40433UE Operational Description

Introduction

The XT (model number 40433UE) was designed to help probation and parole officers monitor offenders. The offender carries the XT and a bracelet transmitter that is attached to his ankle. The bracelet transmitter provides an electronic tether. The bracelet transmitter communicates with the XT via the UHF transceiver operating at 433MHz. The UHF transceiver uses an external antenna for increased range. The XT 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 XT also includes hardware to determine if it has been tampered with and a GSM handset for receiving voice calls from the probation officer.

System Overview

The XT 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.

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The XT is comprised of the following subsystems:

1. GPS Receiver and Antenna
2. GSM\GPRS cellular modem
   (*Quad Band GSM/GRPS MS Class 10, GPRS Capability Class B, Power class 4 for GSM/EGSM bands, Power class 1 for DCS/PCS bands, Voice and Data)*
3. UHF transceiver and antenna operating at 433MHz (timing diagram is attached to Declaration of Conformance)
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 cellular modem are off-the-shelf modules.

Weight:	0.173 Kg
Size:	11 x 6.75 x 0.75 cm
Operating Temperature:	0° to 50°C
Battery Type:	Lithium Ion

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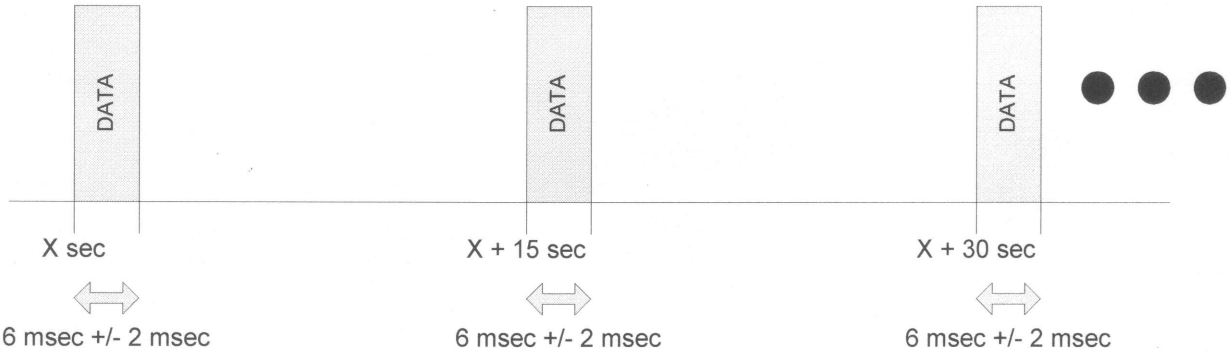
Declaration of Conformance

This device does not contain a manually operated transmitter.

The automatically activated transmitter ceases transmission within 5 seconds after activation.

This is a security or safety application. This device transmits at regular predetermined intervals. The total duration of transmissions does not exceed more than two seconds per hour. The total transmission time does not exceed two seconds per hour.

Transmitter Timing
433 MHz



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