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# SECTION 1.

## OVERVIEW

This manual describes installation, operation, and programming of the Model 9000 (and 9005) Digital Alarm Receiver. The 9000 and the 9005 operate the same except that the 9000 is enclosed in a cabinet and is suitable for desk-mounting. The 9005, the UL listed model, is intended for rack-mounting and is not enclosed in a cabinet. (This is because desk-mounting is not permitted in UL installations.) The term "9000" is used throughout this manual for both models, unless a specific detail about the 9005 is being discussed.

### 1.1. OPTIONAL ACCESSORIES

Unless otherwise noted, the accessories described here are available from Silent Knight Sales Department, 7550 Meridian Circle, Maple Grove, MN 55369-4927, 800-446-6444 or 612-493-6435.

The formats compatible with each line card are described in Table 1.2-A (section 1.2).

**TABLE 1.1-A: ACCESSORIES AVAILABLE FOR USE WITH THE 9000**

<b>SILENT KNIGHT MODEL NUMBER (if applicable)</b>	<b>NAME</b>	<b>DESCRIPTION / OTHER INFORMATION</b>
9001	Line Card Expansion Module	Allows you to expand the line card capability from four to twelve. Required if you are using more than 4 line cards.
9004I	Line Card	For ITI and SIA formats.
9032	Line Card	Allows an independent listen-in module RJ-11 with each individual line card. Requires 9200-E CPU card with software revision 901209 or later.
9103	SIA Direct Line Card	Used only with the Silent Knight models 4720 and 5207.
9007	Printer cable	Connects the 9000 to an external printer.
5257	Replacement paper for on-board printer.	Thermal paper recommended for use with the 9000. Manufactured by SEIKO and available from Silent Knight. (SEIKO model number ATP-201-21125.)
Not available from Silent Knight	Rack-mounting cabinet	For rack-mounting the 9005 receiver as required by UL. (See Section 2.3.1 for specifications and vendor information.)
Not available from Silent Knight	Blank filler panels	For filling up any unused rack cabinet space as required by UL.
Not available from Silent Knight	Hayes or Hayes-compatible modem that runs at 300 baud.	For unidirectional communication from the 9000 to a remote terminal.
Not available from Silent Knight	Parallel printer	Any standard printer with Centronics interface, such as the Epson 86e/286e. Can be used in place of or in addition to the on-board printer, if desired.

## 1.2. FORMATS COMPATIBLE WITH THE 9000

Table 1.2A below shows the formats that the 9000 can decode and the line cards needed for each format. **Section 7.1 of this manual describes the formats in greater detail.**

**TABLE 1.2-A FORMATS COMPATIBLE WITH THE 9000**

**NOTE:** The 9000 will **not** decode the following formats: Radionics using parity as from an FBI XL-1218, XL-1219, Radionics Modem II, or Ademco Contact ID.

9000 FORMAT	DIALER FORMAT	9000 PRINTS	LINE CARD
0	Silent Knight 3+1 Tone Burst Silent Knight 4+1 FSK Silent Knight 4+2 Silent Knight FSK1 Silent Knight FSK2 Franklin 3+1 Tone Burst Radionics Hex Sescoa 3+1 Tone Burst	Codes Codes English English English Codes English Codes	9002 (obsolete)
1	3+1 Tone Burst Formats Radionics with Checksum Radionics BFSK	Codes English English	9002 (obsolete)
2	SIA 8 & 20	English	9004I
3	Ademco Touch-Tone Acron Touch-Tone	Codes Codes	9003 (obsolete)
4	Westec 600	English	9032 OR 9002 (obsolete)
5	Westec Touch-Tone	English	9032W
6	Silent Knight 3+1 Tone Burst Silent Knight 4+1 FSK Silent Knight 4+2 Silent Knight FSK1 Silent Knight FSK2 Extended 3+1 formats *Extended 4+1 formats FBI 4+2 Franklin 3+1 Tone Burst Radionics Hex Sescoa 3+1 Tone Burst	Codes Codes Codes Codes English Codes Codes Codes Codes Codes Codes Codes Codes	9032 OR 9002 (obsolete)
6	Ademco Touch-Tone Acron Touch-Tone Radionics with Checksum Radionics BFSK Sescoa Superfast	Codes Codes Codes English English	9032
7	ITI SX IVB & V	English	9004I

\*Requires model 9330 software.

