**RFBitBanger – Batch 2 January 2024  
Kit Inventory[[1]](#footnote-1)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Description | Qty | Ref Des | Value | LCSC Part Number[[2]](#footnote-2) | Notes | |
|  |  |  |  |  |  |  | |
| **(Pictures not to scale)** | **Electrolytic Capacitors** | | | | | |
|  |  | 2 | C50 C52 | 10uF | C2835646 | Observe polarity. Put the long lead in the hole marked +, and align the light-colored stripe to the filled-in semicircle.  These capacitors are NOT all oriented in the same direction on the RFBitBanger main board. | |
|  |  | 1 | C49 | 22uF | C43346 |
| A close up of a string  Description automatically generated |  | 2 | C6 C40 | 100uF | C47891 |
|  |  | 1 | C19 | 220uF | C12450 |
| A close-up of a green and white capacitor  Description automatically generated |  | 2 | C3 C53 | 1000uF | C2987887 |
|  | **Resistors** | | | | | | |
| A blue rectangular object with metal tips  Description automatically generated | trim pot  (pins in a line) | 1 | RV4 | 2k | C118206 |  | |
| A blue electronic device with numbers and a few metal tips  Description automatically generated with medium confidence | trim pot  (pins in a triangle) | 1 | RV3 | 10k | C58159 | This pot doesn’t quite match the layout on the circuit board. You’ll need to bend the center pin out horizontally to reach the hole. | |
|  | mini pot with shaft | 2 | RV1 RV2 | 10k | C470577 | Each pot includes a washer and a nut. These may be useful if the RFBitBanger is to be installed in a case. | |
|  | 2W film resistor | 1 | R41 | 150 | C1364849 |  | |
|  |  |  |  |  |  |  | |
|  | **Inductors** | | | | | | |
|  | axial lead inductor | 1 | L10 | 100uH | C2971911 |  | |
| A plastic bag with black text  Description automatically generated | ferrite toroid core | 6 | L4 L6 T1 T2 T3 T4 | FT37-43 |  |  | |
| A bag of yellow and grey rings  Description automatically generated | ferrite toroid core | 18 | Filter-L2 Filter-L3 | T50-6 |  |  | |
| A red wire on a white surface  Description automatically generated | magnet wire | 20’ |  | 26AWG |  |  | |
|  |  |  |  |  |  |  | |
|  | **Semiconductors** | | | | | | |
|  | TO-92 MOSFET | 4 | Q3 Q6 Q7 Q9 | 2N7000 | C900717 | 2N7000 | |
| A close up of a metal bar  Description automatically generated | TO-92 bipolar transistor | 1 | Q8 | SS8550 | C8541 | SS8550 Bend the leads out to fit the holes. | |
| A close up of a black and silver electronic component  Description automatically generated | zener diode | 1 | D6 | 51V | C284080 | 1N4757A | |
| A close up of a capacitor  Description automatically generated | zener diode | 1 | D1 | 16V | C261301 | 1N4745ATA | |
|  | **Connectors, Etc.** | | | | | | |
| A row of white sticks  Description automatically generated | pin headers | 2 | DS1 J3-J7 J13-J18 J20-J23 JP1-JP10 |  | C429959 | Cut to length between pins. You may also populate J9 for ICSP. The single-pin connection points are all optional. | |
| A row of gold tips  Description automatically generated with medium confidence | header sockets | 3 | Display module, Filter-J1 Filter-J2 |  | C47940 | When cutting these to length, you must cut on a pin, not between pins, sacrificing that pin. | |
| A black square object on a white surface  Description automatically generated | shunts for header pins | 10 |  |  | C100114 | Check the manual for which jumpers should have shunts installed. You should have some extra shunts. | |
| A close up of a device  Description automatically generated | PS/2 keyboard connector | 1 | P1 |  | C77848 |  | |
| A black square object with metal screws  Description automatically generated | DC power receptacle | 1 | J2 |  | C319132 | You can install either or both of the two supplied DC power connectors. | |
| A green electrical device with two slots  Description automatically generated | DC power screw terminals | 1 | J1 |  | C2915639 |
| A close up of a white plastic tube  Description automatically generated | BNC antenna connector | 1 | J12 |  | C2837587 | Be sure to solder the two small pins to the board. The two sturdy posts are not connected to anything, they are just mechanical. Put a nice round blob of solder on each of the posts for strength. | |
| A close up of a device  Description automatically generated | 3.5mm TRS jack | 3 | J8 J11 J19 |  | C145814 |  | |
