M7C SRPP Pre-Amplifier

User Manual

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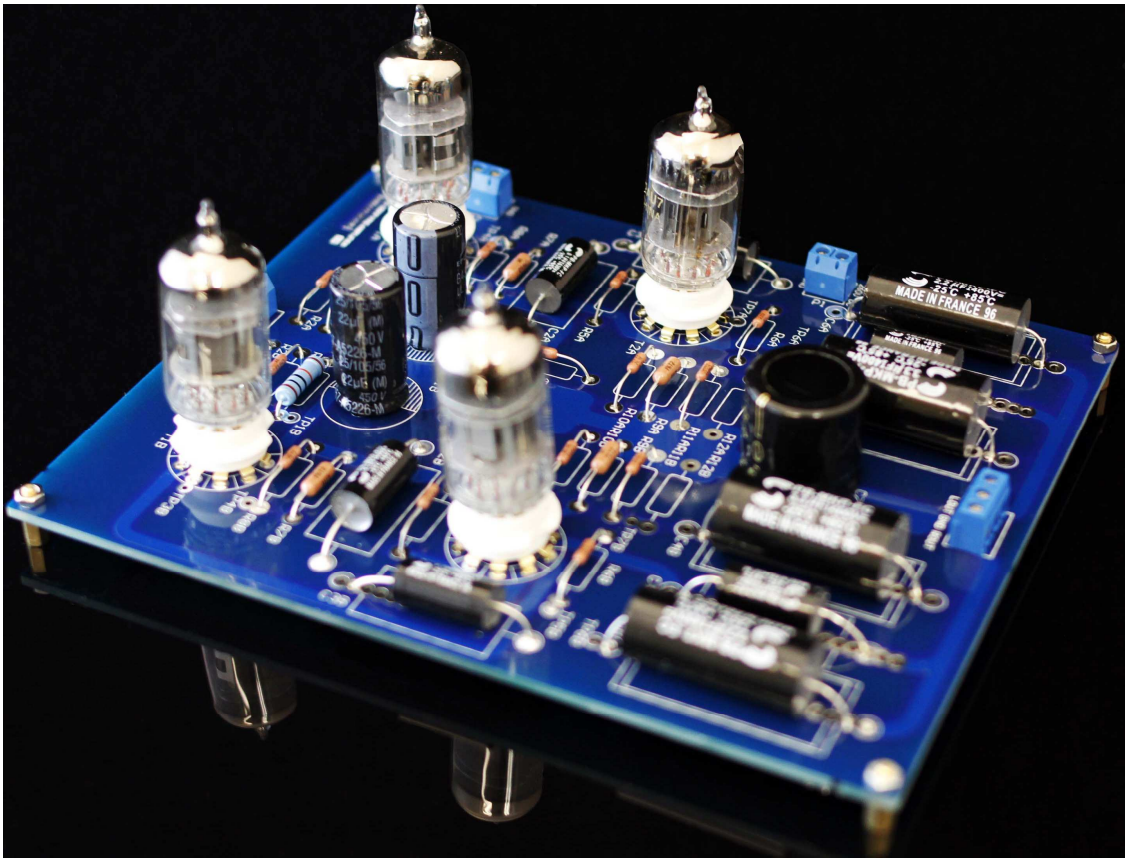

INTRODUCTION

The circuit design is referenced to the Marantz and the output stage is modified to 12AU7 SRPP to provide width bandwidth and low distortion. The design values are adjusted and optimized. The input stage uses 12AX7 in common cathode, whereas the output stage uses 12AU7. The signal paths of this PCB layout are designed in symmetry for both channels. Dedicated power rails, ground, and signal paths, altogether are taken into design considerations so that all are to minimize the parasitic, cross interference, and influence of RFI.

FEATURES

- Two 12AX7 and two 12AU7 vacuum tubes.
- Voltage gain: 20dB
- Bandwidth: 500KHz
- Frequency Flatness: 20-20KHz (+/-0.1dB)
- S/N Ratio: >91dB
- THD: 0.02% @Vin = -1dBm and 1KHz

  0.05% @Vin= -10dBm and 1KHz
- Input impedance 470KΩ
- Output impedance 3KΩ
- Two single-ended and two single-ended outputs.
- Symmetric layout design and signal paths with minimum parasitic.
- Dedicated ground and power rails layout design.
- Two large reservoir decoupling capacitors for power rails.
- Power requirements: one 260V (50mA) DC, and one 12.6V (1A) DC.
- PCB dimension: 19.3mm (W) x 15.6mm (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 (1A) 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 multi-meter with hand after power up. The probes of the multi-meter 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 (C7 and C7B). There are no polarities of the thin film capacitors.
2. Apply either one or two 260V DC to P1, and one 12.6V DC to P2. If you only have one 260V DC supply, just connect the two '260V DC' pins of P1 together.
3. Apply input signals to R-IN and L-IN respectively. The output signals are obtained at R-OUT and L-OUT, correspondingly.
4. Enjoy it.

CHECKLIST

1. The polarity of the high voltage C7 and C7B.
2. The supply voltages at connectors (P1 and P2). Check whether has 260V DC applied to two pins of P1.

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