



A Guide to assist you in estimating, installing, operating and maintaining Security Escort Systems

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What is Security Escort?

- Unique multiple user help call and asset tracking system
- Identifies user information and location, by floor, above or below ground
- Small, easy to carry transmitters
- Indoor/outdoor protection for 60,000+ users and assets as well as multiple buildings
- Man-down alarm, officer tracking & guard tour
- Post-alarm tracking and alarm map recall
- System capabilities perfect for campus and community environments

Emphasis on Reliability

- Supported by a multi million dollar company
- Extensive field testing under maximum abuse conditions, from -20°F to +120°F
- Supervised system communication
- Low battery user *and* system operator notification
- Archived retrieval of system activity
- Patented technology
- Post alarm transmitter tracking
- System-wide backup power feature

System Applications

- Student Safety
- Officer Tracking
- Guard Tour
- Employee/Faculty Security
- VIP Protection
- Executive Protection
- Man-Down
- Asset Tracking

Some Example Installations

Educational Facilities:

- Florida Southern, FL
- Oswego State, NY
- Nazareth College, NY

Healthcare Facilities:

- New Hanover Medical Center, NC
- Provo Psychiatric Hospital, Utah
- Fairport Retirement Home, NY

Correctional Facilities:

- Westchester County D.O.C., Valhalla, NY
- Immigration & Naturalization Facility, TX
- US Naval Brig, SC

Other:

- Diamond Mines, South Africa
- Amusement Park, FL
- International Art Museum, NY

Other Escort Applications

- Hotels & Casinos
- Amusement Parks
- Commercial Complexes
 - Buildings
 - Parking Lots/Garages
- Museums
- Financial Institutions
- Child Care Facilities

Escort Features

The Security Escort System is engineered to provide reliability and user ease of operation. Our patented feature set allows for customization and integration in any installation. These features ensure system integrity and the comfort that when assistance is needed, help is just a click away.

User Self Test

- Assures you that your transmitter is working
- Battery condition sent with every transmission
- Each test verifies system integrity
- Logs each test performed for easy access and reporting
- Can be performed indoors and outdoors
- Ensures user acceptance and peace of mind

Asset Tracking

- Location of assets
- Protection against removal
- Wireless sensing
- No re-cabling for asset relocation
- Auto tracking and location identification

Fixed Point Identification

- Allows for identification of any fixed point
- Simple system integration
- Expands over all system capability and functionality

System Components Description

The Security Escort System consists of five basic components: Transmitters, Receivers, Alert Units, Transponders, and the Central Console.

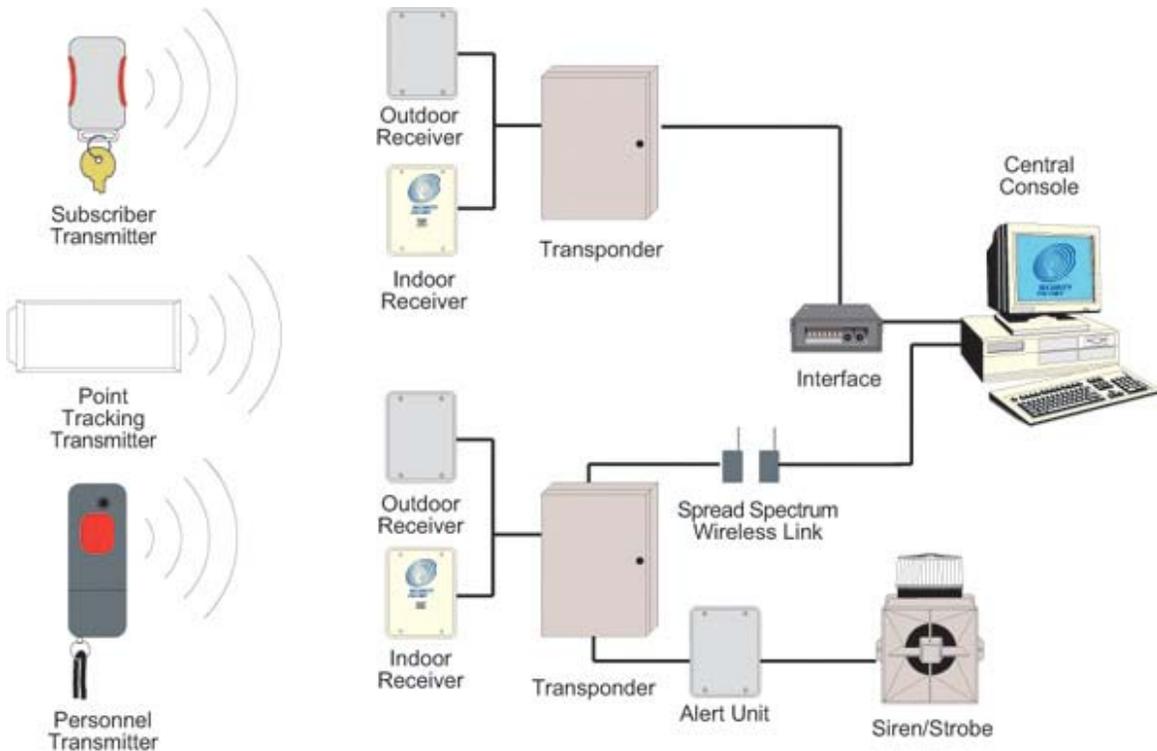


Figure 1: System Block Diagram

The **Transmitter** is a miniature, hand-held radio Transmitter used to transmit either a distress or a test signal. The **Receivers** are located throughout the protected area and detect the radio transmissions from Transmitters. **Alert Units** are Siren/Strobe units activated in the event of an alarm. **Transponders** are devices that control groups of Receivers and Alert Units, connected to them by wire. Each Transponder relays alarm and test signals from its Receivers to the Central Console. In addition, the Transponder tests for device and wiring faults, and transmits problem conditions to the Central Console. The **Central Console** consists of a computer (plus an optional backup and up to 8 optional workstations) which receives alarm and trouble signals from the Transponders, analyzes the signals, activates Strobes and Sirens on the Alert Units, and produces a display for the Security Dispatcher. Each of these system elements is described more fully in the sections that follow.

Compatible Parts

The following table indicates the parts available for inclusion in a Security Escort System. Contact Bosch Security Systems Customer Service for up-to-date model numbers.

Part Name	Description
Electronics, Components	
EA500	Electronics for eight-bus Transponder
EA102	Electronics for indoor or outdoor Receiver
EA120	Electronics for indoor and outdoor Alert Unit
SE485	Interface between Transponder and Central Console
SE3 Transmitters	Personal Duress Transmitter
SE2 Transmitters	Man-down, lanyard, supervisory, and duress Transmitter
SE3401	Point tracking Transmitter
SE88	Personal Watch/Pendant Transmitter
SEFD1	Fall Down Transmitter
Enclosures and Housings	
AE3	Large (51.5 cm x 37.5 cm [20.25 in. x 14.75 in.]) Enclosure
AE1	Small (36.8 cm x 31.8 cm [14.5 in. x 12.5 in.]) Enclosure
AE100	Indoor Receiver Enclosure
AE101	Outdoor Receiver Enclosure
Cables	
C311	3 or 7 Ah battery harness parallel expansion kit
C312	Cables for Transponder to ProxLink Radio Module
Software	
SE2005	System software for up to 500 users
SE2010	System software for up to 1,000 users
SE2050	System software for up to 5,000 users
SE2100	System software for up to 10,000 users
Misc. Parts and Accessories	
HOLST-LGB-SE2	Leather holster for SE2 Transmitters, large belt loop (5.7 cm [2.25 in.])
HOLSTER-SE2	Leather holster for SE2 Transmitters, standard belt loop (4.5 cm [1.75 in.])
E28666B	Security hex driver for Receivers
TR1850	Transformer
P335-10	SE2 Replacement Batteries, 10 pack of CR2, 3 VDC Lithium
E28629B	3 Ah 12 V battery for outdoor Alert Unit
P334	7 Ah 12 V battery for indoor Alert Unit
D1218	17 Ah 12 V Battery
SE112	Portable Test Receiver with display
CTS1-70	Enclosure Cover/Wall Tamper for AE1 and AE3

System Components/Specifications

Central Console

Description

The Central Console consists of one or two IBM PC compatible computers (and up to 8 additional workstations) running the Security Escort software within the Microsoft Windows environment. One computer serves as the master controller for the entire Security Escort system and the second slave computer serves as a back-up. The slave computer can be used for administrative functions such as adding subscribers or performing routine system tests without interfering with the operation of the main computer. The workstations can perform all normal Security Escort functions with the exception of communicating with the Escort transponders.

Software Overview

The Central Console contains all of the operating software and all of the databases required by the Security Escort System. The installation and maintenance portion of the Security Escort Software is designed to facilitate set-up and modification of the system and to provide rapid diagnosis of system problems, usually with only one person being required. The System Software also continually monitors the status of each Transponder to ensure it is functioning correctly.

Versions

There are several versions of the software available. The number of users the system will support defines each version. The following table lists the available models and the number of supported users:

Model	User Base
SE2005	500
SE2010	1,000
SE2050	5,000
SE2100	10,000

NOTE: For systems supporting more than 10,000 users contact Bosch Security Systems Sales.

Minimum System Requirements

As a minimum, each computer in the Central Console should be equipped with the following features and components:

- **Processor:** Pentium class processor or better, 200 MHz or faster.
- **Operating system:** Microsoft Windows 95[®], Windows 98[®], Windows NT[®] (4.0 or later) or Windows 2000[®].
- **RAM:** 16 Megabytes of RAM minimum, 32 Megabytes preferred, in Windows 95 or Windows 98. Windows NT or Windows 2000 systems should have 64 Megabytes of RAM.
- **Hard disk space:** 1 Gigabyte of Hard Disk Space should be available to allow collection of historical data.
- **Backup:** External backup drive, such as an Iomega or SyQuest Cartridge Hard Disk for backup and history storage.
- **Video:** VGA (640x480) at 256 colors minimum, 800x600 High color (16 bits) recommended, 1024x768 High color supported. True color (24 bits) is also supported. If displaying subscriber images, High color (16 bits) or True color (24 bits) should be used.
- **Modem:** Optional V.32bis (14.4), V.34 (33.8), or V.90 (56.6) modem for remote access and pager dial-out. If modem is external an additional serial port is required.
- **Sound:** Any Windows compatible sound system. One set of computer speakers per computer.
- **Printer:** Parallel port dot matrix continuous forms printer for alarm output.

Other Specifications

- **Temperature range:** +32°F to +105°F (0°C to +40°C)
- **Primary power:** 120 VAC 900 Watts (two computers, two monitors and one printer).
- **Backup power:** 1200 VA UPS per computer will provide 45 minutes to one hour backup. System should also be backed up by an emergency generator for extended blackouts (can be shared with other emergency equipment).
- **Pager:** Pager support is included and selected troubles can be automatically sent to a service pager.

SE3 Subscriber Transmitter

Features

- 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.



Description

The SE3 Subscriber Transmitter contains a unique code which is associated with the subscriber at the time the Transmitter is assigned. When the subscriber generates an alarm, this code is sent to the Central Console. The Central Console graphically displays the subscriber's location on a map along with the subscriber's picture, his or her name, and address.

Transmitting an Alarm

In the event of an emergency, the user simply presses and holds the alarm buttons to produce an alarm. Depending on the installed options, when an alarm is generated within approximately two seconds, the sounders in any nearby Receivers will be activated as well as the Strobes and Sirens connected to nearby Alert Units. The alarm signal is transmitted to the Receivers which in turn relay the alarm signal to the Transponder and along to the Central Console. The Central Console then graphically displays the subscriber's location along with the subscriber's name, vital information (such as a medical condition or disability) and a picture of the subscriber. Also, once an alarm is initiated, the Transmitter commences its Auto-Tracking feature.

Auto-Tracking

During an alarm, the Transmitter automatically resends the alarm signal every few seconds, constantly updating the Central Console of the subscriber's location.

Testing

The Test Mode allows a subscriber to test their Transmitter anywhere in the protected area. When the user is indoors in sight of an Indoor Receiver, or outdoors in sight of a Strobe, pressing the buttons in sequence performs a test. If the test is successful, a small green light will flash on the Indoor Receiver, or the Strobe will flash briefly. There will be no response at all if the test fails. If the test fails, the user should contact the Security Office as soon as possible. Every successful test is recorded in the Subscriber Database in the Central Console Software and optionally printed on the hardcopy printer. The Subscriber Database contains all of the information relating to each subscriber, including the date and time of the most recent test transmission. It is possible to search the Subscriber Database for individuals who have not performed tests for a specified period of time.

Low Battery Reporting

When the Transmitter is tested, a special "low battery" message is included in the transmission to the Central Console if the Transmitter's battery is in need of replacing. Also, the system will not give a visual or audible response during a test, indicating that the Transmitter requires service. Low battery alerts are logged at the Central Console.

Available Models

There are two SE3 models available:

- User Transmitter: This is the standard Transmitter used by all system subscribers.
Security Transmitter: This is the same as the standard Transmitter except the Transmitter does not emit an audible tone when activated. This Transmitter is normally distributed to Security Personnel.

SE2 Personnel Transmitter

Features:

- Personal 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.



Description

The SE2 Personnel Transmitter contains a unique code which is associated with the user at the time the Transmitter is assigned. When the user generates an alarm, this code is sent to the Central Console. The Central Console graphically displays the user's location on a map along with the user's picture, and his or her name, and any other necessary information.

Transmitting an Alarm

There are three ways in which an alarm may be generated, depending on the features enabled on the Transmitter. The types of alarms are as follows:

- **Manual Duress Alarm:** An alarm can be initiated by pressing the large button on the Transmitter.
- **Man-Down Alarm:** The Transmitter will transmit an alarm to the Central Console if it is tipped 60° from upright.
- **Lanyard Pull:** A cord connected to the pin inserted in the base of the Transmitter can be looped around a utility belt and if the pin is removed from the Transmitter (such as when the Transmitter is pulled away from the belt) the Transmitter will immediately go into alarm.

Auto-Tracking Feature

During an alarm, the Transmitter automatically resends the alarm signal every few seconds constantly updating the Central Console of the user's location.

Supervision Tracking

With Supervision Tracking enabled, the Transmitter will send a tracking signal to the Central Console constantly updating the user's location.

Testing

The Test Mode allows a user to test their Transmitter anywhere in the protected area. When the user is indoors, in sight of an Indoor Receiver, or outdoors, in sight of a Strobe, pressing the manual test button performs a test. If the test is successful, a small green light will flash on the indoor Receiver, or the Strobe will flash briefly. There will be no response at all if the test fails. If the test fails, the user should contact the Security Office as soon as possible. When the Transmitter is tested, a special "low battery" message is included in the transmission to Central Console if the Transmitter's battery is in need of replacing. Every successful test is recorded in the Subscriber Database in the Central Console Software and optionally printed on the hardcopy printer. The Subscriber Database contains all of the information relating to each subscriber, including the date and time of the most recent test transmission. It is possible to search the Subscriber Database for individuals who have not performed tests for a specified period of time.

SE3401 Asset Tracking Transmitter

Features

- Alerts Central Console of Transmitter's ID and location immediately on alarm.
- Available post-alarm tracking, alarm map recall, and more.
- Internal antenna.
- Two-year battery life.
- Can be mounted virtually anywhere on virtually anything.
- Low battery indication at Central Console.
- Includes mounting plate.



Description

The SE3401 Point Tracking Transmitter contains a unique code which is associated with an asset at the time the Transmitter is assigned. When an alarm is generated, this code is sent to the Central Console, which graphically displays the asset's location on a map along with a picture of the asset and any other necessary information.

Installation

The SE3401 can be configured to monitor magnetic or dry external contacts. When mounted with an external magnet, the SE3401 is mounted on the asset and the magnet is mounted on an opposite surface (such as a wall). When mounted with external contacts, the SE3401 can be mounted anywhere on the asset and connects to the contact by two wires connected to the terminals inside the Transmitter and an end-of-line resistor.

Transmitting an Alarm

Depending on the installed options, when an alarm is generated within approximately two seconds, the sounders in any nearby Receivers could be activated as well as the Strobes and Sirens connected to nearby Alert Units. The alarm signal is transmitted to the Receivers which in turn relay the alarm signal to the Transponder and along to the Central Console. The Central Console graphically displays the Transmitter's location along with the asset's description and a picture of the asset. Also, once an alarm is initiated, the Transmitter commences its Auto-Tracking feature.

Auto Tracking Feature

Once an alarm has been initiated (such as when the Transmitter has been moved away from the magnet) the Auto-Tracking feature will begin. The Transmitter will send a signal back to the Central Console every few seconds updating its location for several minutes. To reset the Transmitter after an alarm has been initiated, all device conditions (e.g., tamper, loop, magnet) must be reset to normal.

Supervision Feature

The SE3401 Point Tracking Transmitter can also be configured to transmit periodically when there is no other activity to report its status and location to the Central Console.

Low Battery Reporting

When the Transmitter is tested, a special "low battery" message is included in the transmission to the Central Console if the Transmitter's battery is in need of replacing. These low battery alerts are logged at the Central Console.

RF3401 Asset Tracking Transmitter

Features

- Supervised Sensor Loop (monitors any dry contact device)
- Internal Reed Switch (used with magnet)
- Supervisory Signal Every 65 Minutes
- Complete Status, including Battery and Tamper Sent with Every Transmission
- Compatible with all DS RF-Tech™ Receivers @304 MHz
- Factory Programmed Transmitter ID for Quick and Simple Transmitter Enrollment
- Installer (or user) Replaceable Lithium Battery
- Quick Install Mounting Base Plate Included
- Cover Tamper



Description

The RF3401 Point Transmitter features a supervised sensor loop and a magnetic reed switch. Use the supervised sensor loop to monitor any device with a dry contact output. When used with an external magnet assembly the RF3401 reed switch allows for quick and easy installation on doors and windows.

SE88 Panic Transmitter

Features

- Can be worn like a watch, pendant or mounted to a permanent location
- Once activated, sends immediate notification of wearer's identity and location
- Water resistant



Description

The SE88 Security Escort Watch/Pendant Panic Transmitter is designed to work with the Security Escort System. Once activated, the wearer's identity and location is sent to the security office. The SE88 may be worn like a watch, around the neck like a pendant or even mounted to a stationary location with a mounting bracket (optional accessories, please order separately). It is ideal for use in elder care or assisted living facilities where immediate emergency notification is required.

Transmitting an Alarm

- In the event of an emergency, the user simply presses and holds the alarm buttons to produce an alarm. Transmittal will vary with different options. Generally, within two seconds of an alarm being generated, sounders in Receivers and Strobes or Sirens connected to Alert Units will activate.
- The alarm signal transmits to the Receivers. The Receivers relay the alarm signal to the Transponder and to the Central Console.
- The Central Console displays the user's location, picture, name, and vital information (such as a medical condition or disability).

Auto-Tracking Feature

- During an alarm, the Transmitter automatically resends the alarm signal every few seconds constantly updating the Central Console of the user's location.

Testing

- The Test Mode allows a user to test his or her Transmitter anywhere in the protected area. When the user is indoors in sight of an Indoor Receiver, or outdoors in sight of a Strobe, pressing the buttons in sequence performs a test. If the test is successful, a small green light will flash on the indoor Receiver, or the Strobe will flash briefly. There will be no response at all if the test fails. If the test fails, the user should contact the Security Office as soon as possible.
- Every successful test is recorded in the Subscriber Database in the Central Console Software and optionally printed on the hardcopy printer. The Subscriber Database contains all of the information relating to each subscriber, including the date and time of the most recent test transmission. It is possible to search the Subscriber Database for individuals who have not performed tests for a specified period of time.

Low Battery Reporting

- When the Transmitter is tested, a special “low battery” message is included in the transmission to Central Console if the Transmitter’s battery is in need of replacing. Also, the system will not give a visual or audible response during a test, indicating that the Transmitter requires service. Low battery alerts are logged at the Central Console.

SEFD1 Transmitter

Calls for Help Even When You Cannot

The SEFD1 Fall Detector and Personal Help Button provides assistance that no other personal Help Button can offer. The device alerts your emergency monitoring service *automatically* when it detects a fall, even if you are unable to push the Help Button on the device.

The SEFD1 is designed to work in and immediately around your home or facility. The device must be close enough to a receiver for a help signal to be received. The coverage area of the device will vary from one location to another. It is important for you to know the effective range of your device.

The SEFD1 is designed to detect falls that meet certain criteria. It may not detect every fall, especially slight falls that are generally not disabling. The SEFD1 Fall Detector device may also generate a fall alarm when you have not fallen. For example, if the device drops on the floor, it may alert the monitoring center that you have fallen.



Operation

The SEFD1 device transmits three conditions:

- Push Button (Help Button)
- Fall
- Low Battery

Component Descriptions – Receivers

EA102 Receiver

Features

- 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.



Description

The Receivers are located throughout the protected area, including building interiors.

Each Receiver contains a radio receiver to detect the transmissions from Transmitters, and a microcomputer to decode and interpret the received test and alarm messages. In addition, the microcomputer monitors tampering and other problems, and reports such conditions to the Transponder.

Each Receiver contains an internal self-contained sounder. These sounders are optionally activated if the Receiver has detected an alarm transmission.

Indoor Receivers are typically mounted on inside walls and are housed in small beige, rectangular units. Indoor Receivers have one red and one green light. The green light is used to indicate a successful test of a Transmitter; the red light is only illuminated during certain system tests and during alarms.

Outdoor Receivers are contained in small weatherproof enclosures typically mounted on the sides of buildings and on light posts. Outdoor Receivers do not have the visible red and green LED's. Outdoors, the strobe lights connected to the Alert Units flash to acknowledge a successful test.

Function During an Alarm

In the event of an alarm, the Receivers detect an alarm signal from a Transmitter and send this information to the Transponder. The Transponder forwards this information the Central Console where, using the reported information from all the Receivers that detected the signal, the location of the transmission is graphically displayed on the Alarm Map.

Buddy Check

In addition to its radio receiver, each Receiver also contains a transmitter functionally similar to the hand held Transmitters. This transmitter can be commanded by the Central Console to transmit a test message to other nearby Receivers. This Buddy Checking is performed periodically to verify that the Receivers are functioning satisfactorily. Results of the Buddy Check are compared with the results of earlier Buddy Checks, and any changes in a Receiver's sensitivity are reported to the Central Console where this information is stored in a system database.

Component Descriptions – EA500 Transponder

Features

- Relays alarm and test signals from the Receiver to the Central Console.
- Can support a combined total of 64 Receivers and Alert Units.
- AC powered with battery backup for all Receivers.
- Can provide power to SE485 Interface and/or Spread Spectrum 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.



Description

The Transponder is a device controller for up to 64 devices -- any combination of Receivers and Alert Units. Its primary function is to monitor the Receivers and Alert Units and report conditions and events to the Central Console via either wire or ProxLink radios. It also provides power output to certain devices.

Installation

The Transponder can be mounted in one of two different sized enclosures. It is always mounted indoors. The devices are connected to the Transponder by means of eight four-wire Multiplex Busses, two wires for power and two wires for data. Each bus is capable of supporting up to eight devices. A Security Escort System supports up to 255 Transponders.

Configuration

Each Receiver and Alert Unit is identified to its Transponder by a Multiplex Address which is set during system installation using a multi-position switch on the Receiver or Alert Unit circuit board. Transponders communicate on the data bus with individual Multiplex devices by issuing commands, which contain the Receiver or Alert Unit's Multiplex Address.

Setup and Testing

Each Transponder and the devices connected to it are set up and can be tested remotely from the Central Console. Also, each Transponder reports any problems, such as low battery, immediately upon detecting them.

Function During an Alarm

When a Receiver or Alert Unit detects an alarm, it goes into an "Off Normal" state. To quickly locate any devices which might be in the "Off Normal" state, the Transponder issues global commands (which are interpreted simultaneously by all of its devices) approximately 10 times per second. These global commands are followed by commands to specific devices to determine the nature of the "Off Normal" condition and, in the case of an alarm (or test), to obtain the Transmitter Identification Number, Transmitter battery condition, and received signal strength. This information is then sent to the Central Console, by either wire or through ProxLink radios, where it is used to graphically display the identity of the subscriber transmitting the alarm and to determine the subscriber's location.

Component Descriptions – EA120 Alert Unit

Features

- 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.



Description

An Alert Unit is a control module that communicates with the Transponder on the MUX Bus. In most installations, it is used to activate Siren/Strobe units or other switched devices in the event of an alarm. The Alert Unit also reports tampering, AC power loss, and backup battery level to the Transponder.

Installation

The Alert Unit may be housed in either a metal indoor enclosure or an outdoor enclosure (similar to the Outdoor Receiver enclosure), depending on the application. The Strobe/Siren units are always mounted in outdoor locations.

Function

The Alert Unit has backup battery power in addition to AC power. The Alert Unit Driver contains a microprocessor that communicates with the Transponder for Strobe and Siren commands, status reports, and trouble indications. The troubles monitored are "Tamper," "Loss of AC Power," and "Low Battery."

Test Acknowledgment

In addition to the function of attracting attention in the event of an emergency, the Strobe unit is used to acknowledge a successful test of a Transmitter. The Alert Unit can be configured to cause a Siren to emit a short tone and the strobe to flash for a successful Transmitter test.

Function During an Alarm

In the event of an alarm, the Alert Unit receives a signal from the Transponder and begins powering the Siren/Strobe (or other switched device). The Siren/Strobe will be active until the alarm is restored at the Central Console.



Equipment Estimation, Location Accuracy and Receiver Location

General

A Security Escort system installation consists of three major steps. The pre-bid equipment estimation, the pre-construction coverage verification survey, and the post construction setup. The Security Escort Receivers work effectively in a wide variety of installations and can be placed with confidence provided these installation requirements are met. Therefore, at the pre-bid stage, it is acceptable to estimate the required equipment. To ensure proper coverage after proposal acceptance, potential Receiver locations can be verified using a standard Receiver in test mode or the portable test Receiver before construction begins.

Location Accuracy

The Security Escort system is intended to provide quick response to a duress call. Its intent is to dispatch a responding individual to an area that will not add additional delay to their response to that duress call.

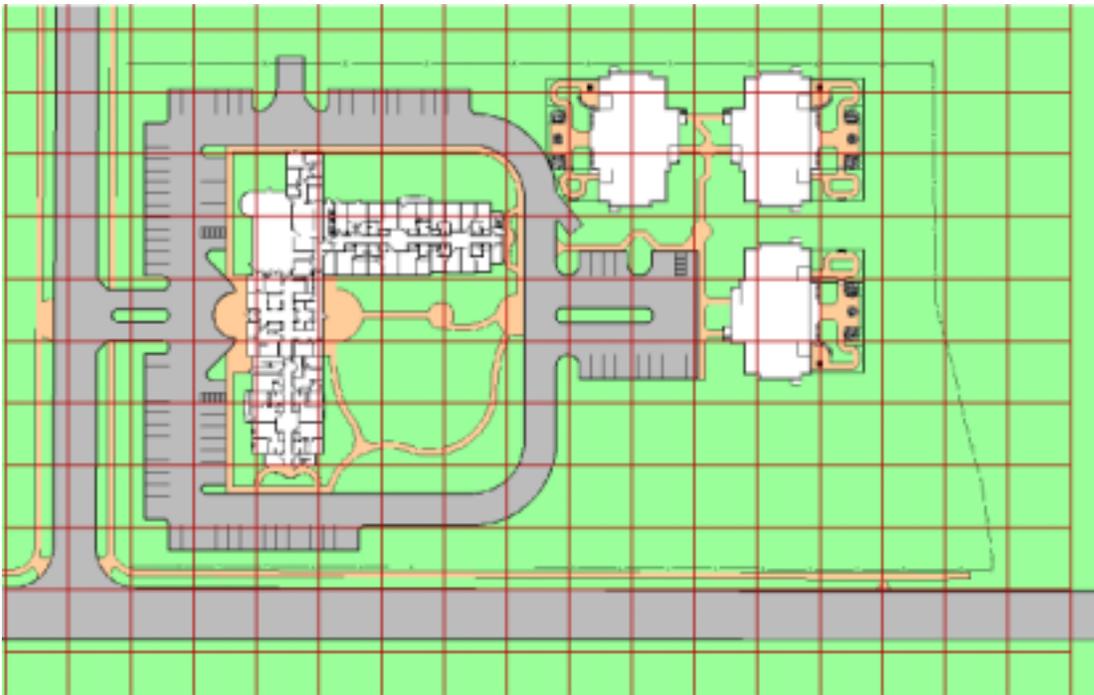


Figure 1a: System Block Diagram

The Security Escort system uses radio frequency (RF) for alarm transmissions. This is a significant positive because it prevents normal construction from blocking the signal and helps to eliminate dead spots where the alarm could not be heard. The fact that RF energy passes through normal construction also prevents Security Escort from locating an alarm with 100% certainty to a specific side of a wall. Alarms originating at or near building walls will typically be indicated within 25 ft. (7.5 m) of the actual location, however there may be times when the computed location may appear to be on the other side of the wall.

Security Escort system was designed to provide a computed alarm location typically within 25 ft. (7.5 m) of the actual location when indoors and a computed alarm location typically within 50 ft. (15 m) of the actual location outdoors. Any deviation from the following installation guidelines will degrade the computed location accuracy. Therefore to achieve accuracy the following installation guidelines must be adhered to:

Pre-Bid Equipment Estimation

The pre-bid equipment estimation is performed prior to bidding the installation. At this point, it must be determined what type of coverage is desired, and where the coverage will be required. For example, the amount of equipment required for a full-coverage (indoor and outdoor) system in a multi-building application will be

greater than an installation that requires outdoor only coverage. The customer should be consulted and the areas of most concern should be given special consideration.

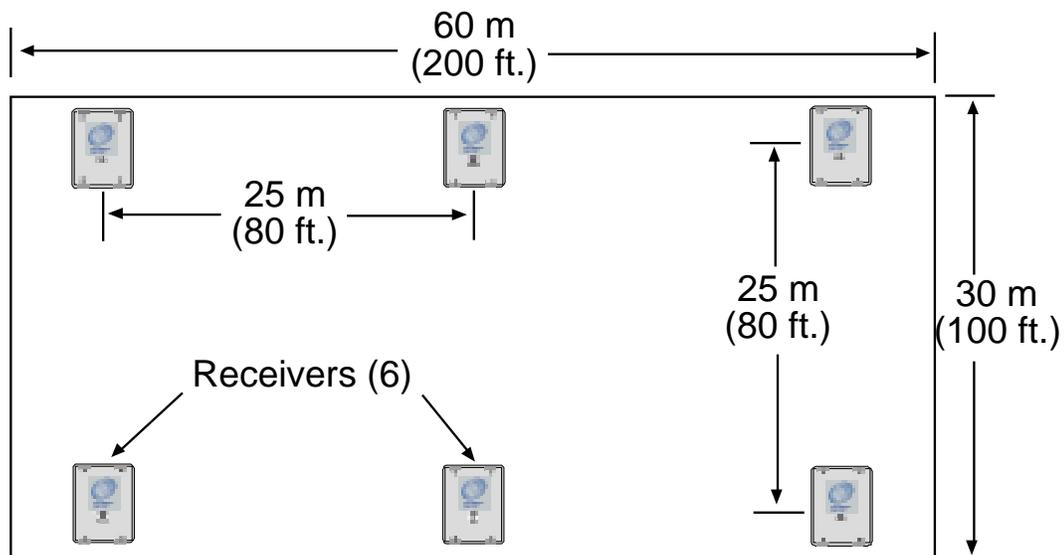
Initial Equipment Estimate

Number of Indoor Receivers

To estimate the number of indoor Receivers, assume the receivers will be placed on a grid with a maximum spacing of 80 ft. (25 m) between Receivers for standard construction. In multi-floor applications the Receivers on each floor must be placed directly above the Receivers on the floor below (this is required for proper floor-to-floor location).

For example, to determine the number of Receivers required to protect a building of standard construction of 60 m (200 ft.) by 30 m (100 ft.) and four floors:

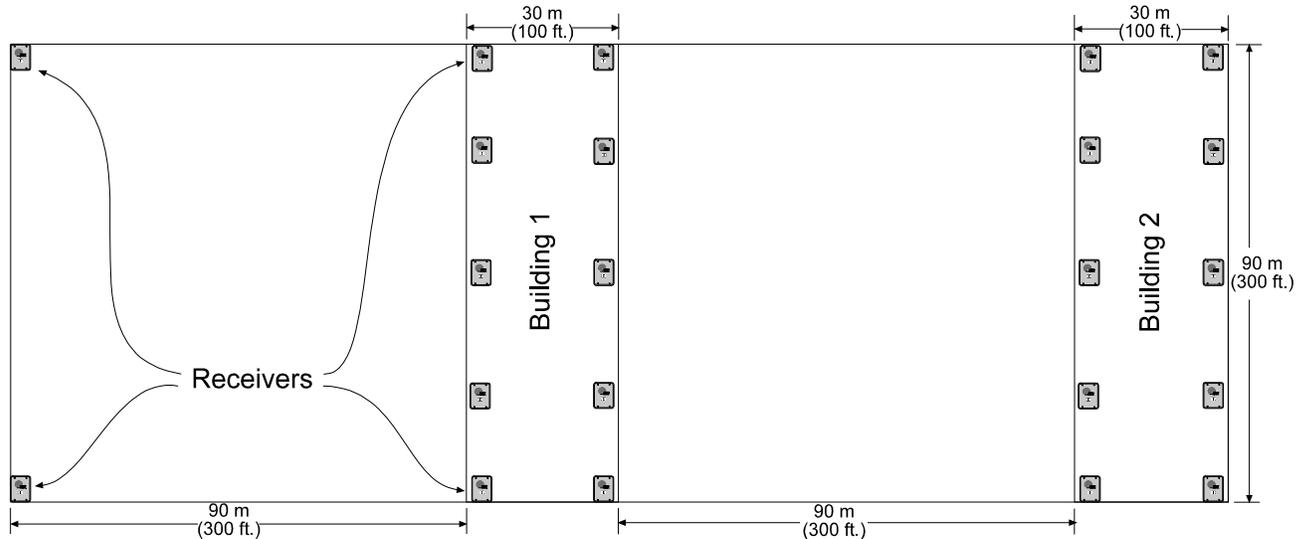
1. To determine the number of Receivers in each direction, divide each dimension of the building by 25 m (80 ft.) and drop the remainder and add 1.
($60\text{ m}/25\text{ m} = 2.4$ becomes 2 add 1 = **3** and $30\text{ m}/25\text{ m} = 1.2$ becomes 1 add 1 = **2**) or
($200\text{ ft.}/80\text{ ft.} = 2.5$ becomes 2 add 1 = **3** and $100\text{ ft.}/80\text{ ft.} = 1.25$ becomes 1 add 1 = **2**)
2. To determine the number of Receivers required per floor, multiply the number of Receivers in one direction by the number of Receivers in the other direction.
($3 \times 2 = 6$) 6 Receivers per floor.
3. To determine the total number of Receivers, multiply the number of Receivers per floor by the number of floors.
($6 \times 4 = 24$) 24 Receivers for the building.



Each floor would require 6 Receivers, resulting in a total of 24 Receivers to protect this building.

For the best location accuracy consistent Receiver spacing is important. Do not place Receivers significantly closer in one section of a building than another section.

Number of Outdoor Receivers



To estimate the number of Receivers, assume a maximum Receiver spacing of 90 m (300 ft.) between Receivers, in both directions, for Receivers that are not within 30 m (100 ft.) of a building with inside coverage. Receivers within 30 m (100 ft.) of a building should be spaced at the spacing of Receivers in the building (spacing the outside Receivers at a somewhat larger spacing is acceptable in most cases).

An outside area directly between two buildings with inside protection will need no additional Receivers if the buildings are 90 m (300 ft.) or less apart. If the buildings are more than 90 m (300 ft.) apart the outside Receivers should be placed evenly spaced between the buildings. Make sure the standard 90 m (300 ft.) spacing is not exceeded. For spacing outside adjacent to a covered building, start the 90 m (300 ft.) spacing at the building wall.

Allowance for Special Coverage Requirements

For purposes of the bid, the number of Receivers estimated above should be raised by 5% to allow for special coverage considerations and RF problem areas.

Number of Transponders

Assume one Transponder per building for indoor installations. If wiring can be run from other buildings or from outdoor Receivers, they may be connected to one Transponder but never exceed the total number of 64 devices (Receivers and Alert Units) per Transponder. All outside wiring must be under ground or in metal conduit.

Number of Receiver and Alert Units Per Multiplex Bus

Although each bus can handle 8 Receivers and Alert Units it is a good idea to leave some addresses available on each bus to allow for future expansion.

Multiplex Bus Wire

The multiplex bus should be wired with 4 conductor 18 gauge (1.2 mm) wire. The wire should not be paired or shielded. In the United States this is the same as fire system wire, except it should not be red.

Number of Alert Units

The number of Alert Units will be determined by each system's requirements. In general, enough Alert Units should be installed to be heard and seen from all outdoor locations of protection. Remember that even in a silent system, Alert Units can be used outside to provide test feedback. Horn/Strobe units should be mounted in predictable locations to make them easy to identify by subscribers. Alert Units are not required indoors because the indoor Receiver provides alarm and test feedback. Each Transponder will drive one siren and one strobe if they are less than 15 m (50 ft.) from the Transponder.

It is a good idea for each protected parking lot to have a siren/strobe near it.

Pre-Construction Coverage Verification Survey

The pre-construction coverage verification survey is performed after the bid has been accepted and before construction begins. It is done to determine the location of each Receiver. Each Receiver location should be checked using a standard Receiver in the test mode.

Verify Each Potential Receiver Location

Using a Standard Receiver in Receiver Spacing Mode

Receiver Spacing Mode is enabled with Jumper P5 in place (Jumper P4 removed) on a standard Receiver (see the EA102 Receiver Installation Instructions). This mode is exactly the same as the Test Mode above, except that only transmissions with an adequate receive margin are sounded. This indicates the maximum acceptable spacing of Receivers. Use the following procedure to test the spacing of Receivers:

- 1) Mount the first Receiver. Put jumpers P1, P2, P3, and P5 in place, remove all other jumpers. Power the Receiver from a 9 or 12 VDC source.
- 2) Take the second Receiver and a Transmitter a distance away from the first Receiver.
- 3) Activate the Transmitter.
- 4) If Receiver 1 sounds the test beep, Receiver 2 is within range. Repeat this test until Receiver 1 no longer sounds the test beeps. Move back to the last location where Receiver 1 received the test beeps. This location marks the maximum spacing between Receivers. The distance between receivers should not exceed 24 m (80 ft.) indoors and 91 m (300 ft.) outdoors. Mount Receiver 2 at this location or closer to Receiver 1.

NOTE: Do not use the Test Mode (Jumper P4) to determine Receiver spacing.

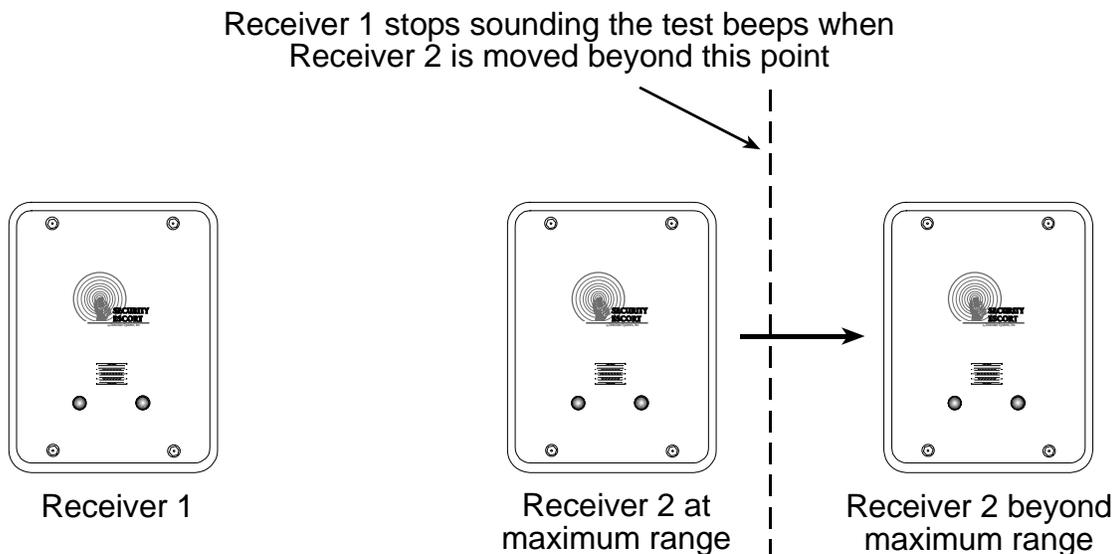


Figure 2: Receiver Spacing

Using a Standard Transponder, Receivers and Laptop Computer to Determine Receiver Location

NOTE: System Software and Area Map must be installed on Laptop Computer to use this method.

