

DIY Upgrade Kit for hörbert 2021 to 3.x – Info Sheet

Scope of delivery:

- 1x motherboard V3.x
- 1x green plastic button frame
- 1x rotary encoder with cable and nut
- 1x lightpin for operating indicator LED
- 1x USB-C socket with cable
- 1x Safety instructions for folding flyers

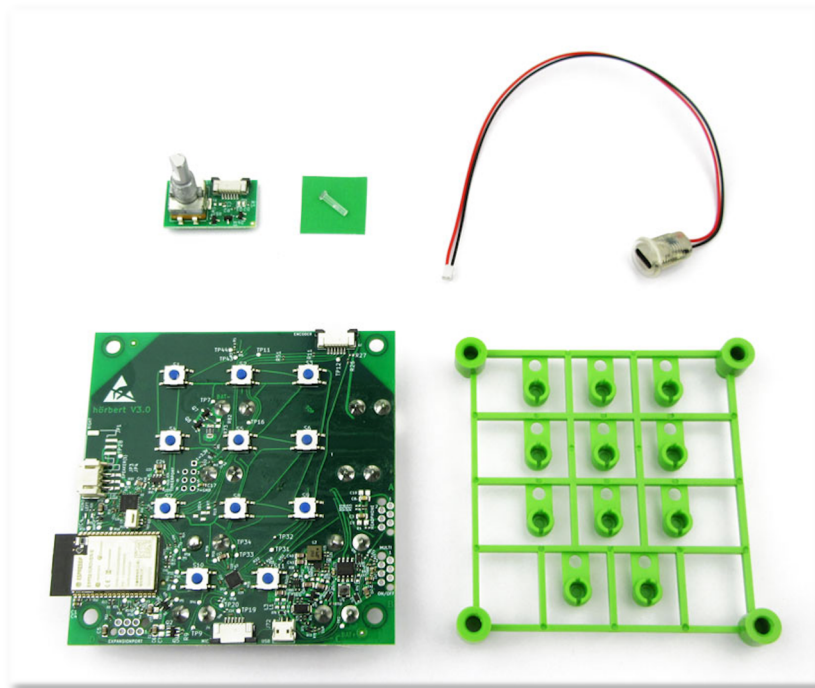


Figure 1 - Components of the DIY Upgrade Kit for hörbert 2021 to hörbert 3.0

Hello Maker,

We are pleased that you have chosen our hörbert upgrade kit. This allows you to convert your hörbert 2021 to the electronics of hörbert 3.0. If you have built your own audio player with an electronics kit in 2021 and now want to upgrade, it is best to contact our service team in advance if you are not sure whether our parts and cables are suitable for your own construction.

You will need the following tools:

- Caliper or ruler
- Socket wrenches SW7 and SW11
- Felt-tip pen or pencil
- Wood drill bit with Ø 10.5 mm and centering tip
- Drill bit with 2.1 mm (or 2.0 mm)
- Allen keys 2.0 mm and 2.5 mm
- small pointed or flat nose pliers

Safety instructions

Electronic components are sensitive to static electricity. Ground yourself before unpacking the electronics so that you do not give the material an electric shock and it is best to work on a professional surface, or at least on a wooden table with a cotton cloth or other suitable surface. Do not wear rubber soles on plastic carpet. Leave the electronics in the ESD protective bag for as long as possible and only unpack them when you install them right away. Don't drill, saw, or file the board, because it has intermediate layers that short-circuit. Never plug or unplug cables while any part still has voltage. This means: Always remove batteries beforehand! Removed electronic components must not be disposed of in the residual waste, but must be disposed of in electronic waste.

Step-by-step instructions

Remove the board

Loosen the four nuts inside that hold the screws of the board with an SW7 socket wrench and hold them against the screws from the outside with an Allen key (2.5 mm). Remove the nuts and bolts. You will need these parts again later.

Carefully pull out the board. When you lift the board, you can unplug the foil cables of the rotary encoder and microphone from the board. To do this, you have to slide open the small black fasteners on the board-side connectors for the encoder cable and the microphone cable beforehand so that the foil cables can be pulled off the board.

