

ABSTRACT

DDS is a method of producing an analog waveform, usually a sine wave, by generating a time – varying signal in digital form and then performing a digital to analog conversion. DDS is used in some modern utilities, like radio receiver, GPS system, handphone, radio telephone, walkie – talkies, CB radio, satelit receiver, clock generator, frequency modulation and other. DDS is frequency synthesizer that used electronic method to get digital signal with changed frequency depend on reference frequency. DDS is a mixer signal that consists of digital devices and analog devices. Digital device is called Numerically Controlled Oscillator (NCO) that consist of phase accumulator, phase truncated and sine lookup table. Analog devices consist of digital to analog converter and filter. NCO is a block to digital computation, that give digital signal if system get clock, than signal is converted to analog signal by analog device.

This research is talking about signal synthesizer that used DDS (Direct Digital Synthesizer) for FMCW (Frequency Modulated Continues Wave) radar application. FMCW radar is a radar technology that now is growing to get high range frequency with low energy and low price. Band frequency that used is S band, it has range frequency 2 GHz until 4 GHz. With DDS system, it is get maximum product with low price and system is simple.