

# NEON-SS FM

TOUCH YOUR DREAMS

# NEON

## FM

**NEON-SS FM  
INSTRUCTION MANUAL**



## 1 Introduction

Congratulations, you now own one of the most unique and revolutionary radio control systems in the world. The Neon 3 was created for the beginner and seasoned R/C enthusiast to grow with your needs and skill level. The basic Neon can be upgraded with a variety of features like;

- A 4th channel two position switch
- Dual Rates
- ATV's on ch. 1 and 2
- A trainer port and switch package

Any way you customize the Neon, we are sure you will be satisfied with the performance of the radio system. Good luck and good flying!

## 2 Features and Specifications:

### Transmitter

Single Stick 3 channel, (upgradeable to 4 channel) FM proportional system

Dual axis precision gimbal

Adjustable gimbal stick length

Adjustable gimbal stick tension

3 LED battery status indicators

Charging jack for internal Nicad battery

Servo reversing function for channels 1, 2, 3 and 4

Elevon or V-tail mixing function

Proportional 3rd. channel slide switch

Channel 1 and 2 trim levers

### Options

- Channel 4 three position switch, part # 54301
- Channel 1,2 and 3 ATV function. part # 54302
- Trainer plug and switch, part # 54303
- Channel 1 and 2 Dual Rate function # 54304  
(must use optional part 54304, ATV function, in addition to this option)

## System Components

### Receiver

Standard version includes Electron 6 channel Dual Conversion 6 channel FM receiver

- Size: 45.5 x 22.5 x 15.0 (mm) / 1.79 x 0.88 x 0.59 (inch)
- Weight : 17g(0.6oz) without X-tal / 13g(0.4oz) without case

Micro version includes HFS-04MG 4 channel Single Conversion 4 channel FM receiver

- Size: 25 x 37.5 x 16 (mm) / 0.98 x 1.47 x 0.62 (inch)
- Weight : 15.9

### Servo

Standard version includes two HS-81 micro servos

- Speed : .17(4.8V) /.14sec(6.0V)
- Torque : 1.1(kg/cm) / 15oz at 4.8V  
1.3(kg/cm) / 18oz at 4.8V
- Size : 23 x 12 x 24(mm) / 0.90 x 0.45 x 0.94(inch)
- Weight : .28oz/8.0g

Micro version includes two HS-55 sub-micro servos

- Speed : .11(4.8V) /.10sec(6.0V)
- Torque : 2.6(kg/cm) / 36oz at 4.8V  
3.0(kg/cm) / 42oz at 6.0V
- Size : 30 x 12 x 30(mm) / 1.2 x 0.47 x 1.2(inch)
- Weight : .58oz/16.6g

### Accessories, all systems

One CG-25 or CG-22A overnight wall charger, part # 43025 or # 43022

One Switch harness, part # 54403

One AAA receiver battery box, part # 54402

## 3 Set-up and Operation

### Transmitter

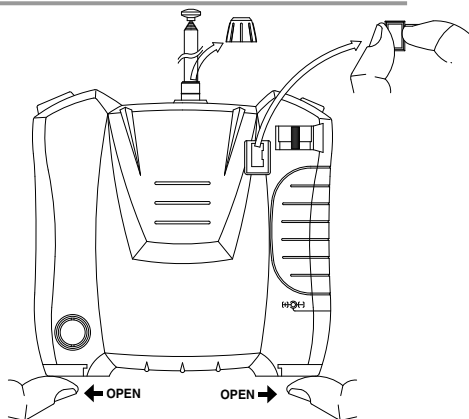
#### Opening the case

The case of your Neon is unique because it does not have the traditional screws holding it together.

Instead we have created a "pull apart" case to facilitate access to the inside components.

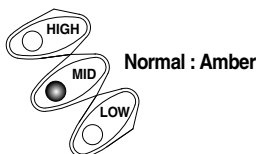
To open your case, slide the tabs located at the bottom corners off and gently pull the bezel at the base of the antenna up.

Now separate the two case half's while being careful of the internal wiring harness to the throttle switch, unplug the wires leading to the throttle switch, and you can now access the internal components to add optional feature packages, reverse your servos, or change the battery out.



