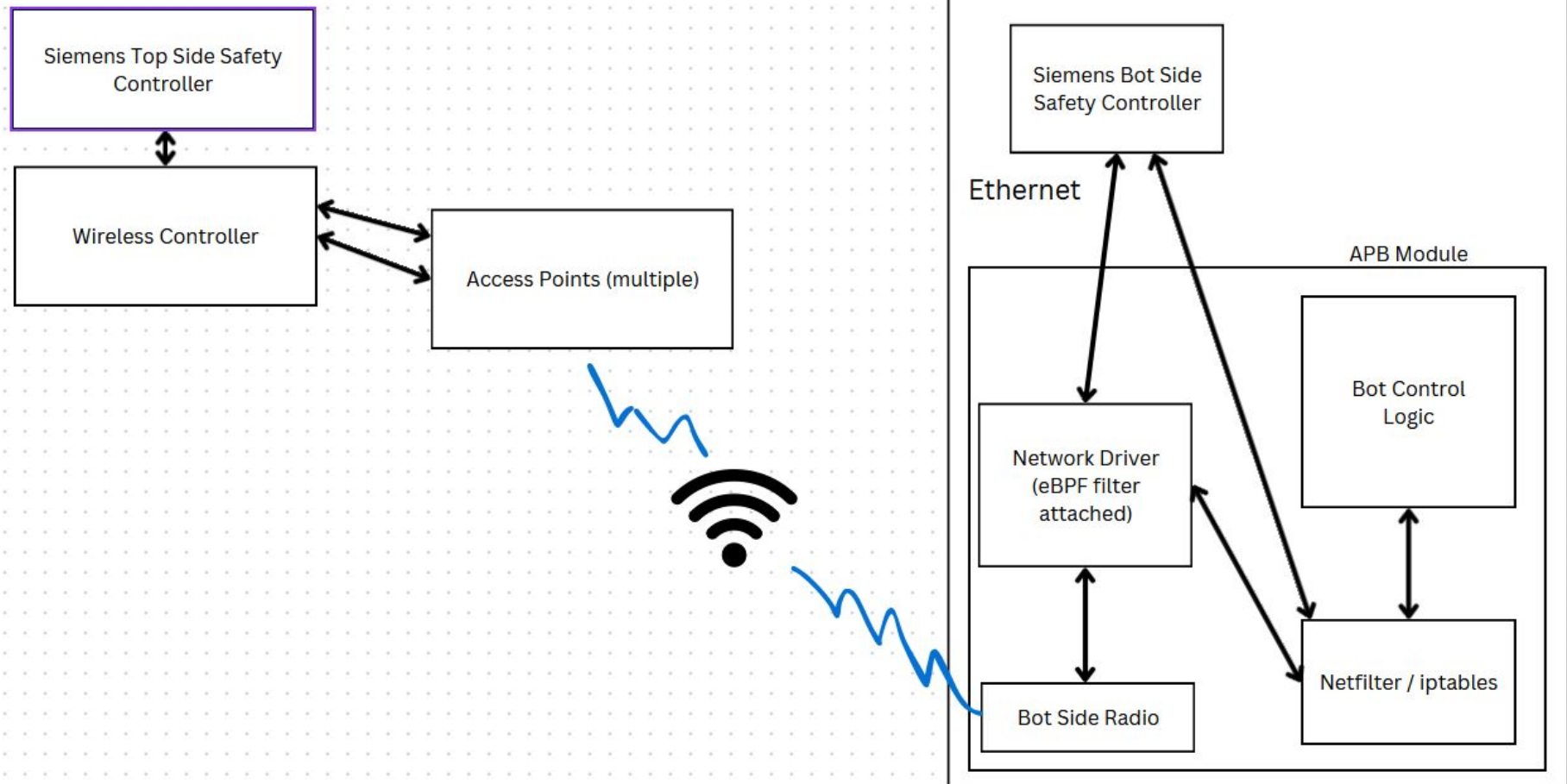


# Siemens Profinet

Protocol Forwarder



# Reisong A50

Modding a Chinese Tube Amplifier

# Design Goals

1. Maximize perceived audio quality
2. Increase reliability & robustness
3. Fits on existing chassis
4. Reduce complexity when possible