---

## SECTION 2.

### AGENCY REQUIREMENTS

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#### 2.1. FCC REQUIREMENTS

---

1. If requested by the telephone company, the following information must be provided before connecting this device to the phone lines:
  - a) Manufacturer: Silent Knight
  - b) Model Number: 9000
  - c) FCC Registration Number - AC 698R-68496-AL-N
  - d) Ringer Equivalence - 0.2 dB
  - e) Type of jack to be installed (by the telephone company)  
- RJ11X (one for each line)
2. This device may not be directly connected to coin telephone or party line services.
3. The device cannot be adjusted or repaired in the field. In case of trouble with the device, notify the installing company or return to:  
Silent Knight Security Systems  
7550 Meridian Circle  
Maple Grove, MN 55369-4927  
800-328-0103  
612-493-6455
4. If the 9000 causes harm to the telephone network, the telephone company will notify the user in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify you as soon as possible. You have the right to file a complaint with the Federal Communications Commission if you believe it is necessary.
5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect operation of the equipment. If this happens, the telephone company will provide advance notice to allow you to make the necessary modifications to maintain uninterrupted service.

**WARNING**

This equipment generates, uses and radiates radio frequency energy. If not installed and used in accordance with the instruction manual, it can cause interference to radio communications. The rules with which it must comply afford reasonable protection against interference when it is used in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his or her own expense.

## **2.2. FACTORY MUTUAL REQUIREMENT**

---

If you're using more than four line cards in your installation, you must use the model 9001FM line card expander.

## **2.3. UL REQUIREMENTS**

---

Follow the procedures outlined in the sections below for listing as an NFPA 72 Central Station Service installation. The 9000 is also suitable for household and commercial burglary service. Note that installation regulations are subject to the jurisdiction of a local authority.

### **2.3.1. HARDWARE REQUIREMENTS**

---

See figures 3.1A and 3.1B (section 3.1) for diagrams of a suggested installation.

1. The model 9005 Digital Receiver must be used. (This is the rack-mount model. The desk-mount model may not be used.)
2. In case the 9005 fails, a second 9005 must be installed as a backup. The backup system must be able to take over within 30 seconds. (Note: This requirement does not apply to burglary-only installations.)
3. If you're using more than four line cards in your installation, you must use the model 9001 line card expander.
4. The 9005 and the 9001 (if used) must be enclosed in a listed metal rack-mounting cabinet. A recommended enclosure is a listed control unit accessories system cabinet, manufactured by Atlas/Soundelier (Fenton, MO, phone: 314-349-3110; or, Parsippany, NJ, phone: 201-887-7800). (The series, WA200, intended for 19-inch rack mount panels, can be used.) A taller cabinet could be used to house additional units.
5. Any unused front panel space must be filled with blank panels so that all wiring remains enclosed.
6. The external conduit must exit through the knockouts in the cabinet or go directly through the floor.

### **2.3.2. OPERATIONAL REQUIREMENTS**

---

1. The 16 GA ground strap must be connected from the 9005 to the rack enclosure.
2. The transmitters reporting to the 9005 must be UL Listed DACTs (digital alarm communicator transmitters).
3. The 9005 provides a minimum of 4 hours of battery backup power. The central station must provide a minimum of 24 hours of battery backup power in case AC power is lost. The backup must either be in the form of a battery or an electrical generator.
4. If the 9005 is not automated, the central station operator must check for the 24 hour test signals from the communicators. (Note: This requirement does not apply to burglary-only installations.)
5. The connection between the 9005 and the UL listed computer should be according to the pin configuration for serial port B as shown in section 3.10 of this manual.
6. If a computer is used, the computer and its accessories must be installed in the same room as 9005.

