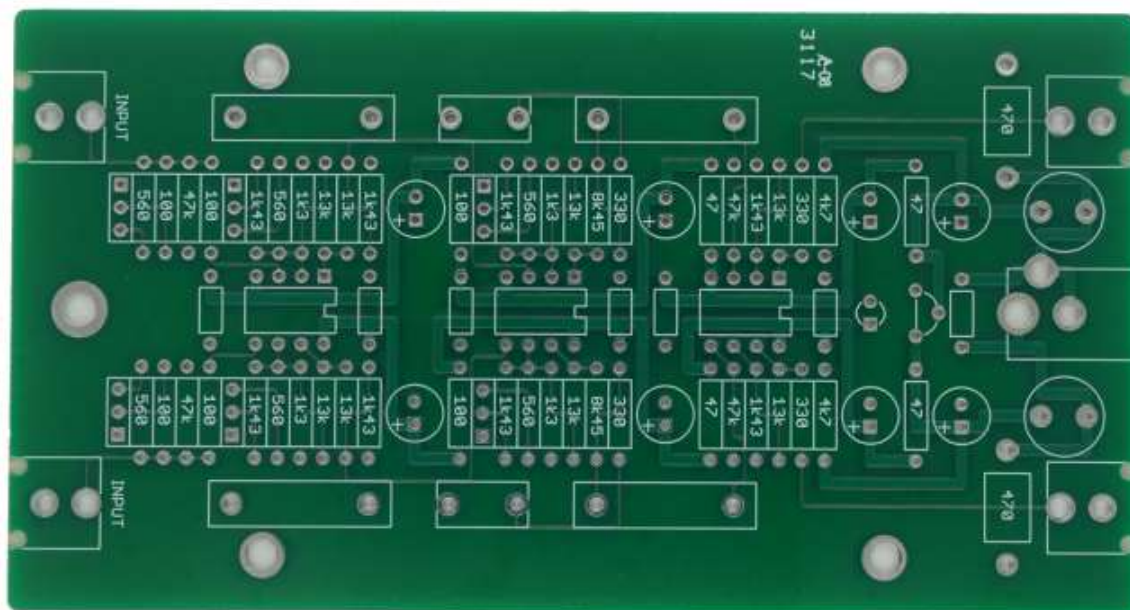




BUGLE3

MM / MC Phonostage PCB



Made in USA

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Description

Congratulations, you have just purchased one of the highest performance-per-dollar audiophile products available! The Bugle3 was designed to be a simple yet flexible phonostage capable of achieving very good sound quality, comparable to far more costly units. It is a third-generation circuit topology using low noise audio opamps implementing passive split-equalization filters, and a low output impedance. Loading and gain are adjustable via DIP switches.

Available as a PCB-only kit! You must purchase all other components to complete assembly.

Specifications

Item	Specification
Loading	85, 100, 553, 47k Ohm
Gain	40, 50, 60, 64dB
Input Capacitance	26pF
Output Impedance	330 Ohm
Bandwidth	10Hz to 1000kHz
Distortion	<0.01% @1kHz
RIAA Accuracy	+/-0.5dB (30Hz to 30kHz)
Noise	82dBA ref 5mV

