

### GENERAL DESCRIPTION

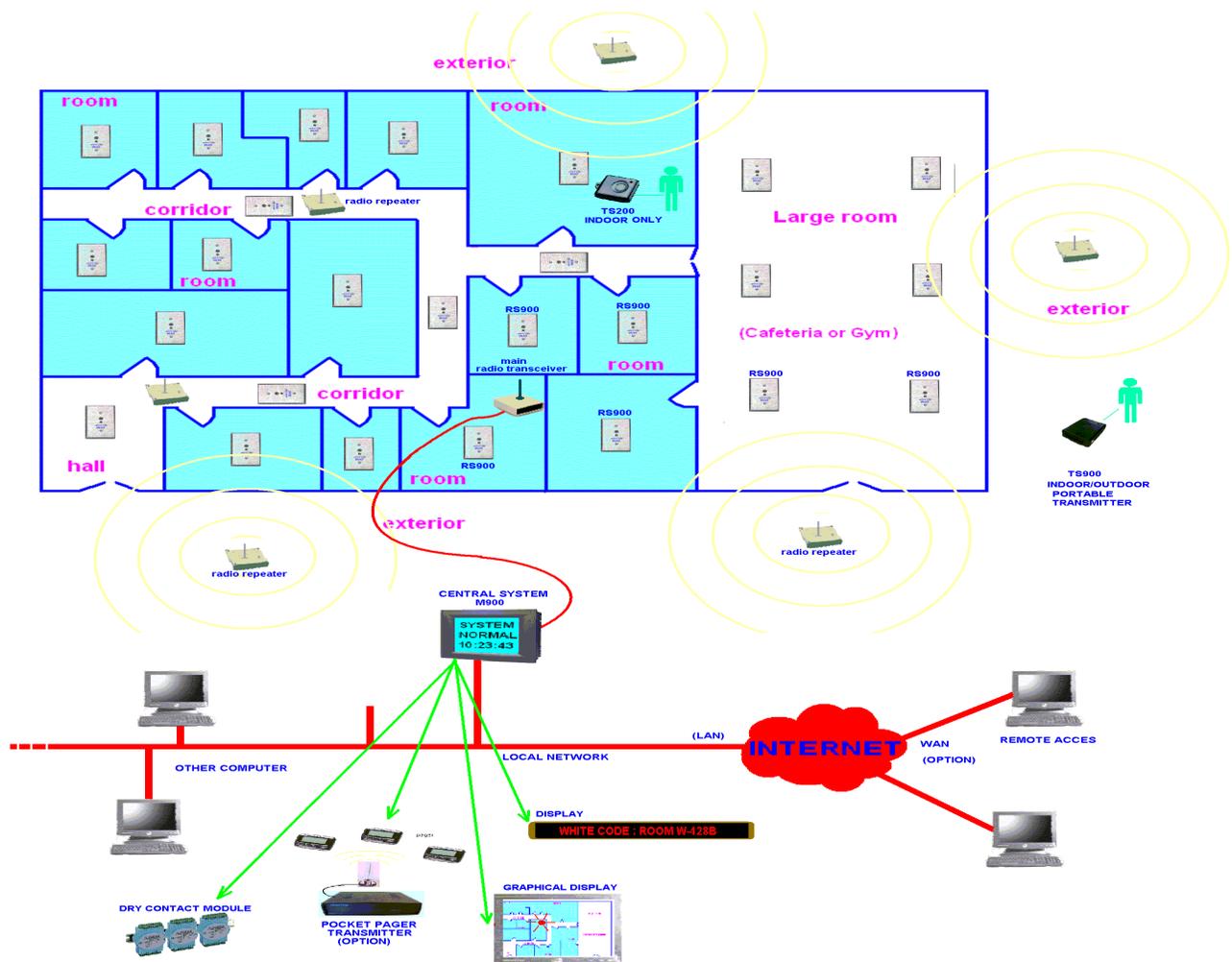
The Securalert Hybrid is the most advanced system to locate precisely and rapidly a person in distress inside or outside a building. The use of bi-directional radio frequency and ultrasonic signals combined with an IP server monitoring station, give a complete supervised locating system.

A unique feature of the Securalert system is the full bi-directional radio communication. This element offers two major advantages:

- A reliable radio communication that acknowledges every message with capacity to retry.
- A bi-directional supervision of all the elements. Not only the central monitor operation of all devices but each device (local receiver and transmitter) can detect a problem with the central and give a positive or negative feedback to the user.

