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KiwiSDR
Aluminum Enclosure Assembly Guide

Version 1.1

Please check kiwisdr.com/quickstart **for the latest information.**

Ask questions on the forum. Check kiwisdr.com **for link.**

Important

There are four important points about the assembly procedure:

- Of the four standoffs used to mount the BeagleBone to the enclosure one of them is plastic and three metal. The plastic one **must** be used at the correct location to prevent a short-circuit on the BeagleBone that will effect the micro-SD card slot.

- The supplied "star washers" must be used with the metal standoffs to ensure good grounding of the Beagle to the enclosure.

- One of two pieces of double-sided sticky tape must be removed from the fan. This is necessaary to keep the Kiwi board level with the enclosure bottom.

- The fan must be positioned so access to the micro-SD card slot is still possible.

Please keep these points in mind as you assemble the enclosure.

Parts list

2   Top and bottom annodized aluninum enclosure pieces.

2   Annodized aluminum end plates with connector cutouts.

1   3.3V fan with BeagleBone Green compatible Grove connector.
         With double-sided sticky tape attached on two sides (only one used).

15   M3 metal screws

1   M3 plastic screw

6   M3 star washers

3   Metal standoffs

1   Plastic standoff



1   M3 plastic spacer

4   Bumper feet

Tools required

- Phillips screwdriver to fit the M3 screws.

- Tape (e.g. cellophane tape) for temporarily holding the screws.

Assembly procedure

Remove KiwiSDR board from BeagleBone. Attach standoffs to Beagle as shown. Be certain plastic screw/standoff is placed at the hole next to the micro-SD card slot. Use star washers and the plastic spacer between standoffs and Beagle as shown. Tighten only finger-tight.
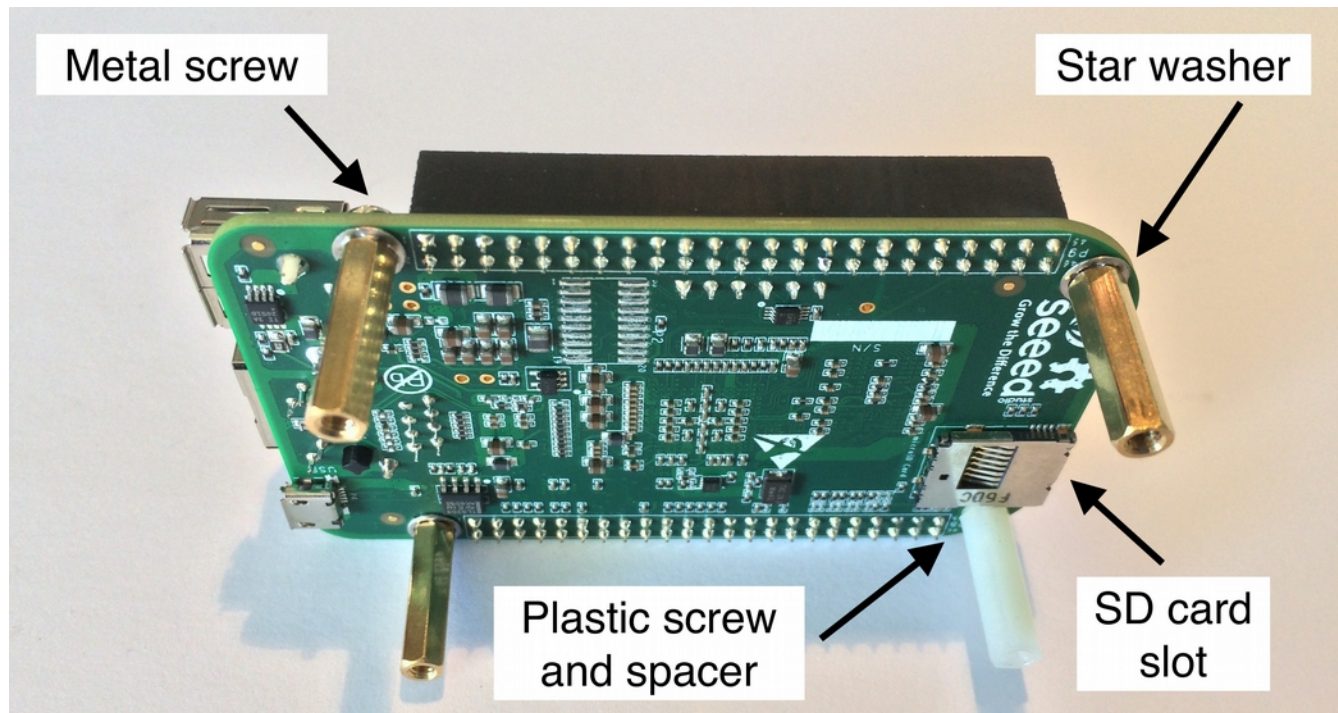

