



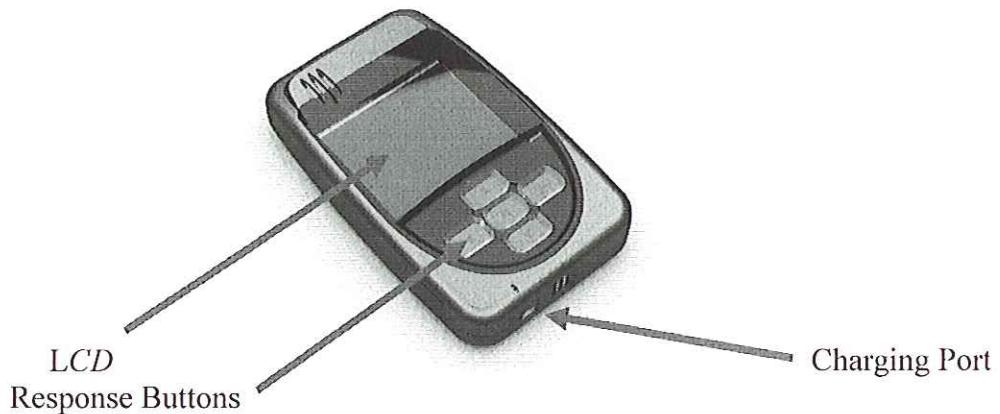
## ***4418 X-Tech Operational Description***

### **Introduction**

The X-Tech (model number 4418) was designed to help probation and parole officers monitor offenders. The offender carries the X-Tech and a bracelet transmitter (ISM) that is attached to his ankle provides an electronic tether. It collects GPS positional information and compares this data to rules that have been established by a probation or parole officer. These rules geographically define where an offender is allowed or not allowed to go. The X-Tech also includes hardware to determine if it has been tampered with.

### **System Overview**

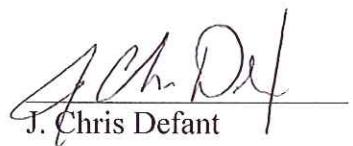
The X-Tech utilizes GPS to establish an offender's location. Positional data (points) are stored every minute while the offender is not in violation of any rule and every 15 seconds whenever he or she is in violation. The cellular network (GPRS) is used to transmit the data back to servers at Pro Tech's data center located in Odessa, FL.



**The X-Tech is comprised of the following subsystems:**

1. GPS Receiver and Antenna
2. GSM\GPRS cellular modem
3. ISM Transceiver and antenna operating at 418MHz
4. Microprocessor running application software and memory
5. Battery and battery charging circuit
6. Tamper detection circuit.
7. Response pushbuttons for offender acknowledgements.

Both the GPS receiver and GSM modem are off-the-shelf modules.



J. Chris Defant