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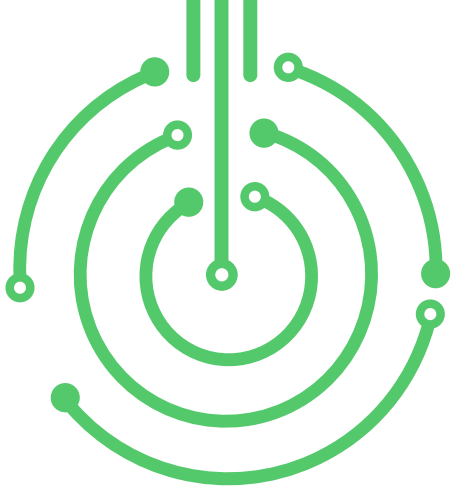


Bluetooth Wireless Robot Car Controller

SKU: EL155057

Bluetooth Wireless Robot Car Controller

This project presents a robot car controller that utilizes a Bluetooth wireless controller, allowing users to control the small robot car using a smartphone and an Android app. The system consists of an Arduino microcontroller (ATMEGA328), an HC-05 Bluetooth module, two BD6211 H-Bridge motor drivers, and an onboard DC-DC converter that provides 5V power to the microcontroller and related circuitry. The circuit operates on a 6V DC battery, making it an ideal choice for small to medium-sized tank and robot car applications. Each H-Bridge channel can handle currents up to 1A.

FEATURES

- Power Supply: 6V Battey
- Motor Load Current 1Amp each, Two Motor 2Amps
- Header Connector for Motor Connections
- Header Connector for Power Supply
- On Board 8 Pin Header Connector for Arduino Programming/Bootloader
- 4X4MM Mounting Holes
- PCB Dimensions 43.02X32.23MM

Arduino Pins

- Digital PWM D5>> U1-H-Bridge PWM/Dir (Motor 1)
- Digital PWM D10>> U1-H-Bridge Dir (Motor 1)
- Digital PWM D6>> U2-H-Bridge PWM/Dir (Motor 2)
- Digital PWM D11>> U2-H-Bridge Dir (Motor 2)
- Digital Pin TX >> Bluetooth HC-05 RX Pin
- Digital Pin RX >> Bluetooth HC-05 TX Pin

Download and Test the Project

Users can download the Arduino code and Android app to test the project. The code enables the car to move forward, reverse, left, or right, similar to a tank, by changing the direction of the two motors. Although speed control is not included in the code, the hardware can control the speed and direction of both motors independently by feeding PWM signals. Users can modify the code to apply this feature, but the current code will control the robot car at full speed since all signals are high and low.

Arduino Code and Bootloader

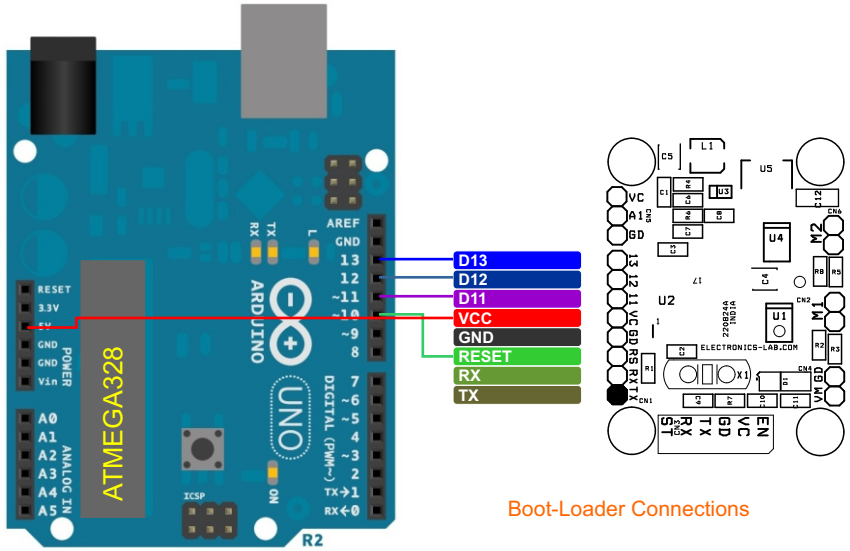
Note that a new ATmega328 chip requires a bootloader before uploading the Arduino code. For programming instructions, refer to the bootloader and programming connections diagram.

