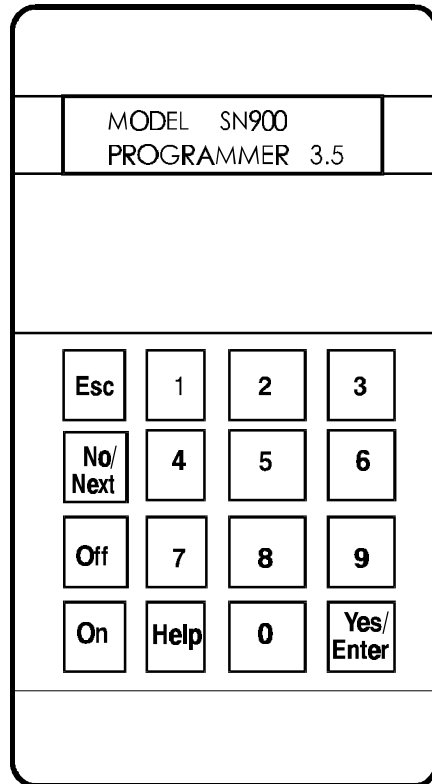


C&K[®] Model SN900-PROG

Handheld RF Programmer



SpreadNet[®] Spread Spectrum

Programming Manual



P/N 5-051-136-00 Rev B

SpreadNet® Handheld RF Programmer

CANADIAN EMISSIONS REQUIREMENTS

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help."

The user is cautioned that changes or modifications not expressly approved by C&K Systems could void the user's authority to operate this equipment.

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Introduction

The SN900-PROG Handheld RF Programmer is designed to allow the installer to program the SpreadNet family of RF products which utilize Spread Spectrum technology. The Programmer is used to program a variety of SpreadNet RF products.

The Programmer is fully menu-driven with built-in help screens.

Power

The Handheld RF Programmer receives its power from two (2) rechargeable internal 7.2V NiCad batteries (P/N SN72L-BAT) and/or from an AC adapter (P/N 5-270-046-00) supplied with the Programmer.

The minimum battery life under optimum temperature conditions is 9 hours. The recharge time for the batteries is approximately 10 hours, however, the Programmer is fully operational (using the AC adapter) while in the charging mode. The internal battery charger will be active whenever the external AC Adapter is connected to the Programmer.

A Low Battery condition is indicated by the lower case letters "lb" flashing in the upper left hand corner of the display. The Low Battery condition (6.9 volts) must exist for a period of 5 minutes before the "lb" indicator will light.

A dead battery condition (5.2 volts) will occur approximately 40 minutes after the "lb" is displayed. At the dead battery voltage the programmer will automatically shut off. Connect the AC adapter to re-activate the programmer, the low battery condition must be removed for a period of 5 minutes before the "lb" indicator will be extinguished.

If the SN900-PROG is left idle for a period of 30 minutes without running a program routine or having any keypad input, it will enter a "sleep" mode to conserve battery power. No data is lost in this mode. To "wake up" the SN900-PROG, press the [On] key.

NOTE: If necessary, the SN900-PROG Handheld RF Programmer may also be operated from two 9 Volt Alkaline batteries. Operating time using Alkaline batteries is approximately 47 hours.

Programmer Fuse

The Handheld RF Programmer is protected by a 250 mA, 3AG, fast-blow fuse. Should the display fail to light when turned "On" from the keypad, the problem may either be a bad fuse or discharged battery. To check the fuse, twist the fuse cap counterclockwise until the cap pops out. Remove the fuse and, if necessary, replace with the same size and type. Replace the fuse cap by twisting clockwise to lock in place. If the fuse is good, plug in the external 12V AC Adapter and press the [On] key on the keypad.

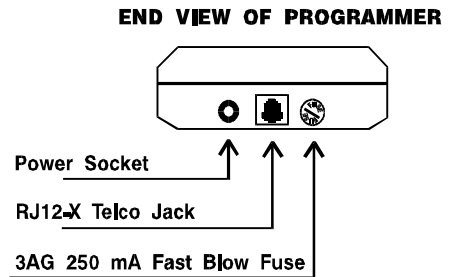


Figure 1
SN900 Programmer Connections

Warning: Turning off the Programmer will erase all information stored in memory.

Section 1: The Keypad

- Keys 0 - 9** All data is entered via the numerical keys on the keypad. Data includes such information as Property Codes, Zone and Device Numbers, Supervisory Rate, and Channel Numbers.
- Esc key** The Escape [Esc] key cancels the last selected function and returns you to a previous menu. From a Main menu selection, the [Esc] key scrolls backward to the previous Main Menu item.
- Off key** The [Off] Key turns off the Programmer. To prevent data loss, this is a two-step process. Pressing the [Off] key will display a "TURN OFF PROGRAMMER?" message. You must press the [Yes/Enter] key to confirm the action. There are two conditions which will cause the RF Programmer to "Turn Off": 1) if the unit is idle for a period of 30 minutes, the Programmer automatically goes into the "sleep" mode (no data loss); and 2) depressing the [Off] key on the keypad (as outlined above).

Warning: Turning off the Programmer will erase all information stored in memory.

- On key** The [On] key turns the Programmer back on.
- Help key** Information about the Programmer and installation instructions are available throughout the system via the [Help] key. The screen will display information pertaining to the programming option in the display at the time the [Help] key was pressed. Since the display is limited to 16 characters, you must press the [Help] key a second time to start the text scrolling. Repeat pressing the [Help] key to start or stop the scrolling of the text. To exit the Help mode, press the [Esc] key.
- No/Next key** The [No/Next] key is used to scroll through the various programming menus and the displayed data at various stages of programming. The text will refer to this key as the [Next] key. The [No/Next] key is also used in the Edit mode.
- Yes/Enter key** The [Yes/Enter] key is used to accept the values entered into the SN900-PROG RF Programmer display by the installer. It is also used to proceed to the next step in programming SpreadNet products. This key is referred to as the [Enter] key throughout the manual.

Section 2: Using the RF Programmer

The SN900-PROG RF Programmer displays a series of menus for programming the SpreadNet devices. The installer can scroll through the menus using the [Next] key on the keypad. Once the desired menu is displayed, press the [Enter] key. A series of flow charts are included at the end of this manual to illustrate the steps involved in programming the various SpreadNet devices.

Main Menu Options:

The following is a brief explanation of each of the Main menu Options available with the SN900-PROG Handheld RF Programmer.

SINGLE ZONE SYSTEM or MULTI-ZONE SYSTEM?

The SN900-PROG Handheld RF Programmer provides separate programming menus for the Multi-Zone (SN912-RCV and SN913-I/O) and Single Zone (SN914-SZR) systems. Careful consideration must be given when starting the programming sequence for the particular type of system being installed or serviced. Selecting the wrong type of system may cause programming errors. The first menu option in the SN900-PROG is the system type. When working with the SN914-SZR receiver and associated transmitters select SINGLE ZONE SYSTEM, for systems using the SN912-RCV receiver, SN913-I/O interface board and associated transmitters select MULTI-ZONE SYSTEM.

Many of the programming locations for Single Zone and Multi-Zone programming appear to be the same, use caution when selecting the system type.

Refer to **Section 3: Selecting the Multi-Zone System** or **Section 13: Selecting the Single Zone System** for additional information on receiver type selection.

SCAN CHANNEL AND PROPERTY #? (single zone/multi-zone)

This menu option allows the installer to select the property code and channel used by the system. The Property Code is a unique code used to identify all components (Receiver and Transmitters) in a system. This option is performed with the Programmer connected to the various receiving devices via the Interconnect Cable (C&K P/N 2-600-089-01) provided with the Programmer.

The system is designed to operate on one of two RF frequency sequencing arrangements, called channels. The two channels are factory preset. The system also provides the selection of 1 of 4048 different property codes (house codes). The property code is the unique system identification code to prevent one system from communicating with another. When the installer selects the "Scan CHANNEL and PROPERTY #" option, the programmer randomly selects a Property Code, the Receiver will automatically scan each Channel looking to see which channel would provide the best reception (least amount of channel traffic). This scanning process will last approximately 2 minutes (2 channels at 1 minute each). The channel having the lowest noise level is selected. The Receiver will again scan, listening for any transmissions from other SpreadNet systems using the selected Channel Number/Property Code combination. A total of 10 minutes is required to scan for other systems. If a signal corresponding to the selected channel and Property Code is received during the scanning process, the Programmer will discontinue scanning and display "Try New Property Code", a new Property Code must be entered. The system will then restart the scanning sequence using the new Property Code.

For additional information on selecting the Channel Number and Property Code, refer to **Section 4: Scan Channel And Property Code (multi-zone system)** or **Section 14: Scan Channel And Property Code (single zone system)**.

The [Esc] key will interrupt the scanning process and return to the "Scan Channel and Property #" menu.

PROGRAM TRANSMITTER? (single zone/multi-zone)

Once the Property Code and Channel Number have been selected, each transmitter must be programmed with the system Property Code and Channel Number in addition to its own Zone Number, Device Number, and Supervisory Rate. To program the transmitter, connect the SN900-PROG Programmer to the 4-pin Molex connector in the Transmitter, using the Interconnect Cable (P/N 2-600-089-01).

Refer to **Section 5: Programming The Transmitter (multi-zone system)** for additional information on programming the transmitters.

Refer to **Section 15: Programming The Transmitter (single zone system)** for additional information on programming the transmitters.

Pressing the [Esc] key will interrupt the programming sequence and return to the "Program Transmitter?" menu.

Warning: Use caution when editing data, incorrect data input may cause false alarms and/or invalid Communication/Check-In failures.

READ TRANSMITTER? (single zone/multi-zone)

Once a transmitter has been programmed, this option allows the installer to verify the information stored in the transmitter's memory. The information displayed includes the Zone Number, Device Number, Supervisory Rate, Property Code, and Channel Number. The information is displayed in a combination of three screens. The screens may be viewed one-at-a-time by pressing the [Next] key.

