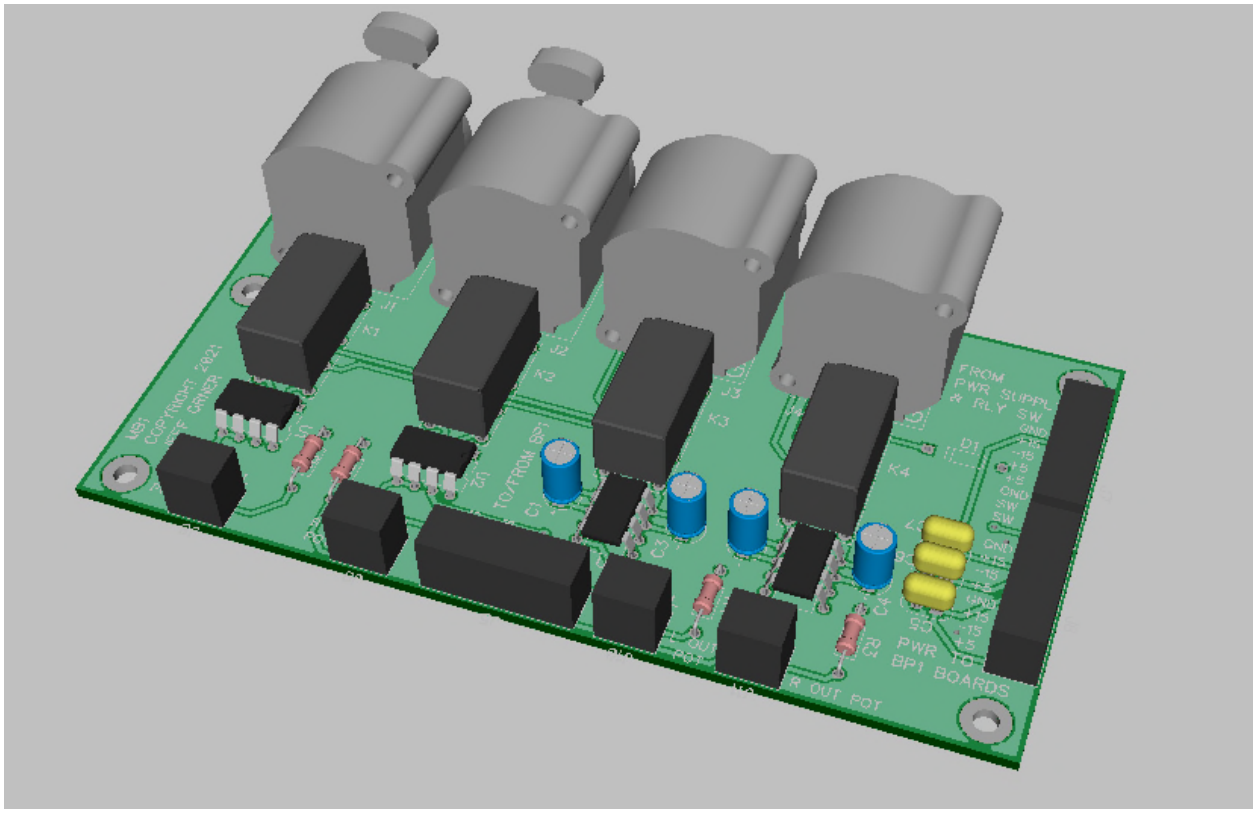
MB1 board assembly:



The MB1 is used in the TPC-100 Prism clone to translate balanced +4dBu studio level audio to unbalanced audio with the ability to bypass the balanced inputs when powered off or by use of a switch. There are provisions for input and output level pots as well as power distribution to the BP1 processor boards. A connection allows switching for relay bypass.

DIP Socket Placement

1) Orient the pcb silkscreen side facing up.

2) Locate the 4 eight pin DIP sockets.

