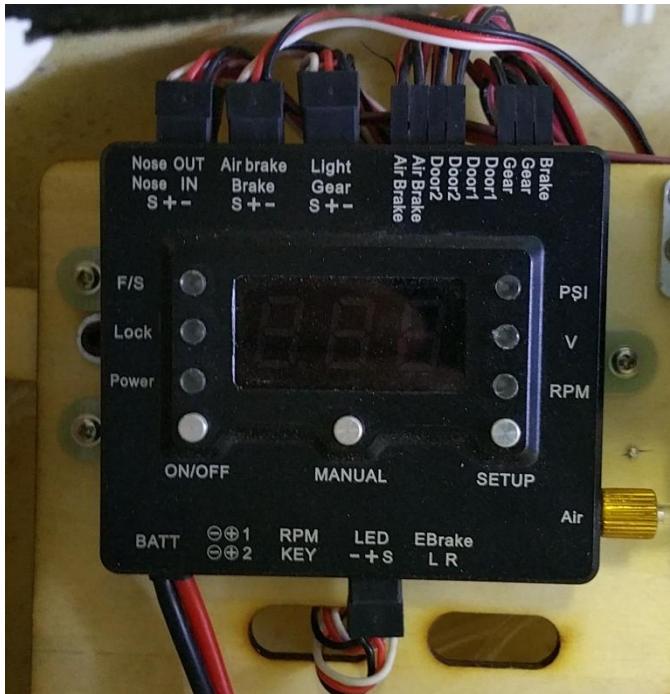


BVM

Central Controller Instructions

For All PNP Models



August 29, 2016
Version 2.2

FUNCTIONS:

Retract Gear (B-1).....Long Press “Manual” Button

Landing Gear Failsafe (B-2).....Short Press “Manual” Button

PSI Display (C-1)..... Short Press “Setup” Button

Voltage Display (C-1)..... Short Press “Setup” Button”

RPM Display (Not Used)

Pressure Loss Protection Setup (C-2)...Long Press “Setup”
Button when “**PSI**” is displayed.

Gear Door Time Lapse Setup (C-3)Long Press “Setup”
Button when “**Voltage**” is displayed

Landing Gear Failsafe Height Setup (C- 4).....Long Press
“Setup” Button when “**RPM**” is displayed.

LED Afterburner Rings

Brakes.....Refer to (“Pneumatic Pressure”)

NOTE: Limit air pressure to 90 psi. Over filling can damage system over time.

Central Controller Instructions

(New Style Controller-Introduced July 2015)

A) ON/OFF (Power Switch): Hold this button down to turn on the power.

Caution: even if power is turned off, the LED remains on which indicates power is connected to this controller. Make sure to always disconnect the Receiver Battery after a day of flying; otherwise the battery will be exhausted by this control unit!



NOTE: The “BATT” connection is only used for set up and testing the Black Box when no Receiver Battery is connected. It is not intended to be used in normal operation.

B) Manual button

B-1) Retract Gear- Long press- Holding this button down will retract the gear.

NOTE: this function only works when the transmitter is not connected. This is very useful for bench operation, etc.

B-2) Landing Gear Failsafe-Short press-Tap this button to turn the landing gear Failsafe on or off. When it's turned on, failsafe (F/S) LED is green and height is displayed in screen.

Example: When the screen displays 002, the height setting is at 2 meters. Press again to turn this function off. Screen reads “OFF”.

NOTE: Refer to “C-4” to change this value.

The landing gear failsafe is a method of protecting your airplane from an accidental retract of the gear while it is sitting on the ground (below the setting, ex: 002: below 2 meters). If the plane is sitting on the ground and a retract command is given, the gear will not retract. If you want to bypass this feature, toggle the F/S off by tapping the “Manual” button, this will turn the F/S LED red.

C) Setup button

C-1) PSI, Voltage, and RPM Display - Short press- Tap this button and the screen will display “PSI”, Voltage (“V”) and “RPM”. The corresponding LED of each function will be on when it is displayed.

C-2) Pressure Loss Protection Setup - Long press- Holding this button down when “PSI” is displayed will enter the “Pressure Loss Protection Setup”. This feature will deploy the landing gear in the event of a leak. Increase the feature by 10PSI with each press, max. is 60PSI. Hold the “SETUP” button down and the setting will be saved. Press the “SETUP” button and “V” will be displayed.

