

Najda Control Board Installation Notes

The Najda Control Board is an optional add-on to the Najda main board that supports all the user interface components, namely the push-buttons, the display, the IR sensor, the rotary encoder and the leds.

Characteristics:

- Size 260 x 36 mm, fits in a slim 1U case
- Supports 80 x 36 mm displays with header on top and 85 x 36 mm with header on side.
- Mute command via dedicated push-button or central push on the rotary encoder
- The led section can be separated if required

The Najda Control Board is available as a sole PCB or in a complete kit that includes following parts:

- 8 push-buttons with plastic black round caps
- 80 x 36 mm OLED display with white text on black background (ref. Winstar WEH001602AWPP5N00000)
- Mounting hardware for the display (1x16 header pins, screws, nuts and washers M2.5)
- IR sensor 38 kHz
- Rotary encoder with central push (ref. Bourns PEC11R-4220F-S0024)
- Discrete parts for the debouncing filter (4x10 kΩ resistors, 2x 10nF capacitors)
- Aluminium black knob for the encoder
- 7 transparent leds (6x Red, 1x Green)
- Connection headers (1x9, 2x8, 1x3, 1x2, 1x8)
- Dupont cables (9p, 3x8p, 3p, 2p)

Important notes:

1. The Najda Control Board was designed to be used with Dupont cables that are inexpensive and easy to source. In particular, the display connection between the Najda Control Board and the Najda Main Board should be made with two superimposed 8 poles flat cables (supplied with the kit).

In any instance, don't use a IDC 2x8 flat cable as the wiring is not appropriate. If you use such a IDC flat cable, you will fry the display.

2. OLED and VFD displays are supported in firmware from V.1.2 on. If you use such a display, please make sure you're running firmware V1.2 or later.

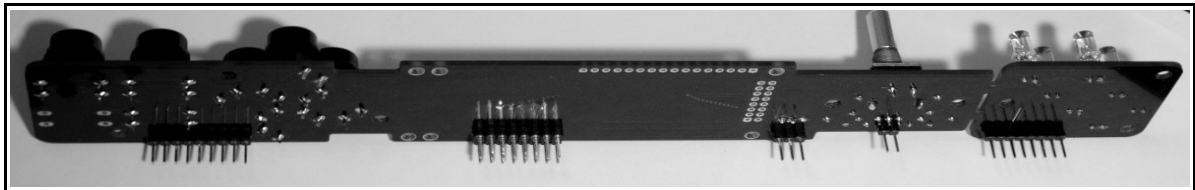
Kit Assembling Instructions

The assembling instructions below apply to the full kit, i.e. PCB plus parts. If you got the PCB alone and are sourcing your own parts, then you might need to slightly adapt these instructions. In particular, pay careful attention to the IR sensor and the display pinouts: refer imperatively to the documentation of the parts you have acquired.

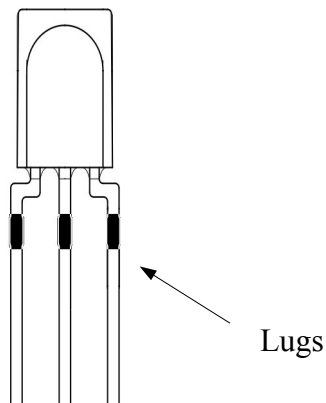
1. Prepare the display. Solder to 16p pin header to the display. Install the screws and 2 nuts per screw as pictured.



