Firmware Updates

The set of features of the Golden Harvest v3 is always expanding. It can be extended by firmware updates which are easy to install without requiring any coding skills. To install a firmware update via USB, just do the following:

1. Before connecting your saber to your computer, make sure to fully charge it using the charger that came with it. Also, it is important that your blade is not ignited when connecting your saber to your computer.
2. Connect your saber via USB to your computer while the saber is in idle mode. That's the state the saber is in before igniting the blade (you may have to wake it up from deep sleep first).
3. Wait until your computer detects your saber as mass storage device.
4. Check if there are "slot[number]" folders contained in the "EffectFonts" folder on your saber. If yes, proceed with step 8. If no, proceed with step 5.
5. Delete the EffectFonts folder and the UserInterfaceSounds folder from your saber. Make sure to not delete the SoundFonts folder and the "general.txt" file.
6. Download the new default files, unzip them and add the new EffectFonts folder and the UserInterfaceSounds folder to the root directory of your microSD card: https://sabertec.net/wp-content/uploads/2020/10/Default-Package.zip
7. Open the "general.txt" file with a text editor and add the new parameters that are introduced by the firmware update. For a list of the parameters that need to be added, see the section below.
8. Delete the file "UPDATE_D.DAT" from your saber (if this file is present).
9. Download the firmware update and put the "update.dat" file on your saber: https://sabertec.net/wp-content/uploads/2020/10/APP_17_10-14_44.zip
10. Unplug the USB connection to your computer. Now, it takes approximately 10 - 20 s before the update is finished. If the boot sound is played after this time, the update was successful.

New parameters

In the following, we list all new parameters that need to be added to the "general.txt" file:

stab_ignition=0
swing_ignition=0

twist_retraction=0
twist_protection=1500

color_wheel=2
color_wheel_tilt_speed=100
color_wheel_twist_speed=100

volume_control=2
volume_control_tilt_speed=100
volume_control_twist_speed=200

effect_font_slot=3

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blade_double_tap=1

stab_ignition=0
swing_ignition=0

twist_retraction=0
twist_protection=1500

color_wheel=2
color_wheel_tilt_speed=100
color_wheel_twist_speed=100

volume_control=2
volume_control_tilt_speed=100
volume_control_twist_speed=200

effect_font_slot=3

orientation=0
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Set the parameter effect_font_slot to 1 if you have a Champion saber, set it to 5 if you have a Hero saber with In-Hilt LED and set it to 8 if you have a Hero saber with Neopixel. Please make sure that there is no space between the symbol "=" and the value of the parameter.

New features introduced by firmware v3.32

- Color wheel:

The color wheel mode allows for a color change on the fly without needing to change any files on the SD card. You can smoothly select from all possible colors without being restricted to predefined color profiles. To enter the color wheel mode, you need to hold the power button for 1 s, release it and twist the saber afterwards. When you are in the color wheel mode, you can customize the blade color by changing the orientation of your saber or by twisting it. You can choose on your own which of both gestures should be used to change the blade color. When in color wheel mode, you can either save the color and leave the color wheel mode by holding the power button or save the color and proceed with customizing also the colors for the other states of the saber, that means also for clash, stab, lockup, blaster and force by tapping the power button. The color wheel feature is available for all background effects, also for Color Flow and Flame Blade for example. The color wheel actually changes the color of the currently active blade folder. That means it will change the color on all sound fonts that are assigned to this blade folder.

There are three new parameters in the "general.txt" that control the color wheel feature. In the following, these parameters are described:

- color_wheel=0: The color wheel feature is disabled.

- color_wheel=1: When in color wheel mode, the color can be changed by tilting the saber.

- color_wheel=2: When in color wheel mode, the color can be changed by twisting the saber.

- color_wheel=3: When in color wheel mode, the color can be changed both by tilting the saber and by twisting it.

- color_wheel_tilt_speed=100: Defines the sensitvity of tilting the saber.

