

HX3.6 Hammond XB2 Retrofit Kit

The **basic kit** consists of the following components:

- HX3.6 mainboard (variant XB Kit), four Spax screws 3x12mm, four spacer sleeves 5mm, two wire end sleeves for power cable, 5 core crimp cable with 10pin connector.
- Interface board 1 with 6.3mm jacks, 6 core crimp cable 25cm for swell pedal and foot switch connection, 3 core crimp cable 40cm for audio out, 16 core ribbon cable 25cm for pots.
- Interface board 2 for keyboard, drawbars, buttons, mod wheel and pitch wheel, two Spax screws 3x12mm, two spacer sleeves 5mm, two 10 core ribbon cables 20cm, 10 core ribbon cable 23cm, 16 core ribbon cable 33cm.
- USB extension to screw on.
- Cable ties, heat shrink tubing.

Optional additions:

- Control board with rotary encoder and up/down buttons, two black screws M3, 6 core ribbon cable 35cm.
- WiFi kit for wireless operation via TouchOSC on smartphone or tablet (iOS, Android), antenna with screw base.
- HX3.5 Extension Board (variant XB Kit, only needed for 11pin Leslie output), two Spax screws 3x12mm, two spacer sleeves 5mm, 14 core ribbon cable 66cm

The installation of the control board requires five precise drill holes (2x 3.2mm, 2x 7mm, 1x 14mm) in the steel profile to the right of the display. Alternatively or additionally, the control can be done wirelessly via our WiFi interface using TouchOSC. Both options are described in this manual.

Tools required:

Small slotted screwdriver (blade <3mm), Phillips screwdriver PH1, Torx screwdriver T10, Hexagon screwdriver 2mm, flat nose pliers or combination pliers, flat side cutter, center punch, steel drill bit 3mm, small round file.

For installation of the optional control board with encoder: steel drill bit 3.2mm, steel drill bit 7mm, step drill bit (>14mm).

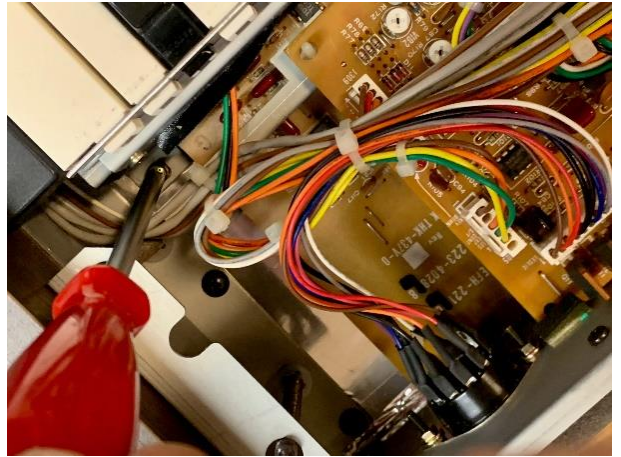
Decorating the XB2



Loosen the 5 large screws on the bottom. Then the wooden lid can be removed.

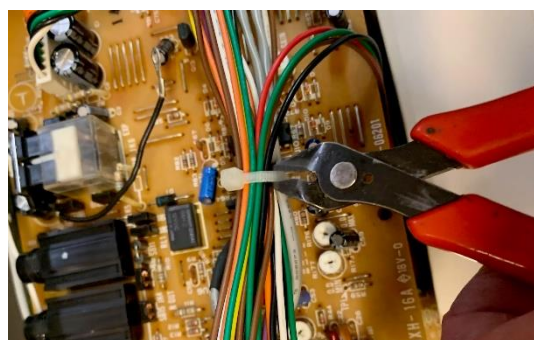
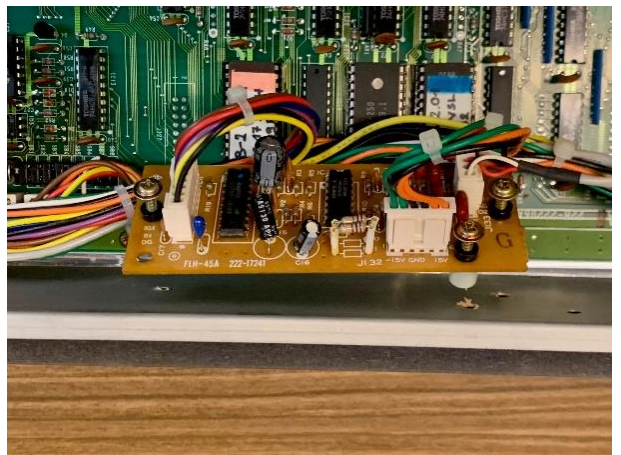
Now dismantle the keyboard. The keyboard is fixed with 5 M5 screws on the bottom and 3 M4 screws on the inside .