The basic system consists of a **central with a radio transceiver**, a number of **ultrasonic receivers** and/or **fixed buttons receivers**, and also **portable transmitters**. Additional parts can be added to increase features like **Radio repeater** to increase the radio range of the system, a **monitor/buzzer/reset** unit, to supervise the central and to give a loud audible signal of alarm, a **forbidden zone beacon** to prevent portable unit to exit a facility and a whole lot of output interfaces to match any need: dry contact output, voice messages, graphical or message panel, OPC compatible equipments, SMS, email, pocket paging, ect.

## Securalert Typical Topology



### DUAL TECHNOLOGY TRANSMITTER TS900

The use of ultrasonic signals when a transmitter is activated, gives a precise indication of the position of a person

**DATE : March 2008****REV 2****Doc # : SECUR01DA2.ODT**

inside a multiple room building. Omni-directional ultrasonic signals give reliable results no matter what the orientation of a transmitter even with minor obstacles between the receiver and transmitter. The signal is also always restricted inside a room, no matter what the size, avoiding confusion of multiple receiver activation.

Bi-directional radio signals are used to give a positive confirmation of alarms, eliminating false alarms and permitting unique identification of the transmitter. The radio signals also act as full supervision of the transmitter by reporting automatically and regularly its state, including battery level, to the central station. FCC licenses free ISM 2.4GHz. Direct spread spectrum encoding gives maximum reliability. On every communication, acknowledgement is sent back so delivery of message is guaranteed even in the presence of interfering signals.

Transmitter can provide to the user a true confirmation of the process (alarm activated on the transmitter, alarm received by the central, exact position of the transmitter found by the system). The transmitter can vibrate (tactile feedback), beep (audible feedback) or display real text on its building Alpha numerical display (visual feedback). Any or many of those feedbacks are selectable directly from the main central.

The display on the unit provides a real time indication to the user of the status of the system. In one click, the user knows the status of his transmitter, battery level, and RF signal strength. The TS900 is the only panic button that knows if the main system is working properly and can inform the user.

Optional features available with the TS900 are the localization of the specific units on demand to find lost units or simply advise personnel to report. Also the Forbidden Area Beacon can be installed at a specific place (staff exit, parking area, main entrance) to create a zone where a user will be notified (transmitter beeping, vibrating and lighting) to bring back the device. Finally, the transmitter can act as a private pocket pager that will inform the team when an alarm is activated. In this case, the TS900 becomes a pocket pager and a panic button in the same box.

#### **LOW COST TRANSMITTER TS200 V2**

The system is also compatible with the first generation ultrasonic transmitter TS200 version 2 (modulated). The TS200 is an ultra miniature transmitter for a maximum of convenience.

#### **ULTRASONIC TRANSCIEVER RS900**

Ultrasonic receivers, equipped with radio transmitter, are used inside for precise localization to activate transmitter. Each receiver sends information back to the central through radio channel. Like the transmitter, each receiver has a unique identification number. Also, each receiver is fully supervised. The receiver can operate on battery or on a low power wire voltage. Range of the ultrasonic receiver is adjustable between 5 to 25 feet of radius minimum. Multiple receivers can be added to cover large areas like a cafeteria, a common room or a corridor. The minimum distance between the receiver and the central radio (or the nearest radio repeater) is 100 feet (30m) inside.

#### **FIX TRANSMITTER RS900F AND FIX TRANSCIEVER RS900F+**

The TS900F is a fix transmitter intended for places where portable devices are not usable or inadequate. Fix transceivers are fully equipped ultrasonic sensors with radio transmitter and with the addition of a local (on the box) switch. This unit can be triggered in alarm by pressing the switch directly on the unit or remotely by an ultrasonic transmitter anywhere in the room.

#### **RADIO LOCATOR BS900**

Radio locators are used to detect radio signals in large areas where precision is less important or where ultrasonic receiver installation may be unworkable, like outside. Radio locators have an adjustable range between more than 300 feet on the outside, down to about 50 feet inside of building.

#### **RADIO REPEATER AND INPUT PORT**

Input port receives information from the transmitter, locator and receiver and brings them to the central station. While input port decodes radio data and connects to the central station through wire (Ethernet or dedicated port), repeater relays radio information back on radio channel to the central station wirelessly.

