CAT SL-1 Preamplifier User Manual

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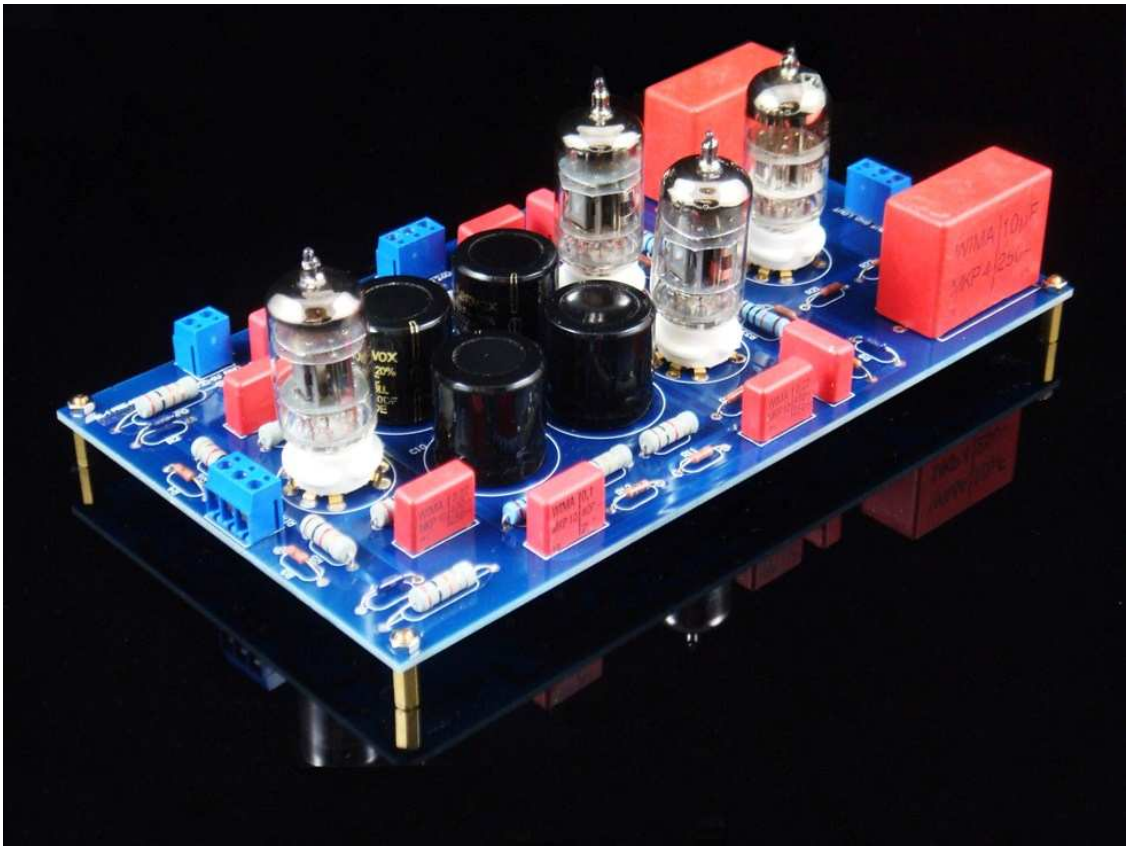


INTRODUCTION

The design of this preamplifier is reference to the classic CAT SL-1 preamplifier. By using three tube stages:12AU7, 12AX7 and 6DJ8; The first-stage use 12AU7which is denoted with high-bandwidth and providing sweet sound. The second stage is even more amazing; the use of high-magnification tube 12AX7 in SRPP configuration, it can create extremely broad bandwidth and ultra dynamic. Finally, the output is done by using 6DJ8 to obtain very low output impedance and increase the driving capability. The output voltage swing can be reach more than 50V.

