

## Wireless Help Call System

### Solutions for any applications

## 1. System Overview

The Security Escort System consists of five basic components:

- transmitters
- receivers
- alert units
- transponders
- central console

In an emergency, the transmitter emits a signal identifying the user or asset. The receiver detects the transmitter and forwards signal to the transponder, which interprets the information from all the receivers that detected the signal. The transponder forwards the information to the central console. The user's or asset's name, description, and current location appear graphically on the alarm map along with a picture of the user or asset and any additional programmed information. Security personnel are immediately dispatched to the location of the alarm. Once there is an alarm, the transmitter retransmits every few seconds, constantly updating the central console of its location.

- Unique multiple user help call and asset tracking system
- Identifies name and location, optional photo ID
- Easy to carry transmitters encourage testing, eliminate false alarms
- Indoor/outdoor protection for 50 to 50,000 or more users or assets, 1 to 1,000 buildings
- Post-alarm tracking, alarm map recall and more
- Field proven throughout the world
- Turnkey system from a security industry leader
- Executive and VIP protection
- Man-down alarm and officer tracking in security installations
- Ability to integrate into a paging network
- Integrates into CCTV camera systems

### 1.1 System Options

Security Escort solves many of the challenges faced by large and small institutions where personnel or asset security is a concern.

For a diagram of a Security Escort system, see Figure 1. The system offers, in addition to basic features, the ability to expand as the environment dictates, and readily applies itself to a wide variety of applications:

- Transmit individual alarms, tests or uninitiated tracking signals
- Subscriber, personnel and asset transmitters available depending on the application
- Up to 50,000 plus transmitters per system
- Provides local sounders and visual test confirmation at any time
- Weather-resistant enclosures for outdoor applications
- Control from a central system operation location
- Database storage
- Graphical representation of user or asset location on PC screen during an alarm
- Active tracking of signal every seven seconds after receipt of initial alarm



# Security Escort

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## 1.1 System Components

The Security Escort system consists of five basic components:

- central console
- transponders
- receivers
- alert units
- transmitters

### 1.1.1 SE2000 – Central Console Software

- Standard Microsoft® Windows®-based interface
- Area map graphically displays protected area and pinpoints alarm locations
- Several databases available to log subscribers or assets, system events, component addresses and more
- During an alarm event, the subscriber's or asset's name, picture and any additional available information (such as medical conditions) are displayed on the screen
- Multiple password-protected security levels; only authorized personnel can view the program or make changes
- Printer and pager support

### 1.1.2 EA500 – Transponder

- Sends alarm and test signals from the receiver to the central console
- Support a combined total of 64 receivers and alert units
- AC powered with battery backup for all receivers
- Provides power to SE485 interface and/or RS232 Radio
- Available in a large or small indoor enclosure
- Monitors receivers and alert units 10 times per second for alarms, tests, tamper notification, and power loss

### 1.1.3 EA102 – Receiver

- Receives transmitter alarms and tests, and relays the information to the transponder
- Built-in self testing through Buddy Check feature
- Indoor and outdoor security enclosures available
- Indoor enclosure provides confirmation of successful transmitter test (Outdoor enclosures use other type of signaling device, such as a horn/strobe)

- Indoor receivers provide local sounders in alarm events

### 1.1.4 EA120 – Alert Unit/Output Control Module

- Provides output for alarm annunciation through the siren/strobe or other third party switched device.
- Provides output to siren/strobe to indicate a successful transmitter test
- Indoor and outdoor enclosures available
- AC powered with battery backup
- Activated on command from the central station through the transponder
- Reports tampering, AC power loss, backup battery power to the transponder, and output status

### 1.1.5 SE2 – Personnel Transmitter

- Personnel duress alarm transmitter
- Man-Down alarm
- Lanyard pull alarm (optional)
- Allows user to test from anywhere within the protected area
- Notifies central console of user's name and location immediately on alarm
- Post-alarm and supervision tracking, alarm map recall and more
- Internal antenna
- User replaceable battery with four-year life
- Belt clip attachment
- Optional silent manual alarm
- Low battery indication
- Optional holster for common security belt sizes