# Factory - Front

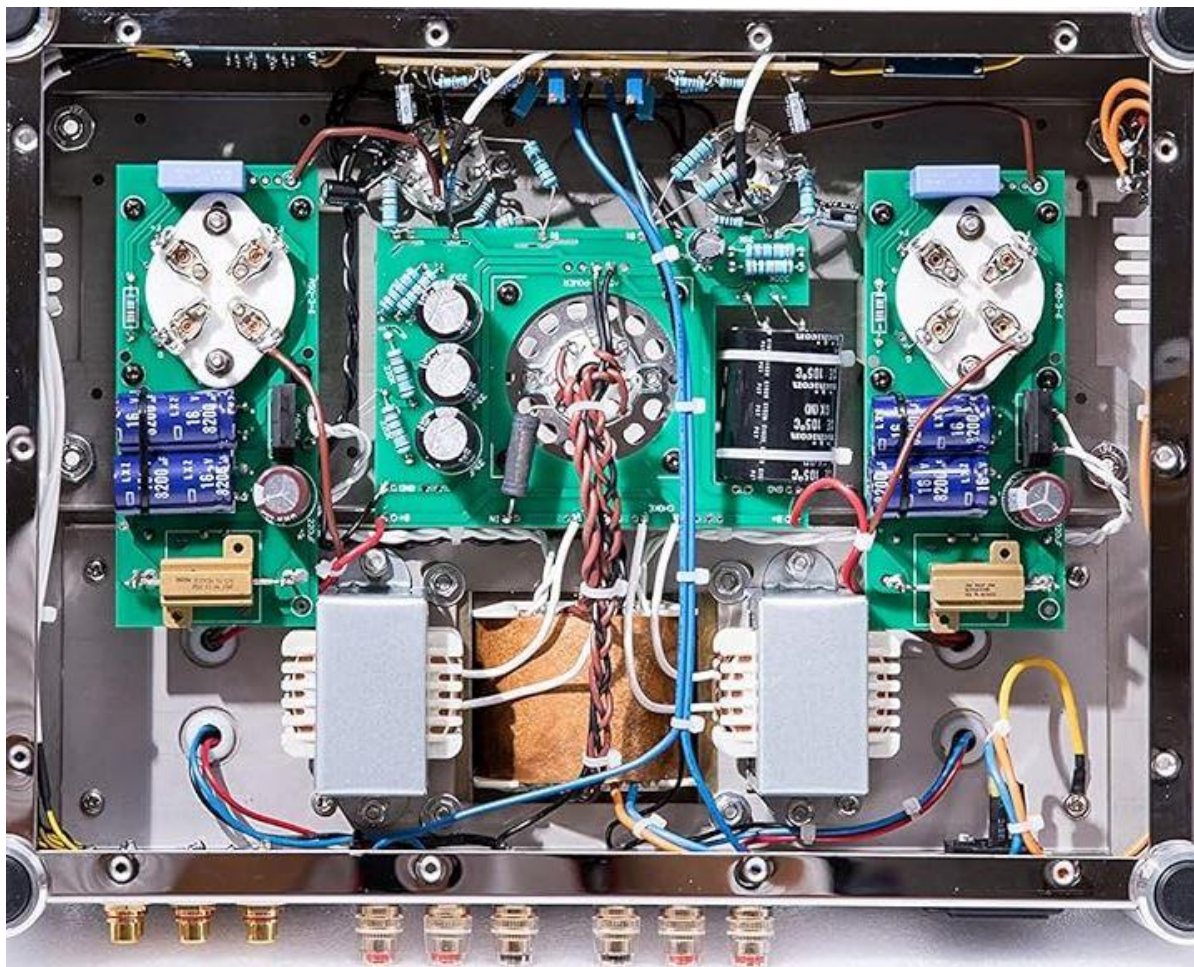


# My Version Front

