

Theory of Operation Ensure Technologies Key XC-2

Please refer to the block diagram for this discussion.

The key is a Gaussian shift keyed FSK transmitter. The transmitter consists of a directly modulated PLL synthesized VCO. The VCO drives a power amplifier. The output of the amplifier is filtered and applied to an internal antenna.

A control microprocessor periodically wakes up and then initiates a transmission. The typical period between transmissions is 800 ms. The key has two buttons. One, the "ON" button initiates transmission and programs the key to transmit every 800 ms for 8 hours. The OFF button suspends transmission and puts the key into a sleep state.

On alternate transmissions, the key changes its antenna pattern by shifting the internal antenna polarization by 90 degrees. It uses the RF switch U4 to switch antenna elements.