### 1.1.6 SE3401 – Point Tracking Transmitter

- Alerts central console of transmitter's ID and location immediately on alarm
- Available post-alarm tracking, and alarm map recall
- Internal antenna
- Two-year battery life
- Mounts on most surfaces
- Low battery indication at central console
- Includes mounting plate

## 1.1.7 SE3 – Subscriber Transmitter

- Alerts central console of user's name and location immediately on alarm
- Post-alarm tracking, alarm map recall and more
- Allows user to test from anywhere within the protected area
- Internal antenna
- Four-year battery life, field replaceable
- Key-chain attachment
- Low battery indication at central console
- Optional silent alarm

## 1.1.8 SE485 Interface Module

- An interface between the RS-485 signal bus of the Security Escort Transponder and the Serial Bus (RS-232) of the Security Escort Central Station
- Each transponder must have its own address.
- For the Security Escort system to maintain operation the SE485 must be powered at all times. Use the 9 V adaptor provided plugged into an Uninterrupted Power Supply (UPS)
- The SE485 can also be powered from the transponder's 9 V output connected to the 9 VDC input wiring connectors
- Up to four SE485s can be included in an installation
- For multiple SE485s, use the connector cable provided

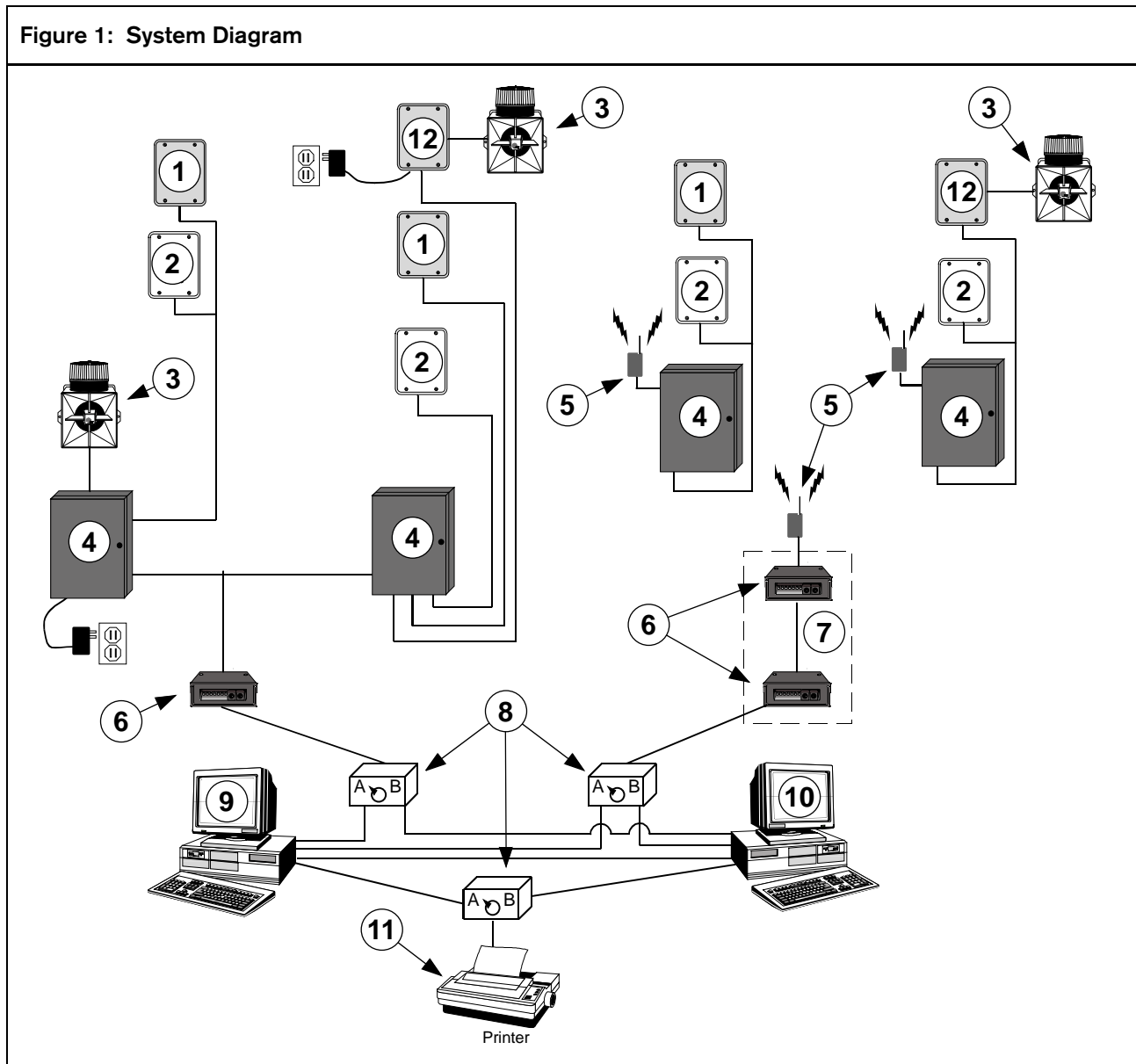
## 2. Installation Considerations

- Uses standard 1.0 mm (0.04 in. / #18 AWG), not twisted, not shielded 4-conductor wire
  - between the console and transponder if more than 15 m (50 ft.) use RS485 bus
- Eight transponder multiplex buses with 914 m (3,000 ft.) per bus
- Up to 255 transponders per system
- Over 11,000 receivers per system
- Uses RS232 or RS485 communications bus
- Can use RS232 radio communications for transponders-communication between central console and transponders

## 3. Technical Information

### 3.1 System Diagrams

Figure 1: System Diagram



- 1 - Outdoor receiver
- 2 - Indoor receiver
- 3 - Siren/strobe
- 4 - Transponder
- 5 - RS232 radio link
- 6 - SE485 interface

- 7 - SE485 interface units are only needed if the length of the cable between the Console and the RS232 radio is greater than 15 m (50 ft.).
- 8 - A/B switch boxes

- 9 - Central console computer #1 (primary)
- 10 - Central console computer #2 (backup)
- 11 - Printer
- 12 - Alert unit

## 3.2 Features and Benefits

- Instantly locates or tracks assets and personnel.
  - Eliminates guess-work on where the person or asset is located on the campus
  - Operators can either wait for alarm signals or can initiate a search for transmitters enrolled into the system
  - Speeds reaction time when responding to emergency signals
- Re-transmission of alarm signal every seven seconds allows for post alarm tracking so that location information is accurate
  - Security or medical staff can monitor the movement of a person or asset throughout the facility/campus
