

This is an easy-to-build open-source Arduino compatible board that enables driving 8 RC servos over NRF24L01 RF Link. The project can be used as a standalone RC servo driver or 8 channel RF remote-controlled RC servo Receiver. An optional OLED display option can be used to develop RC signal monitor. The tiny module contains an ATmega328 microcontroller, connectors for 8 x Servo interface, DC supply connector, bulk electrolytic capacitor C5 on DC supply to provide jitter-free smooth movement of RC servos. Operating Supply 5V DC.

Applications:

- 8 Channel RC Servo Controller
- RF Remote Controlled 8 Channel RC Servo Receiver and Controller
- RC Signal Monitor Reader
- 3 Channel PWM Output Over NRF24L01 RF Link (Arduino Digital Pin D3, D5, D6)

A new Atmega328 microcontroller requires a bootloader and Arduino code. Connector CN4 is provided to do needful, the bellow link will help you to learn more about programming and boot-loader burning.

<https://www.arduino.cc/en/Tutorial/BuiltInExamples/ArduinoToBreadboard/>

Arduino Code is available below as a download for both RX and TX. A compatible Transmitter board will be published soon. This is Arduino compatible hardware. User may write their own code using Arduino IDE. Code can be uploaded to the board using the CN4 programming connector following the connection diagram below.

Arduino Pin Configuration:

RC Servo 1 to 8: A5, A4, D2, D3, D4, D5

NRF24L01: CE>D9, CSN>D10, D11>MOSI, D12>MISO, D13>SCK

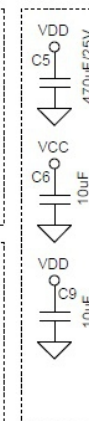
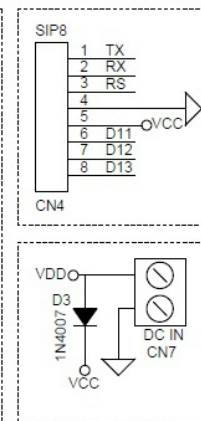
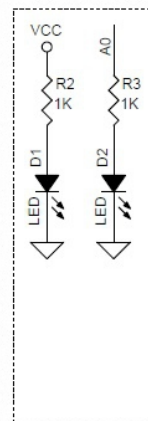
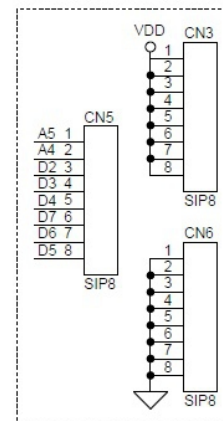
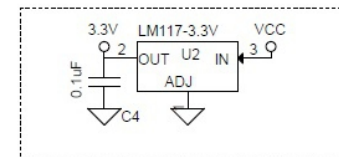
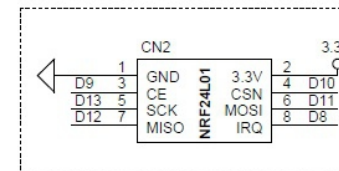
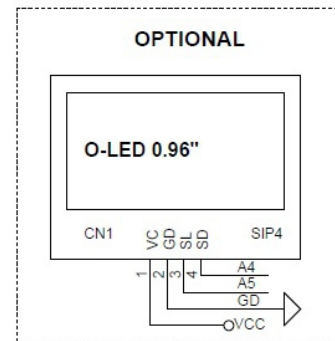
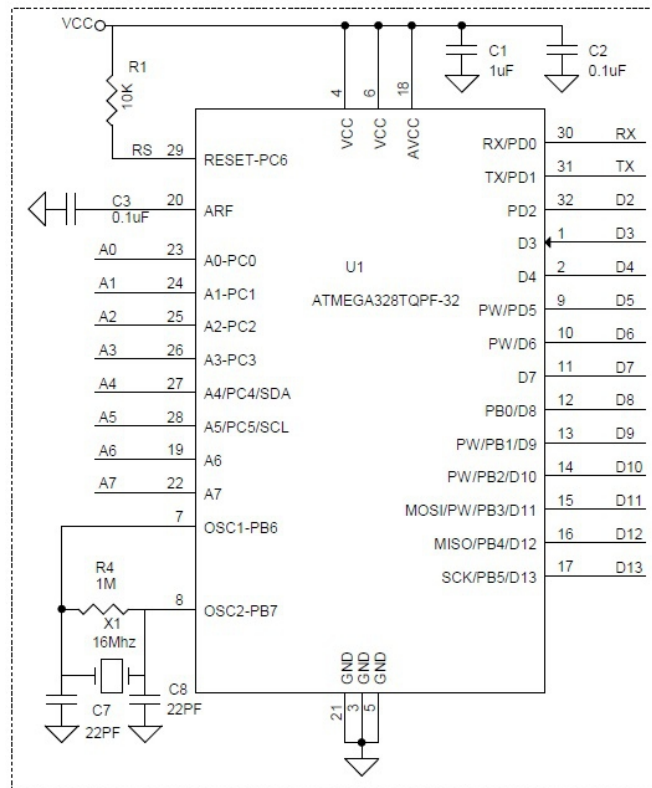
OPTIONAL 0.96INCH OLED DISPLAY: A4 AND A5, In Case of OLED display is in use, You can use only 6 channel RC servo outputs.

