Stumblor
PINBALL

LOLLY WIFI CONFIGURATION

>= 1.7.14

Thanks for your support! ❤️

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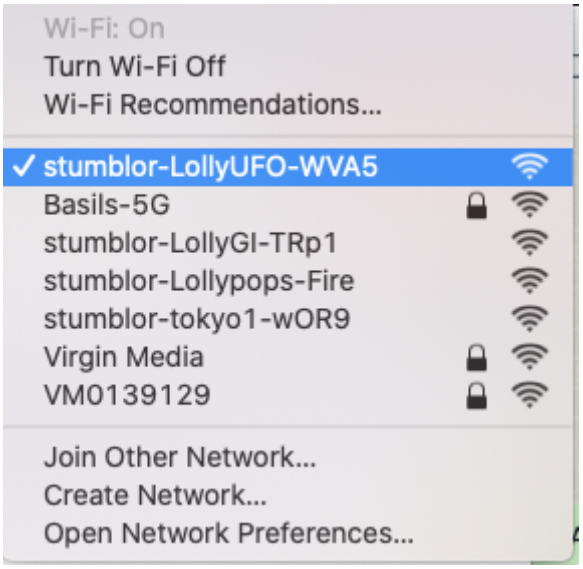
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Wifi Configuration

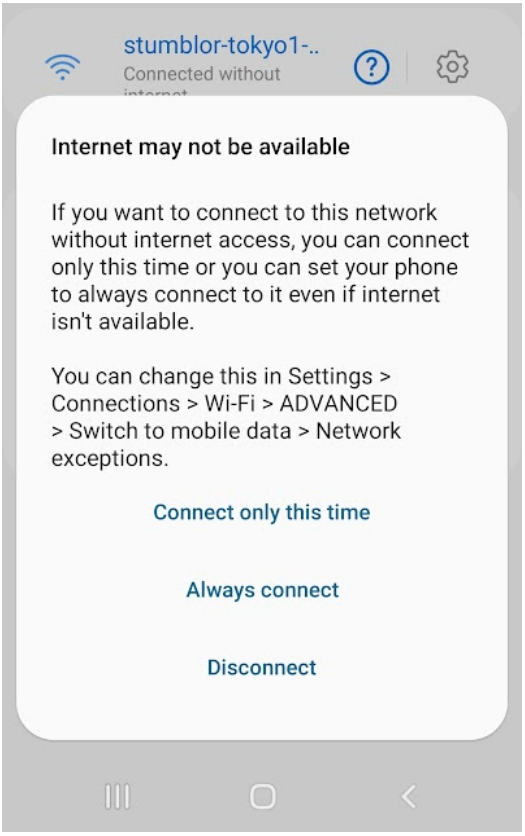
All of our mods come with the ability to change almost every aspect of how they look and behave through a web based configuration app.

*When using the WiFi configuration, please first **put your game in service mode**. In game triggers can interfere, especially when updating firmware.*

To access it, first connect to the local WIFI network created by the mod, which will have a name like **stumblor-{ModName}-XXXX**. To do this, use a WIFI enabled device (phone, laptop, mac or PC) and search for the WIFI network and connect to it (no password is required).

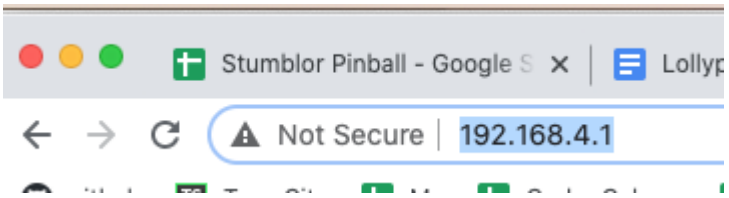


Wait until the WiFi connects. If you are on a phone, and see the message below, make sure to click ‘Connect only this time’ or ‘Always connect’ otherwise it will not connect.

