

AW771 Transmitter Circuit Description

The transmitter is comprised of audio input level controls, input video filters, 75 μ S pre-emphasis networks, a stereo multiplexer circuit, frequency select switch, and a voltage controlled oscillator equipped with harmonic filters and an output buffer amplifier which drives a quarter wave antenna.

Please refer to the enclosed schematics entitled “MEJ7710 Low Cost Transmitter” and “VCO 913 MHz”

The left and right audio inputs are presented to potentiometer VR2. Circuits comprised of Q1 through and including Q5 monitor the audio input level and LED indicators flash to when the user has set VR2 to result in full-scale peak frequency deviation of 75 kHz.

The input filters comprised of T1 through and including T4 are used to reject video artifacts that might be coupled into the circuitry if the transmitter is placed on top of a TV receiver or monitor.

Networks R5/C11 and R6/C12 provide 75 μ S pre-emphasis.

The pre-emphasized right and left stereo inputs are presented to a multiplexer circuit, IC2, which combines the two inputs and forms a composite stereo baseband signal, which is presented to the VCO.

The VCO inputs are a DC level selected by SW1 and the AC coupled stereo baseband signal from the output of IC2. The DC level sets the desired frequency of operation. The three frequencies are nominally 913 MHz, 913.5MHz, and 914 MHz.

The VCO is a varactor tuned coaxial-resonator stabilized oscillator, Q1 on the VCO schematic, coupled through a low-pass harmonic filter to an output buffer-amplifier, Q2, which is coupled to the antenna through a second low-pass harmonic filter.

The complete unit is powered by 12VDC derived from a 110VAC plug-in wall socket adapter, which is regulated to +8 VDC by IC1. This regulator provides power for the main circuits and the VCO.