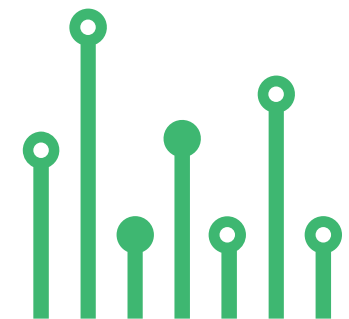


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# RC Servo Movement Recorder and Player

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SKU: EL139543

# RC Servo Movement Recorder and Player

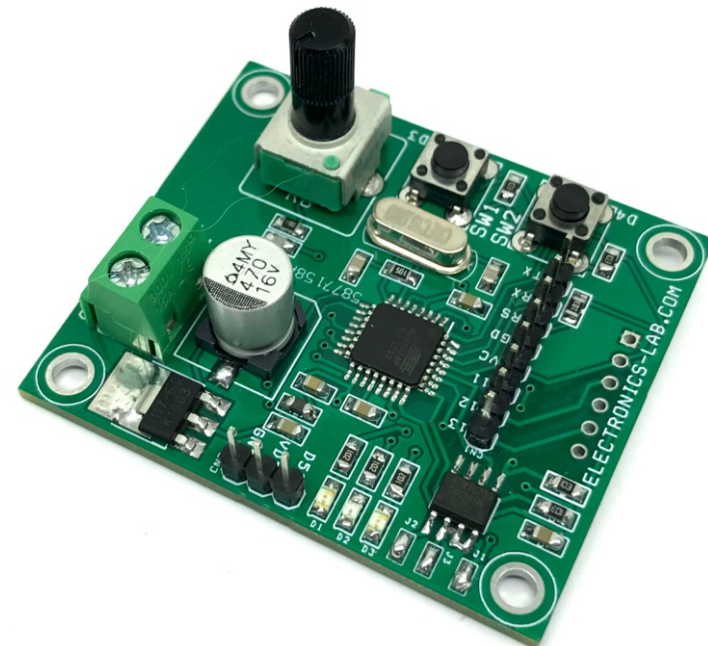


This is an RC servo controller board that allows users to record RC servo motor movement and playback it back with precision. There is an onboard potentiometer to control the RC servo up to 180 degrees. It allows you to record the movement of one servo, a few seconds in duration. Servo movement can be mimicked using the onboard potentiometer. Servo movement data is stored onboard the EEPROM memory chip. The project is Arduino compatible and can be modified to work as a data logger and other applications that require EEPROM and SD Card data logs.

The Arduino code is available as a download and the user will be able to record and playback the RC servo movement for a few seconds with this code. After power is ON, Recording starts when LED D3 lights up, then move the potentiometer to mimic the servo for a few seconds until EEPROM is full and the recording LED is OFF. After a 3-second delay, the Play LED is ON, and playback starts till the end of the movement. This event restarts after 3 seconds.

## FEATURES

- Power Supply 5V to 7.2V DC
- Atmega328 Micro-Controller
- On Board AT24C256 EEPROM
- SD Card Module, (Optional option for higher memory).  
Use CN2 connector to install the SD Card module.
- Potentiometer for Analog Input
- 2 X Tactile Switches with Pull-Up Resistors
- Power LED
- Record/Playback LEDs
- 3 Pin Header Connector for RC Servo
- SD Card Reader
- PCB Dimensions 51.44 X 44.45MM
- 4 X 3MM PCB Mounting Holes



## Arduino Code

This is a Modified code Original Author of the code Anas Kuzechie:

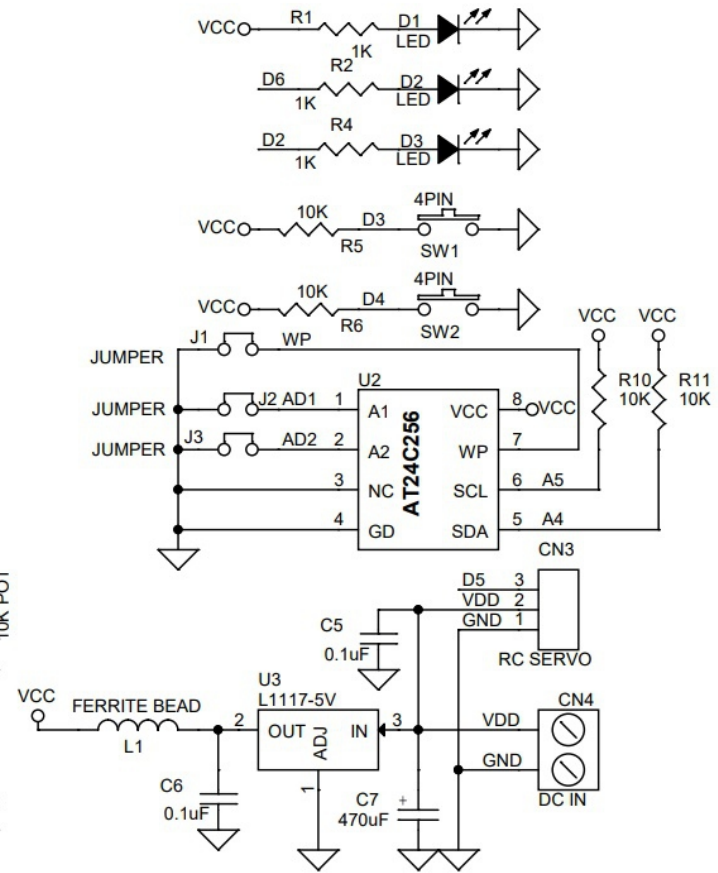
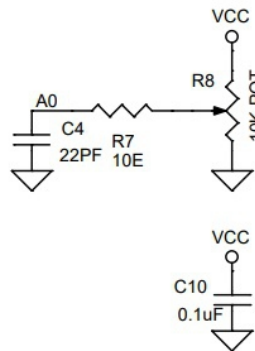
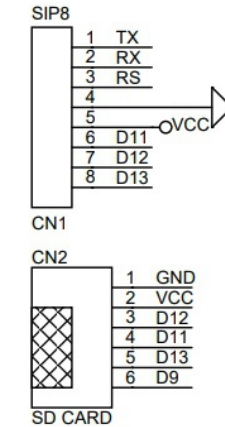
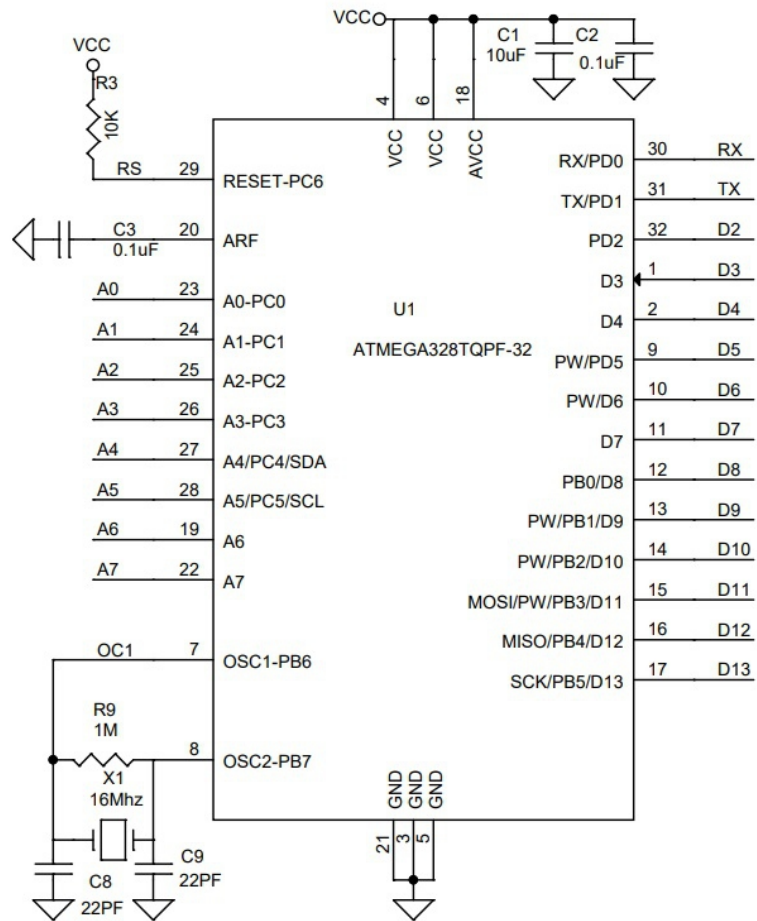
<https://akuzechie.blogspot.com/2020/11/servo-motor-control-using-at24c256.html>