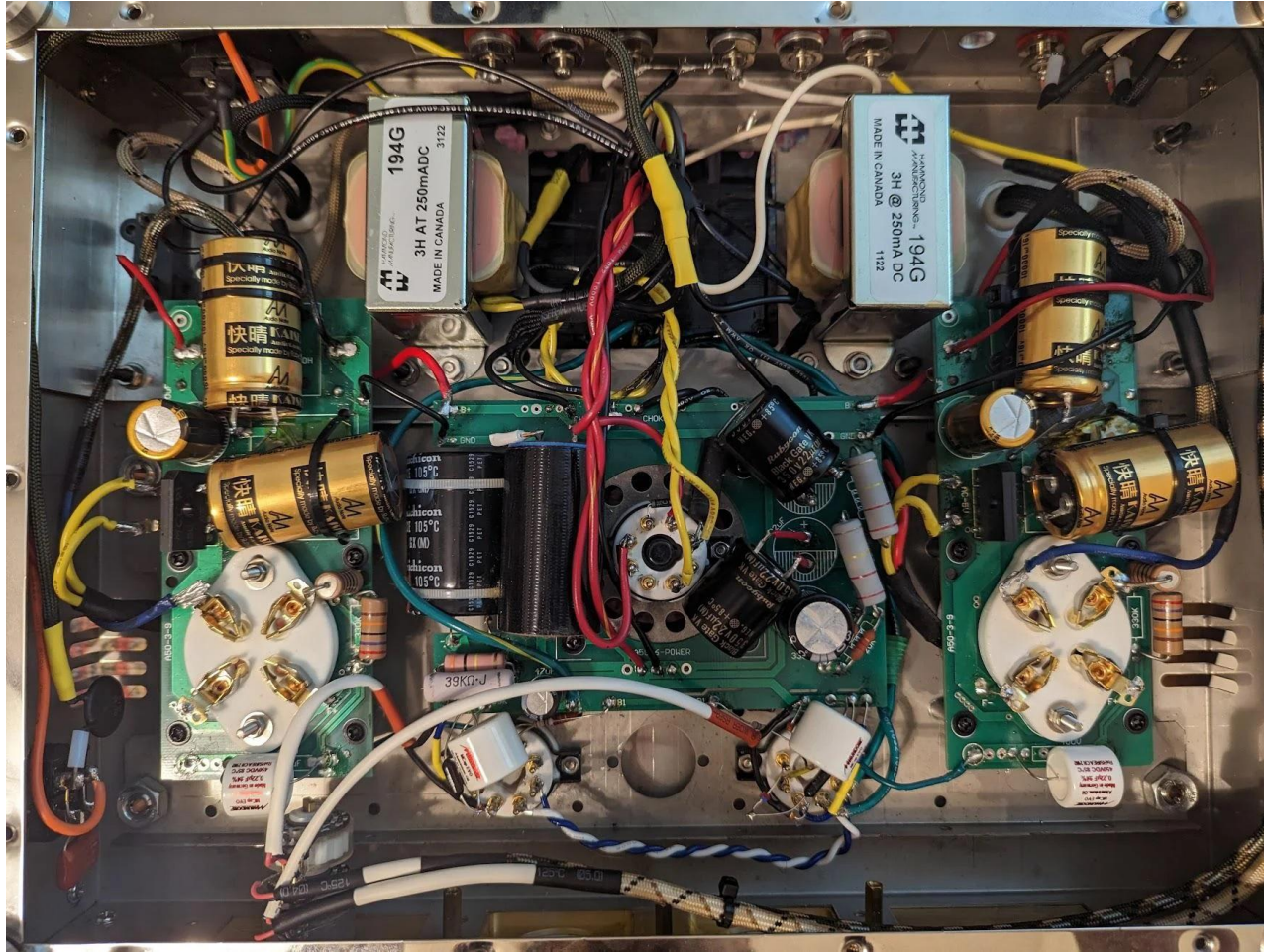




# Factory - Internals



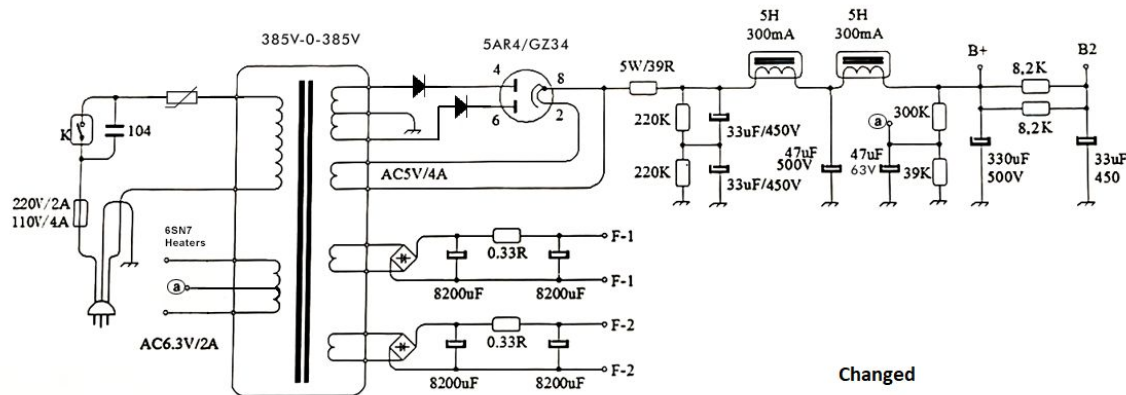
