

Quick Setup Guide

Wiring

There are four high-power channels on the GH v3 (see image below). The following LED connections are recommended for the respective LED setups:

- RGB LED:

- Channel 1: Red (negative)
- Channel 2: Green (negative)
- Channel 3: Blue (negative)
- Channel 4: Switch/Chamber/Accent LEDs (negative)

- RGBW LED:

- Channel 1: Red (negative)
- Channel 2: Green (negative)
- Channel 3: Blue (negative)
- Channel 4: White (negative)

- Single color blade LEDs with separate clash LED:

- Channel 1: Blade LEDs wired in parallel (negative)
- Channel 2: Clash LED (negative)
- Channel 3: Switch/Chamber/Accent LEDs (negative)
- Channel 4: Switch/Chamber/Accent LEDs (negative)

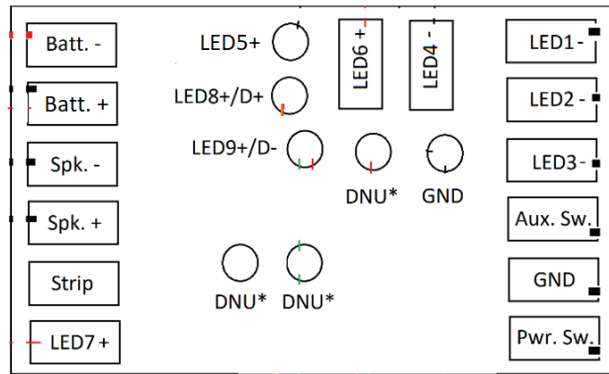
- Quad Cree with fixed color:

- Channel 1: Power (negative)*
- Channel 2: Power (negative)*
- Channel 3: Power (negative)*
- Channel 4: Switch/Chamber/Accent LEDs (negative)

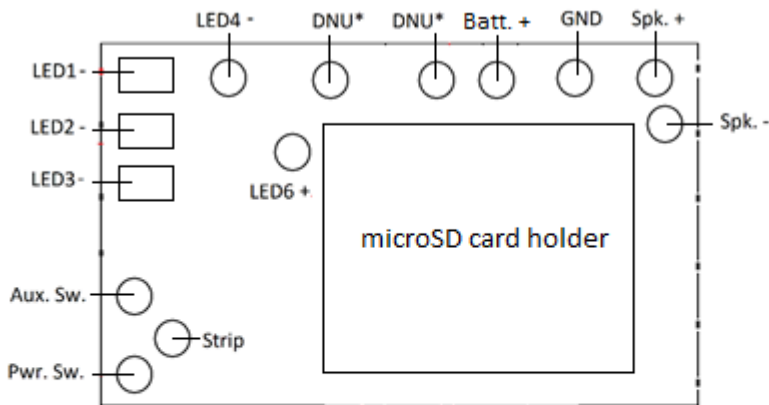
- Neopixel:

- Channel 1: Power (negative)*
- Channel 2: Power (negative)*
- Channel 3: Power (negative)*
- Channel 4: Not connected

* Alternatively, you can also use only channel 1 and channel 2 to power the Quad Cree with dedicated color or Neopixel. Using also channel 3 increases brightness slightly.



* DNU means "do not use this pad" as the corresponding pads do not have any purpose yet. However, this might change with future firmware updates.



* DNU means "do not use this pad" as the corresponding pads do not have any purpose yet. However, this might change with future firmware updates.

The position of the Batt. + pad indicated above holds only for the black boards. For its position on the green boards, please check the manual.

The table below lists the functions of each pad on the top side of the board.

Pad	Function	Remark
Batt. -	Connect to negative of battery	Internally connected to all GND pads
Batt. +	Connect to positive of battery	
Spk. -	Connect to negative of speaker	
Spk. +	Connect to positive of speaker	
Strip	Connect to data line of Neopixel	Resistor is already included on the board
D +	Connect to D + of the USB module	
D -	Connect to D - of the USB module	
Aux. Sw.	Connect to auxiliary switch (must be momentary if used)	Second pin of the switch needs to be connected to GND
GND	Ground	

Pwr. Sw.	Connect to power switch (can be momentary or latching)	Second pin of the switch needs to be connected to GND
LED1 -	High-power LED output (4,2 V and 9 A)	
LED2 -	High-power LED output (4,2 V and 9 A)	
LED3 -	High-power LED output (4,2 V and 9 A)	
LED4 -	High-power LED output (4,2 V and 9 A)	
LED5 +	Accent LED output (3,3V and 20 mA)	Only available on phase 3 and 4 boards
LED6 +	Accent LED output (3,3V and 20 mA)	
LED7 +	Accent LED output (3,3V and 20 mA)	
LED8 +	Accent LED output (3,3V and 20 mA)	
LED 9 +	Accent LED output (3,3V and 20 mA)	

To setup the Golden Harvest for your saber, please read the following instructions on how to choose your hardware setup and on how to choose your light effects.

