AS2 ECO CC CHASSIS INSTALL GUIDE

Chassis designed by Goth3Designs

Install Guide by Sabers Forever
July 2023

This guide will provide you with a visual index of the saber parts, along with assembly instructions for the KR Sabers "**AS2**" Goth3Designs **ECO CC Chassis**

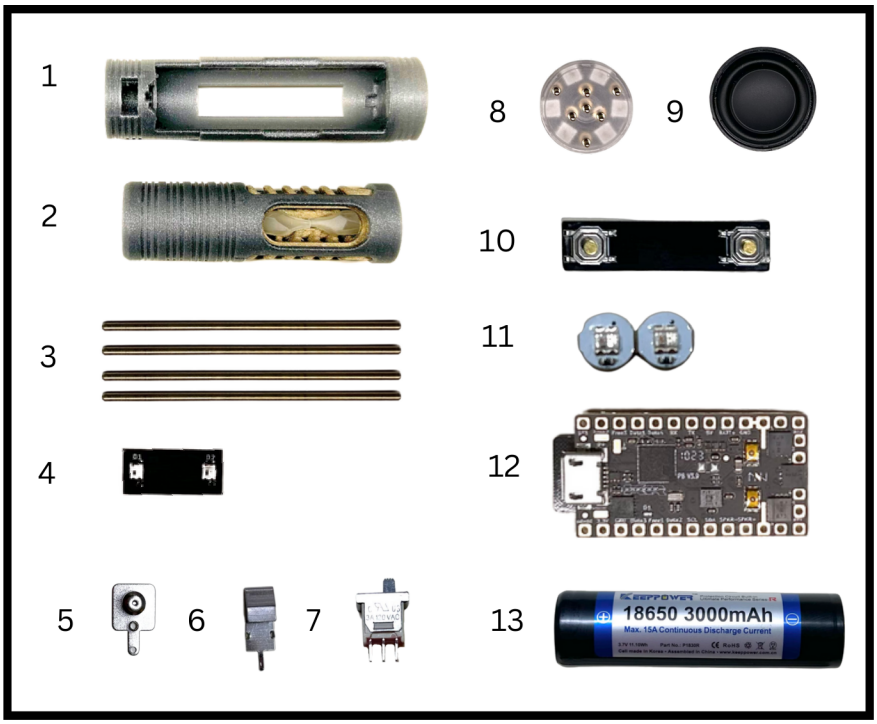
You will need to posses basic soldering skills and an understanding of how to read wiring diagrams in order to complete this installation.

Please note: ALL IMAGES ARE PROVIDED FOR VISUAL REFERENCE ONLY.
THE PHOTOGRAPHS ARE NOT SHOWN AT A 1:1 SCALE.

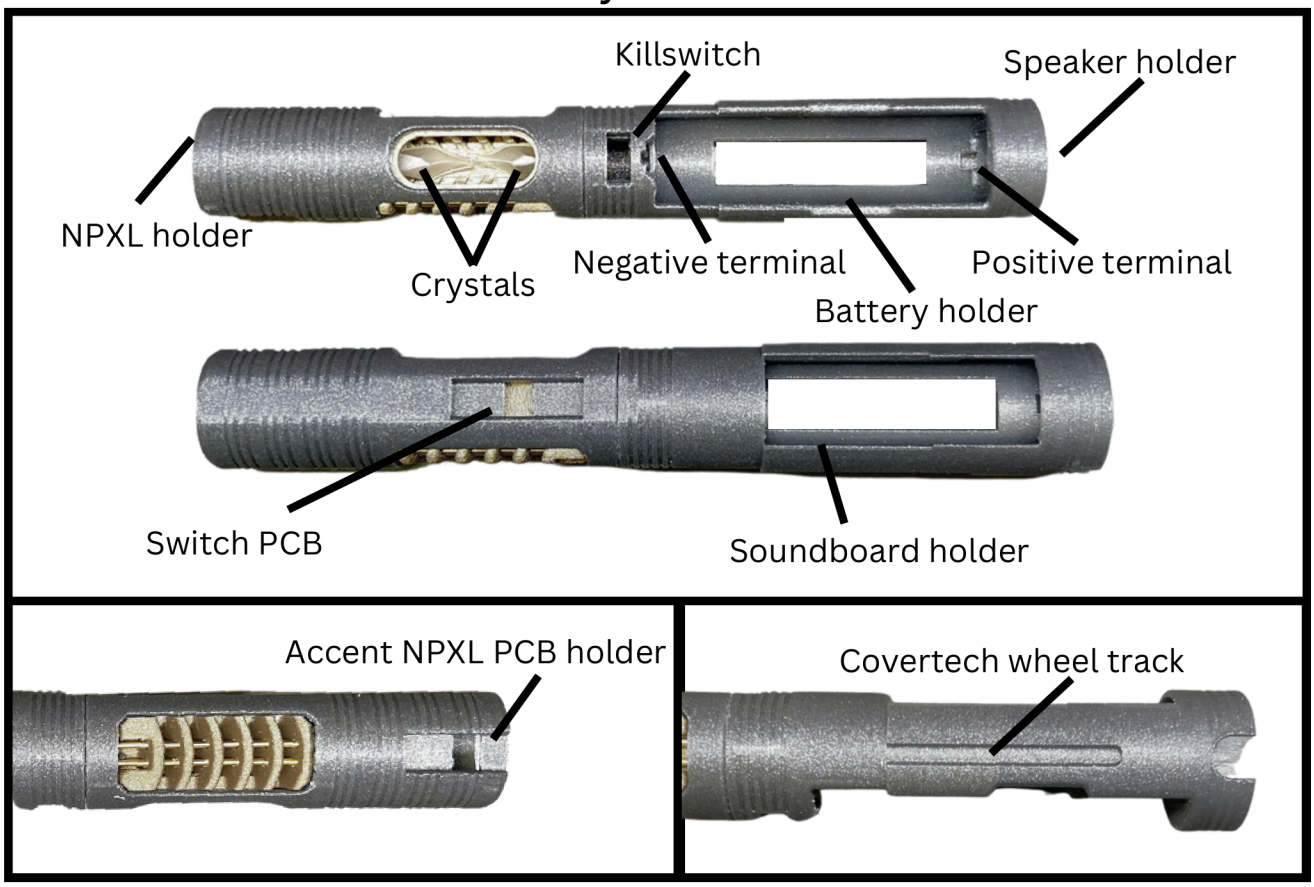
STEP 1 - Components and Test fit.

The Install kit will come with the following components.

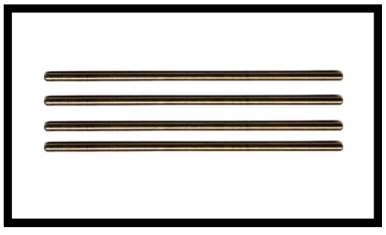
Install Kit
1. Chassis Bottom
2. Chassis Top
3. 4x 55mm Brass rod
4. Accent NPXL PCB
5. Positive terminal
6. Negative terminal
7. Kill switch
8. ECO NPXL w/Lens
9. 28mm speaker
10. Tactile switch PCB
11. Crystal accent pixels
12. Soundboard
13. 18650 Li-Ion Battery