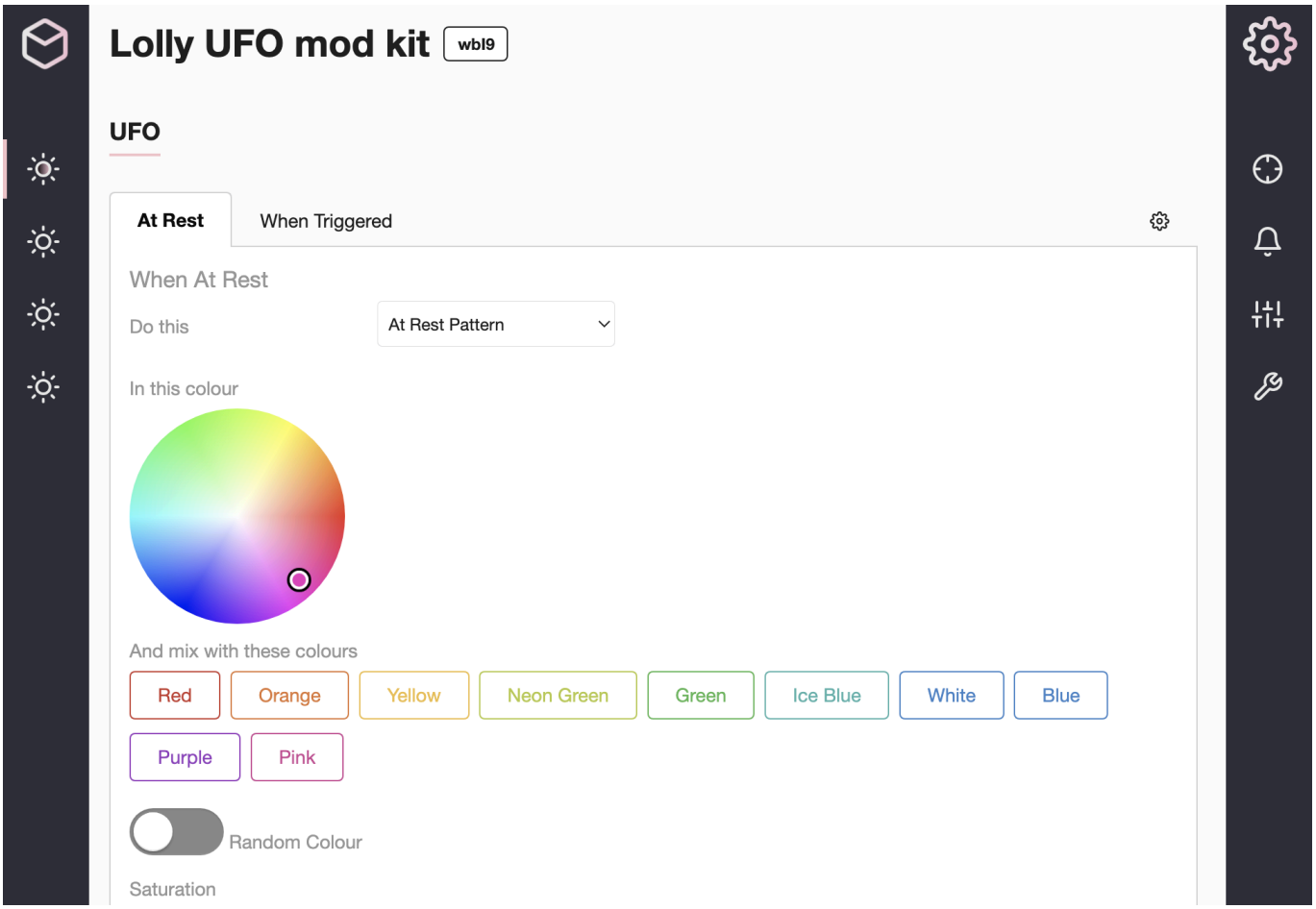


*If using a phone, make sure you have **Mobile Data** turned on*

Open a browser such as Google Chrome, and in the address bar enter **192.168.4.1**



This will open the Lolly control panel, which allows you to configure the colours and the patterns shown on the mod. Below is the screen for the **Lolly UFO mod kit**, however all mods will have a similar interface.



There are two navigation menus, one on the left, and one on the right, which can be accessed either by clicking the corresponding 'box' and 'gear' icons (mobile) or hovering over that section (desktop).

LEFT HAND NAVIGATION

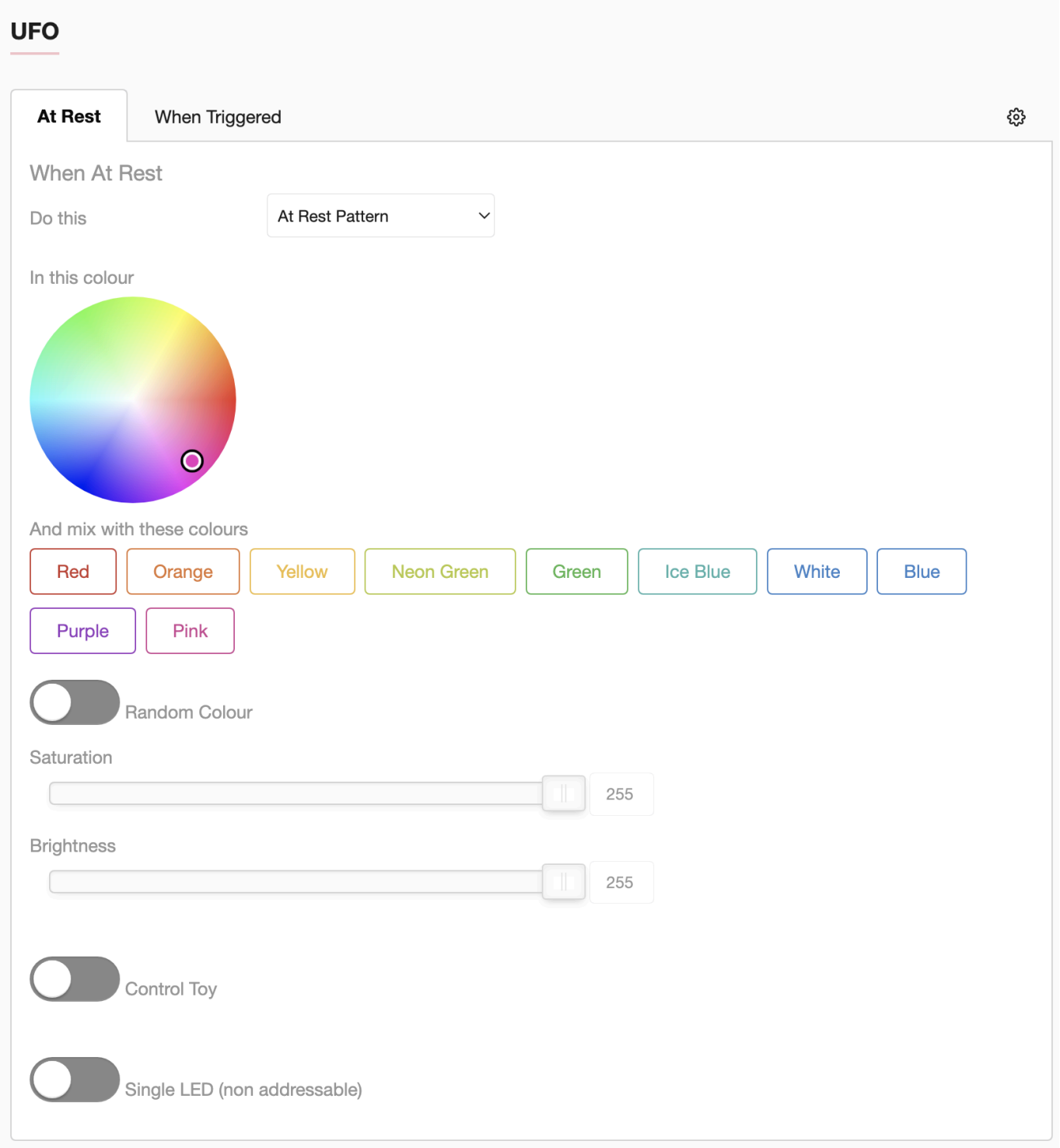
Lists all of the different LED outputs available for this mod (for example, **UFO, R-Sling, L-Sling, Backbox** etc). Clicking on an LED output will open its configuration screen.