More information on bootloader and Arduino programming can be found at: https://docs.arduino.cc/built-in-examples/arduino-isp/ArduinoToBreadboard/

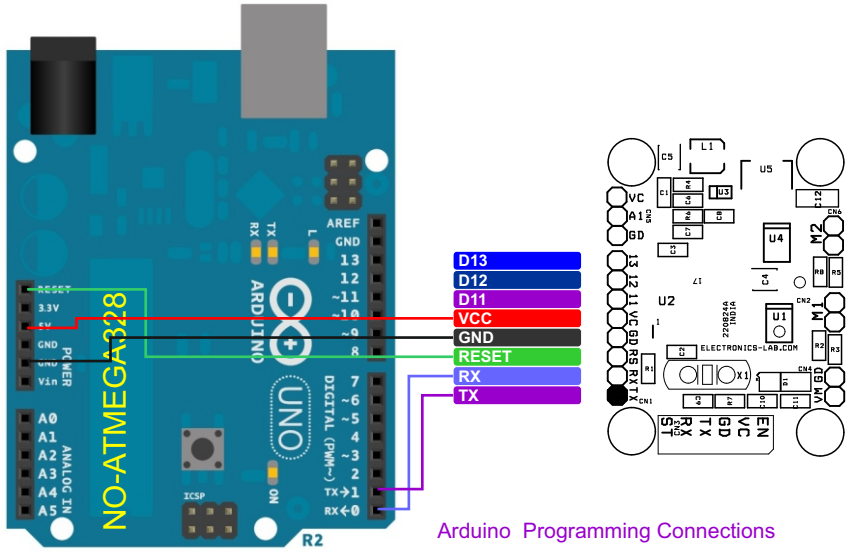
Bluetooth RC Car App

The Bluetooth RC Car app (Bluetooth RC Car APK) offers an exciting and innovative way to control RC cars using a mobile device. Its user-friendly interface and versatile control options enhance the RC driving experience for enthusiasts. However, please note that the app requires modification of the car to be compatible with it.