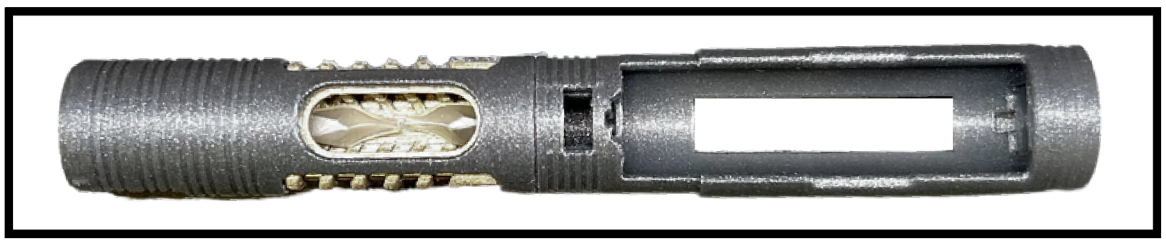


Anatomy of the chassis

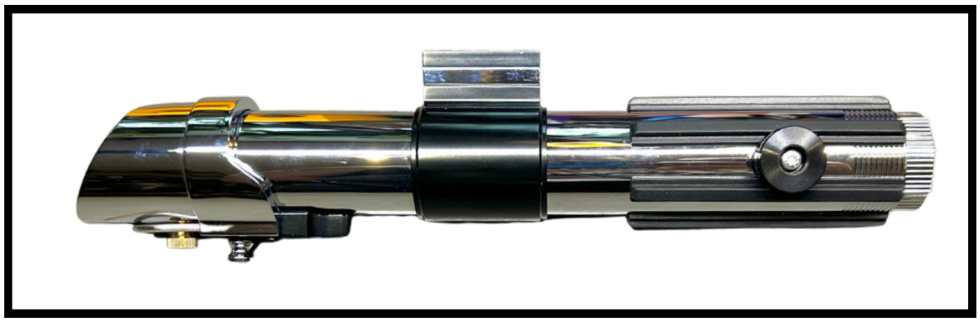


Test fit all of your components. Start by making sure the three chassis pieces all assemble and fit into your saber. You will have to put together your chassis. So let's start there. Cut the Brass rod into **four** 55mm length pieces. Some of the print holes may require some work to fit the rods. You may need to drill out the holes a little bigger if they cannot be pushed through some what easily. Make sure the crystals sit nicely inside the chassis. Once the chassis is together, test fit the chassis into the saber hilt to make sure it is easily taken in and out.

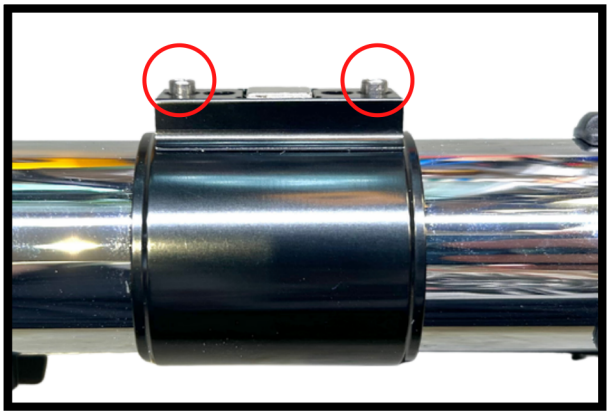


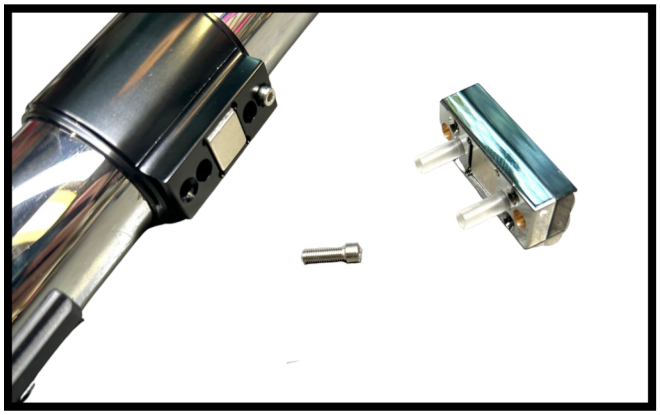


It is very important to check the inside of the saber to make sure no unwanted burs or screw threads are protruding on the inside of the hilt. Some of the screws protruding inside are helpful like the covertech wheel screw. This screw will act as a guide for the chassis orientation to keep the switches and LED's lined up inside the saber while in use.

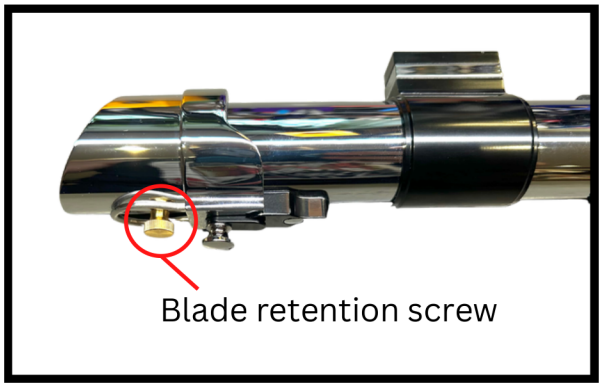


The top of the activation box is held on with a magnet. Pull the top of the activation box off to reveal the screws holding the activation box. Check inside the saber to see if they are sticking out. If they are, you may need to remove 2mm of length from the screws. These can potentially destroy the switches on the PCB if they are too long.

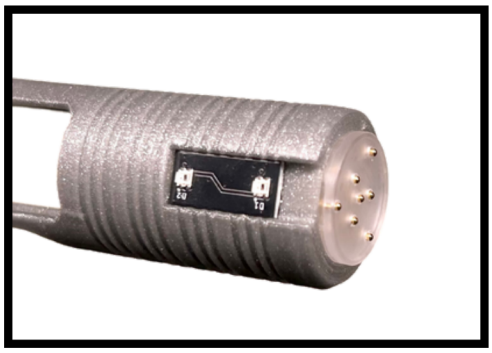


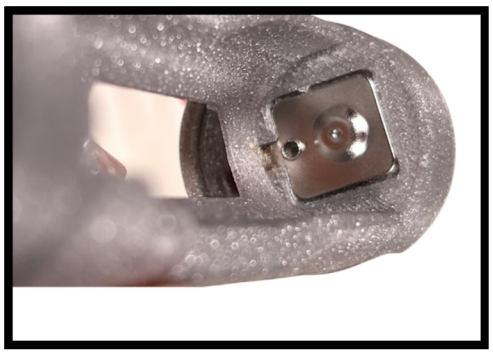


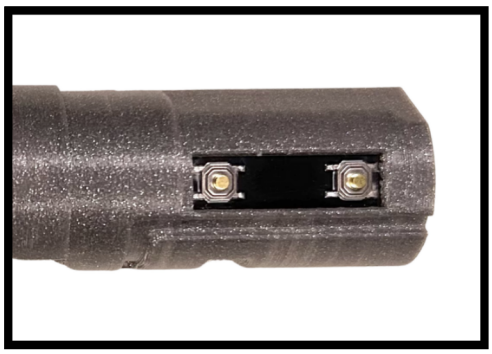
The blade plug can be removed by twisting the blade retention screw counter clockwise, the plug should just fall out into your hand. The pommel can be unthreaded for access to the bottom of the saber. This is where the chassis will be inserted.

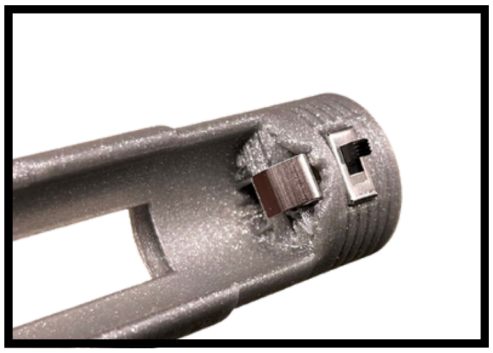


If something is too tight, use your best judgment on if the chassis or the component should be altered. For example, the NPXL PCB is easy to sand/file, where as the speaker holder might only need the lip of the holder chamfered.







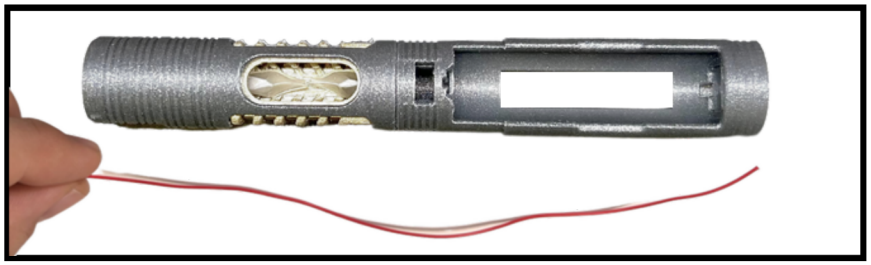


Make sure not to press anything into the chassis that you wont be able to get out. The negative terminal has barbs on it that will prevent you from being able to remove it. You may want to wait to push a component like that in before soldering it. Examine your parts!

