BAL

BLUETOOTH AUDIO LINK
CONSTRUCTION MANUAL

Version 1.00

Doayee.

ACKNOWLEDGEMENTS

The BAL was brought to life by the following people, who we can't thank enough.

For more products by Doayee visit http://doayee.co.uk

Construction Information

If you have purchased BAL as a kit, the following will be useful to the assembly of the product. The full KiCad drawing files of the PCB are available on our website at http://doayee.co.uk/bal under "Open Source" and provide more detail than this guide. If you have further queries, please use the support area to contact us.

The kit you have received contains the following components, take extra care with Bag 3 as the LEDs are extremely small and easy to lose. Likewise, the SMT capacitors have no markings on them so once they have been removed from their marked packet, make sure to place them in the correct place on the board.

Bag 1	Bag 2	Bag 3
• Barrel Jack • Audio Jack • 8-WAY Header • Jumper • USB • 2x Switch • 2x 470uF Cap (Barrel) • 4x 100nF cap (SMT) • 2x 150pF cap (SMT)	• 4x 683 - 68K • 4x 333 - 33K • 4x 104 - 100K • 2x 1200 - 120R • 2x 1002 - 10K • 1x 4702 47K • 1x 223 22K • 4x 15pF cap (SMT)	• RN52 Chip • Voltage Regulator + 1 LED • Schottkey Diode +1 L.E.D. • DRV602 (encased in foam – take extra care!)

We recommend you begin by soldering the DRV602 chip on the right hand side of the PCB and then the resistor array around it which is laid out as shown.

Then add the LEDs, ensuring correct orientation… test first! We recommend the top LED to be red, and the bottom LED to be green, in accordance with this manual. Don't forget the 120R resistors to their left. Finally add the 100nF cap at the bottom right of the RN52.
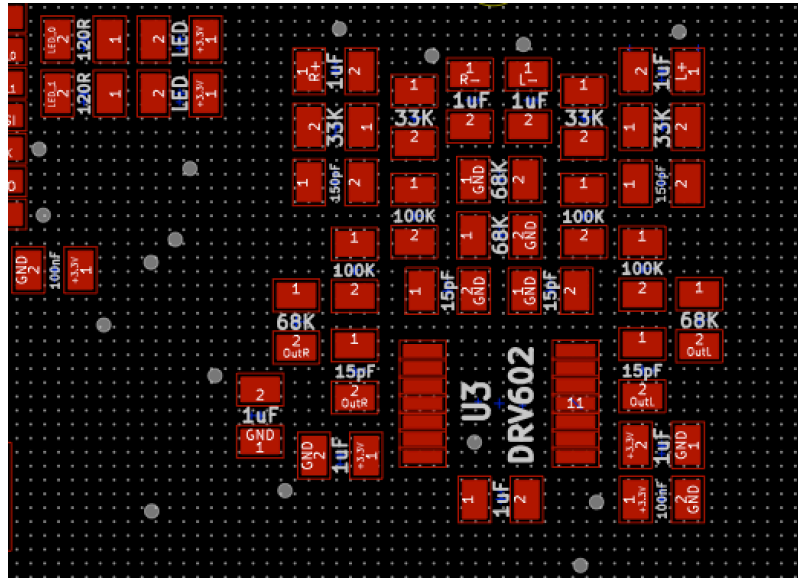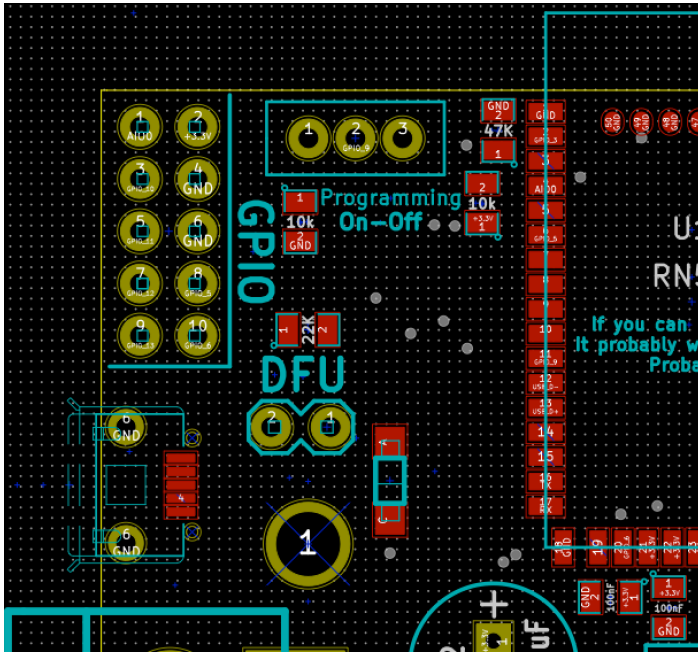
We recommend next soldering the RN52 module itself. Be careful not to leave any pins connected to each other, as we cannot be held responsible for damage caused through incorrect soldering.

Finish up by adding the remaining 100nF caps below the RN52 and the other resistors as shown in the diagram. Add the Schottkey Diode to the right of the DFU header. Then add the USB micro port and the barrel capacitors. Please note, the USB is notoriously difficult to solder and will require the removal of the additional support legs to fit properly.

Finally add the switches (which will most likely require the cutting of additional legs), and optionally the barrel jack, although this is not required for operation of the BAL, as power over USB is adequate.

If you plan to solder the SMT components using a reflow oven, you must first purchase a solder paste stencil. We recommend OSHStencils for this. The Gerber files, including the stencil layer, can be found at http://doayee.co.uk/bal under "Open Source". We recommend placing the components in the same order as the soldering instructions provide above, and maintaining a close eye on the soldering process. The temperature and length of time of your heating will depend on the solder paste you are using.

In order to use your BAL with any of our Arduino libraries the baud rate must be changed from its default 115,200 kbps to 38,400 kbps by issuing the command SU,03 (see "SET" commands chapter.)