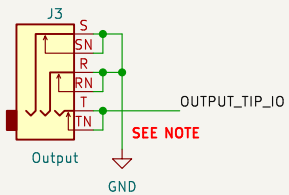
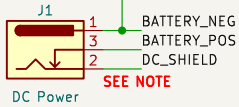
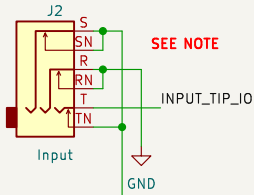


## Connectors



J11  
BATTERY\_NEG 1 Battery  
BATTERY\_POS 2

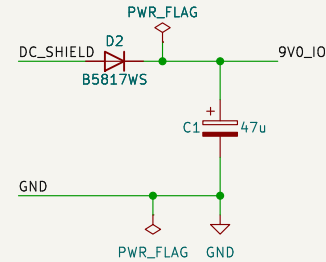
**N.B. Molex Picoblade cable assemblies swap pin order**

J6  
EFFECT\_INPUT\_IO 1  
GND 2  
9V0\_IO 3  
EFFECT\_OUTPUT\_IO 4  
IO/Effect Connector 1 (IO Side) [E1]

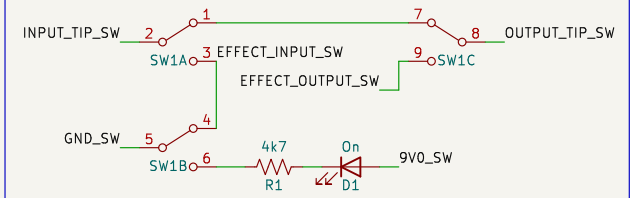
J7 J9  
OUTPUT\_TIP\_IO 1 INPUT\_TIP\_SW 1  
GND 2 GND 2  
INPUT\_TIP\_IO 3 OUTPUT\_TIP\_SW 3  
IO/Switch Connector 1 (IO Side) [S1] IO/Switch Connector 1 (Switch Side) [S1]

J8 J10  
EFFECT\_INPUT\_IO 1 EFFECT\_OUTPUT\_SW 1  
GND 2 9V0\_SW 2  
9V0\_IO 3 GND\_SW 3  
EFFECT\_OUTPUT\_IO 4 EFFECT\_INPUT\_SW 4  
IO/Switch Connector 2 (IO Side) [S2] IO/Switch Connector 2 (Switch Side) [S2]

## Power (IO board)



## 3PDT w/ LED Indicator (switch board)



For enclosure ground (when necessary, such as with plastic audio jacks), solder a wire from GND\_SW lug to footswitch washer.

## Signal flow explanation

Footswitch on:

1. ->input (io pcb)
2. input\_tip\_io -(S1)-> input\_tip\_sw -> effect\_input\_sw
3. effect\_input\_sw -(S2)-> effect\_input\_io
4. effect\_input\_io -(E1)-> effect pcb
5. effect pcb -(E1)-> effect\_output\_io
6. effect\_output\_io -(S2)-> effect\_output\_sw -> output\_tip\_sw
7. output\_tip\_sw -(S1)-> output\_tip\_io
8. ->output (io pcb)

Footswitch off:

1. ->input (io pcb)
2. input\_tip\_io -(S1)-> input\_tip\_sw -> output\_tip\_sw
3. output\_tip\_sw -(S1)-> output\_tip\_io
4. ->output (io pcb)

Input/battery switching and switch terminal grounding rationale: <https://www.freestompboxes.org/viewtopic.php?t=32540>

Briefly:

- Input TIP SWITCH and SLEEVE are connected to negative supply, input RING is connected to circuit ground.
- When an input cable is not plugged in, the effect circuit is open (off) due to lack of a return to ground.
- When a TS input cable is plugged in, RING shorts to SLEEVE and completes the circuit from negative supply to ground, energizing the circuit.
- Note that a TRS cable will not complete the circuit, and the effect will remain off.

Battery vs DC supply switching works similarly:

- When a DC source is not plugged into the jack, a BATTERY\_POS is connected to the DC\_SHIELD net.
- When a DC source is plugged in, the switch opens the battery circuit to providing an alternate positive supply.

Otherwise:

- Output tip (signal) switch IS NOT grounded, as grounding the output of the circuit when energized could damage effect circuit components.
- Input tip (signal) switch IS grounded, to prevent an output signal from being produced when no input cable is present.

[github.com/whbeers/noise\\_floor](https://github.com/whbeers/noise_floor)

Sheet: /

File: noise\_floor.kicad\_sch

## Title: Noise Floor Interface Boards

Size: A4

Date: 2023-03-10

Rev: v0.1

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