STEP 2 - Parts prep and soldering

The following section will provide insight on soldering the wire leads to the components and recommended wire paths on certain parts. Wire color is not critical but to avoid confusion, it is recommended to use different color wire to identify where it is coming from when connecting each component to your chosen soundboard.

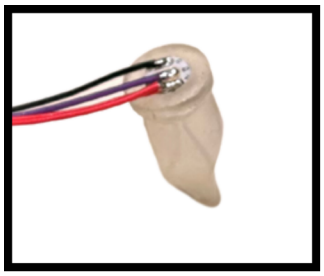
Roughly measure out wire by putting the chassis together and running wires from where components will sit and where they will need to connect to the soundboard, give yourself some extra length you can always make wires shorter, it's harder to make them longer. The wires need to sit within a small space without pinching or being pulled as the sound board and crystal chamber are set into their final position.

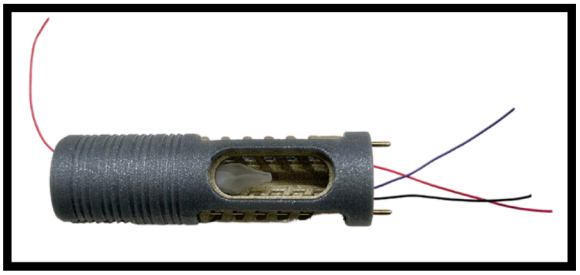


If you are unsure about wire lengths, below are recommended lengths certain component wires should be.

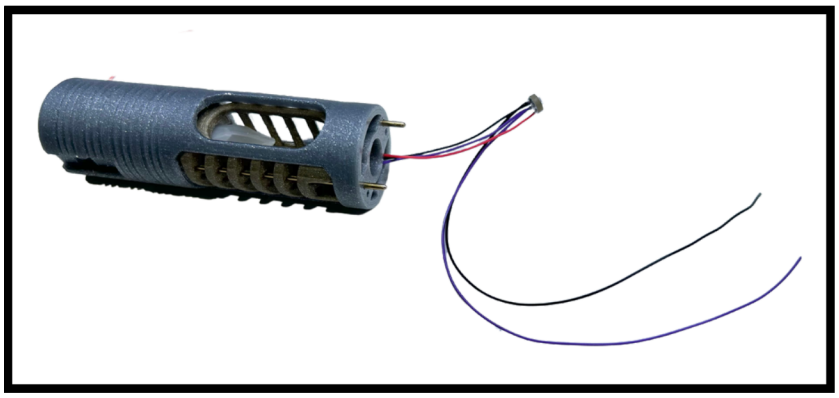
	Wire Length	Wire Gauge	Color recommendation
NPXL-	9 inches (230mm)	two 22AWG wire	1x red, 1x black
Crystal NPXL-	6 inches (150mm)	six 28AWG wire	2x purple, 2x red, 2x black
Accent NPXL-	9 inches (230mm) 4 inches (100mm)	one 28AWG wire three 28AWG wire	1x green 1x red, 1x black, 1x green
Switch-	6 Inch (150mm)	three 28-32AWG wire	1x blue, 1x orange, 1x white
Speaker-	4 inches (100mm)	two 28AWG wire	2x yelow
Negative-	4 inches (100mm)	one 22AWG wire	1x black
Killswitch-	6 inches (150mm) 4 inches (100mm)	one 22AWG wire one 22AWG wire	1x red 1x red

First we start with the neopixel for the top crystal. We will solder two of the 28awg red wires to the positive pad and one of each wire for the data and negative. So you should have 4 wires coming off the NPXL PCB. Once this is soldered, glue the pixel into the crystal. At this point you should have your crystal chamber in the top part of the chassis so you can glue the crystal into place.



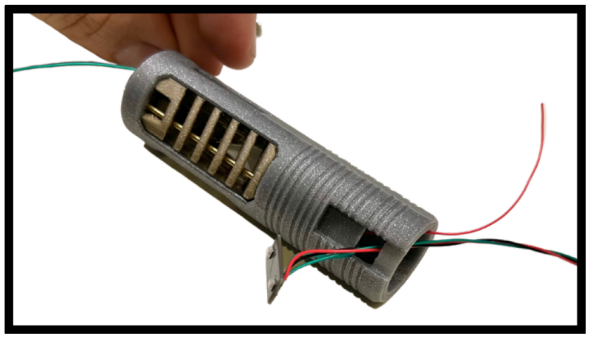


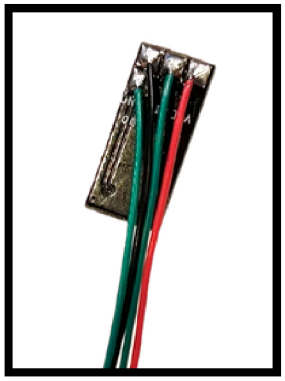
One of the positive wires will be left coming out the main blade connector area to be soldered to the NPXL connector later. Feed the other three wires down the chassis behind the crystal chamber.



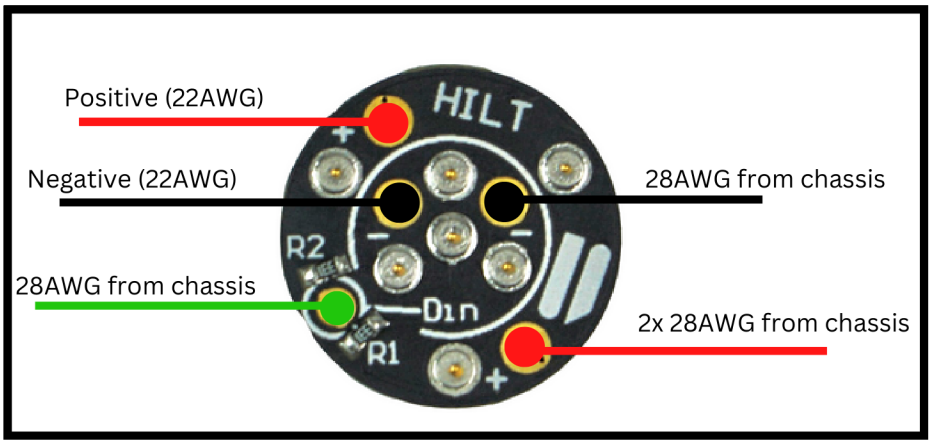
Solder the wires from the chassis onto the other neopixel PCB. Be sure to twist together the other negative and data wires that were pre cut to this PCB. These wires will go to the soundboard area. We will progress the crystal chamber pixel later.

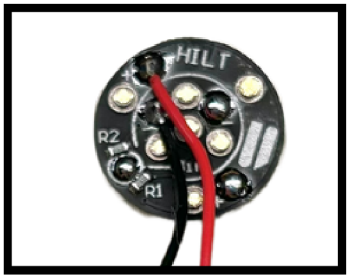
Solder the accent NPXL PCB. The pads are labeled and display which pad is which. The DI (data in) should get the longer pre-cut green 9" wire. This wire will lead to the Soundboard area and the others will come out the main blade NPXL holder.Glue the connector to the chassis

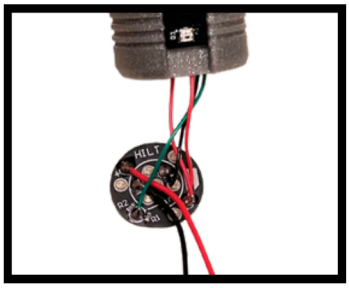




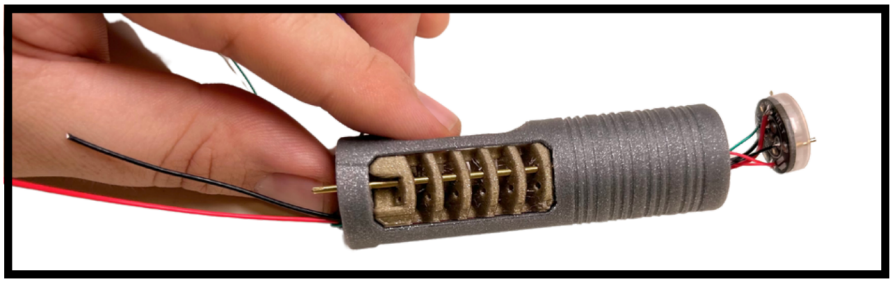
Prep the main blade connector with the 22awg positive and negative wires. Solder the wires coming out of the NPXL holder to the connector, this should include 1 negative, 1 data and 2 positives. Like wires do not need to go to the same pad if there is more than one.

