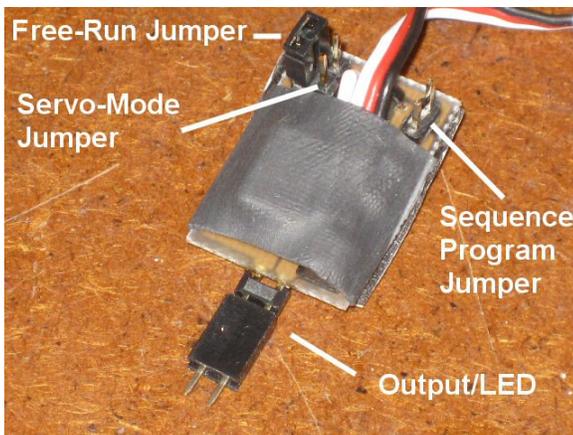


# "MINI-BEACON"

## Rotating Beacon Simulator

### USERS' MANUAL



The Mini-Beacon controller has a servo cable which can either be plugged into a spare channel on your Radio Control receiver (Rx) or it can simply be connected to a 5-6 volt power source. Opposite of this servo cable lies a two pin connector (inline with board) that is used to connect your beacon LED. The onboard output driver/transistor is capable of providing around 600mA to a connected load (same output voltage as input). A typical 5mm LED draws 20mA while a 1 watt Luxeon emitter draws an

average of 350mA. 3 sets of jumpers/pins located on the Mini-Beacon are used to either set the flash pattern (1 of 12), set the servo control function, or allow the controller to free-run. First thing you will obviously need to do is connect an LED to the Beacon output pins (see picture above, observe polarity). Be sure to use the proper series current limiting resistor inline (series) with one of the LED leads (typically 56-120 ohms). (If for some reason you do not see the LED glowing when connected & powered, try reversing the leads)

There are two ways you can operate the Mini-Beacon controller. You can either set it up so it's in "free-running" mode (apply power, and it flashes continuously until power is removed), or you can connect it up to a spare R/C receiver servo channel and control (on/off) the flashing pattern of the beacon using a stick, slider or switch on your transmitter (aka Servo Control Mode). The Mini-Beacon has two jumpers that allow you to set these two functions (labeled "Servo Jumper" and "Free-Run" on the picture above. Only one of these jumpers should be connected at one time.

## **Servo Control Mode**

If you want to be able to turn the beacon effect on & off using your R/C gear, you will need to do the following two things:

- 1) Disconnect jumpers attached to the pins labeled "Free Run" if connected.
- 2) Apply a push-on jumper across the pins labeled "Servo Control"

When you plug the Mini-Beacon into your receiver, not only does it get its power, but it also reads the servo signal output signal from the receiver's servo channel and either turns on or off the beacon effect. The PIC is pre-programmed to switch on at roughly 60%. If you use a switch to control this function, you might have to reverse that channel's servo function on your transmitter in order to get it to work to your satisfaction (i.e. configure on/off position of switch). Also, be sure the R/C channel you are using has its "end-points" set to at least 100% on the transmitter.

## **Free-Running Mode**

NOTE: The Mini-Beacon when delivered is set for free-running mode, pattern #1)

If you want to allow the Mini-Beacon to run all the time when ever powered up, you need to do two things (referring to picture above):

- 1) Disconnect jumpers attached to the pins labeled "Servo Jumper" if connected.
- 2) Apply a push-on jumper across the pins labeled "Free-Run"

Now, every time you power up the Mini-Beacon, it will begin flashing, and continue so as long as power is applied. You can still plug the Mini-Beacon into your receiver for power, but the servo control function will not work.

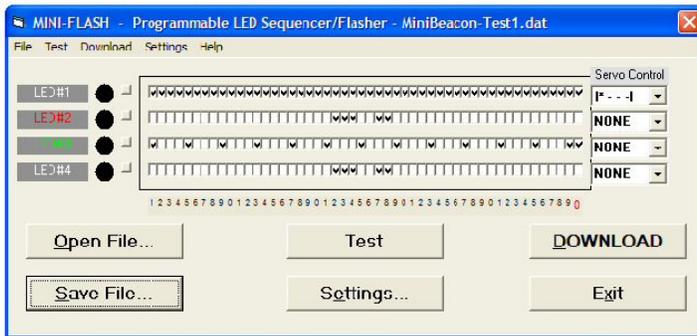


### **Controlling the Mini-Beacon with your "MINI-FLASH" !**

You also have the cool option of controlling (on/off) your Mini-Beacon using a channel on your Mini-Flash. This is accomplished by first setting up the Mini-Beacon so it's in free "running mode" (no jumper across "Servo Jumper", and a jumper across "Free Run" pins). You can now take the Mini-Beacon servo/power lead and plug it directly into a channel on your "Mini-Flash" controller in

order to receive power when the Mini-Flash channel is active. Be certain that you plug it on correctly, the black lead should connect to the top pin on the Mini-Flash,

while the red lead connects to the bottom pin on the Mini-Flash. The white lead on the Mini-Beacon should connect to nothing (hangs down a little below Mini-Flash board).



