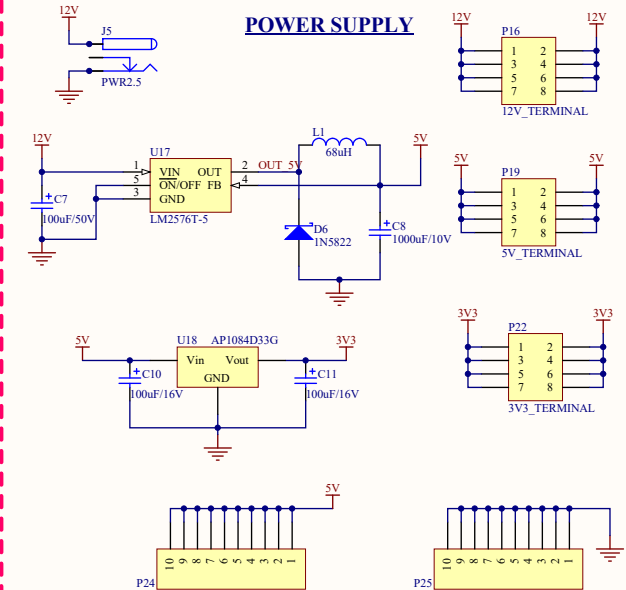
POTENTIONMETER

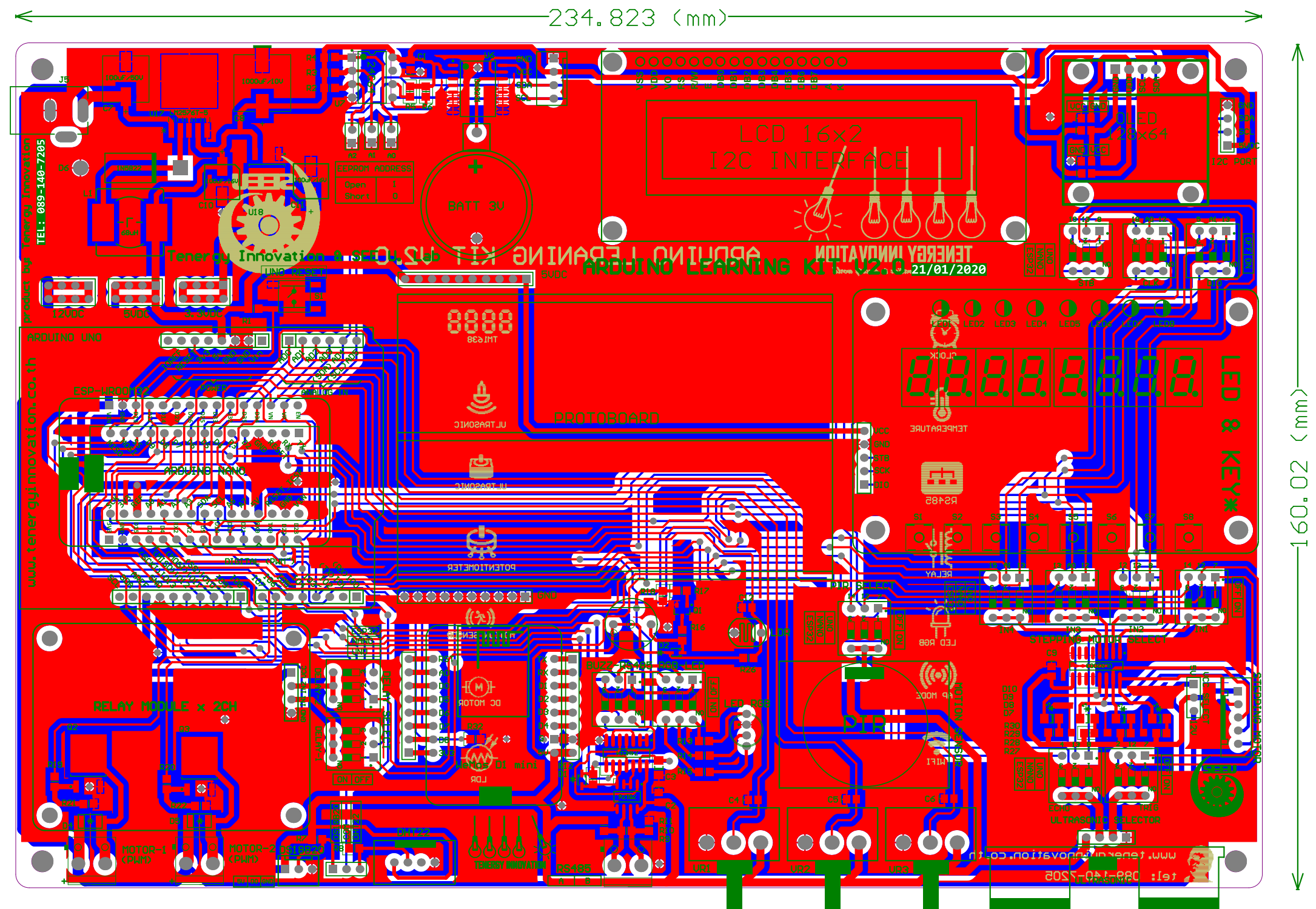


LDR SENSOR



POWER SUPPLY





Comment	Description	Designator	Footprint	LibRef	Quantity
3V	Mulicell Battery	BT1	BATTERY 3.3V	Battery	1
BUZZER	Loudspeaker	BZ1	buzzer	Speaker	1
Cap	Capacitor	C1, C2, C4, C5, C6, C8, C12	0805	Cap	7
Cap	Capacitor	C3	1206	Cap	1
100uF	Polarized Capacitor (Axial)	C7	100uF/ 50V SMD	Cap Pol2	1
100uF	Polarized Capacitor (Axial)	C8	1000uF/ 10V SMD	Cap Pol2	1
100uF	Polarized Capacitor (Axial)	C10, C11	100uF/ 16V SMD	Cap Pol2	2
RFU02V SM6STR	1Amp General Purpose Rectifier	D1	SOD-323	Diode 1N4002	1
1N4148	1Amp General Purpose Rectifier	D2	SOD-323	Diode 1N4002	1
LED_RGB_OC		D3	LED RGB_5mm	LED_RGB_OC	1
SN2D	1Amp General Purpose Rectifier	D4, D5	DO-214	Diode 1N4002	2
1N5822	Schottky Rectifier	D6	1N5822	Diode 10TQ045	1
	Typical INFRARED GaAs LED	D7, D8, D9, D10	1206	LED0	4
OLED 0.96 INCH 128x64_V2		DS1	OLED_0.96INCH_V2	OLED 0.96 INCH 128x64_V2	1
LCD 20x4 I2C		DS2	LCD16x2 I2C - V2	LCD 20x4 I2C	1
Jumper	Jumper Wire	J1, J2, J3, J4	0805	Jumper	4
PWR2.5	Low Voltage Power Supply Connector	J5	KLD-0202	PWR2.5	1
Inductor	Inductor	L1	L68uH_TOP	Inductor	1
	Header, 8-Pin	P1, P2	HDR1X8	Header 8	2
Header 4	Header, 4-Pin	P3	HDR1X4	Header 4	1
	P4, P5, P7, P9, P12, P13, P14, P15, P17, P18, P20, P21, S2, S3		SLID_SWITCH_3CH		
SW DIP-3	DIP Switch, 3 Position, SPST			SW DIP-3	14
SENS_SELECT	Header, 3-Pin	P6	HDR1X3	Header 3	1
RS485	Header, 2-Pin	P8	DG300-02P_2PINS	Header 2	1
MOTOR_1	Header, 2-Pin	P10	DG300-02P_2PINS	Header 2	1
MOTOR_2	Header, 2-Pin	P11	DG300-02P_2PINS	Header 2	1
12V_TERMINAL	Header, 4-Pin, Dual row	P16	HDR2X4	Header 4X2	1
5V_TERMINAL	Header, 4-Pin, Dual row	P19	HDR2X4	Header 4X2	1
3V3_TERMINAL	Header, 4-Pin, Dual row	P22	HDR2X4	Header 4X2	1
5V-12V	Header, 3-Pin	P23	HDR1X3	Header 3	1
