

| KiCAD Freakduino BOM | | | | | | | | |
|----------------------|--|---------------------|------------------------|---|-------------------------|-----|-----------|--------|
| 16/07/2013 | | | | | | | | |
| element14 | | | | | | | | |
| Qty | Reference(s) | Manufacturer | Part No. | Description | element14 SKU | MOQ | Price ea. | Amount |
| 1 | ANT1 | Molex | 73251-2200 | RP-SMA Connector | 2293854 | 1 | 7.320 | 7.32 |
| 1 | BATT1 | JST | S2B-XH-A | 2-pin mated, polarized connector, male | 1516289 | 10 | 0.240 | 2.40 |
| 1 | BATT2 | Keystone | 2462 | 2-AA battery case | 1702630 | 1 | 2.660 | 2.66 |
| 1 | BLN1 | Johanson Technology | 2450BL15B100E | 100 ohm diff/50 ohm single ended, 2.4GHz, balun, 0805 (Different pin layout!) | 1885503 | 1 | 0.884 | 0.88 |
| 10 | C1,C10,C11,C13,C14,C16,C18,C20,C21,C23 | TDK | C1608Y5V1H104Z | 0.1uF/50V,0603 | 1844266 | 1 | 0.030 | 0.30 |
| 0 | C2,R3,R9 | | DNI (Do Not Insert) | | | | 0.000 | 0.00 |
| 1 | C3 | Nichicon | UUR1C101MCL1GS | 100uF/16V, electrolytic, SMD | 1898740 | 1 | 0.355 | 0.36 |
| 1 | C4 | Johanson Technology | 251R14S0R4AV4T | 0.4pf, 0603 RF, Hi Q | 1885354 | 25 | 0.228 | 5.70 |
| 2 | C5,C22 | TDK | C2012X5R0J226M/1.25 | 22uF, 6.3V, 0805, MLCC | 2309030 | 1 | 0.214 | 0.43 |
| 2 | C6,C7 | Johanson Technology | 251R14S5R6CV4T | 5.6pf, 50V, 0402,RF | 1885386 | 25 | 0.130 | 3.25 |
| 2 | C8,C12 | Multicomp | MC0603B103M250CT | 0.01uF, 0603 | 1709947 | 1 | 0.007 | 0.01 |
| 1 | C9 | Nichicon | F920G226MPA | 22uf, 6.3V, Tant, 0805 | 1892302 | 1 | 1.800 | 1.80 |
| 1 | C15 | AVX | 06036D106MAT2A | 10uF, 6.3V, 0603 | 1833804 | 10 | 0.300 | 3.00 |
| 2 | C17,C19 | Multicomp | MC0603N120J101CT | 12pF, 50V, 0603 | 2341488 | 1 | 0.030 | 0.06 |
| 1 | D1 | Vishay | VLMB1300-GS08 | Blue LED, 0603 | 2251459 | 1 | 0.207 | 0.21 |
| 2 | D2,D6 | Vishay | VLMO1300-GS08 | Red LED, 0603 | 2251473 | 1 | 0.207 | 0.41 |
| 2 | D3,D4 | Vishay | VLMTG1300-GS08 | Green LED, 0603 | 2251490 | 1 | 0.160 | 0.32 |
| 1 | FB1 | Fair-Rite | 2508051027Y0 | Ferrite Bead, 0805 | 2112874 | 1 | 0.022 | 0.02 |
| 1 | H3 | Molex | 10897061 (see below) | 3x2 straight male header, 2.54mm (0.100") | 1508365 | 1 | 0.902 | 0.90 |
| | | | -----> | 30x2 and cut to size | 1918095 | 1 | 2.630 | 2.63 |
| 1 | JP1 | Molex | 22-28-5030 (see below) | 1x3 straight male header, 2.54mm (0.100") | 1513726 | 1 | 0.077 | 0.08 |
