

## Operation Theory

1. Transmitter sends out exciting transmitting bursts through a loop antenna to cover an opening with certain distance.
2. The EAS tag entering the detection coverage of the system will be excited by the transmitting energy from the system.

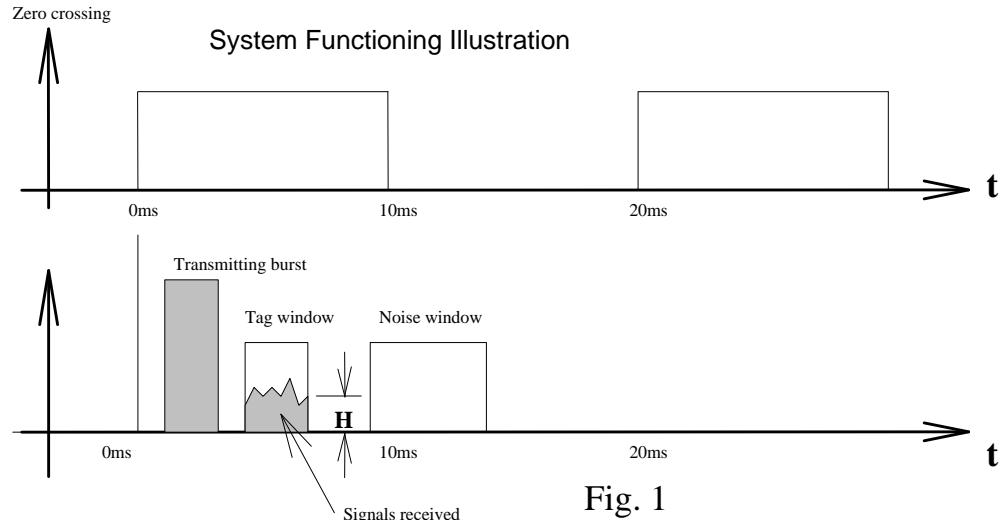


Fig. 1

3. EAS tag resonates with the transmitter and keeps the resonance after transmitter is shut off.
4. Receiver detects the resonant signal of the EAS tag during Tag window.
5. Receiver compares the EAS tag signal in tag window with the signal in noise window where transmitter doesn't transmit any signals.
6. If there is a sequence matching for the detected tag signal with each cycle where there is a transmitting signal, system validate a tag presence in detection zone.

Sky-Guard system employing pseudo random coding transmission(Fig. 4), 1 stands for valid transmitting and 0 stands for null transmitting. The random transmitting sequence promotes a significant immunity to periodical interferences(noise).

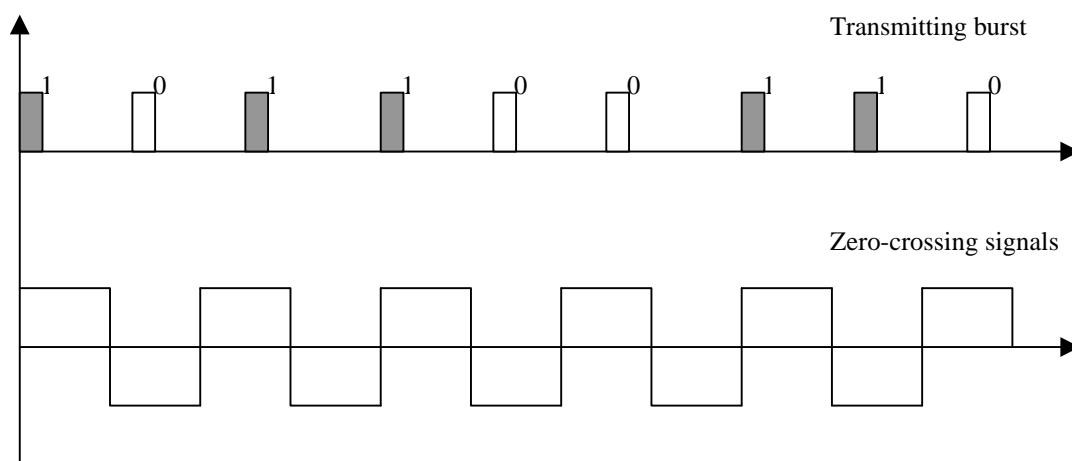


Fig. 4

7. Alarm is triggered.