RIGHT HAND NAVIGATION

Sensors	Modify which sensors trigger which LEDs
Events	*(not currently used)*
Patterns	Modify the LED patterns
Settings	General settings

LEDs

When an LED output is selected, the following screen is shown.



There are three tabs that can be selected to access the various configuration options.

At Rest	What an LED does when it is at rest (untriggered)
When Triggered	What an LED does when it is triggered
	Set which physical outputs the LED should be sent to

 All settings will be saved immediately when changed.

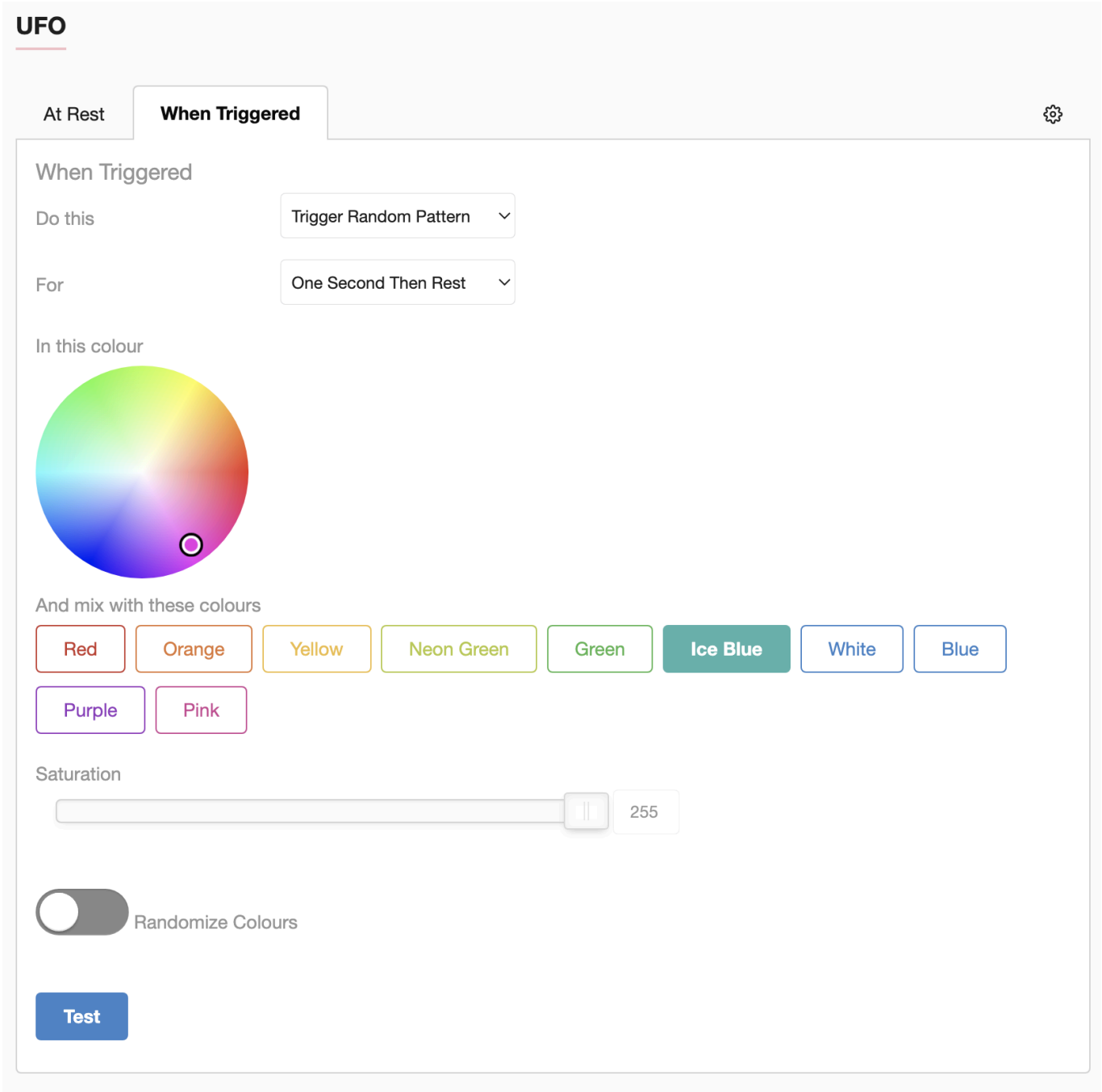
At Rest

This section is used to control the colour of each LED group when it is ‘at rest’ (ie, not being triggered). Different mods will have different defaults set - some will pulse, some will be off, some might be playing a pattern.

Do this	The pattern to apply when this LED group is at rest (see ***Patterns***).
In this colour	A colour wheel to select the base colour the patterns should use (please note that some patterns like ‘glitch’ and ‘pulse’ only use a single colour).
And mix with these colours	The secondary colour set to mix with the base colour, in the case of patterns that use the **RGB** property.
Random Colour	Whether the apply the colour mix randomly
Saturation	How strongly to apply the colour mix
Brightness	Lower the brightness when an LED is at rest
Control Toy	Using this tickbox, the sensor and LED output will act as an ON/OFF switch for an external toy. To use this feature, you will need to use a **LollyControl** board attached to the LED output.
Single LED	(not used)