  - Improves security staffs ability to direct dispatched personnel to the correct area
  - Improves likelihood of asset recover and provides visual graphics on Security Escort terminal
  - Alarms can be silent or audible providing any number of security and medical response scenarios customizable by the system operator
- Provides personal security by allowing individuals the ability to contact security or medical staff instantly when the need arises
  - Provides on-demand ability to request assistance
  - Provides reliable sense of security and peace of mind to system users
  - Security or medical staff can have detailed information or special instructions appear on terminal alarm screen that is specific to that person or transmitter
- Allows you to manage your staff movements with guard tour features
  - Management knows, using built-in or customized system reports, that guard tour guidelines are being followed
  - Man-down feature notifies security of any problems immediately
  - Track asset movement
- Allows individuals to self-test their transmitters to reassure system functionality and indicate low battery notification
  - System allows for visual confirmation that system and transmitters are functioning
  - Battery replacement program is efficient and can eliminate malfunction due to dead batteries
  - All signals are logged into the system history, allowing user to search for tested transmitters or untested transmitters. Supports subscriber maintenance programs to ensure system integrity
- Alarm signal is plotted on a bit map image of the secured area graphically depicting the location of the signal.
  - Eliminates guess-work on where the person or asset is located on the campus
  - Speeds reaction time when responding to emergency signals
  - Responding security or medical personnel know where to go and the general nature of the emergency
  - Graphics can be imported from other commonly used graphics programs
- A pro-active approach to safety, providing peace of mind and sense of overall well being for your employees or community members
  - Provides specific, detailed information as to the nature of the alarm signal(s)
  - Users are provided a greater sense of security with a system that will be able to locate them on the campus (in the facility) under any number of emergency situations
  - Does not need to restrict the movement of people or things in campus-like environments
- Upon receipt of alarm, optional features give the system operator a picture of the individual or asset sending the alarm plus any important information (ie: medical history, handicapped, person or asset name and physical description)
  - Responding security or medical personnel are more informed and better prepared prior to arriving at the alarm site
  - With easily imported pictures, visual verification can be accomplished providing a heightened level of security in combination with CCTV or photo-badging environments

