SPECTRUM
TELEPHONE ENTRY SYSTEM
PROGRAMMING INSTRUCTIONS

(-101 BOARD)

IMPORTANT NOTE

These programming instructions are for a Spectrum system with a -101 board only.

Sentexsystems

IMPORTANT NOTICE

    The Spectrum systems are very reliable and easy to use. However, if programmed incorrectly the systems may not work properly. Before attempting to program and use these systems, you should become familiar with them by reading the instructions in this manual. You can also use the space provided in the manual to fill in the entries before you program them into your system. If you have any questions concerning these instructions, please contact your installing dealer.

TABLE OF CONTENTS

This document is divided into seven sections and one appendix as follows:

IMPORTANT: The Sentex Systems warranty on this system is conditioned upon Sentex Systems being paid in full for this equipment. This warranty will not be honored until such payment has been received by Sentex Systems.

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1 - OVERVIEW OF SYSTEM OPERATION

Your Spectrum telephone entry system stores, recalls, and dials the telephone numbers of your building's residents/occupants (hereinafter referred to as resident or residents), and responds to signals from their phones to unlock a door or activate an automatic gate operator. When a visitor arrives at the controlled entrance, he/she lifts the receiver (if you have a model with a handset), pushes the "#" button on the keypad to activate the system, and then dials the code that is listed next to the resident's name on the directory. The resident can then initiate one of four actions by pressing a key on their telephone. These actions are as follows:

KEY PRESSED	ACTION INITIATED
9	Opens door 1 (on either a tone or a rotary dial telephone).
5	Opens door 2 (on a tone dialing telephone only).
#	Extends the amount of time you may talk with a visitor.
*	Denies entry to the visitor and disconnects the visitor call.

When you dial a "9" or a "5", the controlled entrance unlocks, the display exhibits an "open" indication, and the system emits a 3-second tone. When allowing entry, neither party should hang up until the display and tone are activated. **It is important that all residents know how the system operates.**

The system also has a feature that allows it to be used with codes that, when entered on the system's keypad, can latch, cycle, or release either of the system's relays. These 4-digit entry codes can be given to (or chosen by) each resident as well as 10 vendors, service people, etc. Conversely, you can decide to limit the use of this feature to a few people. An authorized person who wishes to enter the building by this means presses the "*" key and their 4-digit code. If a valid code is entered, the controlled entrance will unlock or activate in the manner described in the paragraph above. If invalid codes are entered successively (the number of incorrect successive entries allowed can be set between 1 and 9) within a 3-minute period, this feature will disable itself for 3-minutes while the remainder of the system's capabilities will continue to operate normally.

For your convenience, a programming guide label has been placed on the inside of the system's cabinet. This guide is an easy, handy reference for you once you become familiar with the programming procedures.

2 - ENTERING AND EXITING THE PROGRAMMING MODE

ENTERING THE PROGRAMMING MODE

The programming password is a 6-digit number. The password is set to "000000" at the factory, but your installer may have changed it during installation. When you are comfortable with programming, you should change the password to maintain the security of your system. Make a note of the new password so you do not forget it.

To enter the programming mode from the keypad, enter three asterisks "∗∗∗" followed by the six-digit password. The unit will respond with 2 short beeps.

EXITING THE PROGRAMMING MODE

After you have completed programming your system, exit the programming mode by pressing "00" + "#."

3 - BASIC HINTS AND PROGRAMMING RULES

The sections that follow provide detailed explanations of how to program specific functions into the system. The following programming rules and hints typically apply when programming is completed. However, there are several basic hints and programming rules that apply to programming the system remotely. If you wish to program the system remotely, please refer to section 7 of this manual.

Basic hints and programming rules for the Spectrum system are as follows:

1. After you complete a valid programming sequence, the system will return the programming prompt "P" to the display. You can then switch to another programming area or continue on with the area you just completed.

2. Several error codes are used to help ensure that you program the system correctly. The system will display an "E" and a 1-digit code to tell you what you have done wrong. These error codes are shown below:

CODE	MEANING OF CODE
1	The entry you are trying to erase or verify does not exist in the system. For example, there is no directory code that matches the one you are trying to erase.
2	You have tried to enter a directory code or entry code that already exists in the system's memory. For example, you are trying to enter directory code 253 and that code has already been assigned to someone else.
3	The system memory is full. You must either erase an individual entry that has already been made or erase the whole memory.
5	You have made a format error in making the entry. For example, you tried to enter a "∗" as part of a telephone number.