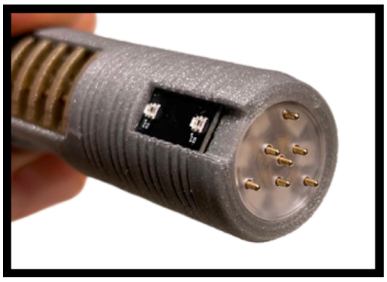


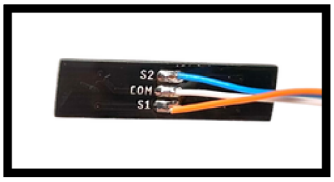


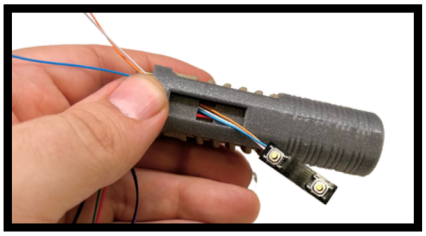


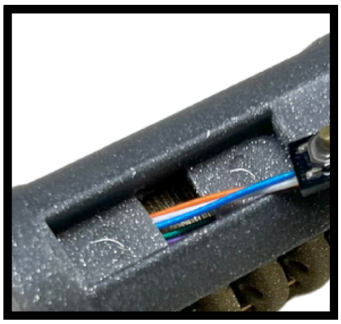
Run the positive and negative wires from the connector down the chassis and out the bottom with the other wires. Press/glue (if needed) the connector into the holder.

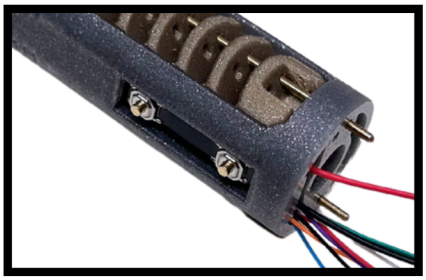






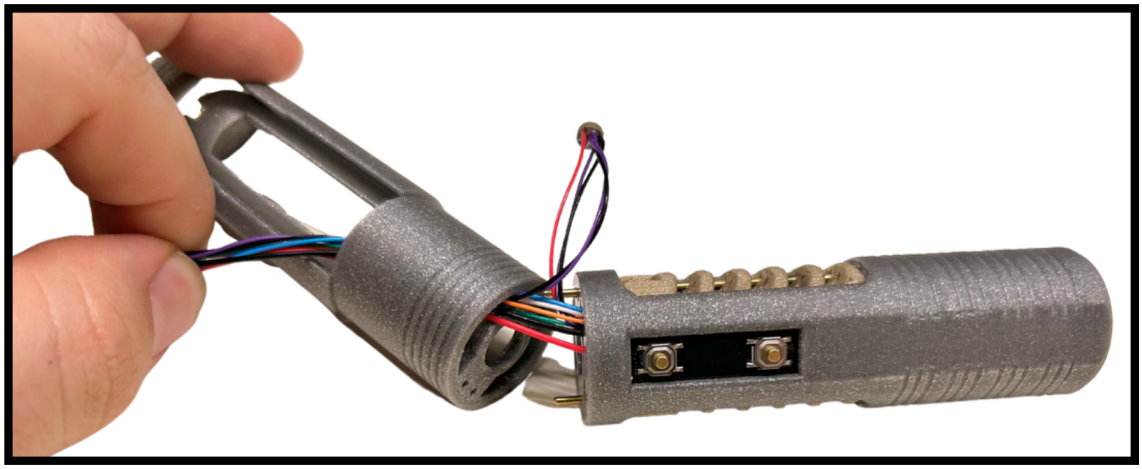


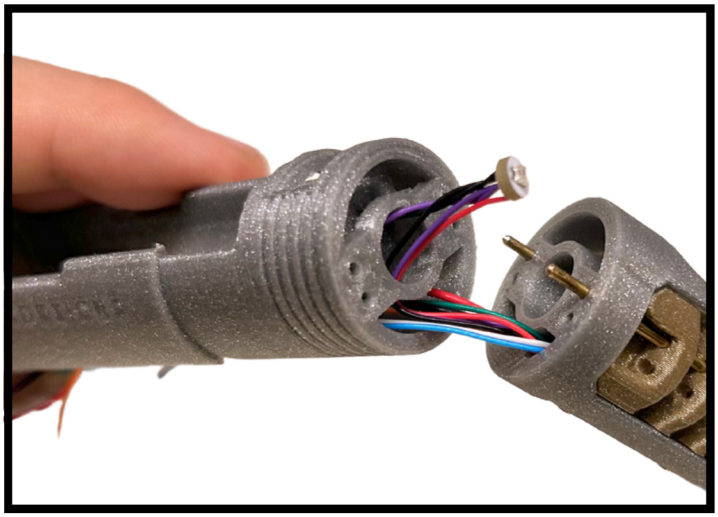




Solder the 28AWG wires to the back of the switch PCB and feed the wires into the chassis and down the bottom with the rest of the wires. Glue the PCB into the chassis and make sure it is seated all the way to the bottom of the holder.

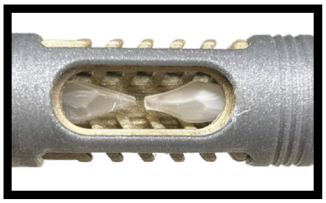
The top part of the chassis should now 90% assembled with only the bottom crystal pixel left to glue in place. First feed all the wires from the top chassis into the bottom chassis via the opening to the soundboard holder. The soundboard side of the bottom chassis should line up with the switches of the top chassis.

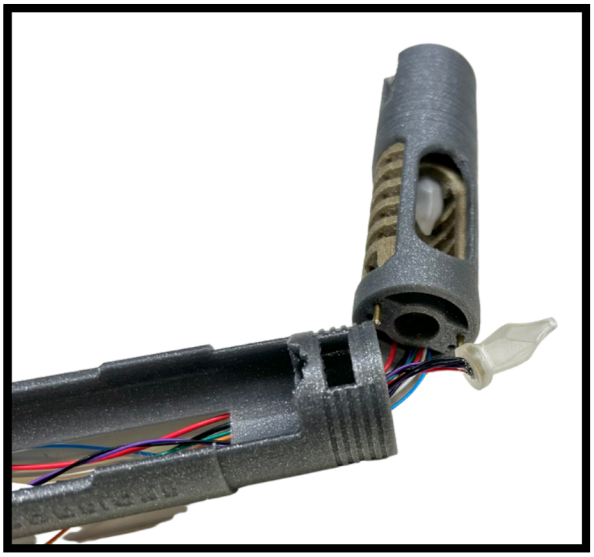


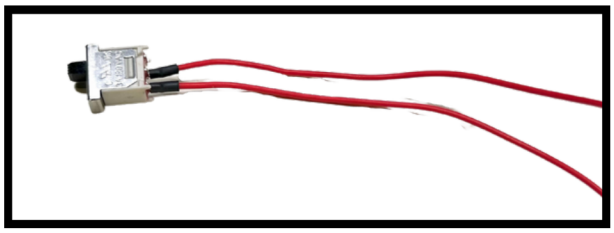


In order to avoid pinching the wires of the bottom crystal pixel, the wires need to be fed into the bottom chassis following all the other wires and then back out through the center hole of the chassis where the crystal will sit. this can be a little tricky but can be snaked through.

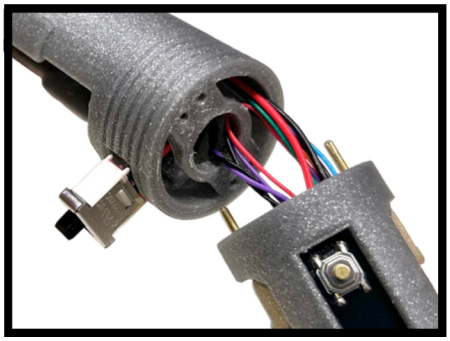
Glue the crystal onto the pixel PCB and then feed the crystal in through the bottom of the chassis.
If you did not test the fit of the crystal with this assembly method, do so before gluing it to the pixel PCB as it will be easier to size. You don't want to have to push very hard to set it in place as it might damage the component.

