

HOW THE SILWATCH TRANSMITTER OPERATES

1. Power Circuit

Power circuit operates with power supply from AC/DC adapter (9 VDC) connected to the external jack or 3 VDC with two UM-4 type dry cells.

When the power switch (S1) is set to ON, the operation starts.

The microcomputer or transmitting circuit works at 2.2 V, also passing through the voltage regulator of 2.2 V.

2. Voice Detection Circuit

When a signal from the external microphone connected to the microphone jack is adjusted by the input regulating volume (RV2) and exceeds the detection time set by the DELAY setting volume (RV1), and after it has been amplified and detected by the detection circuits (Q7, Q8 and Q9), that detection signal is supplied to the CPU (U1).

3. Transmission Circuit

When the CPU (U1) requests the detection circuit or transmission switch (S2) to send, the TXCTL (Q1) is set to ON, and the power supply is fed to the transmission circuit.

The transmission circuit transmits the signal. The signal is 7 times of signal that is oscillated by the crystal oscillating circuit OSC (Q2).

The crystal oscillating circuit OSC (Q2) oscillates at 1/7 of the circuit frequency. This passes through the BPF (FL1), is amplified by the buffer amplifier BUFFER (Q3), adjusted in output by the RV3, and radiated from the antenna.

A modulation signal output from the CPU (U1) is regulated by the semi-fixed resistor RV4, and directly modulated at FM by the variable capacitance diode(D1).

4. Transmission Time Restriction Function

The transmission is started by the software control inside the CPU (U1), and ends after a period of 3.3125 seconds. The LED flickers for 10 seconds from the start of transmission.

During that period a new request to send is not accepted.

5. Identification Code

The identification code written in the EEPROM (U2) is read, and 2 kinds of identification codes of voice detection circuit and switch input are transmitted. The identification code is of 32-bit configuration

including the error detection code. Before it the bit synchronizing signal and frame synchronizing signal are output, and signals of 1,696 bits in total are transmitted at the speed of 512 bps.

