

Abstract

The communication system is a process of conveying information such as data, voice and video from the sender to the receiver via a channel. Basically, the process that occurs on the sender is the process of modulation. Devices that can perform modulation process called modulators. There are several types of modulators, one of whom is a video modulator.

Video modulator is a circuit that converts video and audio signals into RF signals that can be connected to TV antenna input. In the video modulator, audio and video modulated to a UHF radio frequency VHFatau. VHF frequency range which is probably the rate of VHF (174 - 230 MHz) and UHF (470 - 806 MHz)MHz. In this final project will be designed and implemented a video that can normalize the modulated video signal which is connected with a video out connector (RCA or BNC) to the antenna input connector (PAL connectors) from the television. Analog TV system that uses a vestigial sideband modulation of video called (VSB). VSB modulation is done by filtering the signal to SCDSB (double sideband suppressed carrier) such that a single sideband is passed intact and only a portion (vestige) other sideband is passed.

As for testing the performance of this video modulator that is by conducting quantitative and qualitative measurement. Quantitative measurements carried out using osiloscope and spectrum analyzer measurement is obtained level input at 0,2 Volt, level output at 12,5 mV = 81,93 dB μ V, index modulation (m) at 76,47 %, bandwidth video at -1,6 dB. Whereas for a qualitative measurement by connecting the modulator input video with CCTV and television as an output. However, the results obtained from these measurements are still not good enough due to cable attenuation and the composition of the composite video signal which is less well where only the luma signal which influence the output of video images for light and dark.

Keywords: video modulator, vestigial sideband, video signals, CCTV