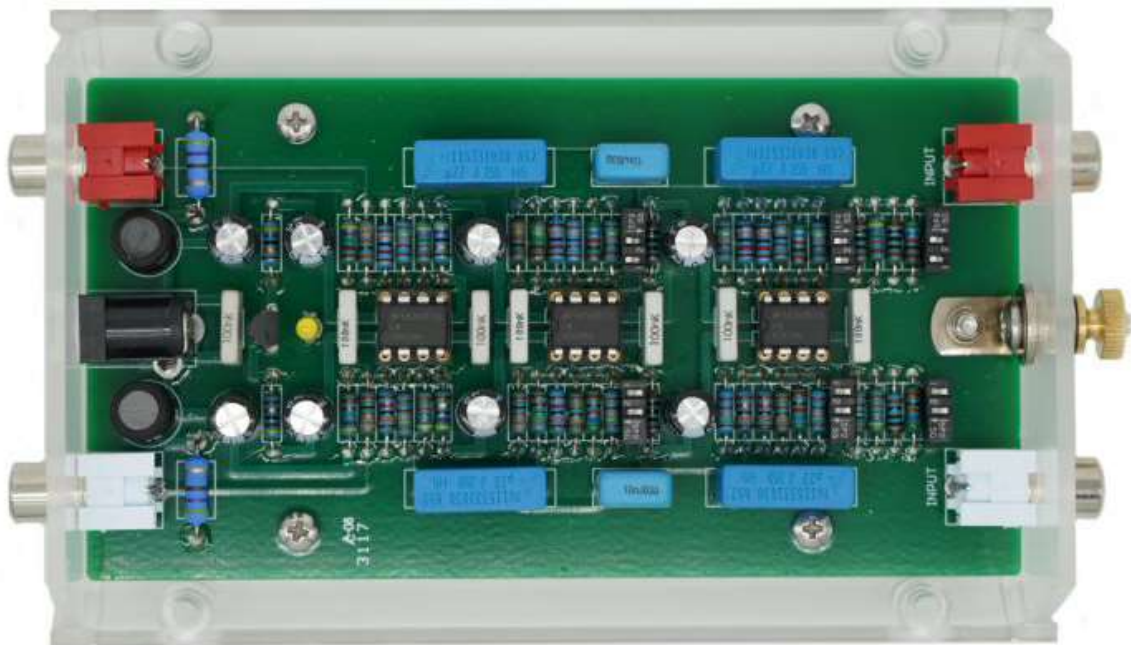
Parts

The following parts (or similar) need to be purchased to complete your kit. If you want to make substitutions, it is recommended to build as stock first to make sure things work properly, then modify to your liking. Any LED will work fine. If you plan on using a different case, buy panel-mounted RCA jacks, etc. Standard case is a SRA27B-N, but will require drilling holes.

Item	www.DigiKey.com	Qty
RCA (red)	CP-1419-ND	2
RCA (white)	CP-1420-ND	2
Opamp	296-43962-5-ND	3
Splitter	296-6549-5-ND	1
LED	67-1072-ND	1
1mH	M10005-ND	2
100nF	399-17918-ND	7
10nF	399-19851-ND	2
220nF	399-PHE426HB6220JR06-ND	4
220uF 16V	399-6566-ND	8
DC Jack	EJ508A-ND	1
Socket	ED3013-ND	3
DIP SW	CKN9438-ND	6
47R5	47.5XBK-ND	4
100	100XBK-ND	6
332	332XBK-ND	4
562	562XBK-ND	6
1k30	1.30KXBK-ND	4
1k43	1.43KXBK-ND	8
4k75	4.75KXBK-ND	2
8k45	8.45KXBK-ND	2
13k0	13.0KXBK-ND	8
47k5	47.5KXBK-ND	4
470 1W	13-RSF100JB-73-470R-ND	2
Power Supply	1470-3172-ND	1

Assembly

- ❑ Install all resistors, solder, cut leads.
- ❑ Install sockets, solder.
- ❑ Install DIP switches, with paddles facing inwards.
- ❑ Install 100nF decoupling capacitors.
- ❑ Install inductors.
- ❑ Install DC jack, rail-splitter, LED.
- ❑ Install inductors.
- ❑ Install RCA jacks.
- ❑ Install electrolytic capacitors.
- ❑ Install film capacitors (10nF, 220nF).
- ❑ Install opamps!



Testing

Apply power to 24Vdc jack. Led should light up! If you have a DVM, check power supply voltages on opamp pins 4 and 8. U1 should be powered by roughly +/-10V.

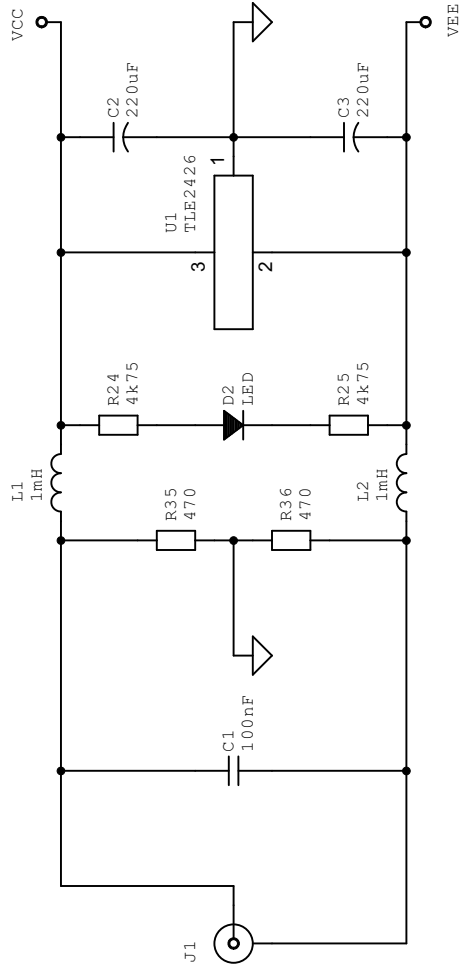
Loading & Gain

Switch	Load	Gain
0	47k	40dB
1	553	60dB
2	100	50dB
1 + 2	85	64dB

Troubleshooting

If audio quality is not good, double-check all resistor values to make sure they were installed into correct locations.