| A white label with black text  Description automatically generated | labels for TRS jacks | 1 |  |  |  | Optional. Cut the labels, peel and stick to the tops of the TRS jacks to help you see which jack is which. | |
|  |  |  |  |  |  |  | |
|  | **Switches & Relays** | | | | | |
| A close up of an orange label  Description automatically generated | DIP power relay | 1 | RLY1 |  | C42803 |  | |
| A black square object with white straps  Description automatically generated | pushbutton switch | 6 | SW1 SW2 SW3 SW4 SW5 SW6 |  | C255811 |  | |
|  |  |  |  |  |  |  | |
|  | **Display and Mounting Hardware** | | | | | |
| A green rectangular object with a black rectangle  Description automatically generated | LCD display module | 1 | DS1 | LCD1602 with HD44780 |  | Mount the display on the standoff hardware before soldering either 16-pin header. If you solder first, you might have trouble getting the standoffs to line up with the holes. | |
|  | standoff | 4 |  | M2x10 |  |  | |
| machine screw | 4 |  | M2x6 |  |  | |
| nut | 4 |  | M2 |  | The nuts are in a separate little bag with the heatsink mounting hardware. | |
|  |  |  |  |  |  |  | |
|  | **Heatsink and Mounting Hardware** | | | | | |
| A black metal piece with a hole in it  Description automatically generated | heatsink |  |  |  |  | Theoretically you might not need a heatsink at all, if the final amplifier is tweaked properly for Class E operation. Safer to use one. We picked a standard (very inexpensive) heatsink and modified it to fit.  IMPORTANT: inspect the heatsink carefully for any loose bits of metal.  Peel off the blue film to expose the adhesive on the bottom, insert screw from top, align assembly on the screw hole between Q3, Q6, Q7, and the empty spot for Q5, and press down on the rounded backs of the transistors. Washer and nut from below the PCB, tighten gently. | |
| A bolt and nut next to a nut  Description automatically generated | machine screw | 1 |  | M2.5x12 |  | Screw head fits in recess machined in the top of the heatsink. Washer and nut go on the bottom of the board, clamping Q3, Q6, and Q7 to the circuit board. | |
| flat washer | 1 |  | M2.5 |  |
| nut | 1 |  | M2.5 |  |
|  |  |  |  |  |  |  | |
|  | **Bag of SMT Capacitors for Band Filters** | | | | | |
| A plastic bag with small objects on it  Description automatically generated | These are NP0/C0G 5% multilayer ceramic capacitors in 1206 surface mount packages. See instructions for tips on soldering these parts. The filter boards are designed to accommodate both SMT and through-hole capacitors, but be sure you have equivalent NP0/C0G capacitors before substituting.  These values are chosen to enable you to build one filter for each of the nine HF bands. See [Winding the Toroids](https://github.com/OpenResearchInstitute/RFBitBanger-kit/blob/main/batch2/batch2_winding_toroids.pdf) for values. If you build all the filters, you will have very few extra capacitors. If you expect to experiment with different capacitor values to tweak the RFBitBanger for maximum performance, you may want to build the filter for your favorite band first, in case you need to use some of the other supplied capacitors instead of or in addition to the ones we recommended. In that case you’ll very likely need to obtain some additional capacitors before you can build all nine filters. | | | | | |
|  |  | 4 |  | 33 | C85570 | Values in pF | |
|  |  | 4 |  | 47 | C107176 |  | |
|  |  | 4 |  | 68 | C326652 |  | |
|  |  | 4 |  | 100 | C107173 |  | |
|  |  | 8 |  | 150 | C326703 |  | |
|  |  | 4 |  | 220 | C107175 |  | |
|  |  | 4 |  | 270 | C113874 |  | |
|  |  | 8 |  | 330 | C282792 |  | |
|  |  | 4 |  | 390 | C326659 |  | |
|  |  | 4 |  | 470 | C107177 |  | |
|  |  | 4 |  | 560 | C527290 |  | |
|  |  | 4 |  | 680 | C106004 |  | |
|  |  | 4 |  | 820 | C527310 |  | |
|  |  | 4 |  | 1000 | C113872 |  | |
|  |  | 4 |  | 1500 | C326591 |  | |
|  |  | 4 |  | 2200 | C396811 |  | |

1. This inventory does not include the parts already soldered onto the main board at the factory. A complete parts list is available in the repository at <https://github.com/profdc9/RFBitBanger> [↑](#footnote-ref-1)
2. For devices we obtained from LCSC (<https://www.lcsc.com>) we supply the LCSC part number so you can look up the exact data sheet on the device. Some devices were obtained elsewhere for convenience. [↑](#footnote-ref-2)