

REP: BUILD GUIDE

Audio Buffered Mults



REP is a dual-channel 1-in-3 Audio Buffered Multiple (or Mults). Input signals applied to the input sockets (sockets marked ❶ and ❷) are replicated at the three output sockets directly below. Each output is buffered using NE5532 dual Operational Amplifiers for audio signal integrity.

In scenarios where no input is connected to the second channel, the first channel is automatically normalled to the second channel. Consequently, the module functions as a 1-in-6 buffered multiple, effectively distributing the input signal across six outputs.

Each channel boasts an input impedance of 1 MΩ when an input jack is connected to it. However, if the module operates as a 1-in-6 buffered mults, the input impedance is halved to 500 kΩ.

The power ribbon cable can be connected in either orientation for convenience and ease of installation.

Specifications

Width: 3 HP

Depth: 21 mm

Current Consumption:

TBD

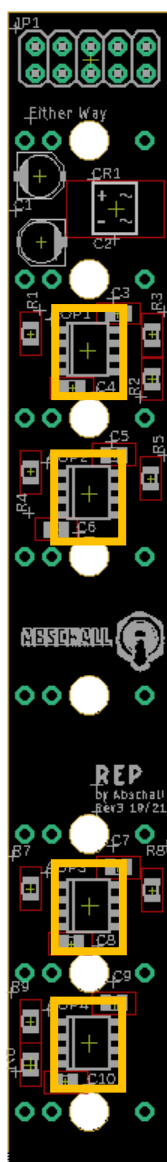
Input Impedance:

$Z_{in} = 1 \text{ M}\Omega$ (500kΩ normalled)

Bill of Materials

QTY	VALUE	PACKAGE	NAME
Resistors			
7	2k	R0805	R1, R3, R4, R5, R7, R8, R9
2	1meg	R0805	R2, R6
Capacitors			
8	100n	C0805	C3, C4, C5, C6, C7, C8, C9, C10
2	10u	PANASONIC_B	C1, C2
ICs			
1	MB6S	4SOIC	CR1
4	NE5532	SOIC8	AOP1, AOP2, AOP3, AOP4
Through Hole Stuff			
1	2X5 Male Pin Header	2X5 Male Pin Header	JP1
8	PJ301M	Thonkiconn	IN1, IN2, OUT1-1, OUT1-2, OUT1-3, OUT2-1, OUT2-2, OUT2-3

ICs



NE5532: AOP1, AOP2,
AOP3, AOP4

Make sure that the angled
side of the Op Amp is
positioned left.



MB6S: CR1

Resistors

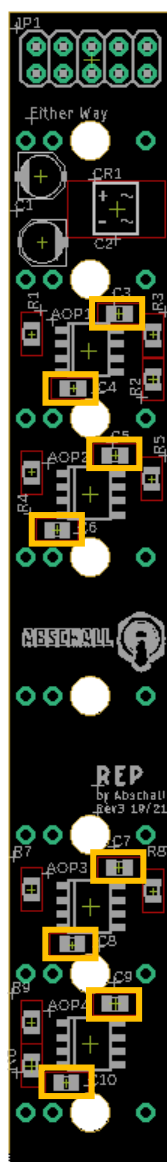


1 MΩ: R2, R6

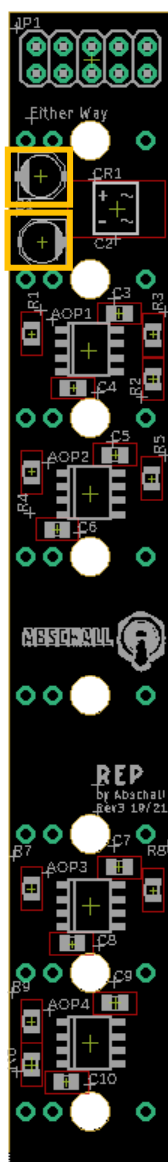


2 kΩ: R1, R3, R4, R5,
R7, R8, R9

Capacitors



100nF: C3, C4, C5, C6, C7, C8, C9, C10



10uF: C1, C2 The capacitors have a black strip indicating the minus side.

Through Hole Stuff

1. Insert the 2x5 Male Pin Header through the PCB, turn the board around and solder the header in place.
2. Place the through hole components (Jacks) on the bottom face, but do not solder anything yet!
3. Place the Front Panel on top of PCB and make sure all the Jacks are aligned properly.
4. Carefully tighten all the nuts.
5. Turn the board around and make sure the sockets are pressed against the PCB before soldering the pins.
6. Solder the jack legs.

Powering the module up

Before Powering the module up, make sure that there are no shorts between -12 V, GND and + 12 V, using a multimeter's continuity probe. Make sure one last time that the Op Amps and Electrolytic Capacitors (C1 and C2) are soldered the right way round.

Connect the power ribbon cable to the module, ensuring that it is properly aligned. Since the module utilizes a full bridge rectifier (MB6S), the ribbon cable can be plugged in either orientation.

Nice! You just successfully finished the build of REP!

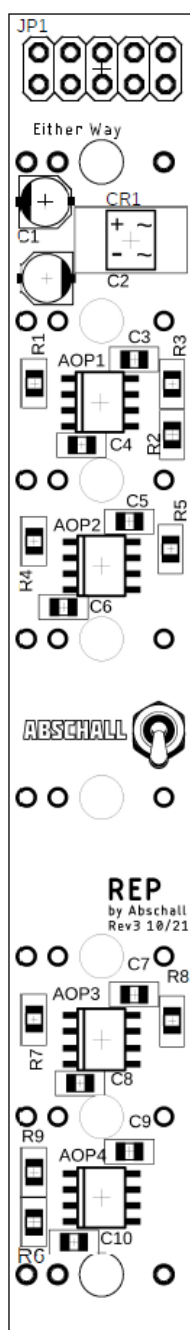


Figure 1 TOP Side Component Placement

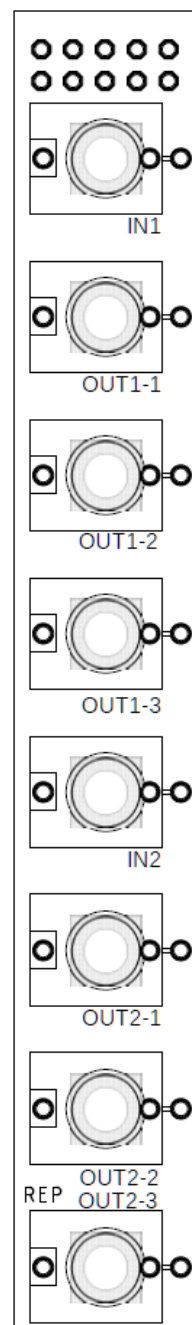


Figure 2 BOTTOM Side Component Placement