If a channel has a scratchy sound to it (not a nice clean, quiet hiss) then it is likely the input opamp has been damaged and should be replaced. These devices are very sensitive to ESD and precautions must be taken. Hum, buzz, and other noise sources (WiFi) can be induced into the Bugle2 and/or input cables. Place as far from other equipment as possible.



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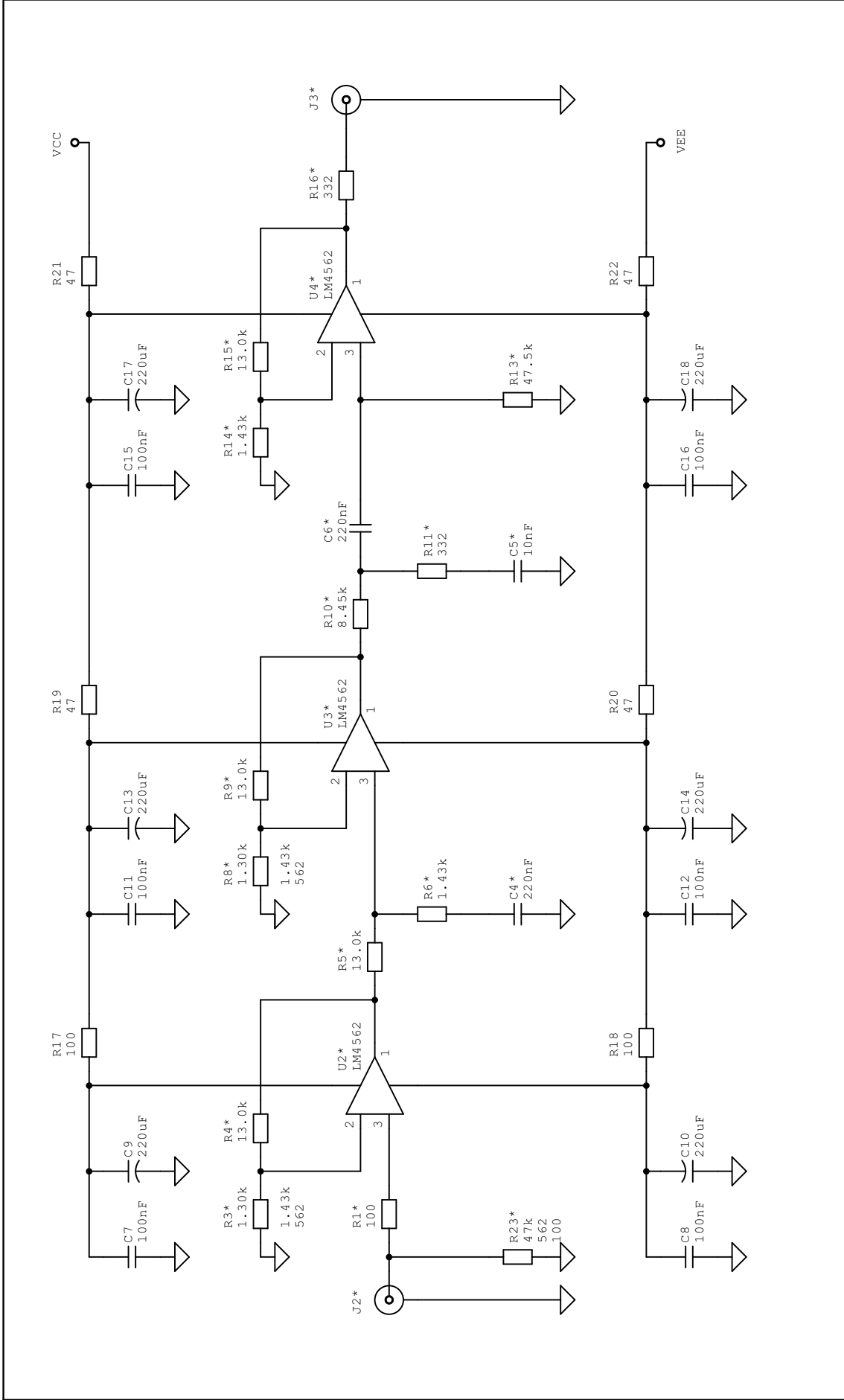
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