## SD Card Module/EEPROM

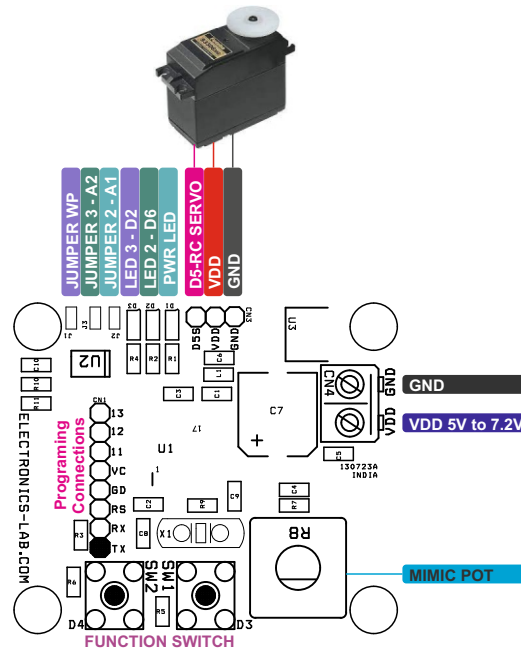
The board has 2 options for data recording. On board EEPROM for low memory size and SD Card module for higher data memory capacity. SD Card module can be installed under the PCB, SD Card module works with SPI protocol and EEPROM follows I2C protocol. Arduino example code works only with EEPROM. The SD card recording requires additional custom code.