Make sure that no screw gets lost and **remember which screw goes where**. Note the ground connection lug on the left, which must be reattached during reassembly.



Before removing the keyboard, disconnect the connector from the motherboard.

The interface board on the rear panel is no longer required and can be removed. Disconnect all plug connections and remove the board.



Remove all cable ties holding various harnesses together.

Disassemble the MIDI connector board and put it aside. **This board will be reinstalled later.**



Remove the circuit board with the 6.3mm jacks, the potentiometers and the jack for the expression pedal.

The socket for the expression pedal may be attached with plastic rivets. Pinch these off on the inside with the side cutter.



Disconnect all connectors and remove the large main board and the boards to the right of it.

To do this, the metal bracket above it must be removed.

Only the power supply, the MIDI connection board and the boards with the controls at the front and in the left end block remain.

Remove the knobs from the Bass and Treble pots and attach them to the pots on Interface Board 1.

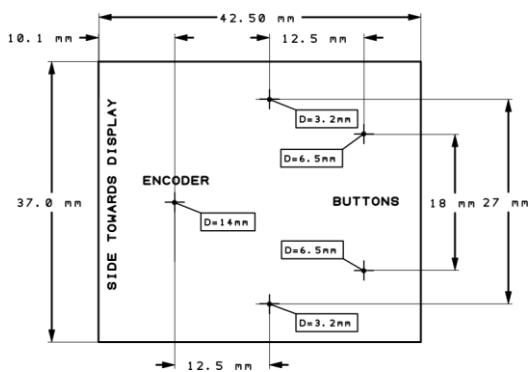
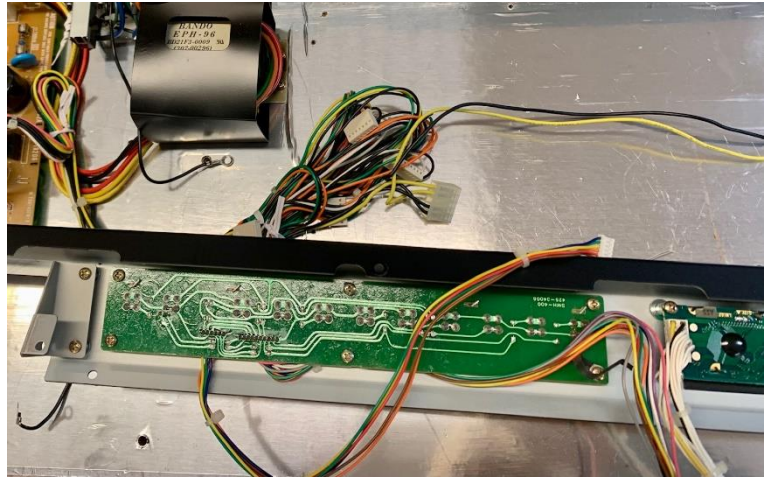
Remove all loose cables.

The metal rails can also be removed and sent for disposal.



Installation of the control board (optional)

