

ABSTRACT

Many kind of technique was created for power amplifier technology to maximize the performance of power amplifier. Power amplifier is a tool that generates bigger output power than the input power. Power amplifier has some class that has different efficiency in each class. In power transistor will produce thermal, and resulting a lot of power dissipation on the amplifier. The thermal on power transistor can decrease by switching technique, and by using this technique can increase power of the efficiency.

This final project is designed for switching method using voltage-controlled oscillator (VCO). This method was created to decrease power dissipation which caused by thermal on power transistor, so the conversion efficiency is higher. The input signal will change to be pulse signal by VCO schematic, which output signal has different pulse width. The pulse signal that has different width will transform to pulse signal that have same pulse width by using multi vibrator mono stable. The signal that have same pulse width will strengthened and will filtered to get back the signal output to the form input signal.

Power amplifier that has been designed and implemented in this final project has enough conversion energy. Proven on input signal (sine signal) $2V_{pp}$ up to $8V_{pp}$, power amplifier is capable of producing power conversion efficiency is about 96 % with or without load.

Keywords: *Voltage-Controlled Oscillator (VCO), Multi Vibrator Mono stable, Power Amplifier, Filter.*