Refer to **Section 6: Read Transmitter (multi-zone system)** for additional information.

Refer to **Section 16: Read Transmitter (single zone system)** for additional information.

The [Esc] key will interrupt the normal sequence and return to the "Read Transmitter?" menu.

SCAN FOR ALL TRANSMITTERS? (single zone/multi-zone)

After all transmitters have been programmed, and installed, the Programmer must be connected to the receiver and used to verify Transmitter to Receiver RF transmission performance (i.e. received RF signal strength and background RF noise strength). During the scanning process the receiver will listen for transmitters with the same Property Code and Channel as programmed in the receiver. A minimum RF Signal to Noise level margin must be received in order to consider the transmitters transmitted RF signal acceptable. This is referred to as the Signal-to-Noise Ratio (SNR). The required signal level must 25 dB greater than the noise level to be considered acceptable. During the "Scan for all transmitters" process, the programmer automatically calculates this value for each transmitter.

Transmitters with a programmed "Supervised" (check-in) rate (Supervisory Rate of 30 to 300 seconds) will send a single transmission at the programmed supervisory interval. Any Transmitters programmed as "Unsupervised" (Supervisory Rate = 0) must be activated manually. The receiver uses these signals to measure the SNR levels during the scanning process.

Refer to **Section 7: Scan For All Transmitters (multi-zone system)** for additional information.

Refer to **Section 17: Scan For All Transmitters (single zone system)** for additional information.

The [Esc] key will interrupt the scanning and return to the "Scan for all Transmitters?" menu.

SCAN FOR ONE TRANSMITTER? (single zone/multi-zone)

This option allows the installer to measure the individual transmitters RF Signal and Noise levels by their programmed Zone and Device Number identification information. A transmitter which failed the "Scan for all Transmitters" test may be continuously monitored using the "Scan For One Transmitter" to provide a test means for measuring individual transmitters RF signal strength in a given location. Also replacement or newly installed transmitters may be tested with this option. The Programmer will display the Maximum Signal and Maximum Noise levels of the transmitter being tested (in dB). Unsupervised transmitters must be manually activated during this test.

Refer to **Section 8: Scan For One Transmitter (multi-zone system)** or **Section 18: Scan For One Transmitter (single zone system)** for additional information.

The [Esc] key will interrupt scanning and return you to the "Scan for one Transmitter" menu.

PROGRAM INTERFACE BOARD ? (multi-zone system)

This menu option is used to load the programmed information such as Property Code, Channel Number, Zone/Device Numbers, and Supervisory Rates into the SN913-I/O Interface Board. This board connects the SN912-RCV RF Receiver to the Control Panel. When programming is complete, the SN900-PROG Programmer will automatically display "Interface Board Is Programmed".

Refer to **Section 9: Program Interface (multi-zone system)** for additional information.

The [Esc] key will also return to the "Program Interface Board?" menu.

READ/EDIT INTERFACE BOARD? (multi-zone system)

The Programmer is capable of interrogating the SN913-I/O Interface Board to determine the current Channel Number and Property Code information for the system. In addition, the Programmer will also display the Zone # and Supervisory Rate for each of the 16 zones. Information stored in the SN913-I/O may be edited by the installer. Press the [Enter] key to scroll through zones 1 through 16 and display the Channel Number/ Property Code. Enter the correct data and press the [Enter] key to accept. Any zone which has not been previously programmed will display "XXX" for the Supervisory Rate (SUPRATE).

Refer to **Section 10: Read/Edit Interface Board (multi-zone system)** for additional information.

Pressing [Esc] at any time returns to the "Read/Edit Interface Board" menu.

PROGRAM RECEIVER? (multi-zone system)

This menu option is used to load the Property Code and Channel Number information into the SN912-RCV RF Receiver. When programming is complete, the SN900-PROG Programmer will automatically return to the "Program Receiver?" menu.

Refer to **Section 12: Program Receiver (multi-zone system)** for additional information.

The [Esc] key will also return to the "Program Receiver?" menu.

PROGRAM SINGLE ZONE RECEIVER?

This menu option is used to load the programmed information such as Property Code, Channel Number, Device Numbers, and Supervisory Rates into the SN914-SZR Receiver. When programming is complete, the SN900-PROG Programmer will automatically display "Receiver Is Programmed".

Refer to **Section 19: Program Single Zone Receiver** for additional information.

The [Esc] key will also return to the "Program Interface Board?" menu.

READ/EDIT RECEIVER? (single zone system)

The Programmer is capable of interrogating the SN914-SZR Single Zone Receiver to determine the current Channel Number and Property Code information for the system. In addition, the Programmer will also display the Device # and Supervisory Rate for each of the 32 devices. Information stored in the SN914-SZR may be edited by the installer. Press the [Enter] key to scroll through devices 1 through 32 and display the supervisory rate, Channel Number/ Property Code. Enter the correct data and press the [Enter] key to accept.

Refer to **Section 20: Read/Edit Receiver (single zone system)** for additional information.

Pressing [Esc] at any time returns to the "Read/Edit Interface Board" menu.

Section 3: Selecting the Multi-zone System

The SN900-PROG RF Programmer is used to program and test all components within the SpreadNet family of products. The first part of the multi-zone system to be set up and programmed is the SN912-RCV RF Receiver and the SN913-I/O Interface Board. Both units must be programmed at the installation site. The SN912-RCV RF Receiver connects to the SN913-I/O Interface Board via a 4-wire Interconnect Cable. This cable carries data and power from the SN913-I/O Interface Board to the SN912-RCV RF Receiver. The SN912-RCV RF Receiver is programmed via the SN913-I/O Interface Board. Connect the Interconnect Cable (provided with the programmer) from the RJ12X (modular phone jack) on the Programmer to the 4-Pin Molex connector on the Interface Board as shown in Figure 2.

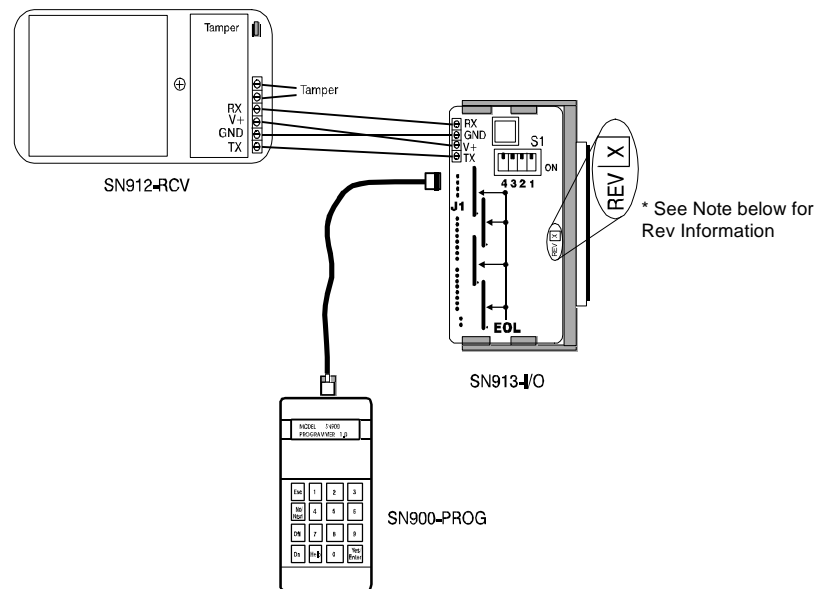


Figure 2 - Connecting the Programmer (multi-zone system)

Connecting and Starting the Programmer

- 1 - Plug the Interconnect Cable (P/N 2-600-089-01) into the 4-pin molex connector (J1) on the SN913-I/O Interface module and the modular plug into the RJ12X jack on the SN900-PROG Programmer.
- 2 - Turn on the Programmer by depressing the [On] key on the keypad. The Programmer will display the Model and Revision Number. You are now ready to begin programming the receiver.

NOTE: SN913-I/O Rev. D and earlier requires setting of switch S1-1. To connect to the SN912-RCV Receiver S1-1 must be in the 'ON' position, or to connect to the SN913-I/O Interface Board S1-1 must be in the 'OFF' position. SN913-I/O Rev. E and later do not require setting switch S1-1. See Figure 2 for location of Rev level information.

When the SN900-PROG Programmer is connected to the SN913-I/O the SN913-I/O zone outputs are disabled. Disconnect the programmer prior to testing SN913-I/O zone outputs to the control panel.

Prior to programming any SpreadNet transmitters, the SN900-PROG Programmer must know the type of Receiver used in the system. The two Receiver types currently available are: the Model SN912-RCV (used for multi-zone systems), and the SN914-SZR (used for Single Zone systems).

- 3 - Press the [On] key to activate the SN900-PROG Programmer. The Model and Revision Number will be displayed.

**MODEL SN900
PROGRAMMER 3.5**

- 4 - Press the [Enter] key, the programmer will now display "Single Zone System?"

**SINGLE ZONE
SYSTEM?**

- 5 - Press the [No] key, the programmer will now display "Multi-zone System?"

**MULTI ZONE
SYSTEM?**

- 6 - Press the [Yes] key, the programmer will now display "Scan Channel and Property #?"

Refer to **Section 4: Scan Channel and Property Code** (multi-zone system)

Section 4: Scan Channel and Property Code (Multi-zone System)

When programming the C&K Model SN912-RCV RF Receiver, the system's Channel # is automatically selected by the SN900-PROG RF Programmer. The channel is a unique set of frequencies used by the system to optimize RF transmissions. With two channels available, the receiver picks the quietest Channel (least amount of background noise). The programmer will also randomly select the Property Code. The Property Code is the unique system identification code, commonly referred to as the *HOUSE CODE* or *SYSTEM CODE*.