Choosing Your Hardware Setup

You can easily customize your hardware setup by opening the "general.txt" file on your microSD card. To configure your board for your hardware setup, it is sufficient to adjust only three parameters which are described in the following.

PARAMETER	DESCRIPTION
button_mode	Defines which button mode you want to use. The following modes are available: <ul style="list-style-type: none"> - button_mode=0: single momentary switch, effect menu, double tap to trigger some features - button_mode=4: single momentary switch, effect menu, twisting the saber instead of double tap to trigger some features - button_mode=1: one momentary switch and one latching switch - button_mode=2: two momentary switches, effect change without menu - button_mode=3: two momentary switches, effect menu - button_mode=6: two momentary switches, effect menu, twisting the saber instead of double tap to trigger some features.
usb	Defines if you want to use USB for charging and file transfer. The following values are possible: <ul style="list-style-type: none"> - usb=0: disable USB - usb=1: enable USB
number_of_leds	Defines the number of Pixels in your blade. Only needed to adjust if you are using Pixel strips. Please count only the number of LEDs of one of the Pixel strips. Usually, the number is between 110 and 135. The number of LEDs is internally clamped to 140.

There are even more customizable parameters in the "general.txt" of course, but to configure your Golden Harvest v3 for your hardware setup, only these three parameters need to be adjusted.

Choosing Your Light Effects

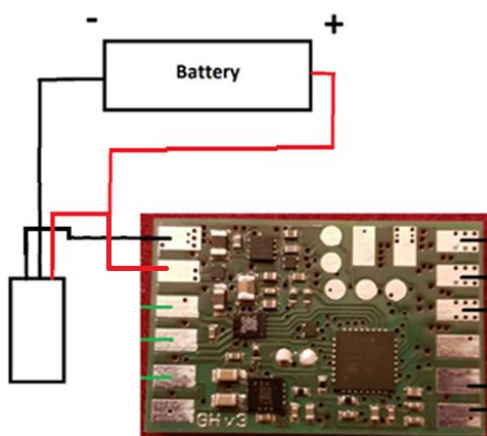
You can easily customize your light effects by changing the value of the parameter "effect_font_slot" in the "general.txt" file on your microSD card. In the image below, you see which values correspond to the different LED setups. For Neopixel, there are three default packages available that differ with respect to the number of presets that they include.

slot1 - In-Hilt Dedicated Color	10.08.2020 21:05	Dateiordner
slot2 - In-Hilt Dedicated Color plus Clash...	11.07.2020 16:25	Dateiordner
slot3 - In-Hilt RGB LED with Colored Clash	20.08.2020 12:25	Dateiordner
slot4 - In-Hilt RGB LED with White Clash	21.08.2020 11:44	Dateiordner
slot5 - In-Hilt RGBA	21.08.2020 11:34	Dateiordner
slot6 - In-Hilt RGBW	21.08.2020 11:52	Dateiordner
slot7 - Neopixel Basic	21.08.2020 11:25	Dateiordner
slot8 - Neopixel Default	23.08.2020 13:30	Dateiordner
slot9 - Neopixel Extended	23.08.2020 13:31	Dateiordner
slot10 - Custom	11.07.2020 16:29	Dateiordner

In the following, the wiring of a recharge port and of our Seedling USB module are shown. Both wiring diagrams depict the respective connections independent from the actual LED setup you are using. Please also have a look at the wiring diagrams for the LED setups.

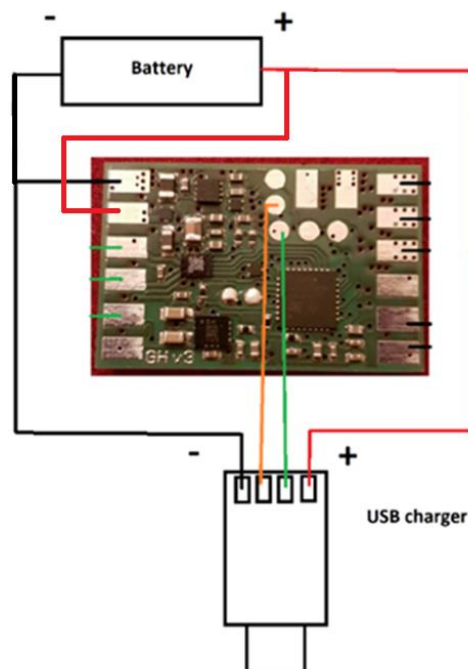
Recharge Port (in addition to LED wiring)

The wiring of a recharge port is shown below. It is the same for any LED setup. **The recharge port has to be connected such that it connects „Batt. –“ and the negative of the battery if the kill key is pulled out.**