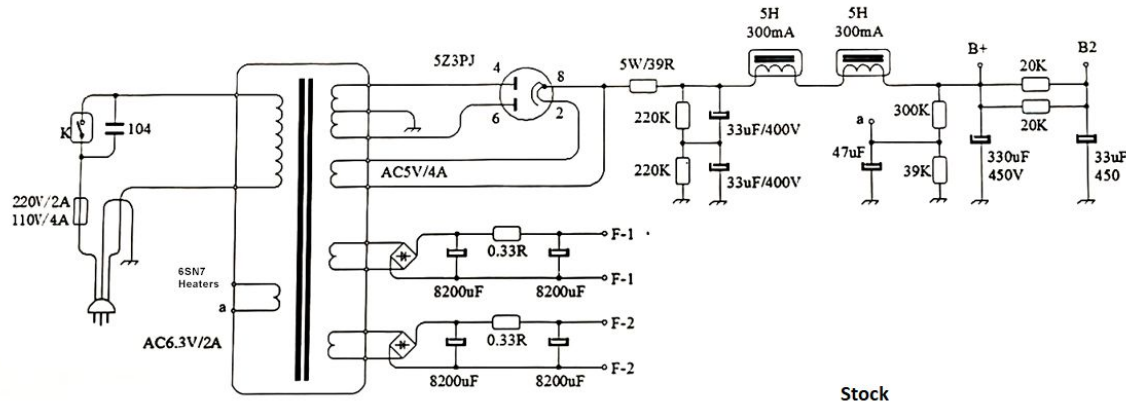
# My Version Internals