WARNING : The "Scan Channel and Property Code" process is required to eliminate Property Code/Channel (system identification) duplication with an existing SpreadNet system installed within RF range of the new receiver being installed. Failure to perform this process could result in false alarms and or supervisory failures.

The following procedure is used to "Scan Channel and Property Code":

SCAN CHANNEL and PROPERTY #?

- 1 - Using the Interconnect Cable (P/N 2-600-089-01) supplied with the Programmer, connect the SN900-PROG Programmer to the SN913-I/O Interface Board as described in **Section 3, Figure 2**.
- 2 - Place S1-1 on the SN913-I/O Interface Board in the ON position.

NOTE: SN913-I/O Rev E and above does not require S1-1 to be switched for SN912-RCV or SN913-I/O programming. To determine which Revision you are using, refer to Figure 2 on page 11.

PROPERTY (1 - 4048)	CODE 000 <u>1</u>
--------------------------------------	------------------------------------

- 3 - The SN900-PROG Programmer will randomly (Programmer Rev. 3.5 and above) select a 4-digit Property Code (The Property Code value must be between 0001 and 4048) to accept this Property Code press the [Enter] key. To manually select a Property Code (Programmer Rev. 2.2 and earlier) enter the 4-digit code and press the [Enter] key.

SCANNING XXXX	CH. 1 MM:SS
--------------------------------	------------------------------

- 4 - The SN900-PROG Programmer will now display "Scanning Ch. 1" with the amount of time remaining in this cycle "MM:SS". This test will last 1 minute per channel. The number of signals received will be displayed in the lower left hand corner. The receiver is listening to the amount of traffic on the channel being scanned.

- 5 - Upon completion of channel 1 scanning, the SN900-PROG Programmer will begin "Scanning Ch. 2" with the same information displayed as for channel 1.

SCANNING CH. 2
XXXX MM:SS

WARNING: Do **NOT** turn the Programmer "OFF". Turning off the SN900-PROG Programmer causes **all** data stored in the Programmer's memory to be erased.

- 6 - Upon completion of the channel scanning process, the SN900-PROG Programmer selects the quietest channel. The programmer will automatically begin "Scanning Pr#" (Scanning Property Number and selected Channel) listening for other SpreadNet systems in the area that might be using the displayed Property Code and Channel combination, also displayed is the scan time remaining (MM:SS). The SN900-PROG Programmer will scan for 10 minutes, listening for transmitters in the area using this Channel and Property Code combination.

SCANNING PR#XXXX
CH. X MM:SS

- 7 - If the SN900-PROG Programmer receives (hears) a signal from a transmitter already using this Channel/Property Code combination, the installer will be prompted to "Try New Property Code". Enter a new Property Code and press the [Enter] key. The SN900-PROG Programmer will again spend up to 10 minutes scanning for transmitters using this new combination. The sequence will continue until the SN900-PROG Programmer finds a Channel/Property Code combination not in use by another system in the area.

TRY NEW PROPERTY
(1 - 4048) XXXX

- 8 - If no transmissions are received during the 10-minute scanning period, the Programmer will display the CHANNEL # and PROPERTY #. The installer can either press the [Enter] key to accept these values or press [Esc] to exit out of the loop and return to the "Scan CHANNEL and PROPERTY #" menu.

CHANNEL # = X
PROPERTY # = XXXX

- 9 - The installer accepts the Channel and Property #'s by pressing the [Enter] key. This will cause the Programmer to automatically proceed to the next menu Option, "Program Transmitter?". Pressing the [Esc] key will return to the "Scan CHANNEL and PROPERTY #" menu.

WARNING : The "Scan Channel and Property Code" process is required to eliminate Property Code/Channel (system identification) duplication with an existing SpreadNet system installed within RF range of the new system being installed. Failure to perform this process at the installation location could result in false alarms and/or supervisory failures.

- 10 - Disconnect the Molex connector from the SN913-I/O Interface Board.

NOTE: If, for any reason, the SN900-PROG Programmer is unable to communicate with the SN912-RCV RF Receiver or the SN913-I/O Interface Board, the SN900-PROG Programmer will display a "COMMUNICATION ERROR:" message.

COMMUNICATION ERROR:

Press [Esc] to return to the "Scan Channel and Property Code" menu. Check all connections and ensure that the connections between the SN912-RCV RF Receiver and SN913-I/O Interface Board are good. Check the SN913-I/O DIP switch S1-1 (not required on Rev E and later, see Figure 2, page 11) to be certain it is in the "ON" position when scanning for the property code and channel. Then try re-scanning for a usable Channel/Property Code combination.

Section 5: Programming a Transmitter (Multi-zone System)

After selecting the Channel # and Property Code as described in Section 4, the next step is to program the transmitters. Each Transmitter in the system must be programmed with the following information: Channel # and Property Code; Zone and Device Number; and the Supervisory Rate.

The Property Code and Channel are loaded automatically, if the "Scan for Channel and Property Code" process was conducted during this session. If not, the Channel and Property Code may be added manually when the transmitter is installed. Refer to **Section 10: Read/Edit Interface Board** for further details.

The transmitter Zone number corresponds to the control panel's zone input from the SN913-I/O interface board (i.e. transmitter zone 6 will report to zone 6 on the SN913-I/O).

WARNING: Multi-zone systems are limited to one transmitter per zone. The transmitter **MUST** be programmed as Device #1.

NOTE: When adding a transmitter to an existing system, you must obtain the system information (Channel #, Property Code, and transmitter data) from the SN913-I/O. This information **MUST** be obtained using the "Read/Edit Interface" command, prior to programming the new transmitter. Refer to **Section 10: Read/Edit Interface Board** for details.

- 1 - To program the transmitter, open the Transmitter housing and connect the Interconnect Cable from the RJ12-X modular connector on the SN900-PROG Programmer to the 4-pin molex connector on the transmitter PCB. Refer to the Transmitter's Installation Instructions for information about opening the Transmitter housing and activating the transmitter.
- 2 - The SN900-PROG Programmer's display should read "Program Transmitter?". If the display is not correct, use the [Next] or [Esc] key to locate the correct menu option. Then press the [Enter] key to access this program segment.

**Program
Transmitter?**

- 3 - The SN900-PROG Programmer will then request the installer to enter a Zone Number. The Zone Number, which corresponds to the Zone Number on the SN913-I/O, must be between 1 and 16. The Device Number must be left at 01. Press the [Enter] key to accept the data displayed or the [Next] key to edit the data.

ZONE #	X X
DEVICE #	XX

- 4 - The SN900-PROG Programmer will next request that you "Enter SUPERVISED RATE (30 - 300)". The Supervised Rate (also called the Supervisory Rate or Check-In Rate) must be between 30 and 300 seconds, in 10-second increments, or 000 for a non-supervised device. The default Supervisory Rate is 120 seconds.

**Enter SUPERVISED
RATE (30 - 300) X XX**

- 5 - After entering the Supervisory Rate and pressing [Enter]. The Programmer will again display the Channel # and Property Code stored in the Programmer. Press [Enter] to confirm that the Channel # and Property Code are correct. If necessary, this information may be edited by pressing the [Next] key. For example, if you are replacing a transmitter or installing an additional transmitter at an existing location. Once the Channel # and Property Code have been accepted, the SN900-PROG Programmer will display the message, "Programming Transmitter." Each transmitter will have a unique code based upon the Channel #, Property Code, Zone/Device ID and Supervision Rate programmed into the transmitter. Upon completion of the programming sequence, the display will automatically display the "Transmitter Is Programmed" screen.

**Programming
Transmitter**

The SN900-PROG Programmer will test the Transmitter's battery prior to programming. If the battery is below the acceptable level, the Programmer will display the "Transmitter Low Battery" error message. You will need to replace the batteries and reprogram the transmitter.

**Transmitter
Low Battery**

- 6 - At this time, you may elect to program the next Transmitter by pressing the [Enter] key or you can READ the Transmitter just programmed by pressing the [Enter] key, followed by the [Next] key. See **Section 6: Reading a Transmitter (multi-zone system)**.
- 7 - Repeat the above procedure, as required, for each Transmitter.

NOTE: If, for any reason, the Programmer is unable to complete the programming of the transmitter, the Programmer will display "COMMUNICATION ERROR:".

**COMMUNICATION
ERROR:**

Press [Esc] to return to the "Program Transmitter?" menu. Check all connections and ensure that the batteries in the transmitter are making good connection and that the Battery Tab has been removed. Then try programming the transmitter again. (Refer to the Transmitter's Installation Instructions.)

WARNING: Do **NOT** turn the Programmer "OFF". Turning off the SN900-PROG Programmer causes all information stored in memory to be erased.

Section 6: Reading a Transmitter (Multi-zone System)

On occasion it may become necessary to read the data programmed into a transmitter. If so, follow the procedure outlined below:

- 1 - Open the Transmitter housing according to the Installation Instructions included with the Transmitter. Connect the SN900-PROG Programmer to the 4-pin Molex connector in the Transmitter, using the Interconnect Cable (P/N 2-600-089-01) supplied with the Programmer.
- 2 - Press the [Next] key until the SN900-PROG Programmer display shows "Read Transmitter?". Press the [Enter] key to select this option.

READ TRANSMITTER?

- 3 - The display will indicate "Reading Transmitter" while the SN900-PROG Programmer reads the information programmed into the transmitter.
- 4 - After completing the "read" cycle, the SN900-PROG Programmer will automatically display the Zone Number and Device Number programmed into the Transmitter.

ZONE #	X <u>X</u>
DEVICE #	XX

- 5 - Pressing either the [Enter] key or the [Next] key will reveal the Supervision Rate programmed into the transmitter.