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- Reporting features provide recorded documentation of emergency events, including a visual map recall and archived retrieval of all system activity
  - Provides a detailed record of all events that can be retrieved on demand and can be customized to fit a particular customer requirement
  - Time and date stamps all critical actions that can be recalled through various search functions
  - Simplifies the record keeping process for legal, billing or general activity tracking purposes
- Application software allows pager messages containing alarm information to automatically be sent to roaming security and maintenance personnel
  - Supports rapid notification and response of alarm signals to on-site roaming personnel that may not be in close proximity to the Security Escort terminal
  - Supports unattended operation from the console
  - Pager messages can provide detailed information on location via numeric or alpha page messages
- Secured area includes indoor and outdoor areas as well as multi-floor accuracy
  - Floor-to-floor and outdoor locations can be graphically shown on the Security Escort terminal pinpointing alarm locations
  - System can cover outdoor areas including parking lots, garages, and park areas
- System performs triangulation between receivers eliminating any tuning of receivers and creating greater location accuracy
  - Provides more accuracy in pinpointing alarm/transmitter location
  - System is able to provide accurate depiction of floor or basement location when indoor alarms are transmitted
  - May eliminate the need for outdoor receivers if buildings are in close proximity to each other and indoor receivers are within system space layout requirements
- System can process multiple alarms if they are received
  - Alarms are not missed or overlooked
  - Multiple alarms are easily accessed from the alarm screen with a simple mouse click
- Extensive field-testing has been performed on the system at maximum abuse conditions, from -29°C to 49°C (-20°F to 120°F)
  - Provides for reliable operation in a wide assortment of challenging environments
  - Ensures equal reliability for both indoor and outdoor (or combined) systems
- Software supports remote computer communications permitting monitoring of system functionality from anywhere
  - Provides for monitoring of the system via customers' network or through other LAN/WAN environments
- Any Windows-based platform will run the system making a highly user friendly and familiar interface
  - System software is easy to operate and uses commonly known pull-down menus and other commands
  - Easily import and export information to be used in other Windows-based programs such as graphics, photos, databases, word documents and more
- Alarm voice output option allows a voice recording to announce the type of alarm at the central console
  - Improves notification to the system operator in the event they are monitoring other systems in the vicinity of the Security Escort terminal
- System allows you to customize the type of alarm, such as silent alarm, handicapped, wheelchair, blind/deaf or demo, that is being received so that alarm can be prioritized based on urgency
  - Provides for customization of each signal transmitted from a system transmitter
  - Allows system to be customized to fit a particular environment and to re-define alarm priorities in the system
  - Expands the number of applications and markets that can use the Security Escort system

## 3.3 Applications

Security Escort is the most advanced, reliable and cost-effective personnel and asset security system in its class. Security Escort was created for security use in virtually every commercial, industrial or institutional application.

- colleges and schools
- urban offices
- parking lots and garages.
- In manufacturing plants
- health centers
- correctional facilities

Security Escort is for any facility wanting, or needing, to track personnel and/or assets in a campus-like environment.

A few of the markets that have successfully installed and utilized the Security Escort system include:

### 3.3.1 Hospitals/Healthcare Facilities

Contacts: Materials Management, Hospital Administration, Security Manager

- Track/locate and monitor patients and staff including guards
- Monitor and track patients with fall-down transmitter
- Track/locate and monitor assets such as drug carts, heart monitors, gurneys, wheelchairs, trauma carts and other high value items
- Track/locate and monitor birthing stations, critical care patients or wandering patients
- Use to dispatch roaming attendants, via pager notification, to areas where alarms have been initiated by patients, staff or asset tagging

### 3.3.2 College Campuses and Universities

Contacts: Campus Security/Police Management, Materials Management

- Provide added security for students with personal transmitter. The Security Escort terminal (at the campus police station) tracks the location of the alarm signal sent by the student's personal transmitter
- Provide added security for faculty with personal transmitter. The Security Escort terminal (at the campus police station) tracks the location of the alarm signal sent by the faculty's personal transmitter