- color_wheel_twist_speed=100: Defines the sensitvity of twisting the saber.

- New supported gesture for volume control on the fly:

Twisting the saber before it is ignited, then stabbing it triggers the volume control mode. Up to now, the volume could be adjusted by tilting the saber. Now, the volume can also be changed by twisting the saber.

There are three new parameters in the "general.txt" that control the volume control feature. In the following, these parameters are described:

- volume_control=0: The volume control feature is disabled.

- volume_control=1: When in volume control mode, the volume can be changed by tilting the saber.

- volume_control=2: When in volume control mode, the volume can be changed by twisting the saber.

- volume_control=3: When in volume control mode, the volume can be changed both by tilting the saber and by twisting it.

- volume_control_tilt_speed=100: Defines the sensitvity of tilting the saber.

- volume_control_twist_speed=100: Defines the sensitvity of twisting the saber.

- Ignition effect:

The ignition effect can be customized now. You can choose an ignition color that is different from the actual blade color for example. The ignition effect is smoothly faded into the basic effect during ignition.

- Tip flash effect:

The tip flash effect is a new optional power on effect. When this effect is activated, it creates a white tip that moves from the bottom of the blade to its top when it is ignited. The color can be customized, too.

There are two new parameters in the "background.txt" file that allow to customize this effect. In the following, these parameters are described:

- ig_tip_flash_size=1: Defines the size of the dot that moves from the bottom of the blade to its top when it is ignited. The tip flash effect can be deactivated by choosing a value of 0.

- ig_tip_flash_color=255,255,255: Defines the color of the dot that moves from the bottom of the blade to its top when it is ignited.

- Base flash effect:

The base flash effect is a new optional power on effect. When this effect is activated, it creates a white flash at the bottom of the blade when it is ignited that simulates an explosive ignition. The color can be customized, too.

There are four new parameters in the "background.txt" file that allow to customize this effect. In the following, these parameters are described:

- ig_base_flash_size=50: Defines the size of the flash at the bottom of the blade when it is ignited. The bottom flash effect can be deactivated by choosing a value of 0.

- ig_base_flash_rand=50: Defines the aggressivity of the flash at the bottom of the blade when it is ignited.

- ig_base_flash_duration=50: Defines the duration of the flash at the bottom of the blade when it is ignited. The value is given as percentage of the ignition duration.

- ig_base_flash_color=255,255,255: Defines the color of the flash at the bottom of the blade when it is ignited.

- Stuttering effect:

The stuttering effect is a new optional power on effect. When this effect is activated, it simulates a blade that assembles itself from pieces during ignition.

There are two new parameters in the "background.txt" files that allow to customize this effect. In the following, these parameters are described:

- ig_stuttering=0: The stuttering effect is disabled.

- ig_stuttering=1: The stuttering effect is enabled.

- ig_stuttering_speed=100: Defines the speed of the stuttering effect.

- Responsive Lockup:

As part of the new firmware, we made many light effects responive which means that their appearance can be changed in real time by gestures. The responsive lockup allows for the location of the lockup to change by tilting the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file that control the responsive lockup feature. In the following, these parameter are described:

- lu_responsive=0: The responsive lockup feature is disabled. The position of the lockup is chosen randomly.

- lu_responsive=1: The position of the lockup is changed by tilting the saber.

- lu_responsive=2: The position of the lockup is changed by twisting the saber.

- lu_responsive=3: The position of the lockup is changed both by tilting the saber and by twisting it.

- lu_tilt_speed=100: Defines the sensitvity of tilting the saber.

- lu_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Drag:

The responsive drag allows for the size of the illuminated area of the tip to change by twisting the saber.

There are three new parameters in the "background.txt" file that control the responsive drag feature. In the following, these parameters are described:

- dr_responsive=0: The responsive drag feature is disabled.

- dr_responsive=1: The size of the illuminated area of the tip is changed by twisting the saber.