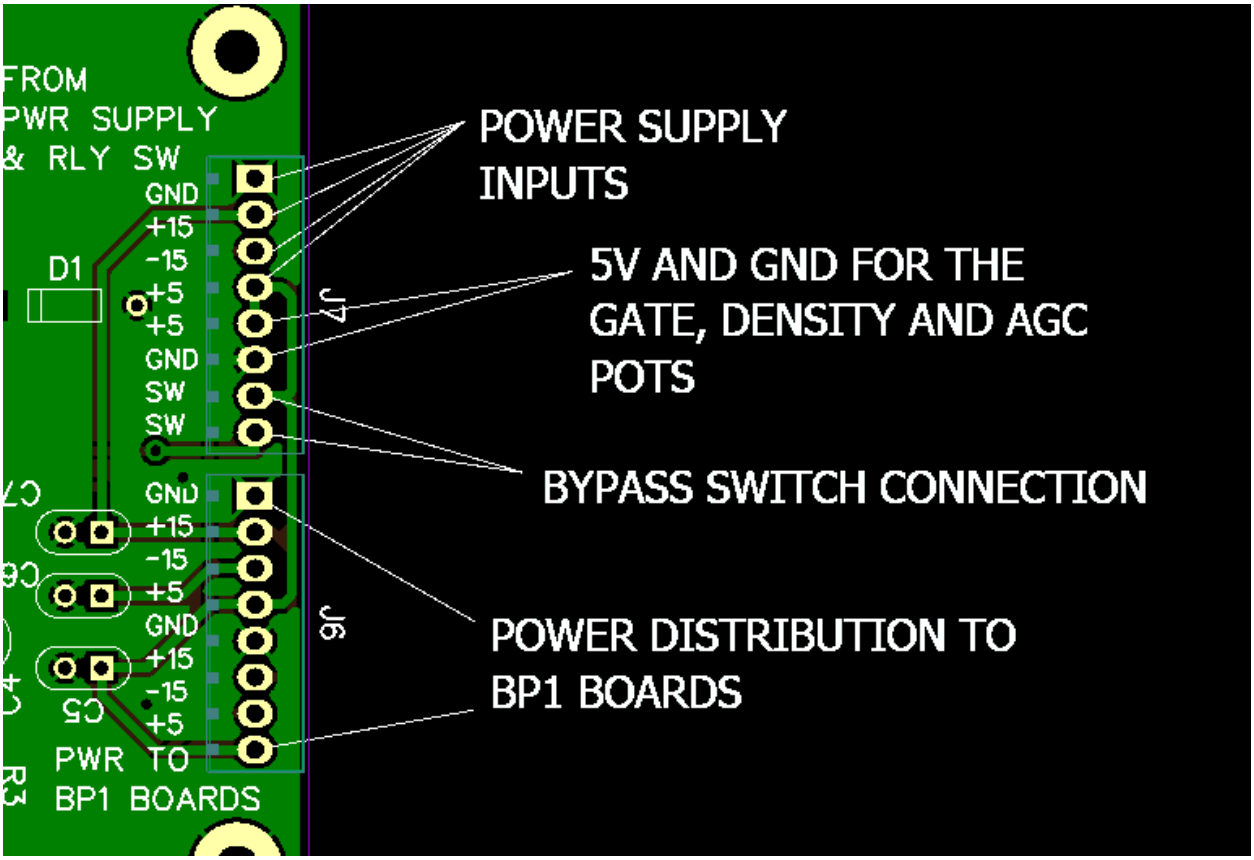
3) Orient the sockets to locate pin 1 per the silkscreen and install the sockets in the board.

4) Using cardboard to hold the sockets flat to the board, flip the assembly over and tack solder two diagonal pins of the sockets. Examine the sockets for proper placement and seating to the board surface. Solder the remaining pins.