## Reading the LED Battery Indicators

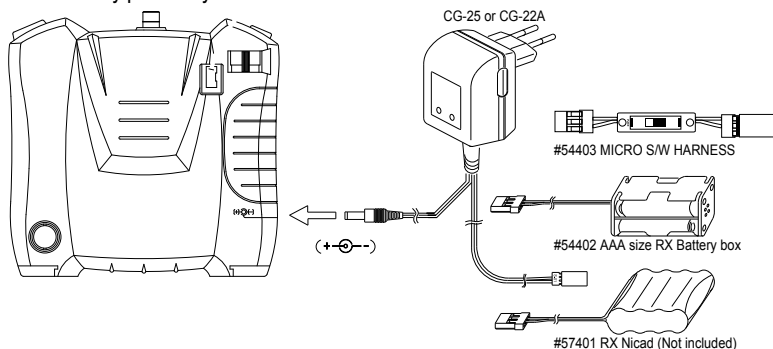
There are three indicator lights on the face of the radio marked High (green), Mid (amber) and Low (red). These relate to the condition of your transmitter battery. Please pay attention to these LEDs and stop flying when the red "Low" light is on.



## Recharging Nicad batteries

Your Neon transmitter is supplied with rechargeable Nicad batteries.

Before using the radio, plug the supplied CG-25 or CG-22A overnight wall charger into a normal household 120V or 220V AC wall socket. There are two leads on the CG-25 or CG-22A, the round one plugs into the socket on the lower left side of the transmitter. The green light on the CG-25 or CG-22A should glow, confirming charging is taking place, leave it on charge for at least 18 hours. Once fully charged, the transmitter should operate for about 120 minutes. Typically you will charge the radio up overnight before flying the next day. Do not leave the radio connected to the CG-25 or CG-22A charger for over 36 hours or permanent damage to the transmitter battery pack may occur.



## Transmitter antenna

Always have the antenna screwed in securely and fully extended when the transmitter is on, except when doing a range check.

## Elevon/V-tail mix

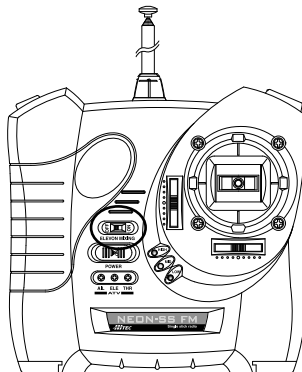
Your Neon transmitter has a "built-in" ch. 1 and 2 mix for flying wing "elevon" controls and "V-tail" ruddervator controls.

This function is activated with the slide switch on the face of the radio.

There are two factors that determine what direction the servo will move when the Elevon or V-tail mixing is selected.

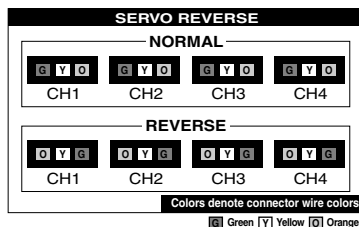
- Whether the servo is plugged into the ch. 1 or 2 port on the receiver
- The servo "direction of rotation", selectable within the transmitter case.

Using these two functions it is possible to have the two servos move in the directions required for Elevon or V-tail/Ruddervator control.



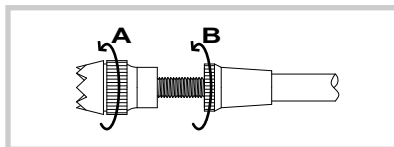
## Servo Reversing

After removing the back of the case you will find three plugs (there are four plugs if you have the optional 4th channel feature). Simply unplug and rotate the connector 180 degrees, plug it back onto the board and the servo throw for that servo, is now reversed.



## Gimbal stick length adjustment

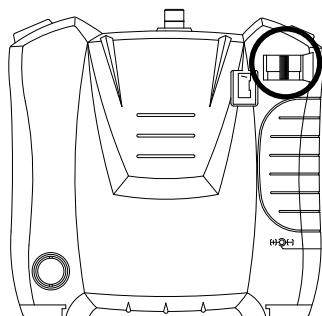
The gimble stick is adjustable to suit your personal preference. Hold the bottom half of the knurled knob and twist the top half counterclockwise to loosen, adjust the length to your satisfaction and twist the two pieces to lock them together.