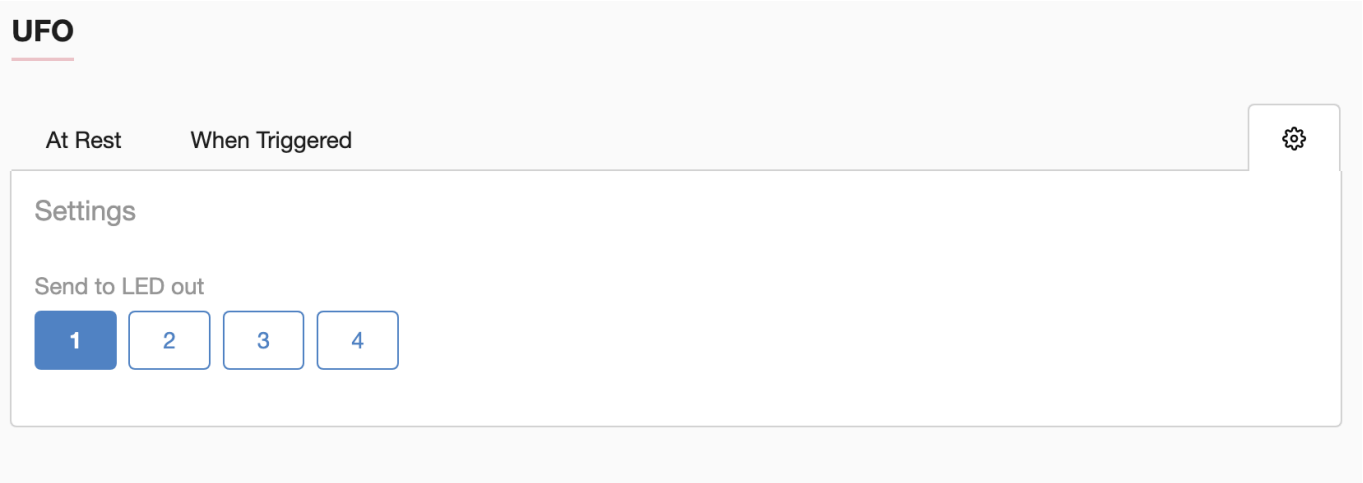
When Triggered

This section is used to control the colour of each LED when it has been triggered by a sensor.



This section contains the same properties as ‘At Rest’ with the addition of a **Test** button which can be used to trigger the LED without requiring the sensor.

LED Settings

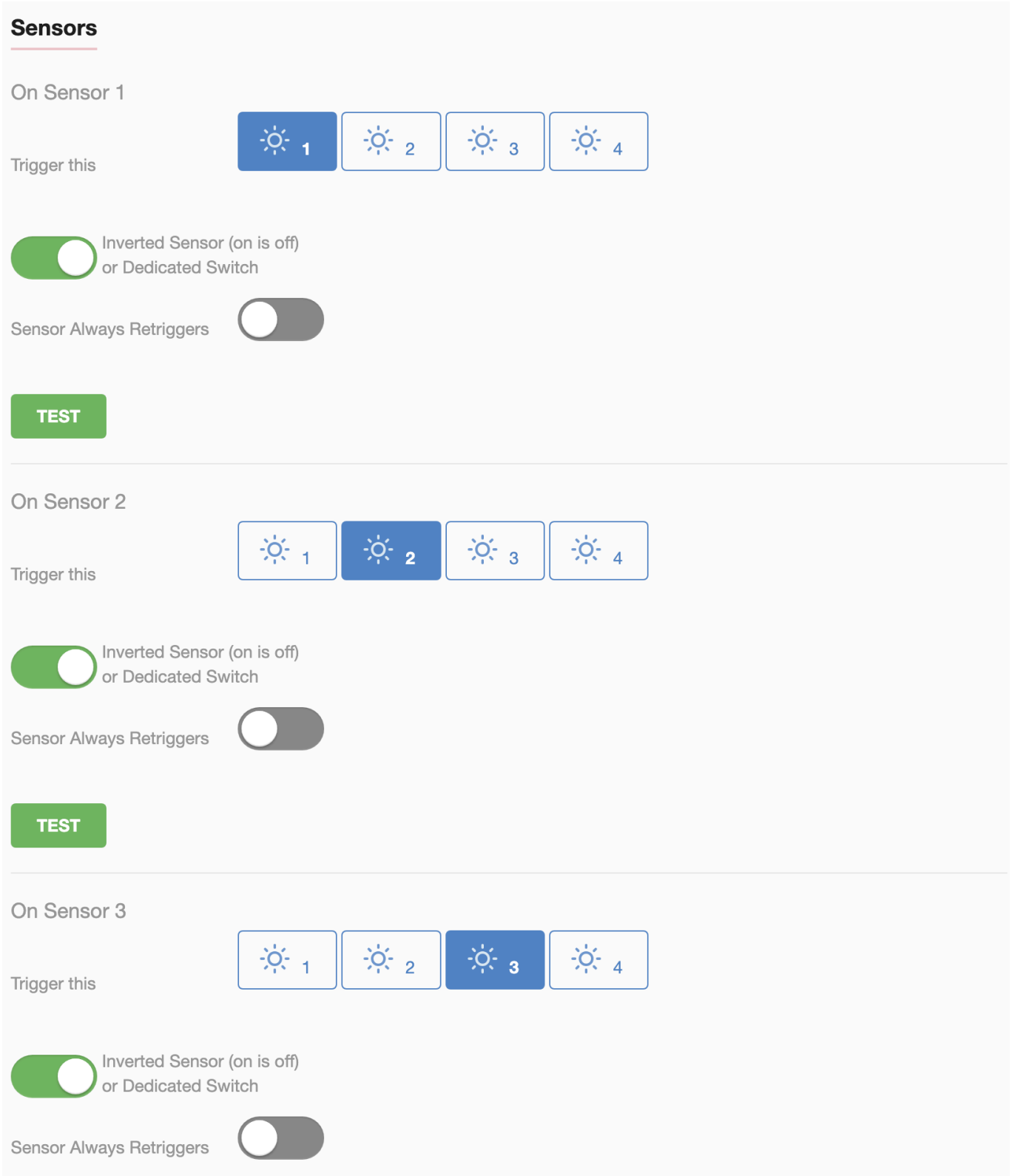


This page allows you to control which physical output an LED is sent to. Using this screen, a single LED can be sent to multiple outputs, or multiple LEDs to a single output.

Send to LED out	Which physical output to send the LED to 1 = J6 2 = J7 3 = J8 4 = J9

Sensors

This section controls the the sensors, which LEDs they trigger, and how the sensor behaves.



