



Cummings Research Park
6767 Old Madison Pike, Suite 310
Huntsville AL 35806

October 6, 2013

Theory of Operation / Technical Description

The PLUS tracking system is a Real-Time Location System (RTLS) based on Ultra Wideband (UWB) technology. Its primary use is for the location and identification of people or objects. The system operates using active tags, a network of sensors (receivers), and one or more Synchronization Distribution Panels (SDPs).

Sensor: The PLUS sensors are receive-only devices that are permanently mounted in the area of coverage. The sensors listen for and decode data packets from the tag, and also ascertain the time of arrival of the packet.

Synchronization Distribution Panel: The synchronization distribution panel (SDP) distributes a timing signal to the multiple sensors in order that the times of arrival measured by each have a common time base. The SDP additionally powers the sensors over Ethernet cable, and passes the decoded data and measured times of arrival to other Ethernet devices.

Tag, PLUS Model Number 2106 (FCC ID: ZEH0913): The Tag is a small, transmit-only device with an active transmit duty cycle of less than 0.0026%. The Tag has two separate ultra-wideband transmitters and antennas optimized for vertical and horizontal applications to accommodate changing physical orientations of the Tag. The data packets include a tag identification code, status information, and time of arrival data.