An "E" will also appear when the system is used incorrectly during normal operation.

3. If you realize during an entry that you are making a mistake, you can cancel the entry by pressing the "∗" key.

4 - SETTING SYSTEM CHARACTERISTICS

The programming sequences described in this section allow you to set up the characteristics of your telephone entry system. In general, you should only need to program your system during installation, not on an on-going basis. Make sure you are in the programming mode before you start programming.

SETTING THE PROGRAMMING PASSWORD (STEP 01)

Purpose	To change the code used to enter the programming mode.
Factory Setting	**000000**.
Format	01 + programming password (6 digits) + #.
Example	01 + 123456 + # (sets the programming password to 123456).
Note:	Be sure to change your code to one that only you know and is easy to remember.

VERIFYING THE PROGRAMMING PASSWORD (STEP 02)

Purpose	To verify the programming password.
Format	02 + programming password (6 digits) + #.
Note	Once you press the "#" key, the system will either display a "1" or a "0". If the system responds with a "1", the programming password you entered matches the password in the system's memory. If the system responds with a "0", the programming password is incorrect and you need to repeat step 01 <u>before exiting the programming mode</u>.

SETTING THE DIALING TYPE (STEP 03)

Purpose	To set the dialing type to tones or pulses in order to enable/disable the shared phone feature and display options such as tone/pulse and shared phone.
Format	03 + type of dialing (one digit) + # 03 + # (1 is displayed for tone dialing, 0 is displayed for pulse dialing)
Example	03 + 1 + # (sets the dialing type to tones) 03 + 0 + # (sets the dialing type to pulses) 03 + # (displays whether dialing type is set to tones or pulses.
Note	The factory default is '1' for tone dialing.

VERIFY THE DIALING TYPE (STEP 03)

Purpose   To verify that the dialing type is either a tone or a pulse
               Factory setting   = '1'

Format   03 + #

Note   Once you press the "#" key, the display will show that the dialing type is
               either 1 for tone or 0 for pulse.

SETTING RINGS BEFORE ANSWER (STEP 04)

Purpose   To set the number of times the phone will ring before the system answers
               it. The number of rings can be from 0 to 9. **Factory setting = 2**

Format   04 + n + # number of rings (0 <=n <=9) + #.

Example   04 + 4 + # (sets the number of rings to 4).

VERIFY RINGS BEFORE ANSWER (STEP 04)

Purpose   To verify the number of times the phone will ring before the system
               answers it. The number of rings can be from 0 to 9. **Factory setting = 2**

Format   04 + #

Note   Once you press the "#" key, the display will show the number of
               times the phone will ring before the system answers it.

SETTING THE VISITOR TALK TIME (STEP 05)

Purpose   To set the maximum length of a call that can be made by a visitor. This
               length can be set from 15 to 255 seconds.
               Factory setting = 60 seconds.

Format   05 + number of seconds (up to 3 digits) + #.

Example   05 + 45 + # (sets the talk time to 45 seconds).

VERIFYING THE VISITOR TALK TIME (STEP 05)

Purpose   To verify the maximum amount of time a visitor can stay on a visitor call.

Format   05 + #.

Note   Once you press the "#" key, the display will show the maximum number
               of seconds allowed for a visitor call.

SETTING THE PBX DIGIT (STEP 06)

Purpose   To dial a digit (which you specify) if your system is connected to a PBX telephone system, and then pause briefly (so the PBX can give the system an outside line) before dialing the telephone number that you program into the system.

Format   06+ PBX Digit (1 digit) + #.

Example   06 + 9 + # (sets the system to dial a "9" before the telephone number).

VERIFYING THE PBX DIGIT (STEP 06)

Purpose   To verify the digit you specified to give the system an outside line if your system is connected to a PBX telephone system.

Format   06 + #.

Note   Once you press the "#" key, the display will show the digit you specified if your system is connected to a PBX telephone system.

ERASING THE PBX DIGIT (STEP 06)

Purpose   To erase the PBX digit from the system's memory. Once the PBX digit is erased, the system will dial a telephone number without the preceding digit and pause.

