Playbook Module
RC Controller Guide

Level: Beginner
Objectives:
- Show how to use the RC Controller.

**Pre-requisites:** None

Table of Contents

RC Controller Overview

The RC controller is very similar to most common game controllers. This is the part of the BSA Drone system that actually controls flight movements.

Why don't we put all the controls in the Drone app on your phone? There are two reasons:
- Actual joysticks provide much easier control and help your hands develop what is called "muscle memory" better than sliders on a phone.
- The app on your phone communicates with the drone over a WiFi radio channel. This sends information in little packages, and there can be delays. WiFi also does not have a far of a range as the radio frequencies used in the RC controller. By using a dedicated radio channel for the real-time flight controls, we prevent minimize the amount of time it takes from when you move a joystick until when the FMU on the drone changes he motor speeds to make that command happen. This is called lag time, and to have a an easy to fly and responsive drone, the design has to minimize the lag time.

Buttons & Joysticks - Front
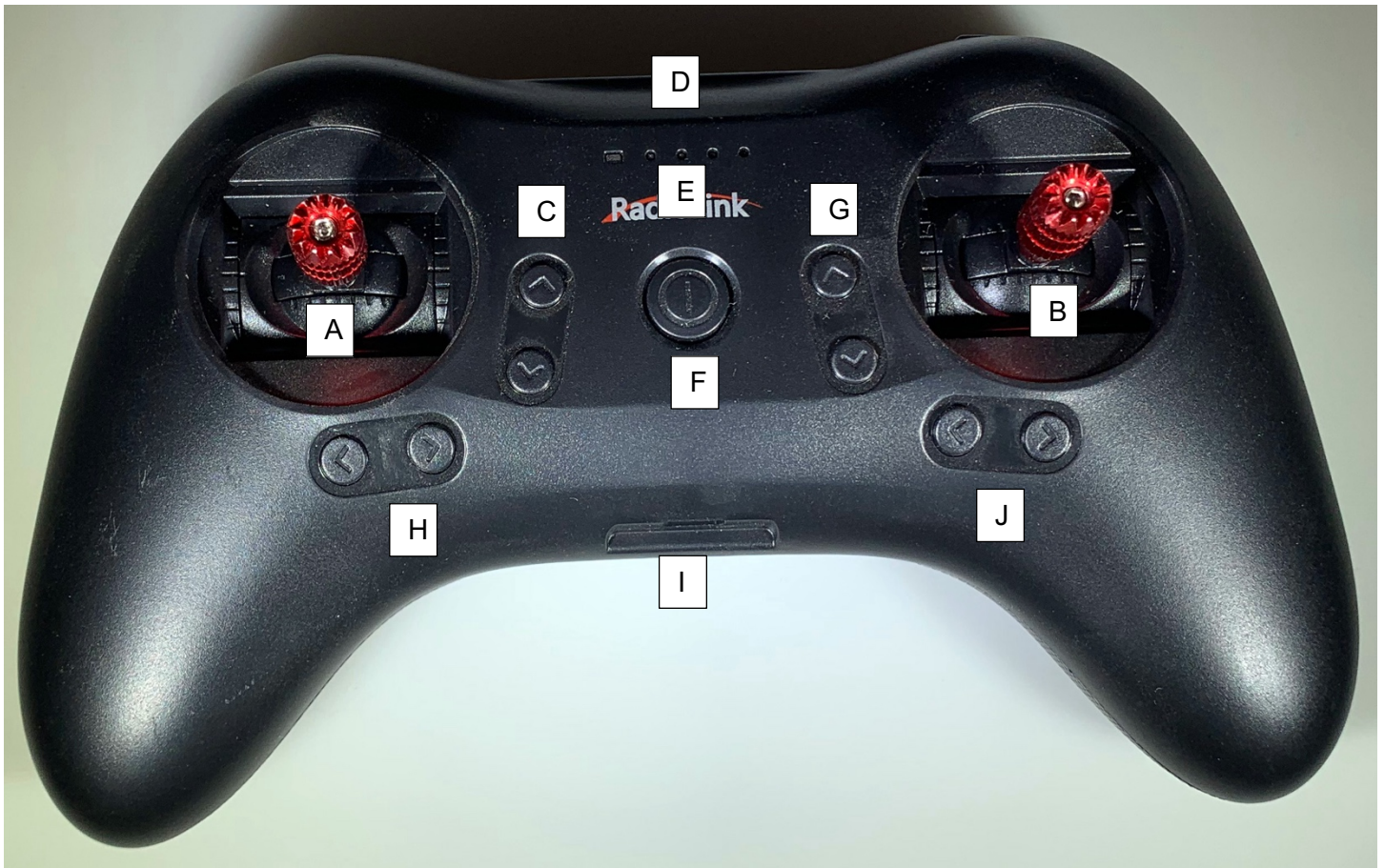
A: Throttle/Yaw.
- Forward - increase throttle, Back - decrease throttle,
- Left - left yaw, Right - right Yaw

B: Pitch/Roll.
- Forward - Pitch down, Back - Pitch up
- Left - Roll Left, Right - Roll right

C: Throttle Trim Buttons to adjust the center position of the throttle. If you are getting too much or too little throttle at the center position, trim up or down till it feels correct..

