Operational Description of TrackPack

TrackPack is a fully self contained, highly reliable and environmentally hardened global satellite based tracking device capable of determining location us-ing GPS and reporting that location over a low earth orbit (LEO) satellite network using the AeroAstro patented SENS CPDMA™ satellite communica-tions system to provide a robust, easy to use asset tracking solution.

The TrackPack is powered by internal primary batteries and require no wires or harnesses for use. The TrackPack features a wireless configuration system using a simple Graphical User Interface (GUI) application and a wireless USB Dongle. Users can configure TrackPack without cables or lengthy connection procedures. The Wireless USB Dongle can communicate with multiple Track-Packs at the same time thus allowing users to configure more than one TrackPack simultaneously.

The TrackPack communicates data via the Globalstar Simplex Data Service. This satellite service utilizes low power, one-way transmitters to relay data from locations globally to a back office server accessible over the internet through a secure connection. The use of one-way, simplex satellite communi-cations is a proven, reliable method. This feature is augmented by a rich con-figuration capability that enables the TrackPack to automatically detect situations where a data update is desired, such as start and stop or while in motion.

This Users Manual describes how the TrackPack is configured and the protocol for on-air data payload and internet XML packets. This document provides a generalized overview only. Consult Comtech AeroAstro for more details and options of relaying data.

Antennas and Grounding

The TrackPack device contains three antennas, for SENS satellite communications, GPS, and configuration. The SENS and GPS antennas are microstrip patch antennas sharing a common ground plane on the top side of the TrackPack printed circuit board. The configuration antenna is not directly dependent on a ground plane, and is located on the bottom side of the printed circuit board, along one edge.

The TrackPack is completely enclosed in an ABS plastic case. There are no provisions for attaching the device to any external ground.