



## CENTRAK PROBE-BASED TEMPERATURE SENSOR TAGRIT-735P

- Covers ranges from -200C to +50C
- 0.75C accuracy (0.5C typical)
- Customizable reporting rates – down to 12 seconds
- Low power consumption for long battery life (*4 years with 1 minute reporting rate*)
- NIST traceable calibration available
- Button for event reporting
- Integrates with CenTrak RTLS

Hospitals have a critical need for wireless monitoring of environmental fluctuations. They require reliable real time monitoring and alerting capabilities as well as comprehensive records of sensor data for reporting and analysis purposes. CenTrak's advanced temperature sensing technology was developed to meet those needs.

The IT-735 is a probe-based temperature sensing tag that has the ability to monitor a wide range of temperatures, from cryogenic (-200C) to room temperature (+50C), reliably and accurately with customizable reporting rates down to 12 seconds at 0.75C accuracy. It is available for use with three specific temperature range probes : -20C to +50C (ITA-781), -100 to -20C (ITA-782), and -200 to -100C (ITA-783)

The IT-735 Tag creates a cost effective way to improve patient care as well as provide automated and detailed reports for any time period. In conjunction with the CenTrak RTLS this single Tag can be used to track, locate, identify and ensure correct temperature levels and can generate alerts via email/SMS when the temperature goes above or below set parameters. The system can also provide temperature logs which eliminate human error and the cost of manual temperature documentation.

Tags send temperature readings in intervals specified by the user (e.g., every one minute). The battery powered tags will even continue to monitor temperature and send a local alert in the event of a power outage. Tags provide an automated and accurate solution that improves regulatory compliance and saves time so that staff can focus on patient care and safety.

### About CenTrak Technology

CenTrak's core RTLS differs from legacy technologies in its use of a patented combination of second-generation infrared (Gen2IR™) and active RFID technology called DualTrak. Battery powered Monitors transmit a unique room number using Gen2IR which is received by any tag in that room. The tag communicates the room number and its own unique ID via RF to the CenTrak Location Server using a hospital's existing wired or Wi-Fi network, where it can be accessed in real-time by hospital personnel and integrated with third party solution providers.

Like light, Gen2IR will not pass through walls and does not suffer from traditional infrared line-of-sight limitations. Therefore, when a tag reads a room number, there are no errors. This is certainty-based RTLS. Unlike estimation-based information, certainty-based location data can be used by hospitals to make important improvements to process flow and automate decision making. Most healthcare workflow improvements can only be realized when the location data is certainty-based.

**WARNING:** *This guide is in draft form and can be changed without notice at any time by CenTrak. Please contact CenTrak prior to commercial use to receive all the necessary latest information about the system.*



## CENTRAK PROBE-BASED TEMPERATURE SENSOR TAG IT-735 TECHNICAL SPECIFICATIONS

### Operation

FCC Operating Frequency Range	902-928 MHz (Model # IT-735)
CE Operating Frequency Range	868-870 MHz (Model # ITEU-735)
Group ID codes	8M codes
Outdoor transmission range	> 300 feet
Field strength	2 uW (Average)
Smart Tag features	1 button, LED, low battery
Motion Sensor	YES

### Attachment Options

Probe temperature ranges	-20C to +50C (ITA-781) -100 to -20C (ITA-782) -200 to -100C (ITA-783)
Thermal Vial	ITA-785
Thermal vial holder	ITA-786
Probe holder for air temperature measuring	ITA-787
3M VHB adhesive (0.64 mm)	ITA-751
Double sided adhesive	ITA-752
Screw attachment w/ adhesive pad	ITA-753

### Tag Dimensions

Case length	1.5 in (38.48mm)
Case height	1.98 in (50.36 mm)
Case width	0.94 in (24 mm)
Case weight (with battery)	1.10 oz. (34.02g)
Construction	ABS & Poly Carbonate mixture
Durability	Tough, impact resistant and temperature stable

### Environmental

Operating temperature (Tag)	+10C to +40C
Storage temperature (Tag)	-25 C to +80 C

### Power

Battery type	Lithium CR2450
Smart tag feature	Low battery indication

### Cleaning

Tag cleaning method	Wipe Cleaning Method Only. <i>See CenTrak Tag Disinfection Guide for Instructions</i>
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**Note:** Must use CenTrak Disinfection procedure. Other methods may void product warranty.