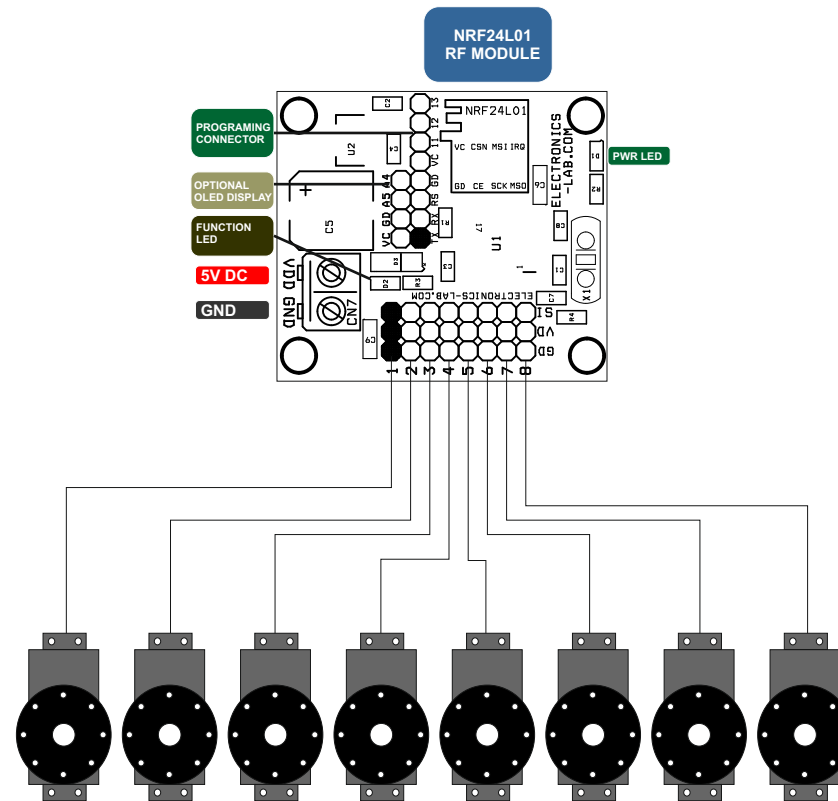
LED D2: FUNCTION LED >A0

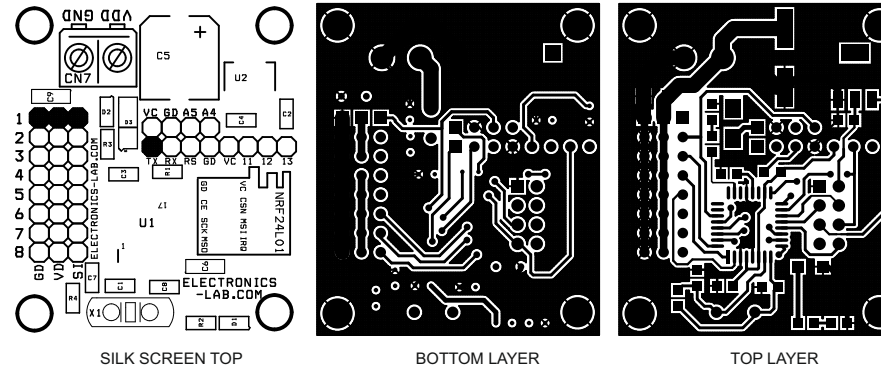
Hardware Details

- CN1: OLED Display Connector (Optional) Can be used as RC signal monitor
- U1: Atmega328 Micro-Controller
- D1: Power LED
- D2: Optional Function LED connected to A0 Analog pin of Arduino
- CN7: DC Supply Input 5V DC
- CN4 Arduino Programming Connector (Boot-Loader and Arduino IDE)
- CN2: NRF24L01 RF Trans-receiver Module for RF Link
- U2: 3.3V Regulator which power NRF24L01 Module
- PCB Dimensions 44.45MM X 37.94MM









SILK SCREEN TOP

BOTTOM LAYER

TOP LAYER

PCB DIMENSIONS 44.45MM X 37.94MM

BOM						
NO	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
2	1	CN2	NRF24L01 RF MODULE	SEED STUDIO	ALIEXPRESS	
3	4	CN3,CN4,CN5,CN6	8 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5321-ND
4	1	CN7	2 PIN SCREW TERMINAL PITCH 5.08MM	PHOENIX	DIGIKEY	277-1247-ND
5	2	C6,C9	10uF/25V SMD SIZE 1206	MURATA/YAGEO	DIGIKEY	
6	3	C2,C3,C4	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
7	1	C5	470uF/25V	PANASONIC	DIGIKEY	PCE4009CT-ND
8	2	C7,C8	22PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
9	2	D1,D2	LED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
10	1	D3	1N4007	DIODE INCO.	DIGIKEY	S1MBDITR-ND
11	1	R1	10K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
12	2	R2,R3	1K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
13	1	R4	1M 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
14	1	U1	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328PB-AURCT-ND
15	1	U2	LM117-3.3V	TI	DIGIKEY	LM117MP-3.3/NOPBCT-ND
16	1	X1	16Mhz	ECS INC	DIGIKEY	X1103-ND
18	1	C1	1uf/25V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	