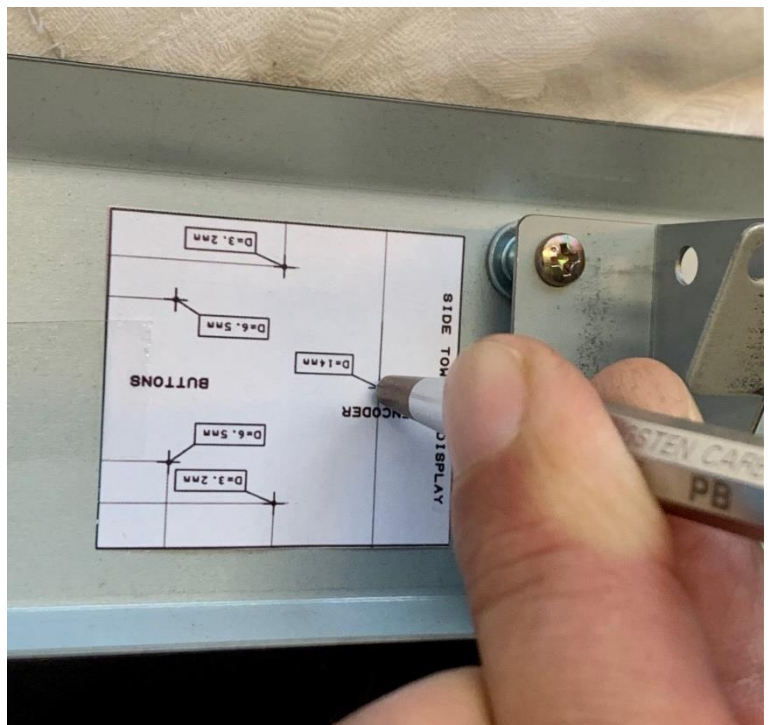
To install the optional control board with rotary encoder next to the display, holes must be drilled. To do this, remove the steel profile on which the display is located. First you must remove the left end block with the drawbars. It is attached to the base with four wood screws from above and two long plastic screws from below. Disconnect the cable to the front panel from the slot on the end block.



To place the drill holes precisely, they must be punched. For this purpose, print out the drilling template shown opposite. **Check the dimensions** to ensure that the printout is on a scale of 1:1, i.e. that it has not been enlarged or reduced. Cut out the drawing along the contour lines.

Place the metal profile upside down on a soft surface so that it does not get scratched. Attach the drawing with adhesive tape in the center of the metal surface, about 6cm next to the display, with some distance to the screwed-on strut.

Center punch the five drill holes at the positions marked with crosses. Pre-drill all five with 3.2mm. Then enlarge the two drill holes for the buttons to 7mm. Enlarge the drill hole for the encoder to 14mm with the step drill. Deburr the holes on both sides with the step drill.



Now fasten the control board with the two black screws and connect the 6 core cable. Reassemble the steel profile with the display and the left end block. When doing so, do not neglect to reattach the ground connection under the screw on the left and restore the cable connection between the two assemblies.

Installing the components

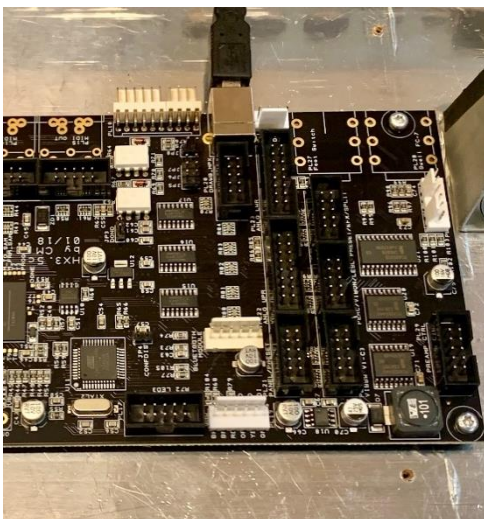


The USB socket is installed in the rear panel where the socket for the expression pedal was located. To do this, drill two 3 mm holes at a suitable distance close to the existing holes or enlarge them with a round file.

Install the interface board 1. If you want to use the optional HX3.5 Extension Board, plug the connector with the long 14 core cable ribbon into PL16 beforehand. Connect the connector of the 11pin Leslie socket to PL17 and the three connectors from the pots at the front to PL12, PL14 and PL18.