A standard Transponder with long multiplex wires connected to standard Receivers can be used to see actual alarm location before the Receivers are placed. Place the Receivers in the proposed locations wired back to the Transponder. Program the Receivers with their locations in the Transponder database. Using the maintenance Transmitter and the maintenance alarm database activate alarm transmissions within the area surrounded by the temporarily placed Receivers. Verify that the location accuracy is acceptable at all points of concern. If not acceptable move the Receivers, update the Receiver location in the Transponder database and retest. Do not test outside of the last Receiver in any direction, as this will give incorrect locations. Repeat this test in all areas of different construction and concern at the site.

Indoor Receiver Installation

- Indoor receivers must be mounted in a evenly spaced grid no more than 80 ft. apart.
- Indoor receivers must be mounted 1.5 to 1.8 m (5 to 6 ft.) above the floor. This is true even if this is a single story building. Do not mount receivers above the ceiling or in roof rafters.
- In multistory buildings the receivers must be mounted directly above the receivers on the floor below. The same number of receivers must be used on each floor level. If you meet all of the indoor installation guidelines, you can expect the computed location to indicate the correct floor about 95% of the time.
- Receivers must not be mounted within 30 cm (1 ft.) of any metal object, including wire mesh, metal foil, metal pipe and HVAC ducting in walls.
- Take care that large metal objects do not shield a receiver from a protected area. For example metal staircases, metal food serving lines, metal walls, lead lined walls, metal roofs, wire mesh in walls, walk-in freezers and refrigerators.

For the best indoor and outdoor location or an indoor only system.

- Mount the indoor receivers on the recommended 25 m (80 ft.) grid, with the last row of indoor receivers at the outside wall of the building. Do this even if the building is less than 25 m (80 ft.) wide or long.
- There should be a receiver at each of the outside corners of a building.

How to handle 2 protected buildings that share a common wall and have floor levels that don't match

- Ask the customer which building has areas of greater concern and favor the recommended mounting heights in that building.
- The recommended 80 ft. (25 m) maximum indoor spacing grid should be maintained throughout both buildings as if that wall in question was not there. Mounting heights only for those receivers at or near (within 6 m [20 ft.]) the wall in question should be affected; mounting heights for all other receivers in the buildings must follow the indoor recommendation. Mark the recommended mounting height for receivers on the higher floor level and also mark the recommended mounting height for receivers on the lower floor level. Mount the receiver at its normal grid location midway between these two heights, but not above the ceiling level of the lower floor.

Outdoor Receiver Installation

- Outdoor receivers must be mounted in a evenly spaced grid no more than 90 m (300 ft.) apart.
- Outdoor receivers must be mounted 3 m (10 ft.) above the ground.
- Receivers must not be mounted within 30 cm (1 ft.) of any metal object, including fences, metal walls and walls with wire mesh. If a receiver is mounted on a metal fence, that fence should be grounded (not floating or insulated from ground) and the receiver should be spaced 30 cm (1 ft.) from the fence and 3 m (10 ft.) above the ground.
- Take care that large metal objects do not shield a receiver from a protected area. For example; metal fences, metal staircases, metal buildings, power transformers and metal roofs.
- Receiver locations should be below building overhangs and eaves as these can shield the areas below them.
- Receivers should have a clear line of sight of the protected area. Therefore, take care where the ground is hilly or uneven, that there are no areas and low spots where several receivers can't hear the signal.

Transition Areas Between Indoor And Outdoor Areas

- An outside area directly between two buildings with complete indoor protection will need no additional Receivers between the buildings, if they are 90 m (300 ft.) or less apart.
- When protecting an outside area directly between two buildings with complete indoor protection and they are more than 90 m (300 ft.) apart; place a row of outside Receivers evenly spaced between the buildings. Make sure the receiver row does not exceed the standard 90 m (300 ft.) spacing from the buildings. The spacing between receivers in that row should be about the same as the spacing for the receivers in the buildings.
- Indoor receivers should be no more than 25 m (80 ft.) apart and outdoor receivers should be no more 90 m (300 ft.) apart. Both of these recommendations work well in their respective areas. However this means that where a building is adjacent to an outdoor area, that the building will have a greater density of receivers and therefore will have a tendency to pull the computed location towards it. To counteract the building tendency to pull the location consider the following special cases:
 - If the outdoor area adjacent to the building is wide open and the customer is not concerned about reduced location accuracy in this area, then nothing special needs to be done. Follow the normal indoor and outdoor recommendations.
 - The building is near the boundary of the protected area, with or without a fence at the boundary. The receivers in the building should be placed at the recommended 25 m (80 ft.) spacing. The receivers at the boundary of the protected area near the building should be spaced about the same as those in the building, approximating the same grid as used in the building.
 - The building is adjacent to a large protected outdoor area that extends for more than 90 m (300 ft.) from the building. The receivers in the building should be placed at the recommended 25 m (80 ft.) spacing. The receivers in the large protected outdoor area should be placed on the normal 90 m (300 ft.) grid except for the first row of receivers adjacent to the building. This first row of outdoor receivers in the transition area should "split the difference" between the indoor and outdoor spacing at about 60 m (200 ft.).

Boundary Areas at the Outer Edge of the Protected Area

- The system cannot locate an alarm past the last receiver at the boundary of the protected area. Therefore, the last row of receivers must be at or past the end of the protected area.

System Wiring

General Guidelines

After the site survey (and special pre-construction verifications) has been completed, the wiring may be run between the proposed locations of the system components and the Central Console. See specific installation instructions accompanying each component for wiring details. The following table indicates the specifications for the wiring:

Application		Diagram Reference	Gauge	Conductors	Maximum Distance	Notes
From	To					
Transponder	Transformer	1	#16 (1.5 mm)	2	15 m (50 ft.)	Standard lamp cord
	Alert Unit	2	#18 (1.2 mm)	4	3000 ft. (900 m) per bus	Solid, not twisted, not shielded
	Receiver	2	#18 (1.2 mm)	4	3000 ft. (900 m) per bus	Solid, not twisted, not shielded
	SE485	3	#24 (0.5 mm)	4 wire, 2 twisted pair		IMPORTANT! Must be twisted pair
	Siren/Strobe	4	#18 (1.2 mm)	4	50 ft. (15 m)	Solid, not twisted, not shielded
Alert Unit	Transformer	5	#16 (1.5 mm)	2	50 ft. (15 m)	Standard lamp cord
	Siren/Strobe	6	#18 (1.2 mm)	4	50 ft. (15 m)	Solid, not twisted, not shielded

Transponder - SE485 Wiring Table

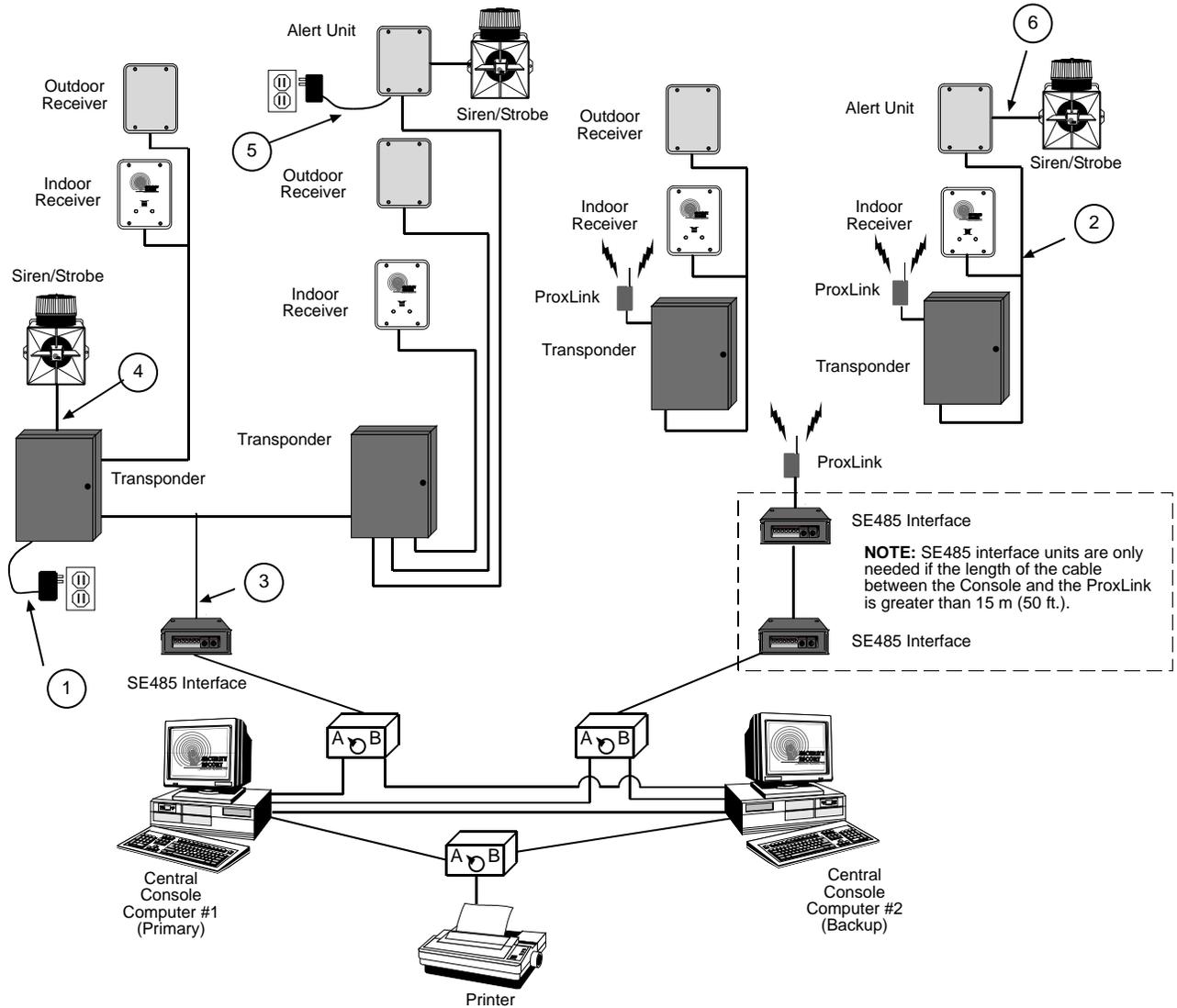
Number of Transponders	Maximum Wire Length
1 to 4	20,000 ft. (6100 m)
8	10,000 ft. (3050 m)
12	5,000 ft. (1525 m)
16	3,000 ft. (900 m)

Observe Established Standards

Install cable according to local code requirements. In USA refer to the National Electrical Code Standards, located in Chapter 8 Article 800 of the National Electrical Code, and applicable local and regional codes.

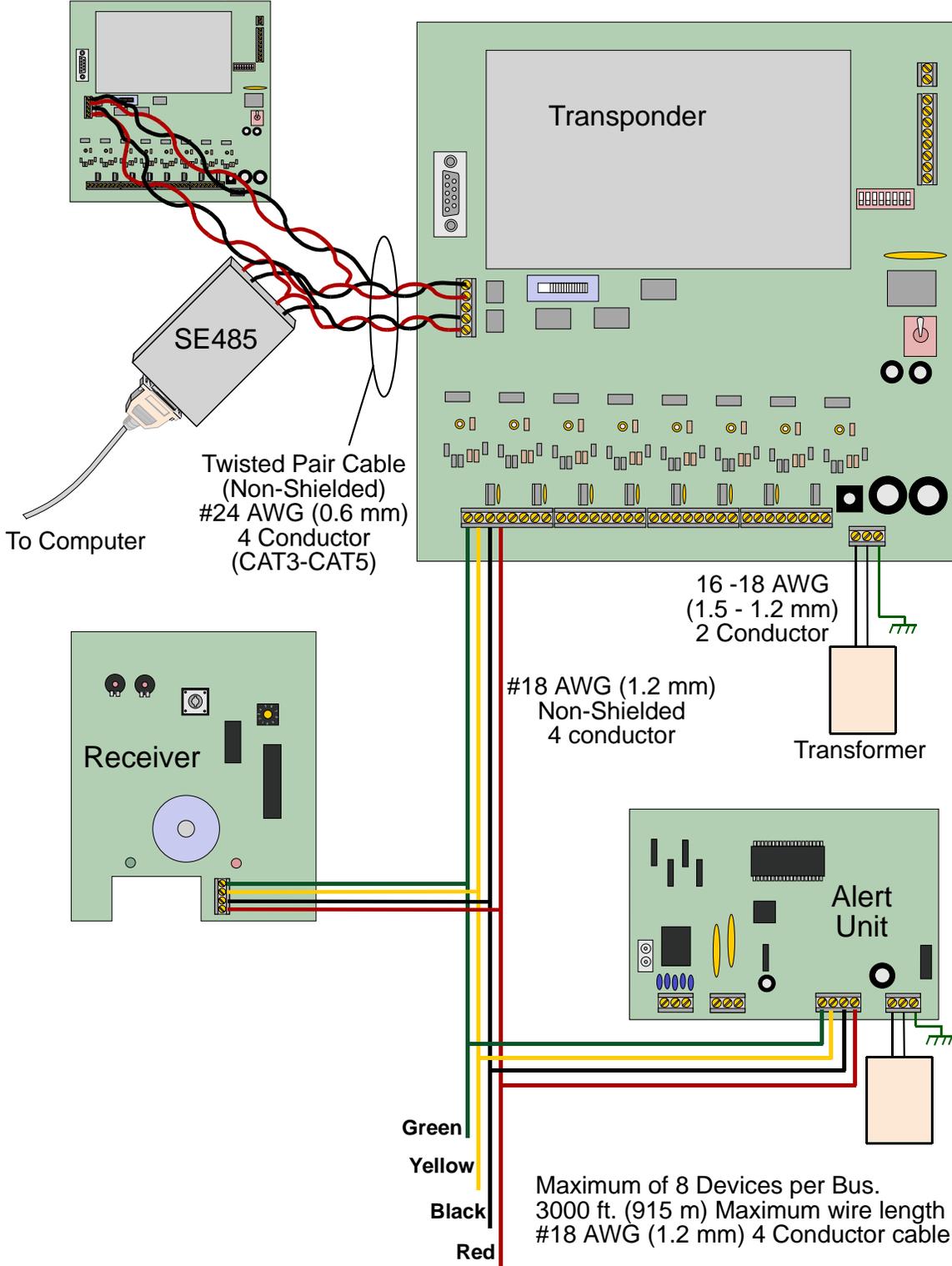
Component Wiring Guidelines

General Wiring Diagram



General Wiring Diagram

Additional Transponders



Transponder Information Sheet

Transponder Number: _____ Transponder Location: _____
Transformer for Transponder Location: _____
Breaker Panel Location: _____ Breaker Number: _____
Siren/Strobe Output To: _____
Keyswitch Monitoring To: _____

Bus #0 Locations:

Point #0: _____
Point #1: _____
Point #2: _____
Point #3: _____
Point #4: _____
Point #5: _____
Point #6: _____
Point #7: _____

Bus #1 Locations:

Point #0: _____
Point #1: _____
Point #2: _____
Point #3: _____
Point #4: _____
Point #5: _____
Point #6: _____
Point #7: _____

Bus #2 Locations:

Point #0: _____
Point #1: _____
Point #2: _____
Point #3: _____
Point #4: _____
Point #5: _____
Point #6: _____
Point #7: _____

Bus #3 Locations:

Point #0: _____
Point #1: _____
Point #2: _____
Point #3: _____
Point #4: _____
Point #5: _____
Point #6: _____
Point #7: _____

Bus #4 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #5 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #6 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #7 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Location of Splices:

EA500 Transponder

General

The EA500 Transponder is the Security Escort module that provides communications between the Central Console and the many Receivers and Alert Units throughout the protected area. In addition to its communications functions, it also supplies power to the Receivers. Each Transponder also includes drivers for a single strobe and siren.

Specifications

Enclosure (AE3):	15 in. W, 20.75 in. H, 4.25 in. D
Hardware Kit:	H500
Temperature Range:	-40° to +149°F (-40° to +65°C)
Power:	18.0 VAC, 50 VA maximum plug-in Transformer for 110 V, 60 Hz Supplies battery backed 12.0 VDC power to Receivers
Power Output:	9V DC used for SE485 <u>or</u> for Proxim radio power
Driver Outputs:	<i>Strobe:</i> 500 mA solid state sink, terminal switches to ground in an alarm condition. <i>Siren:</i> 500 mA solid state sink, terminal switches to ground in an alarm condition.
Battery Backup:	12 VDC Lead Acid Battery
Multiplex Buses:	8 multiplex drivers, each capable of driving 8 Receivers or Alert Units for a combined total of 64 Receivers and Alert Units per transponder
Comm. Interface:	Selectable SE485 or RS-232
Keyswitch Input:	47k EOL resistor, supervised loop
Compatibility:	*ROM version 4.00 or greater (version shipped with this unit) is compatible with “-304” equipment (e.g., EA102A-304). Version 4.00 or greater is NOT compatible with non “-304” equipment. *ROM versions earlier than 4.00 are compatible with non “-304” equipment.

Mounting

Normally, the enclosures are mounted first and all the wiring run, then the electronics are mounted, wired, and tested.

The enclosures come with their own mounting hardware (H500 Hardware Kit) for mounting the enclosure to a wall and mounting the circuit board to the enclosure.

- Mount the enclosure to the mounting surface.
- Mount the circuit board to the enclosure.

Wiring

Wire the transponder. See Figure 3.

Wiring to Receivers and Alert Units can be Home-Run (individual), Daisy-Chain (from device to device), or a combination of both. T-Tapping is OK. The recommended cable is 4-conductor, 18 AWG (1.2mm) fire rated.

Wiring from SE485 to Transponders can be Home-Run (individual), Daisy-Chain (from device to device), or a combination of both. T-Tapping is OK. The recommended cable is 4-conductor, 22 AWG (0.8mm).

Set the Address

Every Transponder in the system must have its own address. Set the address on the transponder using the dipswitches in the upper-right corner. See the Figure 2.

Figure 4 shows how to set the dip switches for each possible address.

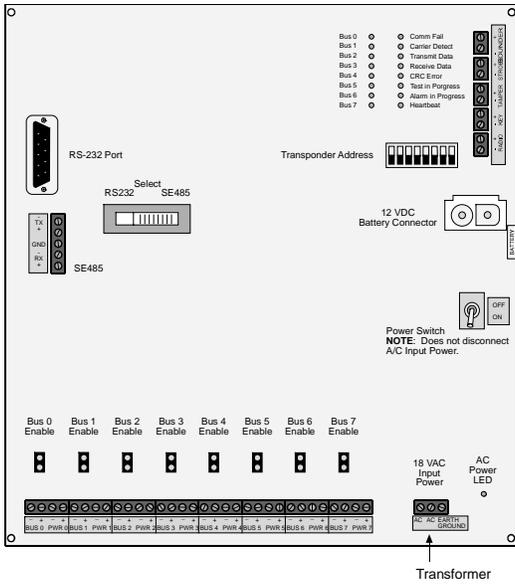


Figure 2: Transponder

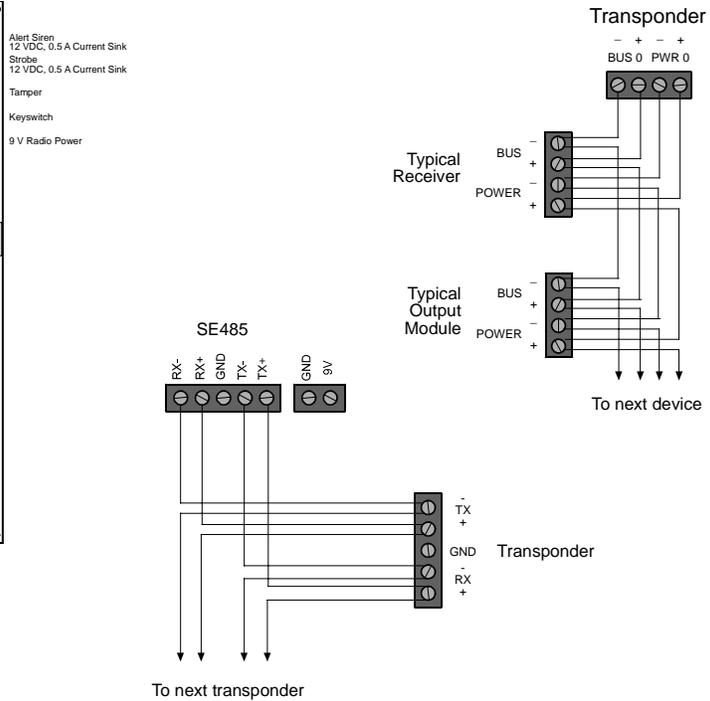


Figure 3: Wiring

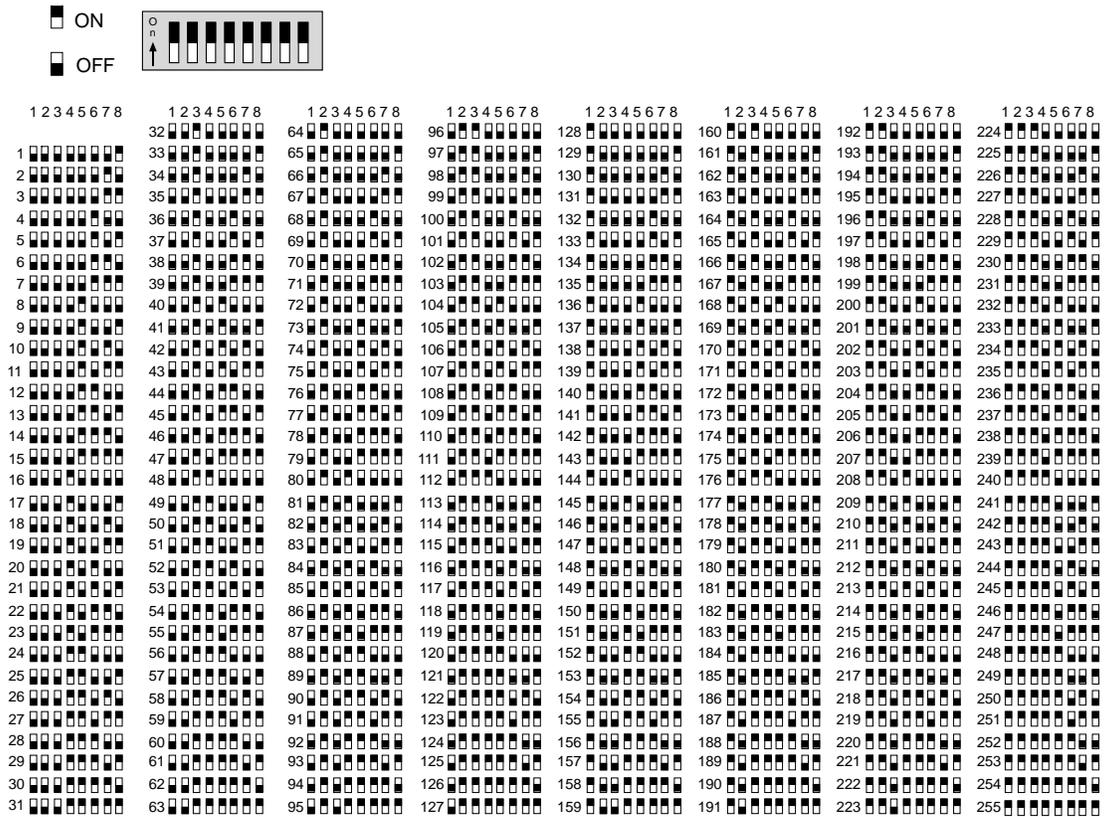


Figure 4: Dipswitch settings

EA102A – 304 Receiver

Specifications

Enclosure	Available in indoor and weatherproof outdoor enclosure
Temperature Range	-40° to + 149°F (-40° to +65°C)
Power	12VDC, 25 mA typical, 55mA with horn sounding
RF Input Frequency	304.000 Mhz
Signal Strength	Measured in 255 steps
Antenna Type	Diversity antennas
Compatibility	SE2x-304 Series and SE4x-304 Series Transmitters; EA500B Transponder with a ROM version 4.00 or greater.

NOTE: The EA102A-304 is compatible only with other “-304” equipment (e.g., the SE2x-304 and the SE4x-304). Also, do NOT install this unit in conjunction with an EA500B Transponder with a ROM version earlier than 4.00.

Mounting

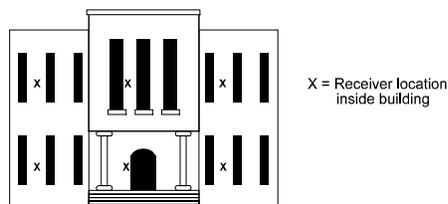
Choose a mounting location based upon the previous site survey. The receiver should be mounted as close as possible to the location found with the test receiver. The following is a guideline for receiver mounting and spacing:

Indoor Receiver Installation

Receiver Spacing: Receiver spacing should be no more than 24 m (80 ft.) between receivers for standard construction. Range will be dependent upon the construction of the building. For example: a building with hollow drywall walls may support 24 m (80 ft.) spacing; a building with steel reinforced concrete may require reduced spacing. It is very important to maintain a consistent spacing as this will ensure optimum signal locating. The more receivers that can detect a transmitted signal, the more accurate the locating will be.

Mounting Height: Receivers should be mounted 1.5 to 1.8 m (5 to 6 ft.) from the floor. Maintain a consistent mounting height to ensure optimum signal locating. Do not place receivers close to the ceiling; this will cause them to be closer to the floor above, and therefore, reduce the floor to floor location accuracy. It may also be helpful to place the receivers somewhat higher only on the top floor to be covered and somewhat lower only on the bottom floor to be covered.

Multi-Floor Installations: Receivers MUST be mounted over one another in multi-floor installations. This helps maintain proper floor-to-floor reception.



Select a mounting location that:

- provides a clear line-of-sight of the protected area, if possible,
- is at least 30 m (1 ft.) away from metal objects such as HVAC ducts,
- is on an inside wall, if possible,
- is 1.5 to 1.8 m (5 to 6 ft.) from the floor,
- is not at a barrier where it is important to resolve which side an alarm location is on, and
- will not be damaged by tampering or opening doors.

Outdoor Receiver Installation

Receiver Spacing: Receivers should be mounted every 91.5 m (300 ft.). It is very important to maintain as consistent spacing as possible, as this will ensure optimum signal locating. The more receivers that can detect a transmitted signal, the more accurate the locating will be. Each receiver should have a clear line-of-sight of the intended protection area.

Mounting Height: Receivers should be mounted 3 m (10 ft.) above grade. Maintain a mounting height that is as consistent as possible to ensure optimum signal locating.

Overhangs/eaves: Receiver locations should be below building overhangs and eaves. Most transmissions will occur a few feet (1 m) above grade; mounting above overhangs and eaves could result in inaccurate signal locating. Be especially careful around metal roofs as these can block the signal.

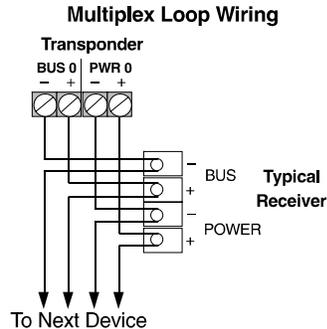
Select a mounting location that:

- provides a clear line-of-sight of the protected area,
- is away from metallic objects such as chain-link fences and electrical transformers. If coverage is required near such items, testing should be performed near these items to determine the potential need for additional receivers,
- is 3 m (10 ft.) above grade,
- is not at a barrier where it is important to resolve which side an alarm location is on,
- is easy to service, and
- will not be damaged by tampering.

Wiring

CAUTION: Apply power only after all connections have been made and inspected.

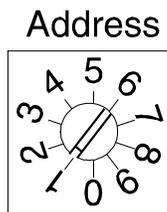
Connect wiring as shown:



Switches and Jumpers

Loop Address

The Rotary Switch is used to select the loop address. This is the address that is reported to the transponder the receiver is connected to. Each device on a loop should have its own address. Only addresses 0 through 7 are valid. Do not use addresses 8 and 9.



Jumpers

There are two groups of jumpers on the EA102A-304 Receiver. The first group contains Jumpers P1 through P3. The second contains Jumpers P4 through P8. The function of each jumper is indicated in the table below:

Jumper	Operation With Jumper in Place
P1*	Sounder is enabled
P2*	Green LED is enabled
P3*	Red LED is enabled
P4**	Test Mode is enabled
P5**	Receiver Spacing Mode is enabled
P6**	Left Antenna is disabled
P7**	Right Antenna is disabled
P8	Do not place a jumper across these pins.

NOTES:

- * Remove Jumpers P1, P2, and P3 when installed in an outdoor enclosure.
- ** Remove Jumpers P4, P5, P6, and P7 for normal operation.

Test Mode

The module goes into Test Mode when Jumper P4 is in place (Jumper P5 removed). In this mode, all test and alarm receptions will be sounded.

NOTE: The sounder and LEDs (Jumpers P1, P2, and P3) must also be enabled to operate the Test Mode.

Each receiver should be tested using the following method (test only one receiver at a time):

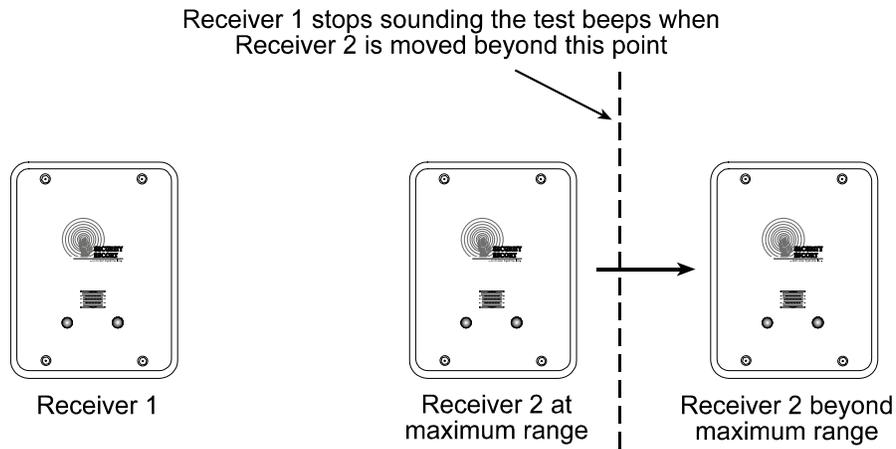
- 1) Enable the Test Mode by placing the P4 Jumper across both pins (Jumper P5 removed).
 - The red LED will turn ON and stay ON during the test.
 - The green LED will flicker if the receiver is connected to a working transponder.
 - There will be no data transmitted to the central station.
 - The central station will receive a "not responding" failure.
- 2) Activate the transmitter from at least five different locations near the receiver.
 - The LEDs will respond to a received transmission.
 - If the receiver detected all the packets from the transmission, the sounder will beep three times.
 - If the receiver detected the transmission, but some of the packets were missing, it will beep once. This could indicate that the signal is not sufficient from this location.

Testing Receiver Spacing

Receiver Spacing Mode is enabled with Jumper P5 in place (Jumper P4 removed). This mode is exactly the same as the Test Mode above, except that only transmissions with an adequate receive margin are sounded. This indicates the maximum acceptable spacing of receivers. Use the following procedure to test the spacing of receivers:

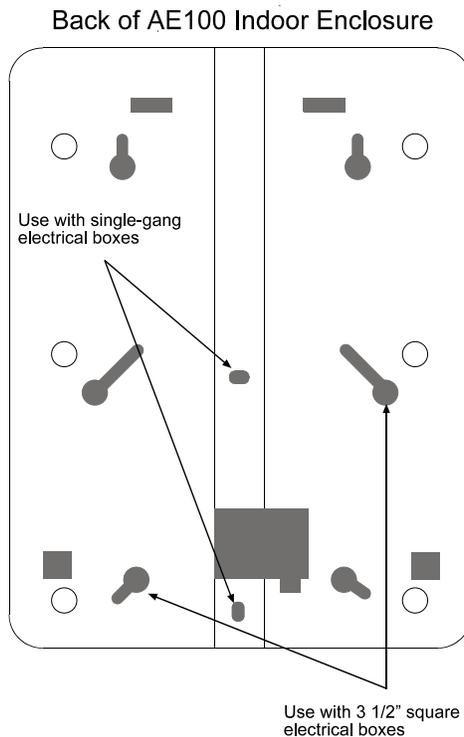
- 1) Mount the first receiver.
- 2) Take the second receiver and a transmitter a distance away from the first receiver.
- 3) Activate the transmitter.
- 4) If Receiver 1 sounds the test beeps, Receiver 2 is within range. Repeat this test until Receiver 1 no longer sounds the test beeps. Move back to the last location where Receiver 1 received the test beeps. This location marks the maximum spacing between receivers. Mount Receiver 2 at this location or closer to Receiver 1.

NOTE: Do not use the Test Mode (Jumper P4) to determine receiver spacing.



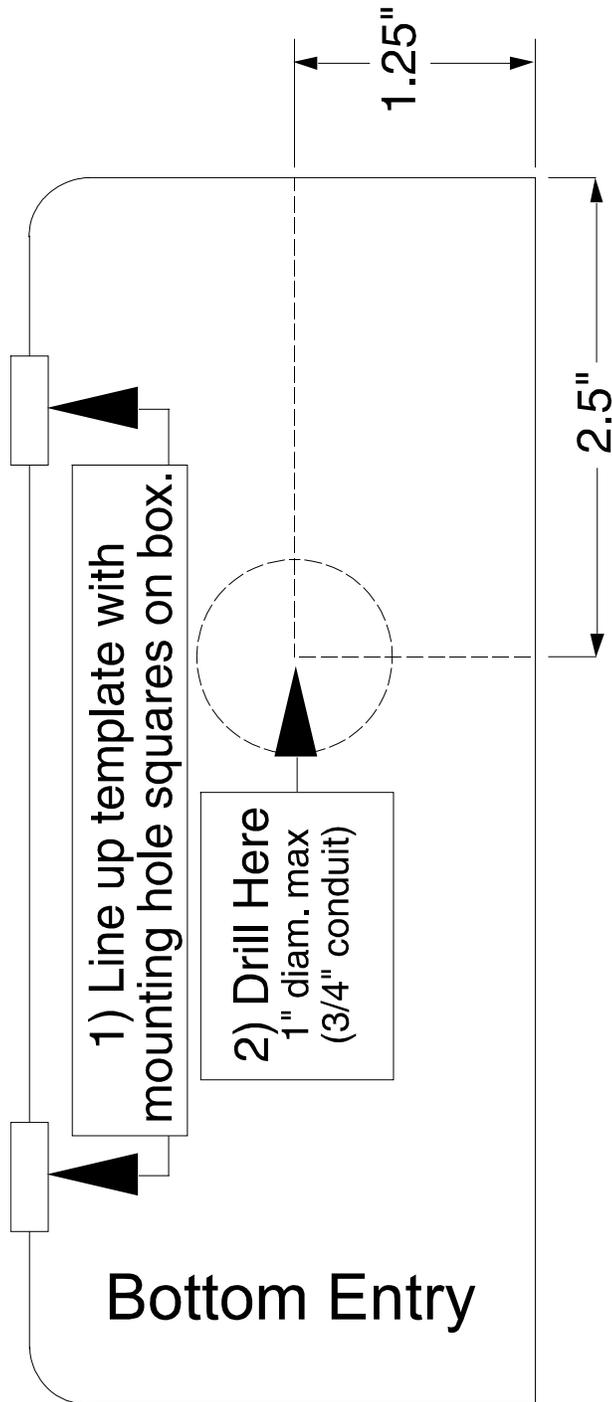
Pre-Wired Installations

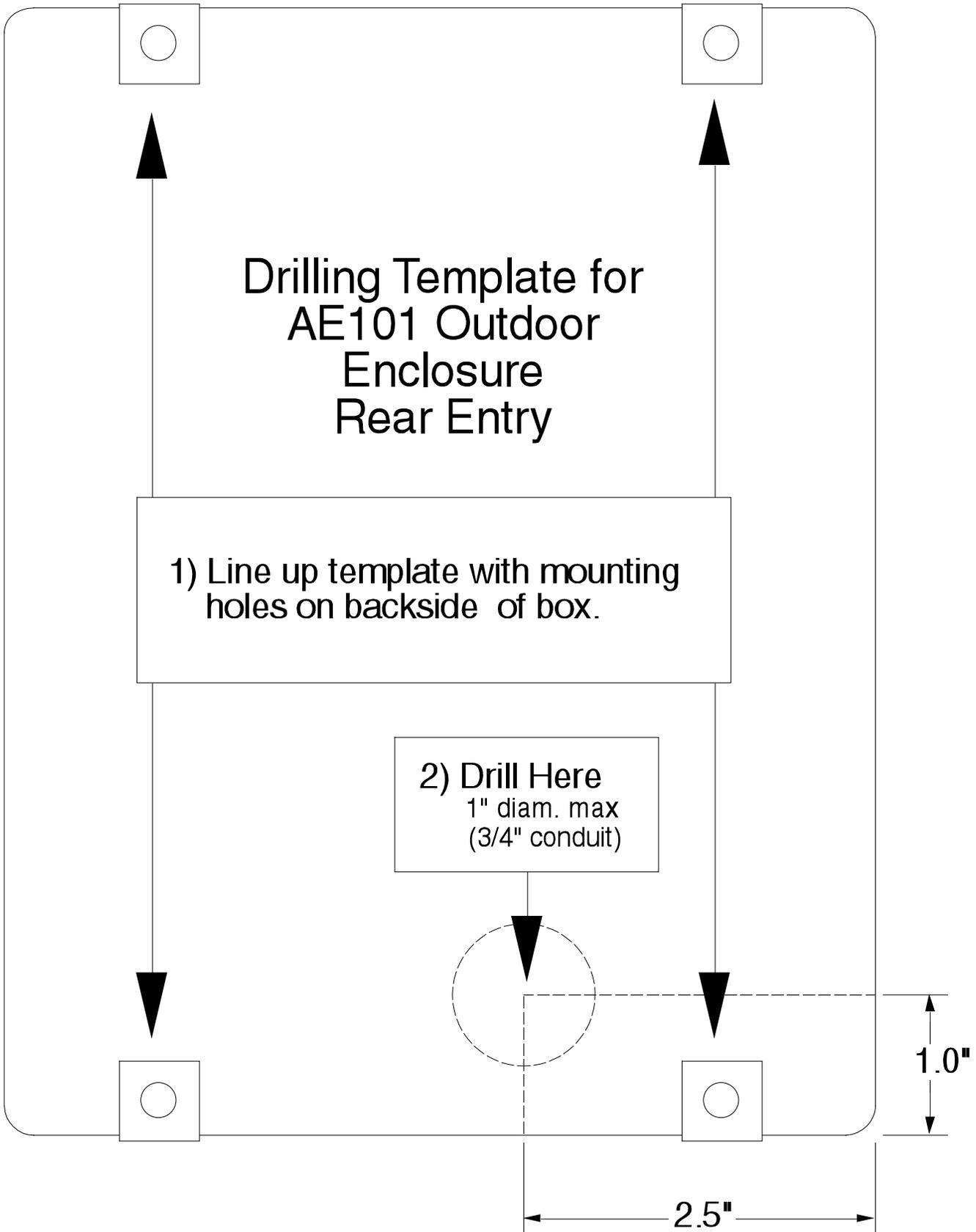
When mounting the enclosure to a pre-wired electrical box, make sure that the electrical box has a six inch overhead clearance. The enclosure should be mounted as shown below:



Drilling Templates

Use the following templates for mounting the AE101 Outdoor Enclosure. Remember to remove Jumpers P1, P2, and P3 prior to installing the receiver.





