

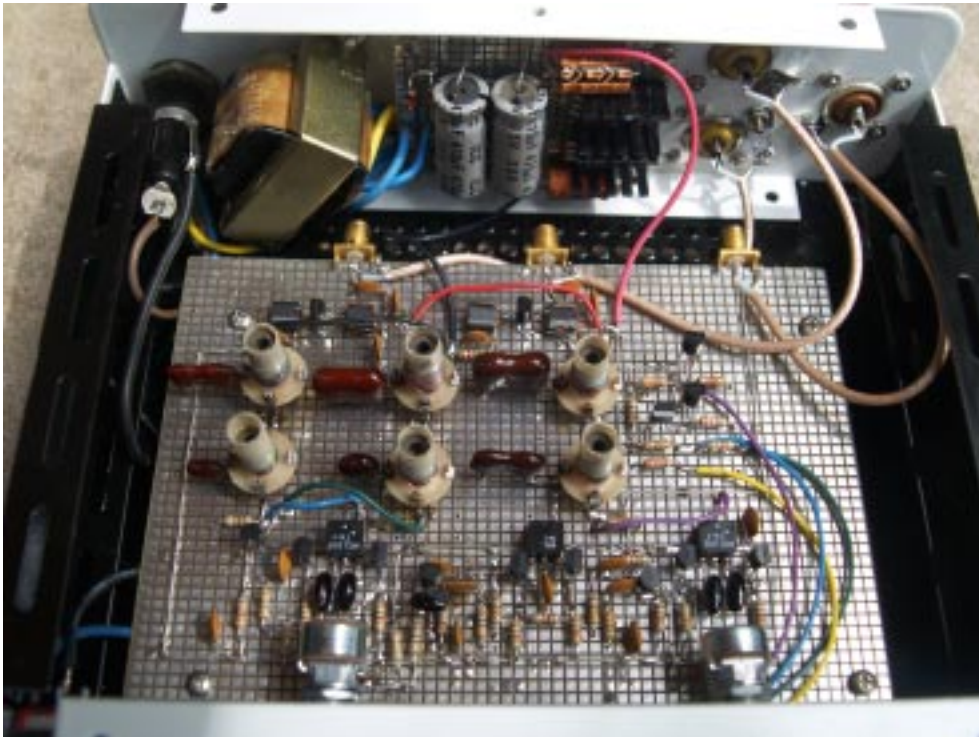


Antenna Interference Canceller (Front View)

The purpose of this project was to devise a system for canceling adjacent signal interference at a point prior to the antenna input of a receiver. Although there are some commercial products offered by manufacturers such as Timewave and MFJ, the overall performance is oftentimes marginal at best due to poor circuit design concepts that are not suitable for wideband applications. In this prototype, operation of both phase and gain settings is constant for the band of 2MHz to 20MHz. The input intermodulation intercept point (IP_3) is estimated to be +30dBm and the noise figure (NF) is estimated to be 5dB. Phase variation over the band of operation is within $\pm 5^\circ$ and gain variation is within ± 0.5 dB.



