



# RTLS User Guide

## General Description

The Tempsys Real Time Location Services (RTLS) system consists of two device types to remotely monitor various assets and determine their location within a facility. Data is sent to a central database for formal presentation and reporting. Tag devices are placed on each asset to be managed, while Locators are placed in each room or area where assets are expected to be.

The system operates in the 865MHz (Europe/Asia) and 915MHz (US) ISM bands using off-the-shelf FSK RFIC radios. The Tags are low power devices that transmit on a fixed set of frequencies, while the Locator operates as a Frequency Hopper over 60 narrow band frequency channels. Data from Tags are received by Locators and then forwarded to the Tempsys Temperature System radio backbone which consists of either Repeaters or Access Points.

A complete system consists of the two RTLS products, plus radio infrastructure hardware (Repeaters and Access Points), as well as a PC Server running the Tempsys Location engine. The Location engine interfaces to a number of 3rd party software tools that provides a user friendly front end to manage the various Assets in the system.

- Location Engine running on a PC server
- A variable number of Repeaters and Access Points to forward RTLS data to the Location Engine.
- A variable number of Tag units, each with a CR2032 battery
- A variable number of Locator units, each with four D cell batteries.

## Warning

**NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT**

## Installation Tool

You should have received a copy of the Tempsys RTLS Setup Tool. This runs on a Windows based PC and provides a basic interface into the Location Engine, suitable for setting up the system and assigning Tag serial numbers to the Assets being tracked. More detailed information can be found in the separate manual for that software.



## **Tag Configuration**

The Tag units do not require any setup or configuration. They will have a serial number assigned to their bracket and this number needs to be associated with the Asset serial number using the RTLS Setup tool.

## **Locator Configuration**

Locator units also do not require any setup or configuration. Their functionality can be changed by using ordering a different BracketID feature from the factory. Regular Locators are suitable for covering a single room with low traffic or Assets. Special High Density Locators are used for high traffic areas such as operating rooms where dozens of Assets could be located. Up to four High Density Locators can be placed in a single room.

## **Usage**

Assuming the Location Engine server has previously been setup and Access Point installed throughout the site, the user will start the RTLS Setup program on a local PC and connect to the Location Engine server.

Both Tags and Locators will come with Batteries installed. To turn on either device, press and hold the button near the LED window until the LED starts to flash. It will flash slowly at first, then rapidly flash when a Access Point beacons are seen, then finally illuminates for 10 seconds when it successfully communicates with the network.

### **Button Usage**

When a unit is off, press and hold for three or four seconds to turn on. LED starts to flash

When unit is on, press and hold for three or four seconds to turn off. LED will be off

A single press can indicate the state of the unit

- Constant on LED for 10 seconds means unit successfully communicating to network

- Single LED flash indicates the unit is on but not communicating with the network

- Double LED flash indicates the unit is OFF

A double press when the unit is on and Connected will trigger an immediate data transmission

### **Device Placement**

Locator devices should be placed on the wall or hung from the ceiling. If placed on the wall, it should be on the longer wall of the rectangular room, toward the center and at least 6 feet high. The front grill should be pointing down toward the floor. If placed on the ceiling, it should be again be located near the center of the longer wall, and with the grill pointing down toward the center of the room.



Tag devices are to be placed on the Asset, ideally with the grill part pointing up to the ceiling. The placement should be chosen so as not to block the ultrasound signal emanating from the grill area, but also in an area that is less accessible to patients and non-maintenance users of the equipment.

## Notes

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<p>THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:</p> <ul style="list-style-type: none"><li>(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND</li><li>(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.</li></ul>
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