(Click on picture to the left for an enlargement of what the Mini-Flash programming software would look like to control the Mini-Beacon).

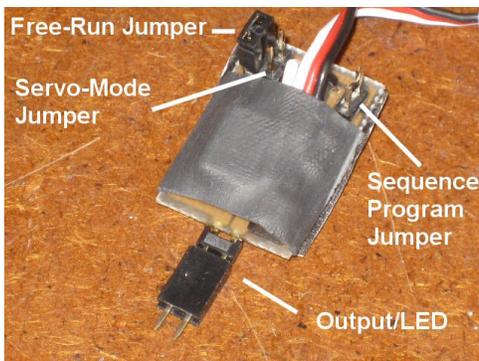
Now, set up a Mini-Flash channel (#1 in this example) such that all 50 events have a checkmark in every location. Set the Servo Control for channel #1 such that it is only ON for 0-1/4 throttle ("\*---"). Now, when the Mini-Flash

channel is High or ON (only between 0 and 1/4 throttle), it applies power to the free-running Mini-Beacon, allowing it to flash its preset pattern. When the Mini-Flash channel turns off, so does the Mini-Beacon. You can then set up the Mini-Flash such that the channel events (all 50) are selected or check-marked (left to right), and then you set the servo control for the stick position you want for that channel to activate. If you are using a switch on your transmitter to control this channel the Mini-Beacon is plugged into, simply set the servo control to "\*\*\*--". Cool or what?

## **Programming & Operating the "Mini-Beacon"...**

The "Mini-Beacon" can be programmed to display 1 of 12 different flashing sequence patterns stored on the PIC. To change the pattern, perform the following steps:

1) Apply power to the Mini-Beacon and be sure it is flashing its programmed pattern.



2) While the pattern is flashing, continuously short the programming jumper (two pins shown towards the top/right on drawing) with either the supplied jumper or a piece of conductive metal (coin, paper clip, screw/nail, etc...)

3) Soon after you short these pins together, you will see the LED glow constantly bright. While it is glowing steadily, remove the short/jumper and you will see the controller quickly flash a certain number of time before continuing its rotating beacon

effect. The number of flashes seen here indicates the pattern number it is now using and displaying. The 12 different patterns are shown here:

- 1) Slow Ramp-up, Flash, Slow Ramp-down
- 2) Slow Ramp-up, Double-Flash, Slow Ramp-down
- 3) Slow Ramp-up, Triple Flash, Slow Ramp-down
- 4) Med. Ramp-up, Flash, Med Ramp-down
- 5) Med. Ramp-up, Double-Flash, Med. Ramp-down
- 6) Med. Ramp-up, Triple Flash, Med. Ramp-down
- 7) Moderate Ramp-up, Flash, Moderate Ramp-down
- 8) Moderate Ramp-up, Double-Flash, Moderate Ramp-down
- 9) Moderate Ramp-up, Triple Flash, Moderate Ramp-down
- 10) Fast Ramp-up, Flash, Fast Ramp-down
- 11) Fast Ramp-up, Double-Flash, Fast Ramp-down
- 12) Fast Ramp-up, Triple Flash, Fast Ramp-down

4) Continue applying and removing the jumper (following steps 2-3) until you selected the pattern you like. When you are satisfied, you are done! Every time you now power up the controller, it will use this pattern you have selected.

**NOTE:** Recent Mini-Beacons I have sold also have another hidden function that allows you to quickly reset the pattern to Pattern #1, rather than having to cycle through all the patterns using the jumper/power numerous times. With the Mini-Beacon un-powered, connect the programming jumper and then power up the Mini-Beacon. You will see the LED glow steady and will do so until you remove power, so remove power. Remove the jumper and re-power the Mini-Beacon. It should now be set to program #1, regardless of its previous pattern setting.

**[A video of these patterns can be seen by clicking HERE!](http://www.diyrc.com/Beacon-Sim2.wmv)**

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