- Asset tracking throughout campus such as vehicles, computers and other valuable items
- Acts as deterrent for assaults on students and faculty
- Provides a method to search-for people or assets that have supervised transmitters. Most student transmitters aren't supervised

### 3.3.3 Museums

Contacts: Museum Administrators, Security Management, and Facility Manager

- Attach asset tracking transmitter to art objects that, when removed, activate alarm and track movement of item through the facility
- Provide man-down and guard-tour functions (in one transmitter) for museum security personnel
- Personal Transmitters can be issued to Museum Tour Guides for added security and general tracking through the museum

### 3.3.4 Correctional Facilities

Contacts: Warden, Prison Security Management, State and Federal Corrections Commissions.

- Provide man-down and guard-tour functions (in one transmitter) for prison/jail guard or security personnel
- Track valuable or secure equipment with asset tracking transmitters
- Track movement of vehicles on the facility grounds

### 3.3.5 Psychiatric Facilities

Contacts: Chief of Staff, Security Management, and Materials Management

- Track and monitor patients and/or wandering patients
- Provide man-down and guard-tour functions (in one transmitter) for staff/attendants or security personnel
- Provide fall-down coverage to protect patients that may fall and not have the capacity to assist themselves

### 3.3.6 Senior Care/Assisted Living Care Facilities

Contacts: Owner, Chief of Staff, Security Management, and Materials Management

- Track and monitor patients and/or wandering patients

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- Provide man-down and guard-tour functions (in one transmitter) for staff/attendants or security personnel
- Provide fall-down coverage to protect patients who might fall and not have the capacity to assist themselves
- Utilize portal function to know when patients have moved out of their prescribed area
- Residents are able to initiate a call for assistance from anywhere in the covered area/facility/campus

## 3.3.7 Manufacturing Plants

Contacts: Plant Owner/Manager, Facility Manager, and Security Management.

- Provide man-down and guard-tour functions (in one transmitter) for roaming security personnel
- Use asset tracking transmitters to monitor and locate valuable assets on the premise
- Use asset tracking transmitters to track movement of valuable assets on the premise
- Use man-down or fall-down transmitters for plant workers that are at-risk in dangerous areas

## 3.3.8 Large Businesses Campus

Contacts: Owner, Corporate Security, Property Manager, and Facility Manager.

- Provide added protection for employees throughout campus, including parking areas and common areas, by providing emergency notification and location tracking
- Track/locate security personnel during guard tour activities. Use man-down transmitter to record guard-tour functions

## 3.3.9 Parking Lots/Garages

Contacts: Security Management, Mall Security Office, Campus Security, and Owners.

- Use for patrolling guards with both man-down and guard-tour capability in one transmitter
- Use to locate vehicles in valet parking—attach temporary transmitter to vehicles for easy location. Will provide floor-to-floor location details
- Assign personal transmitters to parking and valet attendants for notification in the event of assault or robbery attempts

## 3.3.10 Amusement Parks

Contact: Owner, Park Security, Park Management

- Track flow of money through facility using asset tracking transmitters or guard transmitters
- Provide service to Park visitors and temporarily assign a transmitter for children in the event they get lost or separated
- Assign security personnel a transmitter for guard-tour and man-down notification and location tracking
- Use asset tracking transmitters to monitor location of park vehicles and carts

## 3.3.11 Courthouses

Contact: U.S. Marshall's Service, Security Operations, State Police.

- Use personnel transmitter for emergency notification by court staff and judges. Transmitters will allow security to monitor current status and maintain location information by transmitter
- Use personnel transmitter or man-down transmitter for security guards overseeing prisoners

## 3.3.12 Mining Operations

- Use asset transmitters to track and locate heavy equipment for mining such as vehicles and explosives
- guard-tour or man-down applications in a single transmitter

## 3.3.13 Hotels and Casinos

- track movement of cash through the casino
- assign man-down transmitters for man-down issues or hold-up notification. System will monitor and track movement within the casino property

## 3.4 Management Concerns

Management considerations are virtually limitless. These concerns will vary significantly from market to market. However, there is an inherent liability that organizations assume by not providing proper security for their employees, customers, residents and patients.