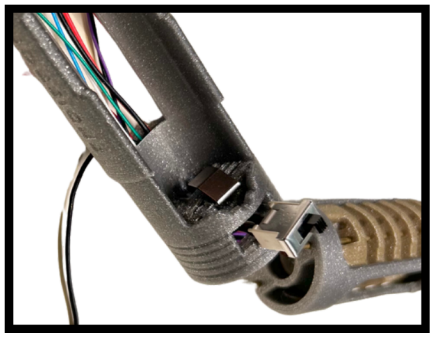


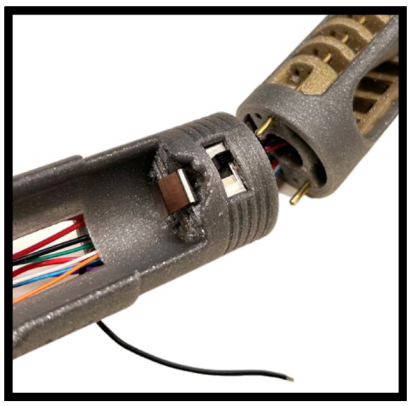




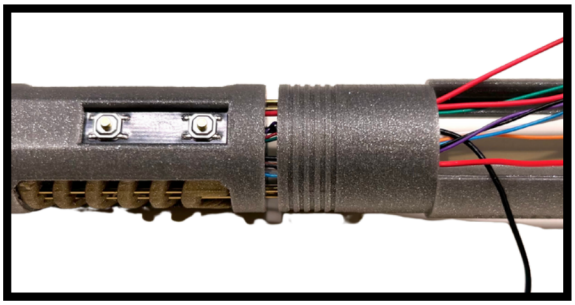
Solder the pre-cut wires onto the negative terminal and the killswitch. These components should be pushed in place into the chassis and have the wires fed to the soundboard opening. It will be easier to place the negative terminal first as it will be easier to get tools in the end to help navigate the wire.

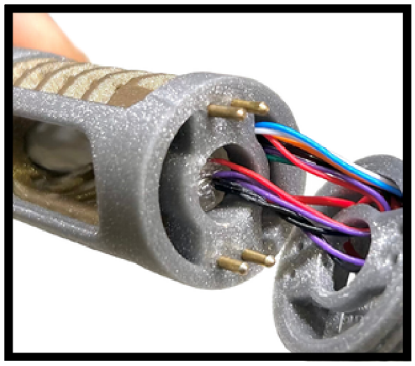


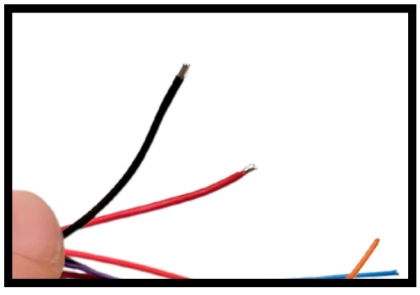




Once the negative terminal is placed into the chassis, glue the killswitch into its seat and add the rest of the brass rod into the top part of the chassis if you have not already. These can be glued in, but be sure to leave enough sticking out to go into the bottom part of the chassis and do not leave any residue on the chassis surface that meets with the other half of the chassis. It should remain clean so it has the best fit on final assembly.

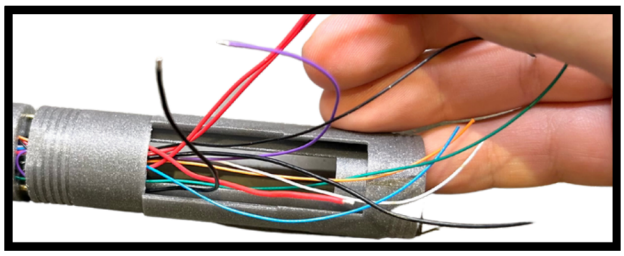
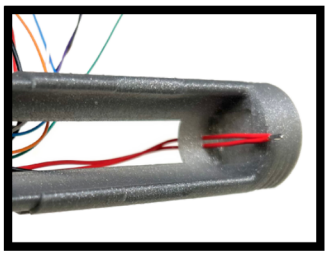
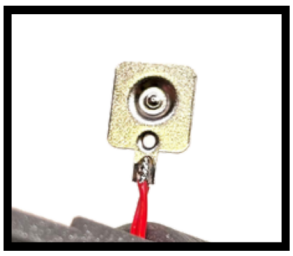
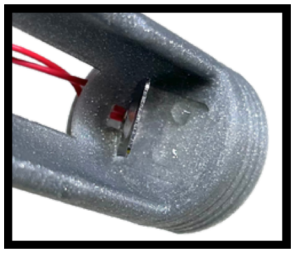
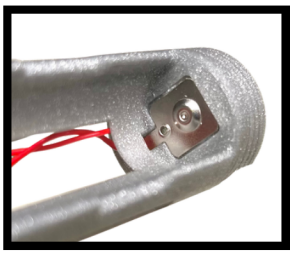
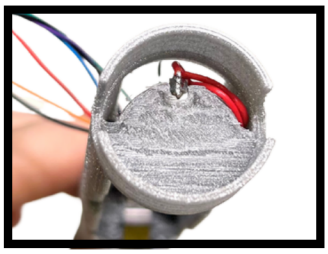
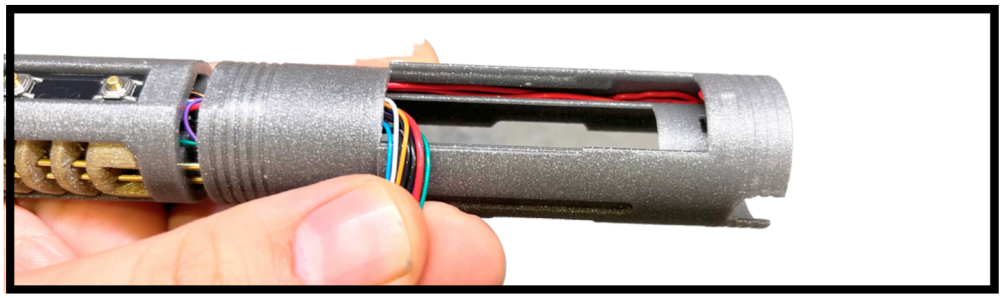






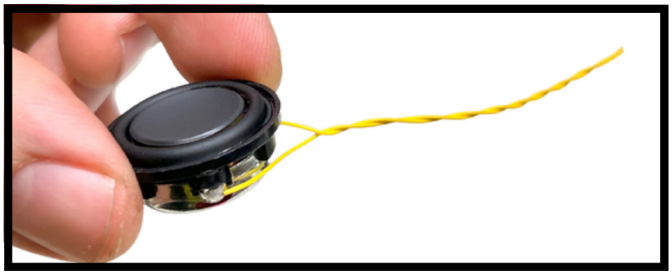
Loosely fit the chassis parts together to make life easier. You should now have a bunch of wires coming out of the soundboard holder and you don't want to get any wires mixed up if you have wires that are alike. The short red 22awg wire from the killswitch is the positive to the soundboard and the black 22awg wire from the negative terminal goes to the negative on the soundboard. These should be easily identified and since there is no power without the battery, I like to strip these two wires to make sure I remember what they are.

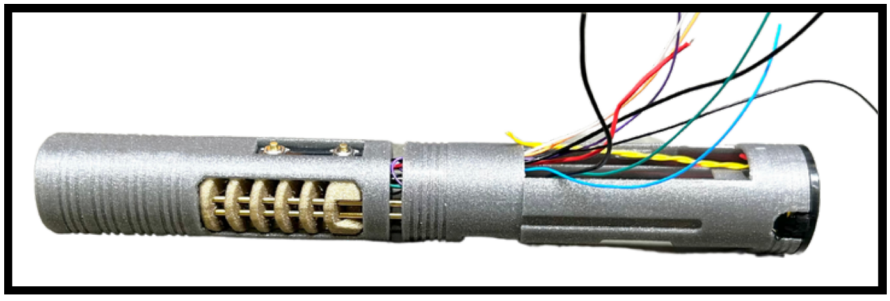
Find the two longer red 22awg wires and feed them through the hole for the positive terminal holder. Tin the two wires together and solder them to the back of the positive terminal. Once the terminal has cooled off, glue it into the chassis.