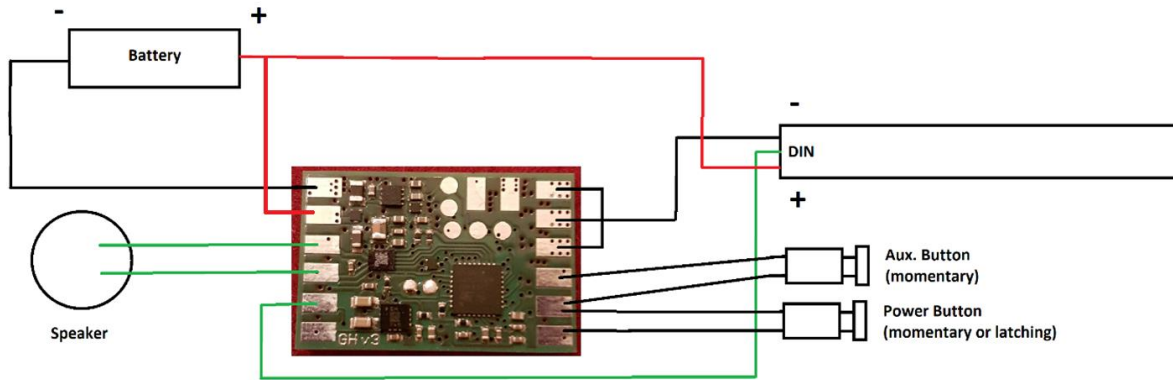
Seedling module (in addition to LED wiring)

The wiring of the Seedling module is shown below. It is the same for any LED setup. Please make sure that the orange and green wires are of same length.



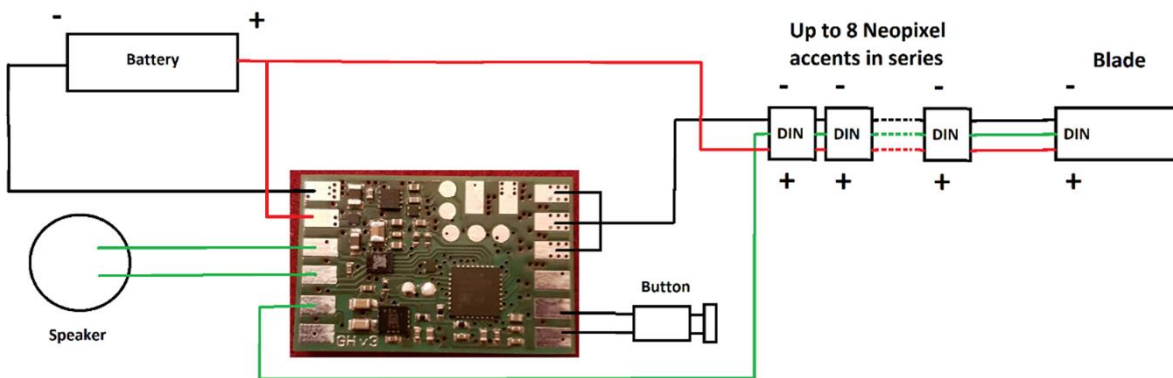
Neopixel without Neopixel accents

The wiring of Neopixel is shown below. To setup your board to Neopixel, set the parameter "number_of_leds" in the "general.txt" to the number of neopixel LEDs in your blade. There is already a 470 Ohm data line resistor on the board so that you don't need to add one. If your blade is pre-resistor, this will not affect the functionality. If you want to use standard accent LEDs with a Pixel blade, make sure to use the pads LED5 - LED9.



