Wireless Rocket Launch Controller

Body:

Safety is always a priority in everyday life. The Aeronautics and Rocketry club deals with combustion and high speed objects during every launch. Many hobby stores have long extension launch controllers, but wire can only get so long. With the ability to send electromagnetic signals from as far as 70 feet, The wireless launch controller is an essential tool for taking safe measurements in every pyrotechnic/rocket launching event.

Components:

1.   IC2262 Transmitter/Receiver

Link:

https://www.banggood.com/IC2262-2272-M4-4-Channel-Wireless-Remote-Lock-Receiving-Board-With-Remote-Control-p-1031857.html?rmmds=mywishlist

2. Two 9V batteries + holders

3. Toggle switch

4. Two alligator clips

5. 5V regulator

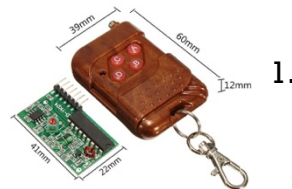6. Transistor

7. LED

8. Wire
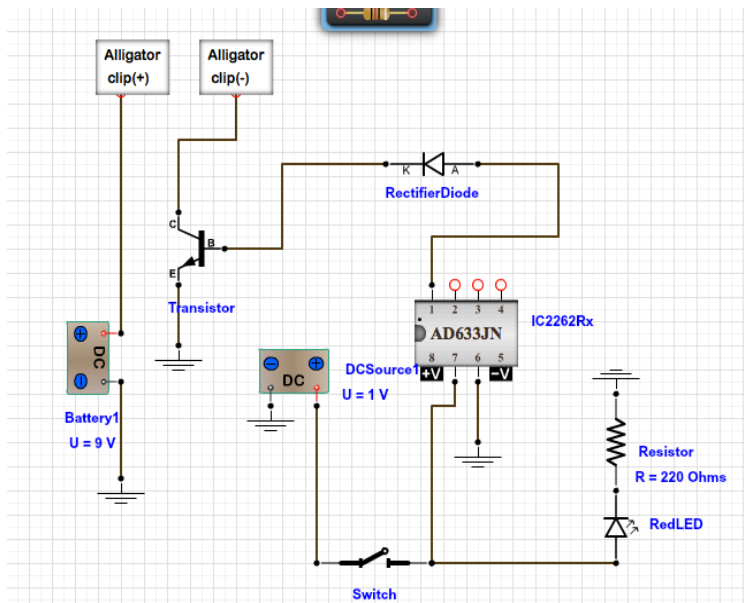
9. 220 Ω resistor

10. Project Box

11. Rectifier diode

How it Works:

Schematic Diagram

The inspiration behind this project was mostly safety. Usually, wired launch remotes give you a 10-15 feet of freedom from the rocket. With the use of the wireless controller, a rocket can be ignited from up to 70 feet away!

The basic gestalt:

The circuitry is designed to allow full amperage flow to the igniters, this is why there are two batteries rather than one. One battery powers the transmitter board while the other provides raw current with no disturbance to the electronic match lighting the rocket.

Setting Up the controller:

Begin the process by measuring out the dimensions of the project box along with all the components being used; it is better to have extra room than not being able to fit everything into the project box.

Wire management is important for this project since the project box should be rugged and minimized size for portability.

(Wireless Remote Controller)

The switch will prevent any current from flowing to the system, this will act as a safety mechanism to ensure there are no misfires. The positive lead of **battery2** will be soldered to the NO (normally open) lead of the switch. The NC (normally closed) lead of the switch will be in parallel between the 5V regulator(in) and the LED; with the 220 Ohm resistor on the other end of the LED going to ground.

The 5V regulator will have a (in) lead coming from the switch, one going to ground and the (+) going to the 5V (power) of the receiver board.

The Receiver board will have a (in) lead coming from the 5V regulator (out). The ground (-) lead going to ground and pin(1) going to the rectifier diode.

The rectifier diode will go to the transistor's (Base).

The Transistor's Collector to ground (-) and emitter to the negative alligator clip.

Finally, Connecting **Battery1** to the positive alligator clip, while negative goes to ground. Thus, you connect the leads of **the igniter/e-match** to the alligator clips and the controller is

Finished Product:

Working Controller