# Bill of Materials: OpBoxShield.fzz

Wednesday, January 24 2018, 14:59:08

## Assembly List (\* denotes currently unused component)

| **Label** | **Part Type** | **Properties** |
| --- | --- | --- |
| C1 | Electrolytic Capacitor\* | voltage 25V; capacitance 10µF; package 100 mil [THT, electrolytic]; part # UKL1E100KDDANA |
| C2 | Electrolytic Capacitor\* | voltage 25V; capacitance 10µF; package 100 mil [THT, electrolytic]; part # UKL1E100KDDANA |
| CHP | Ceramic Capacitor | voltage 50V; capacitance 68nF; package 100 mil [THT, multilayer]; part # FK18X7R1H683K |
| CLP | Ceramic Capacitor | voltage 50V; capacitance 6.8nF; package 100 mil [THT, multilayer]; part # FK18X7R1H682K |
| Devs | Generic shrouded header - 20 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row double; package THT; pins 20; form ♂ (shrouded male) |
| Fan | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| ICSP | Generic double row female header - 6 pins\* | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row double; package THT; pins 6; form ♀ (female) |
| JA | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JB | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JC | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JD | Generic female header - 2 pins\* | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JE | Generic female header - 2 pins\* | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JF | Generic female header - 2 pins\* | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JGND/R1 | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| JGND/R2 | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| MultiDig | Screw terminal - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.137in (3.5mm); package THT; pins 2 |
| Multiplexed Dig | BNC | variant pth; package bnc; part # 1-1337543-0 |
| Part2 | Arduino Mega ADK (Rev3) | type Arduino MEGA ADK (Rev3) |
| Pump H-Bridge | L293D | variant L293D; package THT; part # SN754410NE |
| Pump1 | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| Pump2 | Generic female header - 2 pins | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row single; package THT; pins 2; form ♀ (female) |
| R.Relay | 2kΩ Resistor | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5% |
| R/2R DAC | R2R Ladder Resistor Network DAC | 10k, 20k Ohm ±2% 125mW Power Per Element R2R Ladder 16 Resistor Network/Array ±100ppm/°C 10-SIP |
| R1 | 330Ω Resistor | power 1W; bands 4; resistance 330Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| R2 | 330Ω Resistor | power 1W; bands 4; resistance 330Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| R3 | 1kΩ Resistor | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5% |
| R4 | 120Ω Resistor | power 1W; bands 4; resistance 120Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| R5 | 1kΩ Resistor | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5% |
| R6 | 120Ω Resistor | power 1W; bands 4; resistance 120Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| R7 | 1kΩ Resistor\* | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5% |
| R8 | 120Ω Resistor\* | power 1W; bands 4; resistance 120Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| R9 | 330Ω Resistor\* | power 1W; bands 4; resistance 330Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RA | 100Ω Resistor | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RB | 100Ω Resistor | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RC | 100Ω Resistor | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RD | 100Ω Resistor\* | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RE | 100Ω Resistor\* | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| Relay | Solid state relay (<= 2ms on/off) | true; hole size 1.0mm,0.508mm; package DIP (Dual Inline) [THT]; pin spacing 300mil; pins 4; chip label IC; part # TLP222A(F) |
| RF | 100Ω Resistor\* | power 1W; bands 4; resistance 100Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RHP | 1kΩ Resistor | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5%; part # FMP100JR-52-1K |
| RLP | 1kΩ Resistor | power 1W; bands 4; resistance 1kΩ; pin spacing 400 mil; package THT; tolerance ±5%; part # FMP100JR-52-1K |
| RX1 | 330Ω Resistor | power 1W; bands 4; resistance 330Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| RX2 | 330Ω Resistor | power 1W; bands 4; resistance 330Ω; pin spacing 400 mil; package THT; tolerance ±5% |
| Screw Term Dig + Gnd | Screw terminal - 6 pins | hole size 1.0mm,0.508mm; pin spacing 0.2in (5.08mm); package THT; pins 6 |
| VolAud | 100Ω Resistor | hole size 1.0mm,0.508mm; pin spacing 0.1in (2.54mm); row double; package THT; pins 8; form ♀ (female) |