Mega Tree 32 Relay Sequencer BOM

BOM and discussion

BOM#1- Arduino Mega SunFounder Mega 2560 R3 ATmega2560-16AU Board Compatible with Arduino

BOM#2- Arduino Ethernet Shield SunFounder Ethernet Shield W5100 for Arduino R3 Mega 2560 1280 A057

BOM#3- 8 Channel Relay SunFounder 5V 8 Channel Relay Shield Module for Arduino R3 2560 1280 ARM PIC AVR STM32 Raspberry Pi 3, 2 Model B & B+

BOM#4- AC to DC 5v Adapter to Power Relay boards.
This is probably overkill for power. I used a Buck Converter running off the 9V adapter for subsequent builds.
Power Estimate 32 channels at 72mA per channel (highest reported I have seen) = 2.3A
5V 6A 30W Power Supply 100V-240V AC to DC Adapter 5V 6 amp Switching Converter Charger 5.5x2.1mm Plug

BOM#5- AC to DC 9V Adapter 2 Amps to power Mega
Need to reverse polarity on output**. I would choose a different Power adapter.**
Power Adapter for Brother Label Maker P-Touch PTD210 PTD200, LotFancy 9V 2A AC DC Adapter, Power Supply Replacement for Brother AD-24 AD-24ES AD-20 AD-30 AD-60, 6.5 Feet Cable, UL Listed

BOM#6- WeatherProof Electrical Container
SOCKiTBOX 100533212 Weatherproof Black Large

BOM#7- Input Power Cord Pplug1
Cable Matters 2-Pack 16 AWG Heavy Duty AC Power Extension Cord (Power Extension Cable) in 3 Feet (NEMA 5-15P to NEMA 5-15R)

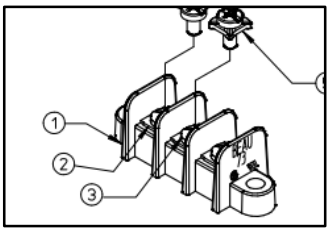
BOM#8**- Jumper Wires Similar to these**

- EDGELEC 120pcs 10cm Dupont Wire Female to Female Breadboard Jumper Wires 3.9 inch 1pin-1pin 2.54mm Connector Multicolored Ribbon Cables DIY Wires Length 10 15
- Premium Breadboard Jumper Wires 22AWG, Now with 20% More Red and Black Jumpers, Square Head 0.1'' 10 Colors Total 120-Pack by Hellotronics (30CM, M/F)
- Pololu 
  - Wires with Pre-Crimped Terminals 10-Pack M-F 12" Red
- Pololu 
  - 0.1" (2.54mm) Crimp Connector Housing: 1x1-Pin 25-Pack

BOM#9- 32x J? Conn_WallSocket
8ft Extension Cord with Vampire Receptacle (Common Part; I purchased mine here)
https://www.actionlighting.com/ **Action Lighting™, Inc.**

SPT 1 / SPT 2 Vampire Zip Cord Receptacle White - Pack(12 plugs) - 100SPTPLUG-White
100FT SPT1 WHITE WIRE WITH MALE PLUG - 100SLAICEXW

BOM#10- Terminal Blocks 5x and Tabs(below) Mouser link 538-38730-0104
Molex Terminal Block 38730-0104 for 4 terminal places
J_TermBlk_1; J_TermBlk_2; J_TermBlk_3; J_TermBlk_4; J_TermBlk_5



Molex Terminal Block Tabs Links are Mouser

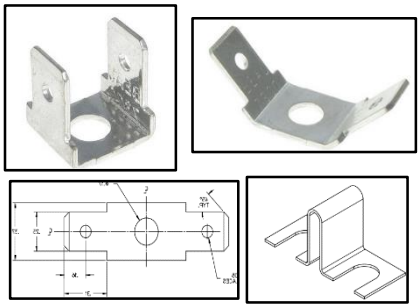
0.25" Vertical Quick Disconnect Tabs 538-38002-1010

0.25" Angled Quick Disconnect Tabs 538-38002-1335

0.25" Flat Quick Disconnect Tabs 538-38002-1333

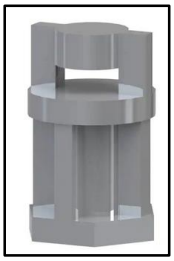
Terminal Slot (jumper between Terminals over barrier) 538-38002-1352

I create a BUSS or neutral return using terminal blocks, tabs and jumpers with Quick Disconnects for easy assembly/repair.



BOM#11- Vertical Board Mount 8x
Mouser Link 534-Mouser link 534-612 Keystone Electronics. Not shown in schematic. Uses 4-40 screws not listed in BOM. These are used to mount 4 relay boards vertically in SockitBox with screw terminals near top of Box.

BOM#12- Board Mount Edge Corner
DigiKey # RPC1449-ND Manufacturer Essentra Components TCEHCBS-6-01
Board Support Corner, Edge Holding / Screw Mount Nylon 0.375" (9.53mm) 3/8"
DigiKey # RP1007-ND Manufacturer Essentra Components TCEHCBS-4-01
Board Support Corner, Edge Holding / Screw Mount Nylon 0.250" (6.35mm) 1/4"
Board Spacers or similar
DigiKey # 492-1090-ND Manufacturer Bivar Inc. MFG # 9911-312 Board spacers



Mounting for Arduino Mega Board on side of Socket Box. The standard Board spacers and standoffs work well if you have room. I found the Edge/Corner mounts to be very useful due to board space constraints. My mounting was about half spacers and half Edge/Corner mounts.