Plug fan into Grove connector of Beagle as shown. The connector is keyed, but be sure black and red wires are connecting to GND and 3V3 pins as marked on the circuit board. Remove one of two pieces of tape from fan.
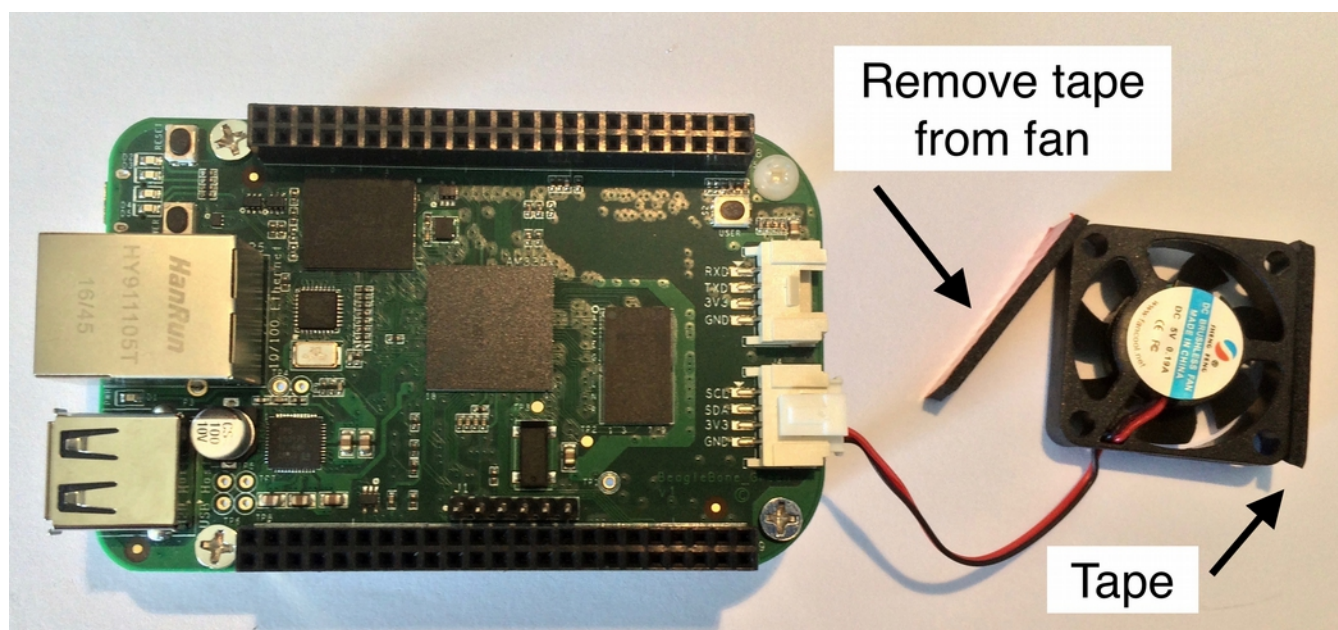
Plug KiwiSDR board into BeagleBone. **Be careful** to align the Kiwi board pins into the correct Beagle header sockets. The cutout in the Kiwi board should wrap around the Beagle Ethernet connector with equal clearance on all sides.

