Explanation of controller circuit

A. The left turn mode - In this mode, the left wheel rotates backward and the right wheel rotates forward, in order to make the ball turn in a left direction.

B. The right turn mode - In this mode, the right wheel rotates backward and the left wheel will rotates forward, in order to make the ball turn in a right direction.

C. The forward dash mode - In this mode, both the right and left wheel rotates forward, provide the maximum speed of forward dash.

D. The backward dash mode - In this mode, both the right and left wheel rotates backward, therefore providing the maximum speed of backward dash.

Explanation of the circuit

1. Power Circuit
The power unit consists of resistor **R1** and 2 x 1.5V AA batteries, which power the Wonderball transmitter together with red **LED1**. While the circuit is closed, the **LED1** will emit a red light which indicates that the circuit is operating.

2. Encoding Section Circuit
This unit consists of a switch **K1** (which provides 4 possible selections for channel settings), an encoder **(IC1),** (which receives the signal from **K1**, then outputs the encoded signal) and a connector **CON1/CON2** (which is used to connect the switch and the IC together.)

3. Direction Control Circuit
This unit consists of a multi directional switch, which provides various combinations for output signals for the Wonderball allowing it to move in different directions.

4. High Frequency Oscillation Circuit
This unit consists of resistances **(R3, R4),** capacitors **(C4, C5, C7).** This part of circuit can general a high frequency signal which can carry another signal from the **direction control circuit** and transfer both to next part of circuit.

5. High Frequency Amplification Circuit
The signal from the Oscillation Circuit is not quite "strong" enough, so the high frequency amplification circuit is used to increase the signal via the transistor **Q2** and through the antenna **(ANT)** to send the signal to the receiver of the Wonderball .