## Throttle Function

The Neon 3 features a slide switch located on the back of the transmitter, it is adjusted with your left index finger as your hand naturally wraps around the radio case. Use this switch to get proportional control of your throttle servo, or ESC, (Electronic Speed Control.)

Note: All ESC's connect to your receiver in the ch. 3 port.



## Installation of Receiver and Servos

Please refer to the aircraft manufacturers instructions on servo, receiver and battery placement within your aircraft.

Channel 1 is Aileron or Rudder

Channel 2 is Elevator

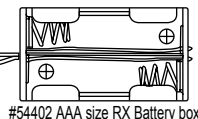
Channel 3 is Throttle

Channel 4 is optional

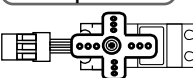
### GLIDER VERSION



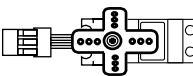
#54403 MICRO S/W HARNESS



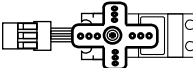
CH4 : Optional



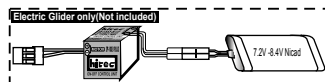
Throttle Servo  
Channel #3



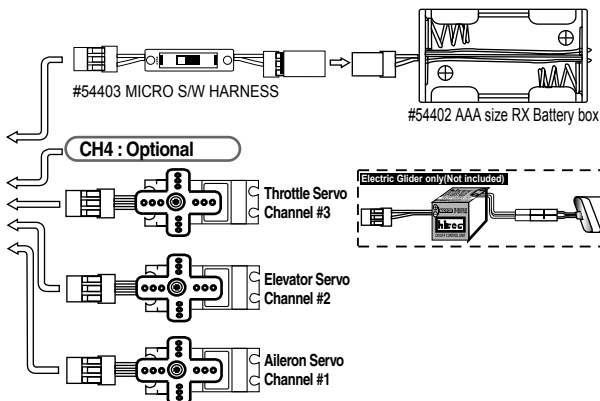
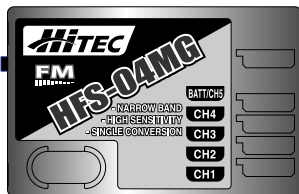
Elevator Servo  
Channel #2



Aileron Servo  
Channel #1



## MICRO VERSION



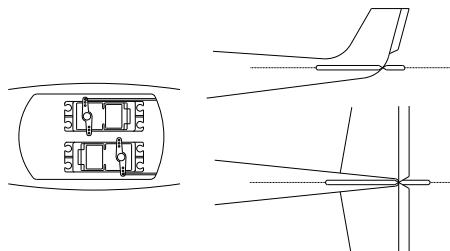
## Turning on your system

Before turning on your transmitter when at a flying field, ask about frequency control. If you turn on your transmitter when another person is flying on your frequency, the other plane will crash.

Always turn the transmitter on first, then turn on the receiver. Do the opposite to power down your system, doing this will avoid damage to your servos and linkages.

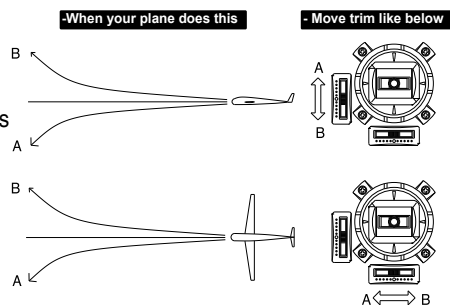
## Servo trim settings

There are two trim levers on the face of the transmitter associated with channel 1, the aileron or rudder and channel 2, elevator. Center these trim levers before installing your servos. These trim levers are used to make minor trim adjustments while in flight, so the aircraft can fly straight and level. Do not use these trims to center a flight control surface while the plane is on the ground or before the first flight, those adjustments should be made with the control linkages before the plane fly's.



## Checking servo operation

Proper servo linkage geometry is important, all control rods should be at a 90 degree angle to the servo case.



## Range Check

Before flying your model conduct a range check.