Tape

Pin 1 of KiwiSDR must match pin 1 of BeagleBone header
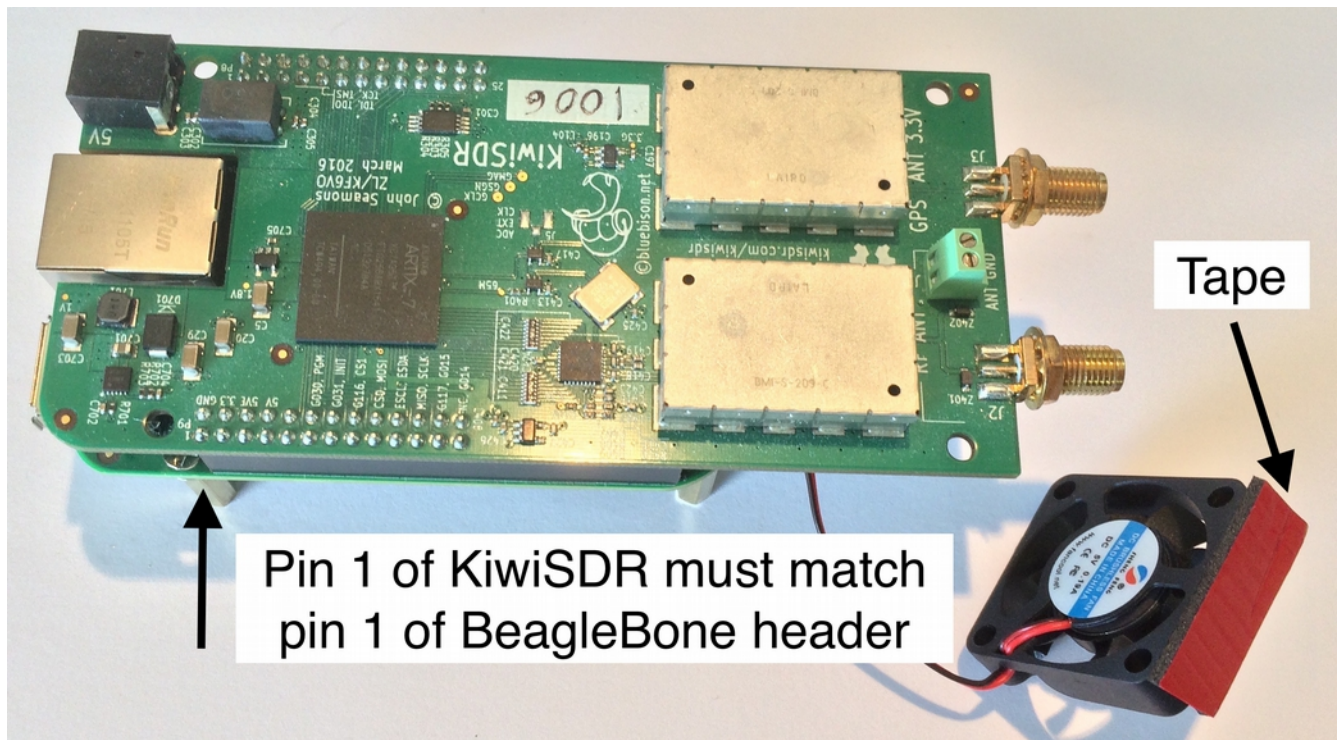
Flip Kiwi/Beagle over. Remove red protective paper from sticky tape. Stick fan to bottom of Kiwi board, offset as shown below, being careful to leave enough room for future insertion of an SD card (green arrow).
