



midSport Pro Lighting System
Instruction Manual

www.sparkhobby.com * (864) 326-5613

Product Description

This is a new microcontroller based lighting system developed for multiple remote controlled aircraft applications. **Please read all instructions and make all LED connections prior to powering up your new lighting system.** The LEDs used are extremely bright. Please use caution when viewing the LEDs.

Technical Data

Dimension	3.25" x 2.25" x 0.75"
Input Power	7.4V to 14.8V
Stand by Current	50mA
Signal Input	Standard 1500mS Rx
Output	2xRed Beacon, 1xWhite Beacon, 1xGreen Nav/ACL, 1xRed Nav/ACL, 1x or 2xWhite Spot Light

Connections, Locations and Programming

Follow the polarity markings as per the label and board markings. Receiver control is intended via a three position switch. Different modes of operation will be described in each lighting section.

The red beacon lights are intended to be placed on the top and bottom of the fuselage. The white beacon is intended to be used as a tail marker. These locations are suggestions, and the modeler can choose ultimately where to install the beacons. With the three position switch at the 100% level, the beacons will "single" flash and no other lights will be active. Adjusting the EPA (End Point Adjustment) of this channel to 75%, the beacons will "double" flash and no other lights will be active.

The nav and ACL lights are intended to be installed on the aircraft's wingtips. For a more scale layout, the white strobe (or the end of the board with the wires) will be oriented toward the trailing edge of the wing. The green light will be installed on the right tip. The green nav/ACL light **MUST** be connected to the ACL_R port on the controller. The red light will be installed on the left tip. The red nav/ACL

light MUST be connected to the ACL_L port on the controller. Failure to do so could cause the nav lights to not illuminate and could result in damage to the LEDs. With the three position switch in the middle position, the nav lights will turn on in a constant state while the ACL lights will begin to strobe. The beacon lights will continue to pulse.

The spot lights can be installed in any landing light location. If your system uses two spot lights, connect them to the Spot ports on the control module. If your system uses one spot light, connect it to either Spot port on the controller. Connect the spot jumper to the other Spot port. If you choose to install a third spot light, connect two of the spot lights with a standard Y-harness and then connect them to one of the Spot ports. Connect the other spot light to the remaining Spot port. With the three position switch in the minimum position, the spot light(s) will be illuminated. The beacon lights will continue to flash and the ACL lights will continue to strobe. The nav lights will begin to strobe in this condition. This indicates that the aircraft is on approach.

Use the supplied male-to-male extension to connect your receiver to the control module.

You can use any standard three pin servo cable to connect the battery to the controller. You may also elect to solder your own battery connection to the controller. There are two solder pads on either side of the three pin power connection. Please pay close attention to the polarity of the power input. The system will turn off the LEDs when there is not a receiver signal present. The standby current draw is approximately 50mA. You can elect to not disconnect power between flights, but be sure to disconnect the battery after you have finished for the day. Failure to do so will completely drain the battery.

Lens and LED Mounting

Cut out the three beacon lenses from the supplied vacuum formed sheet. There are three different choices for the wingtip lenses to better match your aircraft. You may use a variety of adhesives to glue the LEDs and lenses to the aircraft surface. Do not use CA glues (ZAP, Super Glue, etc) or any sealants that have

vinegar smell to them. These types of adhesives will degrade the LEDs at an accelerated rate and will void your warranty.

Control Module Mounting

The control module has a paper enclosure used to protect the electronics on the board. It is not advised to use any strapping methods over this as it could crush the enclosure. The preferred method for mounting is to use a piece of industrial Velcro. This method could be used as well as along with many adhesives or sealants to affix the control module in place.

Battery Recommendations

The control module will accommodate input voltages from 7.4V to 14.8V. Any battery chemistry will work with the system in this voltage range. A 3S 2200 mAh LiPo was used to determine the battery drain in the following scenario:

2 minutes - beacons flashing

8 minutes - beacons flashing, nav lights on and ACLs flashing

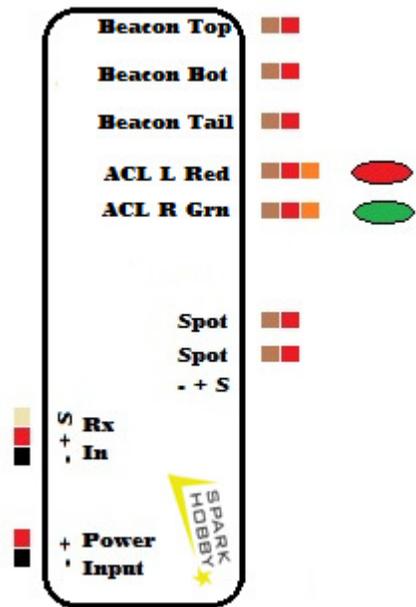
2 minutes - beacons flashing, nav lights flashing, ACLs flashing and spots on

1 minute - beacons flashing, nav lights on and ACLs flashing

1 minute - beacons flashing

The battery drain was only 145 mAh. This was one test, so it is recommended that you perform a similar test after flying to see your typical battery drain.