For more information, visit: https://bluetooth-rc-car.en.softonic.com/android

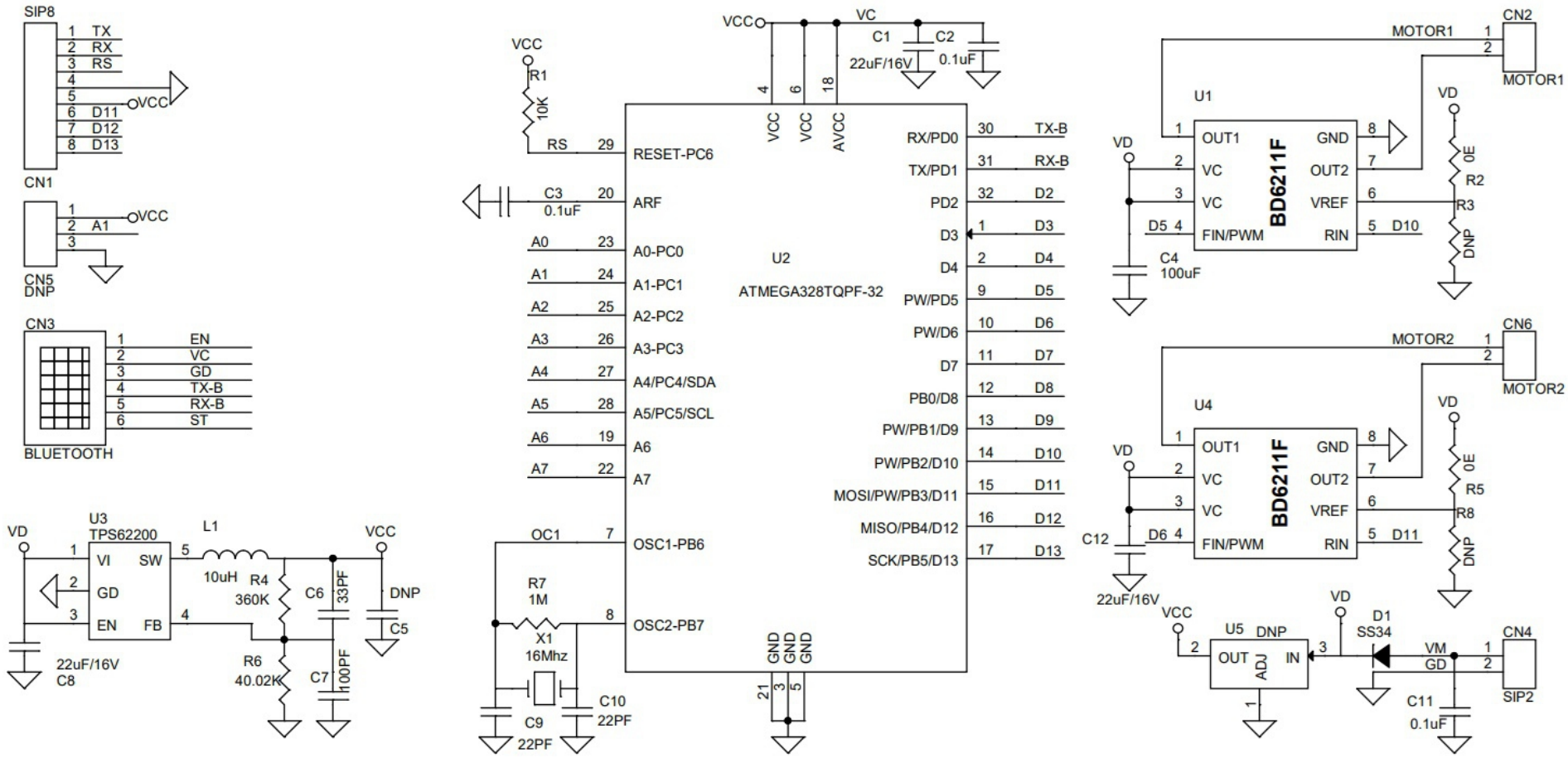


Boot-Loader Connections

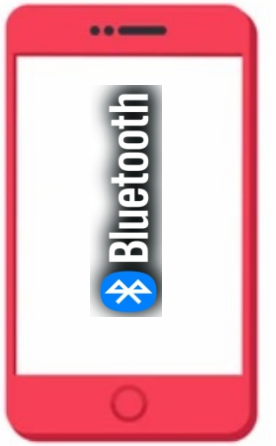


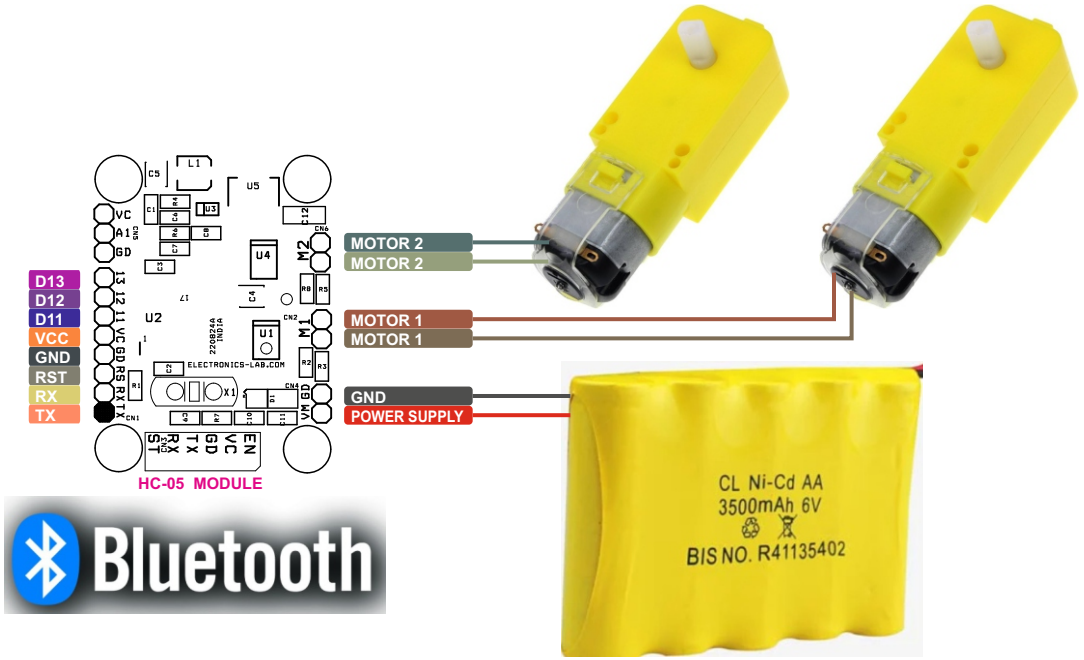
Arduino Programming Connections

Schematic


SIP8
1 TX
2 RX
3 RS
4
5
6 D11
7 D12
8 D13
VCC
CN1
1
2 A1
3
VCC
CN5
DNP
CN3
1 EN
2 VC
3 GD
4 TX-B
5 RX-B
6 ST
BLUETOOTH
VD
U3
TPS62200
VI
GD
EN
SW
FB
L1
10uH
R4
360K
R6
40.02K
C6
33PF
C7
100PF
C8
22uF/16V
DNP
C5
VCC
VCC
R1
10K
RS 29
C3
0.1uF
ARF 20
A0 23
A1 24
A2 25
A3 26
A4 27
A5 28
A6 19
A7 22
OC1 7
R7