Format   06 + 101010 + #.

SETTING THE RELAY ACTIVATION TIME (STEP 07)

Purpose   To control the amount of time the door or gate will remain unlocked/open. The open time can be set from 01 to 99 seconds. **Factory setting = 10 seconds for each relay.**

Format   07 + number of seconds for door 1 (2 digits) + number of seconds for door 2 (2 digits) + #.

Example   07 + 05 + 60 + # (sets door 1 unlocked/open time for 5 seconds and door 2 unlocked/open time for 60 seconds).

Note   If this relay activates a gate operator with a momentary contact closure, you will need to set the relay activation time for a short period of time (for example, 5 seconds). If you set the relay activation time for a longer period of time, there is a possibility that the gate will continue to open and close until the relay activation period has ended.

VERIFYING THE RELAY ACTIVATION TIME (STEP 07)

Purpose   To verify the amount of time the door or gate will remain open.

Format   07 + #

Note   Once you have pressed the "#" key, the display will show four digits. The first two digits are the amount of time the door or gate attached to relay 1 will remain open and the remaining two digits are the amount of time relay 2 will remain open.

SETTING DIRECTORY CODE LENGTH (STEP 08)

Purpose   To tell the system how many digits will be in the code that a visitor uses to dial a resident. **Factory setting = 2 digits.**

Format   08 + code length (may be 1, 2, 3, or 4) + #.

Example   08 + 3 (sets code length to 3 digits) + #.

Notes   *WARNING:* Be sure the directory code length is set properly before you begin entering telephone numbers. You may change this length later BUT you will have to change all directory codes in the system to the new length or the system will not function properly and you may run out of capacity.

A 1-digit code length will handle up to 10 codes, 2-digit codes will handle up to 100 codes, and 3- or 4-digit codes will handle up to 1000 codes.

VERIFYING DIRECTORY CODE LENGTH (STEP 08)

Purpose   To verify that the code length in the system is what you think it is/want it to be.

Format   08 + #.

Note   Once you press the "#" key, the display will show the number of digits in the directory code. For example, if you have 3 digits in the directory code, a "3" will be shown on the display when you   press the "#" key.

USING THE RELAY MANAGEMENT FUNCTIONS (STEPS 71 through 79)

Purpose	To allow you to either activate or deactivate a specified relay while in the programming mode.
Format	7 + relay command code (1 digit) + #.
Relay Command Codes	1 = Cycle relay 1 for its programmed period of time. 2 = Cycle relay 2 for its programmed period of time. 3 = Latch relay 1 for an unspecified amount of time. 4 = Latch relay 2 for an unspecified amount of time. 5 = Release relay 1 from its latched state. 6 = Release relay 2 from its latched state. 7 = Cycle both relays for their programmed period of time. 8 = Latch both relays for an unspecified amount of time. 9 = Release both relays from their latched state.
Example	7 + 2 + # (cycles relay 2 for its programmed period of time).
Important Notes	If you select relay action code "9" and only one of the relays are currently latched, this step will not affect the status of the unlatched relay.

5 - ENTERING, VERIFYING AND ERASING TELEPHONE NUMBERS AND ENTRY CODES

The programming sequences described in this section allow you to tell the system what telephone numbers it may dial, and which 4-digit entry codes should grant entry. These programming steps will be repeated frequently as people move in and out of your building.   Make sure you are in the programming mode before you start programming.

SETTING DIRECTORY CODES AND TELEPHONE NUMBERS (STEP 09)

Purpose	To tell the system to dial up to an 12-digit telephone number when the directory code (the code that appears next to the name on the directory) you program is entered on the keypad by a visitor.
Format	09 + directory code (see page 4 for number of digits) + telephone number (up to 12 digits) + #.
Examples	09 + 38 + 5551212 + # (sets code 38 to dial 555-1212). 09 + 24 + 18185556978 + # (sets code 24 to dial 1-818-555-6978).
Notes	The directory code length you use must be the same for all residents. This length is set in the area discussed on page 4 entitled "Setting Directory Code Length". If you are going to change a resident's telephone number or assign a directory code that has previously been used to a new resident, you must first erase the existing entry and then make the new entry. (See the area below entitled "Erasing Directory Codes/Telephone Numbers".)