Connection Diagram



Please note polarity on all connections. On all of the LED connections, the ground pin "-" is positioned inboard. The red navigation light **MUST** be connected to the ACL_L port. The green navigation light **MUST** be connected to the ACL_R port. Use the included male-to-male extension to connect the control module to the receiver. Use a standard three pin servo extension to connect the battery to the control module. You may also solder your own power connection to the pads on either side of the power input connector.

Troubleshooting

The system is fairly simple, so there are only a few possible causes for the system to not operate as expected.

Symptom	Cause	Solution
Lights are not on	Power issue	Check polarity of the power connector
		Battery voltage is below 7.4V
Single light not turning on	Connection issue	Check polarity of the receiver cable
		Check polarity of the connection at the control module

If you continue to have issues, please feel free to contact us at techsupport@sparkhobby.com or call us at 864-326-5613.

Warranty/Liability

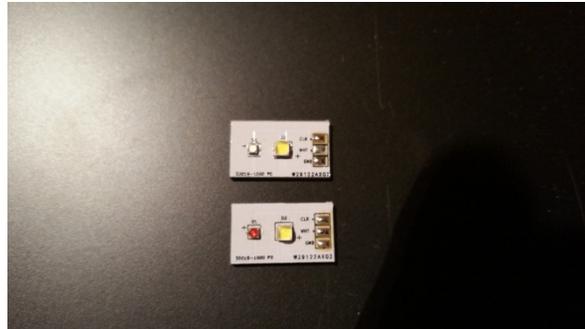
We intend to provide the best product to you possible. Spark Hobby therefore warrants all products for 12 months from date of purchase to be free from defects in materials and workmanship. Any issues will be addressed by Spark Hobby. The company may choose to replace the defective material or perform a repair to correct the issue. Any replacements or repairs do not extend the original warranty.

This warranty does not apply to any misuse, unintended operation or severe wear of the system. We as the manufacturer have no influence to ensure the manual was followed with regards to proper installation, use, operation and maintenance. Therefore, Spark Hobby is not responsible for any costs, loss or damage through the use, operation or connections of the lighting system.

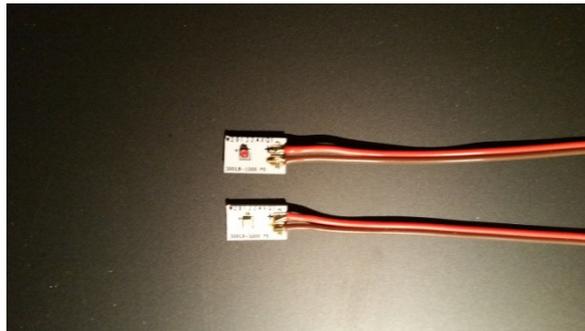
Spark Hobby reserves the right to change this document with no prior notice. The company assumes no responsibility for any mistakes contained in this document or any damages incurred therein.

Component Pictures

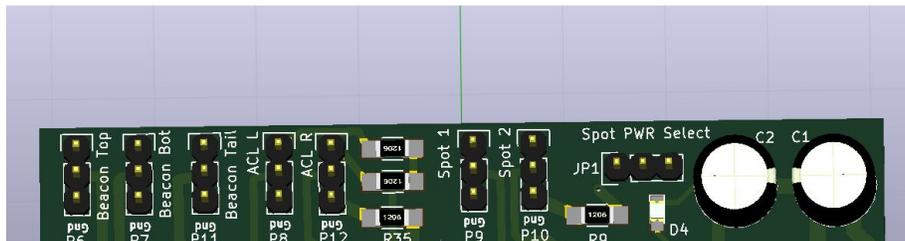
ACL LEDs (green LED is on top):



Beacon LEDs (red LED is on top):



Control Module LED Connections:



Control Module Rx and Power Connections:

