

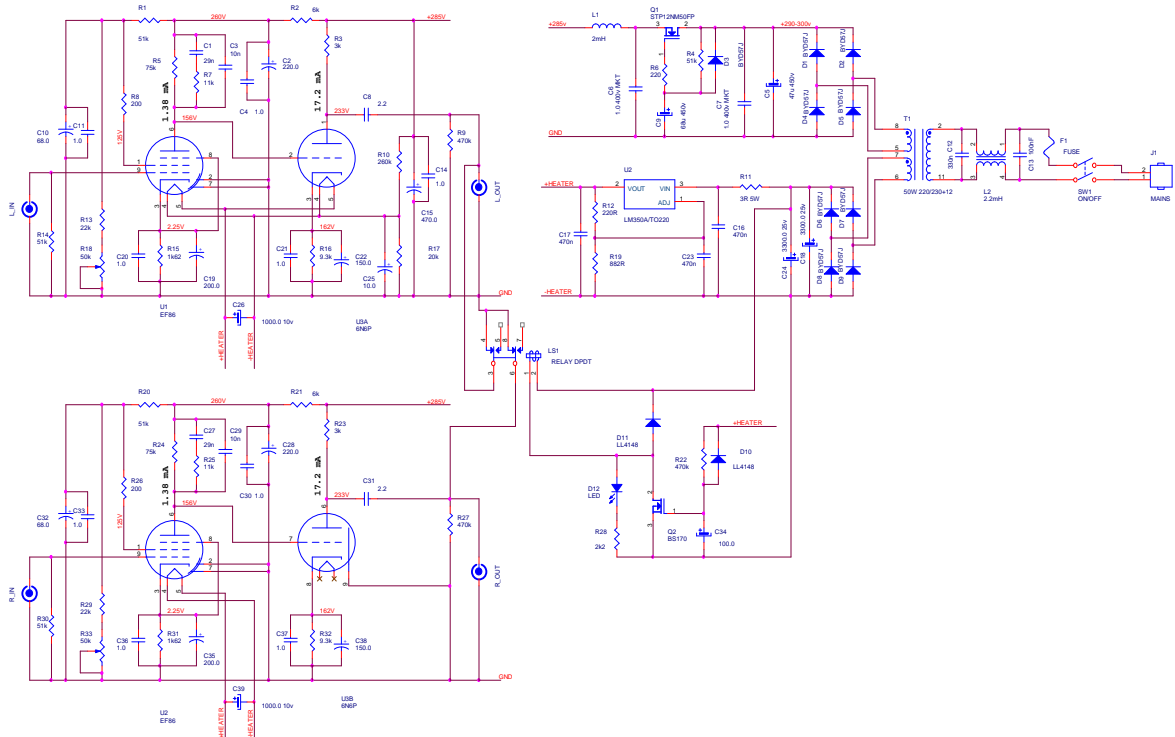
2 Stages Phono Preamplifier

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Many peoples were very satisfied with the phono preamplifier by Eugen Komissarov, published in the "RadioHobby" magazine, 4/2002 [1]. After I have heard its sound, there were no questions about building that device for me. As I had no the same tube as Eugen used (6G4P+6N30P) it was decided to make the 1st stage with EF86 from Siemens, and the 2nd stage – with 6N6P (Russian).

Of course, lamps voltages and current were changed: 150v/1.4mA for EF86, and 70v/17mA for the 6N6P. Because I hate tube rectifiers and other "museum exponents" (like paper-in-oil capacitors and germanium transistors) the mosfet voltage regulator (Q1) was implemented. Additional LC-filter (L1C14C15) helps to cancel very high frequency fluctuation in the plate voltage. Filaments voltage are also stabilized by the U2 regulator, and biased to +20v (R10R17C25).

Filament power supply is also used to provide voltage to the time delay circuit (Q2), that unshorts preamplifier's (relay LS1) output after the several second when the device is switched on, and light D12.



R1R13R8R18 provides screen grid voltage. There is a possibility to adjust lamp's operation mode with the R18 trimmer.

Passive components have the huge influence to the sound, so I used electrolytic capacitors – Rubycon BXA, film capacitors – MKT from BC-Components in the power and WIMA FKP in the signal path.

The frequency response ideally match the necessary RIAA:

Freq, Hz	RIAA, dB	Measured, dB	delta, dB
20	17,3	18,8	1,5
31	17,0	18,3	1,3
50	16,3	16,8	0,5
63	15,4	15,7	0,3
80	14,2	14,4	0,2
125	11,5	11,6	0,1
250	6,7	6,6	-0,1
500	2,6	2,5	-0,1
1000	0,0	0	0,0
2000	-2,6	-2,3	0,3
3150	-5,0	-5	0,0
4000	-6,6	-6,4	0,2
5000	-8,2	-8	0,2
6300	-10,0	-10	0,0
8000	-11,9	-11,9	0,0
10000	-13,7	-13,8	-0,1
12500	-15,6	-15,7	-0,1
16000	-17,7	-17,9	-0,2
20000	-19,6	-19,6	0,0

Mechanically, preamplifier was built on the 2 PCBs (“breadboards”) – amplifier and power supply. Both PCB fixed on basement with the plastic spacers. No microphone effect occurred!

We have compared the sound of this preamplifier with another phonostage, the popular Parravichini EAR-834R clone. This was the better **J**