Drilling Template for AE101 Outdoor Enclosure Bottom Entry

EA120B Alert Unit

Specifications

- Electronics:** EA120B
- Enclosures:** Indoor: AE1 (9"H x 7"W x 1.75"D)
Outdoor: AE101 (14.75"H x 12.75"W x 3.5" D)
- Hardware Kits:** Indoor: H500
Outdoor: H121
Temperature Range -40° to + 149°F (-40° to +65°C)
Power 18 VAC, 50 VA
Battery Backup 12 VDC Lead Acid Battery
- Accessory Equipment:** Horn/Strobe: E28000B
- Strobe: 500 mA solid state sink, terminal switches to ground in an alarm condition.
 - Siren: 500 mA solid state sink, terminal switches to ground in an alarm condition.
 - Power: 12 V @ 1A, max.
- Transformer: TR1850
Batteries (3 Amp Hour): E28629B
(7 Amp Hour): E19729B
Battery Cables: C316 (3 or 7 Amp)
C315 (17 Amp)
C311 (3 or 7 Amp expansion)
- Compatibility:** EA500B ROM Version 4.00 or higher

General Information

The Alert Unit is a driver for output modules such as Security Escort's E28000B Horn/Strobe. The unit should be mounted indoors; however, an outdoor enclosure is available. The Horn/Strobe should always be mounted outdoors.

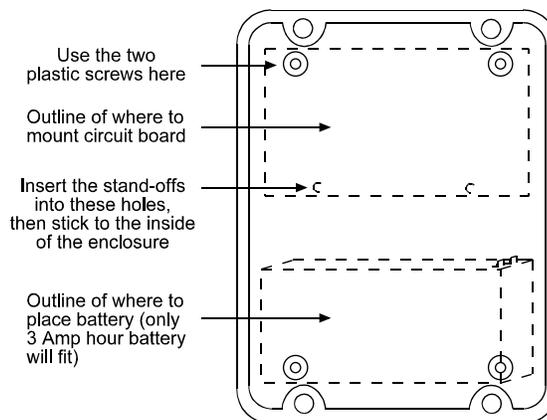
The Alert Unit gets its main power (for horn/strobe activation) from the 18 VAC transformer and its backup power from a battery; however, the multiplex bus will continue to supply the Transponder information on status and troubles in the event "local" power is lost.

Mounting

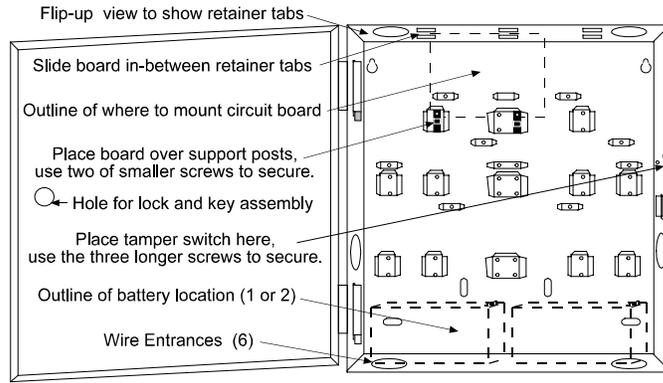
Normally, the enclosures are mounted first and all the wiring run, then the electronics are mounted, wired, and tested.

The enclosures come with their own mounting hardware. The hardware kits listed above are for mounting the circuit board to the enclosures (the indoor hardware kit also includes a tamper switch and a lock and key).

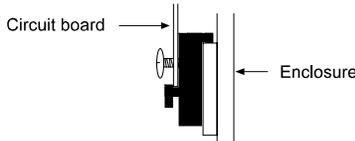
Mount the circuit board to the enclosure as indicated in the figures below.



Inside of AE101 Enclosure



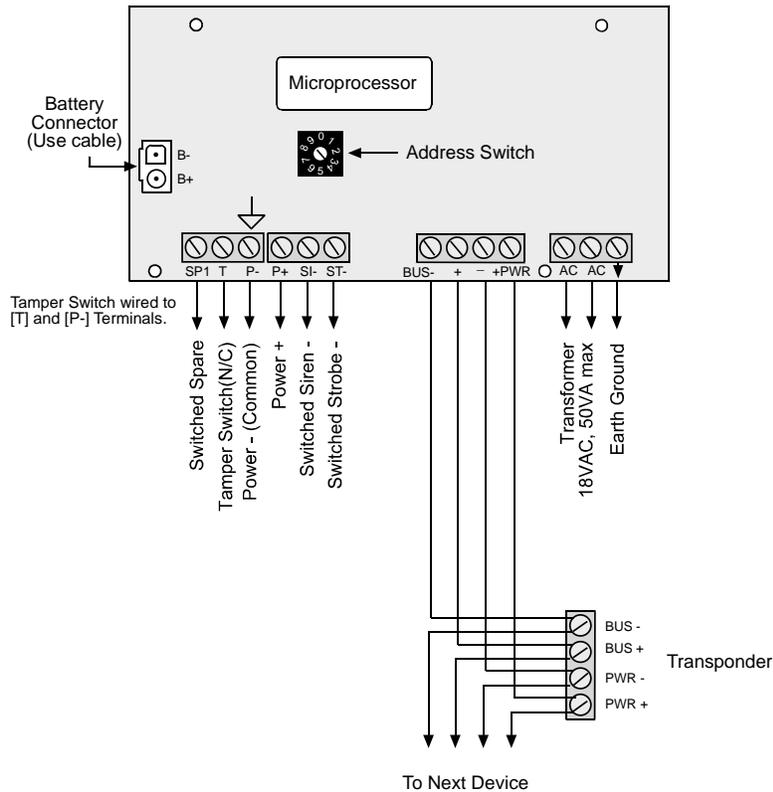
Inside of AE1 Enclosure



Support Post Assembly

Wiring

Wire the Alert Unit using the figure below:



Set the Address

Every module on each multiplex bus of the Transponder must have its own address. Set the address on the Alert Unit using the Address Switch.

Use only address numbers 0 through 7. **Do NOT use address numbers 8 and 9.**

SE485 Interface

Introduction

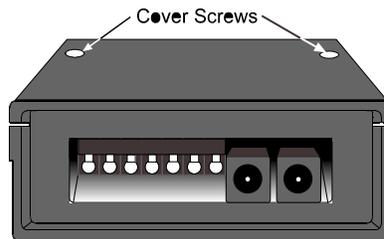
The SE485 is designed as an interface between the RS-485 signal bus of the Security Escort Transponder, and the Serial Bus (RS-232) of the Security Escort Central Station.

Specifications

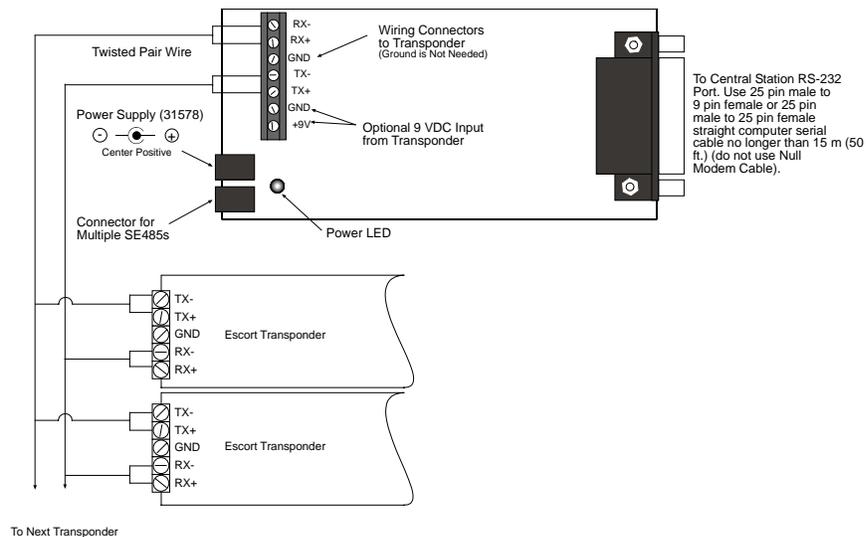
- Dimensions:** 135 mm (5.375 in.) x 85 mm (3.031 in.) x 30 mm (1.187 in.)
- Power:** Use the included 120 VAC adaptor to 9 VDC, 300 mA or power from the Transponder
- Recommended Cable:** 2 twisted pair, 4 conductor, 22 AWG (0.8 mm)
- Compatibility:** EA500B Transponder
EA501B Transponder

Installation

- Remove the cover by removing the cover screws shown below.



- Connect the wiring as shown below.



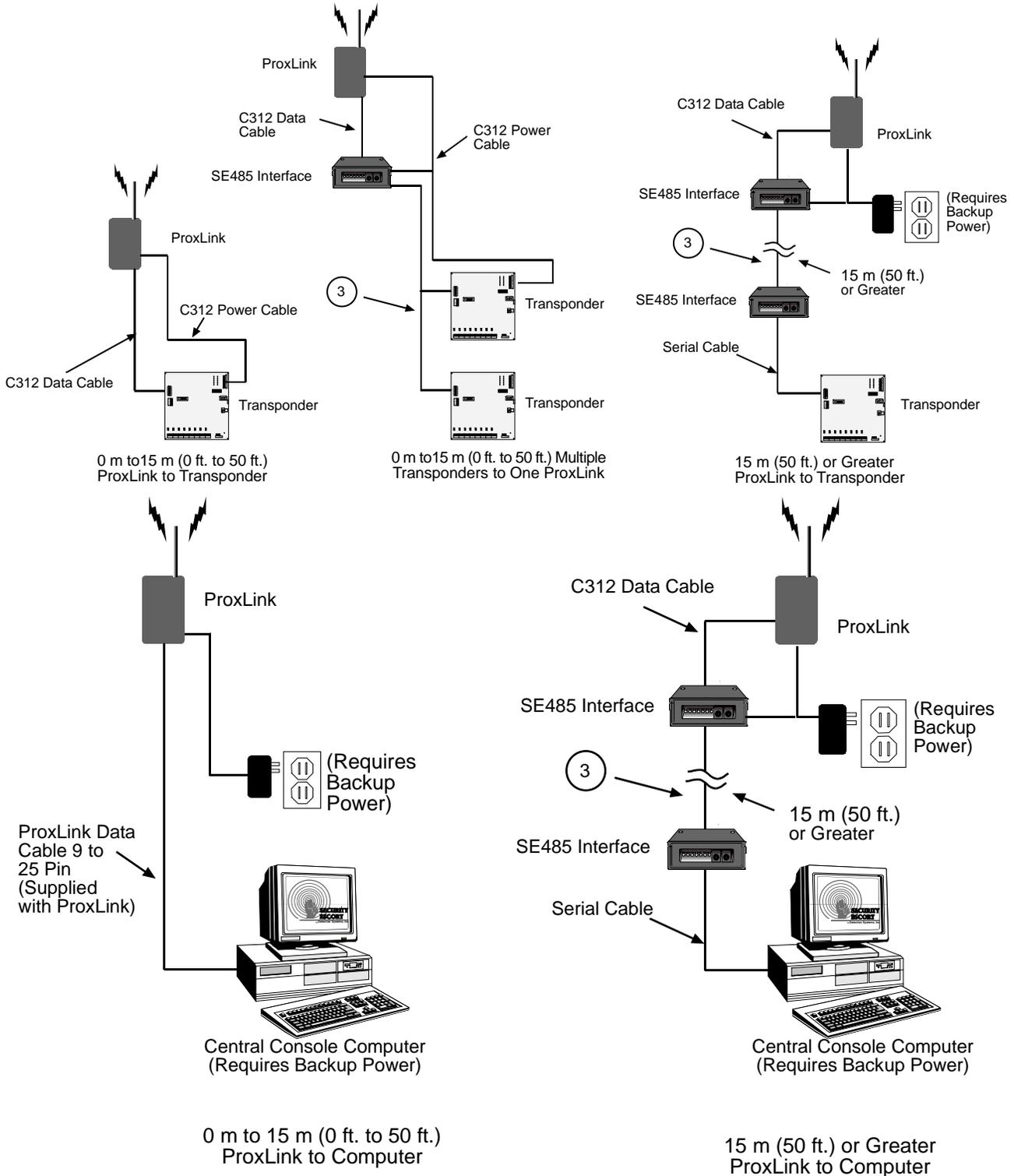
- After wiring the system, replace the cover and power up the unit.

Installation and Operation Notes

- 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 may 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. If using multiple SE485s, use the connector cable provided.

ProxLink Setup

Configuration Procedure



Required Equipment

- ProxLink Radio Module
- PC with RS-232 Port running a terminal emulation software package. (Located: Start Button, Programs, Accessories, then click on Hyper Terminal)
- ProxLink DB-9 to DB-25 Female RS-232 Cable
- 9 VDC Power Supply

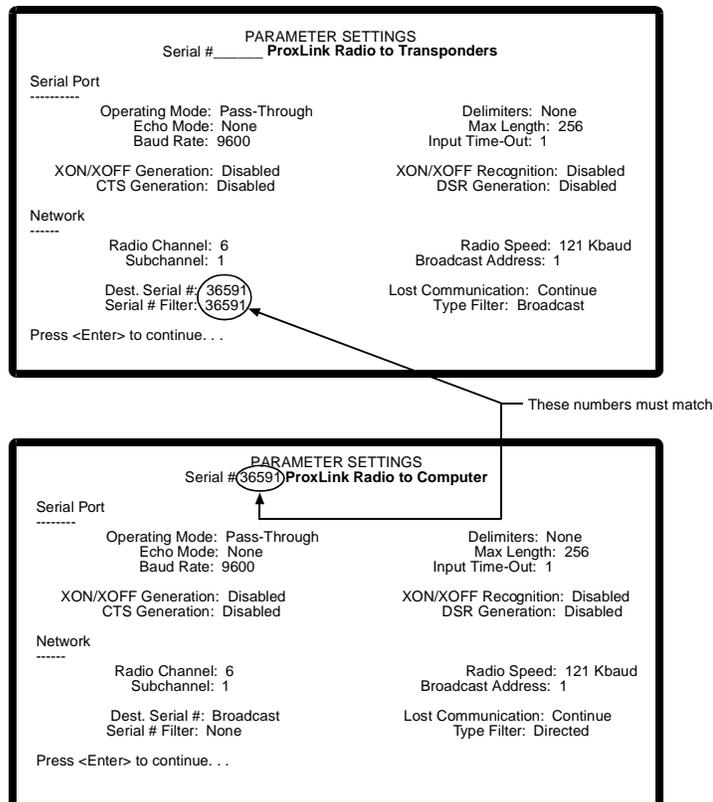
Configure

Select one of seven radio channels (902 - 928MHz). Make certain that the one chosen is set the same in all the ProxLink located at the Transponders and for the ProxLink at the Central Console Computer.

Select one ProxLink for your Central Control Computer. The Serial # (located on a silver tag on the bottom of the ProxLink) on this ProxLink must be entered in the Destination Serial Number and Serial # Filter location in all ProxLink Radios connected to the Transponders.

1. Attach the PC to the ProxLink using the ProxLink RS-232 cable. Attach the DB-9 Connector to the ProxLink and attach the DB-25 Female Connector the PC. Gender changers or DB-25 to DB-9 converters may be required depending on your serial port connector type.
2. Start your terminal emulation software (Hyper Terminal). Configure the ProxLink as follows: 9600 Baud, 8 Data Bits, 1 Stop Bit and no parity.
3. Put the ProxLink in User Interface mode by pressing the configuration button on the front of the unit. The ProxLink should respond by displaying the Main Menu screen.
4. Once the main menu is displayed, to configure a ProxLink parameter select a menu option and press the [ENTER] key. This will either display a prompt or a sub-menu. After finishing with a sub-menu, press the [ESC] key to return to the previous menu.
5. After you have finished configuring the ProxLink, type "L" and then [ENTER] and then type "Y" to place the unit in operating mode.

Configuration should look as follows in Main Menu, D - Display ProxLink Radio Module Parameters:



ProxLink Radio Module Configuration

DEMO INSTALLATIONS

When the software is used for demo purposes, it is limited to 5 records in the Subscriber Database, 1 transponder in the Transponder Database and only receivers 0 through 3 on bus 0 can be defined for that transponder (no other points can be programmed for that transponder). If these limitations are observed then the software will communicate with the single transponder and the system can be used with full functionality for demo purposes. Refer to the Escort software install section of this document to install the software. After the software has been installed, but before it is run, double click on the HDD32.EXE file in the Escort directory (C:\ESCORT). This will install the driver for the software key. This is required even for demo installations that will not have the software key. If the HDD32.EXE installer is not run before the Escort software is run the first time, the Escort software will stop with an error and the HDD32.EXE will automatically run. The demo installation is complete at this point and you do not have to refer to the rest of this document.

In demo mode communications are allowed to one transponder even if the transponder database has more than one transponder in it for diagnostic purposes. The transponder selected in the Transponder Current Status dialog or Transponder Communications dialog will be the transponder that can be communicated with. The transponder can be reselected at any time to change the current transponder in communication. All tests, supervisions and maintenance alarms will function normally; however only subscriber alarms that contain reports from receivers 0 through 3 on bus 0 will function. If an alarm also includes other receivers reporting, that alarm will be ignored. Therefore actual Escort operation can be demonstrated using up to 4 receivers. Also a demo system can be used to directly connect to transponders using the actual transponder database from the system to perform all functions except subscriber alarms. This is desirable to allow a laptop to be plugged directly into a transponder to diagnose problems. In both of these modes the subscriber database must have 5 or less subscribers.

NON-NETWORK INSTALLATIONS

If this system will not be using the network to connect Master, Slave and Workstation computers, refer to the Escort software install section of this document to install the software. After the software has been installed, but before it is run, plug the software key into the parallel port connector on the back of the computer and double click on the HDD32.EXE file in the Escort directory (C:\ESCORT). This will install the driver for the software key. If the HDD32.EXE installer is not run before the Escort software is run the first time, the Escort software will stop with an error and the HDD32.EXE will automatically run. A non-network installation is complete at this point and you do not have to refer to the rest of this document.

NETWORK INSTALLATIONS

The Escort software supports a single master computer, a single slave computer (optional) and a maximum of 8 workstations (limited to the number programmed in the software key). The master computer normally processes the real time communications to the transponders and controls the system. The slave computer can assume the master's role by the use of A/B switches to direct the transponder communications to the slave computer. The workstation computers allow other computers to respond to alarms, perform maintenance and edit the databases.

INSTALLING THE ESCORT SOFTWARE

Software Installation Procedure

Typically the Security Escort program is delivered on floppy disks. It is strongly recommended that you exit all other programs before running this installation program. Place Installation Disk #1 in the computer's floppy disk drive. Run SETUP.EXE from that floppy disk by one of the following methods:

- 1) Double click on the "My Computer" icon on the desktop. Select the "3½ Floppy (A:)", then run SETUP.EXE from it.
- 2) Click on the "Start" button on the Windows® Task Bar. Select "Programs" on the list that pops up. Then select "Windows Explorer". In "Windows Explorer" select "3½ Floppy (A:)", then run SETUP.EXE from it.
- 3) Click on the "Start" button on the Windows® Task Bar. Select "Run" on the list that pops up. Then type "A:\SETUP.EXE" in the Open box and click the OK button.

Once SETUP.EXE is running Figure 1 will be shown.

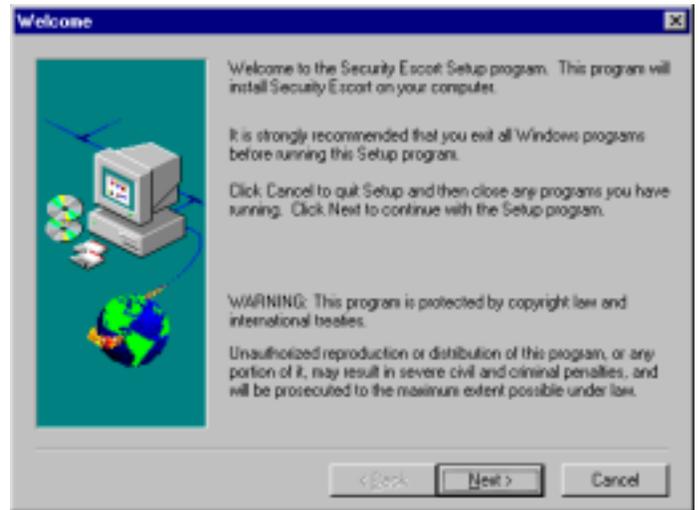


Figure 1: Setup Welcome Dialog

Click the "Next" button or hold the "Alt" key and tap the "N" key and the Software License Agreement will be shown (Figure 2).

Click the "Yes" button or hold the "Alt" key and tap the "Y" key to accept the Software License Agreement. If you chose "No" the installation will terminate.

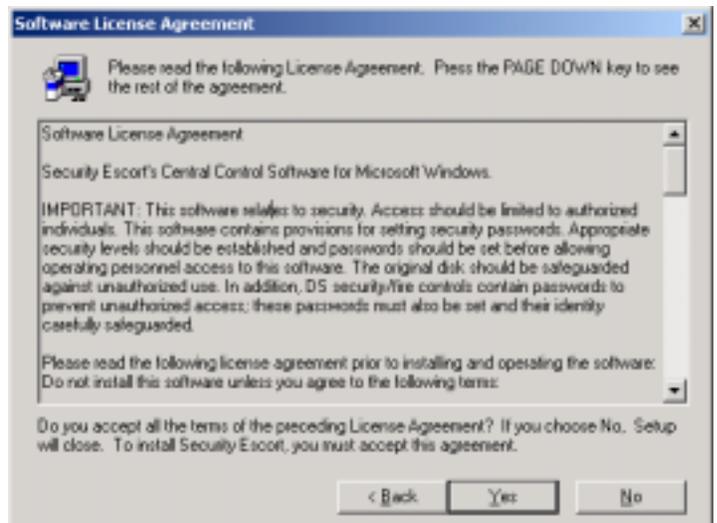


Figure 2: License Agreement

The Readme Information will appear (Figure 3). You may click the Cancel button at any time to exit the installation procedure.

Read the entire file before proceeding (use the scroll bar on the right side to see the portion not currently displayed). When done, click the "Next" button or hold the "Alt" key and tap the "N" key. The "Choose Destination Location" dialog will reappear.

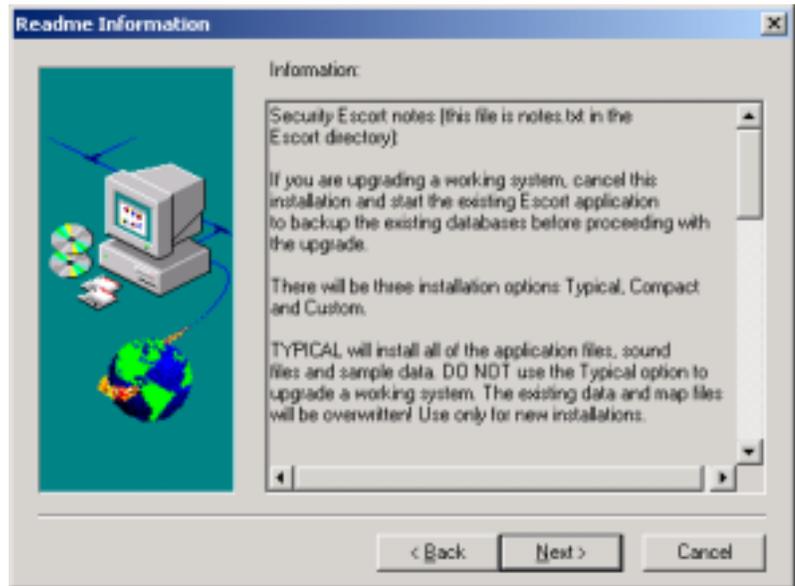


Figure 3: Readme Information Dialog

Figure 4 selects the location on the hard disk drive to install the Security Escort program. Typically the default location is best (C:\Escort). In the "Choose Destination Location" dialog, click the "Next" button or hold the "Alt" key and tap the "N" key. Only if you desire to install the program in a different location click Browse and the dialog in Figure 5 will appear.

Enter the desired location and click OK.

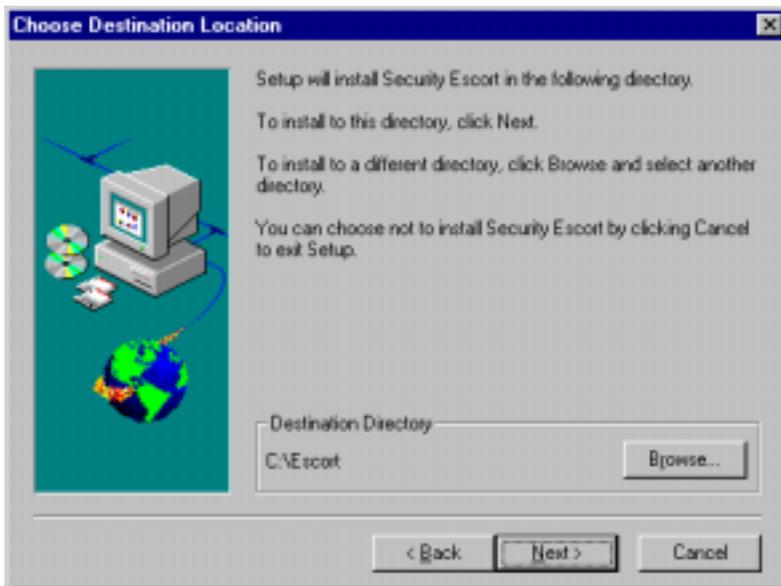


Figure 4: Choose Destination Location Dialog



Figure 5: Choose Directory Dialog

The "Setup Type" dialog will reappear (Figure 6).

Select the type of installation you desire.

Typical – For new installations this is the option you should choose. It will guarantee that all required components would be installed and includes the installer for the software key. Use this selection for demo installations. Do not use this selection on existing installations, as it will replace the databases and maps with the demo databases and maps.

Compact – Only installs the application files. This selection can be used to update an existing installation as it will not write over the databases and map files.

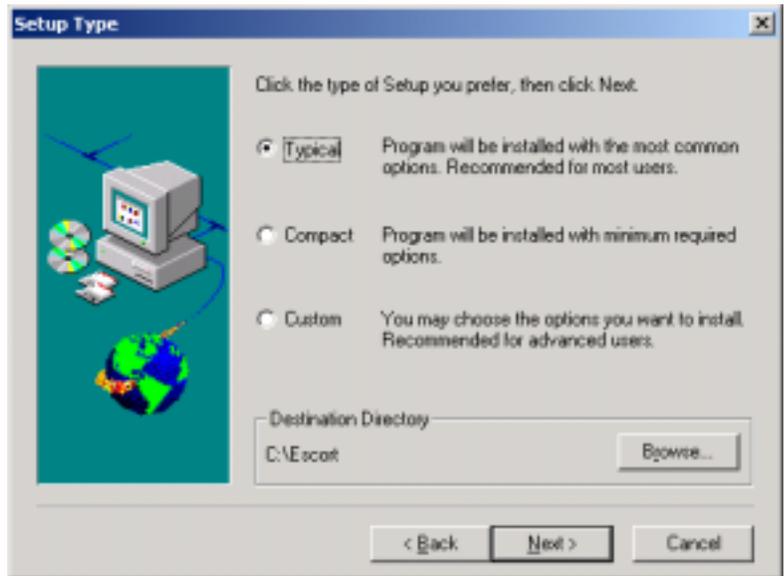


Figure 6: Setup Dialog

This selection can't be used for new installations because it doesn't contain all required components, the installer for the software key, databases and maps.

Custom – This selection contains all systems components, databases and maps. You may choose which to install.

Click the "Next" button or hold the "Alt" key and tap the "N" key.

We are set to copy the files, click the "Next" button or hold the "Alt" key and tap the "N" key to proceed. The files will now be copied (Figure 7).



Figure 7: Start Coping Files Dialog

The installation is now complete. If you desire to run the Security Escort program now, place a check mark in the "Launch the program file" box by clicking in it. Then click the Finish button (Figure 8).

To manually start the Security Escort program after installation, click on the Windows Start button in the Task Bar. Select Programs and then select Security Escort from the list that pops up.

In a live system it is recommended that the Security Escort program be configured to automatically start. To auto start the program, place a shortcut to ESC32.EXE (the Security Escort program, typically located in C:\Escort) in the following path:

C:\WINDOWS\Start Menu\Programs\StartUp

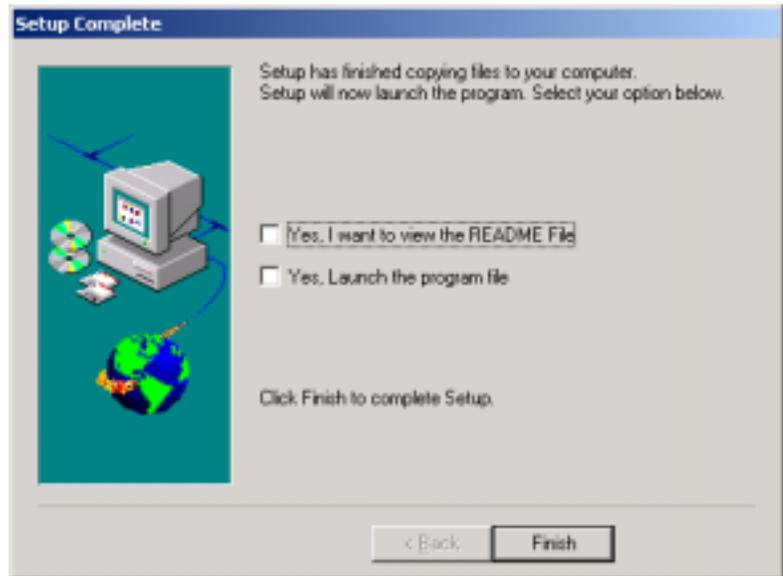


Figure 8: Setup Complete Dialog

Image Files

Map File Generation and Scaling

The Security Escort maps are standard Windows bitmap files (.BMP). Map0.edb is the default map file, usually the ground floor in multiple map systems. The map must be saved in the Escort subdirectory (typically c:\Escort). These maps may be created from scratch using any Windows paint program, however it is best to scan in an existing site map. Commercial copy centers usually have scanners that can handle larger drawing sizes.

If an AutoCad file is available have AutoCad export a bitmap for the best looking maps that require the least work to make presentable. If the scale of the exported map is too large or too small, re-export the map at the corrected scale rather than scaling the map in a graphic editor. Scaling a bitmap file directly will produce a file that will require a significant amount of manual effort to make presentable.

The scanned image should be saved as a Windows bitmap file (.BMP) with 256 colors (8 bit color). High Color (16 bit) or True Color (24 bit) can also be used, but the file sizes will be much larger and the maps will be slower to load and may require more system RAM. It should be scaled so that the entire map file is at least 800x600 pixels (will cover the entire Windows screen). The Security Escort software auto scrolls the map, therefore it is not a problem if the map is larger than the screen. The map should not be too large though, there should be enough area of the map on the screen when an alarm is shown, so there is no question where in the facility the alarm is located from a quick review of the map. A good rule-of-thumb is 100 pixels would represent 15 m (50 ft.) or greater.

Multiple Map Files

For a multi-story building the maps for each floor must have the same resolution. Each map must be vertically aligned with all the floors above and below it. Therefore the maps will have the same origin (0,0 = upper left corner). Typically you would do the map for the ground floor, then make the maps for the other floors by editing copies of the ground floor map.

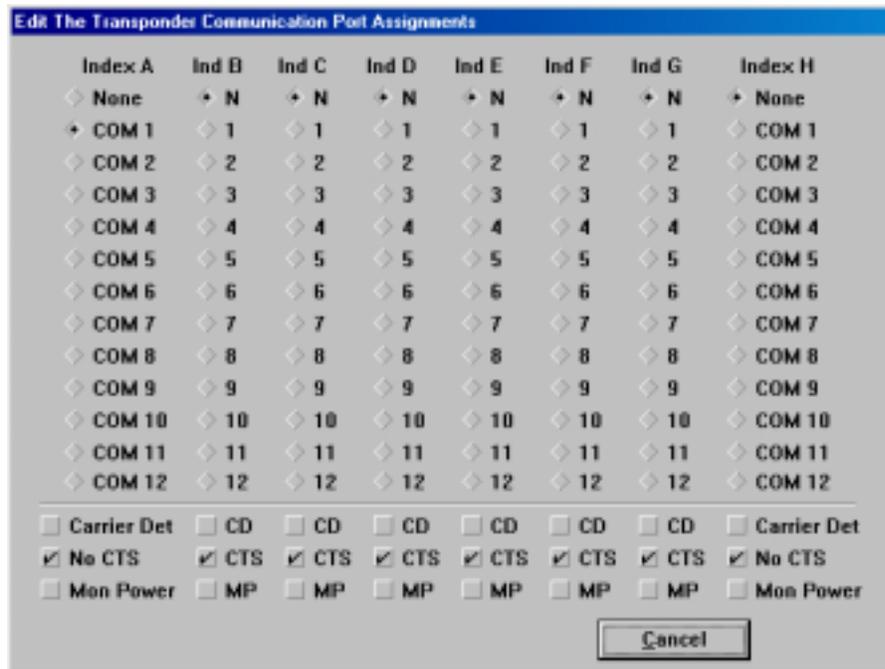
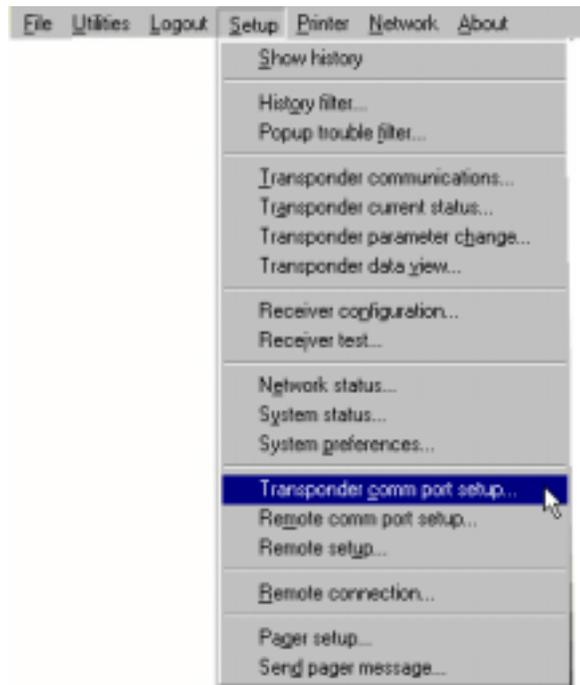
Where transponders from multiple systems are reporting into the same computer the map(s) for each system will be separate and assigned unique map numbers, from the other maps on that same computer. The origin for the maps for each system will be 0,0 = upper left corner. Therefore the location of the receivers in the transponder database will only consider this system's map without respect to the maps for any other systems being handled by the same computer.

The maps must be named Map0.edb, Map1.edb through Map99.edb. Where Map0.edb is the default map file, usually the ground floor. The Escort software will show the default map, if there is no other events being processed at a given time.

Assign the desired map number to an area or point in the transponder database. Assign the map for a fixed location transmitters in the Subscriber Database, Advanced dialog.

Central Console, Computer Setup and Programming

Transponder Comm Port Setup



Transponder Comm Port Setup Dialog

This dialog connects the Comm port indexes set for each transponder in the Transponder database to the physical Comm ports on the computer.

“COM”

The actual physical Comm port over which communications to the transponder will be carried.

“Carrier Det”

If checked, verify that the communications port is not in use before communicating. Only to be used on half duplex links where carrier detect indicates that the link is in use. This setting is rarely used.

“No CTS ”

If checked, do not monitor the Clear to Send before communicating. This setting is normally checked.

“Mon Power”

If checked, monitor the Ring Indicator pin to indicate a remote power supply used on this Comm link has not failed. This setting is normally unchecked.

Remote Port Setup Dialog

Network Port	Modem Port	System Serial 1	System Serial 2
<input checked="" type="radio"/> None			
<input type="radio"/> COM 1			
<input type="radio"/> COM 2			
<input type="radio"/> COM 3			
<input type="radio"/> COM 4			
<input type="radio"/> COM 5			
<input type="radio"/> COM 6			
<input type="radio"/> COM 7			
<input type="radio"/> COM 8			
<input type="radio"/> COM 9			
<input type="radio"/> COM 10			
<input type="radio"/> COM 11			
<input type="radio"/> COM 12			
<hr/>			
<input type="radio"/> 1,200 baud			
<input type="radio"/> 2,400	<input type="radio"/> 2,400	<input type="radio"/> 2,400	<input type="radio"/> 2,400
<input type="radio"/> 4,800	<input type="radio"/> 4,800	<input type="radio"/> 4,800	<input type="radio"/> 4,800
<input checked="" type="radio"/> 9,600			
<input type="radio"/> 19,200	<input type="radio"/> 19,200	<input type="radio"/> 19,200	<input type="radio"/> 19,200
<input type="radio"/> 38,400	<input type="radio"/> 38,400	<input type="radio"/> 38,400	<input type="radio"/> 38,400
<hr/>			
<input checked="" type="radio"/> CR / LF			
<input type="radio"/> CR only			
<input type="radio"/> LF only			

Remote Port Setup Dialog

This dialog connects the network, modem and system serial ports to the physical Comm ports on the computer and sets their baud rate.

“Network Port”

This is the port that connects the master and slave computers of the Security Escort System. If this system has only a single computer, this setting should be set to none.

“Modem Port”

This is the port that typically connects to the modem for remote access and pager dial out. If set in the “Remote Setup” dialog this port can be used without a modem for direct connection to a computer that is always on line.

“System Serial 1”

This is a general-purpose serial port; its function is set up in the “Remote Setup” dialog.

“System Serial 2”

This is a general-purpose serial port; its function is set up in the “Remote Setup” dialog.

“COM”

The actual physical Comm port over which these communications are to be carried.

“Baud”

The speed characters are transmitted on this serial port. This setting must match the baud rate of the device connected at the other end of this serial connection. This setting should always be at the highest speed that both connected devices have in common. Modem connections are typically much more efficient, if the baud rate is set significantly faster than the modems rated speed (for a 28.8 modem set the baud rate to 57600 or 115200).

“CR/LF”

Append carriage return and line feed characters at the end of each string transmitted (default). Only functions with the System Serial Ports (is ignored on the network and modem ports).

“CR Only”

Append a carriage return character at the end of each string transmitted. Only functions with the System Serial Ports (is ignored on the network and modem ports).

“LF Only”

Append a line feed character at the end of each string transmitted. Only functions with the System Serial Ports (is ignored on the network and modem ports).

Remote Setup Dialog

Edit Slave And Remote Computer Access Parameters

Computer Mode

- ◆ Default **M**aster computer
- ◆ Default **S**lave computer
- ◆ **W**orkstation computer
- ◆ *R*emote computer

Modem access setup

- ◆ Emergency answer only
- ◆ Master computer answers
- ◆ Slave computer answers
- ◆ Direct connect port
- Answering machine **o**verride
- Pulse dial

Answer on ring: 4

Dialing prefix:

Password: *****

Password verify: *****

System serial ports

Port 1	Port 2
◆ Disabled.....	◆
◆ History filter output	◆
◆ Video switcher control	◆
◆ Remote system control	◆
◆ Local Service Pages.....	◆
◆ Local Security Pages	◆
◆ All Local Pages	◆

Video switcher restore:

Modem init: ATEMN1QVXS0=0S7=120

Modem reset: ATZ

Save Cancel

Remote Setup Dialog

This dialog sets up the remote access and system serial port parameters.