- dr_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Melt:

To trigger the responsive melt, hold the power button for 1 s, release it and then stab the saber. The responsive melt allows for the area of the tip that simulates the melting and its color to change by tilting the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file that control the responsive melt feature. In the following, these parameters are described:

- me_responsive=0: The responsive melt feature is disabled.

- me_responsive=1: The area of the tip that simulates the melting and its color are changed by tilting the saber.

- me_responsive=2: The area of the tip that simulates the melting and its color are changed by twisting the saber.

- me_responsive=3: The area of the tip that simulates the melting and its color are changed both by tilting the saber and by twisting it.

- me_tilt_speed=100: Defines the sensitvity of tilting the saber.

- me_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Blaster Block:

The responsive blaster block allows for the location of the blaster block to change by tilting the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file that control the responsive blaster block feature. In the following, these parameters are described:

- bb_responsive=0: The responsive blaster block feature is disabled. The position oft he blaster block is chosen randomly.

- bb_responsive=1: The position of the blaster block is changed by tilting the saber.

- bb_responsive=2: The position of the blaster block is changed by twisting the saber.

- bb_responsive=3: The position of the blaster block is changed both by tilting the saber and by twisting it.

- bb_tilt_speed=100: Defines the sensitvity of tilting the saber.

- bb_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Wave:

The background effect Wave can behave responsive now. The responsive Wave allows for the speed of the wave that travels from the bottom of the blade to its top to change by tilting the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file of the Wave background effect that control the responsive feature. In the following, these parameters are described:

- wave_responsive=0: The responsive feature is disabled.

- wave_responsive=1: The speed of the wave that travels from the bottom of the blade to its top is changed by tilting the saber.

- wave_responsive=2: The speed of the wave that travels from the bottom of the blade to its top is changed by twisting the saber.

- wave_responsive=3: The speed of the wave that travels from the bottom of the blade to its top is changed both by tilting the saber and by twisting it.

- wave_tilt_speed=100: Defines the sensitvity of tilting the saber.

- wave_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Color Flow:

The background effect Color Flow can behave responsive now. The responsive Color Flow allows for the speed at which the different colors follow each other from the bottom of the blade to its top to change by tilting the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file of the Color Flow background effect that control the responsive feature. In the following, these parameters are described:

- color_flow_responsive=0: The responsive feature is disabled.

- color_flow_responsive=1: The speed at which the different colors follow each other from the bottom of the blade to its top is changed by tilting the saber.

- color_flow_responsive=2: The speed at which the different colors follow each other from the bottom of the blade to its top is changed by twisting the saber.

- color_flow_responsive=3: The speed at which the different colors follow each other from the bottom of the blade to its top is changed both by tilting the saber and by twisting it.

- color_flow_tilt_speed=100: Defines the sensitvity of tilting the saber.

- color_flow_twist_speed=100: Defines the sensitvity of twisting the saber.

- Responsive Flame Blade:

The background effect Flame Blade can behave responsive now. The responsive Flame Blade allows for the intensity of the flame to change depending on the orientation of the saber or by twisting it. You can choose on your own which of both gestures should be used.

There are three new parameters in the "background.txt" file of the Flame Blade background effect that control the responsive feature. In the following, these parameters are described:

- flame_blade_responsive=0: The responsive feature is disabled.

- flame_blade_responsive=1: The intensity of the flame is changed by tilting the saber.

- flame_blade_responsive=2: The intensity of the flame is changed by twisting the saber.

- flame_blade_responsive=3: The intensity of the flame is changed both by tilting the saber and by twisting it.

- flame_blade_tilt_speed=100: Defines the sensitvity of tilting the saber.

- flame_blade_twist_speed=100: Defines the sensitvity of twisting the saber.