This component complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) The device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation. Modifying or tampering with the transmitter's or receiver's internal components can cause a malfunction, invalidate the warranty, and will void FCC authorization to use these products. This product or its systems are covered by one or more of the following U.S. patents: 5,917,425 , 7,061,428 , 7,378,964

## InTouch Care Operation Instruction

### 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:

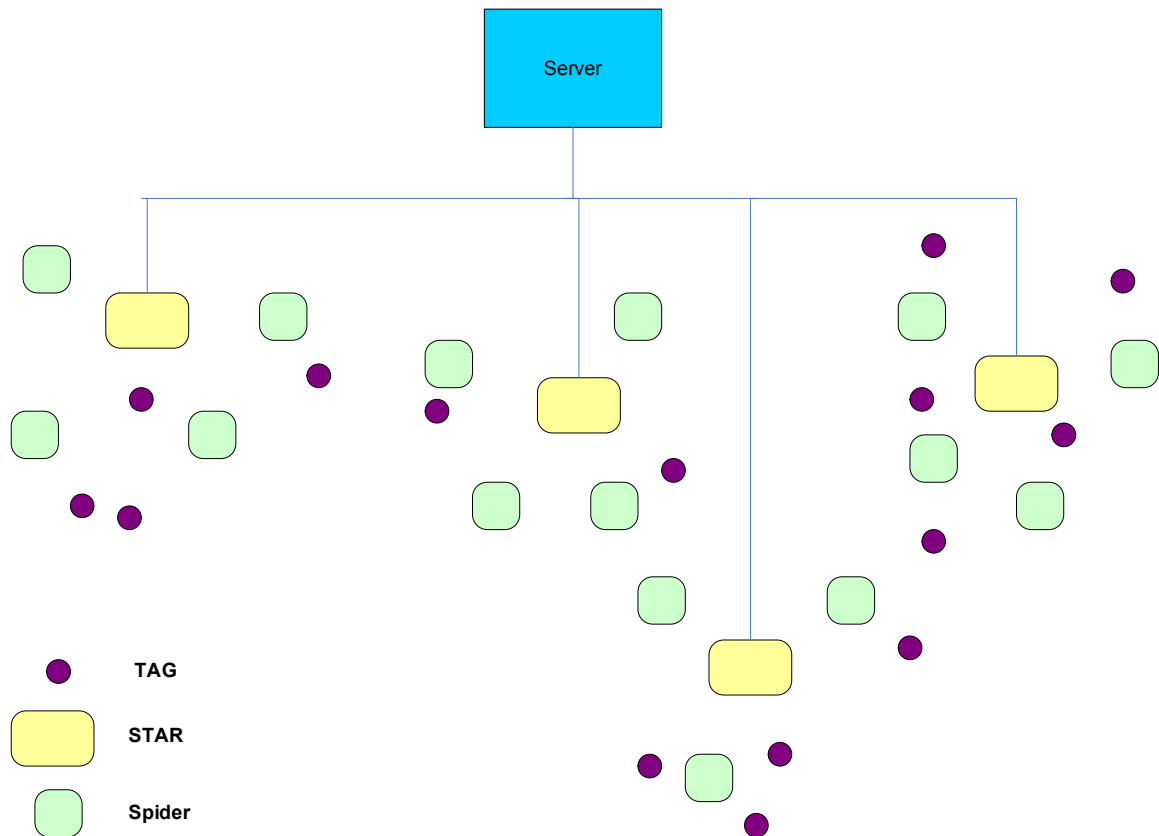


Figure 1: InTouch Network Architecture

## **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.
- 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.

## **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.**