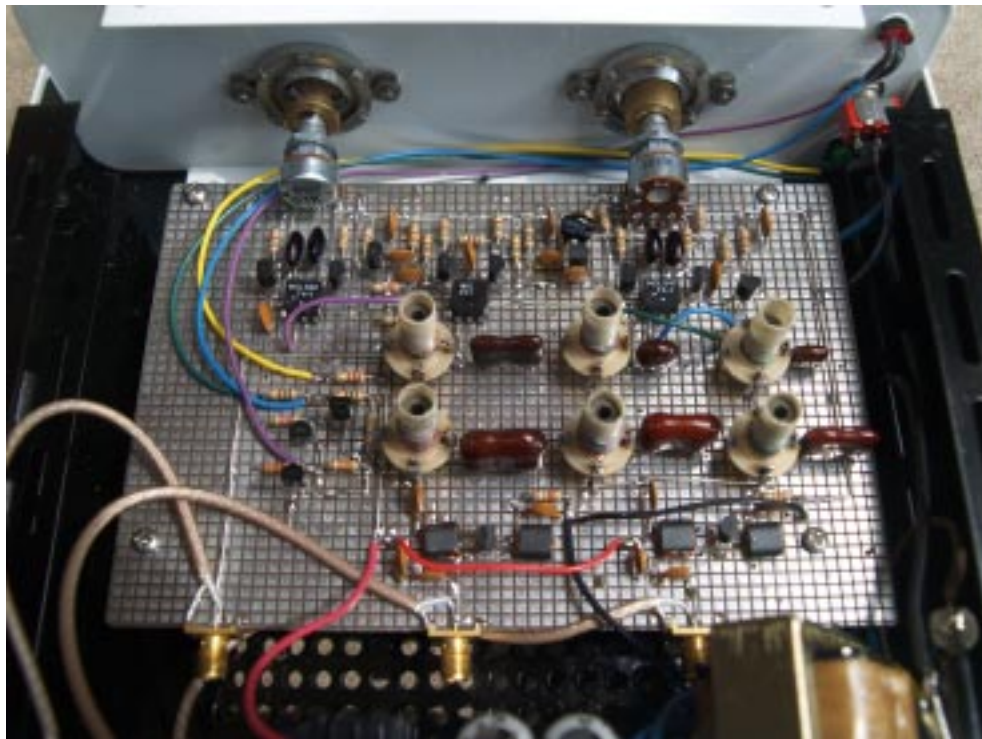
Front View with Cover Removed



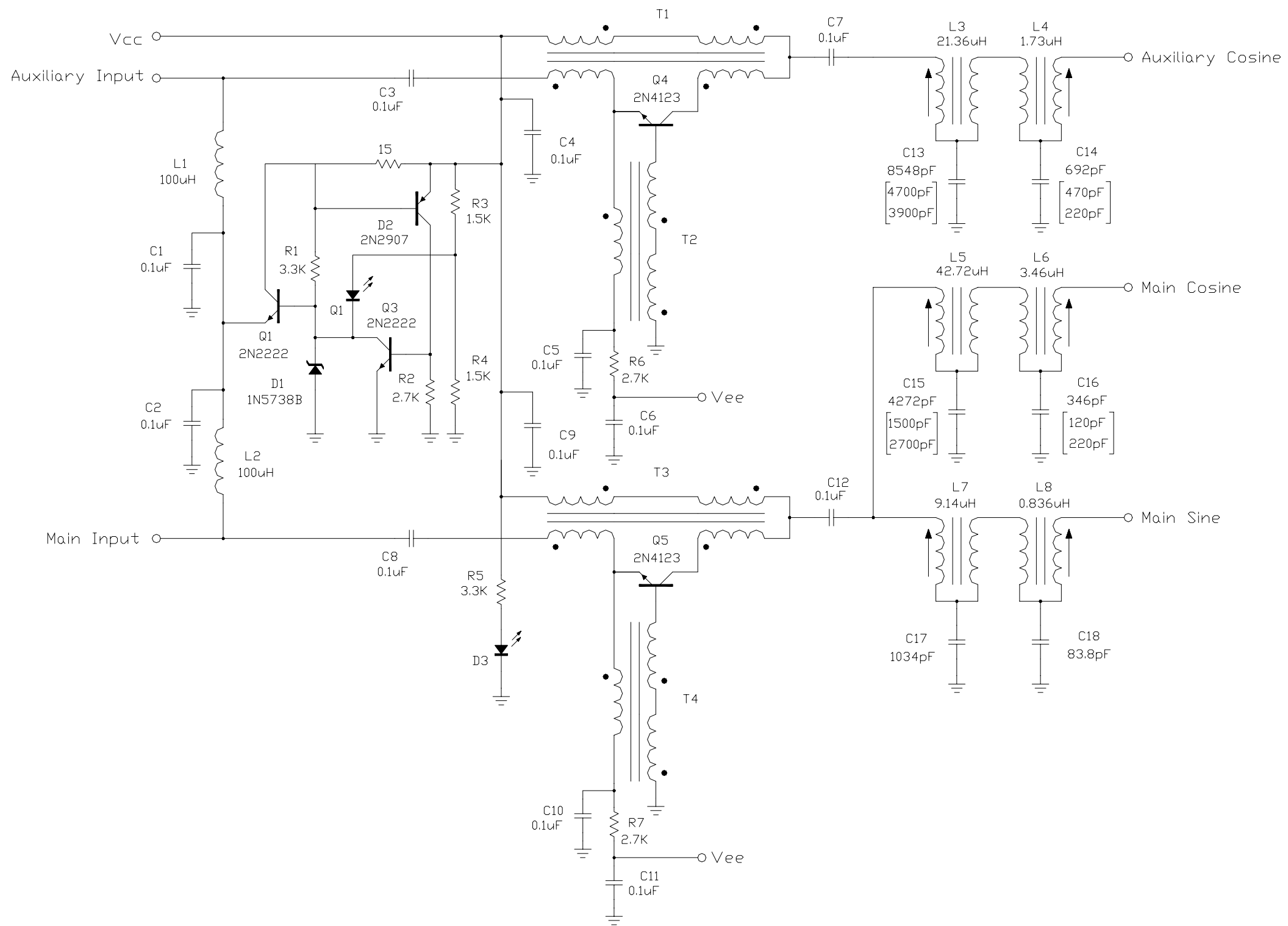
Interior View Showing Rear Panel (power supply)