Supervised At XXX Seconds

- 6 - Press the [Enter] or [Next] key to display the Channel # and Property Code programmed into the transmitter. This allows the installer to verify that the correct Channel # and Property Code have been stored in the transmitter's memory. Continuing to press the [Enter] key or the [Next] key will cycle the display through the Zone/Device Number, Supervision Rate, and Channel #/Property Code displays.
- 7 - Pressing [Esc] at any time during this portion of the programming sequence will exit the loop and return to the "Read Transmitter" menu.

Section 7: Scan All Transmitters (Multi-zone System)

During the installation process, the SN900-PROG Programmer maintains an internal record of all transmitters programmed during the current session. To ensure that each Transmitter's signal is reaching the Receiver properly the installer can use the SN900-PROG Programmer to "**Scan All Transmitters**". The received signal level must be at least 25 dB greater than the noise level for the signal to be considered acceptable.

NOTE: The SN900-PROG Programmer will only remember the transmitters it has programmed during the current session. If the Programmer is turned "OFF", all programmed system information will be erased.

In order to "Scan for All Transmitters" with an existing system, you must first use the "Read/Edit Interface Board" command to upload system transmitter data from the SN913-I/O. Refer to **Section 10: "Read/Edit Interface Board"** for additional information.

- 1 - Using the Interconnect Cable (P/N 2-600-089-01) supplied with the Programmer, connect the 4-pin molex connector to the SN913-I/O Interface Board and the modular plug to the RJ12X connector on the SN900-PROG Programmer. Place S1-1 on the SN913-I/O Interface Board in the ON position. (Not required on SN913-I/O Rev E and later. See Figure 2, page 11.) This disables the SN913-I/O Interface Board and allows the Programmer to communicate directly with the SN912-RCV RF Receiver.
- 2 - Use the [Next] or [Esc] key to locate the "Scan For All Transmitters?" menu and press the [Enter] key.

**Scan For All
Transmitters?**

- 3 - The Programmer will indicate that it is scanning the transmitters and the time remaining (MM:SS). This phase of the test will vary depending upon Transmitter Supervisory Rate, and may take up to 5 minutes (the maximum allowable Supervisory Rate). All transmitters programmed for a Supervisory Rate = 000 (no supervision) **must** be activated manually to verify SNR (Signal-to-Noise Ratio).

**Scanning All
Xmtrs MM:SS**

- 4 - If, at any time during the scanning period, all transmitters have checked in with a valid Signal-to-Noise Ratio (SNR = 25 dB or greater), the SN900-PROG Programmer display will read "ALL Transmitters are acceptable". Press the [Esc] key to return to the "Scan for all Transmitters?" menu or the [Enter] key to proceed to the "Program Interface Board?" option.

**All Transmitters
are acceptable**

- 5 - If, however, one or more transmitters fail to respond properly, the SN900-PROG Programmer will indicate which transmitter(s) failed by Zone and Device Number. The display will show both the Signal Level and Noise Level of the received signal.

Zone=XX Dev=XX Sig=XX dB Ns=XX dB

A transmitter is considered BAD if the received signal (Sig) level is less than 25 dB greater than the average noise (Ns) level. Additional failed transmitters may be viewed by pressing the [Enter] key. The Programmer will continually cycle through the transmitter(s) which failed.

- 6 - Pressing [Esc] will exit the loop and return to the "Scan for all Transmitters?" menu.

Section 8: Scan For One Transmitter (Multi-zone System)

The "Scan For One Transmitter" option is used to measure the Signal-To-Noise Ratio (SNR) of an individual transmitter. This test is required for U.L. Commercial listed installations. This test may also be used to aid in troubleshooting transmitter placement for transmitters with a marginal SNR. With this option selected, the Programmer will continuously scan for the specified transmitter. The received signal strength is constantly updated while changing transmitter location.

In addition, the Transmitter's status is displayed during this test. The following conditions are displayed for the transmitter when the signal is received: Normal, Alarm, Tamper and Low Battery.

- 1 - Connect the SN900-PROG RF Programmer to the SN912-RCV RF Receiver, as described in the "Scan All Transmitters" section.
- 2 - Using the [Next] key, locate the "Scan For One Transmitter" menu and press the [Enter] key. If a transmitter previously failed the "Scan for all Transmitters" test, the SN900-PROG Programmer will display the Zone Number and Device Number of the first failed transmitter. To accept the displayed values, press [Enter]. To scan for a different transmitter, enter the transmitter's Zone and Device Numbers. Use the [Next] key to change fields (from Zone Number to Device Number and back) when editing transmitter data.

ZONE#	XX
DEVICE#	XX

- 3 - After entering the Zone and Device Number values, press the [Enter] key. The SN900-PROG Programmer will display the Minimum Signal and Average Noise levels. The programmer will also display the Status of the transmitter. The "Stat" will display; Normal = Normal status, ALM = Alarm, TMP = Tamper, LB = Low Battery condition.

Sig=XX dB	Ns=XX dB
Stat=XXXXX	

NOTE: The display will flash continuously until a signal of sufficient amplitude is received. To be considered good, the Signal Level must be at least 25 dB greater than the Noise Level. When the difference between the two levels is acceptable, the display will remain steady. Press [Esc] to return to the "Scan For One Transmitter?" menu.

For UL Commercial Listed installations:

To meet the U.L. Commercial Burglary requirements, the minimum signal-to-noise ratio (SNR) measurement for each transmitter in the system is 28 dB, as shown below.

Max Signal (dB) - Max. Noise (dB) = > 28 dB

Section 9: Programming the Interface Board (Multi-zone System)

After all transmitters have been installed, programmed and, adjusted, the last stage of the multi-zone installation procedure is the programming of the RF Interface Board.

- 1 - Connect the SN900-PROG Programmer to the SN913-I/O Interface Board.
- 2 - Make sure that switch S1-1 is in the OFF position (not required with SN913-I/O Rev. E and later, see Figure 2, page 11).
- 3 - Press the [NEXT] key until you find the "Program Interface Board?" option, then press the [Enter] key.

**Program
Interface Board?**

- 4 - The SN900-PROG Programmer will indicate "Programming Interface Board". The data programmed into each transmitter (Channel Number, Property Code, Zone Number, Device Number, and Supervisory Rate) will be downloaded into the SN913-I/O Interface Board's memory.
- 5 - When the SN900-PROG Programmer has finished programming the SN913-I/O Interface Board, it will automatically display "Interface Board Is Programmed".

**Interface Board
Is Programmed**

Section 10: Read/Edit the Interface Board (Multi-zone System)

An occasion may arise when it becomes necessary for the installer to be able to read and edit the data (i.e. last transmitter/zone number and/or Channel Number/Property Code) programmed into the SN913-I/O Interface Board. In addition, if you need to "Scan for All Transmitters" or Add/Delete a transmitter within the system you must first use the "Read/Edit" function to upload the system information into the SN900-PROG Programmer.

- 1 - Connect the SN900-PROG Programmer to the SN913-I/O Interface Board.
- 2 - Make sure that switch S1-1 is in the OFF position. (Not required for Rev E and later. Refer to Figure 2, page 11 for location of Revision information.)
- 3 - Press the [Next] key until the "Read / Edit Interface Board?" menu is displayed and press the [Enter] key.

**Read / Edit
Interface Board?**

- 4 - The SN900-PROG Programmer's display will show "Reading Interface Board".

**Reading
Interface Board**

- 5 - When the data from the SN913-I/O has been read, the SN900-PROG Programmer will automatically display **each** zone and the Supervisory Rate (SUPRATE), beginning with Zone #1. Unsupervised Transmitters will display a Supervisory Rate of "000". Zones which have not been programmed with a transmitter will display a Supervisory Rate of "XXX". Pressing the [Enter] key will advance to the next Zone. After displaying Zone 16, the Programmer will display the Channel # and Property Code. Pressing the [Enter] key again will return to "Read / Edit Interface Board?" menu.

**ZONE # = XX
SUPRATE (SEC) XXX**

- 6 - If the data stored in the SN913-I/O Interface Board requires editing, use the [Enter] key to locate the Zone data to be edited.
- 7 - Enter the new data and press the [Enter] key. This writes the new data into the SN900-PROG Programmer.

- 8 - Once the data in the Programmer has been modified and accepted (pressing the [Enter] key), the display will prompt the installer for the next transmitter to be edited. If there are no further transmitters to be changed, press the [Next] key to change to the "Reprogram Interface?" menu. Press the [Enter] key again to write the changes to the SN913-I/O Interface Board.

ZONE # = 03
SUPRATE (SEC) 150

NOTE: Programming changes will **NOT** take effect until the new data has been downloaded to the SN913-I/O Interface Board using the "Reprogram Interface" option.

- 9 - "Reprogram Interface?" will be displayed following the last zone to be modified or by pressing the [ESC] key. To transfer the changes from the SN900-PROG Programmer to the SN913-I/O Interface Board, press the [Enter] key.

**Reprogram
Interface?**

Section 11: To Add or Delete a Transmitter (Multi-zone System)

Adding a Transmitter

- 1 - To add a transmitter to an existing system, use the "Read/Edit" command, as explained in Section 10, to upload the SN913-I/O (Channel # / Property Code and the zones previously programmed).
- 2 - Use the [Enter] key to locate the next available Zone Number to be added. An available zone will have a SUPRATE of "XXX".

ZONE # = XX
SUPRATE (SEC) XXX

- 3 - Program the transmitter(s) to be added to the system as outlined in Section 6: "Program Transmitter".
- 4 - After programming the additional transmitter(s), you will need to update the programming of the SN913-I/O Interface Board as described in Section 9: "Programming the Interface Board". When complete, the new transmitter(s) will be added to the system.

