Theory of Operation for Ensure Technologies Key
XC-3 Series

Please refer to the block diagram for this discussion.

This device is a keyed FSK transmitter. The transmitted signal comes from an integrated circuit that contains the VCO, PLL, data modulator and transmit amplifier. A 26Mhz crystal provides the reference frequency which is multiplied up to obtain the operating frequency.

Model XC-3

A microprocessor provides control over operation of the RF transmitter. The ON button starts the micro and initiates transmission every second for approximately 13 hours. The OFF button suspends transmissions and puts the device into a sleep state.

Model XC-3T

A microprocessor provides control over operation of the RF transmitter. The microprocessor starts when the battery is inserted into the device and the transmissions will then start at periodic intervals ranging from 10 seconds to 1 minute.

Model XC-3E

A microprocessor provides control over operation of the RF transmitter. The microprocessor starts when the battery is inserted into the device and the transmissions will then start at and repeat every minute. If the ERS button is pushed the device will transmit data every second for 10 seconds and then resume operation at 1 minute intervals.

On alternate transmissions, the device changes it's antenna pattern by selecting one of two internal antennas via an RF switch controlled by the microprocessor.