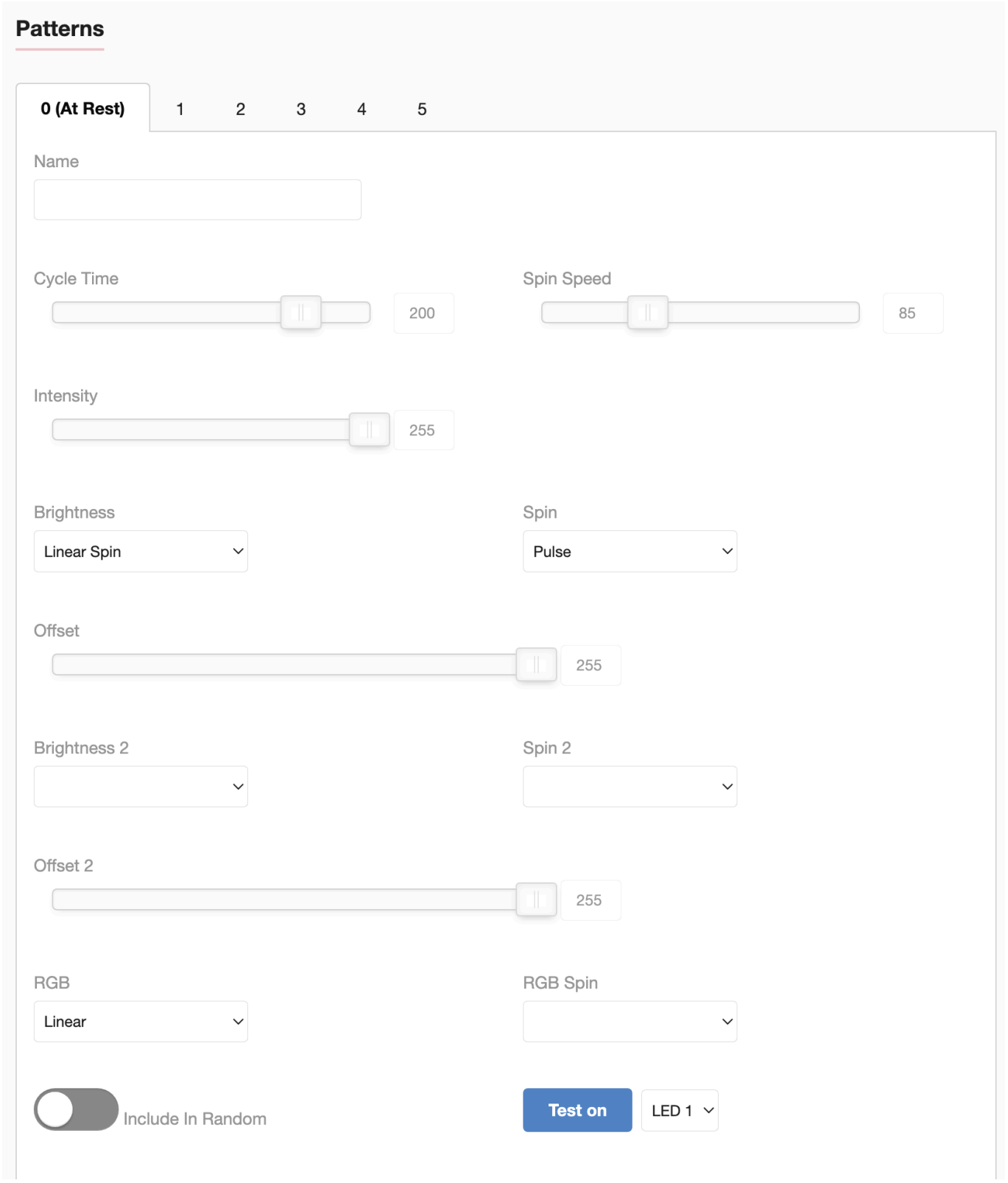
Trigger this	Which LED(s) to trigger when this sensor is activated. This is a matrix - Multiple LEDs can be triggered by one sensor, and multiple sensors can trigger one LEDs.
Inverted Sensor	If you are monitoring a dedicated switch (such as a flipper switch on WPC games, or ANY Spike switch) the sensor should be set to INVERTED.
Sensor Always Retriggers	By default, if an LED is already triggered and the pattern doesn't need to be changed (ie random pattern), the pattern will not be retriggered. This setting overrides that, and resets the pattern to its start position again.

Events

Not currently used.

Patterns

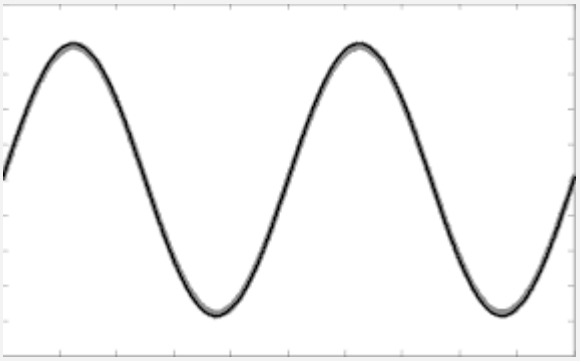
This section is used to alter the patterns that are shown on the LEDs. Each pattern can be selected by clicking on the tabs, with the first pattern being referred to as the ‘At Rest’ pattern, however this is simply a naming convention and can be applied to triggered events also.



