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| Module | 5mm Infrared Emitter LED |
| Inputs | - voltage range from typical to max (1.45 - 1.65) with current I = 20mA  - max current < 1A |
| Outputs | - light at 850nm |
| Functionality | - Generates constant signal for the photo diode receiver interpret |

The IR LED generates a photon light with a unique wavelength in the infrared range of the spectrum. It is going to be always on when the system is running used as an indicator for calculating angular velocity. The photodiode receiver can interpret the signal when line of sight wireless connection is made.

done

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| Module | Side look Photodiode Receiver |
| Inputs | - Bandwidth wavelength range (840 - 1100)nm  - Wavelength peak sensitivity = 940nm |
| Outputs | - Open circuit voltage = 0.35V  - Short circuit current = 18uA |
| Functionality | - Sensor used to detect the IR LED signal when |

The photodiode receiver will indicate that it had received the signal from the IR LED by generating a small current. With this indicator current the time interval between two distinct indications is measured and angular velocity can be calculated.

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| Module | Heavy Duty On/Off switch |
| Inputs | - max current DC < 21A  - max voltage DC < 14V  - physically flipping the switch |
| Outputs | - Turns into a short-circuit when on  - Turns into an open-circuit when off |
| Functionality | - Turns on the motor |

A heavy duty on/off switch is needed to control the motor due to the high level of current that will be passing through the switch when it is on and the high voltage difference when it is off.

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| Module | - Medium Duty On/Off switch |
| Inputs | - max current DC < 21A  - max voltage DC < 14V  - physically flipping the switch |
| Outputs | - Turns into a short-circuit when on  - Turns into an open-circuit when off |
| Functionality | - Turns on the microcontroller |

The rotating light wand will be powered by a couple low voltage batteries so a basic on/off switch would work fine.

<http://www.delcity.net/store/Medium!duty-Toggle-Switches-!-Flat-Terminal/p_789134>

<http://www.everlight.com/index.php?option=com_k2&view=itemlist&task=category&id=259:infrared-led-and-silicon-detector&Itemid=219&lang=en>

<http://www.delcity.net/store/Heavy!duty-Toggle-Switches-!-Flat-Terminal/p_788975.h_788978.t_1>