“Default Master Computer”

This computer is the only or on startup defaults to the master computer in a live Security Escort System.

“Default Slave Computer”

This computer on startup defaults to the slave computer in a live Security Escort System.

“Workstation Computer”

“Remote Computer”

This computer is not in a live Security Escort System; it is used only for remote access. For this setting to be enabled, all transponder Comm ports and the network port must be all set to none.

“Emergency Answer Only”

Allows the master computer to answer a remote access only after 10 rings. If the master does not answer the slave will answer after 12 rings.

“Master Computer Answers”

Allows the master computer to answer a remote access after the programmed number of rings. If the master does not answer, the slave will answer after the programmed number of rings plus two.

“Slave Computer Answers”

Allows the slave computer to answer a remote access after the programmed number of rings. If the slave does not answer, the master will answer after the programmed number of rings plus two. Generally it is better to have the master computer answer remote access calls.

“Direct Connect Port”

The modem port is not connected to a modem. This setting will allow a direct connection to another computer. This additional computer will not display alarms, but otherwise will behave like a slave computer.

“Answering Machine Override”

If checked an answering machine is connected to this phone line. If the answering machine answers a remote access call, hang up and redial. When another call is received within one minute of the last ring of a previous call, then the Security Escort System will answer on the first ring, overriding the answering machine.

“Pulse Dial”

If checked use pulse dial on all outgoing calls. Otherwise tone dialing (default) is used.

“Answer On Ring”

Program the number of rings to answer on. If there is an answering machine on this phone line, set the number of rings to at least 2 greater than the number of rings that the answering machine answers on. Also check the Answering Machine Override checkbox below.

“Dialing Prefix”

On outgoing calls enter the dialing prefix, if any.

“Password”

This is the password that will be used to gain remote access to the Security Escort System. If the first 5 characters of the password match the remote systems password, read only access will be allowed. If the first 8 characters match you will be allowed to edit databases remotely (not currently implemented). If all 12 characters match then you will also be allowed to change system parameters remotely.

“Password Verify”

For verification reenter the same password from above.

“Disabled”

If selected, this system serial port is disabled (default).

“History Filter Output”

If selected, this system serial port will send out whatever items are selected in the “History Filter” dialog.

“Video Switcher Control”

If selected, this system serial port will send out the strings programmed in the “Video Switcher” field of the “Transponder Database Edit” dialog’s Area data. Also see Video Switcher Restore below.

“Remote System Control”

If selected, this system will be controlled by another system through a proprietary protocol. This setting can only be used when two systems are specifically designed to work together.

“Local Service Pages”

“Local Security Pages”

“All Local Pages”

“Video Switcher Restore”

This string is output on any system serial port programmed for “Video Switcher Control” when all alarms are restored. This string is output to the video switcher to reset it to the default displays.

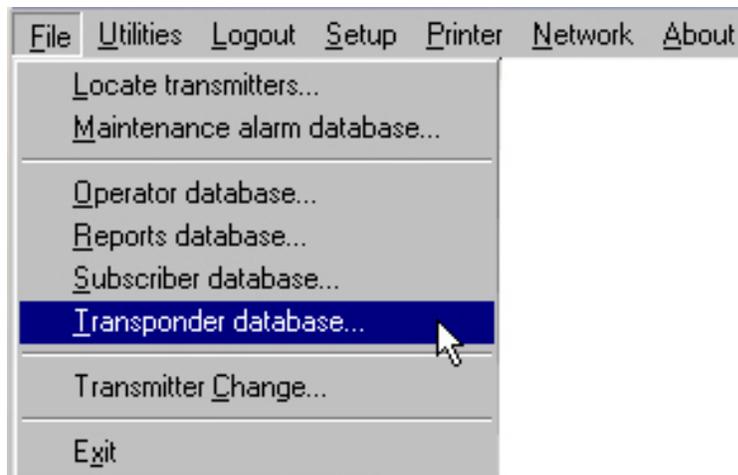
“Modem Init”

This is the initialization string output to the modem. Normally this setting would not have to be changed. To allow changes to this string, hold down the SHIFT and CTRL keys when this dialog is first opened. This string is specific to each modem model.

“Modem Reset”

This is the reset string output to the modem. Normally this setting would not have to be changed. To allow changes to this string, hold down the SHIFT and CTRL keys when this dialog is first opened. This string is specific to each modem model.

Transponder Database



The Transponder Database is established at System set-up and contains all necessary configuration data for each Transponder, receiver and alert unit. It describes the basic structure of the installation, including all device names, locations, types, Multiplex Addresses, etc. This information is used by the Central Console to generate “Alarm” and “Test” displays on the Console and in determining which Alert Units are to be activated. Access to the Transponder Database is from the “File” menu on the Main Menu bar. The following paragraphs describe the elements of the Transponder Database Dialog.

Transponder Information Sheet

Transponder Number: _____ Transponder Location: _____

Transformer for Transponder Location: _____

Breaker Panel Location: _____ Breaker Number: _____

Siren/Strobe Output To: _____

Keyswitch Monitoring To: _____

Bus #0 Locations:

Point #0: _____

Point #1: _____

Point #2: _____

Point #3: _____

Point #4: _____

Point #5: _____

Point #6: _____

Point #7: _____

Bus #1 Locations:

Point #0: _____

Point #1: _____

Point #2: _____

Point #3: _____

Point #4: _____

Point #5: _____

Point #6: _____

Point #7: _____

Bus #2 Locations:

Point #0: _____

Point #1: _____

Point #2: _____

Point #3: _____

Point #4: _____

Point #5: _____

Point #6: _____

Point #7: _____

Bus #3 Locations:

Point #0: _____

Point #1: _____

Point #2: _____

Point #3: _____

Point #4: _____

Point #5: _____

Point #6: _____

Point #7: _____

Bus #4 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #5 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #6 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Bus #7 Locations:

- Point #0: _____
- Point #1: _____
- Point #2: _____
- Point #3: _____
- Point #4: _____
- Point #5: _____
- Point #6: _____
- Point #7: _____

Location of Splices:

Transponder Database

The Transponder Database is established at System set-up and contains all necessary configuration data for each Transponder, receiver and alert unit. It describes the basic structure of the installation, including all device names, locations, types, Multiplex Addresses, etc. This information is used by the Central Console to generate "Alarm" and "Test" displays on the Console and in determining which Alert Units are to be activated.

Transponder Data		Record size: 6004 bytes, version 7	
Transponder	Housing Unit #4	Created	14:29 Wed Mar 01, 2000
Transponder ID	1	Modified	08:54 Thu May 24, 2001
Comm Port Index	A	Radio ID	0
		Modify Oper	4
<input type="checkbox"/> Isolate From All Other Transponders For Location		<input type="checkbox"/> Ignore Communications Failure	

MUX Point Data		Point Type	Transponder	Point	
Point Number	0	Receiver	Alert 1		Insert New
Bus 0, point 0		Bus +	Alert 2		Edit Data
		Bus -	Alert 3		Kill Transponder
Algorithm	Default				Delete Point
Floor Level	Floor 1	Test			Copy

Location: Test receiver 4-0

SA%: 0

Map: 0

Buttons: Beginning, Previous, Next, End of File, Cancel

Figure 9: Transponder Database Dialog

Access to the Transponder Database is from the "File" menu on the Main Menu bar. The following paragraphs describe the elements of the Transponder Database Dialog.

Transponder

This box contains the names of the Transponders. Clicking the mouse on the arrow to the right of this box causes a drop-down list to appear, displaying the names of each Transponder in the system, allowing easy selection for review or editing.

The Transponder names are assigned during set-up and are used to indicate the physical location of the Transponder or the region of the Protected area covered by a particular Transponder.

Created Modified Modify Oper

The system software automatically creates these three fields to the right of the "Transponder" window. They represent the date the Transponder was first entered into the Transponder Database, the date of the last change of any entry for this Transponder, and the identity of the operator making the last change (determined from the password entered to make the change).

Transponder ID

This is a number assigned to the Transponder at system set-up. It is used by the Central Console to identify the Transponder during all communications between the Console and the Transponder. The number must agree with the Transponder address, which is set during final installation by means of switches on the Transponder circuit board.

NOTE: "Zero" is not allowed as a Transponder address.

Comm Port Index

This indicates which Central Console communications port will be used to communicate with this Transponder. The Transponder Comm Port Setup dialog selects the specific physical port that this index will refer to.

Radio ID

This is the identification number for the Radio Interface Unit, if the Transponder communicates to the Central Console by means of a radio link. (This feature is currently not implemented)

Isolate From All Other Transponders For Location

When checked this transponder is isolated from all other transponders for location considerations. This should be used when distant transponders sometimes hear an alarm and throw off the alarm location calculation. If this checkbox is checked it indicates that this transponder is protecting an area that is independent of all other transponders in the system. When an alarm is reported, and receivers on this transponder have best reception then only the receivers on this transponder will be considered for the location of this alarm. If another transponder has the best reception then the receivers on this transponder will be ignored for the location of this alarm.

Ignore Communications Failure

This checkbox allows "Communications Failures" to be ignored for this Transponder. It is used during a new installation for Transponders that are not yet fully on line. During system maintenance, when a Transponder will be out of service for a while, it is used so that the "Communications Failure" messages will not flash on the screen and distract the Operator. **Checking this checkbox will cause the system to ignore communication failure, therefore if communications fail with this transponder, the area this transponder protects will not be protected and alarms from subscribers in that area will be missed without the operator's knowledge. This checkbox should not be checked in a live system.**

Insert New

Clicking this button displays an empty transponder edit dialog. This is used to enter a new transponder to the database.

Edit Data

Clicking this button allows the currently displayed transponder's database record to be edited.

Kill Transponder

Clicking this button will delete the currently displayed transponder's database record. If the transponder is "killed" its data is permanently deleted and can't be recovered.

Delete Point

Clicking this button will delete the currently displayed point only from the currently displayed transponder's database record. If the point is deleted, its data is permanently deleted and can't be recovered.

Copy

Clicking this button will copy the currently displayed transponder's database record into a new transponder record. This allows similarly configured transponders to be programmed once then copied into a new record. Note: It is not possible to edit the Transponder ID itself. If this should be necessary, the "Copy" button can be used to produce another Transponder Database entry duplicating the first, but with the Transponder ID blank. The new Transponder ID can be entered, the new data saved by using the "Save" key, and the old Transponder entry can be deleted by using the "Kill Transponder" button.

Print

Clicking this button will print the currently displayed transponder's database record.

Beginning

Clicking this button will change the currently displayed transponder to the first transponder in the database.

Previous

Clicking this button will change the currently displayed transponder, to the previous transponder in the database.

Next

Clicking this button will change the currently displayed transponder, to the next transponder in the database.

End of File

Clicking this button will change the currently displayed transponder to the last transponder in the database.

Mux Point Data

The lower portion of the Transponder Database dialog provides information on each of the devices controlled by the Transponder selected in the "Transponder" box. There are two digits that represent each Receiver or Alert Unit address, the first is the number of the *Multiplex bus* on which the device is mounted (zero to 7) and the second is the *Multiplex "Point" Address* assigned to the particular device. On each of the eight Multiplex Busses, up to eight devices may be installed, but each device must be assigned a unique Multiplex "Point" Address (zero to 7). More than one device may have a particular Multiplex "Point" Address, but only if on different busses. The Multiplex "Point" Addresses are assigned by switch settings on the device (Receiver or Alert Unit) circuit boards. These Multiplex "Point" Address settings are also a part of the Transponder Database. The Multiplex Address shown in the Transponder Database and the Multiplex Address set on the device circuit board must agree. The "Transponder Setup" Dialog, described later, is used to verify Multiplex Address settings.

Reminder: It is a good idea to create an entry in the Transponder Database for each Transponder in the System before entering the data for each device so that all Transponders will appear in the drop-down menus.

Creating a New Transponder Entry

The creation and modification of the Transponder Database requires special authority levels usually assigned only to Installing Company personnel.

The button labeled "Insert New" creates a new Transponder Database Dialog, ready for entry of data.

The System Design Layout Sheets prepared in advance by the installation manager should contain the necessary information for assigning the Transponder Name and ID, the Com Port or Radio ID, as well as the names and Multiplex Addresses for all Receivers and Alert Units connected to each Transponder.

The Layout Sheets will also contain the text to be used to indicate the Receiver locations and will designate the Alert Units to be driven by each Receiver.

Figure 10: Blank Dialog Resulting from Selection of "Insert New" Button

Setting Receiver Parameters

If the Transponder Database already contains the Transponder the "Edit" button is used to allow completion or modification of the data.

Trouble Type Text

This is the text that will be shown in the trouble dialog when the Remote Key input on the transponder goes active (shorted).

Trouble Tamper Text

This is the text that will be shown in the trouble dialog when the Remote Key input on the transponder goes into trouble (open).

Trouble Response Text

This is the text that will be shown in the trouble dialog as the response test. The actions the responding individual should take.

Show Points

If selected the lower half of the transponder database's dialog will show the point's (receiver, virtual receiver or alert unit's) database values.

Show Areas

If selected the lower half of the transponder database's dialog will show the area's database values.

Area Number

Each Transponder can have up to 80 areas defined in them (prior to version 2.04 of the software only 40 areas could be defined). "Area Numbers" range from 0 to 79. Use the Locate button to define the area graphically on the map.

Point Number

Each Receiver and Alert Unit connected to the Transponder has a unique "Point Number" assigned during the System design process. This number will correspond to a specific "Bus Number" and "Point Multiplex Address" number. The "Multiplex Address", set by means of switches on the device (Receiver or Alert Unit) itself, must correspond with the "Point Number" assigned in the Transponder Database. For instance, a device programmed with Multiplex Address location 3 and on Bus 5 would be Point Number 29. This relationship is displayed in the table which is displayed anytime a "?" box is clicked with the mouse. Clicking on any number in the table will automatically enter that number into the "Point Number" box on the Transponder Database Dialog and will close the table dialog.

	Bus Number							
	0	1	2	3	4	5	6	7
MUX Point 7 =>	7	15	23	31	39	47	55	63
MUX Point 6 =>	6	14	22	30	38	46	54	62
MUX Point 5 =>	5	13	21	29	37	45	53	61
MUX Point 4 =>	4	12	20	28	36	44	52	60
MUX Point 3 =>	3	11	19	27	35	43	51	59
MUX Point 2 =>	2	10	18	26	34	42	50	58
MUX Point 1 =>	1	9	17	25	33	41	49	57
MUX Point 0 =>	0	8	16	24	32	40	48	56
	0	1	2	3	4	5	6	7

Buttons: Alerts Only, Receivers Only, All Points (selected), Cancel

Figure 11: Select Point Dialog with "All Points" Selected

A third number, the "Point Number" is unique to a particular device. "Point Numbers" range from 0 to 63. There is a one-to-one correspondence between a "Point Number" and a "Point Multiplex Address"/"Bus Number" pair. The "Point Number" assignment is presented in a table which is displayed whenever the "?" box to the right of the "Point Number" box is clicked.

This table provides a quick way to select a particular device without having to translate between the two numbering systems. Three buttons at the bottom of this dialog allow the user to display all possible device numbers (whether or not the particular Transponder has a device assigned to the number) or, to display only locations populated by Receivers or only locations populated by Alert Units.

When a "Point Number" button in the table is clicked, the "Point Number" table disappears and that "Point Number" automatically appears in the "Point Number" box of the "Transponder Database" window. The "Bus Number" and "Point" Address are also changed to reflect the selection.

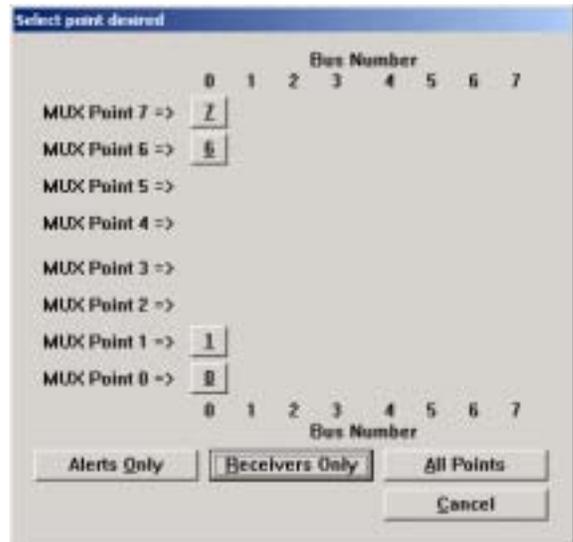


Figure 12: Select Point Dialog with "Receivers Only" Selected

+ , -, Bus + and Bus -

These buttons, just below the "Point Number", allow the user to quickly advance the device selection by one location, either one "Point" location ("+" or "-") or one "Bus" number ("Bus +" or "Bus -"). This is useful when a task requires proceeding from device to device, as during system setup or check out. The "?" box is used to display all devices to facilitate quick selection of a particular device. It is most useful when diagnosing a problem with a particular device.

Point Type

The "Point Type" box indicates the type of device (Receiver, virtual receiver or Alert Unit) located at the location currently selected in the "Point Number" box. Once the "Point Number" box contains the proper value, the device type is set by selecting from the options in the drop-down menu that appears when the arrow to the right of the "Point Type" box is clicked.

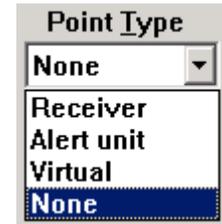


Figure 13: Drop-Down Menu for Selection of Point Type

The receiver selection is used when there is a physical receiver connected at this bus location.

Point or Area Data		Point Type		Transponder	
Number	0 ?	Receiver	Alert 1		
Bus 0, point 0	+ -	Bus + Bus -	Alert 2		
Algorithm	Default	Alert 3			
Floor level	Floor 1	Test			
Location	Test receiver 4-0				
SA%	0				
Map	0				

Figure 14: Data Entry After Selection of Receiver Point Type

The alert unit selection is used when there is an alert unit connected at this bus location.

The dialog box is titled 'Point or Area Data'. It features a 'Point Type' dropdown menu set to 'Alert unit'. Below this, there is a 'Number' field with the value '0' and a '?' icon. To the right are 'Bus +' and 'Bus -' buttons. Below the number field are 'Bus 0, point 0', '+', and '-' buttons. A 'Location' text box is at the bottom. The 'Alert unit' dropdown is highlighted in blue.

Figure 15: Data Entry after Selection of Alert Unit Point Type

The virtual selection is used when there is no physical device connected at this bus location. Starting with version 2.03 of the Escort software you can add Virtual receivers in the transponder database. A Virtual receiver is added at one of the 64 points allowed per transponder. However there is no physical hardware used.

The dialog box is titled 'Point or Area Data'. The 'Point Type' dropdown is set to 'Virtual'. The 'Number' field contains '8'. Below it are 'Bus 1, point 0', '+', and '-' buttons. To the right are 'Receiver 1' and 'Receiver 2' checkboxes. Below the bus buttons are 'Algorithm' (set to 'Default') and 'Floor level' (set to 'Basement5') dropdowns. At the bottom left are 'SA%' and 'Map' fields, both with '0' entered. A large 'Location' text box is at the bottom. The 'Virtual' dropdown is highlighted in blue.

Figure 16: Data Entry after Selection of Virtual Receiver Point Type

The Virtual receiver is intended to compensate in cases where there is a receiver imbalance. For example if a building with a dense population of receivers is adjacent to a fence with few receivers and an alarm occurs between them; the alarm location may pull towards the building. The Virtual receiver references two other physical receivers that must be on the same transponder. Only if both of the referenced receivers receive an alarm transmission, then the Virtual receiver will be added to the alarm as if was a physical receiver that heard the alarm at the average receive level of the 2 referenced receivers. The Virtual receiver's location and sensitivity may be adjusted the same as a physical receiver. After a Virtual receiver is added, verify the surrounding areas to make sure they have not been adversely affected. **In no event should a virtual receiver be utilized as a cost savings measure to avoid the installation of an actual receiver.**

The dialog box is titled 'Point or Area Data'. The 'Point Type' dropdown is set to 'Video Switcher'. The 'Number' field contains '0'. Below it are '+', '-', and 'Alert 1', 'Alert 2', 'Alert 3' dropdowns. To the right are 'Transponder' and 'Point' dropdowns. Below the number field are 'Virtual fence area' (checkbox), 'Pager Group', 'Floor', and 'Outside' (dropdown). At the bottom left are 'Map' and 'Location' fields. The 'Video Switcher' dropdown is highlighted in blue.

Figure 17: Data Entry when Show Areas is selected

Alert 1, Alert 2, Alert 3 and Test

Each Receiver can be assigned up to three Alert Units that are to be activated if it is one of the Receivers reported by the Transponder as part of an "Alarm" event. Each Receiver can also be assigned one Alert Unit that is to be activated to confirm "Test" transmissions. These Alert Units need not be connected to the same Transponder as the Receiver. The "Transponder" box contains the Transponder to which the designated Alert Unit is connected and the "Point" box contains the Point Number of the Alert Unit on that Transponder.

The "Test" boxes similarly designate the Alert Unit, if any, whose Strobe Unit is to be activated in the event of a "Test" transmission from a Transmitter.

To assign Alert Units to each Receiver, the drop-down menus to the right of the boxes labeled "Alert 1", "Alert 2", and "Alert 3" are used to select the Transponder of the designated Alert Unit. The Point Number is typed into the "Point" box.

	Transponder	Point
Alert 1		
Alert 2		
Alert 3		
Test		
Housing Unit #4		
Not Used		

Figure 18: Drop-Down Menu for Assigning Alert Units to Receivers

Algorithm

Starting with version 2.03 of the Escort software there are 5 different location algorithms that can be selected on an individual receiver basis in the transponder database. Classic (original Escort algorithm), linear, low pull, medium pull and strong pull. By default when a receiver is set for outside or tunnel, it will use the linear algorithm and all other receivers will use the low pull algorithm. The receiver that hears the alarm transmission the strongest will determine the algorithm used for this alarm.

Algorithm	Default
Floor level	Default
	Classic
	Linear
	Low
	Medium
	Strong

Figure 19: Location algorithm selection

Changing the algorithm setting for a receiver only affects the location when the alarm is close to this receiver and it hears the alarm the strongest. The stronger the pull the more the alarm will be pulled towards the receiver, with linear having no extra pull.

The Algorithm setting will only be available if the "Enable algorithm tweaks" box is checked in the System Preferences dialog. Also starting with version 2.03 of the Escort software allows individual receiver sensitivity to be set in the transponder database. Receivers can be adjusted from 50% to 149% of their normal sensitivity using the SA% setting.

Alarm Area Setup

In the Transponder database under the File menu, select the transponder that has the alarm area desired programmed in it. Then click Edit data. Click Show areas and select the area desired.

The Pager group field may be programmed with a pager group that will be paged if this area is the most likely location of an alarm. This pager group will be the first group paged to allow quick response by those individuals charged with responding to an alarm in this area. Each area may be assigned a pager group that can be the same or different from other alarm areas.

Figure 20: Transponder Area Edit dialog

The default alarm pager group defined in the Pager Setup dialog will also be paged after the pager group assigned to an area. If a pager group is not assigned to an area or the alarm location is not within a defined area then only the default pager group will be paged.

Floor Level

This selects the physical floor level that a receiver is mounted at or a virtual receiver will act like it is mounted at. It is very important for the operation of the location algorithm that this setting is correct.

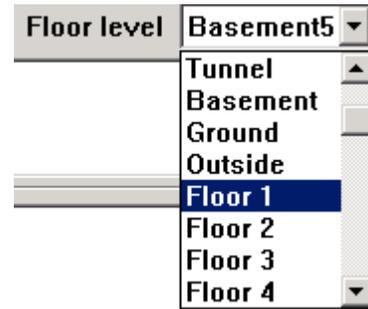


Figure 21: Receiver floor level selection

Receiver 1

These are the 2 receivers on the same transponder that a virtual receiver will assume the average of. Both of the receivers will have to receive a signal before the virtual receiver will report that it also received a signal that is the average of the other 2 receivers signals. The location algorithm and sensitivity adjust work the same for a virtual receiver as for a physical receiver.

Receiver 2

Location

This block contains the text to be displayed on the "Alarm" screen if this Receiver is one of those closest to the Alarm source. The description is developed with the guidance of the security personnel who must respond to an Alarm. It is vital that the description be clear and unambiguous to them.

To enter a location description, place the cursor in the "Location" text block, click the mouse, and begin typing. Receiver and Alert Unit location names are important as they are used for directing response to an Alarm and to aid service personnel in identifying the device in the event of a problem. The problem reports that are displayed on the Console Screen and printed by the Hardcopy Printer contain the device location descriptions that are entered in the "Location" text blocks.

SA%

Starting with version 2.03 of the Escort software allows individual receiver sensitivity to be set in the transponder database. Receivers can be adjusted from 50% to 149% of their normal sensitivity. No physical receiver changes or upgrades are required. This setting should only be changed if there are known location accuracy problems in the area of this receiver. Settings of 50 to 99 will desensitize the receiver to 50% to 99% of the actual received signal strength. Settings of 1 to 49 increase the sensitivity to 101% to 149% of the actual received signal strength. Try changing the sensitivity of receivers one at a time while testing the alarm location response. For example if alarms are being pulled towards a particular receiver, lower its sensitivity in 10% increments and retest. If the area can be corrected using this method, verify the surrounding areas to make sure they have not been adversely affected. It is generally better if the correction is done in small steps while verifying the adjacent areas, rather than trying to correct the entire error in one step. The SA% option will only be available if the "Enable algorithm tweaks" box is checked in the System Preferences dialog.. Also in the transponder database there is the Algorithm dropdown list box to allow selection of DEFAULT, CLASSIC, LINEAR, LOW, MEDIUM or STRONG pull location algorithms for each transmitter. The point reporting the best reception level determines the actual algorithm used for location on any event. If programmed for DEFAULT the algorithm used will be LINEAR for points programmed as outdoor or tunnel and all other points will use LOW. If the point reporting the best reception level is not programmed for the DEFAULT algorithm then the location calculation will use the algorithm programmed.

Map

Defines which bitmap is to be displayed for this receiver or area when an alarm is determined to be closest to it. The default map is 0, which corresponds to bitmap MAP0.EDB stored in the Escort sub-directory. Map 1 would be MAP1.EDB. There can be 100 maps per Security Escort system (0-99).

Video Switcher

This string will be output on a system serial port that is programmed in the Remote Setup dialog. The purpose is to display the area, where the alarm is most likely located, on the CCTV monitors near the Central Console. Therefore the string would activate a macro in the video switcher that selects the appropriate camera and controls any required zoom and tilt actions. Up to 40 characters may be entered. Control characters may be entered as "^A" for control A.

Pager Group

This is the pager group that will be paged if the alarm location is determined to be in this area.

Floor	Determines the floor number that this area is defined on. The areas on floors above and below this one may be defined differently. In order for an area to be selected when an alarm is received, the location determined by the Central Console must be located within the defined area and it must be located on the designated floor.
Virtual Fence Area	If this checkbox is checked this area will not be used for normal alarm area location. This area will only be used to define a "Virtual Fence". Specific transmitters in the subscriber database can reference this transponder and area. When they reference this area and the system locates the transmitter position outside the area a Wandering (Virtual Fence) Alarm will be generated. This alerts the operator and shows the position of the transmitter.
Locate	When clicked the transponder's edit dialog will disappear and the cursor will change to a cross hair. Moving the cursor to a point on the map and clicking the left mouse button will scroll the map so that point is at the center of the screen and all previously defined receivers and areas will be shown with numerical labels. When the map is showing the location of the receiver desired, move the cross hair to the exact location of the receiver and click the right mouse button. The transponder edit dialog will reappear and the selected location will be entered into the X and Y coordinates. When the map is showing the location of the area desired, move the cross hair to the exact location of the first point of the polygon that will describe the boundary of the area and right click. Move the cursor to the second point of the polygon and again right click. The computer will draw a straight line between the first and second points. Repeat this process drawing all sides of the polygon to define the area. To close the polygon the last point should be placed on top of the first point. The polygon can have up to 19 sides and no two lines of the polygon may cross each other. If you try to create more than 19 sides the computer will automatically close the polygon with the 19 th side. When the polygon is closed it will be crosshatched to make it more visible. After the polygon is complete double click the left mouse button to return to the Transponder Edit dialog. If the area being defined is a virtual monitor "fence" area for Wandering Alarms, the monitor fence (area boundary) should be drawn at least 8 m (25 ft.) past the area to be protected to reduce potential false alarms. This is due to the basic location accuracy of the Security Escort system. If while the cross hair cursor is being displayed, you desire to exit without changing any coordinate values, press the ESC key and the transponder edit dialog will reappear.
Cut	Clicking this button will copy the displayed point or area data to a "clipboard" and clear all values to default.
Copy	Clicking this button will copy the displayed point or area data to a "clipboard". Displayed values will not be changed.
Paste	Clicking this button will copy the "clipboard" values to the displayed point or area data. The values on the "clipboard" will not be changed and may be copied to more points or areas.
Save	Clicking this button will save all changes to the database.

Powering Up the System for the First Time

After the system is configured, the system may be powered up. If the system uses multiple Transponders it is easier and more effective to power up the Transponders one at a time. By doing this troubleshooting time can be significantly reduced, especially if there is a wiring problem in the SE485 bus between Transponders.

NOTE: It is very important that twisted pair wiring is used for the SE485 bus. The Tx+ and Tx- wires must be twisted together and the Rx+ and Rx- wires must be twisted together.

1. Turn on the power switch on the first Transponder. In the Security Escort Central Console software go to the **Setup** menu and select **Transponder Current Status**. The following window will appear:

Current Transponder Status	
Transponder	Bldg. #1
Total Alarms Received	10
Total Tests Received	3
Total Troubles Processed	1
Total Troubles Shed	0
Successful Incoming Messages	64
Incoming Format Errors	0
Incoming Retried Messages	0
Total Outgoing Messages	1276
Outgoing Retried Messages	1044
Outgoing Failed Messages	173

Any data fields shown in yellow indicate a system problem

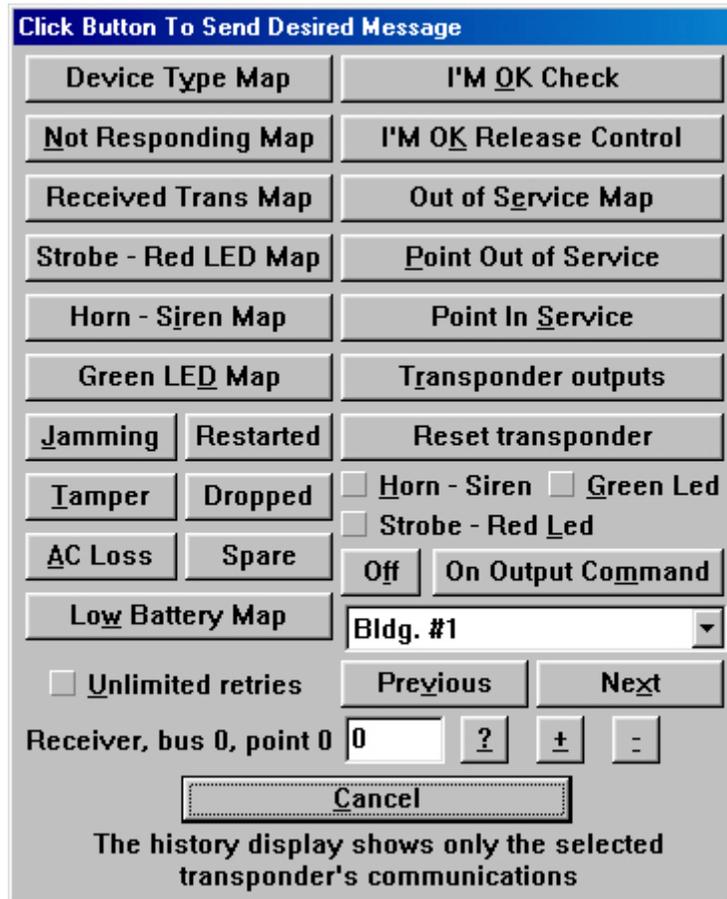
Current Troubles: **COMMUNICATIONS FAILURE low battery**

Auto scan Stress test

Not Responding Map Out of Service Map Reset Transponder Troubles
 Jamming Map Tamper Map AC Loss Map Low Battery Map
 Previous Next Acknowledge Refresh Data Cancel

Current Transponder Status Window

2. Select the desired Transponder. Click the **Reset Transponder Troubles** button. If the selected Transponder is communicating with the Central Console, the number 1 will appear in the **Total Outgoing Messages** field and in the **Successful Incoming Messages** field. The Transponder is now communicating with the Central Console software. If the number 1 only appeared in the **Total Outgoing Messages** field there is a wiring problem between the Central Console and the Transponder (refer to Section 0, Troubleshooting Reference, of this manual and locate the problem).
3. Check the **Stress Test** box. This tests the communications reliability by causing the Central Console software to send a continuous stream of messages to the selected Transponder. The values in the **Successful Incoming Messages** and **Total Outgoing Messages** fields should start counting up rapidly, with few if any errors. It is normal to have slightly fewer **Total Outgoing Messages** than **Successful Incoming Messages**. If the errors are greater than 1% of the number of messages, then there is a problem that should be corrected (refer to Section 0, Troubleshooting Transponders, Points and Alert Units, of this manual and locate the problem).
4. From the **Setup** menu select **Transponder Communications**. The following window will appear:



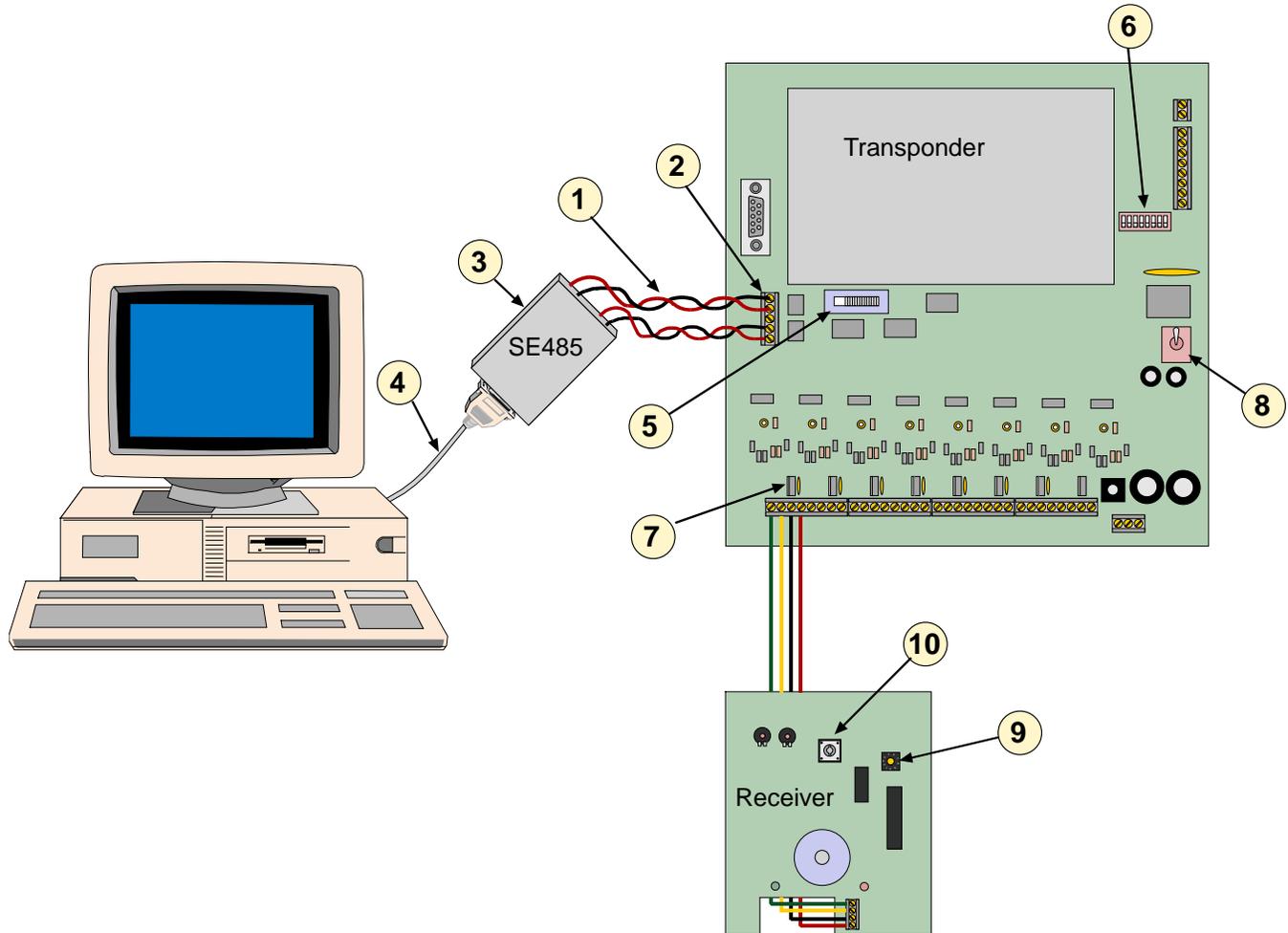
Transponder Communications Window

5. Select the desired Transponder. Then click the **Not Responding Map** button. A grid should appear on the screen. The columns of the grid represent multiplex buses from 0 to 7 (left to right). The rows of the grid are points on the multiplex buses from 0 to 7 (bottom to top). At this point there will be a zero (0) on the grid location for each Receiver connected to the selected Transponder. A zero means that a Receiver is programmed in the database and is communicating with the Transponder. If the number 1 appears at a point location, the Receiver is programmed in the database but not communicating to the Transponder (refer to Section 0, Troubleshooting Reference, of this manual and locate the problem). If an X appears on the grid at a point location the Receiver is communicating to the Transponder but is not programmed in the database. Reprogram this point in the database or rotate the Receiver ID rotary switch on the Receiver's circuit board to the proper point number. (Y = Alert Unit is in the database but not responding to the system; N = Alert Unit is in the database and is responding to the system.)

When the Transponder is communicating with all the Receivers and the Receivers Database records are correct back up the database files to the hard drive again, if any changes have been made. From the **Utilities** menu select **Backup**, make sure it is set to the hard drive and click on **Backup**. It is also wise to back up each database to a 3 1/2" floppy. Mark the floppy label with the databases and backup date.

Troubleshooting Transponders, Points, Receivers, and Alert Units

Common Errors



1. Wrong type of cable. You must use twisted pair cable. Common errors are that twisted pairs are not used or that separate wires from more than one pair is used.
2. Check to see if + and – are reversed or if TX and RX are reversed.
3. The correct connections from the SE485 to the Transponder are: RX+ to TX+ and RX- to TX-.
4. The cable should be straight through to your computer serial port connector. Do not use a null modem cable or a cable marked for printer use.
5. Switch set in the wrong position.
6. DIP switch settings incorrect.
7. Power Jumper not on.
8. ON/OFF switch not ON.
9. Wrong point address.
10. Forgot to put on the tamper spring.

Built-In Troubleshooting Aids

Receiver

Jumpers

There are two groups of jumpers on the EA102A-304 Receiver. The first group contains Jumpers P1 through P3. The second contains Jumpers P4 through P8. The function of each jumper is indicated in the table below:

Jumper	Operation with Jumper in Place
P1*	Sounder is enabled
P2*	Green LED is enabled
P3*	Red LED is enabled
P4**	Test Mode is enabled
P5**	Receiver Spacing Mode is enabled
P6**	Left Antenna is disabled
P7**	Right Antenna is disabled
P8	Do not place a jumper across these pins

NOTES:

* Remove Jumpers P1, P2, and P3 when installed in an outdoor enclosure.

** Remove Jumpers P4, P5, P6, and P7 for normal operation.

Test Mode

Each EA102A Receiver provides a Test Mode that may be used to check the unit's functionality. The module goes into Test Mode when Jumper P4 is in place (Jumper P5 removed). In this mode, all test and alarm receptions will be sounded.

NOTE: The sounder and LEDs (Jumpers P1, P2, and P3) must also be enabled to operate the Test Mode.

Each receiver should be tested using the following method (test only one receiver at a time):

- 1) Enable the Test Mode by placing the P4 Jumper across both pins (Jumper P5 removed).
 - The red LED will turn ON and stay ON during the test. This indicates that power is properly connected and the receiver is in Test Mode. If the red LED does not come on check the POWER+ and POWER-wiring to this receiver. Also verify the corresponding transponder bus enable jumper is in place and the transponder is on and powered.
 - The green LED will flicker if the receiver is connected to a working transponder. If the green LED is not flickering verify the BUS+ and BUS – wiring to this receiver (note, this is a rapid flickering).
 - There will be no data transmitted to the central station. Therefore, the Central Station will report this receiver as "Not responding" while the receiver is in test mode.
- 2) Activate the transmitter from different locations near the receiver.
 - The red and green LEDs will respond to a received transmission.
 - If the receiver detected all the packets from the transmission, the sounder will beep three times.
 - If the receiver detected the transmission, but some of the packets were missing, it will beep once. This could indicate that the signal is not sufficient from this location.
- 3) Remove the P4 Jumper to return the receiver to normal operating mode.

Transponder

Status LEDs

Each Transponder contains LEDs that display the transponder's condition and its response to events. With the exception of the AC Power LED (which is located in the lower right hand corner of the transponder circuit board), the diagnostic LEDs are located in the top right corner of the transponder board.

Generally, the LEDs indicate the unit's status and signal system events. Each LED and its function is indicated below:

LED	Function
AC Power	(Lower right hand corner of the transponder board.) If this LED is off there is no AC power (Mains power) to the board. Find and correct the AC power (Mains power) problem. This LED will light even if the transponder's power switch is off.
Comm Fail	This LED will light if the transponder is in a communications failure condition with the Central Station. It will automatically go out when communications are restored.
Carrier Detect	This LED is operational only for SE485 communications. It will flash on every time any transponder (including this transponder) on this SE485 bus sends a message to the Central Station. It is used to monitor overall communications from the transponders to the Central Station. If the Carrier Detect LED stays on there is a problem with one of the transponders on this bus or the wiring that must be corrected before normal communications will be restored.
Transmit Data	This LED will flash on every time this transponder sends a message to the Central Station, whether or not the Central Station receives it. If this transponder initiated the communications and the Central Station correctly receives the message the Receive Data LED should flash soon thereafter indicating that the Central Station successfully returned an acknowledgement.
Receive Data	This LED will flash on every time this transponder successfully receives a message addressed to it from the Central Station. If the Central Station initiated the communications the Transmit Data LED should flash soon thereafter indicating that this transponder is returning an acknowledgement.
CRC Error	This LED will come on every time a message is received containing errors, whether or not it was addressed to this transponder. The LED will remain on until the next message addressed to this transponder is received without error. The most common cause for this LED to turn on is wiring errors. Verify that the SE485 TX+ and TX- are on a twisted pair. Also verify that the SE485 RX+ and RX - are on a twisted pair.
Test in Progress	This LED comes on whenever a transmitter has been tested. It will stay on for the duration of the test display, typically 5 to 10 seconds, then it will go out. If a test is received while another test is in progress, the Test in Progress LED will go out momentarily then come on for the duration of the second test.
Alarm in Progress	This LED comes on whenever a transmitter is in alarm. It will stay on for the duration of the transponder's involvement in the alarm, then it will go out. If an alarm is received while another alarm is in progress, the Alarm in Progress LED will go out momentarily then will stay on as long as any alarms are active in the transponder. An alarm that causes the receiver sounders to stay on will keep the Alarm in Progress LED to remain on. Silent alarms or alarms from unauthorized transmitters will cause the Alarm in Progress LED to turn on and to go out when the Central Station acknowledges the alarm message. This will also occur for every alarm follower message. A maintenance alarm message will cause the Alarm in Progress LED to come on for 5 to 10 seconds then to automatically go off.
Heartbeat	Flashes at a fixed rate to indicate that the microprocessor is operating normally. If this LED stops flashing, the transponder is not operational. Turn it off using the power switch for five seconds. Then turn it back on. If the LED does not flash the transponder should have the AC power and the back up battery disconnected wait a few seconds and then connect back up. If the LED does not flash at this time, the transponder should be replaced.

Bus 0 – 7	Normally these LEDs will be on if the corresponding Bus Enable jumper is in place, and will be off if the jumper is removed. If the bus is enabled, the LED will flash off and come back on, every time a receiver or alert module on that bus communicates with the transponder. A bus LED will flash at the rate of the heartbeat LED if there is any kind of bus fault (data to ground, data to power and bus power to ground) on that bus. On the EA501 the communications failure LED will flash at this rate since there is no Bus LED. A Bus LED will flash at ½ the rate of the heartbeat LED if there are no points reporting on that bus (open connection). On the EA501 the communications failure LED will flash at this rate. If a Bus LED is flashing for a bus that is not enabled, it can be reset in the Central Station's Transponder Data View dialog by selecting this transponder and clicking the Clear EE button. There are two special displays on the bus LEDs. All the Bus LEDs go out, and for 2 seconds a single LED is on walking down the display from Bus 0 to Bus 7 indicates that a battery test is in progress. Usually after the tamper switch is released the Bus LEDs count rapidly to indicate that the EEPROM memory is being updated.
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Verifying Communications

To verify communications press the test feature on any transmitter. The Test in Progress LED will come on. If it did not come on the receivers are not communicating with the transponder. About a second after the Test in Progress LED comes on the Transmit Data LED will flash on (indicating that the transponder is sending the test message to the Central Station). Less than a second later the Receive Data LED will flash (indicating the Central Station returned an acknowledgement).

Toggleing the transponder's tamper switch on/off will cause the Transmit Data LED to flash on (indicating that the transponder is sending the tamper message to the Central Station). Less than a second later the Receive Data LED will flash (indicating the Central Station returned an acknowledgement).

Troubleshooting Reference

Transponder Communications With SE485 Bus

Symptoms	Probable Cause	Possible Solution
All Transponders on one bus in communications failure.	A. Power to SE485.	A. Check 9 VDC adapter for proper voltage. Red Power LED should be ON (on SE485).
	B. Wire between SE485 and Transponder incorrectly installed.	B. Check to make sure transmit from Transponder goes to receive of SE485 and receive from Transponder goes to transmit on SE485 (RX+ to TX+, RX- to TX-).
	C. Open, short or grounded cable from SE485 to first splice or Transponder.	C. Use VOM to test cable for short, open or ground. Repair or replace cable. Also check for + - pair reversed.
	D. Wrong cable between SE485 and computer.	D. Cable should be a straight through to your computer serial port connection. Do not use null modem cable or cable marked for printer.
	E. Bad SE485 module.	E. Replace SE485 module.
	F. Using third party RS-485 Interface	F. Due to changes made for transient protection, transformer isolation, and link busy detection, these signals are not compatible with third party RS485 Interfaces. Replace with SE485
High Communications Error Count.	A. Wire between SE485 and Transponder incorrectly installed.	A. Check to make sure transmit from Transponder goes to receive of SE485 and receive from Transponder goes to transmit on SE485 (RX+ to TX+, RX- to TX-).
	B. Wrong wire type. (See Section 0.)	B. Wire type must be twisted pair.
Single Transponder in communication failure.	A. Transponder not on.	A. Check power switch.
	B. Wrong Transponder address.	B. Check dip switch setting on Transponder to correspond with your Transponder data base setting.
	C. RS-232/SE485 switch position.	C. Check slide switch on Transponder to make sure it is in the SE485 position.
	D. SE485 wiring on Transponder.	D. Check to make sure transmit from Transponder goes to receive of SE485 and receive from Transponder goes to transmit on SE485 (RX+ to TX+, RX- to TX-).
	E. Close lightning hit.	E. Power down Transponder and restart. If this does not work replace Transponder.
	F. Bad Transponder.	F. Replace Transponder.

Transponder Communication With ProxLink Radio

Symptoms	Probable Cause	Possible Solution
Communication failures from all Transponders.	A. Loss of power.	A. Check power to ProxLink from central console. Also, if using SE485, check power to SE485 module.
	B. Cable from ProxLink to computer.	B. Must use 25 to 9 pin cable supplied from Proxim.
	C. ProxLink Radio Module maybe in programming mode.	C. Unplug power to ProxLink and plug back in to re-start ProxLink.

Symptoms	Probable Cause	Possible Solution
	D. SE485 module.	D. Check wiring between SE485 and computer, and SE485 at ProxLink Radio Module. Transmit should be going to receive and receive should be going to transmit (RX+ to TX+, RX- to TX-).
	E. Cable from SE485.	E. Cable from SE485 to computer must be straight through 25 pin to 25 pin or 25 pin to 9 pin depending on your serial port on the back of the computer. Do not use cable labeled for printer or null modem cable. Replace cable if bad. Check cable between SE485 and ProxLink Radio Module. Replace if bad.
	F. ProxLink Radio Module.	F. Check programming for central console ProxLink Radio Module to be sure it is correct. If everything else checks OK, replace ProxLink.
One Transponder in communication fail on ProxLink Radio Module link.	A. Transponder.	A. 1. Check slide switch on Transponder to make sure it is in the RS232 position. 2. Check dip switch address for Transponder to be sure it corresponds with Transponder data base.
	B. Cable from ProxLink Radio Module to Transponder.	B. Replace cable.
	C. ProxLink Radio Module.	C. 1. Check power to ProxLink. Make sure radio power LED is lit. 2. Check antenna connection to ProxLink Radio Module. 3. Check programming for ProxLink Radio Module. 4. Radio out of range or not in line of sight of Central Console antenna. 5. Ice on antenna. 6. If antenna is remote from ProxLink use RG8U cable to prevent dB loss. 7. Replace ProxLink Radio Module.
One Transponder in communication fail on ProxLink Radio Module link. (Cont'd)	D. SE485.	D. 1. Check power to ProxLink to SE485. 2. Make sure slide switch on Transponder is set for SE485. 3. Check wiring from Transponder to SE485 (RX+ to TX+, RX- to TX-). Make sure transmit goes to receive and receive goes to transmit. 4. Replace SE485 module.

EA500 Transponder Bus Faults

Symptoms	Probable Cause	Possible Solution
Bus failure.	A. Bus power jumper not in place.	A. Place jumper on for corresponding bus (see Transponder Installation Instructions for location of jumper).
	B. Short or open on the bus wires.	B. Put meter across bus wire. Should be reading between 7.5 to 10.5 VDC. If voltage is not present or lower than 9 V, check wiring (BUS+ to BUS-)for possible ground, short, or open.
	C. No power to Receiver.	C. Check power for 10.5 to 13.5 VDC. If lower than 10 or no voltage present check wiring (PWR+ to PWR-) on power side of Receiver repair or replace cable.
	D. Close lightning hit.	D. Power down Transponder (AC and battery) for 30 seconds then turn power back on. If bus failure does not clear go on to solution E below.
	E. Bad bus on Transponder.	E. Remove cable from bus, meter terminals with VOM, if voltage is lower then 9VDC on BUS+ or lower then 12VDC on PWR+ replace Transponder.

EA102 Receiver Issues

Symptoms	Probable Cause	Possible Solution
Single Receiver not responding.	A. Address switch in wrong position	A. Rotate switch to correspond with Transponder database location.
	B. Open on the bus wires	B. Put meter across bus wire. Should be reading between 7.5 to 10.5 VDC. If voltage is not present or lower than 9 volts, check wiring (BUS+ to BUS-)for possible ground or open.
	C. No power to Receiver	C. Check power for 10.5 to 13.5 VDC. If lower than 10 or no voltage present check wiring (PWR+ to PWR-) on power side of Receiver repair or replace cable.
	D. Defective Receiver	D. If power is present on BUS+ and PWR+ and rotary switch is set to correct address, replace Receiver.
Single Receiver intermittently not responding	A. Receiver is located past the 914 m (3,000 ft.) maximum cable run.	A. Re-engineer location or reroute cable to be under 914 m (3,000 ft.)
	B. Moisture on circuit board.	B. Seal housing where moisture is entering enclosure. Replace Receiver until the old one dries out.
	C. Cable going to ground occasionally.	C. Replace or repair cable.
	D. Insects nesting on circuit board.	D. Seal any entry point and spray insect repellent inside housing to stop any further invasions into Receiver.
	E. Bad splice to Receiver.	E. Check all splices to make sure cables are tight and not loose causing high resistant open.
Single Receiver intermittently not responding (Cont'd)	F. Defective Receiver.	F. If power is present on BUS+ and PWR+, between 7.5 and 10.5VDC on bus and 10.5 and 13.5VDC on power replace Receiver.
Single Receiver reporting bad check sum.	A. Two Receivers on the bus with the same address ID number.	A. Check rotary switches on all Receivers on that bus to be sure there are no duplicate ID numbers.
	B. Moisture or water on Receiver.	B. Replace Receiver with new one until the old Receiver dries out. Seal any point where moisture is entering the Receiver housing.

Symptoms	Probable Cause	Possible Solution
	C. Length of cable to Receiver. Receiver is mounted over 914 m (3,000 ft .) from Transponder.	C. Reconfigure the bus run to make sure Receiver is within 914 m (3,000 ft .) of the Transponder.
	D. Bad splice to Receiver.	D. Check all splices to make sure cables are tight and not loose causing high resistance open.
	E. Defective Receiver.	E. If power is present on BUS+ and PWR+, between 7.5 and 10.5VDC on bus and 10.5 and 13.5VDC on power replace Receiver.
Receiver jamming.	A. Electrical equipment in area causing jamming on Receiver.	A. Go into setup on the software to Receiver Configuration. Increase jamming threshold by one degree at a time until jamming has stopped and Receiver has returned to normal. If jamming persists after increasing level, relocate Receiver or attempt to identify and minimize the jamming source.
Receiver LEDs not working.	A. LEDs not positioned behind viewing lens.	A. Remove cover, straighten LEDs, replace cover carefully so LEDs are positioned behind viewing lens. Use Maintenance Transmitter on test and alarm after installing cover to check visibility of LED.
	B. Jumpers in "Off" position on Receiver.	B. Remove cover, check jumpers to right of sounder above Red LED and make sure Jumpers P2 and P3 are On.
	C. Bad Receiver.	C. After performing steps A and B above and LEDs still do not operate on test or alarm replace the Receiver.
Receiver's sounder not operating.	A. Jumper in "Off" position on Receiver.	A. Remove the cover, check jumper to right of sounder above red LED and make sure jumper P1 is On.
	B. "Run Silent" is turned on in the Central Console Software.	B. At the Central Console click on "Setup" then "Transponder Parameter" and un-check the "Run Silent" box.
	C. Bad Receiver.	C. After performing steps A and B and the sounder still does not operate replace the Receiver.

Receiver Configuration Dialog

Once the Receiver and Alert Unit data for a Transponder has been entered into the Transponder Database, this dialog is used to verify that each Receiver is working and is properly addressed in the database. This setup tool identifies errors in the address switch settings of Receivers and Alert Units as well as data entry errors in the Transponder Database.

“To Confirm the RF Reception”

1. To confirm the RF reception, LED and sounder operation and location of each Receiver, from the **Setup** menu select **Receiver Configuration**. The following window will appear:

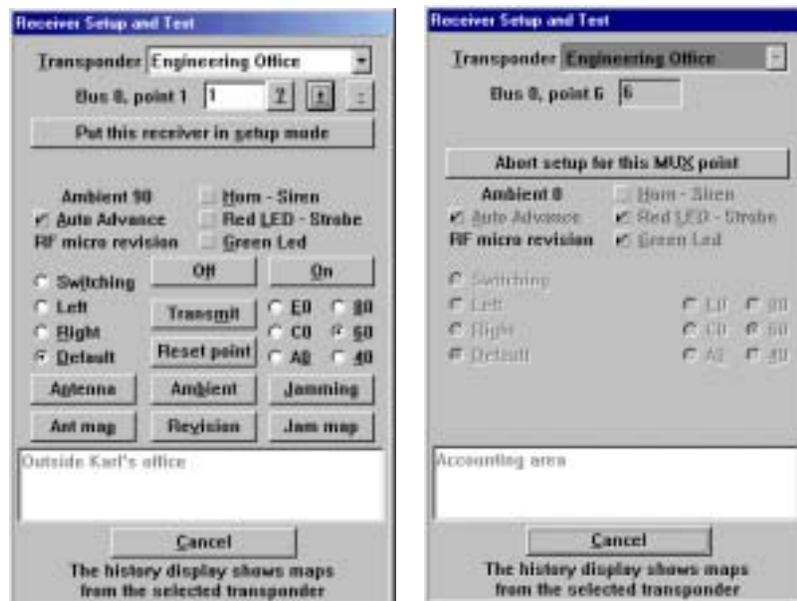


Figure 18: Receiver Configuration Windows

2. Select the desired Transponder. Click on the ? button next to the point number. A bus and point grid will appear showing the programmed receivers. Click on the lowest point number button. If the first Receiver is point zero (0) click on the **Zero** button, or if the first Receiver is point one (1) click on the **1** button. The point number will be automatically entered. Click on the **Put this receiver in setup mode** button. The red and green LEDs will light for the selected receiver on the selected Transponder. Take the Maintenance Transmitter and go to the selected Receiver. The red and green light should be lit when you arrive at the first receiver location. Transmit an alarm from the Maintenance Transmitter. The Receiver should activate by blinking the red lights and sounding the sounder (if the sounder jumper is in place on the Receiver). This will confirm that the RF portion of the Receiver is working and you are at the right location. The software will then turn off the LEDs on the tested Receiver. The Receiver with the next higher point number will be automatically selected and its red and green LEDs will light. Proceed to that Receiver and perform the same operation with an alarm on the Maintenance Transmitter until the operation of all Receivers has been confirmed and all Receivers are working and in their proper location on that Transponder. If the LEDs fail to light, the LED jumpers may be missing on that Receiver, the Receiver may be set to the wrong address, or you may be at the wrong location. If the LEDs are lit but the Receiver fails to respond to the maintenance alarm there may be a problem with the Receiver board or another Receiver is receiving the signal stronger.
3. Repeat the above sequence starting with step 1 for all Transponders and Receivers in the system.

Note: The illuminated LED's indicate to the service person standing near the device that the Receiver is actually the one currently in the setup mode. If the LED's of the designated receiver are not illuminated, there is probably an error in the switch settings of the Receiver or an error in the address in the Transponder Database. To help resolve such problems, the person at the Central Console can command any device to illuminate its LED's and/or sound its Horn.

Post Construction Setup

Testing the location accuracy of an installation

NOTE: Before doing any of the testing below it is critically important to verify that every receiver in the system is functioning correctly using the procedure described in the Security Escort Installation and Setup manual. Additionally every receiver must be programmed in the transponder database with its actual physical location and floor level. **It is also important that receivers that are physically stacked directly above one another on floors of a building are also located at the same X and Y coordinates in the database.**

There are 3 methods that can be used to verify the location accuracy of an installed system, using a standard subscriber transmitter or using a maintenance transmitter. Repeat the chosen process throughout all protected areas. Ask the customer for the areas where they have special concern and devote extra attention to those areas, since the customer is likely to be more critical in those areas.

Remember the intent of the Security Escort system is to dispatch a responding individual to an area that will not add additional delay to their response to that duress call. Therefore the computed location should be considered to be in error only when it would add unacceptable additional time to the response to the alarm.

While testing it is helpful to see which receivers are involved in the alarm response and the relative reception level they reported. To display the receivers, under the Utilities menu select Security Preferences. Make sure the No Receiver Icon checkbox is not checked and click the Save button. Under the Setup menu select System Preferences. If Show Test Levels and Show Maintenance Levels are checked the relative reception level will be shown in the receiver icons, otherwise the floor number will be shown.

When testing with any of the following methods, the transmitter must be used exactly as it would be used in normal operation. A transmitter designed to be belt mounted or used in a holster must be in its normal mounting attitude and be worn on the belt of the individual originating the test transmissions. Handheld transmitters must be held in the hand about waist high, never held above the head.

1) Using a standard subscriber transmitter

This method requires 2 people with radio contact between them. One person operates the computer running the Escort software and the other takes the subscriber transmitter to the area to be tested. Press the alarm on the transmitter and remain at the spot where you transmitted. At the computer acknowledge the alarm and accurately describe the computed location over the radio. The individual with the transmitter should confirm that they are at the reported location or describe over the radio actually where they are. Either individual must record all discrepancies, including the actual and computed locations. We recommend using a map or floor plan and drawing an arrow from the actual alarm location to the reported location. It is also helpful if all successful alarm locations are marked with a P (passed). Then the alarm can be reset from the computer screen. For areas where there are alarm location problems, try facing in different directions in the same spot. Also generate additional alarms from different spots to fully understand the extent of the problem. You should also generate alarms in areas adjacent to the area with the problem to see if they are affected also.

2) Using a maintenance transmitter with only 1 person

The Escort software will retain the last 50 maintenance alarm locations. Make sure you are the only one using a maintenance transmitter on site, buddy check is off and that you limit yourself to a maximum of 50 maintenance alarms per sequence. Synchronize the time on your watch to the computer. Carry a detailed map or floor plan of the area to be tested that you can write on. Take the maintenance transmitter to the area to be tested. Press the alarm on the transmitter and accurately mark the spot on the map where you transmitted with a 1 (for the first transmission). Also record the time of the first transmission only. Continue to the next location, transmit and mark that spot on the map with a 2. Repeat the process throughout the area to be tested, being sure not to exceed 50 alarm transmissions and make sure that at least 10 seconds elapse between transmissions. When done return to the computer and select the Maintenance Alarm database under the File menu. Scroll the alarm list to the alarm that matches the time of your first transmission. This is the maintenance alarm that you marked as 1 on your map. Confirm that the actual location from the map matches the reported location. If the actual location differs from the reported location draw an arrow on the map from the actual location to the reported location. Then press the up arrow once to go to the next alarm. Compare the locations, drawing an arrow to the reported location if they differ. Repeat going through all points on your map, making sure that the points on the map stop when you run out of entries in the scrolling list on the computer screen. Otherwise the points on the map and the screen are out of sync and the errors on your map are incorrect and will be misleading. For areas where there were alarm location problems, you may want to repeat the above process facing in different directions in the same spot. Also generating additional alarms from different spots in the problem areas to fully understand the extent of the problem. You should also generate alarms in areas adjacent to the area with the problem to see if they are affected also.

3) Using a maintenance transmitter with 2 people

The 2 people must have radio contact between them. One person operates the computer running the Escort software and the other takes the maintenance transmitter to the area to be tested. At the computer select the Maintenance Alarm database under the File menu. Make sure the top item in the scrolling list is selected. Press the alarm on the transmitter and remain at the spot where you transmitted. At the computer observe the alarm and accurately describe the computed location over the radio. The individual with the transmitter should confirm that they are at the reported location or describe over the radio actually where they are. Either individual must record all discrepancies, including the actual and computed locations. We recommend using a map or floor plan and drawing an arrow from the actual alarm location to the reported location. It is also helpful if all successful alarm locations are marked with a P (passed). For areas where there are alarm location problems, try facing in different directions in the same spot. Also generate additional alarms from different spots to fully understand the extent of the problem. You should also generate alarms in areas adjacent to the area with the problem to see if they are affected also.

Reviewing potential problem areas

Review the potential problem areas on the maps with the customer to see which areas cause them concern and which areas they consider acceptable as is. If the customer considers an area acceptable it typically is not worth spending additional time trying to improve the location accuracy in those areas.

Improving the location accuracy of an installation

Now we have identified those areas that must be improved, what are the options to improve the computed location accuracy?

NOTE: All changes using the following steps potentially change the computed locations for all alarms at or around the changed area. Therefore after any change is made the entire vicinity around the changed area must be verified.

- Typically the first thought is to add more receivers in the problem area. Generally this is a bad approach. If the system was properly designed using the recommended grid layout, adding extra receivers in any area of the grid will distort the response in adjacent areas and floors. Therefore while it may seem to fix the problem area, typically it will create more problems in adjacent areas. The exception to this is when an area is shielded by something like wire mesh in the walls that prevent the RF transmitted signal from passing. Therefore additional receivers may have to be added in the shielded area to insure that all alarm transmissions will be heard.
- Verify that the location of the receivers in the transponder database is accurate to their physical location and the receivers are indicated to be at the correct floor level. It is also important that receivers that are physically stacked directly above one another on floors of a building are also located at the same X and Y coordinates in the database.

- Try changing the transponder database location of receivers (not the actual physical location) one at a time while testing the alarm location response, using one of the testing methods above. For example if alarms are getting pulled outside a building in one area, move the closest receiver (in the transponder database) to that area a little further into the building and retest. If the area can be corrected using this method, verify the surrounding areas to make sure they have not been adversely affected. It is generally better if the correction is done in small steps while verifying the adjacent areas, rather than trying to correct the entire error in one step.
- Starting with version 2.03 of the Escort software allows individual receiver sensitivity to be set in the transponder database. Receivers can be adjusted from 50% to 149% of their normal sensitivity. No physical receiver changes or upgrades are required. Try changing the transponder database sensitivity of receivers one at a time while testing the alarm location response, using one of the testing methods above. For example if alarms are being pulled towards a particular receiver, lower its sensitivity in 10% increments and retest. If the area can be corrected using this method, verify the surrounding areas to make sure they have not been adversely affected. **It is generally better if the correction is done in small steps while verifying the adjacent areas, rather than trying to correct the entire error in one step.**
- Starting with version 2.03 of the Escort software there are 5 different location algorithms that can be selected on an individual receiver basis in the transponder database. Classic (original Escort algorithm), linear, low pull, medium pull and strong pull. By default when a receiver is set for outside or tunnel, it will use the linear algorithm and all other receivers will use the low pull algorithm. The receiver that hears the alarm transmission the strongest will determine the algorithm used for this alarm. Changing the transponder database algorithm setting for a receiver only affects the location when the alarm is close to this receiver and it hears the alarm the strongest. Change the transponder database algorithm setting for a receiver and test in its area, using one of the testing methods above. The stronger the pull the more the alarm will be pulled towards the receiver, with linear having no extra pull. Verify the surrounding areas to make sure they have not been adversely affected.
- Starting with version 2.03 of the Escort software the 5 different location algorithms can individually limit how close other receivers have to be to the receive level of the receiver hearing the alarm the best, before they will be included in the alarm. Classic (original Escort algorithm), linear, low pull, medium pull and strong pull each have a separate setting. By adjusting this setting you can control if distant receivers with low receive levels will be considered in the alarm calculation.
- Starting with version 2.03 of the Escort software you can add Virtual receivers in the transponder database. A Virtual receiver is added at one of the 64 points allowed per transponder. However there is no physical hardware used. The Virtual receiver is intended to compensate in cases where there is a receiver imbalance. For example if a building with a dense population of receivers is adjacent to a fence with few receivers and an alarm occurs between them; the alarm location may pull towards the building. The Virtual receiver references to other physical receivers that must be on the same transponder. Only if both of the referenced receivers receive an alarm transmission, then the Virtual receiver will be added to the alarm as if was a physical receiver that heard the alarm at the average receive level of the 2 reference receivers. The Virtual receiver's location and sensitivity may be adjusted the same as a physical receiver. After a Virtual receiver is added, verify the surrounding areas to make sure they have not been adversely affected. **In no event should a virtual receiver be utilized as a cost savings measure to avoid the installation of an actual receiver.**

System Preferences Dialog

The “Set System Preferences” dialog under the “Setup” menu contains a number of settings that govern the behavior of the Security Escort System.

Force Map Background Erase

This checkbox is used to cause an extra erase of the map screen. It should only be checked if there are problems with icons not being cleared properly from the screen. Otherwise it will cause the screen to flicker.

Run Buddy Check

This checkbox enables and disables the “Buddy Check” feature of the system.

Edit System Preferences

- Force map background erase
- Run buddy check
- Day month format
- High speed buddy check
- Show maintenance levels
- Show test levels
- Enable algorithm tweaks
- Pager communications
- Monitor communications
- Optional parameter 8
- Display maintenance alarm
- Sound maintenance alarm
- Disable idle processing
- No Buddy Check Delay
- No password to exit
- No password on registry
- No password timeout
- Bring to front on alarm
- Bring to front on trouble
- Control room output to siren
- Control room output to strobe
- Control room output to spare
- Not always top window
- Excel test history files

ID Receiver: Point:

Control room: Point:

Map scale %: Low depth:

Alarm spot size: Medium depth:

Linear depth: Strong depth:

Alarm zone 1
 Alarm zone 2
 Alarm zone 3
 Alarm zone 4

Figure 22: System Preferences Dialog

When checked, the Central Console periodically issues a command (via the Transponders) to each Receiver, to activate its on-board transmitter. The Console then compares the signals received from neighboring Receivers to the results of earlier “Buddy Checks”, thus identifying Receivers, which appear to have changed sensitivity.

Day Month Format	Checking this box causes all dates to be presented in day month year format rather than the month day year format used in North America.
High Speed Buddy Check	Checking this box allows the buddy check to run as fast as it can. Normally only one buddy check transmission is sent each minute.
Show Maintenance Levels	Checking this box causes the Central Console to display the signal strength measured by each receiver as a number (from 1 to 15) inside the Receiver icon when Maintenance "Alarms" are displayed. Otherwise the floor number is displayed.
Show Test Levels	This checkbox causes signal strength levels to be displayed on the receiver icons when displaying tests on the main map screen. Otherwise the green "Test" icons are displayed.
Enable Algorithm Tweaks	When checked this checkbox causes the Map Scale, Alarm Spot Size, and depth settings to be displayed in this dialog. Also it controls the display of the SA% and Algorithm settings in the Transponder Edit dialog
Pager Communications	Normally this box is not checked. If checked the communications to the dial-up wide area paging system through the modem will be displayed on the history screen. This function would only be used to diagnose communications problems to the paging system.
Monitor Communications	Normally this box is not checked. If checked the communications to the modem will be displayed on the history screen. This function would only be used to diagnose communications problems with the modem.
Display Maintenance Alarm	Normally when a maintenance alarm is received from a maintenance transmitter, the red light on all receivers hearing the transmission will flash for 5 seconds. If this box is checked the receiver with the loudest reception level will turn on both the red and green lights for five seconds.
Sound Maintenance Alarm	If this box is checked the receiver with the loudest reception level on a maintenance alarm will turn on its sounder for five seconds. Normally this box is not checked.
Disable Idle Processing	Normally this software registers with Windows to return to the Escort program if there is any idle time, so Escort can use it to speed up its response to serial communications and other background tasks. If checked, the software will not register for the idle time. Normally this box is not checked. Windows NT and 2000 can show the amount of time each application (task) is taking. When this checkbox is not checked it may appear that Escort is "hogging" the processor resources. This is not true, because Escort is only taking the time that Windows gives it through the idle process. To prove this, check this checkbox. The amount of time that Escort needs will drop dramatically and Escort will continue to operate normally (same communications responses will be slowed by several hundred milliseconds).
No Buddy Check Delay	If checked the software will not impose the hour between buddy checks from the same receiver. Normally this box is not checked and should not be checked for live systems.
No Password To Exit	If checked the software will exit without asking for a password. Normally this box is not checked.
No Password on Reentry	If checked the software will not ask for a password when the user switches to another program and then switches back to the still running Escort. Normally this box is not checked.
No Password Timeout	If checked the software will not ask for a password after the screen saver has run. Normally this box is not checked.
Bring to Front on Alarm	If checked the software will jump to the front when a new alarm occurs. Normally this box is checked.
Bring to Front on Trouble	If checked the software will jump to the front when a trouble dialog pops up. Normally this box is checked.

Control Room Output to Siren

If checked, anytime there is an unacknowledged alarm, the siren output on the Control Room Output indicated below will operate.

Control Room Output to Strobe

If checked, anytime there is an unacknowledged alarm, the strobe output on the Control Room Output indicated below will operate.

Control Room Output to Spare

If checked, anytime there is an unacknowledged alarm, the spare output on the Control Room Output indicated below will operate.

Not Always Top Window

If Escort is intended to be the only application running on this computer leave this checkbox unchecked. This will prevent other applications from taking over the screen so Escort will always be present. If Escort is to be run on a computer with other applications check this box and Escort will share the computer's display like all other Windows applications. After checking this box stop and restart the Escort application for this feature to take effect. This checkbox is unchecked by default.

Excel Test History Files

Do not check this box in a live Security Escort System. It is for diagnostic Engineering testing only.

Optional Parameter

These parameters are not currently used in the system. They should be left unchecked.

ID Receiver - Assigning a Receiver For Automated Transmitter Exchanges

The Security Escort System Software contains a feature whereby the Transmitter Identification Number of a Transmitter can be automatically entered into the Subscriber Database. This is used for entering Transmitters when first issuing them to subscribers and for Transmitter exchanges.

This automatic capture of the Transmitter Identification Number is accomplished by performing certain procedural steps (See the Security Escort Operators Manual) and then using the Transmitter to make a "Test" transmission in close proximity to a designated Receiver, usually located close to the Central Console. By capturing the Transmitter Identification Number in this manner, keystroke errors are avoided during Database entries and changes. The Receiver chosen for this purpose is designated as the "ID Capture Receiver". To assign the ID Capture Receiver, its Transponder Name and its "Point Number" are selected using the two boxes labeled "Transponder" and "Point" in the middle of the "Set System Preferences" Dialog.

Control Room

The Security Escort System Software can activate an output to call attention when there is an alarm that has been received and no operator has responded to the system yet. To assign the Control Room output, select Transponder Name it is connected to and its "Point Number".

Alarm Zone

4 Alarm zones allow the selection of which alarms from specific transmitters will be reported on this workstation. This workstation will display the alarms only for the alarm zones that are checked. Each transmitter can be assigned to one or more alarm zones and when that transmitter generates an alarm; if this workstation has one or more of the same alarm zones checked then that alarm would be displayed. The system defaults to all alarms are displayed on all workstations.

Map Scale %

This value changes the scale that the maps are presented with. It is not intended for normal operation; typically it is used for testing to allow more of the map to be seen. The setting may range from 30% to 400%. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Alarm Spot Size

This setting changes the size of the yellow dot that marks the calculated location of the alarm. The settings range from 19 to 76 (half to double the default alarm dot size). It is best to set the size of the alarm spot so that represents a diameter of 50 feet on the displayed map, as this is the area where the transmission of the alarm most likely took place. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Linear Depth

This setting controls the involvement of receivers in the alarm location calculation only when the Linear Algorithm is being used. The setting can range from 0 to 6 (it is defaulted to 2). When set to 0 only the receivers that are closer to the actual location of the alarm will be considered in the location calculation. As the setting is raised more distant receivers will be included in the alarm calculation. Typically lower settings are better than higher settings. This setting should be changed if there are known problems with the location using the Linear Algorithm. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Low Depth

This setting controls the involvement of receivers in the alarm location calculation only when the Low Algorithm is being used. The setting can range from 0 to 6 (it is defaulted to 2). When set to 0 only the receivers that are closer to the actual location of the alarm will be considered in the location calculation. As the setting is raised more distant receivers will be included in the alarm calculation. Typically lower settings are better than higher settings. This setting should be changed if there are known problems with the location using the Low Algorithm. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Medium Depth

This setting controls the involvement of receivers in the alarm location calculation only when the Medium Algorithm is being used. The setting can range from 0 to 6 (it is defaulted to 2). When set to 0 only the receivers that are closer to the actual location of the alarm will be considered in the location calculation. As the setting is raised more distant receivers will be included in the alarm calculation. Typically lower settings are better than higher settings. This setting should be changed if there are known problems with the location using the Medium Algorithm. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Strong Depth

This setting controls the involvement of receivers in the alarm location calculation only when the Strong Algorithm is being used. The setting can range from 0 to 6 (it is defaulted to 2). When set to 0 only the receivers that are closer to the actual location of the alarm will be considered in the location calculation. As the setting is raised more distant receivers will be included in the alarm calculation. Typically lower settings are better than higher settings. This setting should be changed if there are known problems with the location using the Strong Algorithm. The Enable Algorithm Tweaks checkbox must be checked for this to be displayed.

Security Preferences Dialog

The "Security Preferences" dialog controls those aspects of the Security Escort System operation, which are to be determined by the Security Director.

Turn On Outside Sounders

This checkbox is used to activate or deactivate the sirens on Alert Units and transponders. Some security directors prefer that all alarms be silent, others choose to employ sirens. Checking this option causes the sirens on the Alert Units, to sound in the event of an alarm. Temporarily deactivating the sounders may be necessary during maintenance.

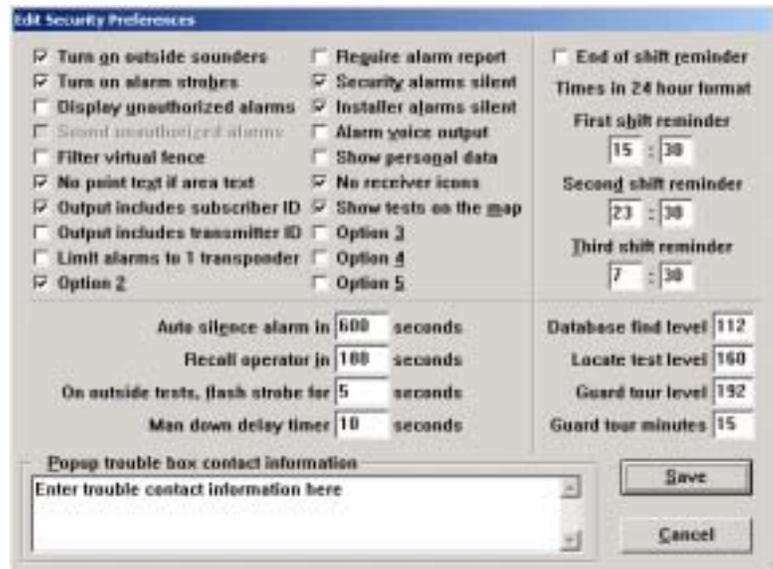


Figure 23: Security Preferences Dialog

Turn On Alarm Strobes

Checking this option causes the strobe lights on the Alert Units and transponders, to flash in the event of an alarm.

Display Unauthorized Alarms

This checkbox determines if "Unauthorized" alarms are to be displayed on the Central Console. Unauthorized alarms are those triggered by Transmitters not currently registered in the Subscriber Database. These could be Transmitters that have been removed from the database because they were lost or stolen, they could be transmitters not yet issued, or they could be transmitters issued to subscribers at another Security Escort System. Typically this checkbox should not be checked.

Sound Unauthorized Alarms

This checkbox determines if "Unauthorized" alarms are to be sounded on the Horns of the Receivers and the sirens of the Alert Units and transponders. The option is not available unless the "Display Unauthorized Alarms" option is selected. Typically this checkbox should not be checked.

Filter virtual fence

If the virtual fence option is to be used, this box may be checked if some false alarms are generated to reduce the number of the false alarms. If it is checked then the actual alarms will be delayed by the supervision period of the transmitter.

No Point Text If Area Text

This checkbox affects the location text shown on the alarm screen. If this checkbox is checked and the alarm is determined to be within a predefined area then only the area text will be displayed (any receiver location text will be suppressed). Typically this checkbox should be checked.

Output includes Subscriber ID

If this checkbox is checked then any time the system prints or displays text for an alarm or test the subscriber's ID number will also be displayed. Otherwise the subscriber's ID will not be shown.

Output includes Transmitter ID

If this checkbox is checked then any time the system prints or displays text for an alarm or test the transmitter ID number will also be displayed. Otherwise the transmitter ID will not be shown. Typically this checkbox would not be checked.

Limit Alarms to 1 Transponder

This box should not be checked. It was used only in a system where all transponders operate on areas that are separate from each other. It would prevent all interactions between receivers on different transponders. Typically this would be very undesirable and there is now a selection on an individual transponder basis to accomplish this feature.

Option 2

This checkbox is for a future option and at this time it has no function. Leave this checkbox unchecked.

Require Alarm Report

If this checkbox is checked then the operator will be prompted to complete an alarm report when the alarm is reset from the screen. If the responding officer is required to complete the report, or if no system report is desired, this box should not be checked. If the operator should complete the report then check this box.

