Circuit Description

TX

1. Power control

Regulate 9V to 5V through power circuit including Q1 S8050 and D1 5.6V zener diode. The regulated 5V voltage will be supplied to U1 TX IC GPRC11A.

2. Key encoder

Encode 8 keys S1-S8 (Forward/Backward, Left/Right, Wheel Spinning, Front/Rear up & All-in-one) in U1. There is a 4-position ID switch SW DIP-2 to select different RC car ID.

3. Encoded signal is modulated with carrier frequency 27.145MHz. The signal will be amplified through Q3, matching network & radiated from antenna.

RX

1. RF stage

Modulated signal is delivered & amplified at Q2,Q3,Q4 & Q5 to U3 RX IC GPTC6603A for demodulation & decoding.

2. Decoded signals from U3 can drive motors for the motion Forward/Backward, Left/Right, control U2 Voice IC eST030, or LED etc. The system clock of U3 is operated by Y1 32.768kHz crystal.

3. Power control

Regulate 9.6V to 3.6V for RF by Q6 S8050 & D1 4.3V zener diode.
Regulate 9.6V to 5V for U2 by U1 LM7805 voltage regulator.