Deleting a Transmitter

- 1 - To delete a transmitter, you must first upload the contents of the SN913-I/O Interface Board into the SN900-PROG Programmer as described in the previous section, "Read/Edit Interface Board".
- 2 - Use the [Enter] key to locate the Zone to be deleted. Change the Supervisory Rate to "880". For example, entering a Supervisory Rate of "880" for Zone #05, as shown below, will remove this transmitter from the system. Be sure to press the [Enter] key after data is entered. Once a zone has been deleted a SUPRATE of XXX will be displayed for that zone. Once the zones have been deleted, you must use the "Reprogram Interface" option to download the new information into the SN913-I/O.

ZONE # = 05
SUPRATE (SEC) 880

NOTE: Programming changes will **NOT** take effect until the new data has been downloaded to the SN913-I/O Interface Board using the "Reprogram Interface" option.

Section 12: Programming the Receiver (Multi-zone System)

This option allows you to program the SN912-RCV RF Receiver with the Channel # and Property Code used by the system. This option would also be used for programming a replacement receiver.

- 1 - Connect the SN900-PROG Programmer to the SN913-I/O Interface Board. (Refer to Figure 2 on page 11.)
- 2 - Place S1-1 on the SN913-I/O Interface Board in the ON position. Setting S1-1 is not required with SN913-I/O Rev E or later. (Refer to Figure 2, page 11 for location of Rev information.) This setting, if required, disables the SN913-I/O Interface Board and allows the programmer to communicate directly with the SN912-RCV RF Receiver.
- 3 - Press the [Next] key to locate the "Program Receiver?" menu and press the [Enter] key.

**Program
Receiver?**

- 4 - The SN900-PROG Programmer will display the Channel # and Property Code previously selected. If necessary, the Channel Number and Property Code may be edited at this point by pressing the [Next] key.

**CHANNEL# = X
PROPERTY# = XXXX**

- 5 - If the Channel # and Property Code are correct, press the [Enter] key. The SN900-PROG Programmer will display "Programming Receiver".

**Programming
Receiver**

- 6 - Upon completion, the display will indicate "Receiver Is Programmed".

**Receiver Is
Programmed**

Section 13: Selecting the Single Zone System

Prior to programming any of the SpreadNet devices a system type must be selected. The system type is determined by the model of receiver used. The two system types available are: the Multi-Zone System, uses the model SN912-RCV Receiver, and the Single Zone System which uses the SN914-SZR Receiver.

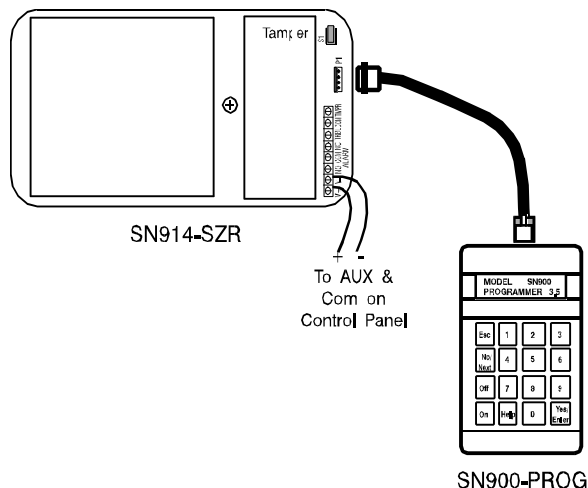


Figure 3 - Connecting the Programmer to the Single Zone Receiver

Connecting and Starting the Programmer

- 1 - Plug the Interconnect Cable (P/N 2-600-089-01) into the 4-pin molex connector (J1) on the SN914-SZR receiver and the modular plug into the RJ12X jack on the SN900-PROG Programmer, as shown in Figure 3 above.
- 2 - Turn on the SN900-PROG Programmer by pressing the [On] key. The Programmer will display the Model and Revision Number. You are now ready to begin programming.

**MODEL SN900
PROGRAMMER 3.5**

- 3 - Press the [Enter] key. The SN900-PROG Programmer display will read "Single Zone System?"

**SINGLE ZONE
SYSTEM?**

- 4 - Press [Enter] to advance to the "Scan Channel and Property #" option. Refer to **Section 14: Scan Channel and Property Code (Single Zone System)**.

Section 14: Scan Channel and Property Code (Single Zone System)

When programming the C&K Model SN914-SZR RF Receiver, the Spread Spectrum Channel Number used by the system is automatically selected by the SN900-PROG RF Programmer. The Channel is a unique set of frequencies selected by the Programmer to optimize RF transmissions. The receiver scans for signals in the area and then picks the quietest of the two Channels. The Programmer will also randomly select the Property Code. The Property Code is the unique system identification code, commonly referred to as the *HOUSE CODE* or *SYSTEM CODE*.

WARNING : The "Scan Channel and Property Code" process is required to prevent duplication of Property Code/Channel # combinations (system identification) with an existing SpreadNet system in the same vicinity as the new receiver being installed. Failure to perform this test at the installation site could result in false alarms and/or supervisory failures.

The following procedure is used to "Scan Channel and Property Code" :

- 1 - Using the Interconnect Cable (P/N 2-600-089-01) supplied with the Programmer, connect the SN900-PROG Programmer to the SN914-SZR Receiver as shown in Figure 3 on page 28. Press the [Enter] key to start the Scan Channel and Property Code option.

**Scan CHANNEL
and PROPERTY #?**

- 2 - The SN900-PROG Programmer (Rev 3.5 and newer) will randomly select a 4-digit Property Code. The Property Code must be between 0001 and 4048, inclusive. To accept the Property Code selected by the Programmer, press the [Enter] key. To edit the Property Code or manually enter a Code, simply enter the desired code and press the [Enter] key.

PROPERTY CODE?
(1 - 4048) 000 1

- 3 - The SN900-PROG Programmer will now display "Scanning Ch. 1", with the amount of time remaining in the cycle displayed as "MM:SS". This test will last 1 minute. The number of signals received will be displayed in the lower left hand corner. The receiver is listening to the amount of traffic on the channel being scanned.

Scanning Ch.1
XXXX MM:SS

- 4 - After completing the scan of Channel 1, the SN900-PROG Programmer will automatically begin "Scanning Ch. 2" with the same information displayed as for Channel 1.

Scanning Ch. 2
XXXX MM:SS

WARNING: Do **NOT** turn the Programmer "OFF". Turning off the SN900-PROG Programmer causes **all** data stored in the Programmer's memory to be erased.

- 5 - When both Channels have been scanned, the SN900-PROG Programmer selects the quietest channel. The Programmer will use this Channel # and the randomly selected Property Code combination to look for any other transmitters using this Property Code / Channel Number combination. Again, the SN900-PROG Programmer will display the remaining scan time in the MM:SS format. This test may last up to 10 minutes.

Scanning PR#XXXX
Ch. X MM:SS

- 6 - If the SN900-PROG Programmer receives (hears) a signal from a transmitter already using this Channel #/ Property Code combination, the installer will be prompted to "Try New Property Code". Enter a new Property Code and press the [Enter] key. The SN900-PROG Programmer will again spend up to 10 minutes scanning for transmitters using this new combination. The sequence will continue until the SN900-PROG Programmer finds a Channel #/Property Code combination not in use by another system.

Try New Property
(1 - 4048) XXX X

- 7 - If no transmissions are received during the 10-minute scanning period, the Programmer will display the CHANNEL # and PROPERTY #. The installer can either press the [Enter] key to accept these values or press [Esc] to exit out of the loop and return to the "Scan CHANNEL and PROPERTY #" menu.

CHANNEL # = X
PROPERTY # = XXXX

- 8 - If you choose to accept the Channel # and Property Code, press the [Enter] key. The Programmer will automatically proceed to the next menu Option, "Program Transmitter?". Press the [Esc] key to cancel and return to the "Scan CHANNEL and PROPERTY #" menu.

WARNING : The "Scan Channel and Property Code" process is required to eliminate Property Code/ Channel # (system identification) duplication with an existing SpreadNet system installed within RF range of the new receiver being installed. Failure to perform this process at the installation site can result in false alarms and or supervisory failures.

- 9 - Disconnect the molex connector from the SN914-SZR Receiver.

WARNING: Do **NOT** turn the Programmer "OFF". Turning off the SN900-PROG Programmer causes **all** data stored in the Programmer's memory to be erased.

NOTE: If, for any reason, the SN900-PROG Programmer is unable to communicate with the SN914-SZR RF Receiver, the SN900-PROG Programmer display will read COMMUNICATION ERROR:".

**COMMUNICATION
ERROR:**

- 10 - Press [Esc] to return to the "Scan CHANNEL and PROPERTY #" menu. Check all connectors to ensure that the connections between the SN914-SZR RF Receiver and SN900-PROG programmer are good. Then try re-scanning for a usable Channel #/Property Code combination.

Section 15: Programming a Transmitter (Single Zone System)

After selecting the Channel # and Property Code as described in Section 14, the next step is to program the transmitters. Each Transmitter in the system must be programmed with the Channel #, Property Code, Device Number, and Supervision Rate.

The Property Code and Channel # will be loaded automatically, once the "Scan for Channel and Property Code" option has been completed during this session. If the "Scan Channel and Property Code" option is not used, the Channel # and Property Code information can manually added when programming the Transmitter.

NOTE: Since **all** transmitters in the system have the same Zone Number, only the Device Number is programmed into the Transmitter.

- 1 - To program the transmitter, open the transmitter housing and connect the Interconnect Cable from the SN900-PROG Programmer to the 4-pin molex connector on the transmitter PCB. Refer to the Installation Instructions for the specific transmitter being programmed for information on opening the transmitter housing, locating the programming connector, and activating the transmitter.
- 2 - The SN900-PROG Programmer's display should read "Program Transmitter?". If the display is not correct, use the [Next] or [Esc] key to locate the correct menu option. Press the [Enter] key to access this program segment.