### **FORBBIBEN AREA BEACON X900**

A forbidden area beacon works with the TS900. It transmits continually a radio signal with a specific level. The level is programmable to cover from 3 to 100 feet. When a TS900 enters in that zone, the TS900 will go in alarm locally (indicating to the user to turn back). Also, the beacon has a led and an output contact that can trigger an external device, like a buzzer, or connected to a security system to inform other personnel that a transmitter is about to get outside of the facility. This device is intended to avoid staff or visitor going home with the transmitter.

### **CENTRAL STATION**

The central station monitors all the radio information, collects information in real time, generates log and graphical status of the system (through a web server) and can generate different actions upon detection of critical events like sending alarm signals to local or wide area pagers, cellular, alarm panels, displays, etc.

The central station is computer based. It operates on a JAVA language, a powerful but also an OS independent language. The software runs on a service mode on a server. Report and configuration operate on an IP mode. The central station monitors all the radio information, collects information in real time, generates log and graphical status of the system (through a web server) and can generate different actions upon detection of critical events like sending alarm signals to local or wide area pagers, cellular, alarm panels, displays, etc.

Complete operation over network, intranet and/or Internet

Operation and maintenance through applet software, independent of operating system, version or software designer

No complicated software to learn, the operator only needs to know how to navigate on the Internet

Maintenance and troubleshooting can be done remotely and even from the manufacturer's support

### **VIEWER APPLET**

A true user-friendly viewer applet (dedicated web browser window) enables all operation, interaction, configuration and report with or from the central station. A minimum installation consists in only 1 station with the central server software and the viewer on the same machine. For a more powerful system, the server is installed on a dedicated machine, located on a secure place and 1 or many viewer can be installed on any machine on the same LAN.

### **OPTIONAL OUTPUT DEVICE**

The central can be linked to a list of device to transfer or activate alarm, messages or signals to other equipment like: fire panel, access control, nurse call system, etc.

### **LIST OF OPTIONAL OUTPUT DEVICE**

-In-house or wide area pocket paging system: message is sent to serial port in a couple of seconds

-Dry contact output modules: compatible with any model of central alarm system

-E-mail or SMS messaging: gives to supervisor real-time information of the events or status of the system

-Voice message sent to paging system or radio mobile (from waves files associated to every location)

-Lighting system

-Alpha numeric giant LED display

-Graphical display monitor

**Specifications****CENTRAL STATION**

PC Computer base Pentium IV or better  
Parameters:  
Operating system: Windows XP, Java VM  
RAM: 512Mb  
Speed: 500MHz  
Hard disk: 1Gb minimum  
Port (min): 1 serial, 2 USB  
Port (recommended): Ethernet, 4 USB, 2 serial.

Number of device ID possible: 65536 (including all devices).

Parameters available for each device: -32 character labels, graphical location on map (x, y, z position), graphical map (1 to 10), active or not, real time battery, rf signal strength, state (alarm, idle, standby) and cover status, last time report, (last position for transmitter).

**RADIO COMMUNICATION**

802.15.4  
Protocol: ISM 2,4GHz  
Frequency: DSSS (Direct Sequence Spread Spectrum)  
Modulation: Spread Spectrum)  
-100dBm  
RF sensitivity 60mW (18dBm)  
Maximum Transmit conducted power: 100mW(20dBm) EIRP

Adjustable power: minimum 10dBm  
Number of channels: 12  
RF data rate: 250,000 bps  
Minimum coverage range: 100' (30m)

**VIEWER INTERFACE**

Type of display: -Graphic (floor plan from BMP image, in color)  
-List view (all device on the screen)  
-Message screen (only current activity)  
-Configuration table (administrator only)

Level of right: -Administrator (all right)  
-User (view data and acknowledgement alarm)  
-View (view only)

Basic Features: Wave files play on each event (wave files provided by customer).

**MAIN RADIO AND REPEATER**

Housing dimensions: 2,75" x 4,50" x 1.20"  
68mm X115mm X  
Weight: 30mm  
Power requirement: 6 oz.  
Antenna: 12VDC 200mA  
Operating environment : dipole  
: 32°F to 85°F, Up to  
95% relative humidity  
(no condensation)

**RECEIVER AND PORTABLE TRANSMITTER**

See respective datasheets