1M
X1
16Mhz
C9
22PF
C10
22PF
RESET-PC6
A0-PC0
A1-PC1
A2-PC2
A3-PC3
A4/PC4/SDA
A5/PC5/SCL
A6
A7
OSC1-PB6
OSC2-PB7
U2
ATMEGA328TQPF-32
VCC
VC
C1
22uF/16V
C2
0.1uF
4 VCC
6 VCC
18 AVCC
21 GND
3 GND
5 GND
RX/PD0 30 TX-B
TX/PD1 31 RX-B
PD2 32 D2
D3 1 D3
D4 2 D4
PW/PD5 9 D5
PW/D6 10 D6
D7 11 D7
PB0/D8 12 D8
PW/PB1/D9 13 D9
PW/PB2/D10 14 D10
MOSI/PW/PB3/D11 15 D11
MISO/PB4/D12 16 D12
SCK/PB5/D13 17 D13
MOTOR1
CN2
U1
BD6211F
OUT1
OUT2
VC
VC
FIN/PWM
GND
VREF
RIN
D5 4
D10
C4
100uF
0E
R2
R3
DNP
MOTOR2
CN6
U4
D6 4
D11
C12
22uF/16V
R5
R8
U5 DNP
OUT
ADJ
IN
D1
SS34
VM
GD
CN4
SIP2
C11
0.1uF