Turn everything on and collapse the transmitters antenna so that one section remains sticking out. While holding the transmitter, walk away from the model, you should have full control over the model without any glitching at least 65 to 75 feet away. If your range is less than this, do not fly, as there would appear to be a problem! Contact the Hitec service department and we will try to help you.

## 4 Neon Transmitter Options

*Hitec offers several feature "up-grades" for the Neon radio transmitter.*

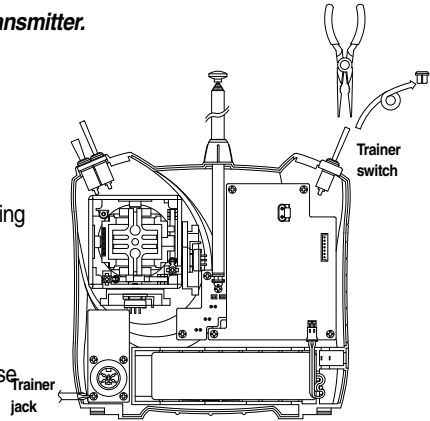
### Trainer Port and Switch

#### Use:

The Neon can be upgraded with a trainer port and switch to help with training new pilots. Using another Hitec radio and the Hitec "trainer cord", part #58310 the two radios are linked together allowing an instructor to safely teach a student how to fly. The trainer port is also required to make the Neon compatible with Computer based Flight Simulator programs.

#### Installation:(#54303)

Remove the Transmitter antenna / Remove the back half of the case.  
Lay the trainer PCB in and screw to secure it.  
Install the trainer Switch and connect the wires to the trainer PCB (see picture).  
Re-assemble



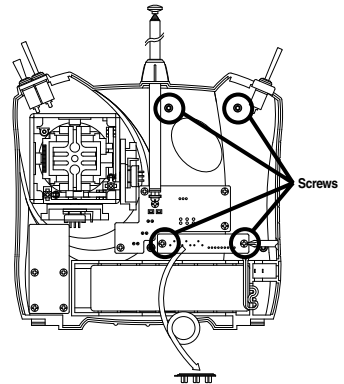
### Ch. 1, 2 and 3 ATV (Adjustable Travel Volume) board

#### Use:

ATV pots are useful in setting-up new aircraft. Using the ATV option allows you to adjust the "throw" or range of servo travel movement, by turning the small "pot" on the face of the radio. The Neon ATV function will work with ch. 1,2 and 3.

#### Installation:(#54302)

Remove the Transmitter antenna  
Remove the back half of the case  
Remove the four screws holding the large brown circuit board  
Shift the large brown circuit board up "¼ of an inch"  
Lay the ATV pot board in and use the supplied screws to secure it  
Route the wire harness up to the left and plug it into the large brown circuit board  
Re-assemble



### Ch. 1 and 2 Dual Rate Switch

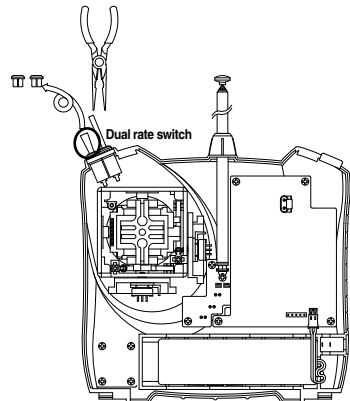
#### Use:

A Dual Rate function that provides two different "rates" or "servo travel throw" is available for ch. 1 and 2, this is useful to de-sensitize or limit the throw or travel of a servo.

*NOTE: The ATV option is package, part # 54302 is required to use the optional Dual Rate function.*

#### Installation:(#54304)

Remove the Transmitter antenna  
Remove the back half of the case  
Install the dual rate switch and connect the wires to the main board (see picture). Re-assemble



**4th ch. Switch****Use:**

The Neon has an optional 4th channel, three position switch available for a variety of functions including flap or spoiler deployment, bomb drop mechanisms and retracts.

**Installation: (#54301)**

Remove the Transmitter antenna

Remove the back half of the case

Install the 4th Ch. Switch and connect the wires to the main board (see picture)

Re-assemble

NEON  
FM[www.hitecrcd.com](http://www.hitecrcd.com)

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