FEATURES

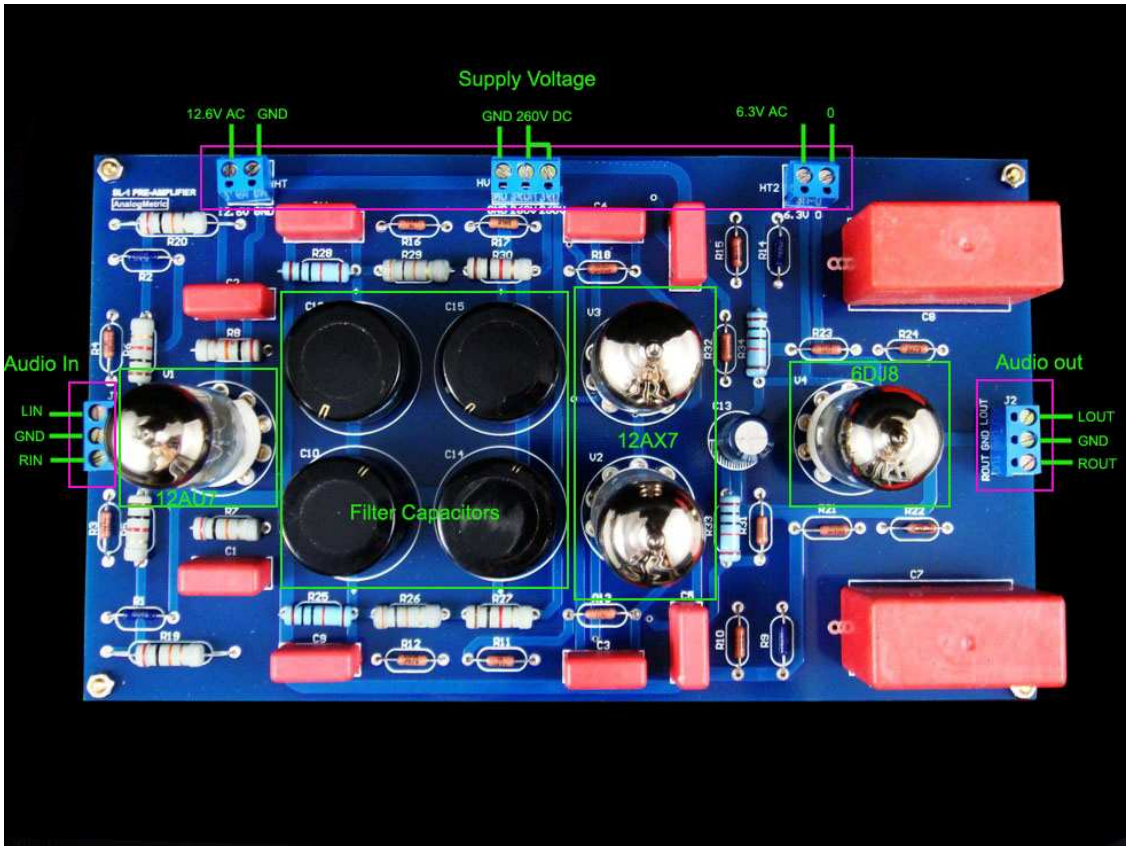
- One 12AU7, two 12AX7, and one 6DJ8.
- First two amplification stages consist of 12AU7 in common cathode and then 12AX7 in SRPP. The final stage are cathode follower provided by 6DJ8
- Two single-ended inputs and two single-ended outputs.
- Symmetric layout design and signal paths with minimum parasitic.
- Dedicated ground and power rails layout design.
- Four large reservoir decoupling capacitors for power rails.
- Power requirements: one 260V DC, one 12.6V DC, and one 6.3V AC.
- PCB dimension: 138mm (W) x 221mm (L)
- PCB thickness: 2.4mm, double layer, 2oz copper.

PRECAUTIONS

- Do not use any body parts to touch the metal parts of the kit after power up or power off, since the high voltage capacitors may not fully discharge. It may cause serious electric shock.
- Use a power transformer with fuse (1-3A) socket to limit the supply current in case of short circuit or incorrect assembly.
- Double check the assembled components with the schematics.
- Do not attempt the measure the voltage by multimeter with hand after power up. The probes of the multimeter should be mounted by some stands to the points of the measurement before switching on the power supply.
- Turn off the power supply if you observe any smokes or hear strange sound coming out from the transformer or board. If there is short circuit, the transformer will be getting very hot shortly.

PROCEDURES

1. Hook up all the components according to the schematic, part list, and photos. Notice to the polarity of the high voltage electrolytic capacitors (C10, C12, C14, and C15).



2. Apply power supplies without plugging in the tubes, there are 12.6V DC to HT connector, either one or two 260V DC to HV connector, and 6.3V AC to connector HT2 connector (This one is AC voltage, do not short pin marked with '0' to the 'GND'). Check again the voltages of the connectors, they should be HT (12.6V DC and HV (260V), with reference to Ground, whereas HT2 (6.3V AC).

3. If the voltages are correct, plug in the tubes and turn on the main power.

4. Good luck.

CHECKLIST

1. The polarity of the high voltage capacitors C10, C12, C14 and C15.
2. The supply voltages at connectors (HT, HT2, and HV)
3. Enjoy it and good luck.

If you have any problem in assembly, please contact us by email to tech@analogmetric.com