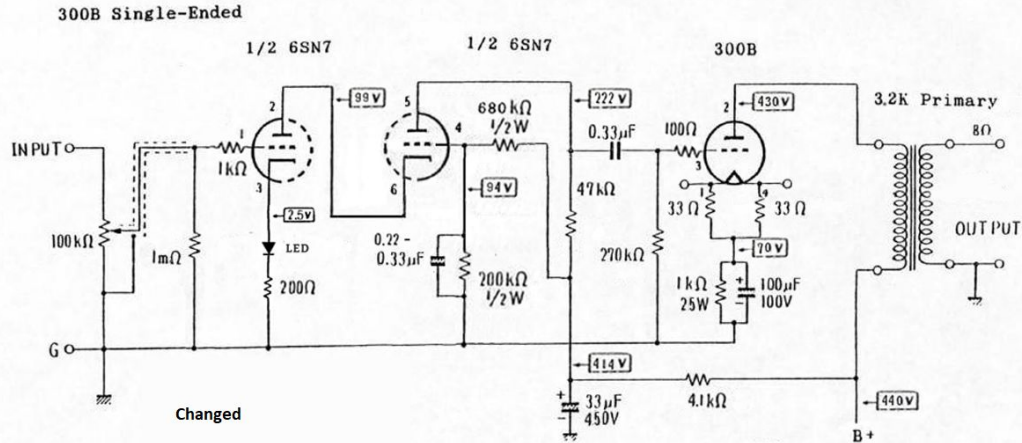
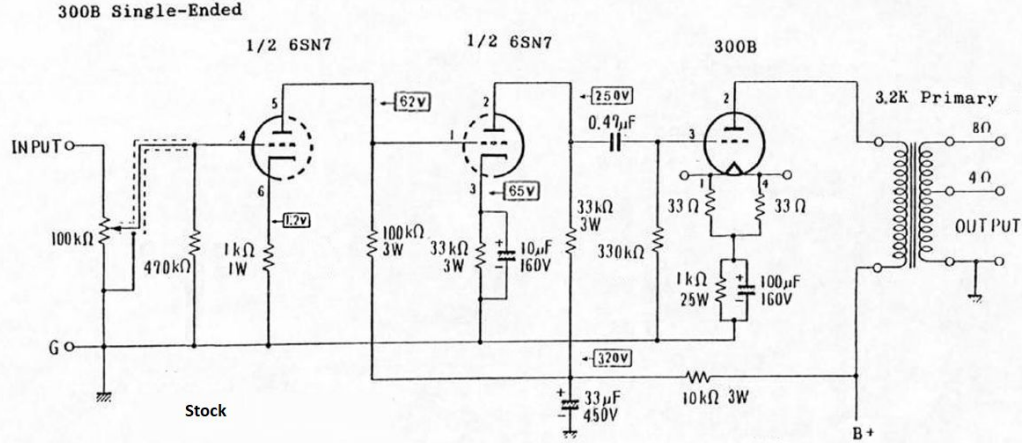


# Power Supply Section

## A50 Power Supply Mods



# Signal Amplification Section



# Improvements

- Rectifier 5AR5 instead of 5U4: Voltage drop of 10V vs 44V, higher B+ operating point at recommended 400V, supporting more voltage swing.

The WE 300B data sheet shows among recommended operating points **one of 400V plate, -87V bias, and 3500 Ohm load with 60ma current for 10.5 watts out at acceptable distortion.**

- Added new DC smoothing capacitor between chokes to reduce ripple.
- Cascade -> Cascode layout: advantages include higher gain and lower noise. The phase is no longer shifted as the cascode works as a single inverting stage.
- Thermistor reduces inrush current when turning amplifier on, slower power up.
- Diodes added in series to half-wave tube rectifier increases reverse bias protection and prevents arcing.
- Mounted 300B cathode power resistors to chassis for better thermal dissipation.
- Signal path is simplified, input selector removed.
- New OPT uses only 8 ohm secondary winding – matched with speakers.
- Stepped attenuator provides higher precision for resistance on stereo volume control.
- Removed unnecessary low quality VU meter.
- Component quality increased across entire amplifier.

# Future enhancement potential

- Change to a regulated 5V DC IC for 300B filament supply voltage.
- Alternatively experiment with grounding 300B cathode into a center tapped 5V transformer and use AC heating on filament. (seen @ Decware design)
- Split power supply smoothing into R/L channels adding separate filtering and supply capacitors.
- Further enhance DC supply using 2 separate rectifiers for R/L.
- Add a switch to swap between pure solid state rectification for A/B testing.
- Add another pair of 6SN7 tubes to allow for paralleling drive stages, increasing current, lowering noise, and lowering output impedance. (Drawback - more matched tubes needed)
- Separate entire power supply into another chassis for lower EMF from supply portion.
- Change input signal wiring to be as short as possible.