| 2 | JP2,JP7 | Molex | 22-28-4022 (see below) | 1x2 straight male header, 2.54mm (0.100") | 1704910 | 1 | 0.201 | 0.40 |
| | | | -----> | 30x1 and cut to size | 1819800 | 1 | 4.060 | 4.06 |
| 2 | JP4,JP6 | Global Connector | BG095-08-A-N-D | 1x8 straight female header, 2.54mm (0.100") | 1799005 | 1 | 1.890 | 3.78 |
| 2 | JP3,JP5 | Global Connector | BG095-06-A-N-D | 1x6 straight female header, 2.54mm (0.100") | 1799003 | 1 | 1.420 | 2.84 |
| 1 | J1 | Multicomp | MC32598 | USB Mini-AB connector | 1696539 | 1 | 2.280 | 2.28 |
| 1 | J2 | Lumberg | NEB 21 R | DC Power Jack, 1.95mm center conductor | 1217037 | 1 | 2.260 | 2.26 |
| 1 | L1 | Johanson Technology | L-07W3N3CV4T | 3.3nH RF inductor, 0402 PCB is 0603 but part no longer stocked | 1865824 | 10 | 0.629 | 6.29 |
| 1 | L2 | Taiyo Yuden | BRL1608T4R7M | 4.7uH inductor, 310mA, 0603 | 1904348 | 1 | 0.858 | 0.86 |
| 5 | R1,R2,R7,R8,R12 | Multicomp | MCMR06X2200FTL | 220 ohms, 0603 | 2073428 | 100 | 0.004 | 0.40 |
| 2 | R4,R5 | Multicomp | MCMR06X102 JTL | 1 Kohm, 0603 | 2073354 | 100 | 0.005 | 0.50 |
| 4 | R6,R10,R11,R13 | Multicomp | MCSR06X103 JTL | 10 Kohms, 0603 | 2074170 | 100 | 0.003 | 0.30 |
| 2 | R14,R15 | Multicomp | MCMR06X104 JTL | 100 Kohms, 0603 | 2073357 | 100 | 0.003 | 0.30 |
| 1 | SW1 | Omron | A6TN-2104 | DIP switch, SPST, 2 poles, raised slide, thru | 2066443 | 1 | 2.660 | 2.66 |
| 1 | S1 | C & K Components | OS102011MA1QN1 | Right angle slide switch, SPDT, ON-ON | 1201431 | 5 | 1.820 | 9.10 |
| 1 | S2 | Würth Elektronik | 430471031826 | SMD SPST Tactile Switch/Pushbutton | 1867986 | 1 | 1.360 | 1.36 |
| 1 | U1 | FTDI | FT232RL | USB-to-Serial converter | 1146032 | 1 | 11.830 | 11.83 |
| 1 | U2 | Texas Instruments | LM3940IMP-3.3 | 3.3V regulator SOT-223-3 (IGO pin order) | 9779280 | 1 | 2.280 | 2.28 |
| 1 | U3 | Atmel | AT86RF231-ZU QFN | 2.4GHz, 802.15.4 radio. | 1748493 | 1 | 8.970 | 8.97 |
| 1 | U4 | NXP | GTL2003 | Voltage level shifter, 8-bit, TSSOP-20 package | 2212068 | 1 | 1.260 | 1.26 |
| 1 | U5 | Texas Instruments | TPS61222DCKT | 5V boost converter | 1755643 | 1 | 2.930 | 2.93 |
| 1 | U6 | Atmel | ATMEGA328-AU | AVR Microcontroller QFP32 | 1972086 | 1 | 4.450 | 4.45 |
| 1 | VR1 | ST Micro | L78M05CDT-TR | 5.0V regulator D-PAK 500mA | 1261392 | 1 | 0.890 | 0.89 |
| 1 | Y1 | Aker | C3E-16.000-12-1010-X | 16MHz crystal, 10ppm, 12pf | 1640978 | 1 | 6.210 | 6.21 |
| Total | | | | | | | | 108.95 |