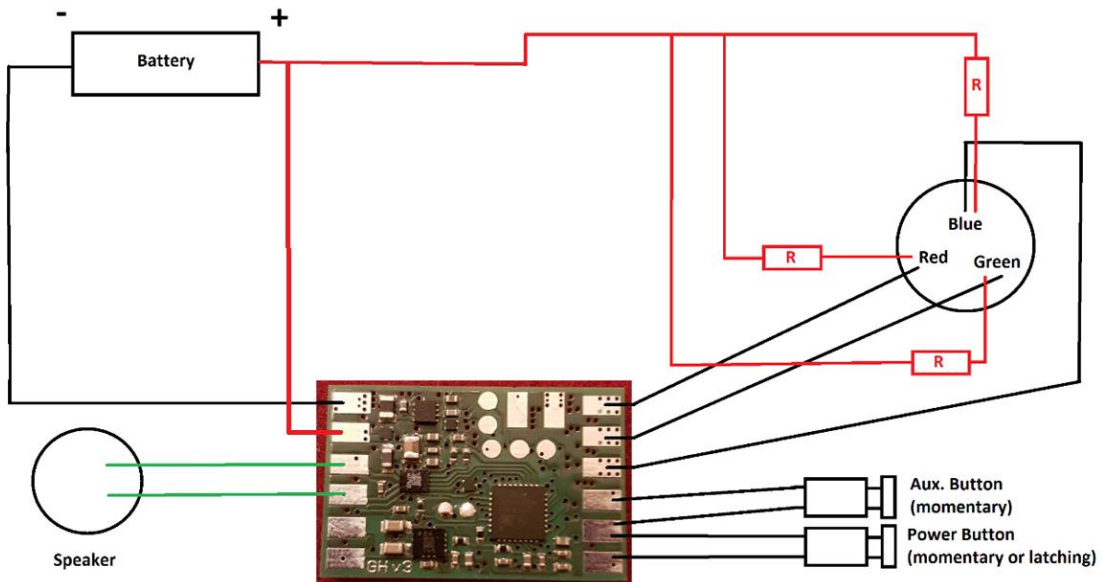
Neopixel with Neopixel Accents

The wiring of a Neopixel blade with using Neopixel accents is shown below. Just wire them in series to the blade and set the parameter "number_of_neopixel_accents" in your "general.txt" file to the number of Neopixel accents you are using. The maximum possible number is 8. There is already a 470 Ohm data line resistor on the board so that you don't need to add one. If your blade is pre-resistor, this will not affect the functionality. If you want to use standard accent LEDs with a Pixel blade, make sure to use the pads LED5 - LED9.



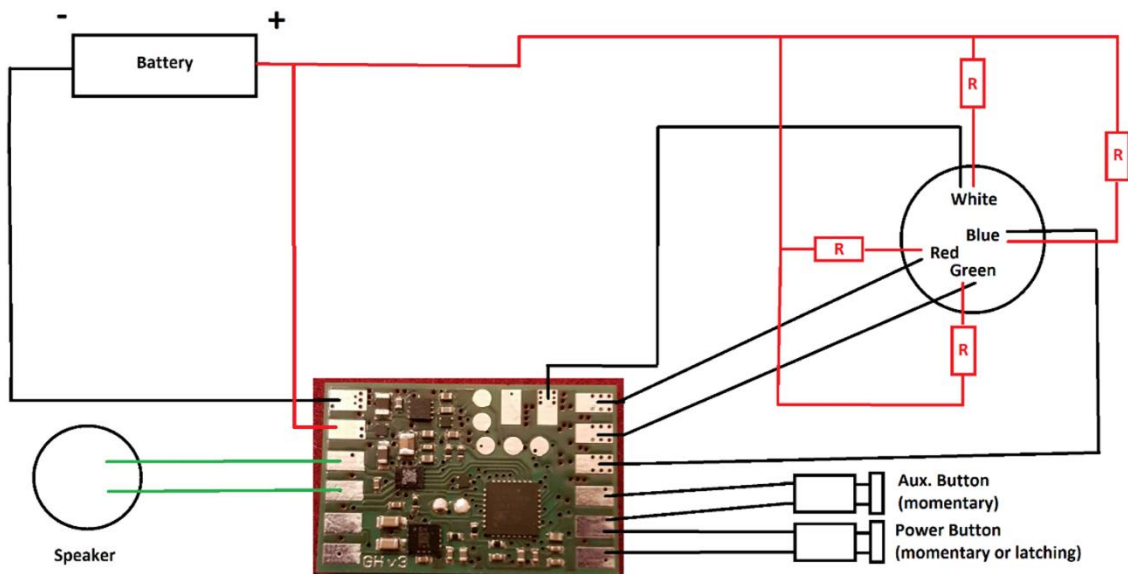
RGB

The wiring of an In-Hilt RGB LED is shown below. If you want to use additional accent LEDs, please use LED channel 4. More LED channels will be available to drive accent LEDs after future firmware updates.



