Theory of Operation:

The RF hand wands are battery-powered devices that operate at 310MHz. The onboard microcontroller transmits pulses by On-Off Keying the carrier oscillator. The oscillator is a SAW-stabilized colpitts type. The data is transmitted only when a button is depressed. The data is represented by pulses of 1msec or 0.5 msec wide separated by as much as 6 msec. The pulse duty cycle is less than 10% over 100msec and we used the +20dB correction factor.