

49MHz WHIPLASH RECEIVER CIRCUIT DESCRIPTION

The modulated signal coupled through C2 to the detector C3 and T1, which are tuned to transmitter's carrier frequency. The regenerative circuit consists of Q1, C17, C4, L1 and R1 will regenerate to a higher level by feeding back a portion of output signal back to the input. With the big capacitor C10 and R2, the regenerative circuit will quench off periodically. This self-oscillating circuit, on the other hand will rectify the incoming signal.

The rectified signal goes through the low pass filter R5 and C8 and then it is amplified by the network consists of U1 (RX6C), C14, C15, C16, R7, R8, R9 and R10. Finally, the receiver IC U1 will decode the demodulated signal and generate the proper driving output to drive the motors.

The voltage regulator Zener D2 and R5 are used to reduce the frequency drift of the detector and maintain the voltage supply of the RF part.

C14 to C22 are used to filter the EMC noise of the motors. The only ground plate of the receiver is on the PCB only. The receiver is powered by six AA size batteries, which are connected to an ON/OFF switch.