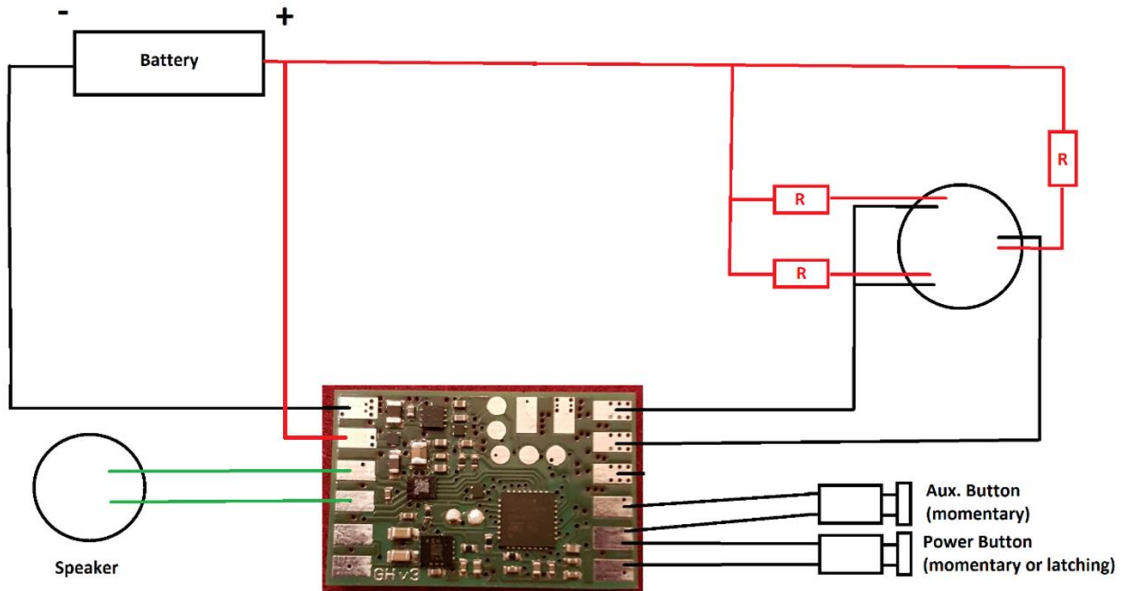
RGBW

The wiring of an In-Hilt RGBW LED is shown below. If you want to use additional accent LEDs, please use LED channel 4. More LED channels will be available to drive accent LEDs after future firmware updates.

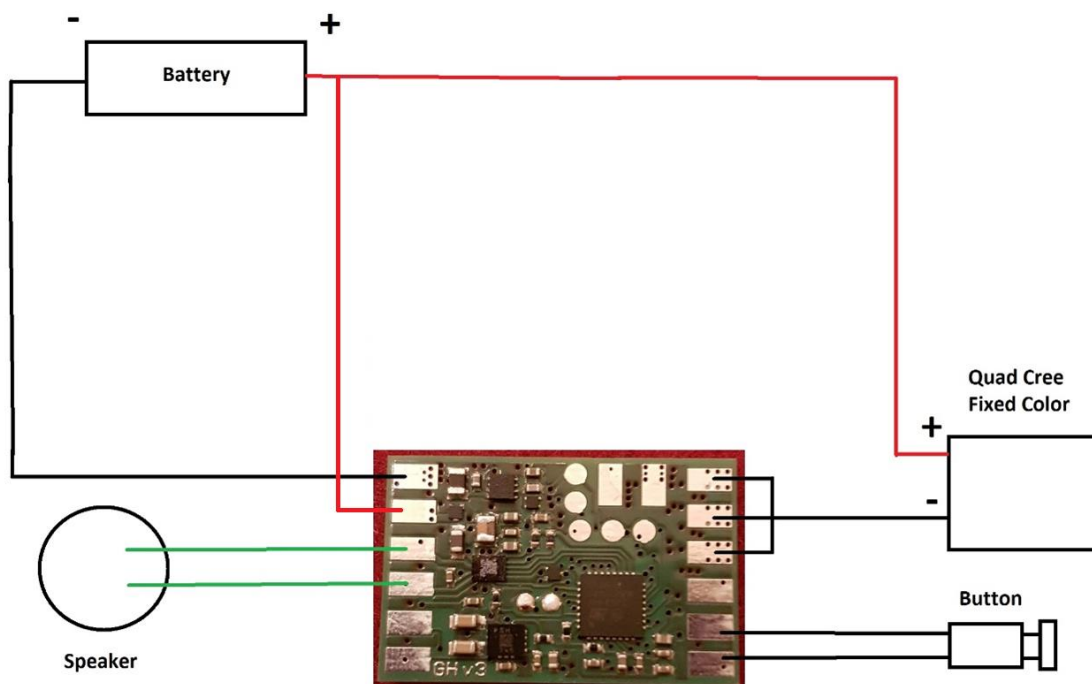


Single color blade with separate clash

The wiring of an In-Hilt LED as single color blade with separate clash is shown below. If you want to use additional accent LEDs, please use LED channel 3 or LED channel 4. More LED channels will be available to drive accent LEDs after future firmware updates.



Quad Cree with fixed color



Resistors are not depicted. They should be used to limit the LED current.

