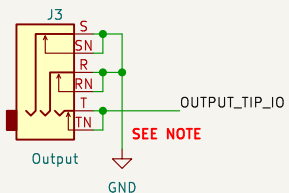
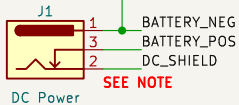
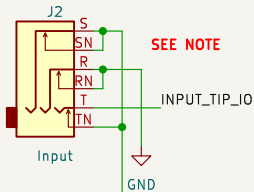


Connectors



J11
BATTERY_POS 1 Battery
BATTERY_NEG 2

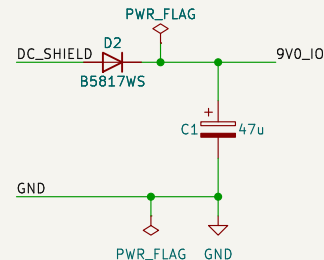
N.B. Molex Picoblade cable assemblies swap pin order

J6
EFFECT_INPUT_IO 1
GND 2
9V0_IO 3
EFFECT_OUTPUT_IO 4
IO/Effect Connector 1 (IO Side) [E1]

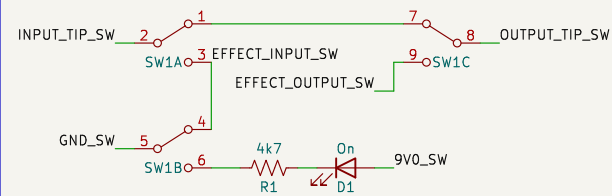
J7 J9
OUTPUT_TIP_IO 1 INPUT_TIP_SW 1
GND 2
INPUT_TIP_IO 3 OUTPUT_TIP_SW 2
INPUT_TIP_IO 4 OUTPUT_TIP_SW 3
IO/Switch Connector 1 (IO Side) [S1] IO/Switch Connector 1 (Switch Side) [S1]

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

Sheet: /

File: noise_floor.kicad_sch

Title: Noise Floor Interface Boards

Size: A4 Date: 2023-03-23

KiCad E.D.A. kicad 7.0.1

Rev: v0.21

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