

## **Operation Description of Transmitter for Spiderman II Dragster (27.145 MHz)**

The Spiderman II Dragster controller is a transmitter operating at 27.145 MHz and is controlled by a crystal. It is powered by a 9V battery. There are two joysticks and two button keys. When the forward or backward joystick is turned, it will transmit a radio frequency for the receiver to move forward or backward. When the left or right joystick is turned, it will transmit a radio frequency for the receiver to move left or right. Upon pressing and holding down the “Stretch Body” button, the memory of coder IC sends out mechanical gear sound data to the audio amplifier. There is no sound when other control buttons are pressed. At the same time the controller will transmit a signal to the receiver and the vehicle body of the receiver performs a stretch action. When the “Shrink Body” button is pressed, the controller will transmit a signal to the receiver and the vehicle body of the receiver will shrink.

Referring to the circuit design, the circuit description is listed as follows:

- U1 and associated circuit act as the encoder and produce sound signal
- X1, Q1, C3, L1, C1 and associated circuit act as the oscillator
- C5, D9, R7 and associated circuit act as voltage control
- U1, R3, C2, Q2 and associated circuit act as RF amplifier and modulate the carrier signal
- L2, L3, the antenna coil, C6, C7 and associated circuit act as the antenna matching network
- Q3 and associated circuit act as the audio amplifier