# Schematic



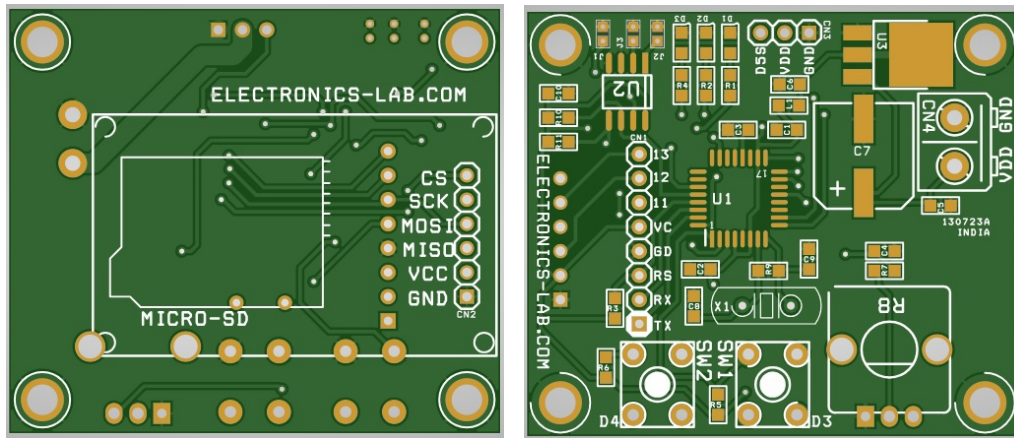
# Connections



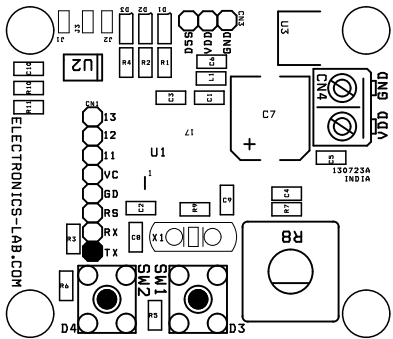
## Connections and Other Details

- CN1: Programming Connector 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: Connector for SD Card Module (Optional)
- CN3: Pin 1 = GND, Pin 2 = VDD, Pin 3 = D5 (PWM Output for RC Servo)
- CN4: Pin 1 = VDD, Pin 2 = GND Power Input 5V to 7.2V DC
- R8: Potentiometer Analog In (Mimic)
- Jumper J1, J2, J3 I2C Address (All Closed)
- D1: Power LED
- D2: Play LED
- D3: Recording LED
- SW1: Function Switch (Optional)
- SW2: Function Switch (Optional)

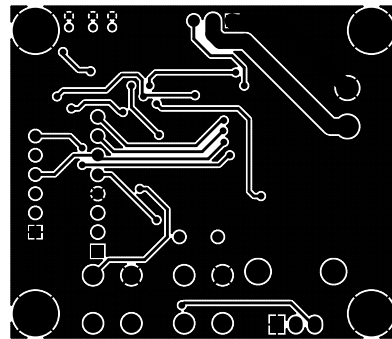
# PCB



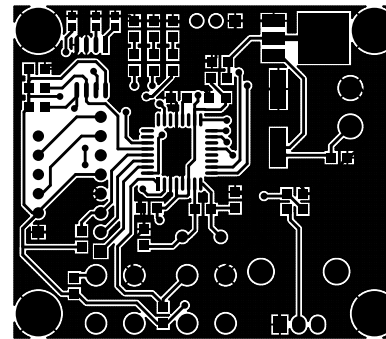
PCB GERBER  
FILES  
AVAILABLE



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

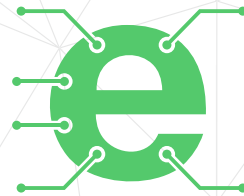
PCB DIMENSIONS 51.44 X 44.45MM



# 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	SD CARD MODULE	CHINA	DIGIKEY	ALIEXPRESS/EBAY
3	1	CN3	3 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5316-ND
4	1	CN4	2 PIN SCREW TERMINAL PITCH 5.08MM	PHOENIX	DIGIKEY	277-1247-ND
5	1	C1	10uF/16V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
6	5	C2,C3,C5,C6,C10	0.1uF/50V CERAMIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	3	C4,C8,C9	22PF/50V CERMAIC SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
8	1	C7	470uF/16V ELECTROLYTIC	RUBYCON	DIGIKEY	1189-1588-2-ND
9	3	D1,D2,D3	LED SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
10	3	J1,J2,J3	JUMPER-SOLDER ON PCB			
11	1	L1	FERRITE BEAD SIZE 0805	LAIRD	DIGIKEY	240-2383-1-ND
12	3	R1,R2,R4	1K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	5	R3,R5,R6,R10,R11	10K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
14	1	R7	10E 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
15	1	R8	10K POT	BOURNS	DIGIKEY	PTV09A-4020U-B103-ND
16	1	R9	1M 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
17	2	SW1,SW2	TACTILE SWITCH 4 PIN	NKK SWITCH	DIGIKEY	HP0215AFKP2-ND
18	1	U1	ATMEGA328TQPF-32	MICROCHIP	DIGIKEY	ATMEGA328PB-AURCT-ND
19	1	U2	AT24C256	MICROCHIP	DIGIKEY	AT24C256C-SSHL-TCT-ND
20	1	U3	L1117-5V	TI	DIGIKEY	LM1117MPX-5.0/NOPBCT-ND
21	1	X1	16Mhz	ECS INC	DIGIKEY	X1103-ND





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