**Program
Transmitter?**

- 3 - The SN900-PROG Programmer will then request the installer to enter a Device Number between 1-32. To edit the data, press the [Next] key. To accept the entries, press the [Enter] key.

**ONE ZONE SYSTEM
TRANSMITTER # X X**

- 4 - Once the Device (transmitter) # has been selected, the SN900-PROG Programmer will ask you to "Enter SUPERVISORY RATE (30 - 300)". The Supervisory Rate must be between 30 and 300 seconds, in 10-second increments. To program a transmitter as non-supervised, enter a Supervisory Rate of "000" (default).

**Enter SUPERVISED
RATE (0, 30 - 300) X XX**

WARNING : The supervisory rate for the SN914-SZR is a global supervisory rate. As such, all transmitters supervisory rates must be the same and match the supervisory rate programmed into the receiver. This option is available to allow transmitters to be programmed as non-supervised.

WARNING: Do **NOT** turn the Programmer "OFF". Turning off the SN900-PROG Programmer causes **all** Zone and Device Number information just programmed to be erased.

- 5 - After entering the Supervised Rate and pressing [Enter], the Programmer will again display the Channel # and Property Code. Pressing [Enter] will accept the current Channel # and Property Code information previously selected. The message displayed by the SN900-PROG Programmer will be "Programming Transmitter". The Channel # and/or Property Code information may also be edited (by pressing the [Next] key) if you are replacing a transmitter or installing an additional transmitter at an existing location.

Programming Transmitter

The SN900-PROG Programmer will test the transmitter's battery prior to programming. If the battery is below the acceptable level, the Programmer will display the "Transmitter Low Battery" error message. You will need to replace the batteries and reprogram the transmitter.

Transmitter Low Battery

The Channel #, Property Code, Zone/Device ID and Supervision Rate is used to generate a message unique to that particular transmitter. Upon completion of the programming sequence, the display will automatically display the "Transmitter Is Programmed" screen.

NOTE: If, for any reason, the Programmer is unable to complete the programming of the transmitter, the Programmer will display "COMMUNICATION ERROR:".

COMMUNICATION ERROR:

Press [Esc] to return to the "Program Transmitter?" menu. Check all connectors and ensure that the batteries in the transmitter are making good connection. Also ensure that the Battery Tab has been removed. Then try reprogramming the transmitter.

- 6 - If there are additional transmitters to program, press [Enter] to proceed to the next transmitter. If you wish to **READ** the transmitter just programmed, press the [Enter] key followed by the [Next] key. (See **Section 16: Reading a Transmitter.**)
- 7 - Repeat the above procedure, as required, for each transmitter.

Section 16: Reading a Transmitter (Single Zone System)

On occasion it may become necessary to read the data programmed into a transmitter. If so, follow the procedure outlined below.

- 1 - Open the transmitter housing and connect the SN900-PROG Programmer to the 4-pin Molex connector in the transmitter. Refer to the Installation Instructions for the specific transmitter being read for information on opening the transmitter housing.
- 2 - Use the [Next] key to scroll through the menus until the SN900-PROG Programmer display contains "Read Transmitter?" and press the [Enter] key.

**Read
Transmitter?**

- 3 - The display will show "Reading Transmitter" while the SN900-PROG Programmer reads the information programmed into the transmitter.

**Reading
Transmitter**

NOTE: If, for any reason, the Programmer is unable to read the transmitter, the Programmer will display "COMMUNICATION ERROR:". Press [Esc] to return to the "Read Transmitter?" screen.

**COMMUNICATION
ERROR:**

- 4 - Upon completion of the "read" cycle, the SN900-PROG Programmer will automatically display the Device Number programmed into the transmitter.

**Xmitter Reading:
DEVICE # XX**

- 5 - To view the Supervisory Rate programmed into the transmitter, press either the [Enter] or [Next] key.

**Supervised At
XXX Seconds**

- 6 - Press the [Enter] or [Next] key again to display the Channel # and Property Code programmed into the Transmitter. This allows the installer to verify that the correct Channel and Property #'s have been stored in the transmitter's memory. Continuing to press the [Enter] key or the [Next] key will cycle the display through the Device Number, Supervised Rate, and Channel #/Property Code screens.

**CHANNEL # = X
PROPERTY # = XXXX**

- 7 - To exit the loop and return to the "Read Transmitter?" menu, press the [ESC] key.

Section 17: Scan All Transmitters (Single Zone System)

During the installation process, the SN900-PROG RF Programmer maintains an internal record of all transmitters programmed during the current session. To ensure that each transmitter's signal is reaching the Receiver properly, the installer can use the SN900-PROG Programmer to **"Scan All Transmitters"**. The received signal level must be at least 25 dB greater than the noise level for the signal to be considered acceptable.

NOTE: The SN900-PROG Programmer will only remember the transmitters it has programmed during the current session. If the Programmer is turned "OFF", the memory of the programmed transmitters is erased.

- 1 - Use the Interconnect Cable (P/N 2-600-089-01) supplied with the Programmer to connect the SN914-SZR RF Receiver to the RJ12X connector on the SN900-PROG Programmer. (Refer to Figure 3 on page 28 for proper connections.)
- 2 - Use the [Next] key to scroll to the "Scan For All Transmitters?" menu, then press the [Enter] key.

**Scan For All
Transmitters?**

- 3 - While scanning (listening for) the transmitters, the Programmer display will indicate "Scanning All Xmtrs" and the time remaining using the "MM:SS" format. This test may take up to 5 minutes (the maximum allowable Supervision Rate). All unsupervised transmitters (Supervisory Rate = 000) **must** be manually activated to verify SNR (Signal-to-Noise Ratio).

**Scanning All
Xmtrs MM:SS**

- 4 - If, at any time during the scanning period, all transmitters have checked in and are good (SNR = 25 dB or greater), the SN900-PROG Programmer will display a message indicating that "ALL Transmitters are acceptable". Press the [Esc] key to return to the "Scan for all Transmitters?" menu or the [Enter] key to proceed to the "Program Single Zone Receiver?" option.

**ALL Transmitters
are acceptable**

- 5 - If, however, one or more transmitters fail to respond properly, the SN900-PROG Programmer will indicate which transmitter(s) failed by Device Number and display the Signal Level and Noise Level of the received signal.

Dev- # XX Sig=XX dB Ns=XX dB

A transmitter is considered BAD if the received signal (Sig) level is less than 25 dB greater than the average noise (Ns) level. Additional failed Transmitters may be viewed by pressing the [Enter] key. The Programmer will continually cycle through the transmitter(s) which failed.

Pressing [Esc] will exit the loop and return to the "Scan for all Transmitters?" menu.

Section 18: Scan For One Transmitter (Single Zone System)

The "Scan For One Transmitter" option is used to measure the Signal-To-Noise Ratio (SNR) of each individual transmitter. This test is also useful as an aid in troubleshooting marginal transmitter placement. You can select this option to continuously scan for a specific transmitter measuring the signal strength while changing the transmitter's location. The status of the transmitter, Normal, Alarm, Tamper and Low Batteries, is continually monitored and displayed with the received transmitter signal.

- 1 - Connect the SN900-PROG Programmer to the SN914-SZR RF Receiver, as shown in Figure 3 on page 28.
- 2 - Use the [Next] key to scroll to the "Scan For One Transmitter" menu. Press the [Enter] key.

**Scan For One
Transmitter?**

If a transmitter failed the "Scan for all Transmitters" test as outlined in the previous section, the SN900-PROG Programmer will display the Device Number of the first failed transmitter. Press [Enter] to accept the displayed values or enter a new Device Number for the specific Transmitter to be scanned followed by the [Enter] key.

**One Zone System
Transmitter # XX**

- 3 - The SN900-PROG Programmer will display the Maximum Signal (Sig) and Maximum Noise (Ns) levels, as well as the Status (Stat) of the transmitter. The "Stat" display will indicate one of the following conditions: Normal = Normal status, ALM = Alarm, TMP = Tamper, LB = Low Battery condition.

**Sig=XX dB Ns=XX dB
Stat = XXXXX**

NOTE: The display will flash continuously until a signal of sufficient amplitude is received. To be considered good, the Signal Level must be at least 25 dB greater than the Noise Level. When the difference between the two levels is acceptable, the display will remain steady. Press [Enter] to increment the Device Number and return to the "Scan For One Transmitter?" menu.

Section 19: Program the Receiver (Single Zone System)

After all transmitters have been installed, programmed and, adjusted, the last stage of the installation procedure is the programming of the SN914-SZR RF receiver.

- 1 - Connect the SN900-PROG Programmer to the SN914-SZR RF Receiver, as shown in Figure 3 on page 28.
- 2 - Use the [Next] key to scroll to the "Program Single Zone Receiver?" menu. Press the [Enter] key.

**Program Single
Zone Receiver?**

- 3 - The programmer will display "Enroll XX Devices?", where XX is the number of transmitters that the programmer will upload to the receiver at this time. This number should match the number of transmitters programmed during the current session. If the value displayed is correct, press the [Enter] key and skip to Step 5. If the number of devices is incorrect, if you wish to verify the individual device numbers and supervisory status of the transmitters, or if you want to add or delete a device prior to receiver programming, press the [Next] key.

**Enroll XX
Devices?**

- 4 - If you pressed [Next] to enter the edit mode, the programmer will ask to enroll device #01. To enroll the device, press the [Enter] key.

**Enroll
Device # XX ?**

The Programmer will ask if the device is supervised. Press [Yes] if this Device number (Transmitter) is supervised or [Next] if it is unsupervised. To skip a particular device, press the [Next] key. The Programmer will increment to the next Device Number.

**Is Device # XX
Supervised ?**

When the last Device (Device #32) has been entered, the Programmer will automatically return to the "Enroll XX Devices?" menu, specifying the number of Devices selected. You can exit the loop and return to the "Enroll XX Devices" menu by pressing the [Esc] key.

