

ABSTRACT

Electromagnetic technology is growing rapidly, especially in exploration geophysics science sector, it is very possible for human being to detect buried object in ground and evaluate its depth without boring or digging the ground. That method is called GPE (Ground Penetrating Radar). Besides, GPR is also used for recognizing condition and characteristic of underground surface.

This final project is aiming to design and realize pulse generator which have nanosecond orde in order to obtain the better resolution for being implemented onto GPR.

The measurement of pulse generator is done to get information about its work and characteristic of prototype which made. The measurement is done at time domain and frequency domain by using oscilloscope and spectrum analyzer. The parameter has been tested from this prototype pulse generator such as pulse width, period, amplitude, rise time, fall time, duty cycle and bandwidth. These measurement results of pulse generator characteristic are pulse width 21 ns, period 80 ns, amplitude 0.8127 V, rise time 8.2 ns, fall time 13.1 ns, duty cycle 26.25% and bandwidth 0.3 GHz.

Key Word : pulse generator, Ground Penetrating Radar