You can use the green button frame with the wooden keys (if you already have one) again. Put it aside. Some hörberts 2021 do not yet have a key frame, but spacer cones for the board. Therefore, we include a new key frame for safety. In this case, the colorful wooden keycaps must be attached to the slots provided for this purpose on the green key frame and pressed down:

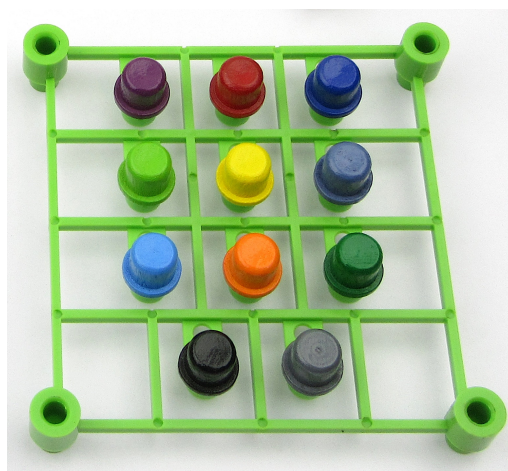


Figure 2 – Keyframes with Keycaps

Dismantling the rotary encoder (volume control)

Loosen the knob on the encoder. To disassemble the knob, you need a 2.0 mm Allen key to loosen the small, deep inside grub screw of the knob (turn counterclockwise):

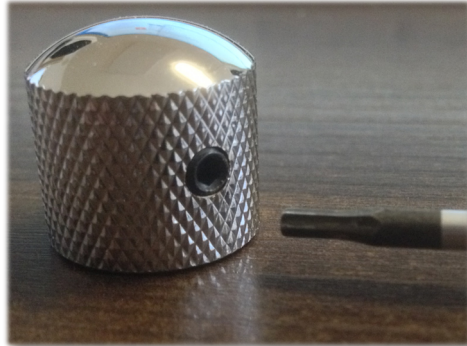


Figure 3 - Knob with grub screw

Then pull the button upwards. You will need the rotary knob again later. Loosen the nut around the encoder with an SW11 socket wrench and remove the encoder by pulling it inwards.

Draw a Drill Hole for Lightpin

Draw the hole for the lightpin to the LED power indicator. Place the drill hole 13.5 mm away from the edge of the hole where the volume control was previously mounted:

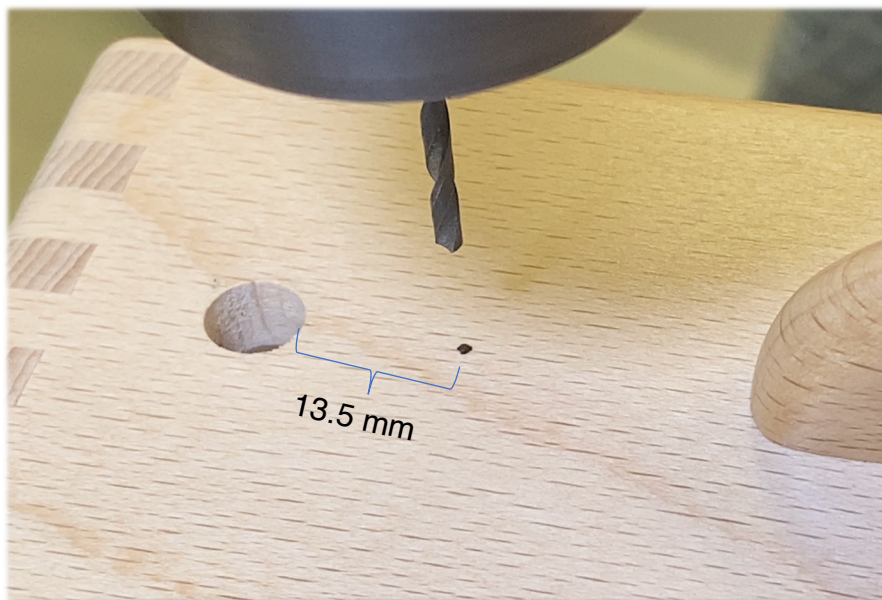


Figure 4 - Draw a hole for lightpin

Attention: If your hörbert 2021 has a blind plug for the former toggle switch on the top, draw the drill hole for the lightpin at a distance of 9 mm (instead of 13.5 mm) from the edge of the encoder opening:

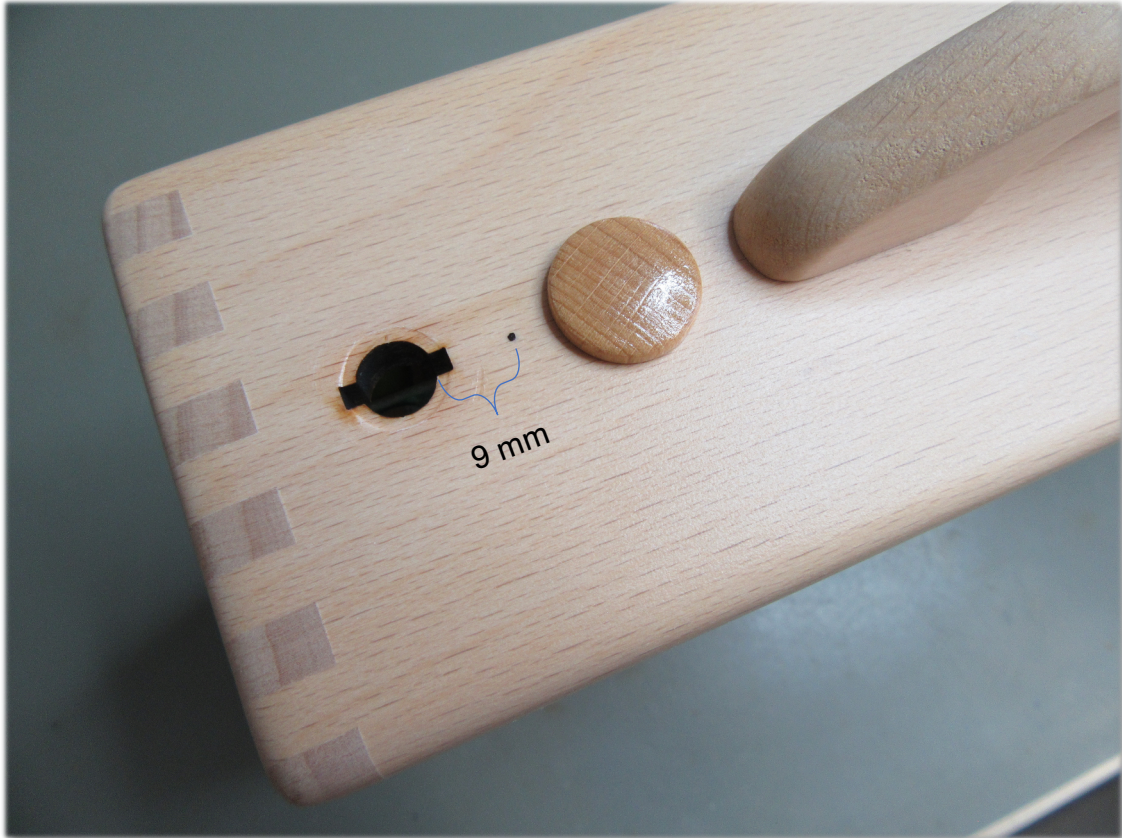


Figure 5 - Drill hole for lightpin on a hörbert with blind plug

Mark drill hole for USB-C socket

Place hörbert on the table with the back wall open to you in front of you. Now place it on the left side so that the side panel next to the speaker is facing you. Draw the drill hole with the help of a ruler in the middle and **1 cm** above the dark brown tines.