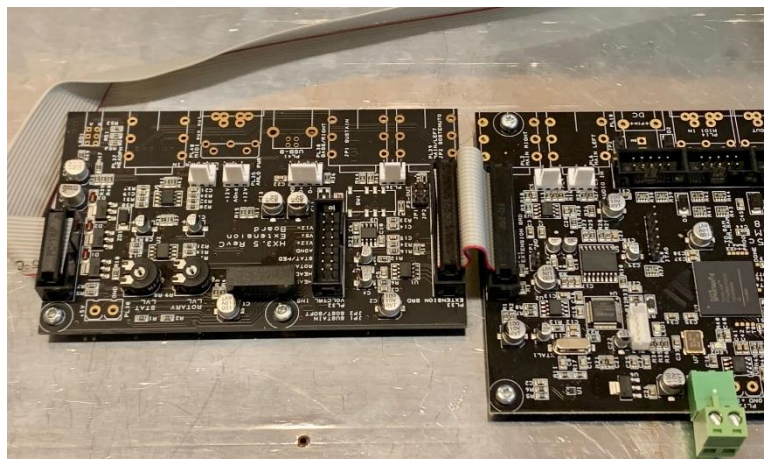


On some XB2 you will find a 3-pin and a 4-pin connector instead of the 8-pin connector for PL12. Then please proceed as follows: Press down the barbs of the connector contacts carefully with a pointed object and pull the cables with the contact out of the housing. Find an 8-pin connector from the removed cable harness and remove the plug contacts on this one as well. Then push the cables into the 8-pin housing, the red to 3, the brown to 5, the white to 7. Make sure that the barbs snap into place.



Plug the USB cable into the socket on the HX3 board. Place the board close to the metal brace that supports the lid. Place the four 5mm spacers underneath and screw the board to the floor with Spax screws.

If you use the optional extension board, screw it right next to the HX3 mainboard. Connect it with the short 26 core flat cable and the 14 core flat cable leading to the interface board 1.





Connect the supplied cable with the white 10pin connectors to PL20 on the mainboard and PL19 on the interface board 1. Attention: The plugs are assigned differently. Make sure that the cable colors match the illustration on the left.

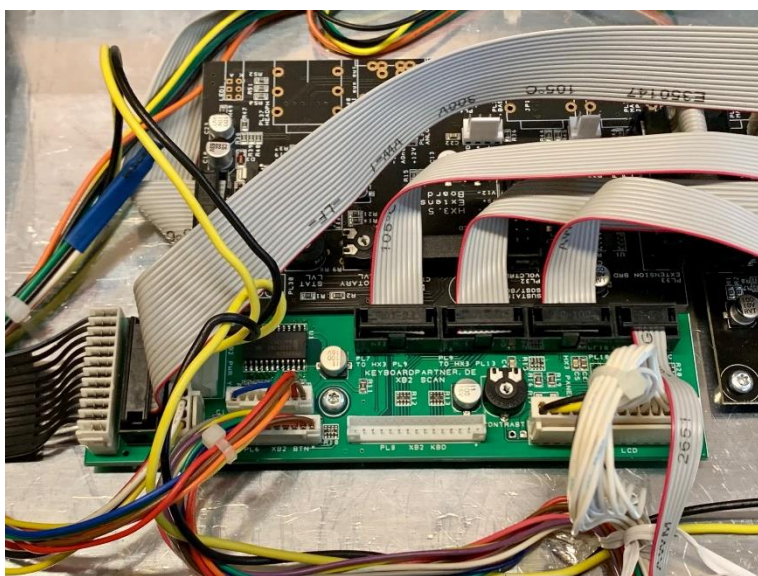
Hint: Refer to the illustration in the [HX3.6 Installation Manual](#) to help locate the connectors on the HX3 mainboard.

Run the shorter of the 16 core ribbon cable from HX3.6 PL32 (ANALG LWR) to PL5 on the interface board 1. Use the 6 core crimp cable to connect HX3.6 PL28/PL29 to PL7/PL8 on the interface board. Connect HX3.6 PL3 to PL10 on the interface board with the 3 core crimp cable.



The connection of the interface board 1 is now completed except for the power supply and should look like on the adjacent photo.

Now it's time to install the interface board 2. Screw it close to the left side of the HX3 mainboard.