Security Alarms Silent

If this checkbox is checked then alarms transmitted by "Security" or "Watchman" Transmitters are to be "silent", alerting the operator at the Central Console, but not sounding the sirens of the Alert Units or the Horns in the Receivers.

Installer Alarms Silent

If this checkbox is checked then alarms transmitted by transmitters issued to installing company representatives and visitors are to be "silent", alerting the operator at the Central Console, but not sounding the sirens of the Alert Units or the Horns in the Receivers. Typically this checkbox would be checked.

Alarm Voice Output

If this checkbox is checked then predefined sound (.WAV) files can be played at the alarm console for specific alarm types. Typically this checkbox would not be checked.

Show Personal Data

If this checkbox is checked then personal height, build, hair and eye color data will be displayed on the alarm screen.

No Receiver Icons

If this checkbox is checked then individual receiver icons will not be shown on the alarm map display. Typically this checkbox would be checked.

Show Tests On The Map

If this checkbox is checked then "Tests" from subscriber's Transmitter will be displayed on the normal map screen as "OK" or "FAIL" icons, signifying a successful test by a valid subscriber or an attempted test transmission from a Transmitter not in the Subscriber Database. This option doesn't affect the display the subscriber receives from a receiver or Alert Unit's strobe. Typically this checkbox would be checked.

Option 3

This checkbox is for a future option and at this time it has no function. Leave this checkbox unchecked.

Option 4

This checkbox is for a future option and at this time it has no function. Leave this checkbox unchecked.

Option 5

This checkbox is for a future option and at this time it has no function. Leave this checkbox unchecked.

Auto Silence Alarm In 'X' Seconds

This box determines the length of time that the sirens and Horns will sound before being automatically silenced by the Central Console. When the sounders are automatically silenced in this way, the Central Console remains in its "Alarm" mode. The numerical value is in seconds, and it can be set between 0 and 9999. Typically this value would be set to prevent violating local noise ordinances and it defaults to 240 seconds (4 minutes).

Recall Operator In 'X' Seconds

This box determines the length of time before a "Recall" alert is issued to the operator at the Central Console when an alarm is being displayed. If neither the mouse nor any key has been actuated for the specified length of time, the Console will resound the "Alarm" sound once. This feature prevents inadvertently ignoring an active alarm event. The numerical value is in seconds, and it can be set between 0 and 240. Typically this would be set to 60 seconds.

On Outside Tests Flash Strobe For 'X' Seconds

The entry in this box controls the approximate length of time the strobe on an Alert Unit will flash to signify a successful Transmitter test. The value is in seconds, and can be set between 0 and 15. Typically it is set to 5 seconds.

Man Down Delay Timer 'X' Seconds

This value controls the time that a Transmitter must be in a man down condition before a man down alarm is displayed. Typically it would be set to 10 seconds. Setting this value too short will cause inadvertent man down alarms to be generated.

End Of Shift Reminder"

A check in this box causes a prompt to appear on the Central Console screen each five minutes for 30 minutes prior to the end of each shift if there are incident reports that have not yet been completed. It is intended to responding officers to complete alarm reports before the end of their shift.

First, Second, Third Shift Reminder

The entries in these fields are the times (24-hour clock) at which the Central Console will prompt the operator that there are one or more incident reports that have not yet been completed. Prompts will be given only if the "End of Shift Reminder" option is selected.

Database Find Level

This is the minimum receive level (1-255) that must be heard before the system will automatically enter the transmitter in the Subscriber Locate dialog. It determines the distance the subscriber's transmitter must be within the specified ID capture receiver (set in the System Preferences dialog) before the system will recognize the test.

Locate Test Level

This is the minimum receive level (1-255) that must be heard before the system will accept a test generated by a transmitter other than a guard, to be printed with a location. It determines the distance the transmitter must be within from a receiver before the system will recognize the test and print the location. If the transmitter is too far away from the receiver, that receiver's green light will not be displayed, so the guard knows that they must move closer to the receiver for the test to register.

Guard Tour Level

This is the minimum receive level (1-255) that must be heard before the system will accept a test generated by the guard's transmitter to be entered as a location in the guard tour report. It determines the distance the guard's transmitter must be within from a receiver before the system will recognize the test and create the guard tour entry. If the guard is too far away from the receiver, that receiver's green light will not be displayed, so the guard knows that they must move closer to the receiver for the test to register.

Guard Tour Minutes

This setting controls the time spacing, in minutes, for entries of the guard's current location in the automatically generated guard tour report. Therefore if set to 15 minutes, an entry will be generated each 15 minutes that the guard's transmitter is within range of the system.

Popup Trouble Box Contact Information”

Each yellow, pop-up trouble box that is displayed on the Central Console to advise of system problems contains specific instructions for the operator. Entries in this text box will be displayed in the pop-up trouble boxes whenever a system problem occurs that requires attention. This information usually includes the name and telephone number of the designated Security Escort maintenance technicians.

The Operator ID field will be automatically filled in with the next available ID number, there is no need to change the number selected.

System Defaults Dialog

This dialog allows the names for each class of subscribers to be changed to match the specific application of this Security Escort System.

Titles that are entered into the subscriber name field in the subscriber database are entered here. The system alphabetizes the subscriber database entries by last name. When a title is entered after the last name in the name field the entry would be alphabetized incorrectly by title. Entering the titles used prevents this problem.

The labels for the 4 Information fields in the subscriber database are also changeable here.

Edit System Specific Preferences	
Subscriber class 1	Commuter
Subscriber class 2	Faculty
Subscriber class 3	Resident
Subscriber class 4	Staff
This subscriber class functions the same as the security class	
Subscriber class 5	Watchman
This subscriber class functions the same as the Installer class	
Subscriber class 6	Visitor
Information label 1	Field 1
Information label 2	Field 2
Information label 3	Field 3
Information label 4	Field 4
Custom personal titles Sr, Jr, Esq, MD, PhD, DDS, I, II, III, IV and V are standard	
Title 1	<input type="text"/>
Title 2	<input type="text"/>
Title 3	<input type="text"/>
Title 4	<input type="text"/>
Title 5	<input type="text"/>
Title 6	<input type="text"/>
Title 7	<input type="text"/>
Title 8	<input type="text"/>
Save Cancel	

Figure 24: System Defaults Dialog

System Labels Dialog

The alarm type definitions are customized to the customer requirements in this dialog.

Edit System Alarm Type Labels	
Alarm type label 1	Person threatened
Alarm type label 2	Accident - person
Alarm type label 3	Accident - auto
Alarm type label 4	Medical problem
Alarm type label 5	False alarm
Alarm type label 6	Alarm demonstration
Alarm type label 7	Other problem
Save Cancel	

Figure 25: System label dialog

Subscriber Database

A subscriber is anyone who has been issued a Security Escort Transmitter. This database includes all transmitters assigned in the system, whether they are protecting people or things. The Subscriber Database is very similar to the Operator Database; the method by which the names and other information are stored is virtually identical.

Figure 26: Find Subscriber's Database Record

Edit Subscriber Database Record

Figure 27: Edit Subscriber's Database Record

When editing a subscriber's file or creating a new file, the following information must be entered to complete the file: subscriber name, subscriber identification number, and transmitter identification code. The computer will not allow the edit screen to be closed until all of the mandatory fields have been completed. The accuracy of information in the Subscriber Database is very important: in the event that a subscriber transmits an alarm, the information displayed in the Alarm Screen is taken from this database. A faulty address could hinder Security's response to an alarm.

Disabled

There is an option to disable an individual subscriber's Transmitter in such a way that it will not produce an alarm message on the Central Console. This can be used to halt a subscriber's misuse of the system. Disabling or enabling a subscriber is accomplished by locating the subscriber in the Subscriber Database, clicking on the "Edit Data" button, and clicking on the box next to the word "Disabled" in the upper-left corner of the dialog. (This box is called a "checkbox.") If the box has a check mark, the subscriber's transmitter will be ignored by the system; if it does not, the transmitter will be recognized and alarms will be displayed.

Subscriber Class

From the dropdown list (see Figure 28) select the appropriate class for this subscriber or asset. Selecting the Acknowledge subscriber class will allow the alarm signal to be used to remotely acknowledge alarms. It will not create an alarm. When this transmitter transmits an alarm the alarms currently present on the alarm screen will be acknowledged in the order they were received, which should be the same order the alarms would be received on a pager for a roving officer.



Figure 28: Subscriber Class dropdown list

Name

The individual or item assigned to this transmitter. This is a required field.

Address

The address of this individual or item within the protected area. The first address line on the left side is shown on the alarm screen.

Phone Number

The phone number to access this individual within the protected area. The phone number on the left side is shown on the alarm screen.

Subscriber ID

The Subscriber ID (typically the Social Security Number) must be typed into its field. This is a required field, it must be filled in with a unique ID.

Transmitter ID / New ID

The Transmitter Identification Code can be typed into its field, but a much faster and error free method is to delete any existing entry in the Transmitter Identification Code field and then perform a "Test" with the Transmitter to be assigned to this Subscriber. The new Transmitter ID will be displayed in the New ID field. That new Transmitter ID must be manually entered into the Transmitter ID field or using the mouse highlight the existing Transmitter ID and press and hold the SHIFT key and tap the INSERT key (this will transfer the new Transmitter ID to the correct field). This is a required field; it must be filled in with a unique ID. Complete the change to the Subscriber information by clicking on the "Save" button.

Browse Image File

Enter the filename for the image of this individual or item to be shown on the alarm screen. Click the Browse button to open a dialog box to select the filename from a list of available files.

Male/Female

Height

Build

Hair Color

Eye Color

These characteristics are shown on the alarm screen.

Silent

If checked, a system that would normally sound alarms will be silent for all alarms generated by this transmitter.

Handicap

If this individual is handicapped, select an item from this drop down list. The condition will be displayed on the alarm screen. If a handicap is selected the Notes field will not show on the alarm screen.

Supervision

Specific transmitter types periodically transmit "Supervisory" messages so the system can monitor their function and location. The supervisory feature must be enabled in the transmitter. Only for transmitters that have the supervisory feature enabled, select the interval of these "Supervisory" messages. The supervision period that is specific to the assigned transmitter must be selected if this feature is used. You can't change the supervision period of a transmitter.

Alarm Zone

Specific Alarm Zones are assigned to the different computer workstations of the Security Escort system. Each transmitter entered in the Subscriber Database can be assigned to one or more of the Alarm Zones. Therefore you may control which computer workstations alarms from this transmitter will appear on.

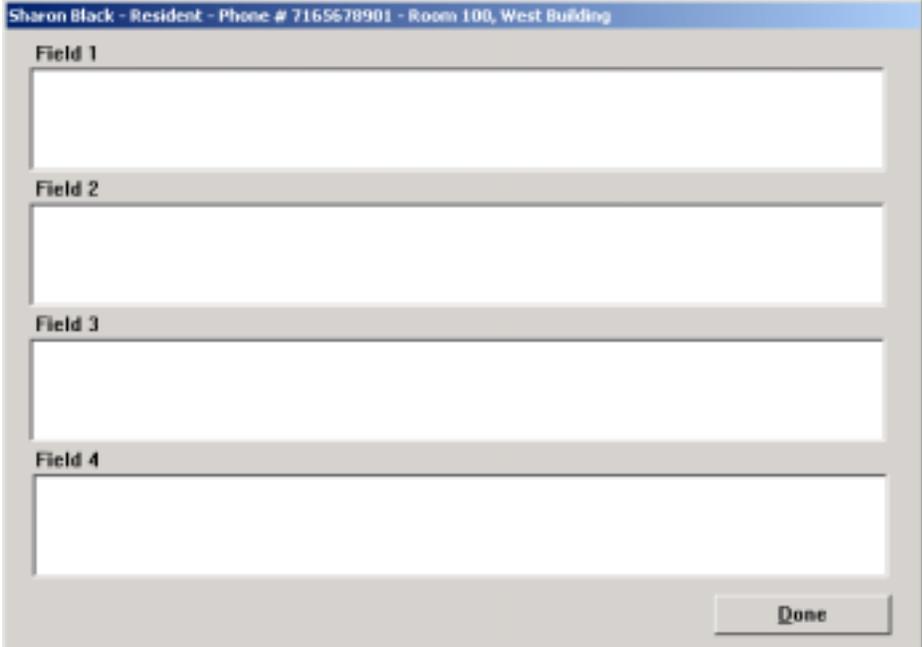
Advanced

The “Advanced” button is used to set up special transmitters that monitor fixed locations, these features are not used for personal transmitters. This button is available only to the maintenance and installing personnel (see the Technical Reference Manual)

Information

The “Information” button is used to enter specific information about the holder of this transmitter. Car type, parking sticker number, license number, and medical information are examples of the types of information typically entered.

Each of the fields would typically hold different information. The installer can change the field labels to labels that would define your intended usage.



The screenshot shows a software window titled "Sharon Black - Resident - Phone # 7165678901 - Room 100, West Building". The window contains four vertically stacked text input fields, each with a label above it: "Field 1", "Field 2", "Field 3", and "Field 4". All fields are currently empty. At the bottom right of the window is a button labeled "Done".

Figure 29: Information Entry Screen

Save

Clicking the Save button saves all changes to the database.

Subscriber Images

Display subscriber images. This software does not capture the images, it displays images that were previously captured by some other means. The subscriber image can be captured using a digital camera, video capture board etc. The source of the image is not critical. We have not identified, nor require a specific manufacturer of the image capture equipment. The images must be saved individually in JPG format. The images should not be larger than 160 pixels wide and 160 pixels high. If they are they will have to be scaled and therefore they may lose image quality. Under the Setup menu, in the System Preferences dialog the path to the images is set in "Subscriber image file path" (default location of the images is "C:\ESCORT\IMAGES", but they can be located anywhere). The three-character file extension of the image files is set in "Extension" (default is JPG). Subscriber images may also be saved in Windows bitmap (.BMP) however this format requires significantly more disk storage.

Only when the display is set to 640x480 (not recommended) the images are displayed on top of the map and the "Scaling %" (10 - 200) controls the size of the image (try different settings to control the image size in the alarm screen). Under the Files menu in the Subscriber Database dialog, select the desired subscriber, then click "Edit data". The "Image file" is the name of file that has this subscriber's image. For example if the subscriber's image is stored in a file with the name "Image1.jpg", enter "Image1" in this box. You should have a minimum of a 1 Meg video card to display subscriber's images. Go to the Windows 95[®] (Windows 98[®], Windows NT[®]) Task bar and click the "Start" button. Select "Settings:Control panel:Display". Click the "Settings" tab. In the "Color palette" control you can select 256 color, High Color (16 bit) or True Color (24 bit). The system should be set to High Color or True Color (256 color likely will produce undesirable results). When in doubt set to High Color. In the same dialog "Desktop area" can be set to 640x480, 800x600 or 1024x768 pixels. When the display is set to 640x480 (not recommended) the images are displayed on top of the map and therefore limit how much of the map is displayed. The 1024x768 setting may require too much memory for most video cards and show more of the map, decreasing the size of the map details. Most video cards can be set to 800x600 and when in doubt this setting should be selected. If you can't choose these settings your video card or monitor setting may be incorrect, refer to the system documentation to correct.

Fixed Location Transmitters

The image shows a software dialog box titled "EdR Subscriber's Advanced Features". It is divided into several sections. The top right section is titled "Fixed location transmitter" and contains a dropdown menu for "Floor level" (currently set to "Basement5"), and three input fields for "Map X Position", "Map Y Position", and "Map number", all of which are currently set to "0". A "Locate" button is positioned to the right of the "Map Y Position" field. Below this section are two groups of radio button options. The first group includes "Enable reed switch" (unchecked), "Disable shorted loop" (checked), "Alarm on shorted loop", "Trouble on shorted loop", and "Alarm when armed, Trouble when disarmed on shorted loop". The second group includes "Disable open loop" (checked), "Alarm on open loop", "Trouble on open loop", and "Alarm when armed, Trouble when disarmed on open loop". Each of these groups has an "Optional text" field. At the bottom of the dialog is a large text area labeled "Fixed location and pager text" and a dropdown menu labeled "Alarm Group". A "Done" button is located at the bottom right corner of the dialog box.

Fixed Location Dialog

different paging companies and they may require different baud rates. Set the baud rate to the highest baud rate common to all of the paging companies to be accessed.

The Character limit (characters per page), Pages per call affect all pages of the indicated type (local and dial-up). These fields must be set to the lowest setting for any of the routes that may be used. Remember that dial-up pages may be routed to different paging companies and they may have different restrictions.

Subscriber (individual) Pager Setup

In the subscriber database select the record for the desired individual. Press Edit data then press Advanced, the dialog below will be displayed.

The pager ID is required for all individual pagers dial-up and local. If the phone number and password are assigned the page will be sent over the modem connection. If the phone number and password fields are blank the page will be routed to the local paging system. If you do not desire this individual to have pager support leave the phone number, password and pager ID fields all blank.

The screenshot shows a software dialog box titled "Edit Subscriber's Advanced Features". It contains several input fields and controls:

- Phone number**: A text input field.
- Pager password**: A text input field.
- Pager ID**: A text input field.
- Pager Groups**: Three small input boxes.
- Fixed location transmitter**: A section containing:
 - Floor level**: A dropdown menu showing "Basement5".
 - Map X Position**: A text input field with "0".
 - Map Y Position**: A text input field with "0".
 - Map number**: A text input field with "0".
 - A **Locate** button.
- Enable reed switch**: A checkbox.
- Optional text**: A text input field.
- Disable shorted loop**: A radio button.
- Alarm on shorted loop**: A radio button.
- Trouble on shorted loop**: A radio button.
- Alarm when armed, Trouble when disarmed on shorted loop**: A radio button.
- Disable open loop**: A radio button.
- Alarm on open loop**: A radio button.
- Trouble on open loop**: A radio button.
- Alarm when armed, Trouble when disarmed on open loop**: A radio button.
- Fixed location and pager text**: A large text area.
- Transponder name**: A dropdown menu.
- Transponder Area**: A dropdown menu with "0".
- Alarm Group**: A dropdown menu with "Not Used".
- Requires Check-in**: A checkbox.
- Done**: A button.

Figure 30: Subscriber Database Advanced dialog

If the pager information is entered above this individual may be assigned to 3 paging groups. Each group will accept 8 members maximum. Remember it takes time to communicate with a paging service, therefore only add members to a group if they need to be there, otherwise you may slow the paging report to people that must respond.

A pager group may contain members accessed by the local paging system and members that require dial-up access. Dial-up access typically takes much longer and it may slow pages to the local paging system.

Subscriber Database

The Subscriber Database contains the information on the transmitters that are assigned in the system. See the "Security Escort Operations Manual". When the Advanced button is pressed in the Subscriber Database Edit dialog the following Edit Subscriber Advanced Features dialog will be displayed.

The "Edit Advanced Subscriber Features" dialog is used to set up special transmitters that monitor fixed locations, subscriber pager access, parameters for point transmitters, the virtual fence for a Wandering Alarm, the alarm group for arming of the transmitter and check-in requirements for this transmitter.

The screenshot shows a software dialog box titled "Edit Subscriber's Advanced Features". It is divided into several sections. The top section, "Fixed location transmitter", includes a "Floor level" dropdown menu, and input fields for "Map X Position", "Map Y Position", and "Map number", all currently set to 0. A "Locate" button is positioned to the right of these fields. Below this are three groups of alarm-related options, each with a checked radio button for a primary setting and an "Optional text" field. The first group is for "Enable reed switch". The second group is for "Disable shorted loop", with sub-options for "Alarm on shorted loop", "Trouble on shorted loop", and "Alarm when armed, Trouble when disarmed on shorted loop". The third group is for "Disable open loop", with sub-options for "Alarm on open loop", "Trouble on open loop", and "Alarm when armed, Trouble when disarmed on open loop". A section titled "Fixed location and pager text" contains a large, empty text area. At the bottom, there are fields for "Transponder name" (a dropdown menu), "Transponder Area" (a numeric input field set to 0), "Alarm Group" (a dropdown menu set to "Not Used"), and two checkboxes for "Requires Restore" and "Requires Checkin". A "Done" button is located at the bottom right.

Figure 31: Subscriber Advanced Features Dialog

Phone Number

This phone number is dialed to send a pager message to this subscriber. Typically this is a different phone number than the one that is manually dialed to access this pager. The phone number is assigned by the paging service.

Pager Password	This is the password to be sent to the paging service when a page is sent to this subscriber. Leave blank if not required (typically the Pager Password is not required). The Pager Password is assigned by the paging service.
Pager ID	This is the ID that identifies the pager to receive the pager message (many times this value is the last 7 digits that would be manually dialed to access this pager). The Pager ID is assigned by the paging service.
Pager Group	These are the pager groups that this subscriber is a member of. This subscriber may be a member of up to 3 different pager groups.
Fixed Location Transmitter	This section is to be used only when this transmitter is mounted in a fixed location (it does not move). When this transmitter transmits and alarm it will always be reported at the programmed location.
Floor Level	This is the floor level where this alarm is to be located for a fixed location transmitter.
Map X Position	This is the X coordinate of the map position where this alarm is to be located for a fixed location transmitter.
Map Y Position	This is the Y coordinate of the map position where this alarm is to be located for a fixed location transmitter.
Locate	When clicked the dialog will disappear and the cursor will change to a cross hair. Moving the cursor to a point on the map and clicking the left mouse button will scroll the map so that point is at the center of the screen. When the map is showing the desired alarm location, move the cross hair to the exact location of the alarm to be reported and click the right mouse button. The dialog will reappear and the selected location will be entered into the X and Y coordinates. If while the cross hair cursor is being displayed, you desire to exit without changing any coordinate values, press the ESC key and the transponder edit dialog will reappear.
Map Number	Defines which bitmap is to be displayed for the fixed location of this transmitter. The default map is 0, which corresponds to bitmap MAP0.EDB stored in the Escort sub-directory. Map 1 would be MAP1.EDB. There can be 100 maps per Security Escort system (0-99).
Enable Reed Switch	If checked the reed switch input of this transmitter enabled to cause an alarm. Otherwise the reed switch input will be disabled. The alarm group this transmitter is assigned to must be armed, for this input to cause an alarm, which is displayed. If no alarm group is assigned, the transmitter is always armed. For this option to be enabled the transmitter's class must be set to "Point type".
Optional Text	This is optional text that will be added to the location text when this input reports an alarm. For this option to be enabled the transmitter's class must be set to "Point type".
Disable Shorted Loop	If selected a shorted loop on this transmitter will not cause an alarm or trouble report to be displayed. For this option to be enabled the transmitter's class must be set to "Point type".
Alarm on Shorted Loop	If selected and the alarm group this transmitter is assigned to, is armed, then a shorted loop on this transmitter will cause an alarm report to be displayed. The alarm group this transmitter is assigned to must be armed, for this input to cause an alarm, which is displayed. If no alarm group is assigned, the transmitter is always armed. For this option to be enabled the transmitter's class must be set to "Point type".
Trouble on Shorted Loop	If selected a shorted loop on this transmitter will cause a trouble report to be displayed. For this option to be enabled the transmitter's class must be set to "Point type".
Alarm When Armed, Trouble When Disarmed on Shorted Loop	If selected and the alarm group this transmitter is assigned to, is armed; then a shorted loop on this transmitter will cause an alarm report to be displayed. If selected and the alarm group this transmitter is assigned to, is disarmed, then a shorted loop on this transmitter will cause a trouble report to be displayed. If no alarm group is assigned, the transmitter is always armed. For this option to be enabled the transmitter's class must be set to "Point type".
Disable Open Loop	If selected an open loop on this transmitter will not cause an alarm or trouble report to be displayed. For this option to be enabled the transmitter's class must be set to "Point type".

Alarm on Open Loop

If selected and the alarm group this transmitter is assigned to, is armed, then an open loop on this transmitter will cause an alarm report to be displayed. The alarm group this transmitter is assigned to must be armed, for this input to cause an alarm, which is displayed. If no alarm group is assigned, the transmitter is always armed. For this option to be enabled the transmitter's class must be set to "Point type".

Trouble on Open Loop

If selected an open loop on this transmitter will cause a trouble report to be displayed. For this option to be enabled the transmitter's class must be set to "Point type".

Alarm When Armed, Trouble When Disarmed on Open Loop

If selected and the alarm group this transmitter is assigned to, is armed; then an open loop on this transmitter will cause an alarm report to be displayed. If selected and the alarm group this transmitter is assigned to, is disarmed, then an open loop on this transmitter will cause a trouble report to be displayed. If no alarm group is assigned, the transmitter is always armed. For this option to be enabled the transmitter's class must be set to "Point type".

Fixed Location and Pager Text

This is the text that will be displayed as the location of the alarm for fixed location transmitters and on pagers reporting this alarm.

Transponder Name

Select the transponder with the area that defines the area for a Wandering (virtual fence) alarm. See Transponder Area below for the operation and setup of the wandering alarm (virtual fence alarm).

Transponder Area

Wandering Alarm - Create a protected area by placing a virtual monitor "fence" around an area of the main map. These areas are defined in the transponder database. If this transmitter will be constrained to remain within one of these defined areas, first select the defining transponder in Transponder Name above. Then select the desired area that the from this dropdown list of the transponder's area names. For the Wandering Alarm to work the supervision period must also be programmed for this transmitter.

Then specific transmitters are marked in the subscriber database to be constrained within a specific fenced area defined by this option. If the transmitters leave their defined area, the system will report this as a Wandering Alarm and continue to monitor and track the location of the transmitter until the alarm is canceled from the screen in the normal way. However these tracking updates can only occur every supervision transmission period (not on an accelerated rate like a tracking alarm) The Escort system computes the location of the transmitters when they broadcast automatic supervision transmissions periodically.

Because of the basic location accuracy and the floor-to-floor accuracy of the system, there is a potential for some false alarms. If false alarms are a problem, check the Filter Virtual Fence checkbox in the Security Preferences dialog. If you do this two successive location calculations will have to indicate the transmitter has moved outside the protected area before an alarm is generated. The downside of this is a delay in the reporting of a wandering alarm of one extra transmitter supervision period.

Alarm Group

This is the alarm group that controls the arm/disarm status of this transmitter. Select the desired alarm group from the dropdown list of the alarm group names. This alarm group must be armed, for this transmitter to cause an alarm, which is displayed. If no alarm group is assigned, the transmitter is always armed.

Requires Check-in

When this checkbox is checked, this transmitter will have to be activated once each day during the Check-in Schedule time. At the end of the check-in period if the subscriber fails to check-in, a Failed to Check-in Report will be generated and presented to the operator of the software. This report contains all of the people who failed to check-in with their first address line and phone number. All subscribers in the report must be checked on to make sure they are not in need of assistance, as this may be a life-treating situation. A printed report may also be generated.

If the transmitter is not a point type, then the transmitter can generate alarms and therefore a test transmission will be used for the check-in.

If the transmitter is a point type then any non-trouble transmission will serve as a check-in.

One of the 10 schedules must be selected as the check-in schedule to define the check-in period.

Done

Click this button when all changes to this dialog are complete to return the main Subscriber database edit dialog.

Ignore Holidays for this Schedule

You may directly enter the date or press (...). The Holiday dates do not accept wildcards therefore you must enter an entire date as shown above.

Figure 32 is a list of holidays that may be used as exceptions to the one or more of the 10 schedules.

Each schedule individually can use the holiday dates as exceptions. If the Ignore Holidays checkbox is checked then on the indicated holiday dates the schedules will be active (armed) that entire day. If the Ignore Holidays checkbox is not checked then the normal action of the schedules will take place on the holiday dates.

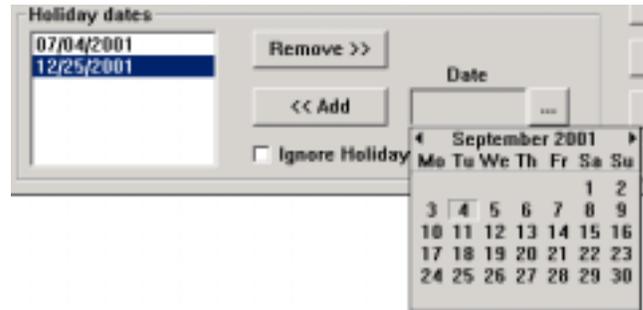


Figure 32: Holiday selection in the Schedule dialog

Ellipsis (...)

Clicking this button will display a calendar so you can graphically select a date as shown above.

Remove >>

Clicking this button will remove the selected date from the Holiday Dates list.

<< Add

Clicking this button will add the date shown to the Holiday Dates list.

Edit Schedule Times Dialog

This dialog allows the arming and disarming times to be programmed for each of the days of the week. All times are expressed in 24-hour time (00:00 to 23:59). Each schedule has one Arm Time and one Disarm Time for each of the 7 days of the week.

If both the Arm Time and Disarm Time are programmed to 00:00 then the schedule will be active (armed) for the entire day.

If the Arm Time is 00:00 and the Disarm Time is programmed then from midnight to the programmed Disarm Time the schedule will be active (armed) and from the Disarm Time to the end of the day the schedule will be off (disarmed).

If the Disarm Time is 00:00 and the Arm Time is programmed then from midnight to the programmed Arm Time the schedule will be off (disarmed) and from the Arm Time to the end of the day the schedule will be active (armed).

If both the Disarm Time and the Arm Time are programmed and the Disarm Time occurs before the Arm Time (normal 8 to 5 style day), then from midnight to the programmed Disarm Time the schedule will be active (armed). From the Disarm Time to the Arm Time the schedule will be off (disarmed). From the Arm Time to the end of the day the schedule will be active (armed).

If both the Disarm Time and the Arm Time are programmed and the Arm Time occurs before the Disarm Time, then from midnight to the programmed Arm Time the schedule will be off (disarmed). From the Arm Time to the Disarm Time the schedule will be active (armed). From the Disarm Time to the end of the day the schedule will be off (disarmed).

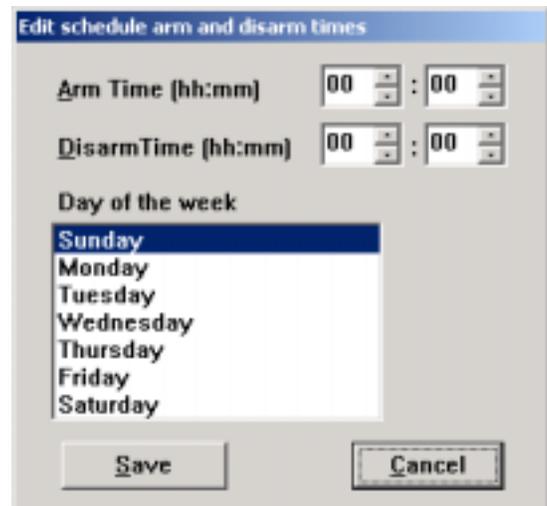


Figure 33: Edit Schedule Time dialog

Arm Time

This is the time that the schedule will become active (on or armed) for the selected day of the week. Times are expressed in 24-hour time (00:00 to 23:59).

Disarm Time

This is the time that the schedule will go off (disarmed) for the selected day of the week. Times are expressed in 24-hour time (00:00 to 23:59).

Day of the Week

Select the day you desire to change the time for. The Arm Time and Disarm time are programmed separately for each day of the week. Therefore you must select individually each day of the week and set the desired times.

View Alarm Groups Dialog

This dialog will show the alarm groups that are assigned to the selected schedule and their current arming state. The ON and OFF states indicate that the alarm group is under manual control. AUTO is under control of the selected schedule. Therefore the alarm group will be armed if the schedule is active.

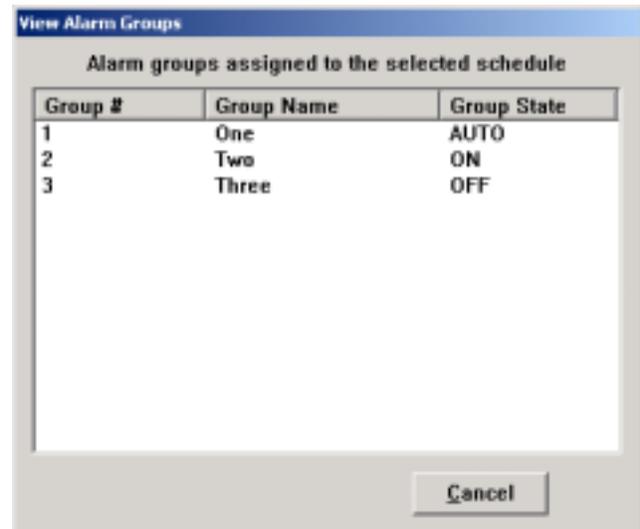


Figure 34: View Alarm Groups dialog

Alarm Groups Dialog

This selection allows setup and arm/disarm control of the 99 alarm groups. Any number of point type transmitters can be assigned to an alarm group in the Subscriber Database's Advanced dialog. However each transmitter can only be assigned to one alarm group.

An alarm group can be manually armed and disarmed or assigned to a schedule to automatically arm and disarm the alarm group.

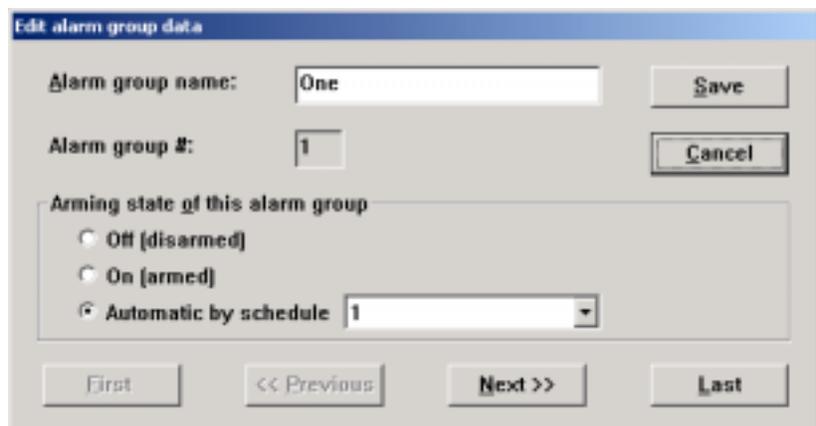


Figure 35: Alarm Groups dialog

Alarm Group Name

Enter a descriptive name to identify the function of the points in this alarm group.

Alarm Group

This is the number of the alarm group (1-99).

Arming State of this Alarm Group

The Off, On and .Automatic by Schedule selection will control the arming state of this alarm group.

Off (disarmed)

Clicking this button will disarm the alarm group. The alarm group will remain off (disarmed) until manually changed in this dialog to On or Automatic by Schedule.

On (armed)

Clicking this button will arm the alarm group. The alarm group will remain on (armed) until manually changed in this dialog to Off or Automatic by Schedule.

Automatic by Schedule

Clicking this button will assign the alarm group's arming state to be controlled by the indicated schedule. When the schedule is active (on or armed) the alarm group will be armed. When the schedule is off (disarmed) the alarm group will be disarmed. Any number of alarm groups may be assigned to the same schedule.

First

Clicking this button will take you to alarm group 1.

Previous

Clicking this button will take you to the next lower alarm group from the one currently displayed. It will not wrap around. Therefore it will be disabled at alarm group 1.

Next

Clicking this button will take you to the next higher alarm group from the one currently displayed. It will not wrap around. Therefore it will be disabled at alarm group 99.

Last

Clicking this button will take you to alarm group 99.

Alarm Group State Dialog

This selection will display a list of the alarm groups that are currently armed and have one or more transmitters (points) faulted. The points are presented because they were not restored when their automatic schedule armed or there was an alarm while the alarm group was on.

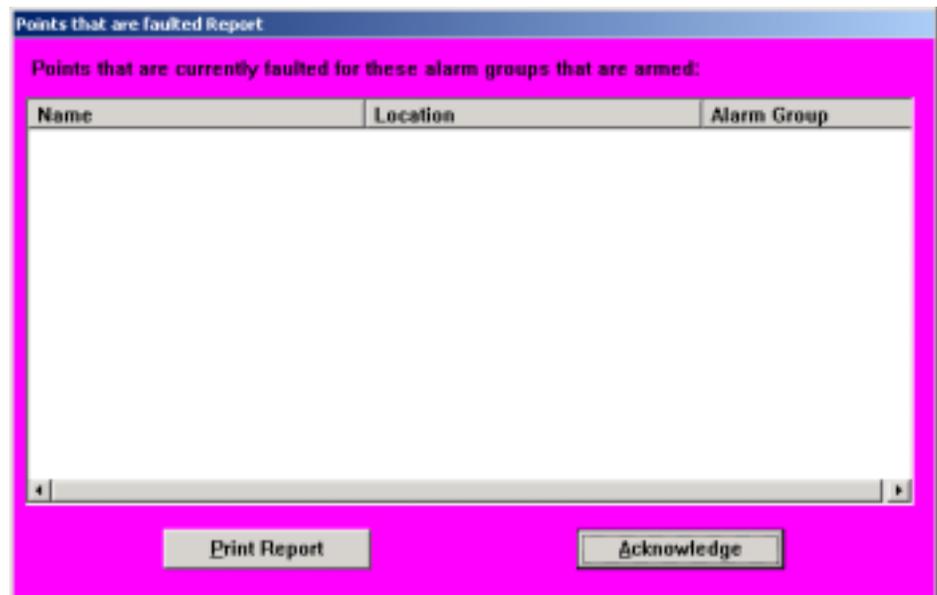


Figure 36: Alarm Group State dialog

Print Report

Clicking this button will print the displayed data to the Report printer.

Acknowledge

Clicking this button will close the dialog if it was selected from the menu. However if the dialog was presented automatically at the arm time of an alarm group's automatic schedule because they were not restored when their automatic schedule armed or there was an alarm while the alarm group was on, then you will be required to enter your password to the acknowledge the dialog and remove it from this computers (and all other computer workstations) screens.

Current Check-in Status Dialog

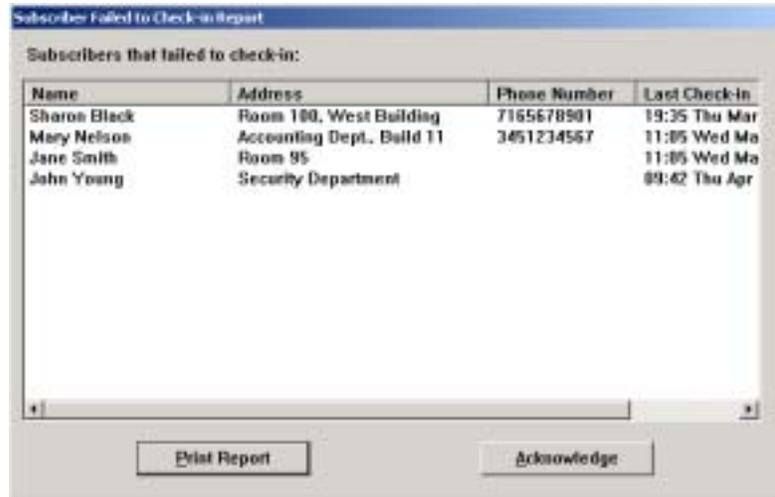
This selection will display a list of the subscribers that are required to check-in and failed to do so during the last check-in period. Also presented are their address, phone number and the last time they did check-in.

Print Report

Clicking this button will print the displayed data to the Report printer.

Acknowledge

Clicking this button will close the dialog if it was selected from the menu.



Name	Address	Phone Number	Last Check-in
Sharon Black	Room 100, West Building	7165678901	19:35 Thu Mar
Mary Nelson	Accounting Dept., Bldg 11	3451234567	11:05 Wed Ma
Jane Smith	Room 95		11:05 Wed Ma
John Young	Security Department		09:42 Thu Apr

Figure 37: Current Check-in Status dialog

However if the dialog was presented automatically at the end of the check-in period because there were subscribers that failed to check-in, then you will be required to enter your password to the acknowledge the dialog and remove it from this computers (and all other computer workstations) screens.

Importing a Subscriber Database

This section describes the file format required to import data into the Subscriber database. There is no way to undo this operation, therefore DO A DATABASE BACKUP FIRST and verify the updated data before the changed database is placed in service. If there are problems, restore the Subscriber database from the backup.

