



**CAUTION:** Secure the aircraft safely to a work bench or enlist the use of a helper while accessing the advanced programming features. Mistakes in programming could cause the motor to run unexpectedly.

### Reversing Servos

Servo reversing is done through your transmitter's servo reversing function. You may also reverse the actual servos by following the instructions below.

### Reversing The Servos on the Receiver Board

This feature reverses the servos at the board level, making it useful for implementing features, such as elevons, while using transmitters with limited programming options.

**NOTICE:** For all advanced programming changes, you must hold the control sticks in the correct position with the transmitter on and the receiver off.

1. Ensure a successful bind was completed.
2. Turn the transmitter on.
3. Move the THRO stick to full throttle position.
4. Move the control sticks to the corresponding position for the servo to be reversed (see illustration).
5. While holding this position, connect the battery to the receiver; power on the receiver.
6. The LED on the receiver will turn solid and within 5 seconds, the LED will flash 3 times quickly, indicating servo is now reversed.
7. Disconnect the battery from the receiver.
8. Turn the transmitter off.

#### Mode 1



THRO/RUDD ELEV/AILE



THRO/RUDD ELEV/AILE



THRO/RUDD ELEV/AILE

#### CH2

1. Full THRO
2. Down ELEV
3. Left AILE



ELEV/RUDD THRO/AILE

#### CH3

1. Full THRO
2. Down ELEV
3. Right AILE



ELEV/RUDD THRO/AILE

#### CH4

1. Full THRO
2. Up ELEV
3. Right AILE



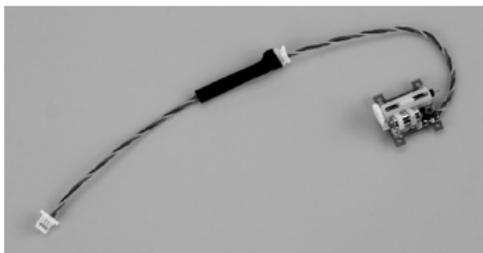
ELEV/RUDD THRO/AILE

## Reversing Optional Linear Servo

Reversing the servo is useful when implementing certain installations, such as dual ailerons, flaps, etc. Spektrum offers a servo reversing lead you can connect to the receiver and optional servo.

To reverse the servo using a reversing lead:

1. Connect the reversing lead to the servo.
2. Plug the servo into the CH2 or Reversed CH2/CH6 ports.
3. Power the receiver using a charged battery.
4. Once the receiver connects, the servo is now reversed.
5. Disconnect the battery from the receiver.
6. Remove servo reversing lead and store it in a safe place for future use.
7. Reinstall the servo lead into the servo port.



## To Change CH6 to a Reversed CH2 for Dual Ailerons or Reversed CH2 to CH6

1. Ensure the receiver and transmitter are bound.
2. Turn the transmitter on.
3. Move the THRO stick to the full throttle position.
4. Move the control sticks to the corresponding position to change between the available options (see illustration).
5. While holding this position, connect the battery to the receiver; power on the receiver.
6. The LED on the receiver will turn solid and within 5 seconds, the LED will flash 3 times quickly, indicating the option is now changed.
7. Disconnect the flight pack from the receiver.
8. Turn the transmitter off.

### Mode 1



THRO/RUDD ELEV/AILE

### Rev. CH2/CH6

1. Full THRO
2. Up ELEV
3. Left AILE

### Mode 2



ELEV/RUDD THRO/AILE

## To Change CH5 to X-port or X-port to CH5

When X-Port is active, CH5 and CH6 are not available; however, reversed aileron (CH2) is still available.

1. Ensure the receiver and transmitter are bound.
2. Connect the X-Port accessory or optional servo into the X-Port/CH5.
3. Turn the transmitter on.
4. Move the THRO stick to the full throttle position.
5. Move the control sticks to the corresponding position to change between the available options (see illustration).
6. While holding this position, connect the battery into the receiver; power on the receiver.
7. The LED on the receiver will turn solid and within 5 seconds, the LED will flash 3 times quickly, indicating the option is now changed.
8. Disconnect the battery from the receiver.
9. Turn the transmitter off.

### Mode 2



THRO/RUDD ELEV/AILE

### CH5/X-Port

1. Full THRO
2. Right RUDD

### Mode 1



ELEV/RUDD THRO/AILE

## Optional Support Items

Please see [www.horizonhobby.com](http://www.horizonhobby.com) for a complete list of items.

## Programming the Brushless ESC

To access a programmable feature, power on with full throttle (musical confirmation sound).

### Brake

- Pull throttle to center (1 long beep)

To assign No Brake: Push throttle to full (1 short beep). (Default)  
Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).

To assign Soft Brake: Keep throttle at full for 5 seconds (2 short beeps).  
Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).

To assign Center Brake: Keep throttle at full for 10 seconds (3 short beeps).  
Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).

To assign Hard Brake: Keep throttle at full for 15 seconds (4 short beeps).  
Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).

Timing	<ul style="list-style-type: none"> <li>• Pull throttle to center, hold for 5 seconds (2 long beeps).</li> </ul>
	5°: Push throttle to full (1 short beep). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 10°: Keep throttle at full for 5 seconds (2 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 15°: Keep throttle at full for 10 seconds (3 short beeps). (Default) Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 20°: Keep throttle at full for 15 seconds (4 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 25°: Keep throttle at full for 20 seconds (5 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).
Throttle Range	<ul style="list-style-type: none"> <li>• Pull throttle to center, hold for 10 seconds (3 long beeps).</li> </ul>
	1.2–1.8ms: Push throttle to full (1 short beep). (Default) Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound) 1.1–1.9ms: Keep throttle at full for 5 seconds (2 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).
Starting Rate	<ul style="list-style-type: none"> <li>• Pull throttle to center, hold for 15 seconds (4 long beeps).</li> </ul>
	0.25s: Push throttle to full (1 short beep). (Default) Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 1.0s: Keep throttle at full for 5 seconds (2 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).
PWM Switching Frequency	<ul style="list-style-type: none"> <li>• Pull throttle to center, hold for 20 seconds (5 long beeps).</li> </ul>
	8kHz: Push throttle to full (1 short beep). (Default) Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 16kHz: Keep throttle at full for 5 seconds (2 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). 32kHz: Keep throttle at full for 10 seconds (3 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).
Mode	<ul style="list-style-type: none"> <li>• Pull throttle to center, hold for 25 seconds (6 long beeps).</li> </ul>
	Normal Mode: Push throttle to full (1 short beep). (Default) Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound). Heli Mode: Keep throttle at full for 5 seconds (2 short beeps). Pull back to center throttle to confirm setting (Hi Lo Hi Lo sound).

**Important:** Cutoff voltage: 6.1V cannot be changed.  
 Recycle ESC power with throttle idle after changing settings.  
 Recycle power after you hear the Hi Lo Hi Lo confirming beeps after changing settings.