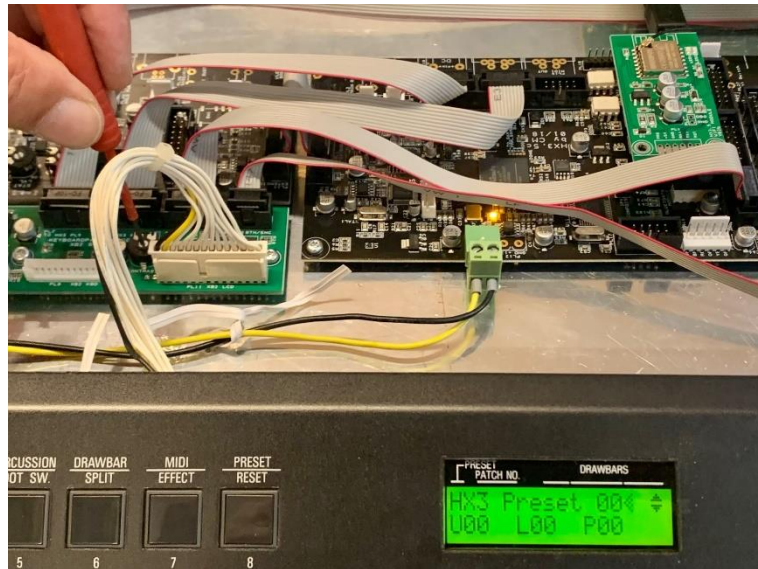
Connect the white connectors leading to XB2 units, from left: 12pin connector with black cables (drawbars), 4pin connector (pitch/mod wheel), 5pin connector with black and yellow cables (power supply), 9pin connector (LEDs), 10pin connector (buttons), 14pin connector (display). The 6 core cable from the control board, if present, goes to PL12 on the interface board.

Make the connections to the HX3.6 mainboard with the 10 core ribbon cables: PL7 goes to HX3.6 PL8, PL9 to HX3.6 PL12, PL10 (panel) to HX3.6 PL26. The 16 core cable goes from PL2 to HX3.6 PL31 (ANLG UPR).

Run the yellow and the black cable for the power supply to the HX3.6 mainboard. Shorten the cables to fit, remove 5mm of insulation sheathing and press on the supplied wire end ferrules with the pliers. Screw the ferrules into the green screw connector.

Please observe the polarity indicated by the cable colors, see photo.

Fix the power cables with the white cable holders at the bottom of the XB2.

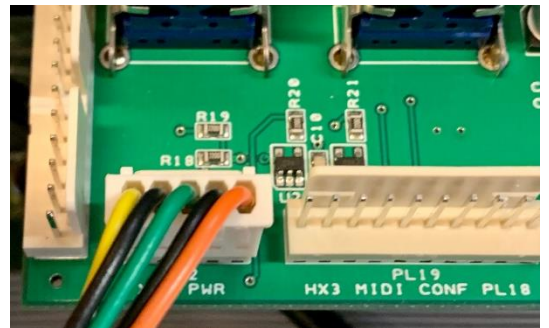


You can now connect the power cable and switch on the XB2 with HX3 soul for the first time. The HX3 start message should now appear on the display.

Take the opportunity to adjust display contrast with the trimmer on the interface board 2.

Switch off the XB2 and disconnect the power cable.

Identify the harness coming from the power supply with cables in the colors yellow, black, green, black, orange and a 5-pin connector. Plug this into the PL2 XB2 PWR connector on the interface board 1.



Another cable harness remains from the power supply unit with four connectors and six cables in the colors white, 2x black, 2x orange, green or 2x black, orange, green and pink. Cut this off at a distance of about 30 cm from the power supply unit and insulate the cable ends with insulating tape or heat shrink tubing.

Arrange all cables and fix them with cable ties and the white cable holders at the bottom of the XB2.





Fix the cables to the display and the buttons on the front tightly with the black cable holder.

Now reassemble the keyboard. First plug the connector into PL8 on the interface board 2. Be careful not to pinch any cables when moving the keyboard into position. Fix the ground connection with a toothed lock washer under the brass screw near the power supply.



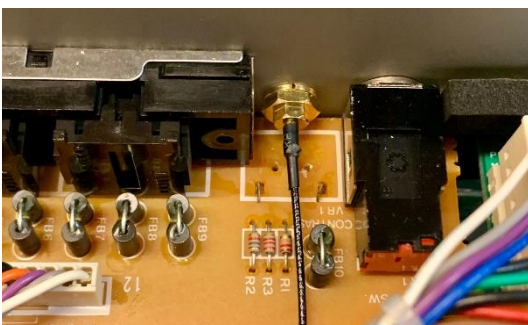
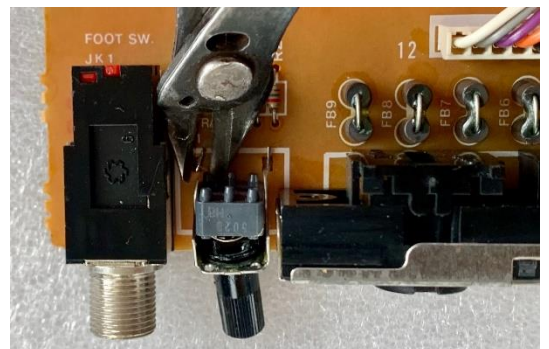
Installation of the MIDI board and the WiFi interface (optional)



If you do not use the WiFi interface, you can now install the MIDI connector board unchanged and connect it to PL1 of the interface board 1. You can omit the next five steps.

