



SlotcarLightController Manager

Brief Instruction

About the SLC

The SLC is a processor based lightcontroller giving the user maximum freedom for designing slotcar lights. Even in delivery status it comes with a lot of preprogrammed functions to satisfy nearly every light wish for a slotcar. For those who want even more we provide the SLC Manager.

What exactly is the SLC Manager?

With the SLC Manager you can program all 14 channels of the SLC completely freely. The compiled programs can be uploaded to the SLC with a USB-FTDI-adapter via PC. Any configuration can repeatedly be changed and saved as an slc-file to use it again later. Several effects like exhaust flames can also be saved to be used in configurations later.

How can I build my own light effects?

First the channel which the effect should work on is chosen. After the checkbox is ticked the channel is activated, and various actions can then be programmed. The user can rename and recolour the channel for a better overview.

A light action always consists of three parts:

trigger, phase and duration

There are 4 kinds of triggers:

1. Always activated - starts the saved LED-phases as soon as the SLC is powered.
2. Active if hand controller value is greater than x% - starts the saved LED-phases as soon as the threshold value is exceeded.
3. Active if hand controller value is less than x% - starts the saved LED-phases as soon as the value falls below the threshold value.
4. Random activated - starts the saved LED-phases within a freely chosen timespan.

All triggers can also be started with a delay. The delay value can be fixed or it can be a random time within arbitrary parameters. To start an action the trigger has to be activated for the whole delay time.

A simple group trigger can start multiple channels each containing various actions like the ones outlined above. Once a group trigger is built, it can be found in the

drop-down list of each channel. With that option you can, for example, build a common starting flashing blue light with each channel having his own flashing frequency.

An action can be built with as many phases* as you like. A phase can set an LED or make it fade, with the initial and final values for brightness set in %. The duration of one phase can be fixed or it can be random within a minimum and a maximum value. Alternatively, it can follow the threshold value of the handcontroller.

*The total amount of phases is limited only by the flash memory size of the SLC.

If an action contains several phases, the phases are executed top-down. It is possible, for example, to make an LED fade and set it afterwards. A continuous flashing also contains two phases: Set LED to 100% for X (time), then set LED to 0% for X (time).

The total duration of the action after the trigger can be chosen by the user:

1. Infinite - The action runs until the LED is switched off (by another action) or until the power supply runs out.
2. Duration - The action runs for a fixed time or it runs for a random time which is set with minimum and maximum values.
3. Phase loops – The action runs a fixed number of cycles or a random number of cycles. The random number is again set with a minimum and a maximum value.

A channel can contain an arbitrary number of actions*. The list position of the actions shows the order in which the actions are processed.

*The total amount of actions is limited only by the flash memory size of the SLC.

We have a practical example:

Headlight with headlight flasher at full throttle - This effect contains two actions

The first action is the headlight flasher. The trigger used is an **Active if hand controller value is greater than 80%** with a **random delay of 0 - 500 ms**. Due to the randomness of this delay the effect is not causing the action on every single short full throttle push.

The phases consist of **set LED 100% with random duration** and **set LED 30% with random duration**. The values for the duration can be **between 150 and 1200 ms**. This effect looks even more realistic when using more phases with different random durations and the checkbox **Random start phase** ticked.

To make sure this effect is seen well, it gets a **random minimum duration between 500 and 1500 ms**.

The second action is the normal headlight. It contains an **Always active** trigger, just one phase set LED to 30% brightness, and an infinity duration.

The SLC executes the action list top-down. When the trigger for flashing headlights is activated, the headlights will flash for 500 to 1500 ms with phases in various lengths.

When the trigger is not active, the same LEDs will just work as normal headlights with 30% brightness.

For a perfect finish one more action can be listed above the always on headlight: Fade out headlights after 5 seconds without voltage on the track.

The trigger is an **Active if hand controller value is less than 20%** with a **delay of 5000 ms**. The action contains two phases: **fade LED from 30 to 0% brightness in 500 ms**, afterwards **set LED to 0% for an infinite duration**. The total duration of this action is also infinite.

Besides the **simple group trigger**, which is used to start separate channels simultaneously, the **Running light on multiple channels** can be chosen.

First a trigger has to be chosen, afterwards the channels which the effect should work on are chosen via checkbox. The order of the channels can be changed in the list. After setting a duration for the running light, the SLC Manager automatically creates single phases for each channel. The action list place can be chosen the same way as for a single action.

Some technical values can be set under the flag **Profile settings**.

The calibration of the track voltage-hand controller combination can be reset after X (time). This is necessary if the track voltage or the hand controller change (for example, a driver change during a long distance race) as to make threshold value triggers always work properly.

Activation of the Trigger Reset after X (time) is necessary to make the SLC behave as if it started for the first time although it still has power from the goldcaps. It is a way of restarting the SLC.

If the „global off“ is activated, all channels will be turned off after the saved period of time. This saves energy in the goldcaps for the next start. Attention: The processor will always keep on running.

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