

Looney Tunes Bumper Car B7170
49.860MHz Receiver Operational Description

The Looney Tunes Bumper Car is a radio controlled car operates on 3 volts supplied by 2 AA batteries. It is designed to operated on a single fixed frequency in the 49.82-49.90 MHz band.

The RF link (control method) of the car is established by receiving (RX) a square wave transmitting via a carrier signal (49MHz). The modulated signal is sent when the button is pressed.

For the receiver, it has 3 main parts, a decoding circuit, an RF amplifier and a motor activating circuit.

When 3V battery is connected to the circuit, the voltage at the collector of Q3 will be high. Thus the car will move backward because Q8, Q11 and Q7 are turned 'on' as long as no signal is received from the controller. Whenever a signal is received, the super-regenerative circuit (Q1) demodulates the signal and sends to AF circuit (Q2). Then, the voltage at the collector of Q3 goes down. As a result, transistor Q9, Q6 and Q10 turn on while Q8, Q11 and Q7 turn off, making the motor running in counter direction.

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

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