### 3.4.1 Security Concerns

- Security for employees, customers, patients and residents

### 3.4.2 Safety Concerns

- Safety for employees, customers, patients and residents

### 3.4.3 Asset Protection

- Shrinkage, theft, tracking of valuable assets, searching for lost or misplaced inventory, knowing where assets are located on the premises at any given time

### 3.4.4 Man-Down

- The need to know when an employee, guard or attendant is down for whatever reason and that help is on the way
- The need to know where this person is located on the premise

### 3.4.5 Robbery-Assaults

- The need to know when a person is in jeopardy, where that person is and to be able to dispatch assistance in a timely fashion
- To have a product that would act as a deterrent to theft, robbery or assault activities

### 3.4.6 Liability

- To be able to provide a system in a cost effect manner that would also protect the company and its employees from liability claims.

### 3.4.7 Patient/Resident Fall-Down

- Concerns with residents falling and not being able to summon help. This could be anything from residents in a senior care facility to guards making rounds.

### 3.4.8 Expansion/Upgrade Options & Product Longevity

- Will this system expand as my facility grows?
- Are new transmitters and software features being developed to stay current with the times?

### 3.4.9 Recurring Revenue

- Is there an opportunity to generate recurring revenue through issuance of the transmitters to students, faculty or anyone else wanting to have this additional protection?

### 3.4.10 Transaction History & Reports

- Does the system provide detailed history of activities?
- Am I able to customize the management reports to extract only the information I need?

### 3.4.11 Simplified Operation

- Are my people going to need to go through extensive training to understand the software operation?

- Can the system function in an unattended mode or must there be someone at the terminal at all times?

### 3.4.12 Integration

- Can this system be integrated with a paging or camera system?

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## 4 Rep Review Questions

- What is Security Escort?
  - A system that can be networked
  - A system that can be easily expanded
  - A system primarily intended for campus-like environments
  - An asset and personnel tracking system
  - All of the above
- Which of the following is not a transmitter function with Security Escort?
  - Transmitter able to send signal when someone falls down
  - Transmitter battery supervision
  - Transmitter testing with visual option
  - None of the above
- Does Security Escort provide information as to which floor a person is located on when the transmitter has been activated?
  - Yes
  - No
- How does Security Escort locate a transmitter so it can be displayed at the Security Escort terminal?
  - It locks onto the closest receiver and then you know what area to search.
  - It uses GPS (Global Positioning System) and then plots the coordinates on the computer graphics
  - It triangulates off three or more receivers to give a more accurate location including floor-to-floor.
  - It doesn't. Security Escort sends signals, via a fixed transmitter, that is assigned to a room or area. This transmitter can then be assigned to a specific person or thing.
  - None of the above.
- Security Escort is able to track alarm signals, plot them on a graphics display on the Security Escort terminal and update the alarm signal location every 7 seconds.
  - True
  - False
- When the Security Escort terminal/console receives an alarm signal, the system software displays the following information:
  - Photo of person assigned to the transmitter
  - Critical medical history
  - Nature of the alarm, for example, Hold-up, panic, man-down, fall-down etc...
  - All of the above
  - None of the above
- Security Escort, by Bosch Security Systems, can be integrated with various paging networks and CCTV camera systems.
  - True
  - False
- Security Escort system can track and locate various transmitters without first requiring an alarm condition.
  - True
  - False
- Which of the following is true? Choose all that are correct.
  - Security Escort is an asset and personnel tracking system that will graphically display and locate alarm signals and updates transmitter locations every 7 seconds.
  - Security Escort does not locate or track alarm signals but can graphically display the location of the alarm if that transmitter is assigned to a specific receiver.
  - Security Escort software is Windows based and uses multiple password-protected security levels to control program access.
  - Each receiver, transponder and output device is polled at least 10 times per second to ensure it is still able to communicate to the central console.
- What is the maximum number of receivers that can be connected to a transponder?
  - 15
  - 25
  - 64
  - 128
- What is the maximum number of transponders that can be connected to the central console?
  - 64
  - 255
  - 355
  - 125

## 4.1 Answers

1. E
2. D
3. A
4. C
5. A
6. D
7. A
8. A
9. A and C
10. C
11. B

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