The file of new data record entries must be in tab delimited text format. It must be placed in the Escort subdirectory (typically C:\Escort) and be named TABMERGE.DAT. The data fields must be in the following order, delimited by the horizontal tab character (decimal 8) and the record must be terminated with a carriage return (decimal 13). If a data field has no data just store the terminating tab character for that field. The total number of characters in all the fields of a record must be 255 characters or less, including the tab and carriage return characters. After the TABMERGE.DAT file is stored in the Escort subdirectory, start ESC32.EXE, enter the Subscriber database and click the DATA MERGE button. Be patient, it may take a while, watch for the disk activity to stop. After the data is successfully merged it is a good idea to remove the TABMERGE.DAT file, to disable the DATA MERGE feature.

Data fields in required order	Excel Column	Restrictions
Subscriber Name	A	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Subscriber ID	B	This field may be up to 12 characters. This field may contain only ALPHA, numeric and the dash ASCII characters.
Here Phone Number	C	This field may be up to 16 characters. This field may contain only numeric, '#', '*', '(', ')', comma and the dash ASCII characters.
Here Address 1	D	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Here Address 2	E	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Here City	F	This field may be up to 20 characters. This field may contain any printable ASCII character except the '?'.
Here State	G	This field may be up to 3 characters. This field may contain only ALPHA ASCII characters.
Here Zip	H	This field may be up to 10 characters. This field may contain only ALPHA, numeric and the dash ASCII characters.
Away Phone Number	I	This field may be up to 16 characters. This field may contain only numeric, '#', '*', '(', ')', comma and the dash ASCII characters.
Away Address 1	J	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Away Address 2	K	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Away City	L	This field may be up to 20 characters. This field may contain any printable ASCII character except the '?'.
Away State	M	This field may be up to 3 characters. This field may contain only ALPHA ASCII characters.
Away Zip	N	This field may be up to 10 characters. This field may contain only ALPHA, numeric and the dash ASCII characters.
Supplemental Text Field 1	O	This field may be up to 254 characters. This field may contain any printable ASCII character except the '?'.
Supplemental Text Field 2	P	This field may be up to 254 characters. This field may contain any printable ASCII character except the '?'.
Supplemental Text Field 3	Q	This field may be up to 254 characters. This field may contain any printable ASCII character except the '?'.
Supplemental Text Field 4	R	This field may be up to 254 characters. This field may contain any printable ASCII character except the '?'.
Pager Phone Number	S	This field may be up to 16 characters. This field may contain only numeric, '#', '*', '(', ')', comma and the dash ASCII characters.
Pager Password	T	This field may be up to 6 characters. This field may contain only numeric, and ALPHA ASCII characters.
Pager Pager ID	U	This field may be up to 10 characters. This field may contain only numeric ASCII characters.

Data fields in required order	Excel Column	Restrictions
Subscriber Type	V	"0 Unclassified", "1 Commuter", "2 Faculty", "3 Resident", "4 Security", "5 Staff", "6 Installer", "7 Out of Service", "8 Watchman", "9 Visitor", "10 Point type", "11 Acknowledgement". This field should contain only numeric ASCII characters.
Handicapped Type	W	"0 No handicap", "1 Blind", "2 Deaf", "3 Handicapped", "4 Wheel chair". This field should contain only numeric ASCII characters.
Transmitter ID	X	This field may be up to 9 characters. This field should contain only numeric ASCII characters.
Away Name	Y	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'.
Image Filename	Z	This field may be up to 30 characters. This field may contain any printable ASCII character that is valid for a file name.
Height Feet	AA	0-7, This field should contain only numeric ASCII characters.
Height Inches	AB	0-11, This field should contain only numeric ASCII characters.
Build Code	AC	"0 Medium", "1 Slim", "2 Large". This field should contain only numeric ASCII characters.
Hair Color	AD	"0 Brown", "1 Auburn", "2 Black", "3 Blond", "4 Brunet", "5 Grey", "6 Red". This field should contain only numeric ASCII characters.
Eye Color	AE	"0 Brown", "1 Blue", "2 Green", "3 Hazel", "4 Grey". This field should contain only numeric ASCII characters.
Pager Group A	AF	0-99, This field should contain only numeric ASCII characters.
Pager Group B	AG	0-99, This field should contain only numeric ASCII characters.
Pager Group C	AH	0-99, This field may contain only numeric ASCII characters.
Fixed Floor Level	AI	"0 Basement5", "1 Basement4", "2 Basement3", "3 Basement2", "4 Basement1", "5 Tunnel", "6 Basement", "7 Ground", "8 Outside", "9 Floor 1", "10 Floor 2", "11 Floor 3", "12 Floor 4", "13 Floor 5", "14 Floor 6", "15 Floor 7", "16 Floor 8", "17 Floor 9", "18 Floor 10", "19 Floor 11", "20 Floor 12", "21 Floor 13", "22 Floor 14", "23 Floor 15", "24 Floor 16", "25 Floor 17", "26 Floor 18", "27 Floor 19", "28 Floor 20", "29 Floor 21", "30 Floor 22", "31 Floor 23", "32 Floor 24", "33 Floor 25", "34 Floor 26", "35 Floor 27", "36 Floor 28", "37 Floor 29", "38 Floor 30", "39 Floor 31", "40 Floor 32", "41 Floor 33", "42 Floor 34", "43 Floor 35", "44 Floor 36", "45 Floor 37", "46 Floor 38", "47 Floor 39". This field should contain only numeric ASCII characters.
Fixed Map X Location	AJ	This field may contain only numeric ASCII characters.
Fixed Map Y Location	AK	This field may contain only numeric ASCII characters.
Fixed Bitmap Number	AL	0-99 This field may contain only numeric ASCII characters.
Supervision Interval	AM	"0 None", "1 is 90 Second Supervision", "2 is 30 Second Supervision", "3 is 1 Hour Supervision. This field may contain only numeric ASCII characters.
Alarm Group	AN	0-99, This field may contain only numeric ASCII characters.
Shorted Loop	AO	This field may contain only numeric ASCII characters.
Open Loop	AP	This field may contain only numeric ASCII characters.
Status	AQ	Encoded value. Do not change.
Enable Magnetic Reed	AR	This field may contain only numeric ASCII characters.
Fixed Location Text	AS	This field may be up to 254 characters. This field may contain any printable ASCII character except the '?'
Magnetic Reed Text	AT	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'
Shorted Loop Text	AU	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'
Open Loop Text	AV	This field may be up to 30 characters. This field may contain any printable ASCII character except the '?'
Status Flags	AW	Encoded value. Do not change.
Modify Op	AX	0-30000, This field may contain only numeric ASCII characters.
Test Time	AY	Encoded 32-bit time value. Do not change.
Last Transmitter Change	AZ	Encoded 32-bit time value. Do not change.
Spare Date	BA	Encoded 32-bit time value. Do not change.
Last Fail To Test Letter	BB	Encoded 32-bit time value. Do not change.

Data fields in required order	Excel Column	Restrictions
Created	BC	Encoded 32-bit time value. Do not change.
Modified	BD	Encoded 32-bit time value. Do not change.
Low Battery	BE	Encoded 32-bit time value. Do not change.
Spare2	BF	This field should be blank.
Spare3	BG	This field should be blank.

A (Blank) B (First Name) C (MI) D (Last Name) E (Blank)
Click E1
go to Insert then click on Function
Now click Text, then Concatenate
then click Next
Text1 = click B1 (First Name)
Text2 = "space"
Text3 = click C1 (MI)
Text4 = "space"
Text5 = click D1 (Last Name)
Now click Finish

click E1 go to Edit then Copy
click E hi-light Column
go to Edit then Paste

Now click E hi-light column
go to Edit then Copy

Now click A hi-light column
go to Edit then Paste Special
then click Values
then click OK

Now Delete B,C,D,& E
Done.

The Operator Database

Find Operator's Database Record

Authority Level Operator ID

Name

Address

City State

Zip Phone

Created

Modified

Modify Oper Record size 59 bytes, version 0

Notes

The figure above is a typical screen from the Operator Database. The term "Operator" is used to refer to a person who has the authority to use the various features of the Security Escort System software. The term includes the Security Department's dispatchers who initiate responses to alarms, Security Officers who may be required to produce incident reports, and other employees of the Security Department who may be responsible for maintaining the Subscriber and Operator Databases.

The information in an "Operator Database" record includes his or her password, full name, a unique operator identification number, an authority level, local address and phone number, and notes. All fields but the password field are displayed; even when a specific operator's file is edited (via the Edit Data command), the password is represented by a number of asterisks for security.

Edit Operator Database Record

Edit Operator's Database Record

Password Password Verify

Authority Level Operator ID

Name

Address

City State

Zip Phone

Notes

When adding a new Operator or editing the data for an existing Operator, the “Edit Operator Record” dialog is displayed, as shown above. Certain information fields must be completed to produce a valid record: the password, the authority level and the name must be entered. All the other information in the operator’s file is optional, including the local address, local phone number and notes.

Note that there are two boxes for passwords in the “Edit Operator Record” dialog, “Password” and “Password Verify”. Since the operator cannot see what is being entered while typing in the password field, it must be entered twice to safeguard against errors; password modifications will not be accepted if the entries in the “Password” and “Password Verify” boxes are not identical.

The Operator ID field will be automatically filled in with the next available ID number, there is no need to change the number selected.

Edit Authority Level

The screenshot shows the "Edit Operator's Database Record" dialog box. The "Authority Level" dropdown menu is open, displaying a list of options. The "Install Master" option is highlighted at the bottom of the list. Other fields in the dialog include "Password" and "Password Verify" (both containing "***"), "Operator ID" (containing "7"), "Name", "Address", "City", "Zip", and "Notes". There are "Save" and "Cancel" buttons on the right side.

The Reports Database

Find Alarm Report Database Record			
Name	Door Contact		
Address	Necular Medicine		
City		State	
Zip	Subscriber ID	DR204	
Phone		Point type	
Record size 1501 bytes, version 3			
Alarm time and date		09:35:32 Thu Apr 20, 2000	
Acknowledge time and date		09:35:33 Thu Apr 20, 2000	
Silence	Operator	30000	
09:35:34 Thu Apr 20, 2000			
Modified	Operator	4	
Name of OFFICER responding to the alarm:		Problem type:	
		Unknown	
Description of PROBLEM:			
ACTION taken:			
Beginning	Previous	Incomplete	Next
			End of File
			Cancel
<div style="float: right;"> <u>S</u>tatistics <u>M</u>ap <u>E</u>dit Data <u>D</u>elete <u>L</u>ocate Key <u>K</u>ey Select </div>			

The Security Escort software contains a report-generating feature that encourages prompt, uniform reporting of incidents. A sample of the alarm report dialog is shown above. The system software automatically captures the alarm data displayed on the Alarm Screen and enters it into a report form. The form also contains fields that describe the nature of the incident and the action taken. These fields are to be filled in by the responding officer.

The system software can be configured to require that a report be completed prior to the end of the shift in which the incident occurred. If the "Require Alarm Report" option is chosen in the "Edit Security Preferences" dialog, the report can be filled out immediately after the alarm is reset. However, if the report is not completed a reminder prompt will appear on the screen every 5 minutes for 30 minutes before the end of the shift. The time at which the prompt is to be displayed is also set in the "Edit Security Preferences" dialog.

All of the common database commands are available in the Reports Database, with the following additional commands:

Report Statistics

Unknown	2
Person threatened	0
Accident - person	0
Accident - auto	0
Medical problem	1
False alarm	0
Alarm demonstration	2
Other problem	1

Cancel

Map

The screenshot shows a window titled "Master computer, No alarms - 11:42 Mon Apr 27, 1998". The window contains a map of a facility with rooms labeled: Manufacturing, Stockroom, Lab, and Cafe. A yellow circle with the number "1" is overlaid on the map, indicating the location of an alarm. Below the map is a form with a pink background. The form includes a description of the alarm: "Female, 5 feet 2 inches, Medium build, Brown hair, Brown eyes" and "Accounting area ... Sales office area". There are buttons for "Alarm", "History", and "Recall". The "Recall" section contains fields for Name (Sharon Black), Address (Room 100), Phone, and ID (1001). There is also a "Commuter" checkbox. On the right side of the form, there is a "Cancel" button and a timestamp "Alarm received 11:36:20 Mon Apr 27, 1998". A small portrait of a woman is visible on the right side of the form.

The act of resetting an alarm causes a report to be saved into the Reports Database. A part of the alarm report record is a copy of the Alarm Screen that was displayed at the time of the incident. Clicking on the "Map" button allows a reconstruction of the screen as it appeared to the dispatcher.

Edit Data

Edit Alarm Report Information

Name

Address

City State

Zip Subscriber ID

Phone Point type

Select problem type:

- Unknown
- Person threatened
- Accident - person
- Accident - auto
- Medical problem
- False alarm
- Alarm demonstration
- Other problem

Enter name of OFFICER responding to the alarm:

Enter description of PROBLEM:

Describe ACTION taken:

Select the appropriate problem type, then enter the name of the officer that responded to the alarm. Finish with the description of the problem and the action taken. Save the updated record by clicking the Save button.

Delete

This button will delete the alarm report from the database. If the report is deleted the data can not be recovered.

Locate Key

Locate Alarm Database Record

Subscriber Name

Transmitter ID

Subscriber ID

Subscriber Class

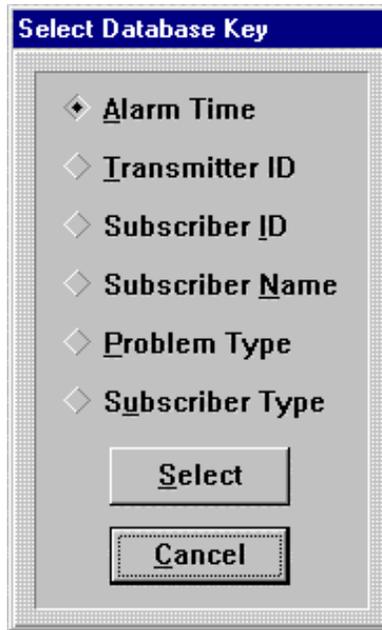
Hours Minutes Month Day Year

Select problem type:

- Unknown
- Person threatened
- Accident - person
- Accident - auto
- Medical problem
- False alarm
- Alarm demonstration
- Other problem

This button works similarly to the "Locate Key" button in the Operator and Subscriber Databases. Entering the Subscriber Name, Transmitter ID, Subscriber ID, Subscriber Classification, problem type, or a specific time and date can locate a specific report. As in the Operator and Subscriber Databases, the subscriber records are temporarily ordered according to the field entered in the "Locate Key" dialog.

Key Select



This button also works similarly to its counterparts in the Operator and Subscriber Databases. Using it, the Reports can be ordered by Subscriber Name, Transmitter Identification Code, Subscriber Identification Number, alarm time, problem type or Subscriber Classification.

Incomplete

When this button is clicked, the most recent incident report file that has not been completed will be displayed. The reports are not reordered when this command is used.

System Menus and Dialogs

File Menu

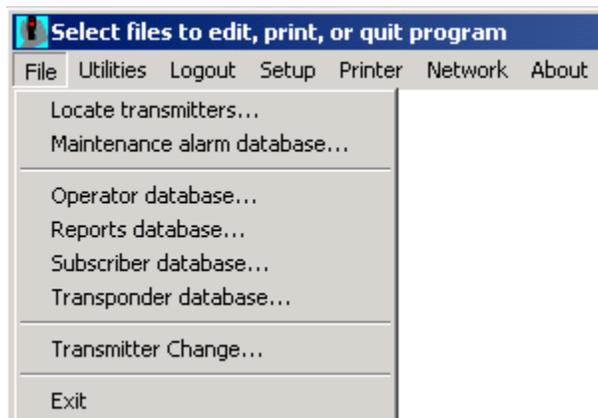


Figure 38: File Menu

Locate Transmitters

This selection allows the operator to display the last reported location of the transmitter assigned to the indicated individual or asset. When the individual or asset is selected from the list the time of the last supervision report is shown (or None is displayed if no supervision report has been received from that transmitter). On the map the last report location will be shown.

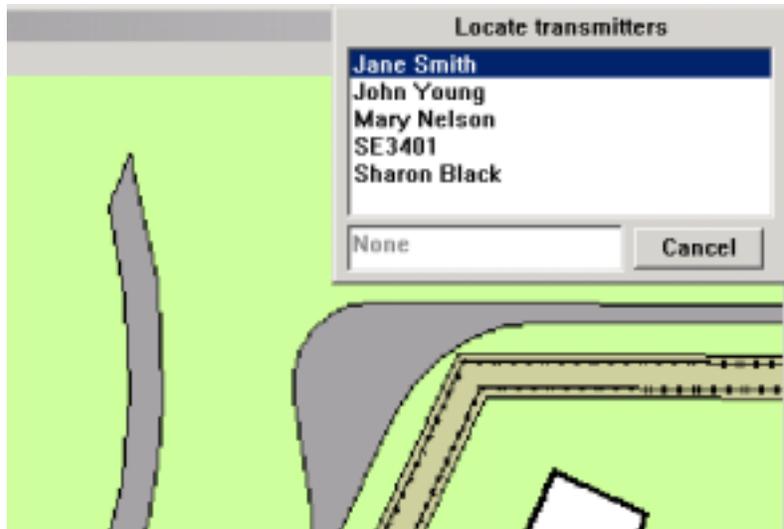


Figure 39: Locate Transmitters

Maintenance Alarm Database

Maintenance Transmitters, when activated in the "Test" or "Alarm" mode, generate a series of multiple data packets like Subscriber Transmitters, however, a special code in each packet identifies the Transmitter as a "Maintenance Transmitter".

The Receiver responds to a Maintenance "Alarm" or "Test" transmission in the same fashion as it responds to a Subscriber "Alarm" or "Test" unless the Receiver has been put in the "Setup" mode. The Transponder then reports the Maintenance Transmitter identification number and all signal levels to the Central Console, which then creates the location estimate and processes the data as it would for a normal "Alarm".

NOTE: All Maintenance Transmitters are assumed to be valid so there is no need for the Console to check for the identification number in the Subscriber Database.

The Central Console will not generate an audible alert for the Operator, nor will it create an "Alarm" display on the main Console screen. Because they can be set to graphically display received signal levels, Maintenance "Alarms" are very useful in verifying that the System coverage exists at any location in the protected area and that Receiver redundancy is adequate.

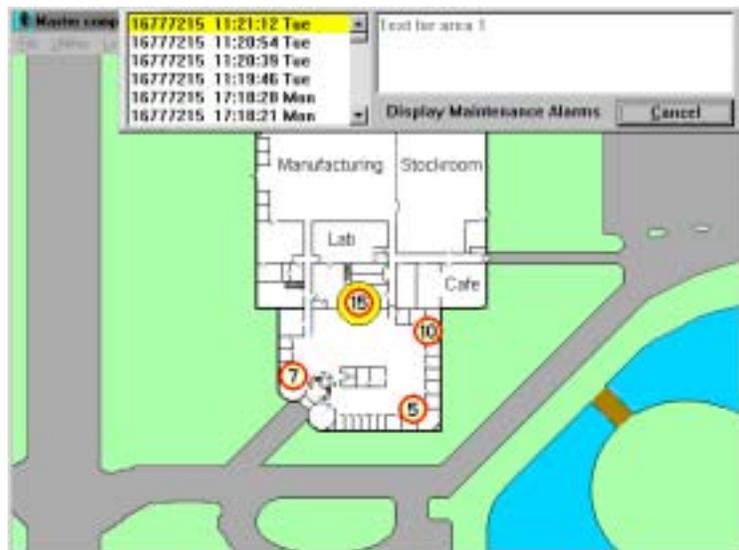


Figure 40: Maintenance "Alarm" With Signal Levels Shown in Icons

Transmitter Change

The "Transmitter Change" command under the File Menu, is used when it is necessary to change a subscriber's Transmitter.

Selecting "Transmitter Change" causes the "Locate Subscriber" screen to appear. The subscriber's record in the Subscriber Database can be quickly found by entering the Subscriber Name, Subscriber Identification Number, or current Transmitter ID. This method of locating a particular subscriber's record is identical to using the "Locate Key" command in the Subscriber Database: the first record, which fits the entered data, is shown. It may be necessary to scroll using the "Previous" and "Next" buttons to find the appropriate record. Perform a "Test" using the old transmitter if possible, this should fill in the Transmitter ID field. Then press "Find".

The dialog box has a blue title bar with the text "Locate Subscriber's Database Record". It contains three input fields: "Subscriber Name", "Subscriber ID", and "Transmitter ID". Below these fields is a text instruction: "Test near the receiver closest to this system to automatically fill in the Transmitter ID field". At the bottom are two buttons: "Find" and "Cancel".

CAUTION: Be absolutely certain that the correct record is displayed before entering the new Transmitter ID (Identification Code). Changing the wrong subscriber's record makes two records ineffective: the correct subscriber will be misidentified and the subscriber whose record was incorrectly altered will be disabled. If possible, perform a test with the subscriber's old transmitter after the change has been made: the test should fail.

The dialog box has a blue title bar with the text "Find Subscriber's Database Record For Transmitter Change". It is divided into several sections. On the left, there is a "Disabled" checkbox and a "Commuter" button. Below this are fields for "Name" (Sharon Black), "Addr" (Room 100), "City", "State", "Zip", and "Phone". On the right, there is a "Home Address" section with a "No handicap" button and fields for "Name", "Addr", "City", "State", "Zip", and "Phone". In the center, there is a "Subscriber ID" field with the value "1001", a "New transmitter ID" field, and a "Transmitter ID" field with the value "00000001". To the right of these fields are buttons for "Locate Key" and "Change". At the bottom, there is a yellow highlighted instruction: "After correct subscriber is found, press Change button. =====>>>". Below this are buttons for "Beginning", "Previous", "Next", "End of File", and "Cancel".

When the correct subscriber's record is displayed, click on the "Change" button and perform a "Test" using the new transmitter. The new Transmitter Identification Code will be automatically entered into the "New transmitter ID" field.

Manually enter the new transmitter ID into the “Transmitter ID” field or using the mouse highlight the old “Transmitter ID” value and press and hold the “Shift” key and tap the “Insert” key. Then click the “Save” button. A prompt will appear, asking for a second "Test" to confirm the change. Test the new transmitter again. A green light should be shown on a nearby receiver and this dialog should automatically be removed from the screen, confirming the change was successful.

Clear Screen

When selected, clears the map of any icons and returns to the default map display.

Output Verification

When selected, the system is scanned to verify that all alarm outputs are in the correct state. Any output found in the wrong state is corrected.

Synchronize System Time

Selecting this option on the master computer will cause the time on the slave and all of the workstation computers to be updated to the master computer's time.

Utilities Menu



Figure 41: Utilities Menu

Backup Dialog

This dialog allows backups to be made of all of the databases. Only the databases with a checkmark will be backed up. Typically all databases should be backed up at once. Only when they do not fit on one floppy disk should you save individual databases to one floppy, then switch floppy disks and repeat the procedure to save the rest of the files. As insurance against database problems, multiple backups to different disks should be made frequently. At least one backup copy should be stored in a different location from this system (remember to keep this copy current).

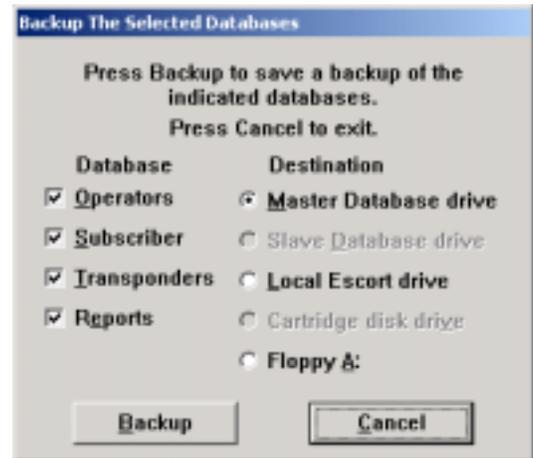


Figure 42: Backup Dialog

Operators

This is the database of all of the individuals with passwords to operate the system software and acknowledge alarms.

Subscriber

This database contains all of transmitters assigned in the system.

Transponders

This database contains the configuration of the transponders, receivers, virtual receivers and alert units.

Reports

This database contains all of the alarm reports and related alarm map screens.

Master Database Drive

Store the backup files in the Security Escort Master Database path. See the System Directories and Network Address dialog.

Slave Database Drive

Store the backup files in the Security Escort Slave Database path. See the System Directories and Network Address dialog.

Local Database Drive

Store the backup files in the save sub-directory as the Security Escort System components are stored on this computer (typically C:\ESCORT).

Cartridge Disk Drive

Store the backup files in the "Backup / restore to disk cartridge path" assigned in the System Preferences dialog. This path may point to a cartridge disk drive, to a local hard disk or to a network disk drive.

Floppy A:

Store the backup files on the floppy disk in floppy disk drive A.

Backup

When the backup button is clicked all of the databases selected with a checkmark will be saved to the destination selected on the right.

Restore Dialog

This dialog allows previously made database backups, to be restored to the system databases. Select the database to be restored on the left. On the right where this database backup is currently located. Then click restore to replace the existing database file with the backup. This process also rebuilds the database and its index tables to correct most database structure problems.

Operators

This is the database of all of the individuals with passwords to operate the system software and acknowledge alarms.

Subscriber

This database contains all of transmitters assigned in the system.

Transponders

This database contains the configuration of the transponders, receivers, virtual receivers and alert units.



Figure 43: Restore Dialog

Reports

This database contains all of the alarm reports and related alarm map screens.

Master Database Drive

Store the backup files in the Security Escort Master Database path. See the System Directories and Network Address dialog.

Slave Database Drive

Store the backup files in the Security Escort Slave Database path. See the System Directories and Network Address dialog.

Local Database Drive

Store the backup files in the save sub-directory as the Security Escort System components are stored on this computer (typically C:\ESCORT).

Cartridge Disk Drive

Store the backup files in the "Backup / restore to disk cartridge path" assigned in the System Preferences dialog. This path may point to a cartridge disk drive, to a local hard disk or to a network disk drive.

Floppy A:

Store the backup files on the floppy disk in floppy disk drive A.

Clear Entire File

If selected and the restore button clicked, then that entire database will be cleared of all records. This selection must be used with extreme caution! Hold down the SHIFT and CTRL keys when opening the dialog to enable the Clear Entire File option.

Restore

When the restore button is clicked the database selected will be restored from the destination selected on the right.

This message box is a reminder that if changes to the system databases have been made since the backup was made, the changes will be lost. Therefore those changes must be redone to the restored database.

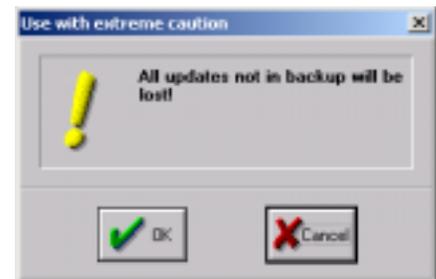


Figure 44: Restore Warning Message Box

This message box indicates the restore has been completed. The previous database file has been renamed with an .OLD extension and saved in the Escort sub-directory. Only the most recent database of each type is retained.

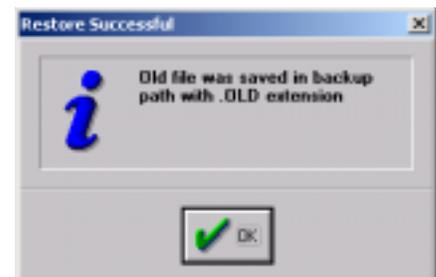


Figure 45: Restore Save Old database Message Box

Print System Reports

System reports	Midnight report	Sunday only
<input type="checkbox"/> Print report now		
<input type="checkbox"/> Daily test report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Low battery report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Not testing report	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Receivers not heard from report	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Daily trouble report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Guard tour report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Guard tour exception report	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> New alarm reports	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Fail to test letters	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly subscriber test report	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly security test report	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly watchman test report	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Weekly maintenance test report	<input type="checkbox"/>	<input type="checkbox"/>

This dialog allows the system reports to be printed now, scheduled for printing each night at midnight or weekly on Sunday at midnight. To print a report or reports now check the left-hand box for each report desired and click "Print". Check the "Midnight Report" or the "Sunday Only" checkbox to automatically schedule that report at those times.

"Daily Test Report"

Report of testing by classes of subscriber for the last 24 hours broken down by hour.

"Low Battery Report"

Report of all subscriber transmitters currently reporting low battery.

"Not Testing Report"

Report of all subscriber transmitters that have not tested their transmitters within the last 28 days.

"Receivers Not Heard From Report"

Report of all receivers that have not heard transmissions recently. Could indicate a problem with that receiver's ability to hear alarm and test transmissions.

"Daily Trouble Report"

Report of all the troubles currently being reported by transponders, receivers and alert units.

"Guard Tour Report"

Report of the guard tours collected within the last day.

"Guard Tour Exception Report"

The guard tour exception reports collected within the last day. Not currently implemented.

“New Alarm Reports”

Alarm reports for all of the new alarms that have been received by the system.

“Fail To Test Letters”

Notices to all of the subscribers that have not tested within the last 28 days. Not currently implemented.

“Weekly Subscriber Test Report”

Report of subscriber testing for the last 7 days broken down by hour.

“Weekly Security Test Report”

Report of security personnel testing for the last 7 days broken down by hour.

“Weekly Watchman Test Report”

Report of watchman personnel testing for the last 7 days broken down by hour.

“Weekly Maintenance Test Report”

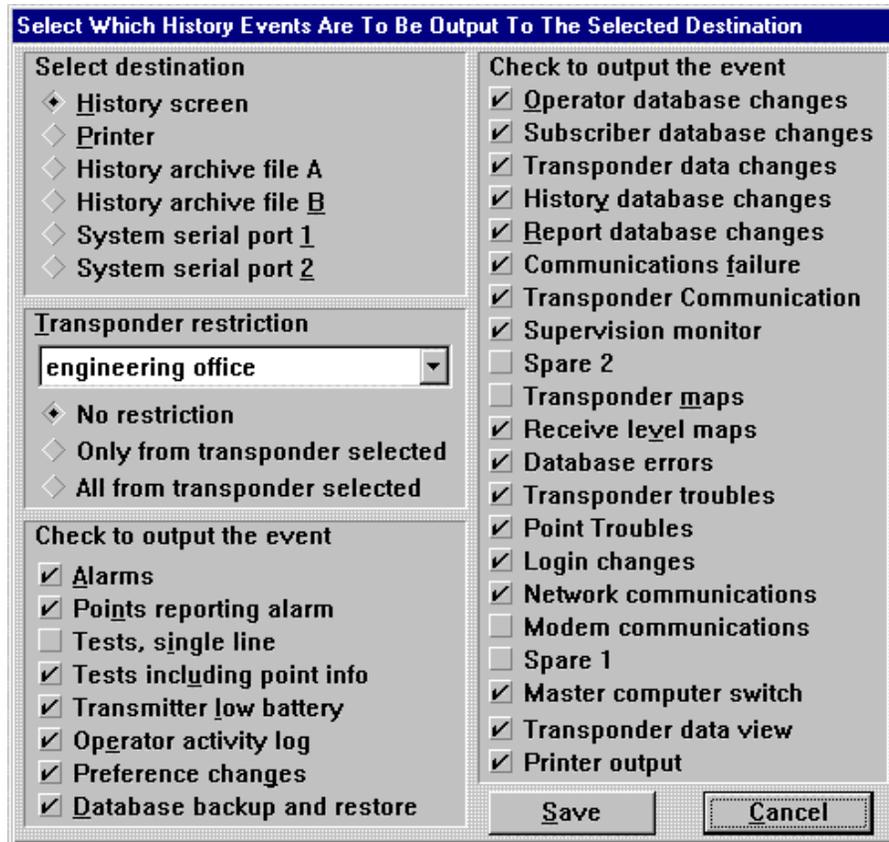
Report of maintenance testing for the last 7 days broken down by hour.

Setup Commands

Show History

```
REPORTS DATABASE EDITOR entered by operator 4 - 01:17:50 PM Fri Apr 21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:19:57 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:20:10 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:20:28 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:20:36 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:21:33 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:22:26 PM Fri Apr
21, 2000
File not found, Loading C:\ESCORT\IMAGES\MEDSTORE.JPG - 01:22:34 PM Fri Apr
21, 2000
REPORTS DATABASE EDITOR exit by operator 4 - 01:23:32 PM Fri Apr 21, 2000
SECURITY PREFERENCES entered by operator 4 - 01:34:20 PM Fri Apr 21, 2000
SECURITY PREFERENCES exit by operator 4 - 01:35:17 PM Fri Apr 21, 2000
SYSTEM LABELS entered by operator 4 - 01:35:22 PM Fri Apr 21, 2000
SYSTEM LABELS exit by operator 4 - 01:35:29 PM Fri Apr 21, 2000
SYSTEM DEFAULTS entered by operator 4 - 01:35:33 PM Fri Apr 21, 2000
SYSTEM DEFAULTS exit by operator 4 - 01:35:35 PM Fri Apr 21, 2000
SYSTEM LABELS entered by operator 4 - 01:35:38 PM Fri Apr 21, 2000
SYSTEM LABELS exit by operator 4 - 01:36:54 PM Fri Apr 21, 2000
SYSTEM REPORTS entered by operator 4 - 01:36:58 PM Fri Apr 21, 2000
SYSTEM REPORTS exit by operator 4 - 01:38:13 PM Fri Apr 21, 2000
```

History Filter



History Filter Dialog

This dialog selects the classes of events will be recorded (sent to) specific output devices. The Select Destination box will select History screen, Printer, History files and System serial ports. Notice when this selection is changed the checked items also change. There is a different set of events to be output for each destination selected. Therefore for each destination the events to be output must be individually configured.

“History Screen”

This option selects the events that will be displayed on the computer screen when “Show History” above is selected.

“Printer”

This option selects the events that will be sent to the printer.

“History Archive File A”

This option selects the events that will be sent to the a_audit.txt file stored in the Escort sub-directory (typically C:\escort\a_audit.txt). There is a minimum set of events that can't be disabled, so they will always be recorded.

“History Archive File B”

This option selects the events that will be sent to the b_audit.txt file stored in the Escort sub-directory (typically C:\escort\b_audit.txt).

“System Serial Port 1”

This option selects the events that will be sent to the System Serial Port 1. System Serial Port 1 is assigned a physical Comm Port in the “Remote Comm Port Setup” dialog and its function must be set to “History Filter Output” in the “Remote Setup” dialog.

“System Serial Port 2”

This option selects the events that will be sent to the System Serial Port 2. System Serial Port 2 is assigned a physical Comm Port in the “Remote Comm Port Setup” dialog and its function must be set to “History Filter Output” in the “Remote Setup” dialog.

“Transponder Restriction”

This option selects a transponder for the restrictions below.

“No Restriction”

This selection typically would be left at this setting at all times. Therefore the output would not be restricted by an individual transponder.

“Only From Transponder Selected”

The selected events would only be output if they were reported from the transponder selected in the “Transponder Restriction” above.

“All from Transponder Selected”

All events will be reported from the transponder selected in the “Transponder Restriction” above. In addition the selected events will be reported from all other transponders in the system.

“Alarms”

Output the information about an alarm including location, but not the transponder and receiver levels. This is the data typically sent to a printer.

“Points, Reporting Alarm”

Output the transponder and receiver levels for an alarm. This is the data is typically too detailed to send to a printer and is used for diagnostics, not normal system operation.

“Tests, Single Line”

Output the simple information about a test. This is the data typically sent to a printer.

“Tests Including Point Info”

Output the transponder and receiver levels for a test. This is the data is typically too detailed to send to a printer and is used for diagnostics, not normal system operation. If this option is selected then “Test, Single Line” above typically would not also be selected for the same output device.

“Transmitter Low Battery”

Output low battery reports received from transmitters.

“Operator Activity Log”

Output all other operator activity (audit trail) not covered by specific event selections.

“Preferences Changes”

Output all changes made to system preference selections.

“Database Backup and Restore”

Record all database backup and restore activity.

“Operator Database Changes”

Record all changes to the operator database.

“Subscriber Database Changes”

Record all changes to the subscriber database.

“Transponder Database Changes”

Record all changes to the transponder database.

“History Database Changes”

Record all changes to the history database. Not currently implemented.

“Report Database Changes”

Record all changes to the alarm report database.

“Communications Failure”

Record all communication failures and restorals.

“Transponder Communication”

Record all communications to transponders. Typically this selection would only be used for engineering diagnostics. Leaving this item selected will generate a significant amount of history and fill up the hard disk drive quickly. Leave this item unchecked.

“Supervision Monitor”

Report changed in the supervision status for all transmitters than are being supervised.

“Spare 2”

This is a future option that has no function at this time (leave unchecked).

“Transponder Maps”

Output all transponder status maps. Typically this selection would only be used for diagnostics. Leave this item unchecked.

“Receive Level Maps”

Output all maintenance alarm receive level maps. Typically this selection would only be used for diagnostics. Leave this item unchecked.

“Database Errors”

Output all reported database errors. Typically this item would be checked.

“Transponder Troubles”

Output all reported transponder troubles. Typically this item would be checked for devices used to monitor problems.

“Point Troubles”

Output all reported receiver and alert unit troubles. Typically this item would be checked for devices used to monitor problems.

“Login Changes”

Report all new system operator login and logout activity.

“Network Communications”

Record all communications to between networked computers. Typically this selection would only be used for engineering diagnostics. Leaving this item selected will generate a significant amount of history and fill up the hard disk drive very quickly and may bog down the system during high traffic times. Always leave this item unchecked.

“Modem Communications”

Record all communications to the modem for remote communications and pager access. Typically this selection would only be used for diagnosing pager communication problems. Leave this item unchecked.

“Spare 1”

This is a future option that has no function at this time (leave unchecked).

“Master Computer Switch”

Record when the master and slave computers switch roles.

“Transponder Data View”

Allows the data created by the “Transponder Data View” dialog to be output. Typically this selection would only be used for engineering diagnostics. Leave this item unchecked.

“Printer Output”

Allows the data being sent to the printer to be sent on other outputs. Typically this item would be unchecked.

Popup Trouble Filter

System Trouble Reported

This transponder is reporting trouble.
Service should be contacted and the transponder, receiver or output module must be repaired or replaced.

Trouble no response

Transponder ENGINEERING BUILDING

Time of Report 13:54 Thu Dec 29, 1994

Multiplex Point 3

Location
Receiver, CENTRAL ENGINEERING OFFICE

Response Instructions
The service individual in CONTACT INFORMATION below should be called NOW! Do not delay.

Contact Information
1st - Robert Donaldson, Pager 555-1213, Home 555-1234
2nd -John Ronaldson, Pager 555-0123, Home 555-2345

"Pop-Up" Alert Showing Receiver not Responding

The Security Escort System contains many built-in self testing features. Each Transponder tests the condition of the Receivers and Alert Units connected to it.

When the Transponder finds a device reporting a "Trouble" condition, it communicates the problem and the device identity to the Central Console, which generates a brief alert tone and displays a pop-up message for the Dispatcher. The message indicates the nature of the "Trouble" and instructs the Dispatcher on the proper course of action. The status of the device is recorded in the "Error! Reference source not found." file under the "Setup" menu item. The event is recorded on the hard disks of both the main and backup computers and on the hardcopy printout.