Header 10	Header, 10-Pin	P24, P25	HDR1X10	Header 10	2
Step motor interface	Header, 5-Pin	P26	HDR 5 PIN 2.5mm	Header 5	1
BC847	NPN Bipolar Transistor	Q1	KTC8550S	NPN	1
RD3G500GN	N-Channel Power MOSFET	Q2, Q3	TO252-3M	NMOS-2	2
		R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R26, R27, R28, R29, R30, R32			
	Resistor		6-0805_M	Res1	28
RPot	Potentiometer	R23, R24, R25	Potentiometer	RPot	3
LDR		R31	LDR	LDR	1
SW1	Double-Pole, Single-Throw Switch	S1	Tactile Switches SMD	SW-DPST	1
protoboard		U1	PROTOBOARD_54x82mm	protoboard	1
ARDUINO UNO		U2	ARDUINO UNO R3 -V2	ARDUINO UNO	1
ESP32_DEVKIT_V1	ESP32_DEVKIT_V1	U3	ESP32_DEVKIT_V1	ESP32_DEVKIT_V1	1
ARDUINO NANO	ARDUINO NANO	U4	ARDUINO_NANO	ARDUINO NANO	1
ESP-8266	WiFiMos mini NodeMCU WPI ESP-8266	U5	ESP8266	ESP-8266	1
DS3231	RTC Extreme accurate I2C-Integrate	U6	SOIC16W_N	DS3231	1
24LC32A-E/ P	32Kbit, 400KHz, 2.5V, I2C Serial EEPROM, 8-Pin PDIP, Extended Temperature	U7	PDIP300-P8	24LC32A-E/ P	1
ULTRASONIC	Digital-output relative humidity & temperature sensor/ module	U8	ULTRASONIC	ULTRASONIC	1
DHT22	Digital-output relative humidity & temperature sensor/ module	U9	DHT22_4PIN	DHT22	1
DS18B20	1C Programmer Resolution, 1-Wire digital Thermometer	U10	HDR 3 PIN	DS18B20	1
PIR	Motion Sensor Module HC-SR501	U11	PIR	PIR	1
SN74HC04N	Hex Schmitt-Trigger Inverter	U12	SOIC14T_M	SN74HC14N	1
SN75176BDR	DIFFERENTIAL BUS TRANSCEIVER RS-485/ RS-422	U13	SOIC8_L	MAX485	1
DELAY_2CH_MODULE	2-CHANNEL DELAY MODULE	U14	2CHANNEL_DELAY V3	DELAY_2CH_MODULE	1
TM1638	7 SEGMENT ARRAY LED & KEY - IC TM1638	U15	TM1638 - V2	TM1638	1
ULN2003	IC	U16	SOIC-SL16_M	ULN2003	1
LM2576T-5	Easy Switcher 3.0A Step-Down Voltage Regulator	U17	LM2576SX-5.0/ NOPB	LM2576T-5	1
API084D33G	Voltage Regulator	U18	TO252-3M	Volt Reg	1
Jumper	Jumper Wire	W1, W2, W3	HDR1X2	Jumper	3