InTouch Care User Manual

Introduction

InTouch Care is an Active RFID tracking system. The system is comprised of four basic elements:

1. TAGS – The TAGs are battery operated and are comprised of an RF Transceiver and a few peripheral components. The TAGs are small devices with about 1" X 2" foot print. They are typically attached to assets or people that need to be tracked.
2. Spiders – The Spiders are also battery operated and are equipped with similar to the TAG RF transceiver and other peripheral components. Unlike TAGs, Spiders are not mobile. They are typically attached to either ceilings or walls. Their function is to improve the localization capability of the system.
3. STARs – The STARs are operated either using an external power supply or a POE power supply within the device. STARs are also equipped with essentially identical RF section to both the TAGs and the Spiders. The STARs are also equipped with a LAN chip for communication with the server.
4. Server – The servers can be either local or can be connected directly to any Internet server. The Servers are in direct communication with the STARs.

InTouch RFID Network high level architecture looks as follows:

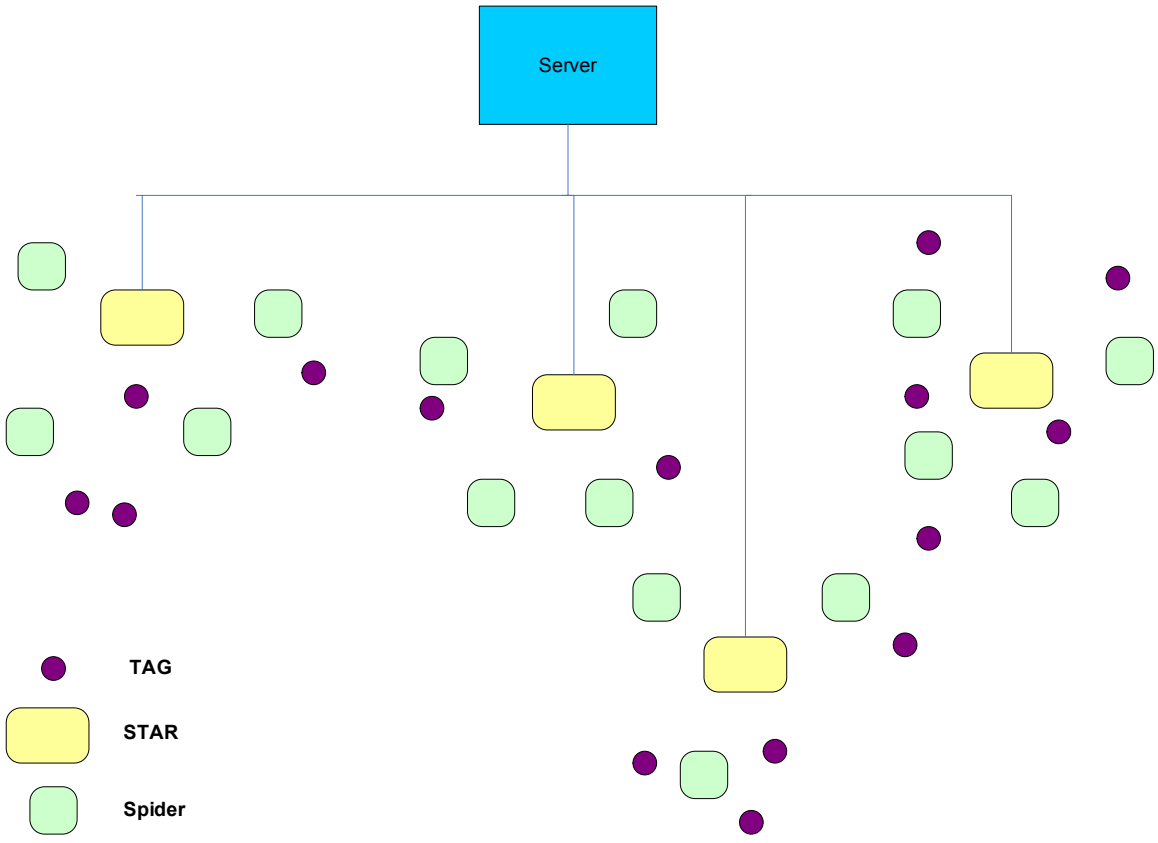

Figure 1: InTouch Network Architecture

STAR Installation and Operation

Installation

Stars should be installed as high as possible. It is preferred to attach them to the ceiling upside down such that the antennas point downward. The antennas should be positioned at 90 degrees to each other and perpendicular to each other. Stars can be fed through one of two methods:

1. Power Over Ethernet (POE) or
2. External 3.3 volts power supply.

The STAR must be connected to the LOCAL AREA Network (LAN) which must be connected to InTouch Server.

Operation

The STAR communicates with all InTouch Components and is responsible to communicate information it receives to and from InTouch server. InTouch network can support up to 128 STARs

Maintenance

STAR malfunction is immediately sensed by the InTouch Server. The Network needs to be tested for before it is determined that the SART fails. In case, a STAR malfunctions it should be replaced with one in inventory.

FCC NOTICE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and the receiver.
• Consult the dealer or an experienced radio/TV technician for help.
• The carrier frequency is 904MHz – 926MHz.
• The RF output power (or field strength and measurement distance) is less than one milliwatt.

TAG Operation

Installation

In order to initiate a TAG the user must install a battery in the TAG. The preferred battery is CR 2335 that is enclosed in the TAG package. Other alternatives are CR2330 and CR2032. Both of the alternate batteries need a plastic shim that is included in the package. There is no on/off button on the TAG and it will start operation as soon as the

battery is inserted. Also enclose in a pack of 10 TAGs a special tool to open and close the battery door.

Operation
There are five buttons on the TAG: The three buttons on top are used to signal the server a push button. The meaning of each button is programmable by the user on the PC level. There are two buttons on the bottom. One is a theft detection button. When the TAG is affixed to an asset the button is pressed in. If would be thief tries to remove the TAG from the asset the button is released and a message is sent immediately to the server. The second button is a reset button that allows a restart of the TAG in case, the TAG stops operation due to shock or a voltage spike.

Maintenance
The batteries last about four years. The replacement process follows the same instructions to install batteries.

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• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and the receiver.
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Spider Installation and Operation

Installation
Spiders, like STARs should be installed as high as possible. It is preferred to attach them to the ceiling upside down such that the antennas point downward. The antennas should be positioned at 90 degrees to each other and perpendicular to each other. Spiders are battery operated by 6 D-Cell batteries

The Spiders communicate with the STARs wirelessly, so no wiring is needed. Once the batteries are inserted, the on/off button should be moved to the on position. No more operations are needed to set the Spiders.

Operation
The Spider communicates with other InTouch Components wirelessly. It also provides maintenance information to the server, such as low battery indicator and the "health" of its RF receiver signals from the STAR.

Maintenance
Once the low battery indicator sends the server the indication of low battery the batteries will have about 1-2 month operational time. The batteries should be replaced as soon as possible after such messages are generated.

Spiders should also be maintained if the communication with them stops or of poor quality. This information is reported by the server.

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• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and the receiver.
• Consult the dealer or an experienced radio/TV technician for help.
• The carrier frequency is 904MHz – 926MHz.
• The RF output power (or field strength and measurement distance) is less than one milliwatt.

Warning:
Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.