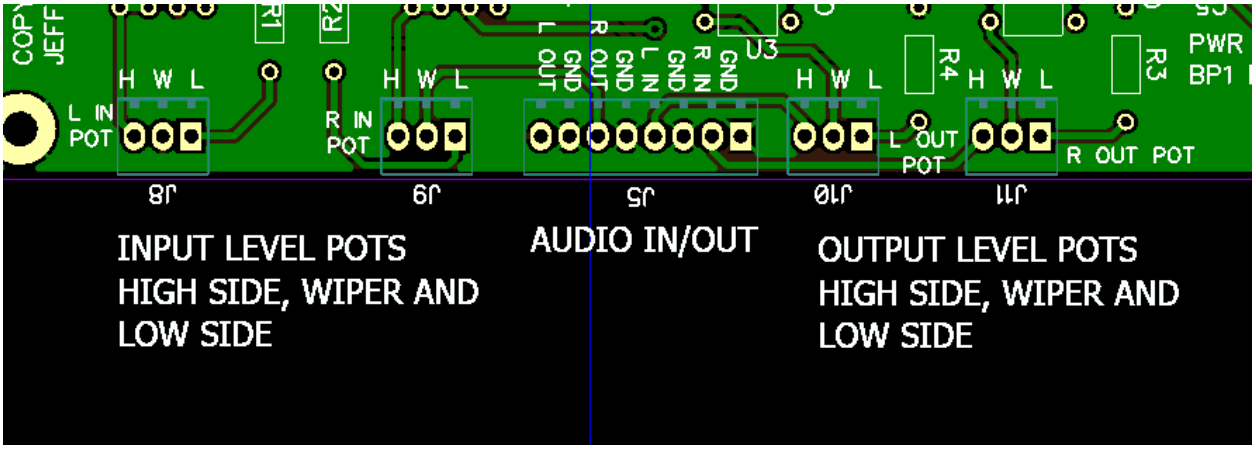
Component placement

5) Place 3 pcs of the 4.7uf ceramic capacitors at C5, C6 and C7
6) Install 4 pcs of the 10uf non-polarized electrolytic capacitors at C1, C2, C3 and C4. Ignore polarity markings on PCB.
7) Install the 1N4148 diode at D1
8) If using analog taper pots for input and output level controls use a jumper wire, or if using a linear taper pot use a 1k resistor and place it at R1, R2, R3 and R4.
9) Place 4 pcs of the relays at K1, K2, K3 and K4
10) Place 4 pcs of the 3 position screw terminal blocks with the terminal openings facing toward the board edge
11) Place 2 pcs of the 8 position screw terminal block with the terminal openings facing toward the board edge
12) Install two female XLR connectors in J1 and J2
13) Install two male XLR connectors in J3 and J4
14) Install 2 pcs of THAT1246 in U1 and U2 sockets.
15) Install 2 pcs of THAT1646 in U3 and U4 sockets.
16) Clean any solder flux from the board and inspect the board.

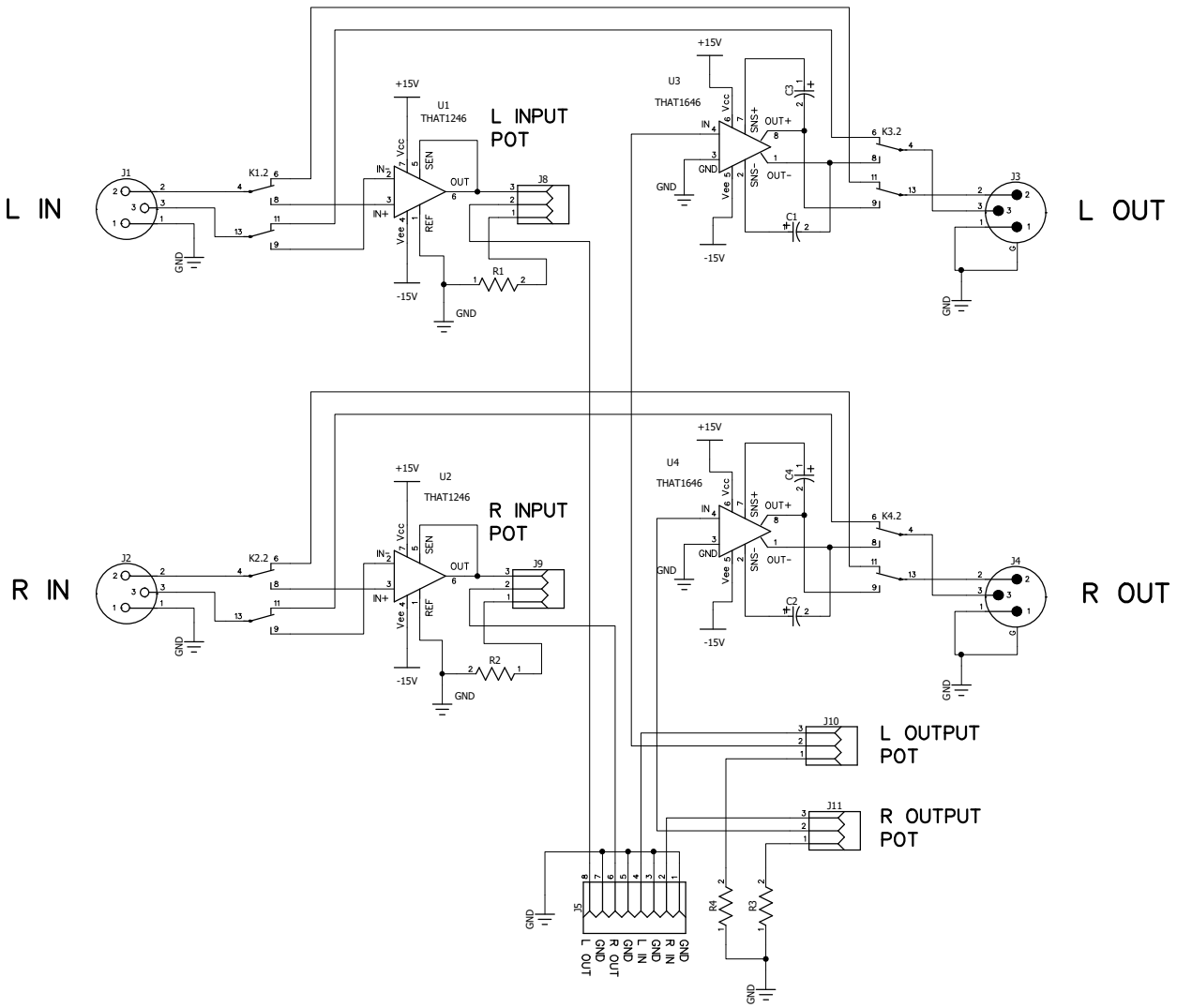
Below is the function of the 8 pin connections and how they are used:

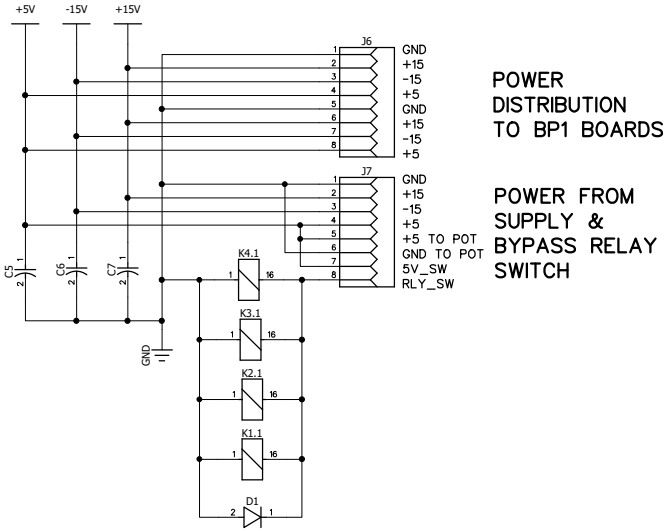


Below is the function of the audio and pot connections



L IN
GND
+
-
R IN
GND
+
-
L OUT
+
-
GND
R OUT
+
-
GND
FROM
PWR SUPPLY
& RLY SW
GND
+15
-15
+5
+5
GND
SW
SW
J7
D1
J1
K1
J2
K2
J3
K3
J4
K4
C7
C6
C5
GND
+15
-15
+5
GND
+15
-15
+5
J6
PWR TO
BP1 BOARDS
MB1
COPYRIGHT 2021
JEFF ORNER
U1
U2
U3
U4
R1
R2
R3
R4
C1
C2
C3
C4
TO/FROM BP1
L OUT
R OUT
GND
L IN
R IN
GND
GND
H W L
L IN
POT
J8
H W L
R IN
POT
J9
L OUT
POT
J10
H W L
R OUT POT
J11





MB1 SCHEMATIC

SIZE	FSCM NO.	DWG NO.	REV
SCALE		Sheet 1	

#	RefDes	Name	Value	Manufacturer	Manufacturer PN	Part Number (Digi-Key)	Part Number (Mouser)	Quantity
1	K1,K2,K3,K4	Relay 5V coil		Omron	G5V-2-DC5		653-G5V-2-DC5	4
2	J8,J9,J10,J11	TERM BLK 3P SIDE ENT 2.54MM PCB		On Shore	OSTVN03A150	ED10562-ND		4
3	J6,J7	TERM BLK 8P SIDE ENT 2.54MM PCB		On Shore	OSTVN08A150	ED10566-ND		3
4	U1-U4	CONN IC DIP SOCKET 8POS TIN		Amphenol	DILB8P-223TLF	609-4717-ND		4
5	R1,R2,R3,R4	1/4W 1% axial res	1k	Stackpole	RNMF14FTC1K00	S1KCACT-ND		4
6	C5,C6,C7	CAP NP0 CERAMIC	4.7uf	Murata	RCER71H475K3DBH03A	490-7555-1-ND		3
7	D1			Onsemi	1N4148	1N4148FS-ND		1
8	U1,U2	Line receiver		THAT	1246P08-U		887-1246P08-U	2
9	U3,U4	Line driver		THAT	1646P08-U		887-1646P08-U	2
10	C1,C2,C3,C4	10uf non-pol electrolytic	10uf	Panasonic	ECE-A1EN100UB		667-ECE-A1EN100UB	4
11	J1,J2	XLR female		Neutrik	NC3FAH		568-NC3FAH	2
12	J3,J4	XLR male		Neutrik	NC3MAH		568-NC3MAH	2

Install if using linear pots, use jumper for log pots