C-3) Gear Door Time Lapse Setup - Long press- Holding this button when “V” is displayed will enter the “gear door time-lapse setup”. Increase 1 second with each press, max setting is 15s.

Function: The gear door time lapse setting indicates to the nose wheel steering servo when to be on or off. When gear is up, the nose wheel steering servo is not active. When gear is down, nose wheel steering servo is active.

This procedure is on a time-lapse. The lapsed time is N-3 seconds. N is lapsed time of the gear door. When it's set up at 8 seconds, the recovery time of nose wheel is 8-3=5 seconds. Control recovers in 5 seconds after sending gear down command. Change the time-lapse of nose wheel by changing time-lapse of gear door. Hold the “SETUP” button down and the setting will be saved. Press the “SETUP” button and “RPM” will be displayed.

C-4) Landing Gear Failsafe (F/S) Setup - Long press this button when “RPM” is displayed to enter the height setting for the Landing Gear Failsafe (F/S) setup. If the airplane is below your height setting, the landing gear will not retract to protect your airplane from an accidental retract of the landing gear. The minimum setting is “002” which means 2 meters, max is “010” which means 10 meters.

Hold the “SETUP” button down to save the setting and exit the menu or it will automatically exit in 5 seconds.

LED's Definition

Blue LED: Corresponds to the landing gear.

ON: Landing gear is deployed.

OFF: Landing gear is retracted.

FLASHING: Sequencer is not receiving transmitter signal or the gear switch is not in the correct position. Turn on or check the transmitter, make sure switch is in the correct position to eliminate the flashing.

IMPORTANT! : When the blue LED is on, make sure the landing gear is deployed! This is how the controller identifies the status of gear. Failure to do so will result in the landing gear retracting when Pressure Loss Protection is commanded. If the direction of gear down and corresponding gear door is incorrect, reverse it by switching the polarity of the appropriate gear and door 2-wire connections.

Red LED: Corresponds to PSI.

FLASHING: “Pressure Loss Protection” feature has been commanded. The landing gear will deploy automatically; the “Manual” button or transmitter switch will become deactivated and will not work. The pressure will have to be raised to a pressure higher than the previously set value (**Refer to C-2**). Resetting the value to “000” will eliminate the flashing.

Green LED: corresponds to Landing gear Fail-Safe (F/S).

When this function is on (Green LED), height protection is activated. If the airplane is sitting ground level while a retracting command is sent from transmitter, the controller will not execute this command until the plane flies up to an altitude of set value. If you need to test your landing gear on the ground, short press the manual button **(Refer to B-2)** to turn this function off. When the LED is red, the function is deactivated.)

Servo Wire Ports

Nose OUT- Steering servo connects to this port.

Nose IN- Connects to the steering channel of your receiver.

Air brake- Air brake outlets: Not used

Brake-Landing gear brakes: Connects to the brake channel of your receiver.

Light-Light control outlets- Connects to the light channel of your receiver.

Gear- Connects to the Gear channel of your receiver.

NOTE: A 3-step switch needs to be defined for the lights. First step- navigation lights on; second step-gear lights on. Third step is all lights off.

LED outlets

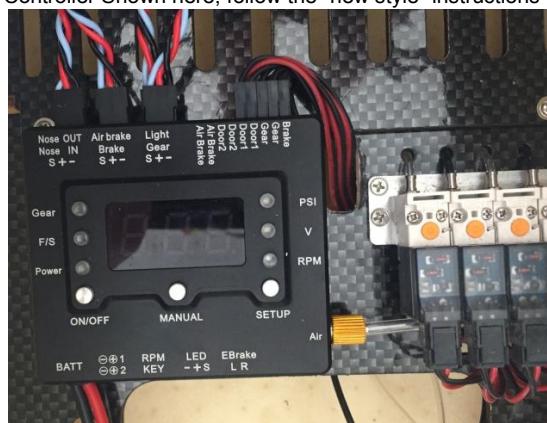
Both are for the light system.

