

**Applicant:**

Heath Company, a Division of DESA International Inc.  
2701 Industrial Dr.  
Bowling Green, KY. 42102

**Manufacturing Location:**

Heath Company LTD.  
Rm. 704 Star Centre  
443-451 Castle Peak Rd.  
Kwai Chung, Hong Kong

**Circuit Description**

The WB-97-TX is a Wireless Remote Doorbell Transmitter designed to operate Heath Zenith door chimes receivers in the SL/CL series of AC (plug-in) or battery powered models. These wireless systems consist of the -615x, -616x, -617x and -618x series of products. The WB-97-TX will also be packaged as a stand-alone accessory and case style may vary, including the push button that covers the power switch. A type-23A, 12V battery powers the transmitter and is included with the product.

The transmitter is normally in a powered-down state (stand-by current is zero) until the operator presses a switch to activate the unit. This switch is a front cover push button (momentary contact) that supplies power to the circuit as long as the button is pressed. When the button is released, power is removed and the transmission is stopped. The 12-volt supply (from the battery) is regulated to 5.6 volts by an integral regulator of a custom IC used to encode functions and control the “rf” generator stage.

This custom IC is similar to the HT-12E encoder used in the previously certified version (SL-6194-TX) and produces a serial bit stream that corresponds to the state of its address and data control lines. The data rate is approximately 1 kHz and the pattern consists of 8 address bits, 4 data bits and 1 “start” bit (a 13 bit information block). The logic data high bit (one) is represented by a 600 uS pulse-width and a logic low bit (zero) by a 300 uS pulse-width. A minimum of four 13 bit information blocks are sent (transmitted) each time the push button is pressed and will repeat while the switch is held down.

A jumper installed in a pin-header that is connected to the IC electrically sets the address and data control bits. When a jumper plug is not installed, the data line floats (pulled high by the internal structure of the IC) and the bit is set at a logic zero.

The output of the custom encoder IC (U1) drives the base of the “rf” oscillator transistor, Q1 and is factory adjusted to 315 MHz by capacitor “VC”. The “rf” is activated when U1’s output is set at a logic high and deactivated when set at logic low. There is no external antenna, transmission radiation comes from a special PCB trace (circuit board foil) and a small internally mounted loop (L1).

### Alignment

There are no user accessible adjustments. During manufacture, adjusting the tuning capacitor “VC” to 315 MHz sets the carrier frequency.

### Service

There are no user serviceable parts in this product.

### List of Generated Frequencies

315 MHz “rf” oscillator stage  
120 kHz digital encoding stage

Modulation: digital data, AM pulse-width coding.