Connections

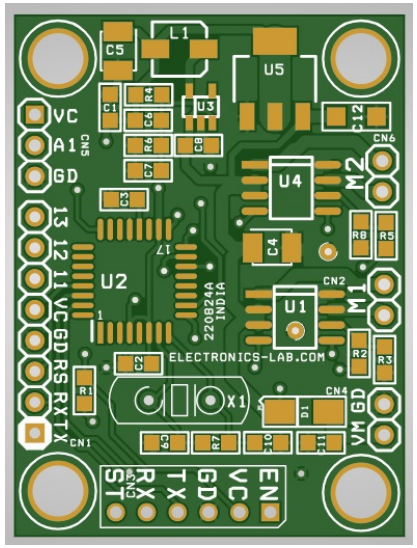


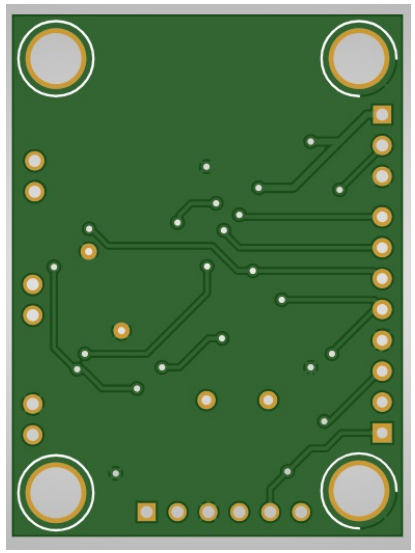


Connections

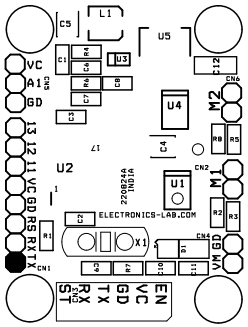
- CN1: Pin 1 = TX, Pin 2 = RX, Pin 3 = Reset, Pin 4 = GND, Pin 5 = VCC, Pin 6 = D11, Pin 7 = D12, Pin 8 = D13
- CN2 Motor 1: Pin 1 Motor, Pin 2 = Motor
- CN3: Bluetooth Module HC-05
- CN4: Pin 1 = +6V, Pin 2 = GND (6V Battery or Power Source)
- CN5: No Use
- CN6 Motor 2: Pin 1 Motor, Pin 2 = Motor

PCB

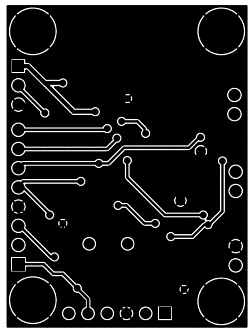




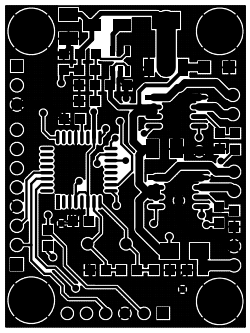
PCB GERBER FILES AVAILABLE



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 43.02X32.23MM

Parts List

BOM						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	8 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5321-ND
2	1	CN2	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
3	1	CN3	BLUETOOTH MODULE HC-05		AMAZON/EBAY/ALIEXPRESS	
4	1	CN4	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
5	5	R3,U5,CN5,C5,R8	DNP			
6	1	CN6	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
7	3	C1,C8,C12	22uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
8	3	C2,C3,C11	0.1uF/25V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
9	1	C4	100uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
10	1	C6	33PF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
11	1	C7	100PF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
12	2	C9,C10	22PF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	D1	SS34 SMD DIODE	TAIWAN SEMI	DIGIKEY	1801-SS34CT-ND
14	1	L1	10uH/1.5A 3MMX3MM	BOURNS	DIGIKEY	118-SRN3015C-100MCT-ND
15	1	R1	10K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
16	2	R2,R5	0E SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
17	1	R4	360K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
18	1	R6	40.02K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
19	1	R7	1M 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
20	2	U1,U4	BD6211F SOIC8	ROHM	DIGIKEY	BD6211F-E2CT-ND
21	1	U2	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328P-AU-ND
22	1	U3	TPS62200 TSOP23-5	TI	DIGIKEY	296-12716-1-ND
23	1	X1	16Mhz	ECS INC		X1103-ND

Notes

APP

Android App

DOWNLOAD

Android App launched in 2017 and has 100k+ downloads - rated with 4.5 stars.

SCAN QR CODE

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info@electronics-lab.com
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