- 5 - For systems using the SN914-SZR RF Receiver, the supervisory rate is global. All supervised devices use the supervisory rate programmed into the receiver. The supervisory rate will be between 30 and 300 seconds (or 0 for unsupervised). Select the appropriate supervisory rate and press the [Enter] key.

**Enter Supervised
Rate (0, 30 - 300) X XX**

WARNING: Entering a supervisory rate of “0” will disable the supervision of **all** devices in the system.

NOTE: The supervisory rate of all transmitters in the system must be the same as that programmed into the receiver.

- 6 - Verify that the Channel # and Property Code are correct, then press the [Enter] key to accept these values. To edit the Channel #, enter the correct value (1 or 2), and press the [Enter] key to begin programming. To edit the Property Code press the [Next] key, then enter the new value (0001- 4048) followed by the [Enter] key, to accept the values.

**CHANNEL # = X
PROPERTY # = XXXX**

WARNING: The “Scan Channel # and Property Code” option is required to eliminate duplicate Channel #/Property Code (system identification) combinations within the range of the new system being installed. Failure to perform this test at installation sight may result in false alarms and or supervisory failures.

- 7 - Pressing the [Enter] key will cause the programmer to momentarily display “ Programming the Receiver”.

**Programming
Receiver**

- 8 - Once the receiver has been successfully programmed the programmer will display “Receiver is Programmed”

**Receiver
Is Programmed**

- 9 - Disconnect the molex connector from the SN914-SZR RF Receiver.

NOTE: If, for any reason, the SN900-PROG Programmer is unable to communicate with the SN914-SZR Receiver, the Programmer will display a "COMMUNICATION ERROR:" message.

**COMMUNICATION
ERROR:**

Press [Esc] to return to the "Program Receiver?" menu. Check all connections and ensure that the connections between the SN914-SZR Receiver and SN900-PROG Programmer are good. Then try reprogramming the Receiver.

Section 20: Read/Edit Receiver (Single Zone System)

An occasion may arise where it becomes necessary for the installer to be able to read the data (i.e. last transmitter/device number and/or Channel Number/Property Code) previously programmed into the SN914-SZR RF receiver.

- 1 - Connect the SN900-PROG Programmer to the SN914-SZR Receiver as shown in Figure 3, page 28.
- 2 - Press the [Next] key to scroll to the "Read/Edit Receiver?" menu and press the [Enter] key.

**Read / Edit
Receiver?**

- 3 - The SN900-PROG Programmer will indicate "Reading Receiver".

**Reading
Receiver**

- 4 - After reading the data from the SN914-SZR, the SN900-PROG Programmer will display the Channel # and Property Code for the system. Verify the Channel # and Property Code, then press the [Enter] key to accept. To edit the Channel enter the new value (1 or 2), then press the [Enter] key. To edit the Property Code press the [Next] key, followed by the new value (0001- 4048) and the [Enter] key.

**CHANNEL # = X
PROPERTY # = XXXX**

WARNING: The "Scan Channel # and Property Code" option is required to prevent duplicate Channel #/Property Code (system identification) combinations which may interfere the system being installed. Failure to perform this test may result in false alarms and/or supervisory failures.

- 5 - After displaying the Channel #/Property Code information, the SN900-PROG Programmer will display the system's supervisory rate. You may accept the value shown by pressing the [Enter] key. If necessary, you may also edit the supervisory rate, followed by the [Enter] key. Remember, the supervisory rate is a global rate for all supervised transmitters in the Single Zone System. Enter the supervisory rate in the range of 30 - 300 seconds or 0 for unsupervised and press the [Enter] key.

**Enter Supervised
Rate (0, 30 - 300) X XX**

NOTE: Remember, the receiver supervisory rate must match the transmitter's supervisory rate.

Transmitter Status Reports

- 6 - The Programmer will display the number of devices programmed in the receiver and ask if you would like to display the individual devices and their supervisory status. Press the [Yes] key to display the first device. Pressing the [Enter] key again will step through the programmed devices. To exit the loop, press the [Next] key.

**#XX Supervised
Display more?**

- 7 - The “XX Low Bat Xmtrs” is used to display which transmitters, if any, have reported a low battery condition. If a low battery signal has been received, the Programmer will display the number (quantity) of devices that have reported low battery conditions.

**XX Low Bat Xmtrs
Display?**

- 8 - Press [Enter] to display the first Device which reported a low battery condition. To display subsequent devices reporting low batteries, press [Enter] again. Pressing the [Next] key will exit the loop and continue to the next command.

**Low Bat Xmtr # XX
Display more?**

- 9 - The “XX Alarm Memory Display” is similar to the “Low Bat Xmtrs” option. The display indicates how many transmitters have reported Alarms.

**XX Alarm Memory
Display?**

- 10 - To step through the devices reporting Alarms, press the [Enter] key. Press [Next] to proceed to the next command.

**Alarm Xmtr # XX
Display more?**

Deleting Transmitters

- 11 - If for some reason you need to remove a transmitter from the system, the “Delete Any Transmitters?” command allows this option. To select this option, press the [Enter] key.

**Delete Any
Transmitters?**

- 12 - Enter the Device# of the transmitter to be deleted and press the [Enter] key.

**Delete
Transmitter # XX**

Adding Transmitters

- 13 - This option allows you to add a transmitter to an existing system. To add a transmitter, select the “Enroll More Transmitters” command and press the [Enter] key.

**Enroll More
Transmitters?**

- 14 - Enter the Device # (1 - 32) of the new transmitter and press the [Enter] key

**Enroll
Transmitter # XX**

- 15 - The SN900-PROG Programmer will ask if the Device is supervised? Press the [Enter] for a supervised transmitter or [Next] for an unsupervised transmitter. The programmer will again display the “Enroll More Transmitters?” screen. Press [Next] to exit the loop and proceed to the next menu option.

Updating the SN914-SZR Receiver

- 16 - The final step in program editing is to update the Receiver programming data. The SN900-PROG display will read “Reprogram Receiver?”. To accept the changes you have made and upload the data to the Receiver, press the [Enter] key.

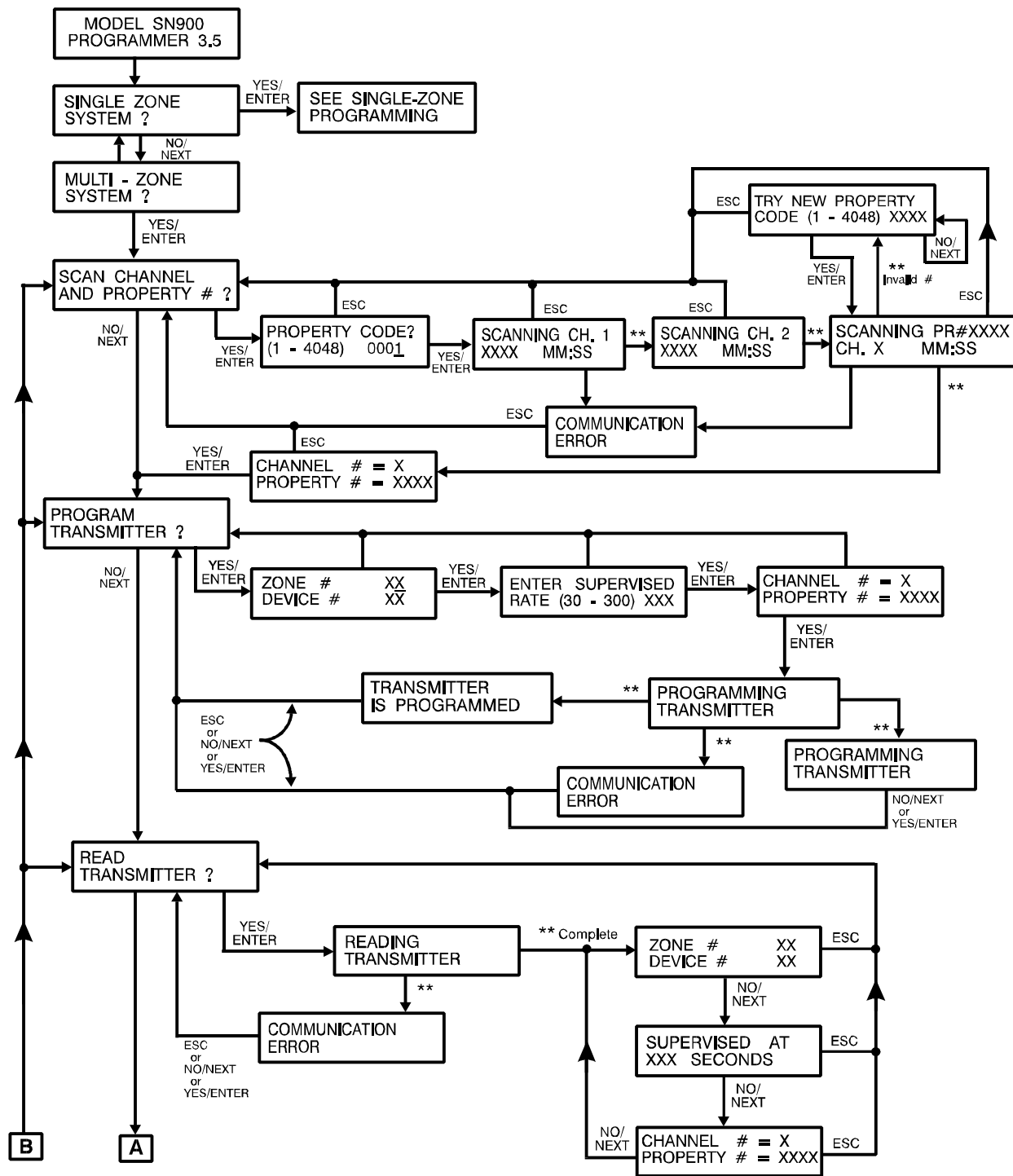
**Reprogram
Receiver?**

- 17 - The “Erase Alarm Memory” command clears the alarm memory and low battery memory, as well as