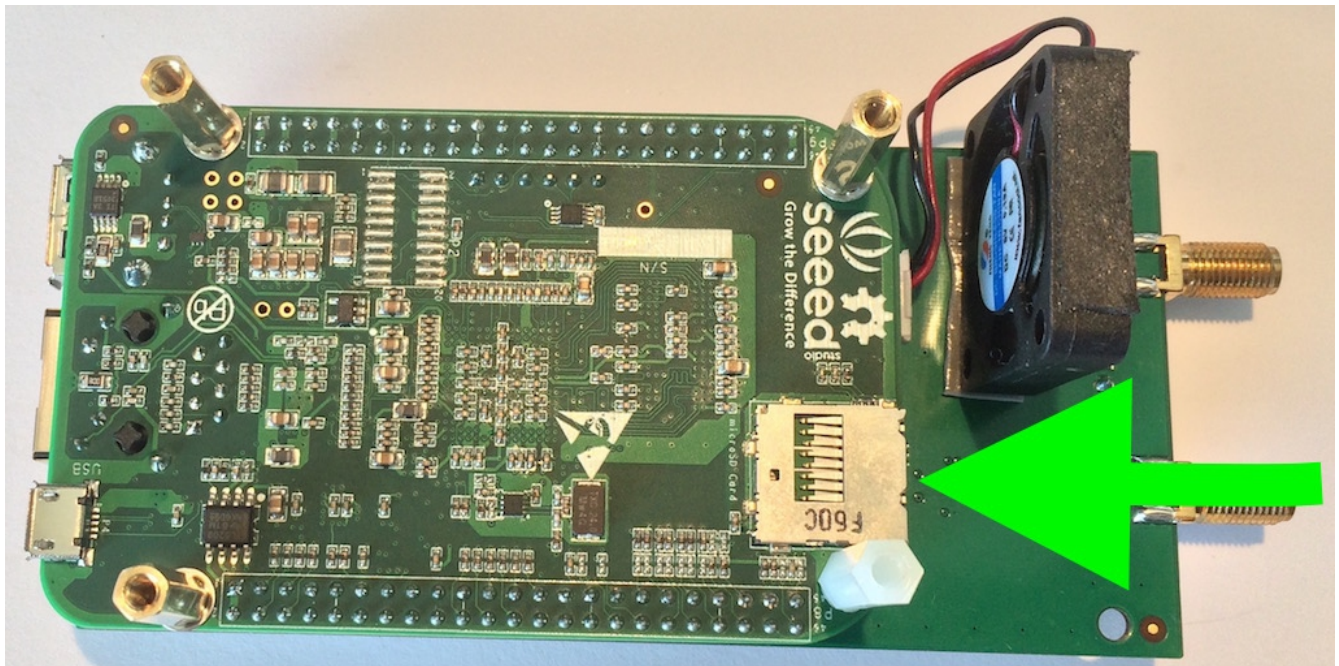
Insert three metal screws through the outside holes of the bottom enclosure piece as shown. Cover each with a piece of tape (clear cellophane tape used here) to keep the screws from falling out when the enclosure piece is inverted in the next step.
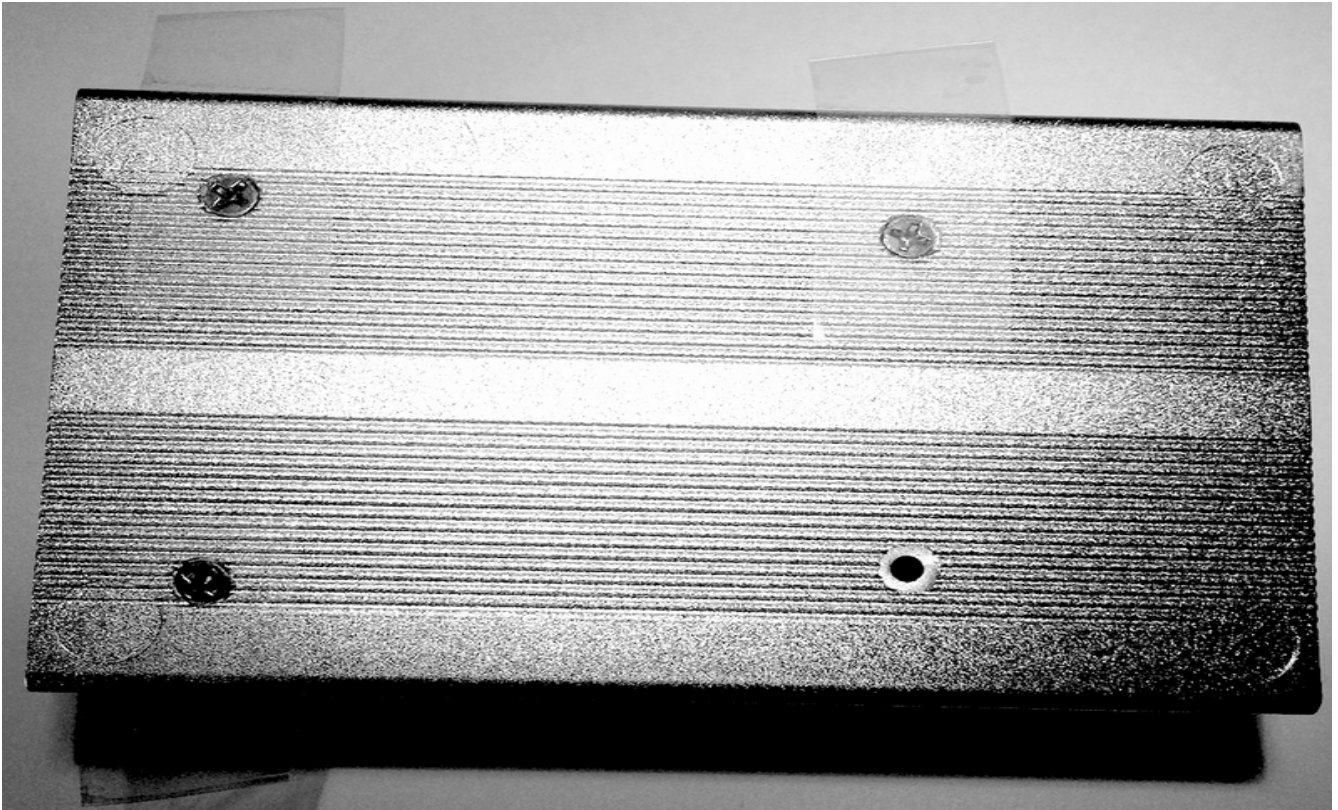