- Swing ignition:

The blade can be ignited by swinging it. The new parameter "swing_ignition=0" in the "general.txt" and in the "settings.txt" of each sound font controls this feature. If your "settings.txt" contains this parameter, the firmware will use the value of this parameter. If your "settings.txt" does not contain this parameter, the value of the parameter in the "general.txt" will be used. In the following, the meaning of the different values of this parameter is described:

- swing_ignition=0: The swing ignition feature is disabled.

- swing_ignition=1: The swing ignition feature is enabled.

- Twist retraction:

The blade can be retracted by twisting it. The new parameters "twist_retraction=0" and "twist_protection=1500" in the "general.txt" control this feature. If your "settings.txt" contains this parameter, the firmware will use the value of this parameter. If your "settings.txt" does not contain this parameter, the value of the parameter in the "general.txt" will be used. In the following, the meaning of the different values of these parameters is described:

- twist_retraction=0: The twist retraction feature is disabled.

- twist_retraction=1: The twist retraction feature is enabled.

- twist_protection=1500: The twist retraction is blocked if the movement of the saber is stronger than this parameter. This avoids that the saber accidentally turns off during movement.

- Common folder:

The new folder "common" was added to the "SoundFonts" folder. If a sound font does not contain specific sound files like music tracks for example, the board will check if the missing sound files are present in this new folder and will use them. That way, you could add music tracks to the "common" folder for example and they would be used for all sound fonts except from those that feature own music tracks. It is recommended to use the native GH v3 naming scheme for the sound files in the "common" folder.

- Increased performance:

The boot time has been reduced strongly and also the loading time when changing sound fonts or light effects.

- Sound font descriptions:

The board now supports adding descriptions to the name of each sound font folder. That way, you can easily identify the sound fonts.

sound1 - Balance	02.04.2020 21:20	Dateiordner	
sound2 - Psy-Borg	02.04.2020 21:20	Dateiordner	
sound3 - Daddy Issues Complete	20.07.2020 12:53	Dateiordner	
sound4 - Guardian	02.04.2020 21:21	Dateiordner	
sound5 - Cryo Carbon	04.04.2020 17:43	Dateiordner	
sound6 - Peace	20.07.2020 12:53	Dateiordner	
sound7 - Violence	20.07.2020 12:53	Dateiordner	
sound8 - Son of Darkness	04.04.2020 17:48	Dateiordner	
sound9 - The Eternal Prince	04.04.2020 17:49	Dateiordner	
sound10 - The Phantom	30.03.2020 19:25	Dateiordner	
sound11 - The Shadow	30.03.2020 19:27	Dateiordner	
sound12 - Shadows	23.03.2020 13:13	Dateiordner	
sound13 - The Classic Villain	20.07.2020 12:54	Dateiordner	
sound14 - Energy Pike	20.07.2020 12:54	Dateiordner	
sound15 - Knighthood	20.07.2020 12:54	Dateiordner	
SoundFonts	22.06.2020 18:50	Textdokument	3 KB

- Blade folder descriptions:

The board now supports adding descriptions to the name of each blade folder. That way, you can easily identify the blade folders.

blade1 - Classic	13.08.2020 20:35	Dateiordner
blade2 - Frozen Pulse I	11.07.2020 16:28	Dateiordner
blade3 - Frozen Pulse II	11.07.2020 16:28	Dateiordner
blade4 - Wave I	11.07.2020 16:28	Dateiordner
blade5 - Wave II	11.07.2020 16:28	Dateiordner
blade6 - Color Flow	11.07.2020 16:28	Dateiordner
blade7 - Flame Blade	11.07.2020 16:28	Dateiordner

- New preset selection:

So far, you had to copy and paste the corresponding "EffectFonts" folder from the "Choose-Hardware-Setup" folder to the root directory of your SD card when you wanted to change between Neopixel and in-hilt for example. This is not needed any more. To simplify this, the "EffectFonts" folder in the root directory of the SD cards contains all presets both for Neopixel and in-hilt in different slot folders now. To change between them, you only need to change the parameter "effect_font_slot" in the "general.txt". It is also supported to add descriptions to each slot folder.

