

P350-T010101 Tag User's Manual

PulsON 350 Active Radio Frequency Identification
(RFID) Tracking System

DRAFT

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Regulatory Notice

U.S. Operation. This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. (3) Operation on board an aircraft or a satellite is prohibited. (4) Devices operating under this section may not be employed for the operation of toys. (5) Except for operation onboard a ship or a terrestrial transportation vehicle, the use of a fixed outdoor infrastructure is prohibited. A fixed infrastructure includes antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole. This outdoor infrastructure prohibition applies to intentional ultra-wideband (UWB) emitters.

Operation in disregard of these conditions is a violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties. Disassembling or modifying the unit will void FCC compliance and void Time Domain warranty provisions.

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Please consult with Time Domain Corporation if you have any questions, prior to use.

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Active Change Record

Version	Comments	Release Date
Rev X	Draft release	3/22/07

1. Introduction

The P350-T010101 Tag, hereafter referred to as the P350 Tag, is the transmitter for the P350 Ultra Wideband Active RFID Tracking System. It is small in size, durable, and with its long battery life, requires minimal maintenance. It has been certified by U.S. FCC to comply with Part 15 of the FCC Rules subject to the conditions listed under the Regulatory Notice on Page 2 of this manual. Figure 1-1 shows the tag's FCC identification (ID) number with a sticker denoting its unique device ID. Figure 1-2 demonstrates the small size of the tag device.



Figure 1-1 P350 Tag FCC ID



Figure 1-2 P350 Tag

2. Overview

Background

Tag tracking is accomplished by analyzing time-differences-of-arrival (TDOAs) of tag transmissions. When a tag transmits a packet, readers that successfully receive the packet will send out information concerning the tag packet, including a precise timestamp. The difference in the timestamp between readers gives the TDOA for that reader pair/tag combination. At least three readers must hear a tag in order to determine a valid position for that tag.

P350 Tag

Within the P350 Ultra Wideband Active RFID Tracking System, the P350 Tag is used both to calibrate the tracking system readers and to track assets within the system.

When used as a calibration tag, the tag's unique id and position are input to the system. During the calibration process, the tag remains stationary at this location, transmitting ultra wideband (UWB) RF packets. As the readers "hear" and report time-of-arrival (TOA) data, a solution is determined and calibrated. The system must be calibrated before tag tracking can commence.

When used to track assets, the tag is mounted on that asset, and through transmitted RF packets, sends its unique device ID and status. As the system readers hear the tag, the tag position is determined and the position is added to its internal database. Note that the tracking system automatically discovers new tags and adds those newly discovered tags to that database.

3. Specifications

The P350 Tag specifications are listed below. These specifications are for the tag circuit board and are independent of housing.

Function:	Transmits RF packets
Battery Life:	4 Years at 1 Hz Packet Rate
Packet Rate:	1 Hz
Range:	75' typical line of sight
Dimensions:	1.1" W x 1.2" D x 0.4" T
Weight:	0.4 oz (11.8g)
RF Emissions:	FCC 15.250 compliant

4. Beam Orientation Recommendations

TBD

Warranty

Covered Products

These warranties cover the following equipment and products made and provided by us:

P350-T010101

Scope and Duration of Warranties

Product Warranties and Warranty Period: We warrant to you that for one (1) year from the date we deliver the Product to the Carrier in Huntsville, Alabama, the Covered Products listed in our Purchase Order (except batteries) will (1) be free from defects in material, workmanship, and title, and (2) conform substantially to our published Covered Product specifications in effect on the date of shipment of the Covered Products. Our published Covered Product specifications are available on request. Batteries are warranted only by the original equipment manufacturer.

Patent and Copyright Warranty: We warrant to you that when they are delivered, the Covered Products will not be subject to any valid patent or copyright infringement claim.

We will defend or settle any suit against you to the extent it is based on an infringement claim that would be a breach of the Patent and Copyright warranty, provided we receive prompt written notice of the claim, your cooperation in its defense or settlement, and complete and exclusive control over its defense or settlement. If a court of competent jurisdiction renders a final judgment that the infringement claim is valid, we will pay all damages and costs awarded against you due to the breach. In addition, we will either obtain a license for you to continue using the infringing Covered Product, provide a non-infringing replacement, alter the Covered Product so that it is non-infringing, or remove the infringing Covered Product and refund the price (less reasonable depreciation) and any return transportation costs paid by you.

Warranty Period: The warranty period for all warranties listed above is limited in time to one year from the date referenced above.

The warranty period for any Covered Product or part furnished to you without a pro rata charge as a warranty remedy will be the remaining portion of the warranty period applicable to the repaired or replaced Covered Product. The warranty period for any replacement Covered Product or part furnished to you with a pro rata charge as a warranty remedy will be the full period of the warranty applicable to the replacement Covered Product.

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The warranties do not cover:

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- B. The payment or reimbursement of any facility costs arising from repair or replacement of the Covered Products or parts.
- C. Covered Products used or exported outside the United States without necessary U.S. and foreign government authorization.

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