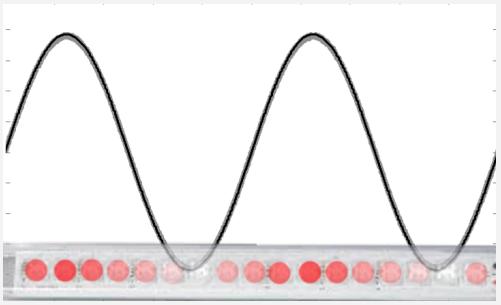
Name	Give the pattern a descriptive name
Cycle time	How long each pattern takes to repeat itself (higher values = longer patterns). **For some patterns, this slider might be renamed to control other values.**
Spin Speed	How quickly time is applied to the spin function (higher values = faster spin). **For some patterns, this slider might be renamed to control other values.**
Brightness	The geometric equation for the pattern. Special patterns such as ‘Fire’ or ‘Glitch’ can also be selected from here.
Spin	The geometric equation to use for spin
Offset	The base offset used for the first spin function.
Brightness2	An additional brightness equation. Used to create competing waveforms to multiply the brightness effect.
Spin2	An additional spin equation. Used to create competing waveforms to multiply the spin effect.
Offset2	The base offset used for the second spin function. This setting can be used to ensure both Brightness functions start from different positions.
RGB	The geometric equation to use for colours. For example, if multiple colours were selected, they would be mixed and applied according to the location on the waveform. Usually this would follow the brightness function (so that colours are applied as per brightness) but doesn’t have to.
RGBSpin	The geometric equation to use for colour movement. Again, this would generally be applied according to spin, but doesn’t have to.
Include in random	How strongly to apply the pattern
Random Settings	Randomise all the pattern settings to find some interesting combinations
Intensity	If ‘random pattern’ is selected for the LED group, this tickbox indicates whether to include this pattern in the the random selection
Test On	Clicking this will test the pattern on the LED group selected in the dropdown.

A Nerd's Guide to Patterns

Patterns are created using geometric waveforms. A simple example of this is the sine wave, which is created with the equation y = sin(x)



If this wave was being used to control the brightness, an LED that was at the top of the wave would be at full brightness, whereas an LED at the bottom of the wave would be off. This allows us to have a nice and incremental control over LED fading.



Waves are also used to control movement, where the wave is applied to time. For example, if the same kind of wave was used on the property 'spin', and the time was at the top of the wave, everything would be moving to the left at full speed. When time was at the bottom of the wave, everything would be moving right at full speed.

By applying different types of waves, and having the ability to 'sidechain' wave values (have one wave's values affect another) we can end up with all kinds of different effects and patterns.

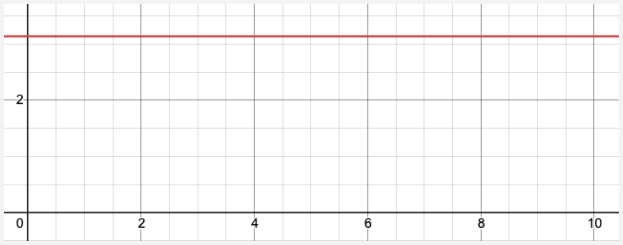
Testing

Testing can be achieved in two ways.

Trigger Testing	(When Triggered Tab) use this button to test the effect a trigger will have on an LED group
Pattern Testing	Plays the pattern continuously on the LED group select ed in the dropdown, which assists in testing new pattern sequences. Click the button again to stop.

Background on Brightness Waveforms

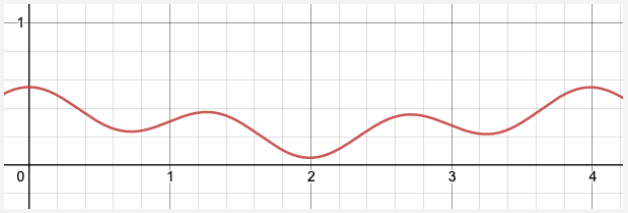
Linear



LinearSpin

Like **Linear** but sidechained with spin

Crazy



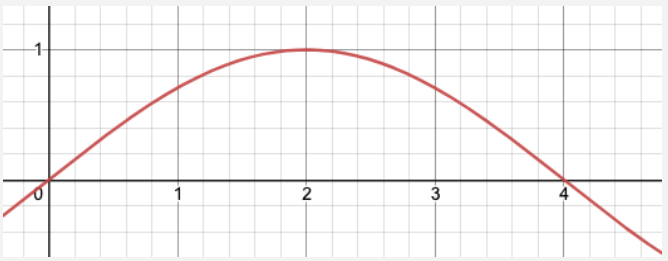
Sine



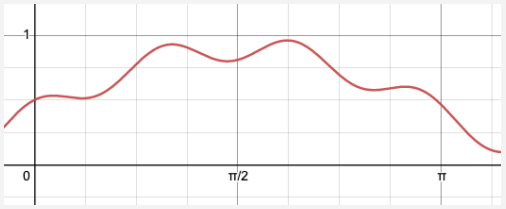
Single



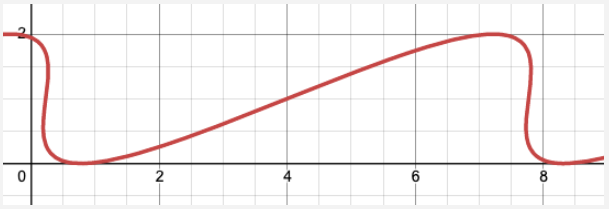
Narrow



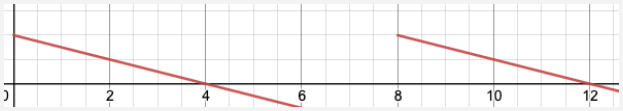
Wobble



Tilted

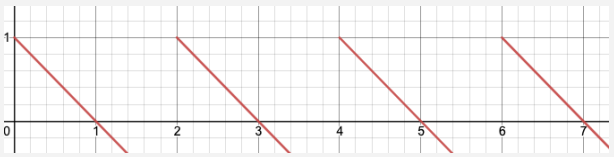
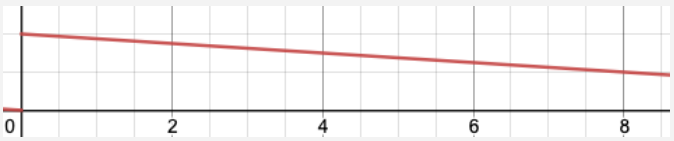