Select Troubles To Display As Popup Dialogs And To Print

Transponder troubles		MUX bus point troubles	
Popup	Pager	Popup	Pager
<input type="checkbox"/> Communications failure	<input type="checkbox"/>	<input type="checkbox"/> AC loss	<input type="checkbox"/>
<input type="checkbox"/> AC loss	<input type="checkbox"/>	<input type="checkbox"/> Low battery	<input type="checkbox"/>
<input type="checkbox"/> Low battery	<input type="checkbox"/>	<input type="checkbox"/> Tamper (no delay)	<input type="checkbox"/>
<input type="checkbox"/> Tamper (no delay)	<input type="checkbox"/>	<input type="checkbox"/> No response	<input type="checkbox"/>
<input type="checkbox"/> Remote key activation	<input type="checkbox"/>	<input type="checkbox"/> Jamming	<input type="checkbox"/>
<input type="checkbox"/> Remote key tamper	<input type="checkbox"/>	<input type="checkbox"/> Output device error	<input type="checkbox"/>
<input type="checkbox"/> Transponder startup	<input type="checkbox"/>	<input type="checkbox"/> Bad checksum	<input type="checkbox"/>
<input type="checkbox"/> Bus faults	<input type="checkbox"/>	<input type="checkbox"/> COMM port overload	<input type="checkbox"/>
Transmitter supervision monitor		<input type="checkbox"/> Network comm failure	<input type="checkbox"/>
Popup	Pager	<input type="checkbox"/> All troubles to history	
<input type="checkbox"/> Known transmitters	<input type="checkbox"/>	Popup trouble and pager delay	
<input type="checkbox"/> Unknown transmitters	<input type="checkbox"/>	<input type="text" value="30"/>	seconds
Monitored periods	<input type="text" value="8"/>		

Popup Trouble Filter Dialog

This dialog allows for selection of which "Trouble" categories will cause pop-up messages to appear on the Console screen or be set to the service pager. The "Troubles" described below will always be recorded in the "Transponder Current Status" window but may or may not produce a Pop-up display or pager message, depending on the selections made.

Transponder Parameter Change

The screenshot shows a dialog box titled "E66 Transponder's EEPROM Configuration". It is organized into three main sections. The first section, "EEPROM configuration setup switches. Do not change unless you know what you are doing!", contains a list of checkboxes: "Run silent", "Optional parameter 2", "Optional parameter 3", "Loop communications", "Enable remote key", "Uses Proxim radio", "Comm fail to siren out", and "Verbose point reports". The second section, "EEPROM configuration setup values. Do not change unless you know what you are doing!", contains numerical input fields for "Test min. level", "Test differential", "Alarm min. level", "Alarm differential", "Byte 5", "Byte 7", "Spare 1", and "Spare 2". The third section, "For engineering test only! Leave at default!", contains input fields for "Test transmitter type", "Test receiver 1", "Test receiver 2", "Test receiver 3", "Test receiver 4", "Transmit delay", "Transmit point", "Lead delay", and "Tamper load". At the bottom, there is a "Transponder" dropdown menu currently set to "Diag. #1", and four buttons: "Previous", "Next", "Send change", and "Cancel".

Transponder Parameter Change Dialog

This dialog allows parameters stored in the transponder's EEPROM memory to be viewed and changed.

“Run Silent”

If checked the receivers and alert units on this transponder will not sound for an alarm. This includes alarms that are received during a communications failure with the Central Console.

“Optional Parameter”

This is a future option, it should be left unchecked.

“Loop communications”

Normally the transponders are connected in parallel (party line) so they can all hear if any other transponders are in communications so they don't collide when communicating. However if fiber optic communications is used between the transponders and PC they can't be connected this way. Therefore they are connected in a loop. The transmit from the PC goes to the receive on the first transponder. The transmit from the first transponder goes to the receive on the second transponder and so on ... Until the transmit from the last transponder goes to the receive on the PC. This option tells the transponders they are connected this way so it can react. You must make this change to the first transponder first, then the second, continuing in order until all are done.

“Enable Remote Key”

If checked the remote key supervised input on this transponder is enabled. Otherwise it will be ignored.

“Uses Proxim Radio”

Only check this item if a Proxim radio is used to communicate to the Central Console.

“Comm Fail to Siren Out”

If this item is checked the siren output on this transponder will activate when a communications failure is detected with the Central Console.

“Verbose Point Reports”

If checked alarm and test reports will also include average level and packet count information. This extra information is for diagnostic purposes only and is not required for system operation. Since the additional data increases the system traffic load this item should be left unchecked.

“Test Min Level”

This is the minimum receive level (1-255) a receiver must see before the green light will be displayed acknowledging a successful test. This item should be left at default (128).

“Test Differential”

This is the minimum difference in receive level (1-255) a receiver must be less than the loudest receiver hearing a test before the green light will be displayed acknowledging a successful test. This item should be left at default (64).

“Alarm Min Level”

This is the minimum receive level (1-255) a receiver must see before the sounder and red light will be displayed for an alarm. This item should be left at default (1).

“Alarm Differential”

This is the minimum difference in receive level (1-255) a receiver must be less than the loudest receiver hearing an alarm before the sounder and red light will be displayed for an alarm. This item should be left at default (255).

“Byte”

These are future options and should be left at default (0).

“Min Receive Level”

This is a system wide parameter not specific to this transponder. This is the minimum receive level (1-255) a receiver must see before it will be included in alarm processing. Setting this parameter too high will limit the number of receivers considered in an alarm and cause loss of location accuracy. This item should be left at default (1).

“Max # of Rec”

This is a system wide parameter not specific to this transponder. This is the maximum number of receivers (1-90) to be included in processing an alarm. Setting this parameter too low will limit the number of receivers considered in an alarm and cause loss of location accuracy. This item should be left at default (90).

“Test Transmitter Type”

“Test Receiver”

“Transmit Delay”

“Transmit Point”

“Load Delay”

“Tamper Load”

“Transponder”

These parameters are used for engineering system load testing only. They are never to be used in a live system, as they can generate more traffic than a system can handle and therefore actual alarms may be missed! Leave them at default.

“Pervious”

Goes back to the pervious transponder in the system.

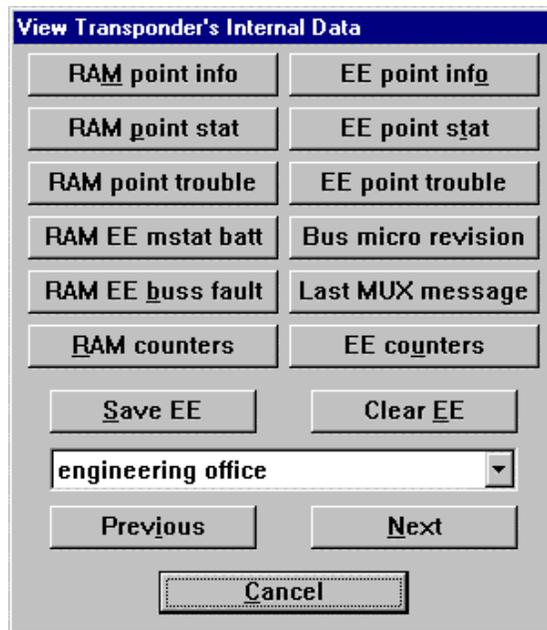
“Next”

Advances to the next transponder in the system.

“Send Change”

Send the changes made to the selected transponder. Changes will not be made the transponder EEPROM memory unless this button is clicked.

Transponder Data View



Transponder Data View Dialog

This dialog is for engineering evaluation of a transponder only.

“RAM Point Info”

Views the RAM image of point information.

“RAM Point Stat”

Views the RAM image of point status.

“RAM Point Trouble”

Views the RAM image of point trouble.

“RAM EE Mstat Batt”

Views the RAM and EEPROM images of transponder status and battery condition.

“RAM EE Buss Fault”

Views the RAM and EEPROM images of transponder MUX bus fault condition.

“RAM Counters”

Views the RAM image of the process registers.

“Save EE”

Saves the current RAM image to the EEPROM memory on the transponder.

“EE Point Info”

Views the EEPROM image of point information.

“EE Point Stat”

Views the EEPROM image of point status.

“EE Point Trouble”

Views the EEPROM image of point trouble.

“Bus Micro Revision”

Views the bus micro revision for the connected points.

“Last MUX Message”

Views the last MUX bus message received.

“EE counters”

Views the EEPROM image of the process registers.

“Clear EE”

Clears the EEPROM memory on the transponder and resets the transponder.

“Pervious”

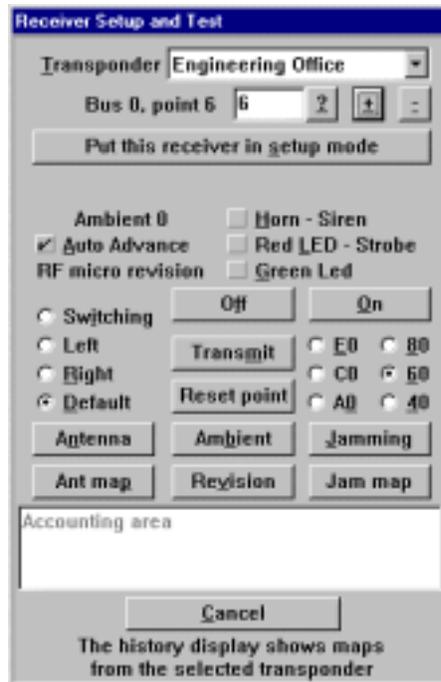
Goes back to the pervious transponder in the system.

“Next”

Advances to the next transponder in the system.

Receiver Configuration

Once the Receiver and Alert Unit data for a Transponder has been entered into the Transponder Database, this dialog is used to verify that each Receiver is working and is properly addressed in the database. This setup tool identifies errors in the address switch settings of Receivers and Alert Units as well as data entry errors in the Transponder Database.



Receiver Configuration Dialog

“Put This Receiver In Setup Mode”

This button initiates the “Setup” process by causing both the Red and Green LED’s of the selected Receiver to go on. The red and green LED will be flashing. On the Console, the dialog will change to present an “Abort setup for this MUX Point” button to allow proceeding to the next device in the event that one Receiver is not set up properly.

“Automatic Advance”

If this box is checked, the Central Console will automatically select the Receiver with the next higher “Point” address.

“Horn - Siren”

If this checkbox is checked the horn output of a receiver or the siren output of an alert unit will be turned on if “On” is clicked or off if “Off” is clicked. If this checkbox is not checked, then the state of this output will not change.

“Green LED”

If this checkbox is checked the green LED output of a receiver or the spare output of an alert unit will be turned on if “On” is clicked or off if “Off” is clicked. If this checkbox is not checked, then the state of this output will not change.

“Red LED - Strobe”

If this checkbox is checked the red LED output of a receiver or the strobe output of an alert unit will be turned on if “On” is clicked or off if “Off” is clicked. If this checkbox is not checked, then the state of this output will not change.

“Off”

When clicked, the checked Horn-Siren, Green LED and Red LED - Strobe outputs will be turned off for the selected point on the selected transponder. If the output does not change, click “On” then click “Off” again.

“On”

When clicked, the checked Horn-Siren, Green LED and Red LED - Strobe outputs will be turned on for the selected point on the selected transponder. If the output does not change, click “Off” then click “On” again.

“Ambient”

The Ambient value is shown above “Auto Advance”, it displays the current ambient level at the receiver. To get an updated ambient reading, select the point, click the Transmit button, then click the Ambient button.

“RF Micro Version”

The receiver’s RF micro revision level is shown below “Auto Advance”. To get an updated reading click the Revision button.

“Antenna”

Normally a receiver automatically switches between its diversity antennas during normal operation (the default selection, a working system should be left at this setting). The receiver can be forced to use only the left or right antenna or always switch by selecting the appropriate setting and clicking the “Antenna” button.

“Ant Map”

Clicking “Ant Map” will cause the system to interrogate the current antenna switching settings of all receivers on this transponder.

“Transmit”

Clicking “Transmit” will cause this receiver to send one test transmission.

“Reset Point”

Clicking “Reset Point” will cause the microprocessors on this point to reset as if they were just powered up. A Receiver should not be reset in a working system, as it can cause receptions to be lost.

“Ambient”

Clicking “Ambient” will cause the system to interrogate the current ambient levels of all receivers on this transponder.

“Revision”

Clicking “Revision” will cause the system to interrogate the RF micro revision levels of all receivers on this transponder.

“Jamming”

A receiver monitors the ambient level during normal operation. If the ambient level rises above the jamming setting and Jamming trouble is reported to the Central Console. The receiver’s jamming level can be adjusted by selecting the appropriate setting (shown in hexadecimal levels) and clicking the “Jamming” button.

“Jam Map”

Clicking “Jam Map” will cause the system to interrogate the jamming setting levels of all receivers on this transponder.

“Highest”

The left hand box displays the highest receive level that the test transmission was heard. The right hand box displays the greatest number of packets heard from a single test transmission.

“Average”

The left hand box displays the average receive level that the test transmission was heard. The right hand box displays the average number of packets heard from a single test transmission.

“Lowest”

The left hand box displays the lowest receive level that the test transmission was heard. The right hand box displays the least number of packets heard from a single test transmission.

“Run Test”

The test will only run when this box is checked. To stop the test and retain the test values, uncheck this box.

“Stop Test and Reset Counters”

Pressing this button will stop the test and reset all values.

“Close Dialog, Does Not Stop Test”

Clicking this button will close this dialog but will not stop the test if running. Reopening the dialog will display the current progress of the test. The test should not be left running unless there is a specific need, as it generates both RF and system traffic.

Network Status Dialog

	Network	Modem	Sys Serial 1	Sys Serial 2
Successful Incoming Messages	0	0	0	0
Incoming Communications Errors	0	0	0	0
Incoming Retried Messages	0	0	0	0
Total Outgoing Messages	0	0	0	0
Outgoing Retried Messages	0	0	0	0
Receive Buffer Max	0	0	0	0
Transmit Buffer Max	0	0	0	0
Buffer Overflow	0	0	0	0
Hardware Overrun	0	0	0	0
Total Remote Access Connections		0		
Total Wrong Access Code Attempts		0		
Last Remote Access Time				
Successful pager messages		0		
Failed pager attempts		0		

Yellow indicates a problem

Reset Status
Refresh Data
Cancel

Network Status Dialog

This dialog shows the status of communications on the network, modem and system serial ports.

“Successful Incoming Messages”

This value is the number of messages that the system successfully received on this communications port.

“Incoming Communication Errors”

This value is the number of messages that the system detected errors in, on this communications port. If displayed in yellow this value is more than 5% of the Successful Incoming Messages.

“Incoming Retried Messages”

This value is number of successful receptions that indicated that they retried by the sending application. If displayed in yellow this value is more than 5% of the Successful Incoming Messages.

“Total Outgoing Messages”

This value is total number of outgoing messages sent on this port.

“Outgoing Retried Messages”

This value is number of outgoing messages that had to be retried because the receiving application did not acknowledge them. If displayed in yellow this value is more than 5% of the Total Outgoing Messages.

“Receiver Buffer Max”

This value is maximum number of bytes that were received on this serial port, but not yet processed by the system. If displayed in yellow more than 50% of the queue was in use.

“Transmit Buffer Max”

This value is maximum number of bytes that were processed by the system, but not yet transmitted on this serial port. If displayed in yellow more than 50% of the queue was in use.

“Buffer Overflow”

This is the number of times that a byte was lost by the software for a serial port because the input buffer overflowed. Bytes were being placed into the input buffer faster than the system could process them.

“Hardware Overrun”

This is the number of times that a byte was lost by the hardware for a serial port because it was not fast enough to process the byte into the input buffer.

“Total Remote Access Connections”

This value is the total number of times that a remote access connection was successful.

“Total Wrong Access Code Attempts”

This value is the number of times that a remote access connection was attempted and rejected because a valid remote access code was not received.

“Last Remote Access Time”

This is the time and date of the last successful remote access attempt.

“Successful Pager Messages”

This value is the number of successful pager messages that have been sent.

“Failed Pager Attempts”

This value is the number of times a pager message dial-out was unsuccessful.

“Reset Status”

Pressing this button will reset all values in this shown in this dialog.

“Refresh Data”

Pressing this button will refresh all values in this shown in this dialog. The values are not automatically updated when the dialog is left open.

System Status Dialog

The screenshot shows a dialog box titled "Current System and Transponder Serial Port Status". It contains several input fields for system parameters. The values shown are: Maximum Retry Messages (7), Maximum Alarm Messages (0), Maximum Trouble Messages (0), Max Low Battery Messages (0), Max Test Strobe Messages (0), Max Man Down Messages (0), Supervision Monitors (1), Max Spooler Bytes (0), and Max Report Spooler Bytes (0). Below these are serial port status fields for Serial Port A through H, with values: Max Receive (0), Max Transmit (1), Hardware Overrun (0), Buffer Overflow (0), Overload Level (0), and Overload Count (0). A note states: "Any data fields shown in yellow indicate a system problem". At the bottom are buttons for "Reset Status", "Refresh Data", and "Cancel".

Maximum Retry Messages	7	Max Spooler Bytes	0
Maximum Alarm Messages	0	Max Report Spooler Bytes	0
Maximum Trouble Messages	0	Any data fields shown in yellow indicate a system problem	
Max Low Battery Messages	0		
Max Test Strobe Messages	0		
Max Man Down Messages	0		
Supervision Monitors	1		
Serial Port A Port B Port C Port D Port E Port F Port G Port H			
Max Receive	0		
Max Transmit	1		
Hardware Overrun	0		
Buffer Overflow	0		
Overload Level	0		
Overload Count	0		

System Status Dialog

This dialog shows the status of internal system queues and communications on the serial ports assigned to transponders.

“Maximum Retry Messages”

This value is maximum number of messages that the systems had queued to be sent to all transponders in the system and were not yet acknowledged. If displayed in yellow more than 50% of the queue was in use at this value.

“Maximum Alarm Messages”

This value is maximum number of alarms that the system processed at it busiest time. If displayed in yellow more than 50% of the maximum was in use.

“Maximum Trouble Messages”

This value is maximum number of troubles in the queue that have yet to be displayed. If displayed in yellow more than 50% of the queue was in use.

“Maximum Low Battery Messages”

This value is maximum number of transmitters with low batteries that have yet to be displayed. If displayed in yellow more than 50% of the queue was in use.

“Maximum Test Strobe Messages”

This value is maximum number of test strobes that were in use at one time. If displayed in yellow more than 50% of the queue was in use.

“Maximum Man Down Messages”

This value is maximum number of transmitters that were timing man down events, at one time. If displayed in yellow more than 50% of the queue was in use.

“Supervision Monitors”

This value is current number of transmitters that are being monitored for supervision transmissions.

“Max Spooler Bytes”

This value is maximum number of bytes that were spooled for the printer at one time. If displayed in yellow more than 50% of the queue was in use.

“Max Report Spooler Bytes”

This value is maximum number of bytes that were spooled for the printer for guard tour reports at one time. If displayed in yellow more than 50% of the queue was in use.

“Maximum Receiver Buffer”

This value is maximum number of bytes that were received from transponders on this serial port, but not yet processed by the system. If displayed in yellow more than 50% of the queue was in use.

“Maximum Transmit Buffer”

This value is maximum number of bytes that were processed by the system, but not yet transmitted to the transponders on this serial port. If displayed in yellow more than 50% of the queue was in use.

“Hardware Overrun Count”

This is the number of times that a byte was lost by the hardware for a serial port because it was not fast enough to process the byte into the input buffer.

“Buffer Overflow Count”

This is the number of times that a byte was lost by the software for a serial port because the input buffer overflowed. Bytes were being placed into the input buffer faster than the system could process them.

“Highest Overload Level”

This is a measure of the amount of time that peak traffic on this serial port was greater than the systems ability to handle it. The system will automatically shed non-essential tasks when this value rises.

“Overload Pass Count”

This is a measure of the number of times that peak traffic on this serial port was greater than the systems ability to handle it. The system will automatically shed non-essential tasks when this value rises.

“Reset Status”

Pressing this button will reset all values in this shown in this dialog.

“Refresh Data”

Pressing this button will refresh all values in this shown in this dialog. The values are not automatically updated when the dialog is left open.

Pager Setup Dialog

This dialog sets up remote pager access for troubles (service) and alarms (security).

Automatically Send Selected Troubles

If checked send the troubles selected in the Popup Trouble Filter dialog to the service pager.

Phone Number

Phone number to be dialed to access the paging service. This phone number is usually different from the number you would manually dial to send a page. The paging company assigns this value.



Figure 46: Pager Setup Dialog

Password	This is the password that must be sent to the paging service to send the page. If not required, leave this field black. Usually a password is not required. The paging company assigns this value.
Pager ID	This is the ID that identifies the specific pager that this message is to be sent to. Many times it is the last 7 digits of the phone number that you would manually dial to access this pager. The paging company assigns this value.
Character Limit	This is the maximum number of characters that are allowed per page. Typically this is set to 80 characters. The Security Escort System will truncate the pager message at this number of characters. The paging company assigns this value.
Pages Per Call	This is the maximum number of pager messages that are allowed per phone call. Typically this is set to 4 pages per call. When this number of messages have been sent and there are more messages to be delivered; the Security Escort System will hang up and redial the paging service to deliver the remaining messages. The paging company assigns this value.
Pager Group	This is the group of up to 8 pagers that this message is to be sent to. You may program the individual pager as well as a group of pagers. The pager group will be sent the page before the individual.
Baud Rate	This is the baud rate that will be used to communicate with the paging computers. The paging company assigns this value.
System Name	This will identify the Security Escort System when multiple Security Escort Systems report to the same service pager. Keep this field as short as reasonably possible since these characters plus a space will be sent before each trouble message and they are included in the "Character Limit" set above. If not desired, leave blank.
System Phone	This will present phone number to be called to respond to the service page. Only use if required since these characters plus a space will be sent before each trouble message and they are included with the "System Name" in the "Character Limit" set above. If not desired, leave blank.
Send Installer Demo Alarms	If checked demo alarms will be sent to the security pager.
Send All Other Alarms	If checked all actual alarms will be sent to the security pager.
Cancel Page If Alarm Reset	If checked the alarm page will be canceled if the alarm is reset before it can be communicated to the paging service.
Send Page a Second Time, 2 Minute Delay	If checked an alarm page will be sent a second time to the security pager. This would be done in case the pager was in an area where pages couldn't be heard when the first page was sent.
Modem Init	This is the initialization string output to the modem to set it up for pager communications. Normally this setting would not have to be changed. To allow changes to this string, hold down the SHIFT and CTRL keys when this dialog is first opened. This string is specific to each modem model. The default setting should work with most modems.

Send Pager Message Dialog

Allows manually entered messages to be sent to the service or security pagers. Service and Security pagers are configured in the Pager Setup dialog. Individuals and group pager assignments are setup in the Subscriber Database.

Enter Text to be Sent

Enter the text to be sent to the pagers in the large text box at the top of the dialog.

Send Service

Causes the message entered to be sent to the service pager and service pager group.

Send Security

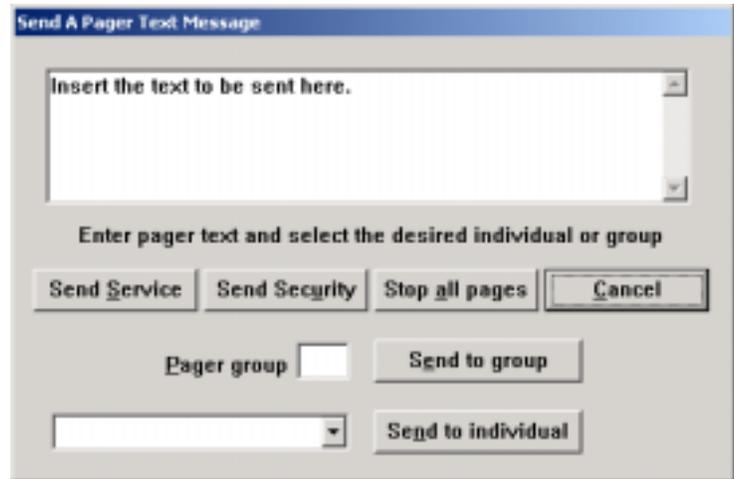


Figure 47: Send Pager Message Dialog

Causes the message entered to be sent to the security pager and security pager group.

Stop all Pages

Causes all pages currently queued to be sent (automatic or manual) to be aborted and deleted. Use with caution.

Pager Group

To send a page to all members of a group enter the pager group number here (1 – 99).

Send to Group

Click this button to send the text entered to the indicated pager group.

Select Individual

Drop this list down to select an individual to send a page to.

Send to Individual

Click this button to send the text entered to the indicated individual.

Formfeed

Click this button to output a formfeed to the report printer.

Print History Screen

This selection will print the current data in the History Screen buffer to the report printer.

Print File Dialog

Enter the file name of the file to be printed or click the Browse button to open the Common Open File dialog below. Then click the Print button to print the file to the report printer.

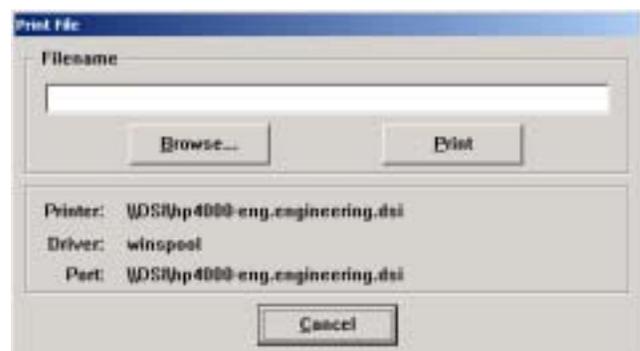


Figure 48: Print File dialog

This is the standard Windows Common Open File dialog that is used for the selection of the file to be printed. It works the same as any other Window's standard application.

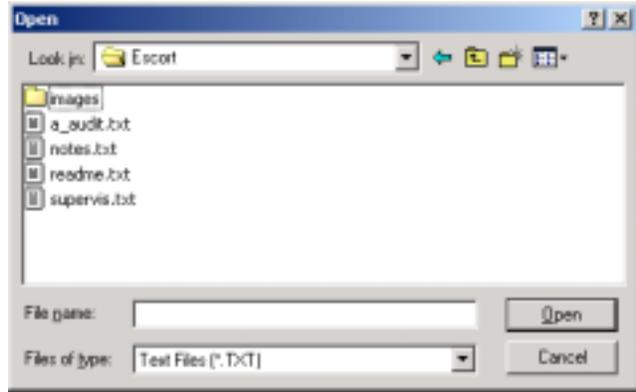


Figure 49: Common Open File dialog

Network Menu

This is the network menu, to setup and monitor the TCP/IP network and the computer's file paths.

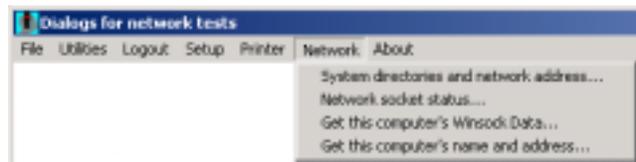


Figure 50: Network Menu

System Directories and Network Address Dialog

This dialog allows the setup of the Network IP addresses and ports and related options. Also the file paths may be setup. **"Databases are not shared"** if not checked the master and all the slave and workstation computers share the same database files. This box must only be checked if each computer has its own copy of the databases stored locally. In normal operation this box is typically unchecked. If this box is checked the databases must be manually updated using Backup and Restore every time there are changes made to the database.

"Show connection pop-ups" if checked will show a pop-up message box whenever a network connection is initiated or released with another computer. Unchecking this box will stop the message boxes from displaying. In normal operation this box is typically unchecked.

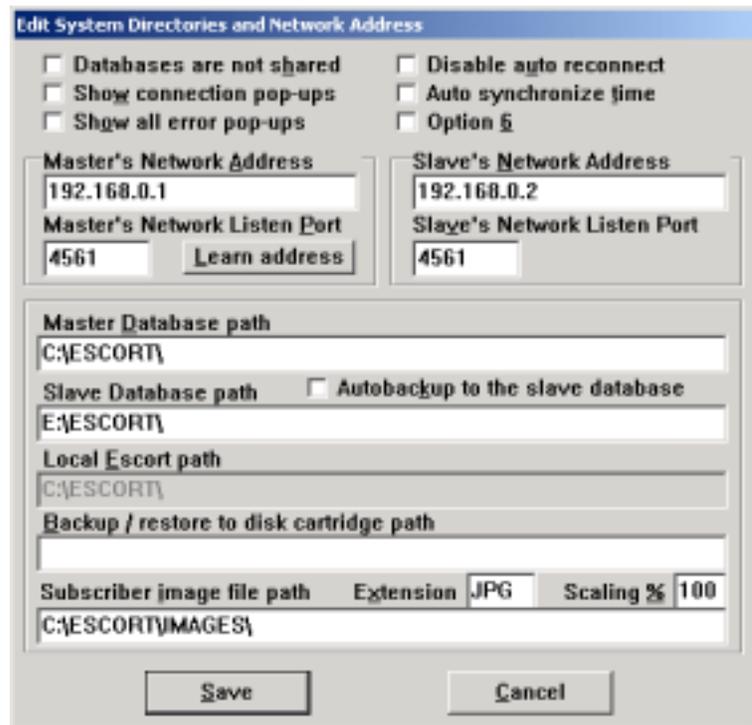


Figure 51 System Directories and Network Address dialog

"Show all error pop-ups" if checked will show a pop-up message box whenever a network error is reported. Unchecking this box will stop the message boxes from displaying. In normal operation this box is typically unchecked.

"Disable auto reconnect" if checked the system will not automatically attempt to reconnect a lost connection each minute. Unchecking this box will allow the system to automatically reconnect a lost connection. In normal operation this box should be unchecked.

"**Auto synchronize time**" if checked the master computer will automatically synchronize the time on the slave and workstation computers once each night.

"**Option 6**" this checkbox currently has no function and should be left unchecked.

"**Master's Network Address**" is the IP address of the master computer. There is no need to program the IP addresses of the workstation computers into the Escort software since they always establish the connection with the master and the slave. The Escort system requires a fixed IP address for the Master computer.

"**Master's Network Listen Port**" is a unique number that indicates that the Escort software is attempting to set up a connection. Other software will use different port numbers, allowing the Network Interface Card to be shared with other network applications. Typically this would be set to 4561.

"**Learn address**" button. Clicking this button on the master computer will automatically program the master's IP address in the "Master's Network Address". If the computer has more than 1 Network Interface Card (NIC) you must verify that the correct IP address has been selected by comparing this address to the IP address that was programmed in the network control panel TCP/IP protocol for the master computer's network card. If the address is not correct, manually edit it to the IP address programmed in the network control panel TCP/IP protocol for the master computer's network card. Clicking this button on the slave computer will automatically program the slave's IP address in the "Slave's Network Address".

"**Slave's Network Address**" is the IP address of the slave computer. There is no need to program the IP addresses of the workstation computers into the Escort software since they always establish the connection with the master and the slave. The Escort system requires a fixed IP address for the optional Slave computer.

"**Slave's Network Listen Port**" is a unique number that indicates that the Escort software is attempting to set up a connection. Other software will use different port numbers, allowing the Network Interface Card to be shared with other network applications. Typically this would be set to 4561.

"**Master Database Path**" is the path that this slave or workstation computer uses to access the shared database files on the master computer. This path may have a different drive letter on the different slave and workstation computers. They are typically on the master computer but they may be on a file server or any other network accessible drive. NOTE: With version 2.04 of the software it is possible to use UNC path names rather than mapping drive letters. Therefore the path to the master computer's database would be [\\MASTER\C\ESCORT](#).

"**Autobackup to the slave database**" if checked the slave computer will back up all of the databases in the Master Database Path to the Slave Database Path each night at 3:00 AM.

"**Slave Database Path**" is the path that this master or workstation computer uses to access the hot backup database files on the slave computer. This path may have a different drive letter on the different master and workstation computers. They are typically on the slave computer but they may be on a file server or any other network accessible drive. Typically they would not be stored on the same computer as the "Master Database Path" so a single failure would not prevent access to both the master and slave database files. NOTE: With version 2.04 of the software it is possible to use UNC path names rather than mapping drive letters. Therefore the path to the master computer's database would be [\\SLAVE\C\ESCORT](#).

"**Local Escort Path**" is the path on this workstation the Escort was installed in. Typically it is C:\ESCORT.

Backup / Restore to Disk Cartridge Path

When backing up or restoring the databases to a disk cartridge this is the path that is used.

Subscriber Image File Path

The Security Escort System Software can display an image for each subscriber on the alarm screen. This parameter tells the software the path to where the image files are stored. The default is "C:\ESCORT\IMAGES".

Subscriber Image Extension

The subscriber images may be in JPEG format or Windows Bitmap format. All images in a system must be in the same format. For the JPEG format enter the Windows extension "JPG". For the Bitmap format enter the Windows extension "BMP".

Subscriber Image Scaling %

When the display is set to 640x480 pixels and subscriber images are being displayed this parameter will control the image size. This value could range from 10 to 100% and should be adjusted while viewing alarms to get the desired image size. When the display is set to 800x600 or larger (recommended) this parameter has no effect.

Network Socket Status Dialog

This dialog shows diagnostic information for the selected TCP/IP socket.

Successful Incoming Messages

This value is the number of messages that the system has successfully received on this socket.

Incoming Communication Errors

This value is the number of messages that the system detected errors in, on this socket. If displayed in yellow this value is more than 1.5% of the Successful Incoming Messages.

Incoming Retried Messages

This value is number of successful receptions that indicated that they retried by the sending application. If displayed in yellow this value is more than 1.5% of the Successful Incoming Messages.

Field	Value
Socket number	1
IP address	Not connected
Port	None
Successful Incoming Messages	0
Incoming Communications Errors	0
Incoming Retried Messages	0
Total Outgoing Messages	0
Outgoing Retried Messages	0
Receive Buffer Max	0
Transmit Buffer Max	0

Yellow indicates a problem

Buttons: Previous, Next, Reset Status, Refresh Data, Cancel

Figure 52 Current Network Socket Status Dialog

Total Outgoing Messages

This value is total number of outgoing messages that have been sent on this socket.

Outgoing Retried Messages

This value is number of outgoing messages that had to be retried because the receiving application did not acknowledge them. If displayed in yellow this value is more than 1.5% of the Total Outgoing Messages.

Receive Buffer Max

This value is maximum number of bytes that were received on this serial port, but not yet processed by the system. If displayed in yellow more than 50% of the queue was in use.

Transmit Buffer Max

This value is maximum number of bytes that were processed by the system, but not yet transmitted on this socket. If displayed in yellow more than 50% of the queue was in use.

Reset Status

Pressing this button will reset all values in this shown in this dialog.

Refresh Data

Pressing this button will refresh all values in this shown in this dialog. The values are not automatically updated when the dialog is left open.

Get This Computer's Winsock Data Dialog

This dialog shows information about the Windows Winsock support. This is only used for diagnostic purposes.



Figure 53 Get This Computer's Winsock Data Dialog

Get This Computer's Name and Address Dialog

This dialog show the computer's network name and current IP address.

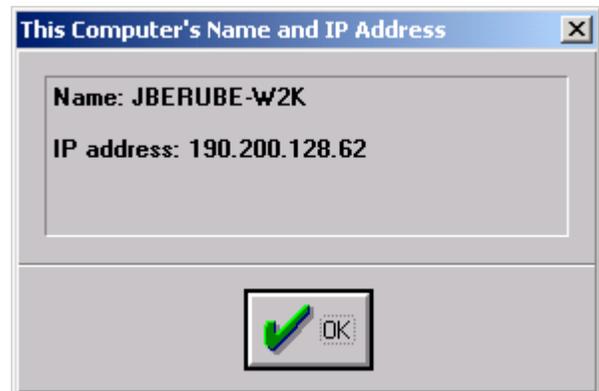


Figure 54 Get This Computer's Name and IP Address Dialog

About Menu

Demo Manual Alarm, Subscriber 1

For demonstration only, can't be used in a live system, causes system to display an alarm from the subscriber with transmitter ID number 1. In the System Preferences dialog check "Enable Demo Selections" to enable these demo alarm and trouble selections. The transponder communication ports and network communication ports must also be disabled and the operator of the system must login at Installer or Installer Master authority level.



Figure 55: About Menu

Demo Lanyard Alarm, Subscriber 2

For demonstration only, can't be used in a live system, causes system to display a lanyard alarm from the subscriber with transmitter ID number 2.

Demo Man Down Alarm, Subscriber 3

For demonstration only, can't be used in a live system, causes system to display a man down alarm from the subscriber with transmitter ID number 3. The man down alarm is delayed by the programmed man down delay (usually 10 seconds).

Demo Man Down Restoral, Subscriber 3

For demonstration only, can't be used in a live system, will restore a previous man down alarm from the subscriber with transmitter ID number 2, if it has not timed out and is not being displayed.

Demo Test Subscriber 1

For demonstration only, can't be used in a live system, simulate a test from the subscriber with transmitter ID number 1.

Demo Test Subscriber 2

For demonstration only, can't be used in a live system, simulate a test from the subscriber with transmitter ID number 2.

Demo Test Subscriber 3 with low battery

For demonstration only, can't be used in a live system, simulate a test from the subscriber with transmitter ID number 3. This test will also report low battery.

Demo Troubles

For demonstration only, can't be used in a live system, simulate troubles from a transponder. Point troubles are simulated for AC loss, tamper and no response. Transponder troubles are simulated for remote key and remote key tamper. The individual troubles can be enabled or disabled in the Popup Trouble Filter dialog. The trouble delay in the Popup Trouble Filter dialog will also affect these troubles, therefore for demo purposes it should be set to zero.

Demo Trouble Restoral

For demonstration only, can't be used in a live system, simulate trouble restorals for all the troubles sent in "Demo Troubles".

Demo Maintenance Alarm

For demonstration only, can't be used in a live system, simulate an alarm from a maintenance transmitter.

Demo Maintenance Test

For demonstration only, can't be used in a live system, simulate a test from a maintenance transmitter.

About Dialog

The About dialog presents the version information, copyright data and internal processing timers.

Software Version

At the top of the dialog the software version and the date and time that it was compiled is displayed.

Free Disk Space

This shows the free disk space on the "C" drive of this computer.

Total Disk Space

This shows the total disk space on the "C" drive of this computer.

Tick Time

The amount of time spent in the time tick processor per pass.

Idle Time

The amount of time spent in the idle time processor per pass.

Alarm Time

The amount of time spent to process each alarm report from a transponder.

Test Time

The amount of time spent to process each test report from a transponder.

Security Escort 32

Version 2.04.08
Aug 23 2001 15:59:08
Free Disk Space 3897 mb
Total Disk Space 9580 mb

	Average	Max
Tick Time	3 ms	10 ms
Idle Time	7 ms	180 ms
Alarm Time	0 ms	0 ms
Test Time	0 ms	0 ms
Other Time	0 ms	0 ms
Alarm Location	0 ms	0 ms
Tick Passes Hour	572	0
Idle Passes Hour	4751783	0

Serial number 1048852875
Maximum users 5
Max transponders 1
Max workstations 2

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Reset Max **Cancel**

Figure 56: About Dialog

Files Required For Security Escort

The following files must be in the same directory as ESC32.EXE (default c:\escort):

- Esc32.exe: the main program
- Bwcc32.dll: support for the dialog appearance
- Cdrvdl32.dll: communications support
- Cdrvhf32.dll: communications support
- Cdrvxf32.dll: communications support
- Comm32.dll: communications support
- W32mkde.exe: the database manager
- W32mkrc.dll: support for the database manager
- Wbtrcall.dll: support for the database manager
- Wbtrv32.dll: support for the database manager
- Lfbmp70n.dll: support for the screen images
- Lfcmp70n.dll: support for the screen images
- Ltkrn70n.dll: support for the screen images
- Ltfil70n.dll: support for the screen images
- Wprefers.edb the workstation preferences file
- The map of the facility is a standard Windows .BMP (bitmap) file. It must be stored in the same directory as ESC32.EXE and be named "Map0.edb".
- Map0.edb: map bitmap file

Note: The following files are the system databases that are stored at the Master Database path:

- Operator.edb: the system operators database
- Preferen.edb: system preferences settings
- Reports.edb: alarm reports database
- Subscrib.edb: database of the subscribers/transmitters
- Transpon.edb: database of the system configuration
- Gprefers.edb the global preferences file

Note: The following sound files should be in the Windows\media directory:

- SEtroubl.wav: trouble sound
- SEalarm.wav: alarm sound

Note: These are sample images for demo and test. The following files should be in the \IMAGES directory, which is a sub-directory to the ESC32.EXE directory (default c:\escort\images):

- Image1.jpg: sample subscriber image
- Image2.jpg: sample subscriber image
- Image3.jpg: sample subscriber image