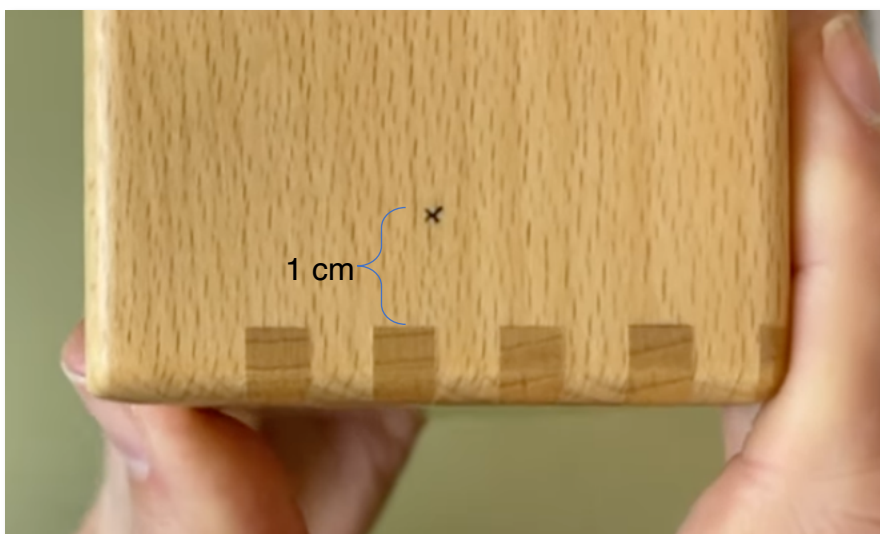


Figure 6 - Draw a hole for the USB-C socket

Drilling

Now drill the **hole for the lightpin** with a **2 mm drill**. A 2.1 mm drill would be ideal. If there is only a 2 mm drill, you will have to press the lightpin a little harder later. Then drill the hole for the **USB-C socket** with a **10.5 mm wood drill bit** with a centering tip. Carefully place the wood drill bit with centering tip on the side wall and slowly drill open the opening for the bushing.

Insert Lightpin

Insert the small lightpin into the drill hole as far as possible from the top and then press it all the way down with a tool, e.g. with the hard rubber back of a screwdriver, until it is firmly anchored.

Installation of the USB-C socket

Take the USB-C socket with cable and run the cable through the hole opening from the outside. Insert the plastic socket into the opening. Make sure that the slot is positioned as horizontally as possible and press the socket tightly. To press the socket down, you can audibly press the socket down onto the padded work pad. If the bushing is a little crooked, you can then turn it straight from the inside with small needle-nose pliers.

PCB and encoder assembly

The board is attached with the four existing screws, the corresponding nuts and the green button frame. Before that, the encoder must be installed.

Mounting the encoder with rotary knob

Open the two small black clasps on the new encoder by sliding them forward. Now plug the ribbon cable into the encoder with the white side up and close the fasteners again. Now insert the encoder through the encoder opening from the inside. Then place the nut on the encoder and tighten it with the SW11 socket wrench.

The knob must be placed so that the side with the grub screw rests against the flat side of the encoder. Then tighten the small grub screw inside the knob again clockwise with a Allen key 2.0. **Between knob and wooden housing approx. Allow 1 mm of air** so that the knob can still be pressed down after tightening.

Take one of the four front screws at a time and insert it through the front from the front. Hold your hand on the front of the screws that have not yet been attached so that they do not fall out when you carefully place them on the front of the screws. Now place the **green key frame** with the colorful wooden caps on the screws from the inside:

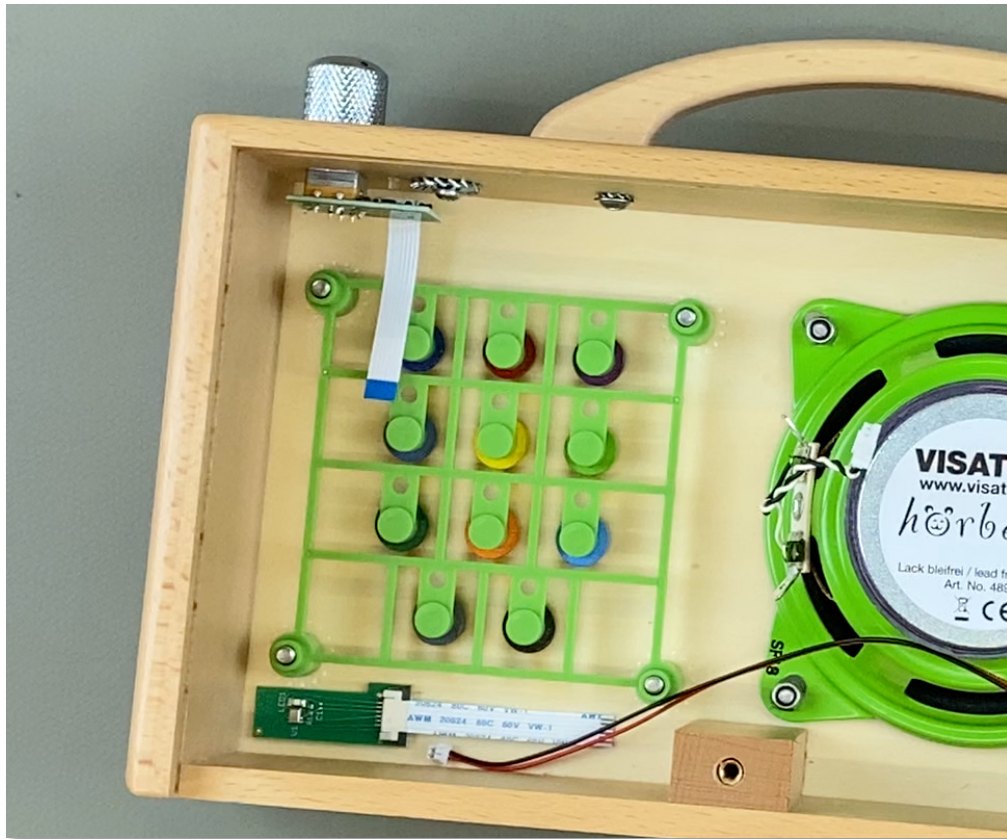


Figure 7 - Key Frame Inserted with Keycaps

Take the new board V3.x and open the two small black clasps on the bottom of the board on the connectors for encoders and microphone cables (white sockets labeled "WE") by gently sliding them open with two fingers.

Now first plug the microphone cable into the connector (No.2 in the following picture) of the board and slide the black fasteners on the connector closed:

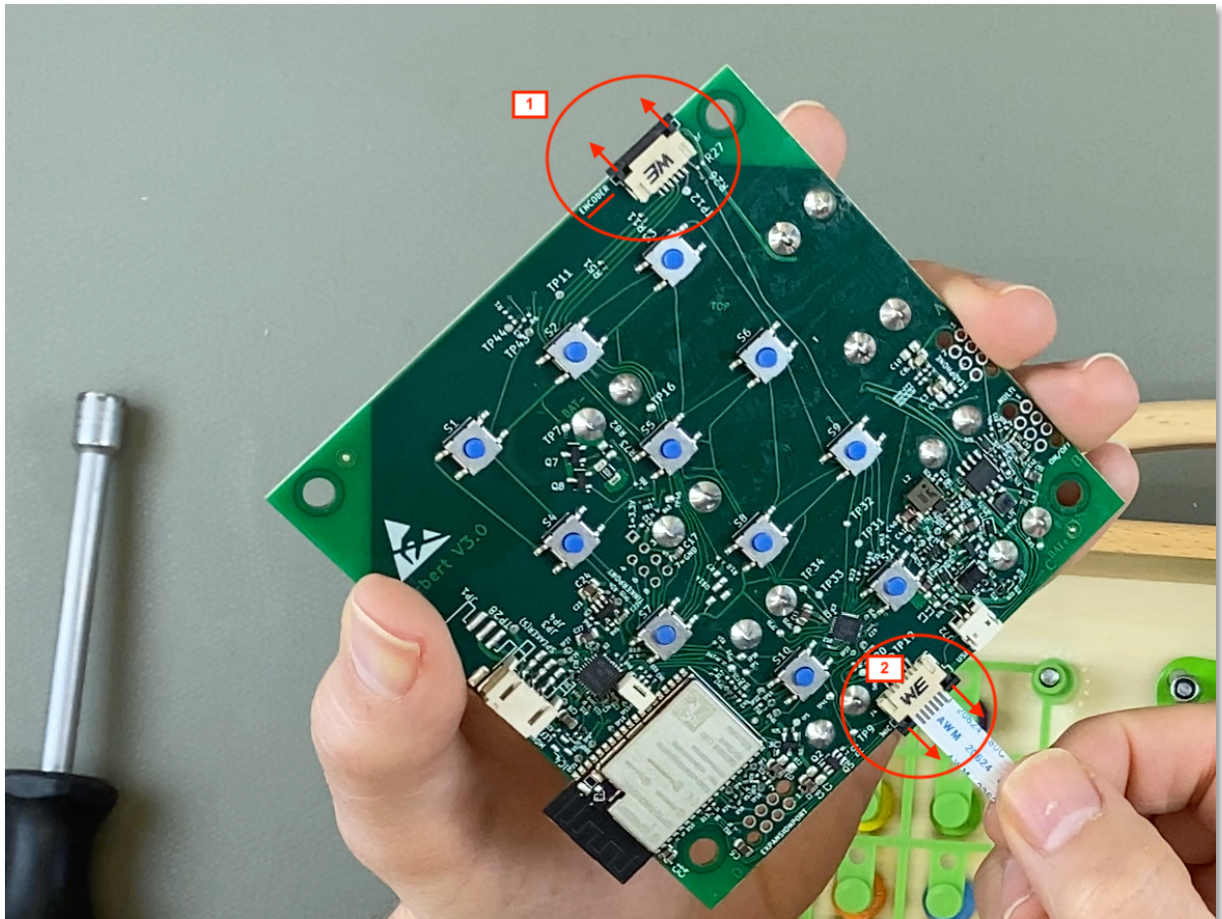


Figure 8 - Connector for Encoder (1) and Microphone (2)

Now plug the cable of the USB-C socket into the connector provided to the right of the connector for the microphone cable:

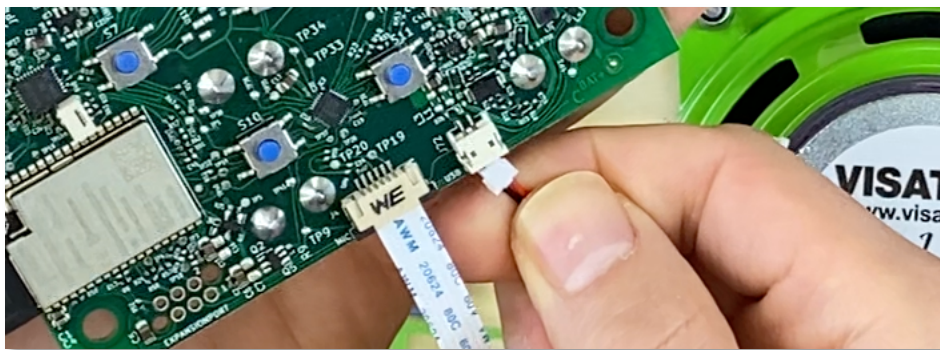


Figure 9 - USB Socket Connectors

Now turn the board by turning it clockwise to the front so that the metallic battery clips are facing upwards towards you. Plug the encoder cable into the top of the board into the connector for the encoder. For this connector, there is a printed label with the word "encoder" on the left side of the board. (Marked with underscore in Figure 8) Finally, plug the speaker cable into its socket on the right side of the board:



Figure 10 - Speaker Cable Connectors

Now place the board completely on the previously inserted screws of the green button frame and press them down a little.

Take the hexagon socket 2.5 and the socket wrench SW7 and tighten the board screws from both sides.

Attention: Be very careful and do not tighten too tightly so that the wood varnish around the front screws does not tear.

Congratulations! Your hörbert upgrade is complete.

Do you have any questions?
Write to us at service@hoerbert.com

Instructions and videos for the new features can be found on our homepage in the service area at:

<https://en.hoerbert.com/customer-service/manuals-and-videos/>