Invert the bottom enclosure piece and place one star washer on each screw thread.
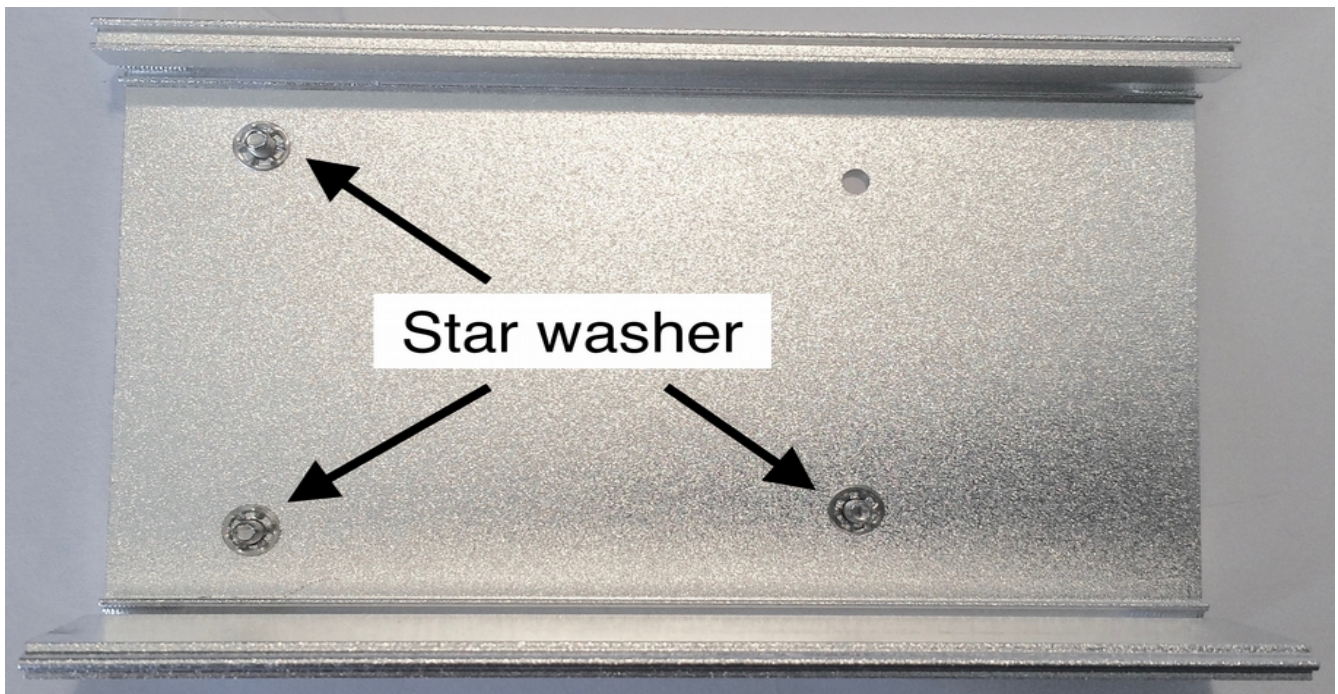
Star washer

Attach the Kiwi/Beagle standoffs to the screw threads as follows.