### **2.3.3. PROGRAMMING REQUIREMENTS**

---

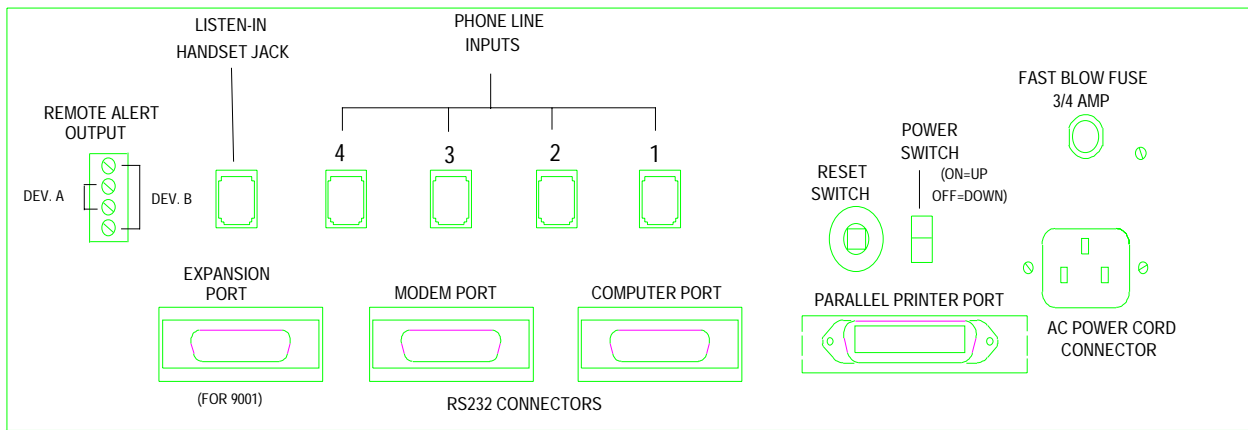
In a UL listed installation, the Model 9005 digital receiver must be programmed according to the following procedure:

1. The alert tone **MUST** be selected. (Do **NOT** use the alarm output relay in UL installations.)
2. Each log-on code must have at least three digits.
3. The listen-in feature must **NOT** be selected for any line card.

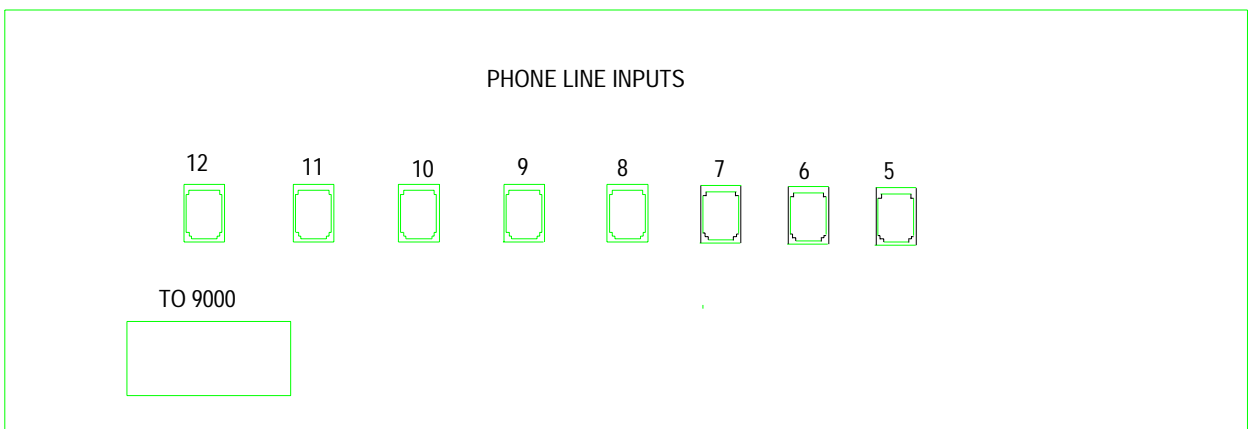
# SECTION 3. INSTALLATION

## IMPORTANT:

Do not connect power to the system until you have read these instructions carefully. The 9000 is assembled at the factory. It is possible that the two pre-installed line cards could come loose during shipping. Check the line cards before installing. If they need to be inserted, follow the procedures described in section 3.2.