D: Phone clamp installs here

E: Battery Status Indicator - when it flashes, it is time to charge. Do not let it run down to zero power or you may damage the internal battery.

F: Power on/off button

G: Pitch Trim Buttons - if your drone is pitching up or down when the joystick is centered, use the trim buttons to adjust the joystick until there is no pitch change when the joystick is centered.

H: Yaw Trim Buttons - if you are getting some yaw when the joystick is centered, use the trim buttons to adjust the joystick until there is no yaw change when the joystick is centered.

I: Battery Charging Port

J: Roll Trim Buttons - if you are getting some roll when the joystick is centered, use the trim buttons to adjust the joystick until there is no roll change when the joystick is centered.
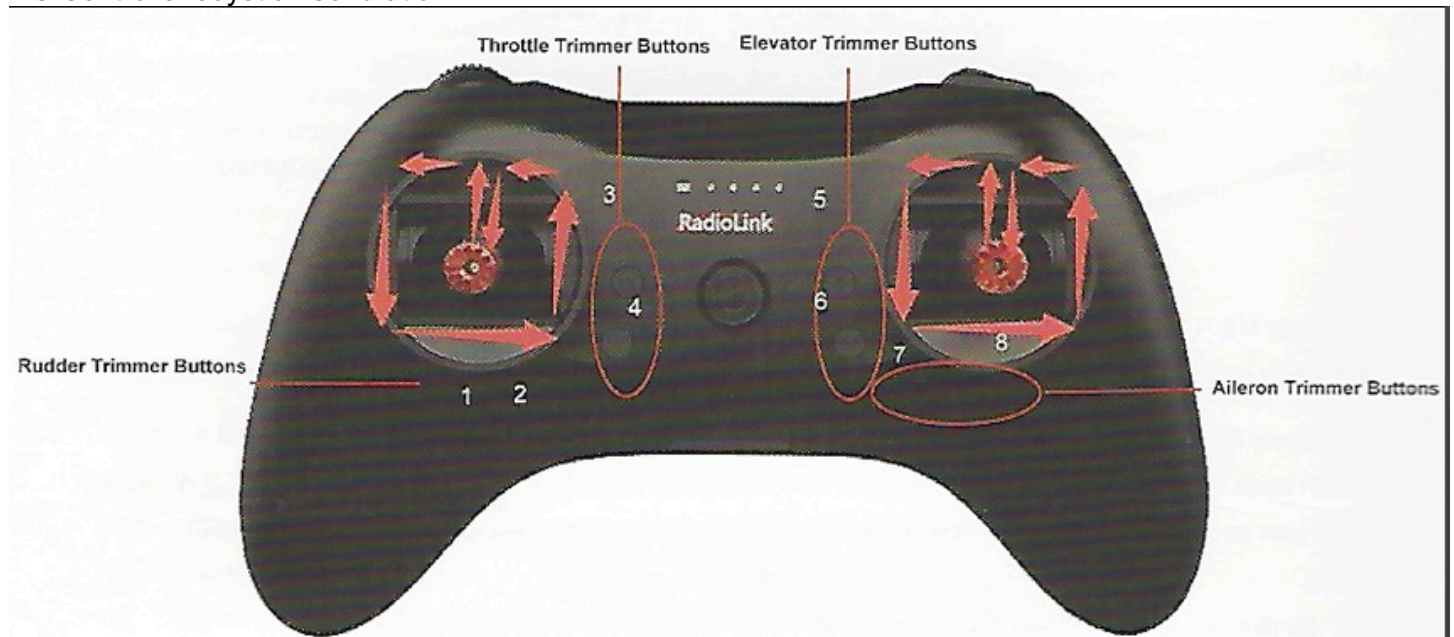
Buttons - Back

K: Not Used
L: Kill Switch - Emergency shut down - scroll the wheel to the right. Warning - if you use this in flight, your drone is going to fall straight down and crash.
M: Switch Flight Modes from GPS to Manual and back
N: Not used

1. Turn the RC Controller off.
2. Simultaneously press the left Rudder Trimmer Button (1) and he power button until you hear a beep. Release the button and the 4 Battery Status Indicator lights will start flashing.
3. One at a time, move each of the joysticks up and then to all 4 corners and then back to center as shown by the red arrows above.
4. When the joysticks are back to center, push the right rudder trimmer button (2) and you will hear a double beep and the left light will go off. Your joy stick calibration is complete