

## WHIPLASH #91496 27.145 MHz TRANSMITTER OPERATIONAL DESCRIPTION

The Whiplash radio control transmitter is a low powered, hand held unit for controlling the movement of a toy car. The transmitter is powered by a 9 volt battery. It is designed to operate on a single fixed frequency in the 26.98-27.28 MHz band. See the attached block diagram and schematic.

Input switches trigger an integrated circuit ( U1 ) which produces the digital control signals which will modulate the carrier signal. The carrier signal is generated by a crystal oscillator/ amplifier circuit comprised of a 27.145 MHz crystal ( Y1 ) and a npn transistor ( Q2 ). The RF carrier signal is modulated by the digital control signal at the base of an RF amplifier stage ( Q4 ). The modulated output of the RF amplifier stage is capacitively coupled ( via C12 ) to the antenna through a “ pi “ matching network comprised of C13, T1 and C14. The whip antenna is 8 inches long and permanently attached.

All tuning and verifications are performed by the manufacturer and there are no adjustments that can be made by the user. No external ground is required or used with this transmitter.