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	11.07.2020 16:25	Dateiordner
slot4 - In-Hilt RGB LED with White Clash	11.07.2020 16:25	Dateiordner
slot5 - In-Hilt RGBA	11.08.2020 13:25	Dateiordner
slot6 - In-Hilt RGBW	11.07.2020 16:25	Dateiordner
slot7 - Neopixel Basic	11.07.2020 17:12	Dateiordner
slot8 - Neopixel Default	11.07.2020 17:14	Dateiordner
slot9 - Neopixel Extended	11.07.2020 17:20	Dateiordner
slot10 - Custom	11.07.2020 16:29	Dateiordner

- New Neopixel effect files:

To simplify the modification of the effect files, a new structure was introduced. In past, there were only the "effect[number].txt" files that contained both background and on top effects. Now, there are a "background.txt" file and "ontop[number].txt" files in each blade folder. That way, it is easier to change background effects and on top effects independently of each other. Each blade folder contains

a single "background.txt" and thus a single background effect. As the color is defined by the background effects, it is also easier to change the color now.

accent	21.02.2020 11:59	Textdokument	3 KB
background	15.08.2020 16:42	Textdokument	11 KB
blade	29.01.2020 11:11	WAV-Datei	132 KB
ontop1	11.08.2020 12:46	Textdokument	2 KB
ontop2	11.08.2020 12:47	Textdokument	6 KB
ontop3	11.08.2020 12:48	Textdokument	4 KB
ontop4	11.08.2020 12:48	Textdokument	3 KB
ontop5	11.08.2020 12:49	Textdokument	3 KB
ontop6	11.08.2020 12:49	Textdokument	3 KB
ontop7	11.08.2020 12:50	Textdokument	3 KB
ontop8	11.08.2020 12:50	Textdokument	3 KB
ontop9	11.08.2020 12:51	Textdokument	4 KB
ontop10	11.08.2020 12:51	Textdokument	3 KB
ontop11	11.08.2020 12:52	Textdokument	5 KB
ontop12	11.08.2020 12:52	Textdokument	5 KB
ontop13	11.08.2020 12:53	Textdokument	5 KB
ontop14	11.08.2020 12:54	Textdokument	5 KB

- New in-hilt effect files:

To simplify the modification of the effect files, a new structure was introduced. In past, there were only the "effect[number].txt" files that contained both color and effects. Now, there are a "color.txt" file and "effect[number].txt" files in each blade folder. That way, it is easier to change the color and the effects independently of each other. Each blade folder contains a single "color.txt" and thus a single color.

accent	21.02.2020 11:59	Textdokument	3 KB
color	11.08.2020 13:23	Textdokument	2 KB
effect1	11.08.2020 13:16	Textdokument	8 KB
effect2	11.08.2020 13:17	Textdokument	8 KB
effect3	11.08.2020 13:18	Textdokument	8 KB
effect4	11.08.2020 13:18	Textdokument	8 KB
effect5	11.08.2020 13:19	Textdokument	8 KB
effect6	11.08.2020 13:20	Textdokument	8 KB
effect7	11.08.2020 13:20	Textdokument	8 KB
effect8	11.08.2020 13:21	Textdokument	8 KB
effect9	11.08.2020 13:21	Textdokument	8 KB
effect10	11.08.2020 13:22	Textdokument	8 KB

- Accent LEDs standby:

It is now possible to customize whether the accent LEDs are turned on when the blade is not ignited or turned off. There is a new parameter in the "accent.txt" file. In the following, this parameter is described:

- accent_standby=0: The accent LEDs are turned off when the blade is not ignited.

- accent_standby=1: The accent LEDs are turned on when the blade is not ignited.

- Increased volume limit:

You can increase the volume up to 400 now. However, increasing it beyond 100 is at your own risk as your speaker may not be able to support such high volumes.