Navigation Using Two Momentary Buttons

There are three different navigation layouts for two momentary buttons from which you can choose your favorite one. The two buttons are referred to as auxiliary and power button according to the wiring examples above. The first of the possible navigation layouts contains a **change of background and on top effects on-the-fly** and is shown below. It can be selected by setting the parameter "button_mode=2" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH TWO BUTTONS
POWER ON	Tap the power button
CHANGE ON TOP EFFECT*	Tap the power button
CHANGE BACKGROUND EFFECT*	Double tap the power button
CHANGE SOUND FONT*	Tap the auxiliary button before the blade is ignited
LOCKUP	Hold auxiliary button while pointing the saber upwards
DRAG	Hold auxiliary button while pointing the saber downwards
ENTER MELT MODE	Hold the power button, release it and then perform a stab
LEAVE MELT MODE	Tap the power button
BLASTER BLOCK	Tap the auxiliary button
FORCE PUSH	Double tap the auxiliary button
ENTER COLOR WHEEL	Hold the power button, release it and then twist the saber
└ CHANGE COLOR	└ Twist the saber
└ GO TO NEXT SABER STATE	└ Tap the power button
SAVE AND LEAVE COLOR WHEEL	Hold the power button
ACTIVATE POWER SAVING	Hold the power button while performing a stab
DEACTIVATE POWER SAVING	Hold the power button while performing a stab
START BACKGROUND MUSIC	Double tap the power button before the saber is ignited
└ SKIP TRACK	└ Twist the saber
STOP BACKGROUND MUSIC	Double tap the power button before the saber is ignited
SHOW BATTERY INDICATOR	Hold the power button while performing a stab before the saber is ignited
└ CALIBRATE BATTERY	└ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
└ ADJUST VOLUME	└ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the power button
WAKE UP FROM DEEP SLEEP	Tap the power button
POWER OFF	Hold the power button until the saber shuts down
RESET	Hold the power button for 10 s

The second option you have for the navigation layout for two momentary buttons uses an **effect menu to change the background and on top effects**. After entering the menu, the **changes can be triggered by tapping or double tapping the power switch, respectively**. The navigation layout is shown below. It can be selected by setting the parameter "button_mode=3" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH TWO BUTTONS
POWER ON	Tap the power button
ENTER EFFECT MENU	Hold the power button, then tap it
└ CHANGE ON TOP EFFECT*	└ Tap the power button

└ CHANGE BACKGROUND EFFECT*	└ Double tap the power button
SAVE AND LEAVE EFFECT MENU	Hold the power button
CHANGE SOUND FONT*	Tap the auxiliary button before the blade is ignited
LOCKUP	Hold auxiliary button while pointing the saber upwards
DRAG	Hold auxiliary button while pointing the saber downwards
ENTER MELT MODE	Hold the power button, release it and then perform a stab
LEAVE MELT MODE	Tap the power button
BLASTER BLOCK	Tap the auxiliary button
FORCE PUSH	Double tap the auxiliary button
ENTER COLOR WHEEL	Hold the power button, release it and then twist the saber
└ CHANGE COLOR	└ Twist the saber
└ GO TO NEXT SABER STATE	└ Tap the power button
SAVE AND LEAVE COLOR WHEEL	Hold the power button
ACTIVATE POWER SAVING	Hold the power button while performing a stab
DEACTIVATE POWER SAVING	Hold the power button while performing a stab
START BACKGROUND MUSIC	Double tap the power button before the saber is ignited
└ SKIP TRACK	└ Twist the saber
STOP BACKGROUND MUSIC	Double tap the power button before the saber is ignited
SHOW BATTERY INDICATOR	Hold the power button while performing a stab before the saber is ignited
└ CALIBRATE BATTERY	└ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
└ ADJUST VOLUME	└ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the power button
WAKE UP FROM DEEP SLEEP	Tap the power button
POWER OFF	Hold the power button until the saber shuts down
RESET	Hold the power button for 10 s

The third option you have for the navigation layout for two momentary switches also **uses an effect menu to change the background and on top effects**. However, **double tapping the power switch to trigger the change of the background effects is replaced by twisting** the saber. The navigation layout is shown below. It can be selected by setting the parameter "button_mode=6" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH TWO BUTTONS
POWER ON	Tap the power button
ENTER EFFECT MENU	Hold the power button, then hold it again
└ CHANGE ON TOP EFFECT*	└ Tap the power button
└ CHANGE BACKGROUND EFFECT*	└ Twist the saber
SAVE AND LEAVE EFFECT MENU	Hold the power button
CHANGE SOUND FONT*	Tap the auxiliary button before the blade is ignited
ENTER LOCKUP MODE	Hold the auxiliary button, then tap it while pointing the saber upwards
LEAVE LOCKUP MODE	Tap the auxiliary button
ENTER DRAG MODE	Hold the auxiliary button, then tap it while pointing the saber downwards
LEAVE DRAG MODE	Tap the auxiliary button
ENTER MELT MODE	Hold the power button, release it and then perform a stab

