

ABSTRACT

In this research, an electrical signal generator system will be developed with a maximum current reaching 3 amperes based on digital control with the application of a microcontroller. This study aims to improve the ability to manage waves by applying digital controls and increasing the output current of the wave generator system. Wave generator devices use the XR2206 module which can produce AC electric waves in sinusoidal, triangular and square shapes. Setting the output frequency value by conditioning the timer resistor and timer capacitor values, setting the resistance value using the X9C104 digital potentiometer and setting the amplitude output using the X9C104 digital potentiometer as a voltage divider, and setting the waveform output using an electronic switch integrated with a microcontroller. In an effort to increase the system output current, the system is integrated with the OCL power amplifier so that it has an output range of faithful amplitude of the waves ranging from 0 V_{pp} to 65 V_{pp}, the output frequency has a range of 40 Hz to 20 kHz with a maximum output current reaching 3 amperes. The power output and output amplitude range in this system is greater than the function generator in general.

Keywords: digital, control, current, generator, signal, electric