COLOUR KEY

BLACK

ORANGE

PURPLE

RED

As originally specified for Freakduino v2.1a.

Alternative part with same footprint as original. Additional orange text shows difference in part parameters.

Alternative part with **different** footprint to original.

Part not available and no alternative so far found. Red in price column indicates price unreasonably high.

KiCAD Freakduino BOM

| DigiKey | | | | | | | | |
|---------|--|---------------------|-------------------|---|------------------------------------|-----|---------|--------|
| Qty | Reference(s) | Manufacturer | Part No. | Description | DigiKey SKU | MOQ | USD ea. | Amount |
| 1 | ANT1 | ChangHong | SMA-02-113-TGG | RP-SMA Connector | | | 0.00 | |
| 1 | BATT1 | JST | JST-XH2P | 2-pin mated, polarized connector, male | | | | |
| 1 | BATT2 | COMF | BH321-1P | 2-AA battery case | | | | |
| 1 | BLN1 | Murata | LDB-182G4510C-110 | 100 ohm diff/50 ohm single ended, 2.4GHz, balun | | | | |
| 10 | C1,C10,C11,C13,C14,C16,C18,C20,C21,C23 | Various | | 0.1uF/50V,0603 | | | | |
| 0 | C2,R3,R9 | | DNI | | | | | |
| 1 | C3 | Various | | 100uF/16V | | | | |
| 1 | C4 | Johanson Technology | 251R14S0R4 | 0.4pf,0603 RF capacitor | | | | |
| 2 | C5,C22 | Various | | 22uF, 6.3V,0805, MLCC | | | | |
| 2 | C6,C7 | Taiyo Yuden | UMK105C-G5R6DW-F | 5.6pf,50V,0402,RF | | | | |
| 2 | C8,C12 | Various | | 0.01uF, 0603 | | | | |
| 2 | C9,C15 | Various | | 100uF, 35V, thru | | | | |
| 2 | C17,C19 | Various | | 12pF, 50V, 0603 | | | | |
| 1 | D1 | Various | | Blue LED, 0603 | | | | |
| 2 | D2,D6 | Various | | Red LED, 0603 | | | | |
| 2 | D3,D4 | Various | | Green LED, 0603 | | | | |
| 1 | D5 | Vishay | BAT43 | Schottky Diode, thru | | | | |
| 1 | FB1 | Various | | Ferrite Bead, 0805 | | | | |
| 1 | H3 | Various | H3X2 | 3x2 straight male header, 2.54mm (0.100") | | | | |
| 1 | JP1 | Various | JP3/THRU_VERT | 1x3 straight male header, 2.54mm (0.100") | | | | |
| 2 | JP2,JP7 | Various | 1X2 | 1x2 straight male header, 2.54mm (0.100") | | | | |
| 2 | JP4,JP6 | Various | | 1x8 straight male header, 2.54mm (0.100") | | | | |
| 2 | JP3,JP5 | Various | | 1x6 straight male header, 2.54mm (0.100") | | | | |
| 1 | J1 | 4UCON | | 9558 USB Mini-AB connector | | | | |
| 1 | J2 | 4UCON | | 5537 DC Power Jack, 2.0mm center conductor | | | | |
| 1 | L1 | Johanson Technology | L-14C3N3SV4T | 3.3nH RF inductor | | | | |
| 1 | L2 | Various | | 47uH inductor, 200mA, thru | | | | |
| 5 | R1,R2,R7,R8,R12 | Various | | 220 ohms, 0603 | | | | |
| 4 | R6,R10,R11,R13 | | | 10 Kohms, 0603 | | | | |
| 2 | R14,R15 | Various | | 100 Kohms, 0603 | | | | |
| 2 | R4,R5 | Various | | 1 Kohm, 0603 | | | | |
| 1 | SW1 | Various | | 2-input DIP switch, thru | | | | |
| 1 | S1 | Various | | Right angle slide switch | | | | |
| 1 | S2 | Various | | SMD SPST Tactile Switch/Pushbutton | | | | |
| 1 | U1 | FTDI | FT232RL | USB-to-Serial converter | | | | |
| 1 | U2 | Microchip | TC1264-3.3 | 3.3V regulator | | | | |
| 1 | U3 | Atmel | AT86RF231 | 2.4GHz, 802.15.4 radio | | | | |
| 1 | U4 | Fairchild | FXMA108 | Voltage level converter, DQFN-20 package | FXMA108BQXFSCCT-ND | 1 | 1.52 | |
| 1 | U5 | Holtek | HT7750A | 5V boost converter | NOT AVAILABLE | | | |
| 1 | U6 | Atmel | ATMEGA328-QFP32 | AVR Microcontroller | | | | |
| 1 | VR1 | NJRC | NJM2845-5.0 | 5.0V regulator | | | | |
| 1 | Y1 | NDK | NX3225SA,15ppm | 16MHz crystal, 15ppm | | | | |