VERIFYING TELEPHONE NUMBERS (STEP 09)

Purpose	To check that you have entered a telephone number correctly.
Format	09 + directory code + #.
Example	09 + 38 + #
Note	Once the "#" key is pressed, the system will display the telephone number that was entered for that directory code. If the telephone number shown is incorrect, erase the entry as shown on page 6 and re-enter it with the correct telephone number.

ERASING DIRECTORY CODES AND TELEPHONE NUMBERS (STEP 10)

Purpose	To delete a directory code/telephone number entry from memory.
Format	10 + directory code + #.
Example	10 + 38 + # (erases directory code 38 and its associated telephone number).

ERASING ALL DIRECTORY CODES
AND TELEPHONE NUMBERS (STEP 11)

Purpose   To Allow you to clear the entire directory code/telephone number memory. You would want to perform this task if the memory has become filled with numbers that have been forgotten or have been entered in error.

Format   11 + 101010 + #.

SETTING NUMBER OF WRONG ENTRY CODES ALLOWED (STEP 12)

Purpose   To tell the system how many incorrect entry codes may be entered within a 3 minute period before the system deactivates the entry code function for a period of 3 minutes. All other functions continue to operate normally during this time. The number of wrong entries can be between 0 to 9 incorrect entries. A "0" will disable this feature. **Factory setting = 2 incorrect entries.**

Format   12 + number of incorrect entry codes allowed (1 digit) + #.

Example   12 + 6 + # (sets incorrect entry codes allowed at 6).

Note   When an incorrect entry code is entered on the system's keypad, the system will respond with an "E" error message on the display. When the specified number of incorrect entry codes is reached, the system will not give an error indication on the display. The only indication given by the system that the incorrect entry code limit has been reached is that the system will not accept any entry code entries until the 3 minute period is over.

VERIFYING THE NUMBER
OF INCORRECT ENTRY CODES ALLOWED (STEP 12)

Purpose   To verify the number of incorrect entries that are allowed on the system's keypad before the system deactivates the keypad function for 3 minutes.

Format   12 + #.

Notes   Once you press the "#" key, the display will show the number of incorrect entries allowed. For example, if you have this feature set at 4 entries, the display will show a "4" after the "#" key is pressed.

PROGRAMMING ENTRY CODES + RELAY ACTION CODE (STEP 13)

Purpose   To Allow you to set up 4-digit codes that residents or service people can use to gain entry to the building without a key. There are two types of entry codes that you may enter: entry codes with programmed relays and "simple" entry codes. Entry codes with programmed relays allows you to specify which relay the code will activate and how it is activated when it is entered on the system's keypad. "Simple" entry codes will only activate relay 1 for its programmed period of time.

Format	Entry code with programmed relay - 13 + entry code (4 digits) + relay code (1 digit) + #.
	Simple entry code - 13 + entry code (4 digits) + #.

Relay Code	1 = Cycle relay 1 for its normal activation time.
	2 = Cycle relay 2 for its normal activation time.
	3 = Latch relay 1 for an unspecified period of time.
	4 = Latch relay 2 for an unspecified period of time.
	5 = Release relay 1 from its latched state.
	6 = Release relay 2 from its latched state.
	7 = Cycle both relays open for their normal activation time.
	8 = Latch both relays open.
	9 = Release both relays from their latched states.

Example	Entry code with programmed relay - 13 + 5467 + 4 + # (sets up entry code 5467 to latch relay 2).
	Simple entry code - 13 + 3377 + # (sets entry code 3377 to activate relay 1 for its programmed period of time).

Note	You have the capacity to give entry codes to each resident in your building up to the capacity purchased, plus at least 10 extra for vendors or service people. Ask your installing dealer for the exact number of entry codes available.

ERASING ENTRY CODE (STEP 14)

Purpose	To delete a 4-digit code that a resident or service person uses to gain entry to the building without a key.

Format	14 + entry code (4 digits) + #

Example	14 + 5467 + # (deletes entry code 5467).

ERASING ALL ENTRY CODES (STEP 15)

Purpose	To allow you to clear the entire entry code memory. You would want to perform this task if the memory has become filled with codes that have been forgotten or have been entered in error.

Format	15 + 101010 + #.