TiltedShort

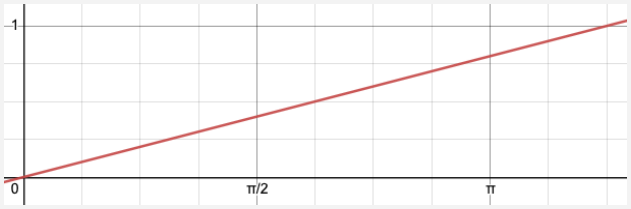
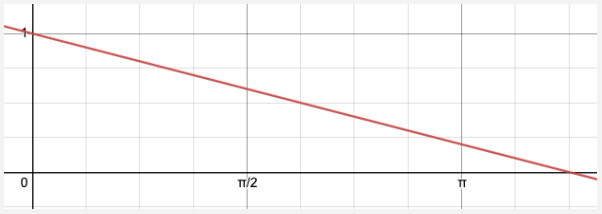
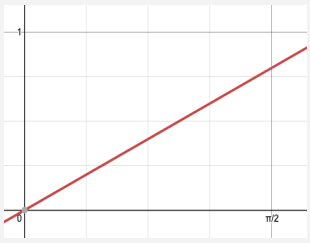
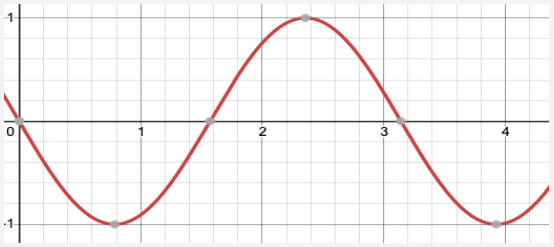


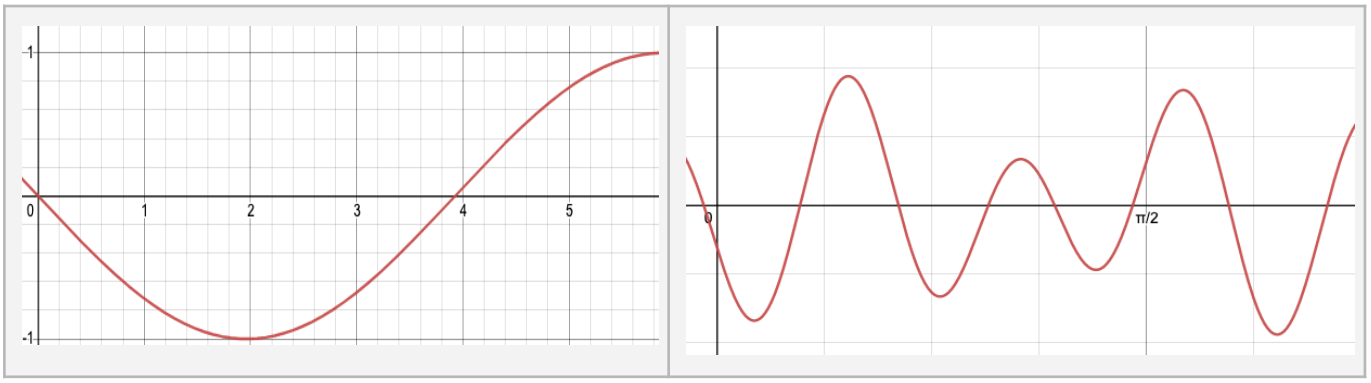
TiltedShortSpin

Like **TiltedShort**, but sidechained to spin

TiltedShortSpinQuad  Also sidechained to spin	**TiltedWide** 
SineChanger Like **Sine** but sidechained to spin	**Quad** 
Fire A custom coded pattern to display a fire effect.	**Glitch** A custom coded pattern to display a glitch effect like a failing neon sign.

