

Modulation Characteristics

The transmitted RF power by the SmartScan AEI hand-held reader is unmodulated, on-off-keyed (OOK) RF carrier. The effect of the OOK is an emission of pulses of the RF carrier. However, these pulses are not a digital encoding, and the pulses carry no information or data per se. This OOK is done simply to increase battery life and reduce any possible thermal relate issues.

An explanation of the pulsing scheme:

The pulsed RF power is controlled by the PIC microprocessor (U6), which drives (U4), a dual one-shot counter. In typical use of this product, an operator will give the unit the command to read a transponder by pushing the power on/read request switch. When it receives this command, the PIC microprocessor sends a pulse to the dual one-shot counter, which sends a pulse of DC voltage to the power control pin of the RF power amplifier (U10). This turns on the RF output for the length of time of the pulse. This is repeated approximately once each second for approximately 30 seconds. At this time the reader will turn itself off, a feature designed for enhancement of battery life.