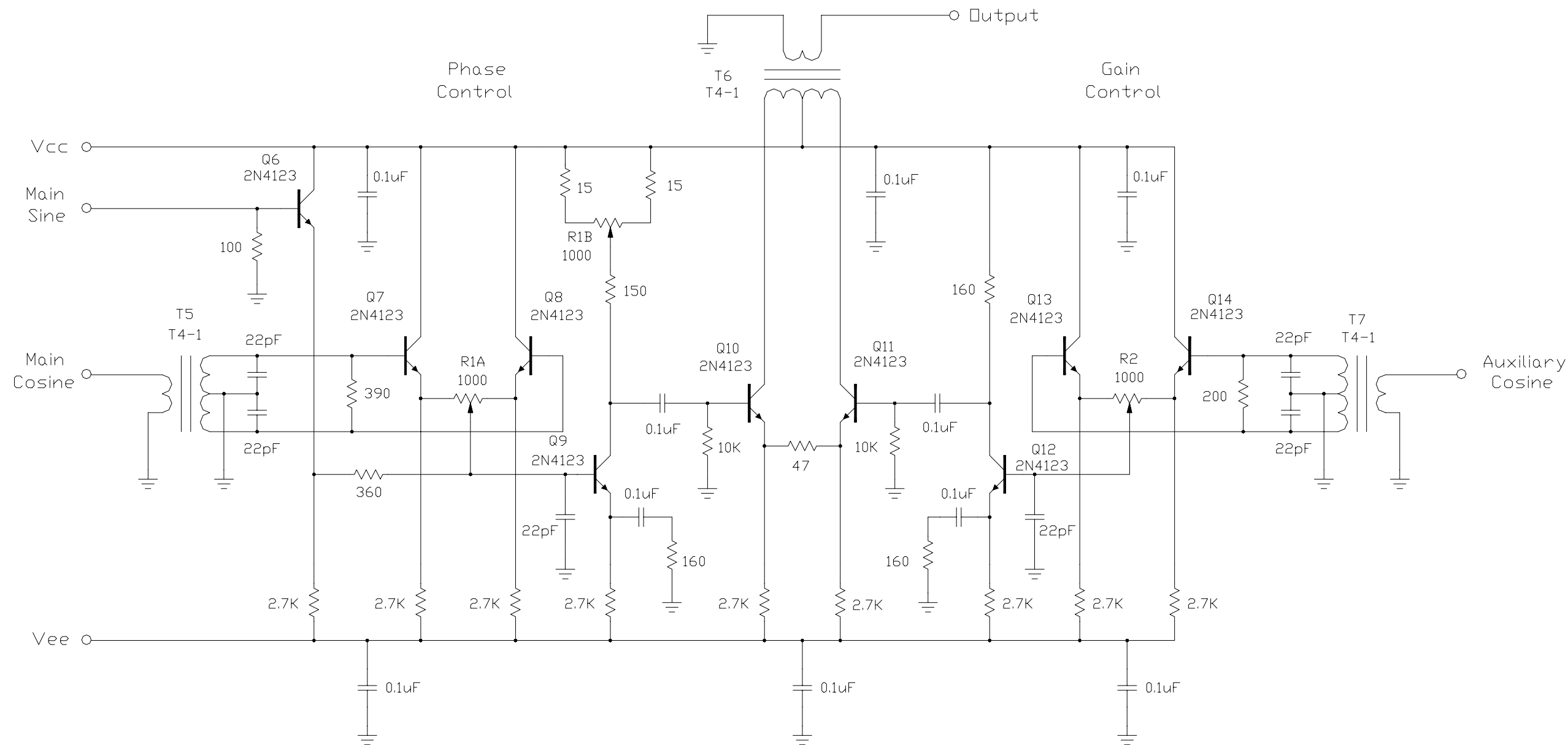
Rear View with Cover Removed



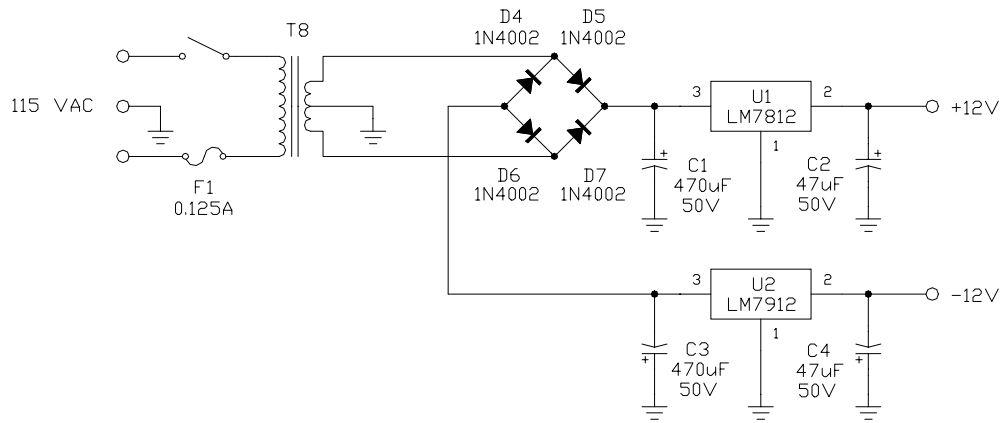
Interior View Showing Vernier Drives and Controls



Input Section Schematic



Control and Processing Section Schematic



Power Supply Schematic