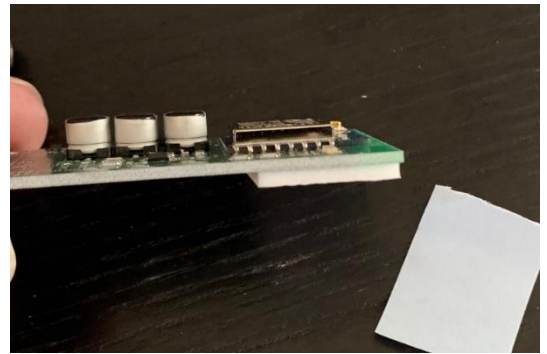
There is a trimmer for the display contrast on the MIDI connection board, which is no longer needed. The hole in the back panel can be used for the antenna of the optional WiFi interface.

To install the antenna for the WiFi interface, remove the trimmer. This can be done without desoldering: First cut off the rear brackets with the side cutter, then the trimmer falls apart. Bend the inner part backwards, then you can pinch off the three connection wires.



Screw in the antenna socket on the rear panel, install the MIDI connector board and connect it to the interface board 1.

Remove the blue protective film from the double-sided adhesive foam plate and attach it to the edge under the antenna socket on the back of the WLAN module.

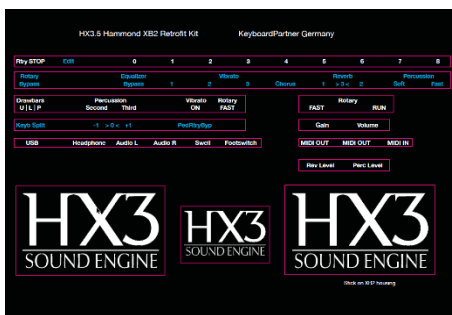
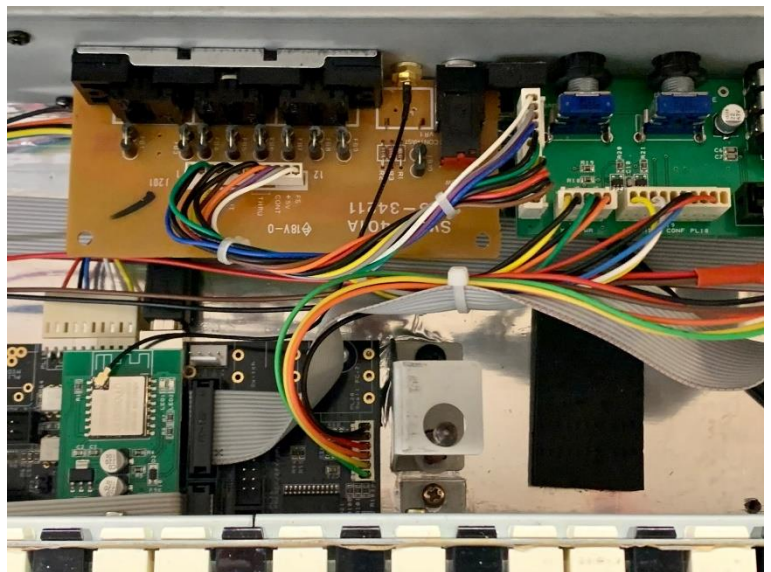


Carefully press the plug of the antenna cable onto the antenna socket of the WLAN module until it snaps firmly into place.

Remove the second protective foil from the double-sided adhesive foam plate, plug the WLAN module onto the PL33 slot of the mainboard and press it onto the USB socket on the other side.

The conversion of the Hammond XB2 to a HX3 organ is now complete.

Now you can put the lid back on and affix it to the bottom with the five large screws.



Download the [User Manual HX3 XB2](#) if you have not already done so. Using the manual, attach the stickers from the stickers sheet to the controls of the XB2.

Screw the WiFi antenna into its socket. Then you can put the organ into operation with a new soul.

The KeyboardPartner team hopes you enjoy!