2. Install and solder the remaining pin headers on the rear side of the PCB as pictured.

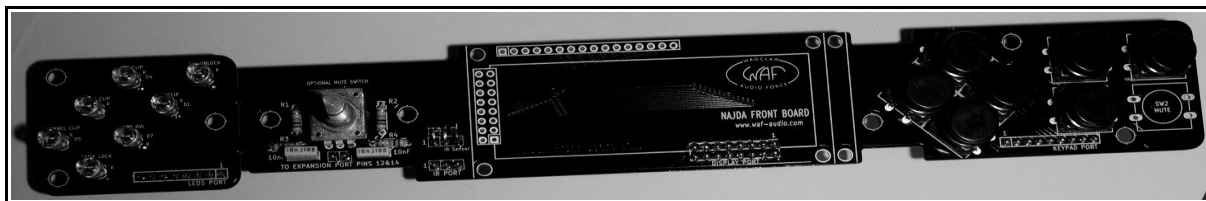


3. Gently insert the push-buttons in their slots and solder the pins. If you intend to use a rotary encoder with central push, then you should not install the Mute switch (SW2).
4. Gently bend the IR sensor pins right after the lugs and solder the sensor. The IR sensor is a static electricity sensitive device: handle the part with same care as you would with any IC.

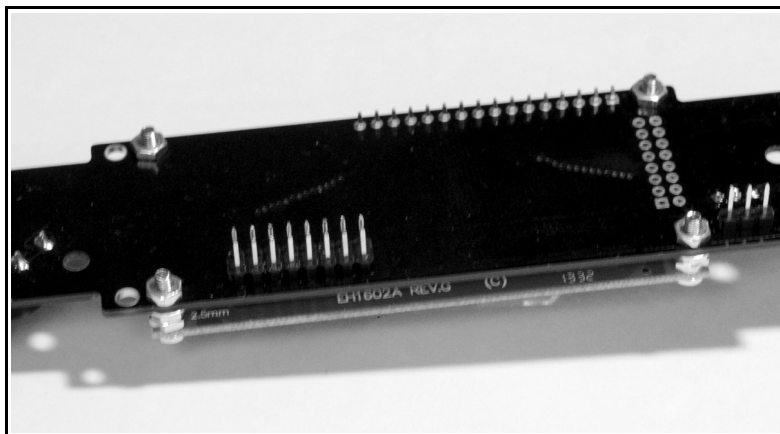


5. Bend the resistors leads right after the body. Install and solder the debouncing filter discrete parts (4 resistors and 2 capacitors).

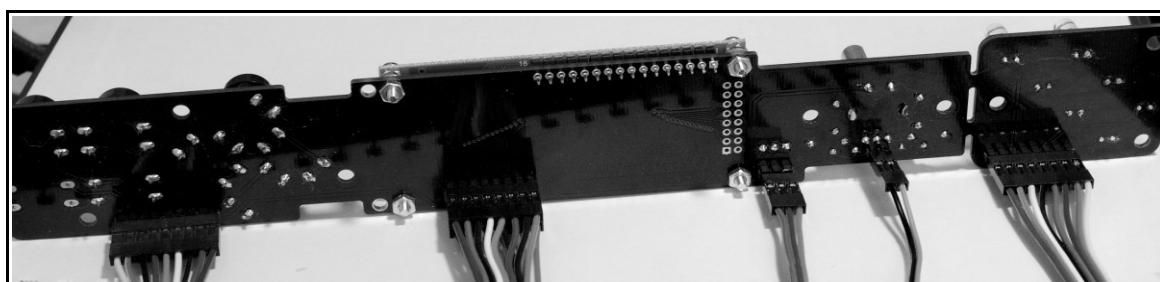
6. Install the leds. Leds are polarised devices and must be installed with proper orientation. Cathode pins are designated with a mark **K** on the PCB. The led shortest lead is the cathode.
7. Gently snap in the rotary encoder and solder the pins.



8. Fit the display onto the PCB. Use washers to achieve appropriate display height. Protruding parts at the rear of the display should not make contact with the control board PCB. Solder now the 16p display pin header to the control board PCB.



9. Install all cables on the control board's rear pin headers. Note in particular that you must use two single row 8p flat cables for the display header. **Don't use a 2x16 IDC flat cable.**



10. Turn the Najda main board off and remove the power chord. Install now the interconnects on Najda's headers. Check that the headers are properly aligned with the cables.
11. Connect a USB cable between the Najda and your computer. Power on the Najda, launch Najda Under Control (NUC) application and initiate a connection. Open the *Display Options* dialogue in the *Settings* menu and select your display type. In particular, if you got the full kit, you must select the OLED option.