Once the terminal is glued in place, make sure to tuck the two wires into the chassis nicely. The speaker will take up all of the space in the speaker holder and no wires can be in this area.

Solder the pre-cut wires to the speaker off to the side of the speaker instead of perpandicular to the speaker. This is to make sure the wires don't sit between the speaker and chassis body. Glue the speaker into place.

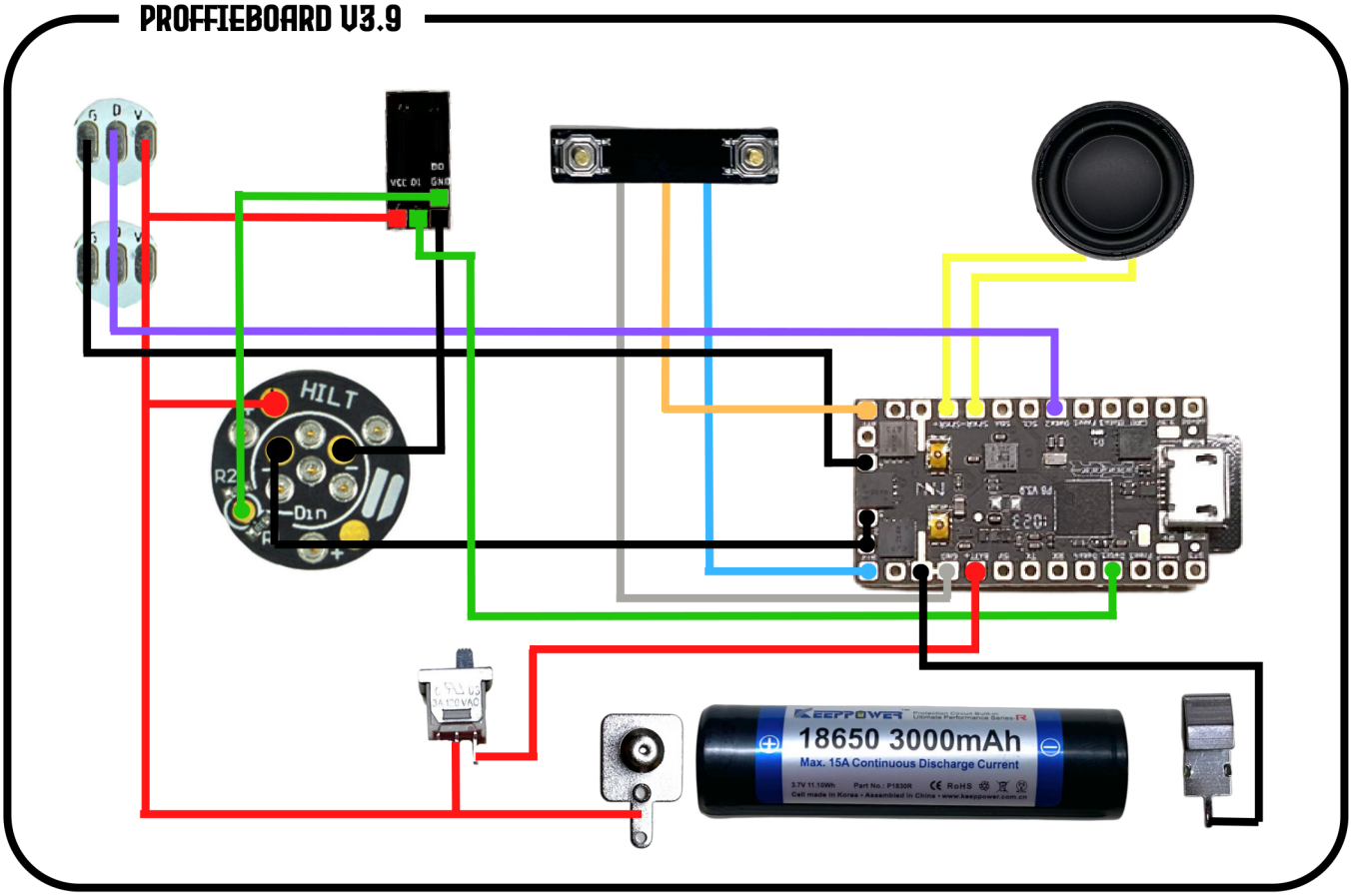




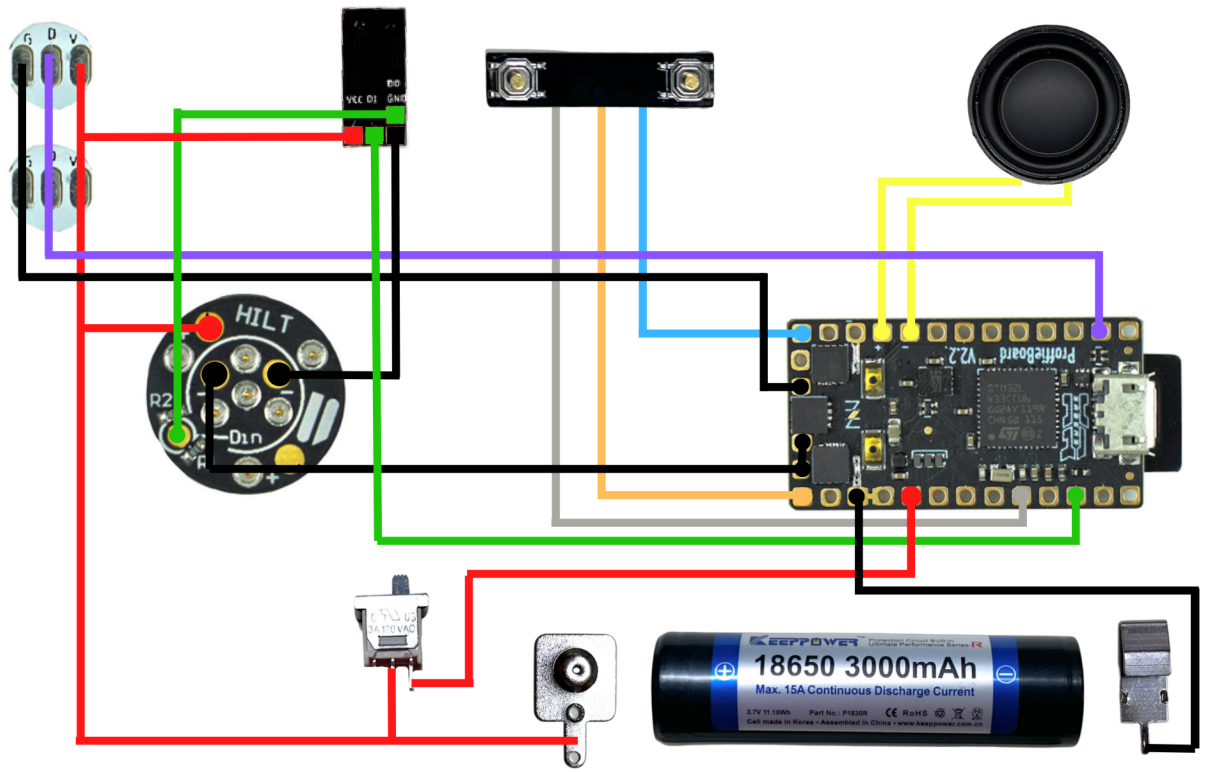
You should now have a mess of wires coming out of your soundboard holder. Please select the wiring diagram for your selected soundboard to continue.

Please note, this guide is provided to assist with the wiring and assembly of this kit. For further details relating to the programming or setup of your chosen soundboard, please refer to the users manual.