Light Connections (New Style Controller-July 2015)

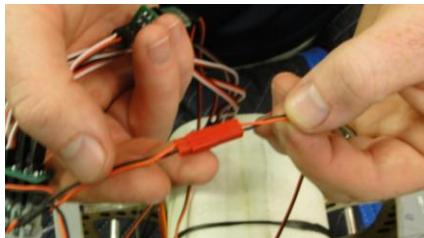
If your Model has the Central Controller Shown here, follow the "new style" instructions accordingly. A schematic of the light wiring and Light Control Modules is included.

Note: The lights receive power through all leads from the RX to the Central Controller (Nose IN, Brake, Light, Gear)

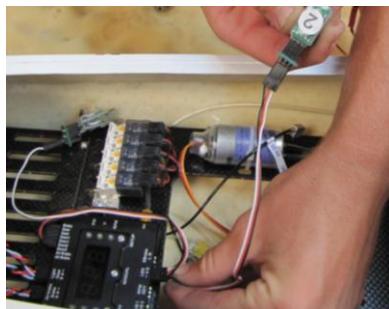
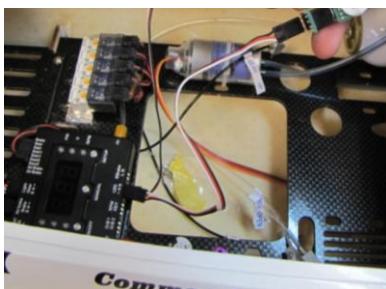
On older versions, an optional battery can supply power through the “BATT” lead for testing.



NOTE: Verify the polarity of all connections before applying power.

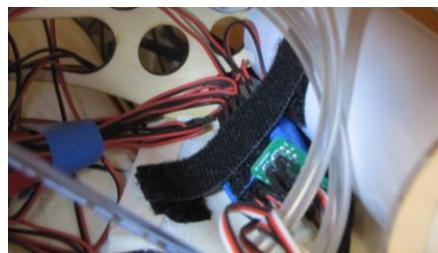


- Connect the Red connector for the nose gear landing light. All 3 landing lights should be connected to the “tri-harness”.



- There are (2) three wire servo leads coming off of the light controller modules, plug the servo leads into the “LED” port in the central controller as shown. Make sure the polarity is correct. Both the top and bottom ports are sending out the same signal and voltage.

- The Light Modules are all connected; they have been bundled with masking tape and secured with Velcro.



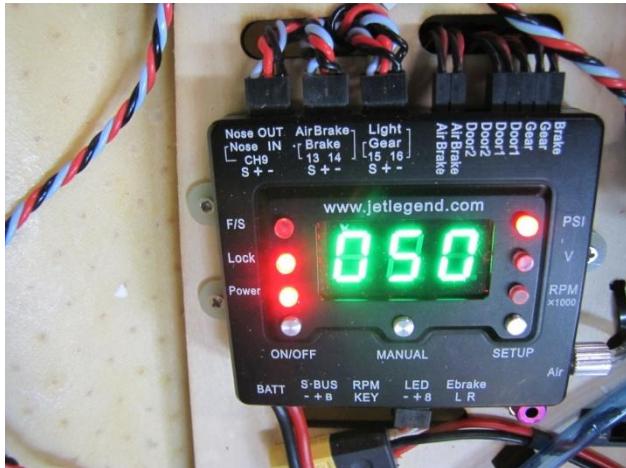
- The “GEAR” wire coming from the main controller goes to your Receivers gear channel. The “LED” wire coming from the main controller goes to your Receivers channel of your choice, this will be the channel to control your lights. The “LED” channel coming from the RX has three positions, Off, NAV Only, and NAV and Landing lights.



LED Afterburner Ring

The Factory LED Afterburner Ring is controlled by the Central Controller.

- Connect a Y Harness to your receiver and Throttle cable, and then a Male to Male servo lead to the Y harness and RPM outlet on the Central Controller.



Pneumatic Pressure

Fill the pneumatic system to 90 PSI on the central controller read out. For taxi out, use the brakes sparingly. We prefer to use them only in a full on or off position activated by a slide switch.

The automatic pulsing brake feature is deactivated with the gear up. Upon landing touchdown, move the transmitter control to the mid position and the brakes will be applied with an automatic pulsing action that will bring the model to a smooth stop.

After engine shutdown, check the pressure remaining and adjust braking techniques accordingly.

Example Light Schematic