LEAVE MELT MODE	Tap the power button
BLASTER BLOCK	Tap the auxiliary button
FORCE PUSH	Hold the auxiliary button while twisting the saber
ENTER COLOR WHEEL	Hold the power button, release it and then twist the saber
└ CHANGE COLOR	└ Twist the saber
└ GO TO NEXT SABER STATE	└ Tap the power button
SAVE AND LEAVE COLOR WHEEL	Hold the power button
ACTIVATE POWER SAVING	Hold the power button while performing a stab
DEACTIVATE POWER SAVING	Hold the power button while performing a stab
START BACKGROUND MUSIC	Hold the power button while twisting the saber before the saber is ignited
└ SKIP TRACK	└ Twist the saber
STOP BACKGROUND MUSIC	Hold the power button while twisting the saber before the saber is ignited
SHOW BATTERY INDICATOR	Hold the power button while performing a stab before the saber is ignited
└ CALIBRATE BATTERY	└ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
└ ADJUST VOLUME	└ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the power button
WAKE UP FROM DEEP SLEEP	Tap the power button
POWER OFF	Hold the power button until the saber shuts down
RESET	Hold the power button for 10 s

*** When changing the On Top Effect, Background Effect or Sound Font, you can go to the next one by pointing your saber upwards during selection or to the previous one by pointing your saber downwards.**

Navigation Using Only One Momentary Button

As mentioned above, all of the features of our board are accessible even with using only one momentary button. There are two different navigation layouts for a single momentary button from which you can choose your favorite one. The first of the possible navigation layouts uses a **double tap to trigger some features**. It is shown below and can be selected by setting the parameter "button_mode=0" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH ONE MOMENTARY SWITCH
POWER ON	Tap the button
ENTER EFFECT MENU	Hold the button, then tap it
└ CHANGE ON TOP EFFECT*	└ Tap the button
└ CHANGE BACKGROUND EFFECT*	└ Double tap the button
SAVE AND LEAVE EFFECT MENU	Hold the button
CHANGE SOUND FONT*	Hold the button before igniting the blade
LOCKUP	Tap the button, then hold it while pointing the saber upwards

DRAG	Tap the button, then hold it while pointing the saber downwards
ENTER MELT MODE	Hold the power button, release it and then perform a stab
LEAVE MELT MODE	Tap the power button
BLASTER BLOCK	Tap the button
FORCE PUSH	Double tap the button
ENTER COLOR WHEEL	Hold the power button, release it and then twist the saber
└ CHANGE COLOR	└ Twist the saber
└ GO TO NEXT SABER STATE	└ Tap the power button
SAVE AND LEAVE COLOR WHEEL	Hold the power button
ACTIVATE POWER SAVING	Hold the power button while performing a stab
DEACTIVATE POWER SAVING	Hold the power button while performing a stab
START BACKGROUND MUSIC	Double tap the power button before the saber is ignited
└ SKIP TRACK	└ Twist the saber
STOP BACKGROUND MUSIC	Double tap the power button before the saber is ignited
SHOW BATTERY INDICATOR	Hold the power button while performing a stab before the saber is ignited
└ CALIBRATE BATTERY	└ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
└ ADJUST VOLUME	└ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the power button
WAKE UP FROM DEEP SLEEP	Tap the power button
POWER OFF	Hold the power button until the saber shuts down
RESET	Hold the power button for 10 s

The second option for the navigation layout uses a **twist of the saber instead of a double tap to trigger some features**. It is shown below and can be selected by setting the parameter "button_mode=4" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH ONE MOMENTARY SWITCH
POWER ON	Tap the button
ENTER EFFECT MENU	Hold the button, then hold it again
└ CHANGE ON TOP EFFECT*	└ Tap the button
└ CHANGE BACKGROUND EFFECT*	└ Twist the saber
SAVE AND LEAVE EFFECT MENU	Hold the button
CHANGE SOUND FONT*	Hold the button before igniting the blade
ENTER LOCKUP MODE	Hold the button, then tap it while pointing the saber upwards
LEAVE LOCKUP MODE	Tap the button
ENTER DRAG MODE	Hold the button, then tap it while pointing the saber downwards
LEAVE DRAG MODE	Tap the button
ENTER MELT MODE	Hold the power button, release it and then perform a stab
LEAVE MELT MODE	Tap the power button
BLASTER BLOCK	Tap the button
FORCE PUSH	Hold the button while twisting the saber
ENTER COLOR WHEEL	Hold the power button, release it and then twist the saber
└ CHANGE COLOR	└ Twist the saber

└ GO TO NEXT SABER STATE	└ Tap the power button
SAVE AND LEAVE COLOR WHEEL	Hold the power button
ACTIVATE POWER SAVING	Hold the power button while performing a stab
DEACTIVATE POWER SAVING	Hold the power button while performing a stab
START BACKGROUND MUSIC	Hold the button while twisting the saber before the saber is ignited
└ SKIP TRACK	└ Twist the saber
STOP BACKGROUND MUSIC	Hold the button while twisting the saber before the saber is ignited
SHOW BATTERY INDICATOR	Hold the power button while performing a stab before the saber is ignited
└ CALIBRATE BATTERY	└ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
└ ADJUST VOLUME	└ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the power button
WAKE UP FROM DEEP SLEEP	Tap the power button
POWER OFF	Hold the power button until the saber shuts down
RESET	Hold the power button for 10 s

*** When changing the On Top Effect, Background Effect or Sound Font, you can go to the next one by pointing your saber upwards during selection or to the previous one by pointing your saber downwards.**

Navigation Using One Momentary Button and One Latching Switch

Alternatively to using only one momentary button, you can also use one momentary button and one latching switch. The navigation layout is shown below. It can be selected by setting the parameter "button_mode=1" in the "general.txt" file on your microSD card.