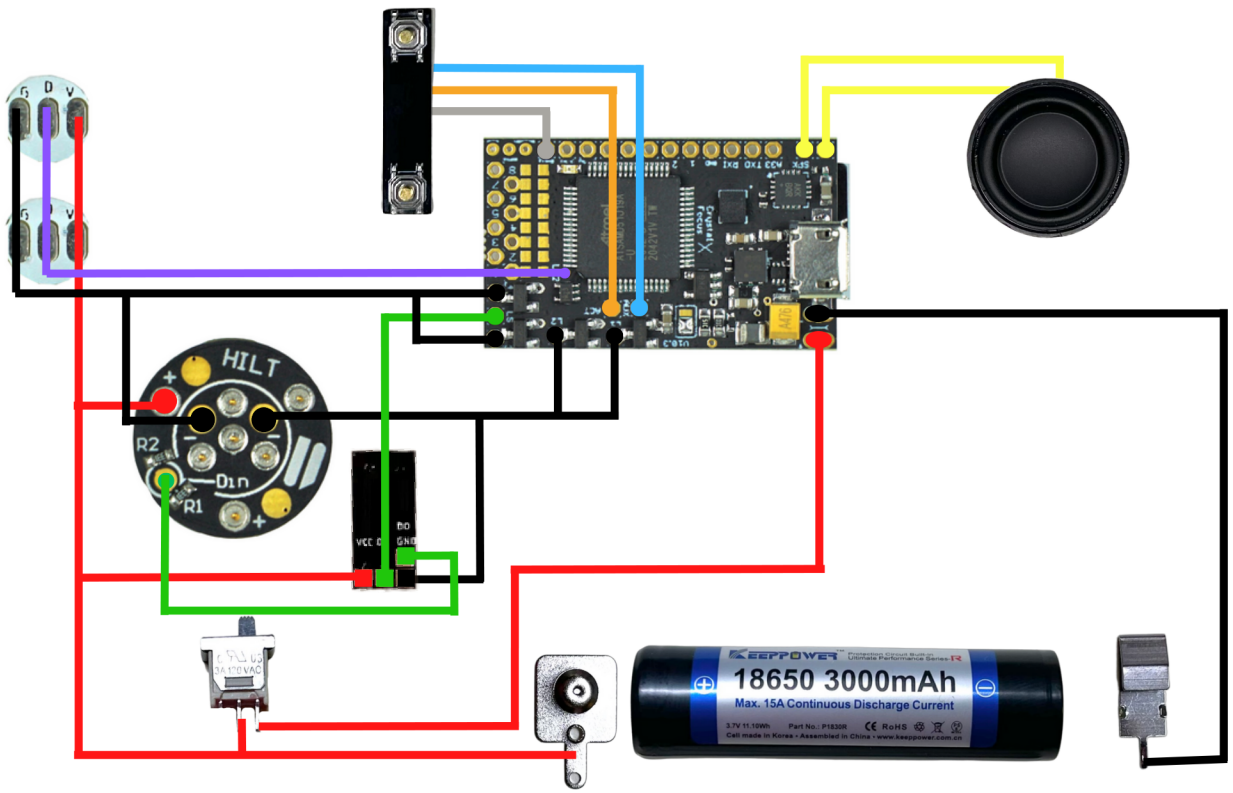
PROFFIEBOARD V3.9



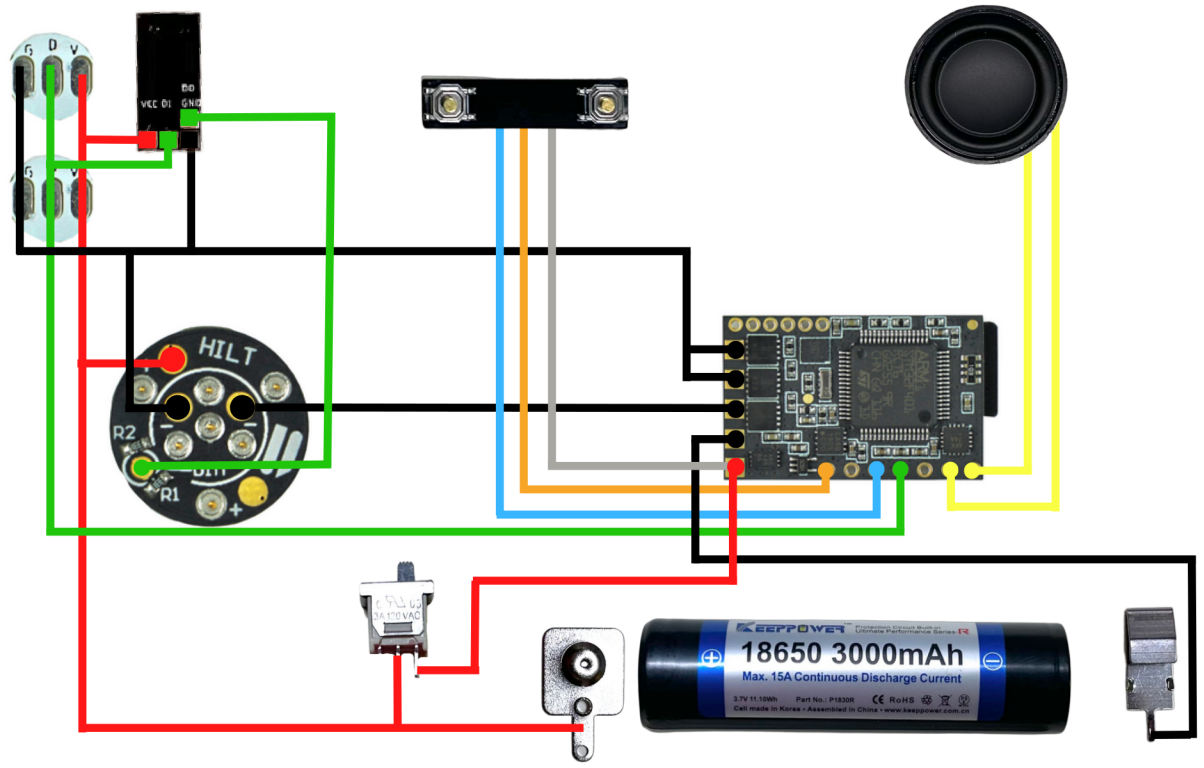
PROFFIEBOARD V2.2



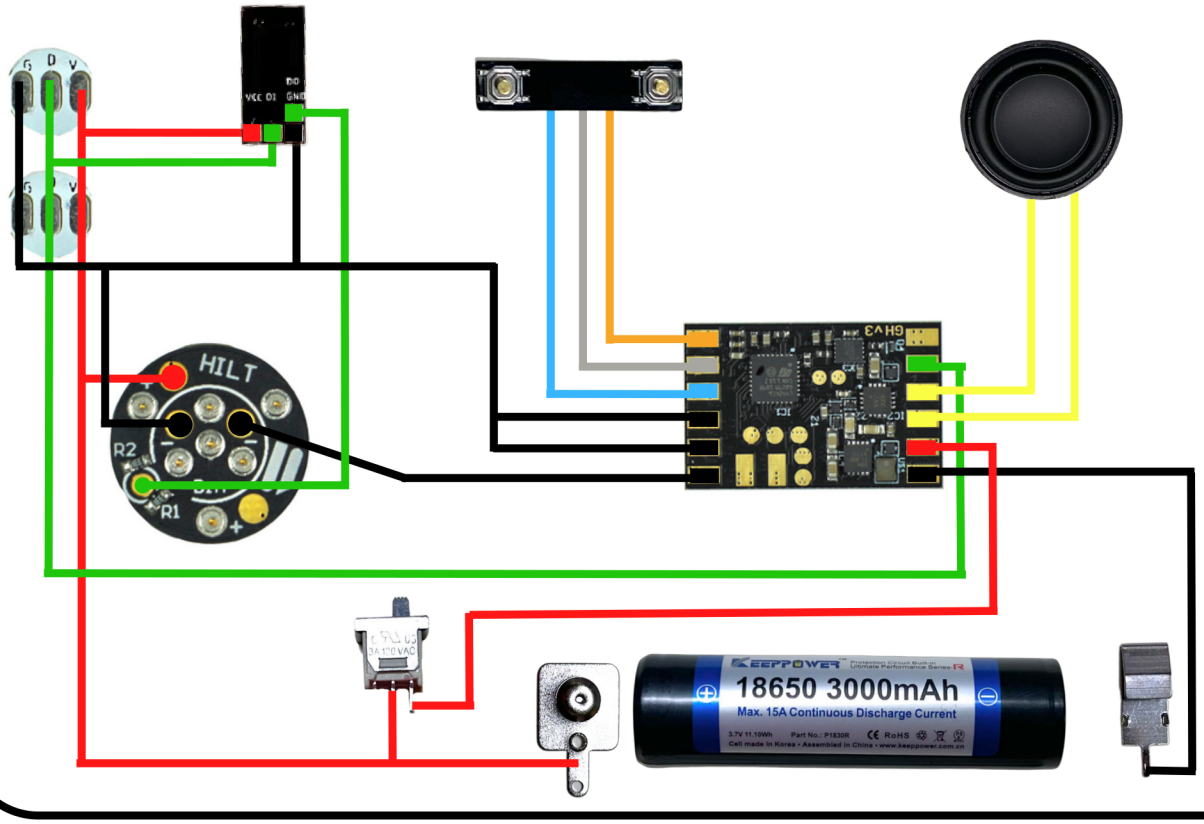
CRYSTAL FOCUS X



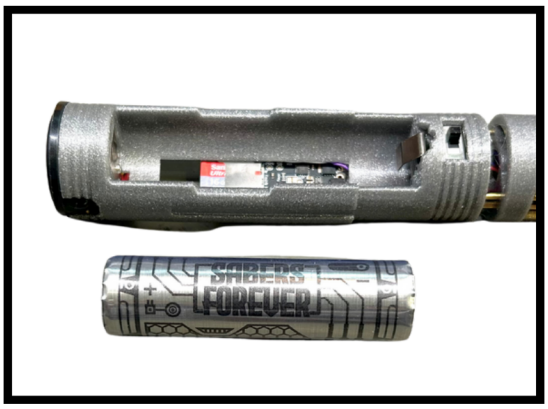
VERSO V2

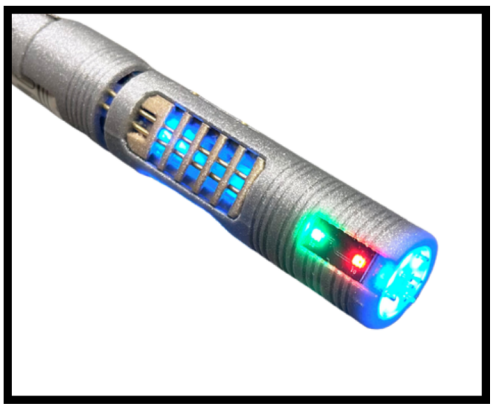


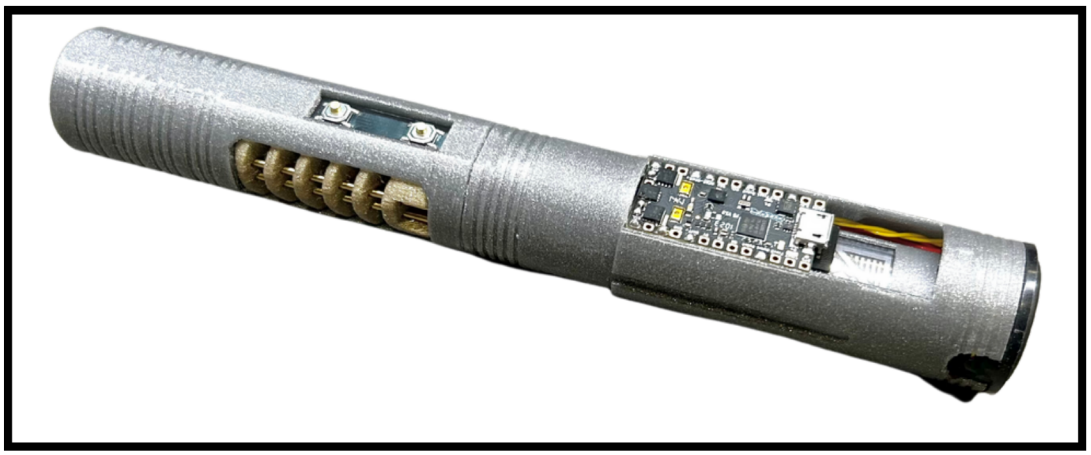
GOLDEN HARVEST V3 PHASE 4



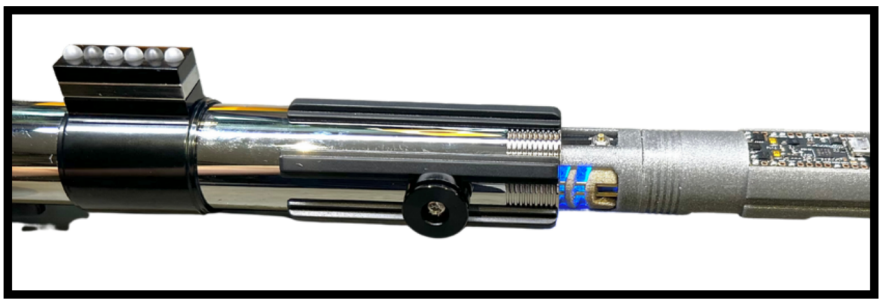
Once you have finished soldering the soundboard, double check your work against the diagram and put a battery into the saber before glueing everything together. if everything works, proceed to glue the two chassis halves together and the soundboard into the its holder. Do this with the battery removed!