6 - REMOTE PROGRAMMING

To program the Spectrum system via telephone from a remote location, please refer to the following instructions:

REMOTE PROGRAMMING FROM A TONE TELEPHONE

1. Dial the unit telephone number and wait for an answer. When the unit answers, it emits two beeps.

2. Enter one asterisk "∗" and the six-digit password. The unit will begin emitting a high pitched tone. Press the "#" key to stop the tone.

3. Once you are in the programming mode, a "b" appears on the unit's display and two short tones are emitted to signal that the unit is ready to be programmed.

4. Begin programming exactly the same as you would using the keypad on the unit.

   NOTE The only functions that will not work from a remote location are the verify functions and the ability to set the system's feedback.

REMOTE PROGRAMMING VIA MODEM

The -101 board has a modem and can be programmed remotely using this modem and SVWin software. Please refer to the SVWin User's Guide for programming instructions.

APPENDIX 1
PROGRAMMING STEPS FOR THE 101 BOARD

Step number	Description	Example	Description	Remote Prgrm?
	Error Messages:			
	E1: does not exist			
	E2: duplicate found			
	E3: system is full			
	E5: format error			
00	Terminate Programming	00+#		Yes
01	Set Password	01+nnnnnn+#		Yes
02	Verify Password	02+nnnnnn+#	1=nnnnnn matches current setting, 0 = no match	No
03	Set Dialing Type	03+n+#	Sets dialing type to tones (1), pulses (0)	Yes
03	Verify Dialing Options	03+#	(1/0 for tone/pulse)	No
04	Set Rings Before Answer	04+n+#	Sets rings before answer to 0 <=n <=9	Yes
04	Verify Rings Before Answer	04+#	If 0, don't answer	No
05	Set Visitor Talk Time	05+n+#	015 <=n <255	Yes
05	Verify Visitor Talk Time	05+#		No
06	Set PBX Digit	06+n+#	Set PBX digit	Yes
06	Verify PBX Digit	06+#	Display PBX digit	No
06	Erase PBX Digit	06+101010+#	Erase PBX digit	Yes
07	Program Relay Activation Time	07+r1+r2+#	Sets relay 1 to r1 (2 digits) and relay 2 to r2 (2 digits)	Yes
07	Verify Relay Activation Time	07+#		No
08	Set Directory Code Length	08+n+#	Sets code length to 1 <= 4 digits 1<=n <=4	Yes
08	Verify Directory Code Length	08+#		No
09	Program Directory Code and Phone Number	09+d[ddd]+t[tttttttttttt]+#	Sets code d[ddd] (1-4 digits) to t[tttttttttttt] up to 12 digits	Yes
09	Verify Directory Code and Phone Number	09+d[ddd]+#		No
10	Erase Directory Code and Phone Number	10+d[ddd]+#	Erases dir code d[ddd] (1-4 digits)	Yes
11	Erase All Directory Codes and Phone Numbers	11+101010+#	Erases all dir codes	Yes
12	Set # of wrong entry codes	12+n+#	Sets incorrect entry codes allowed to 0 <=n <=9	Yes
12	Verify # of wrong entry codes	12+#	If n=0, strikes and out is disabled	No
13	Program Entry Code	13+eeee+#	Sets entry code eeee with relay action code 1	Yes
13	Program Entry Code + Relay Action Code (RAC)	13+eeee+r+#	Sets entry code with specified relay action code 'r'	Yes
14	Erase Entry Code	14+eeee+#	Erases entry code eeee (4 digits)	Yes
15	Erase All Entry Codes	15+101010+#	Erases all entry codes	Yes
52	System Reset			
69	Set Feedback	69+#		No
7r (see Relay Action Codes, next page)	Relay Management Functions	7+r+#	Performs the specified relay action 'r'	Yes

* Relay Action Codes

DIGIT	RELAY ACTION CODE
1	Cycle Relay 1
2	Cycle Relay 2
3	Latch Relay 1
4	Latch Relay 2
5	Release Relay 1
6	Release Relay 2
7	Cycle Both
8	Latch Both
9	Release Both

NOTE The -101 board has the ability to cycle, latch and/or release either relay during programming, whereas the -99 board and the -100 board could only cycle, latch or release one relay per telephone call. In the memory erase process, the system focuses on erasing memory as quickly as possible. However, if you cycle, latch or release a relay while in the erase mode, the additional task added to the erase function will cause a significant delay in the memory erase cycle.