FUNCTION	TRIGGERING WITH ONE MOMENTARY BUTTON AND ONE LATCHING SWITCH
POWER ON	Turn on latching switch
ENTER EFFECT MENU	Hold the auxiliary button, then hold it again
└ CHANGE ON TOP EFFECT*	└ Tap the auxiliary button
└ CHANGE BACKGROUND EFFECT*	└ Twist the saber
SAVE AND LEAVE EFFECT MENU	Hold the auxiliary button
CHANGE SOUND FONT*	Hold the auxiliary button before igniting the blade
ENTER LOCKUP MODE	Hold the auxiliary button, then tap it while pointing the saber upwards
LEAVE LOCKUP MODE	Tap the auxiliary button
ENTER DRAG MODE	Hold the auxiliary button, then tap it while pointing the saber downwards
LEAVE DRAG MODE	Tap the auxiliary button
ENTER MELT MODE	Hold the auxiliary button, release it and then perform a stab
LEAVE MELT MODE	Tap the auxiliary button
BLASTER BLOCK	Tap the auxiliary button
FORCE PUSH	Hold the auxiliary button while twisting the saber

ENTER COLOR WHEEL	Hold the auxiliary button, release it and then twist the saber
↳ CHANGE COLOR	↳ Twist the saber
↳ GO TO NEXT SABER STATE	↳ Tap the auxiliary button
SAVE AND LEAVE COLOR WHEEL	Hold the auxiliary button
ACTIVATE POWER SAVING	Hold the auxiliary button while performing a stab
DEACTIVATE POWER SAVING	Hold the auxiliary button while performing a stab
START BACKGROUND MUSIC	Hold the auxiliary button while twisting the saber before the saber is ignited
↳ SKIP TRACK	↳ Twist the saber
STOP BACKGROUND MUSIC	Hold the auxiliary button while twisting the saber before the saber is ignited
SHOW BATTERY INDICATOR	Hold the auxiliary button while performing a stab before the saber is ignited
↳ CALIBRATE BATTERY	↳ When your battery is fully charged, perform a stab while battery level is displayed
ENTER VOLUME CONTROL	Twist the saber, then perform a stab before the saber is ignited
↳ ADJUST VOLUME	↳ Twist the saber
SAVE AND LEAVE VOLUME CONTROL	Tap the auxiliary button
WAKE UP FROM DEEP SLEEP	Tap the auxiliary button
POWER OFF	Turn off latching switch

*** When changing the On Top Effect, Background Effect or Sound Font, you can go to the next one by pointing your saber upwards during selection or to the previous one by pointing your saber downwards.**

Important notes

- When you cut off the power from the board (e. g. by inserting a kill key or removing the battery), please make sure that the power stays disconnected for at least 30 s before you power it again. This is necessary to make sure the board shuts down properly. If you don't wait for 30 s, the board will not be damaged, but it might not boot.

- When you have discharged your battery completely and you are using the Seedling extender board for USB charging, make sure to wait for 30 s after the battery was fully depleted before you charge your saber.

Frequently Asked Questions

- My saber does not boot after pulling the kill key. How can I fix that?
Answer: This can happen when you put the kill key in the recharge port and pull it out again shortly afterwards. Make sure that you wait for at least 2 minutes before you pull the kill key out again after having inserted it.
- There are no blaster and lockup effects in Neopixel setup for example. How can I fix that?
Answer: The most probable reason for this is that you forgot to activate the Neopixel light effects on your microSD card. Please follow the steps described in the section "Choosing Your Light Effects"

- My blade is blinking white. How can I fix that?
Answer: The white blinking indicates that your microSD card is not inserted properly or some files or folders are missing on it.
- There is no sound or stuttering sound. How can I fix that?
Answer: Please recharge your saber.
- Some sound files are not played or some sound fonts are not recognized. How can I fix that?
Answer: Please check that your sound font folders and the sound file names are enumerated continuously and check the naming of the sound files.
- The Seedling Module is connected to my computer, but even after 10 minutes it does not recognize the microSD card as mass storage device. How can I fix that?
Answer: Please check the device manager, look for an "unknown device", click on it with the right mouse button and uninstall the "unknown device". After that, you can try to reconnect the Seedling Module to your computer. Also make sure that you are using a computer with Windows 7 or Windows 10.