



T2 Radio Transmission Techniques

The M2w utility radio and the innov8 electronic register utilize a proprietary radio for digital communications. The transmission technique is called “spread spectrum” and is conducted in the 902-to-928 MHz ISM band.

What is an ISM Band?

ISM stands for “Industrial, Scientific, Medical”. There are multiple frequency ranges that have been designated ISM by the FCC, which governs and regulates all radio frequency transmissions in the U.S. Typical devices which use the ISM bands include wireless phones, garage door openers, Bluetooth headsets, and a wide variety of medical instruments.

What is Spread Spectrum

The “spread spectrum” transmission technique dictates that a transmitting device must spread its signal across multiple frequencies and limit its power level. The radio essentially transmits a short, low power signal which can only be used for digital communications.

The FCC rules for spread spectrum radios in the ISM bands are straight forward: limited in power and limited in duration. The intent is to have a frequency range where many different devices can coexist without interference.

The FCC regulations also consider potential health risks. Higher power devices and devices intended for consistent human contact (i.e. cell phones, radio handset, computers) have additional regulations and guidelines to ensure protection for the users.

T2 Radios

The M2w and the innov8 utilize a spread spectrum technique in the 900 MHz ISM band. T2 has undergone FCC testing and received grants for all devices. Furthermore, since the M2w and innov8 are battery powered, the transmission signal is designed to be short and efficient.

Here are the specifics:

- The T2 radios transmit a ~30 milliwatt signal that lasts about 3 milliseconds.
- That is a signal 0.030 of a watt for 0.003 of a second.

These levels are far below most other ISM devices and vastly below virtually all communication devices encountered on a daily basis (cell phones, Wi-Fi, TV, radio, etc.). T2 has carefully engineered the M2w and innov8 radios to comply with FCC regulations to ensure that they cause no interference and pose no health risks.