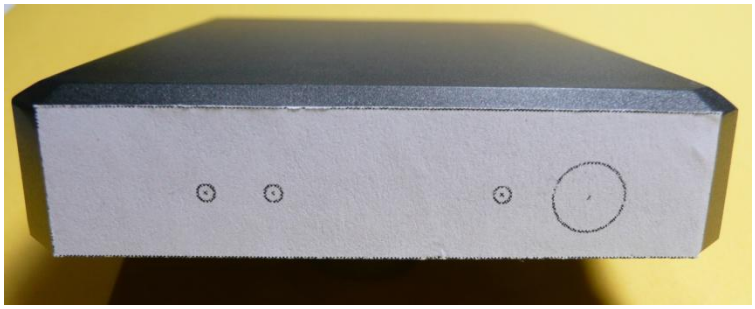
SHARI PiHatX Assembly Instructions

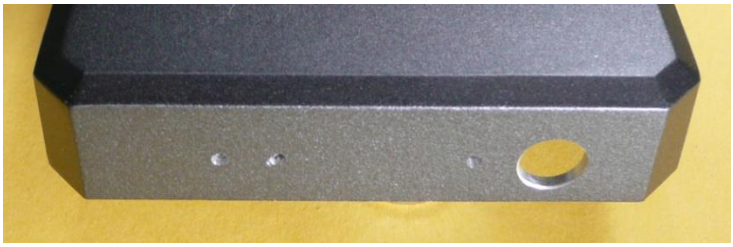
This document describes the steps necessary to assemble a SHARI PiHat node. It assumes that the PCB assembly has been completed with the exception of the installation of the RF connector.

SHARI PiHat node assembly requires that modifications be made to the standard Argon40 Neo case This involves drilling holes in the case for the SMA antenna connector, observation of the LEDs on the SHARI PC board and routing the internal USB port connection.

Open the Neo packaging and remove the sliding top metal cover. Locate the drill template supplied with the PiHat kit. Carefully trim it to size. Remove the adhesive back and apply the template to the cover as shown. The bottom edge of the template should be even with the bottom edge of the cover. Overhang on the left and right side should be equal.

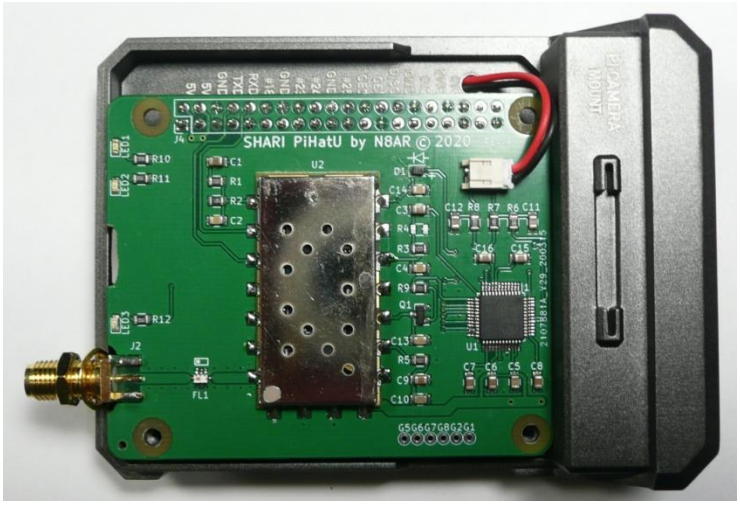


Drill three 1/16” diameter holes and one 9/32” diameter hole. The location of the 9/32” hole is the most critical. Use a good center punch. Start with a small drill and enlarge it gradually with larger drills or a step drill.



Locate the middle Neo case metal body. Drill a 1/8” hole centered on the #20 silkscreen (outlined in red in the photo) to route the internal USB cable from the Raspberry Pi to the SHARI PiHat

Align and place the Raspberry Pi4 on the middle Neo case body. Do not install the silicon thermal pad at this time. Use two screws to temporarily hold the Pi in place. Align the SHARI PiHat female GPIO connector with the male GPIO pins of the Pi and press it into place. Use two screws to temporarily hold it in place. Plug the JST connector of the internal USB cable into J1 on the PiHat board and route the cable through the 1/8” hole you drilled in the middle case.



On the Raspberry Pi side of the assembly route the internal USB cable as shown in the photo. Solder the red wire to TP10 of the Pi and the black wire to TP6. Route the red and black wires **between** the GPIO connector pins as shown. Do not route them over the top of the pins as they may be pushed into the pins by the bottom cover risking the possibility of piercing the wire insulation. Fasten the cable in place using hot glue as shown.

Remove the two screws holding the PiHat board and unplug it from the Pi. Remove the two screws temporarily holding the Pi. Raise the Pi and insert the Silicon thermal pad on the CPU. Place the Pi back in position, place the Neo plastic case over it and secure using four screws. Install the four rubber footings in the plastic cover.

Plug the PiHat back into the GPIO connector header of the Pi and secure it in place using two screws. Locate the RF connector and place it in position to be soldered. Align it to the board and footprint and solder the center pin of the connector. Slide the cover in place and verify that the connector is properly aligned to the hole in the cover. Reheat the connector solder joint and re-position the connector as necessary. When it is correctly positioned solder the two ground leads of the connector to the top of the board. Remove the two screws holding the PiHat board, unplug it and solder the two RF connector ground leads to the bottom of the board. Reinstall the PiHat board and two screws. Install the top cover. Install the connector star lock washer (teeth pointing toward cover) and nut and tighten gently. Do not over tighten.