

## **Theory of Operation for Ensure Technologies Key XC-4 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 26 MHz crystal provides the reference frequency which is multiplied up to obtain the operating frequency.

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.

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.