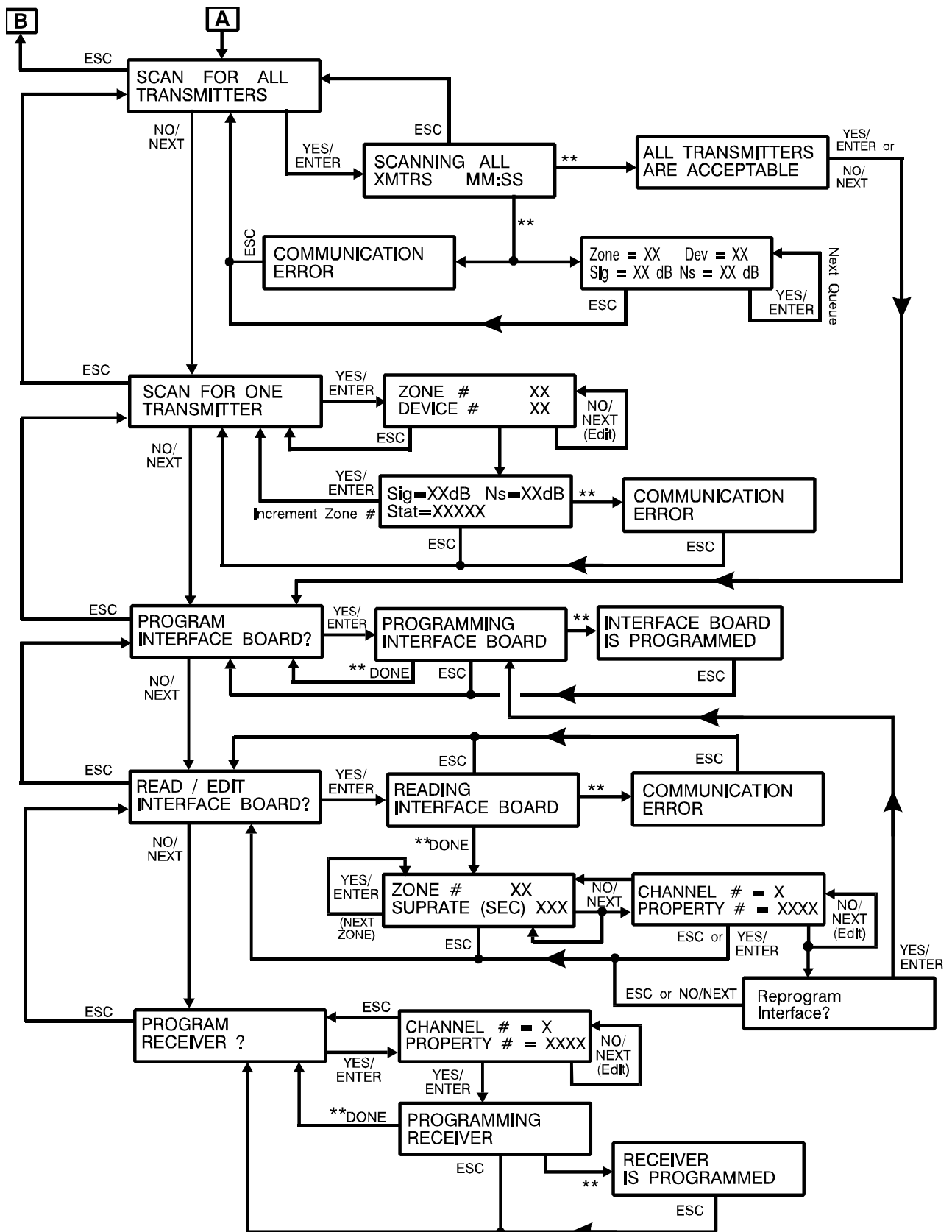
resetting the supervisory timer and trouble relay. Press the [Yes] key to perform all four of these functions. The programmer will then return you to the 'Read/Edit Receiver?' menu option.

**Erase Alarm
Memory?**

SN900-PROG RF Programmer Flowchart - Multi-Zone

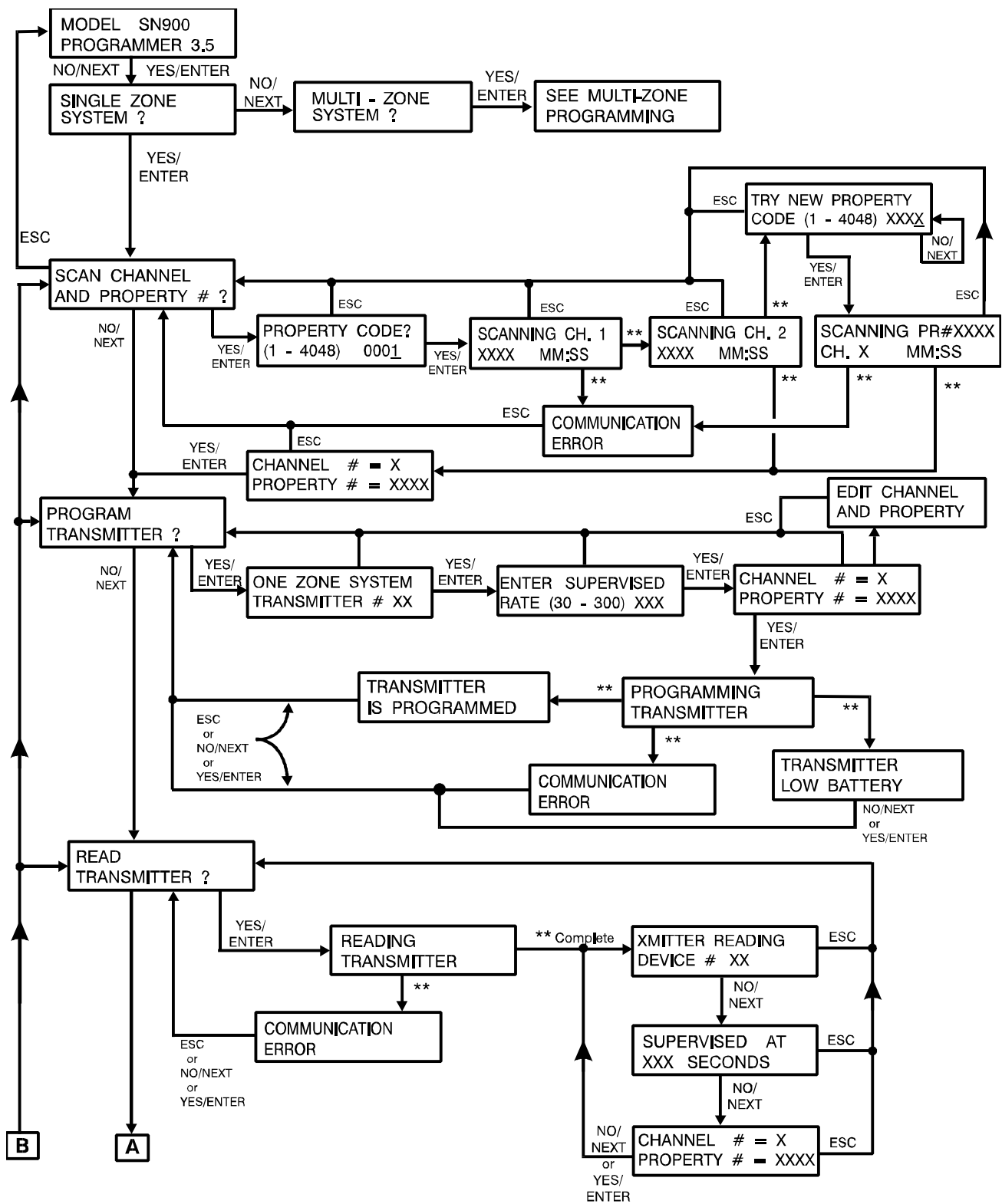


**Automatic Sequence



**AUTOMATIC SEQUENCE

SN900-PROG RF Programmer Flowchart - Single Zone



**Automatic Sequence

Specifications

Dimensions:

3.75" W x 6.25" H x 1.875" D
(9.5 cm x 16 cm x 4.8 cm)

Power Input:

7.2 VDC Rechargeable NiCad Battery
9 VDC @ 300 mA AC Adapter (included)
9 VDC Alkaline Battery

Accessories:

Interconnect Cable	P/N 2-600-089-01
AC Adapter	P/N 5-270-046-00
7.2 VDC Rechargeable NiCad Battery	Model #: SN72N-BAT (P/N 5-771-017-00)

RF Emissions:

USA: FCC Part 15
CANADA: Industry Canada (IC)

Operating Environment:

40° to 140° F (4° to 60° C)
up to 95% Relative Humidity

Associated Equipment

SN910-RCVI/O

Receiver/Interface Board

SN912-RCV

Receiver

SN914-SZR

Single Zone Receiver

SN913-I/O

Interface Board

SN930-DOOR

Universal/Door Transmitter

SN935-DT

DUAL TEC Transmitter

SN940-PIR

Passive InfraRed Transmitter

SN950-GLASS

Glassbreak Transmitter

SN960-PENDANT

Personal Protection Transmitter

SN970-PANIC

Single Button Panic Transmitter

SN971-HOLDUP

Two Button Hold-Up Transmitter

SN972-RAIL

Bank Type Foot-Rail Transmitter

SN973-MONEY

Bank Note Removal Transmitter

SN980-SMOKE

Smoke Detector Transmitter

SN981-135HEAT

Heat Detector Transmitter

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