

MAT Fantasy Pre-Amplifier

User Manual

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INTRODUCTION

The circuit design is fairly simple with reference to the Matisse Fantasy line stage, comprising of two 12AT7s and two 12AX7s, which, as Matisse points out, breaks no new ground in terms of design innovation. Two amplification stages are configured in common cathode stage with series-shunt feedback. The big improvements come in the choice of component parts and PCB material, circuit layout, and power-supply considerations, all of which are to minimize the influence of RFI.

FEATURES

- Two 12AX7 and two 12AT7 vacuum tubes.
- Circuit design with reference to Matisse Fantasy line stage comprising two common cathode stages with series-shunt feedback.
- Voltage Gain: 26dB
- Bandwidth: 1MHz
- Input impedance: 600k Ω
- Output impedance: 4k Ω
- 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.
- Two large reservoir decoupling capacitors for power rails.
- Power requirements: one 420V DC and one 12.6V DC.
- PCB dimension: 18.6mm (W) x 12.4mm (L)
- PCB thickness: 2.4mm, double layer, 2oz copper.

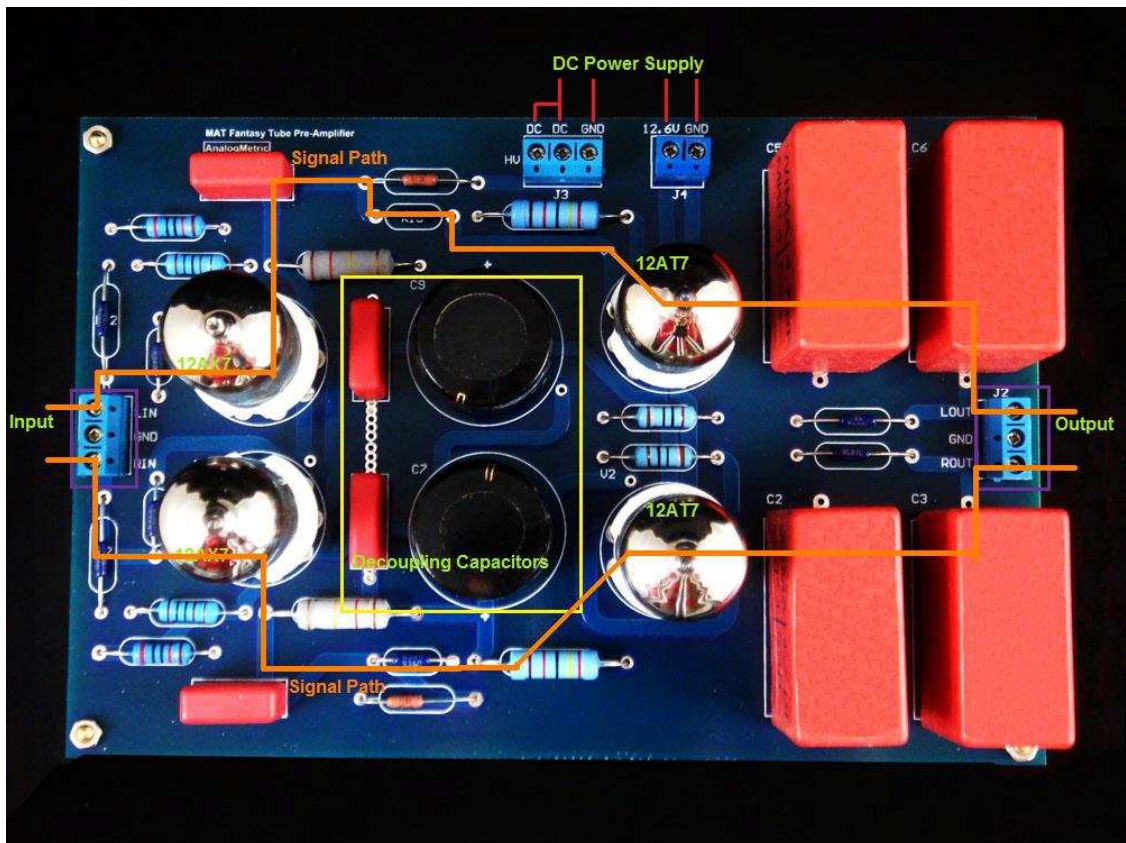
PRECAUTIONS

- 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 to 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 (C7 and C9). There are no polarities of the thin film capacitors.
2. Apply either one or two 260V-420V DC to J3 and 12.6V DC to J4. The Matisse Fantasy MKII uses 420V DC for power rail, but 260V DC works fine. This leave for DIYers' choice.
3. If everything work fine, the tubes will be led up gradually. Then, apply signals to connectors J1 and obtain corresponding output signal at J2.
4. Enjoy it.



CHECKLIST

1. The polarity of the high voltage capacitors C7 and C9.
2. The supply voltages at connectors (J3 and J4). Check the two DC pins of J3 whether connected to power supply.

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