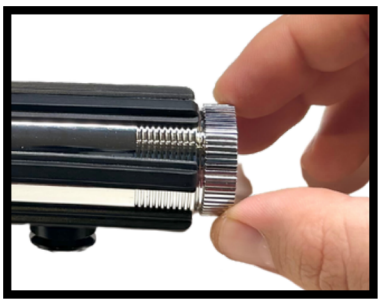


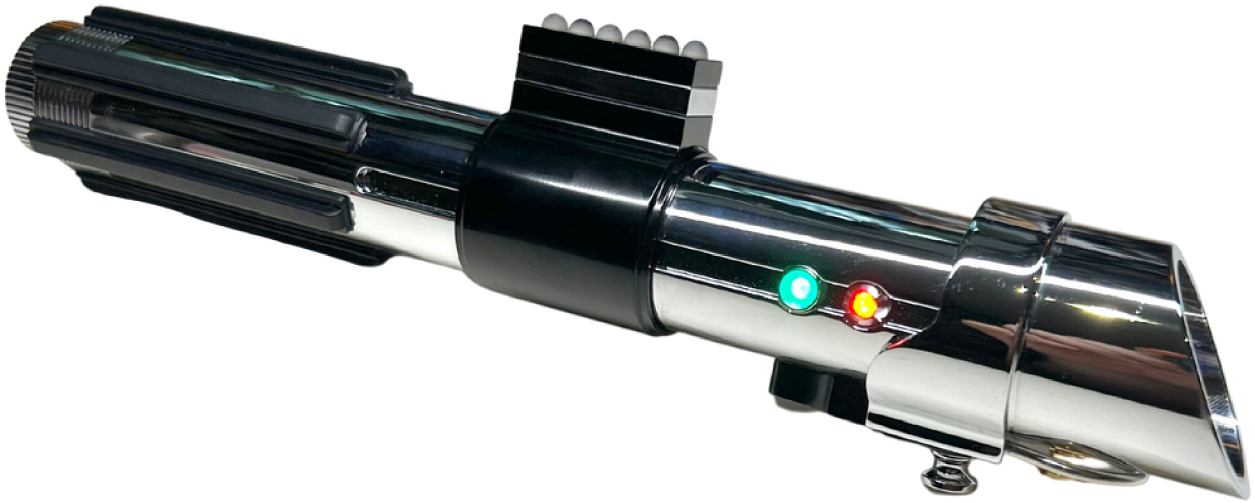




Now that the chassis is fully assembled, align the switches with the activation box and push the chassis into the handle. The track on the side of the chassis near the soundboard should also line up with the covertech wheel. Secure the pommel onto the bottom of the hilt and test your button actuation.







Congratulations on completing the installation of your saber!
We hope you had much success with this guide.

May the force be with you.

GOTH-3Designs

SABERS

SABERS FOREVER