Stand the enclosure up on its end. Bring the standoffs close to the screw threads. Make sure the star washers are still present on the threads. Press the Phillips screwdriver through the tape and start turning the screw onto the standoff. Just make a few turns, enough to keep the screw attached but allow lots of movement. Repeat the process with the remaining screws. Use a metal screw for the plastic standoff.

Make sure the fan is aligned: standing vertically and positioned to blow across the Beagle. Tighten the four screws. With a little more tighness on the metal standoffs to make sure the star washers "dig in" to give a good electrical connection. When finished the Kiwi board should be equal height, front and back, from the enclosure bottom piece (see picture). If you incorrectly used two pieces of tape on the fan the Kiwi board will be too high. And this may cause the screws of the green antenna input header to short out to the enclosure top. You could place some insulating tape (e.g. black electrical tape) on the top cover at this location for extra safety.
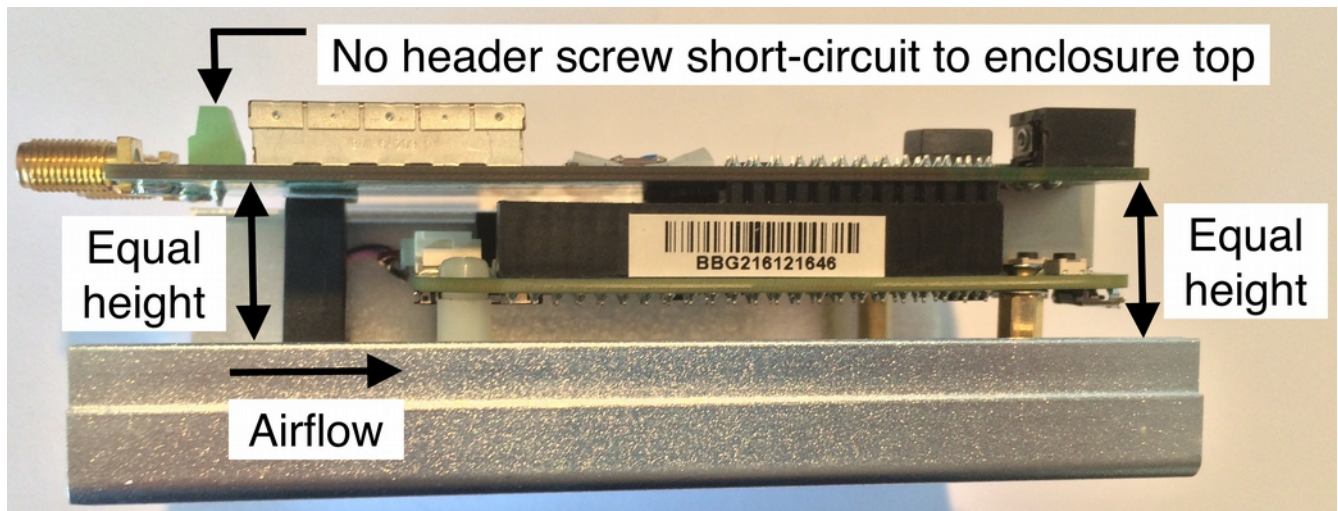
Place the top cover on the enclosure. Attach each end plate with four screws each. The antenna SMA connectors do not contact the enclosure because this was found to result in the lowest noise floor (i.e. grounding the SMAs would form a small ground loop with the Beagle-to-enclosure ground). Attach the four adhesive bumper feet to the bottom of the enclosure.

This completes the enclosure assembly. Be sure not to obstruct the vent holes during operation.