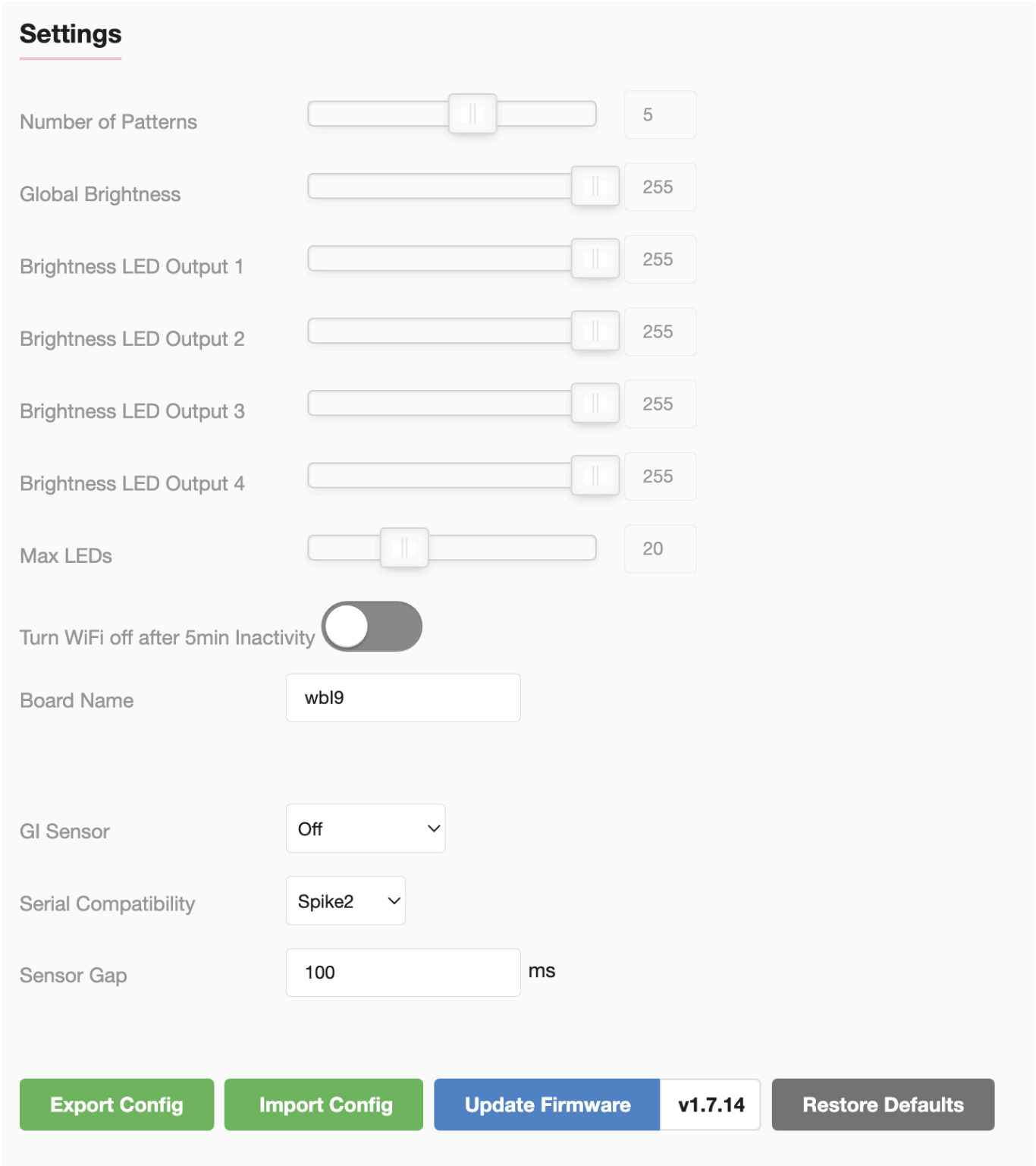
Background on Spin Waveforms

MoveLeft 	**MoveRight** 
Move Left Fast 	**Move Right Fast** 
Pulse 	**Sine** 
SineSlow	**Wobble**


1
0
1
2
3
4
5
-1
0
π/2

Settings

Control the general settings of the board.



Number of Patterns	The total number of patterns available (max 8 currently)

Global Brightness	Use this to control the overall brightness for all LED groups
Brightness LED Output 1	Control the brightness of LED 1
Brightness LED Output 2	Control the brightness of LED 2
Brightness LED Output 3	Control the brightness of LED 3
Brightness LED Output 4	Control the brightness of LED 4
Max LEDs	The maximum number of LEDs to support in a strip
Turn off after 2min Inactivity	If on, the WIFI access point will turn on for 2 minutes following power on, then will switch off if not connected to after 2 minutes. If off, WiFi will stay on all the time.
Board Name	Modify the name of this control board, which is useful for identifying boards in a multi-board setup.
Advanced Options	Clicking this will open advanced settings, such as those used to detect flashing.
GI Sensor	Specify one of the sensors to be used for GI fading. Also used to turn off GI Fading altogether.
Serial Compatibility	What baud rate to listen to on the RX pin (used for Events).
Sensor Gap	Ignore duplicate sensor triggers under this time threshold.
Export Config	Download the current settings. These files can be used as a backup, but also shared with other Tokyo Neon users.
Import Config	Upload a settings file
Update Firmware	Click this button to upload a new firmware (see section Updating the Firmware).
Restore Defaults	Click this button to return the board to the default factory settings

Updating the Firmware

1. **Enter the service menu** on your machine. This step is critical, as the attract mode triggers can interfere with the update.
2. Ensure the device is still powered (you may need to reclose your coin door, but make sure you are still in the service menu).
3. Connect to the WiFi Access Point of the device, which will look something like **Stumblor-ModName-xxxx**
4. Open your browser and enter **192.168.4.1** in the address bar
5. Navigate to **Settings > Update Firmware**
6. Enter your HOME WiFi details and then click the 'Connect' button. If the Wifi connection fails, try to put the device closer to your router, or if that is not possible, set up a WiFi hotspot on your phone and connect to that instead (if using this method, you will need two devices - one to connect to the board, and one to create the hotspot).



If you are still struggling to connect to WiFi, check that your home access point is running in Dual Band mode (5G/2.4G), or connect to the 2.4G band router access point. The ESP device on the Lolly board is only compatible with 2.4G bands.

7. Wait to see if a firmware update is required.
8. If a new version is found, click 'Download Latest & Install'.
9. Wait for the download & installation to complete. After the download, the installation will start. **Do not reboot your device during this time**. After completing, the device will reset. You may need to reconnect to the device's WiFi Access Point again (step 3).



If the progress bar stalls, you may not have put your machine in service mode first. If it stalls > 90%, it may have completed updating OK but not updated the UI, so wait two minutes and reconnect again to the device's WiFi Access Point, and go to **Settings** to check the firmware version has updated. If it hasn't, repeat the process.

Updating the Firmware using a binary (.bin) file

You can also update your firmware using a local file, should you need to.

1. Download the firmware you want to update to from the firmware server.

2. Repeat Steps 1-5 above
3. Click the **Install from file** button
4. Browse for the firmware file you downloaded earlier
5. Wait for the process to complete (as per step 8 above)

RETURN POLICY

Please be sure to contact us directly within 12 weeks (see limited warranty) if you are having any problems with this product, as we always endeavour to resolve any issues quickly. Approval from Stumblor Pinball must be received before any items can be returned for repair or replacement. All materials, boards, cables, etc. must be included when the product is returned. We will repair or replace/exchange components based on our analysis of the problem. Stumblor Pinball reserves the right to deny any return or exchange. Refunds are not given. Freight will be covered by Stumblor Pinball on the return trip back to you only.

WARRANTY

Stumblor Pinball offers a LIMITED WARRANTY which covers defects in workmanship and materials for a period of 12 weeks from date of delivery of the purchased product. During the warranty period, Stumblor Pinball (c/o Coder Cabana Ltd) will replace or repair, at its sole option, any defective product returned to us, or to one of our dealers, by its original purchaser. This warranty does not cover problems that result from abuse, accidental misuse, or problems with electrical power. It does not cover uses not in accordance with the instruction manual. It does not cover commercial use of the product. It does not cover damage to any items used in conjunction with the purchased product. It specifically excludes products for which Stumblor Pinball has not received payment. This warranty gives you specific legal rights which may vary based on your locality. Stumblor Pinball's responsibility for defects in material and workmanship shall be limited to repair and/or replacement as set forth in this warranty. All express and implied warranties, including but not limited to, any implied warranties and warranties of merchantability or fitness for a particular purpose are disclaimed. We do not accept liability for incidental or consequential damages, or for any third party claims for damages against the retail purchaser of this product. We do not accept liability for any personal injury caused by the use of this product. Some localities do not allow the exclusion or limitation of incidental or consequential damages, so this may not apply to you. To exercise your rights under this warranty, contact the dealer from whom you purchased it, or contact us at davey@stumblorpinball.com.