**FIGURE 3A: MODEL 9000 BACK PANEL**

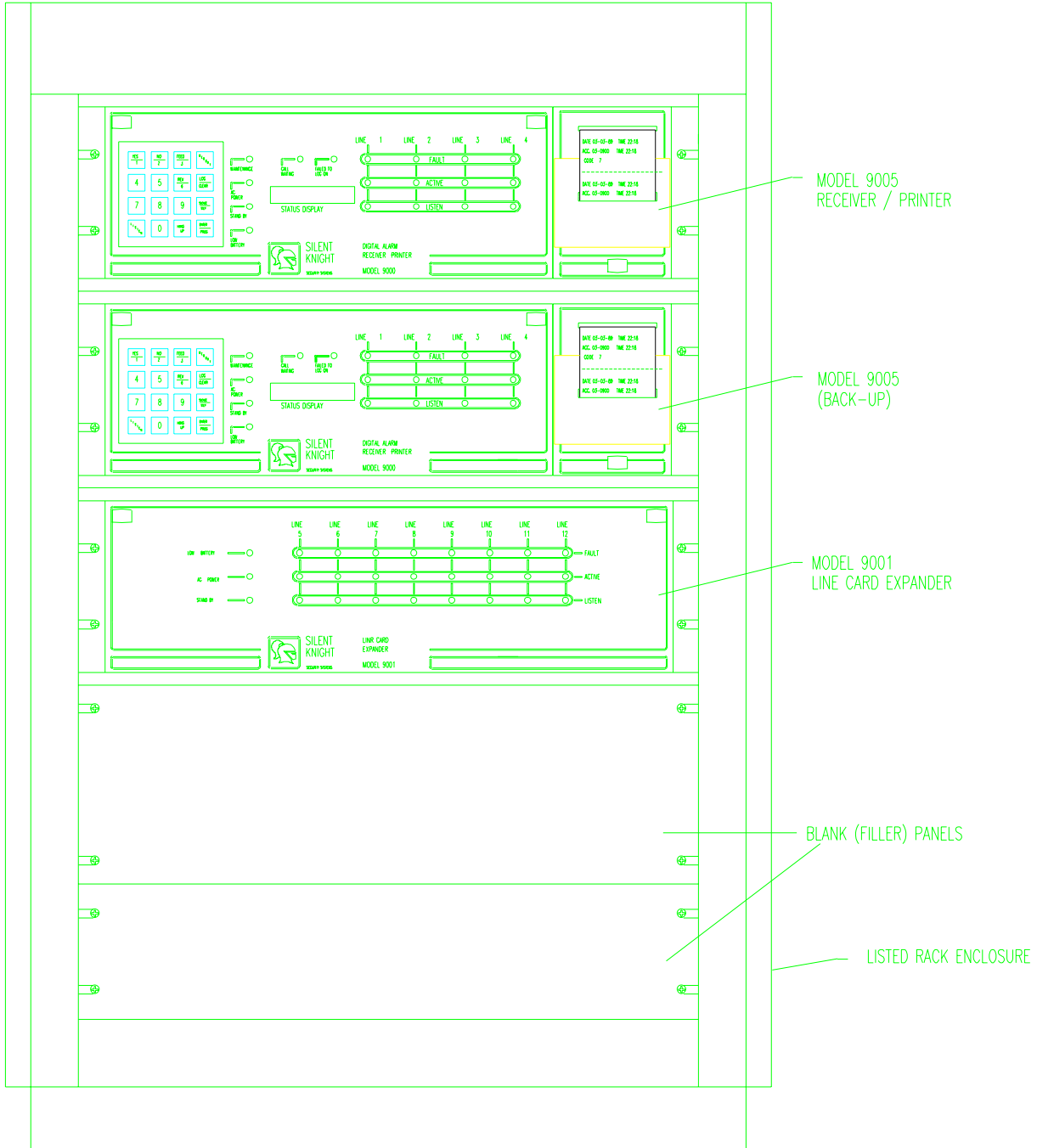


**FIGURE 3B: MODEL 9001 BACK PANEL**

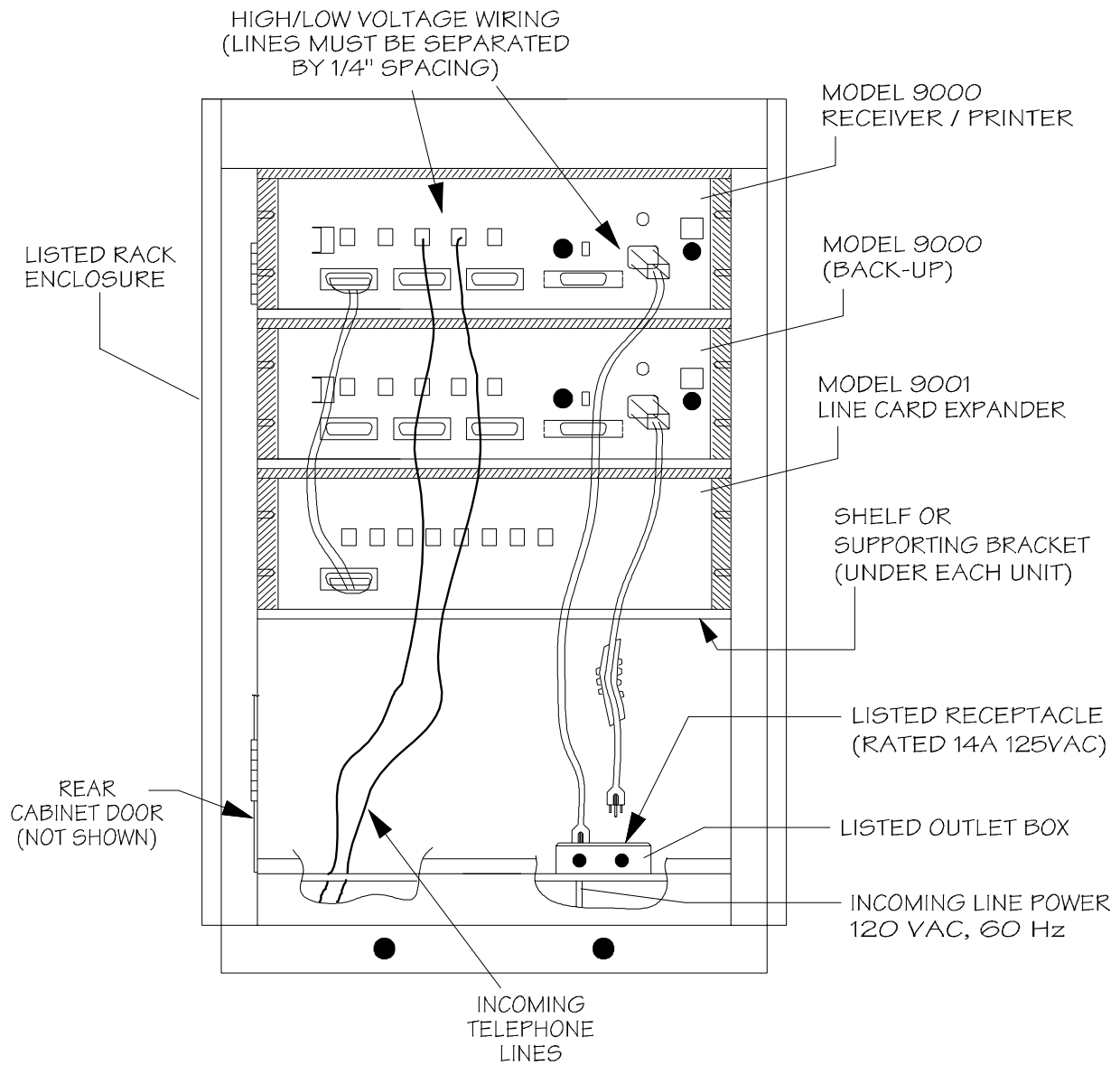


### 3.1. RACK MOUNTING

This diagram shows how to mount two model 9005s and a 9001 line card expander in a UL listed rack enclosure.



**FIGURE 3.1A: RACK MOUNT ENCLOSURE, FRONT VIEW**



All wiring that exits cabinet must be in electrical conduit.

**FIGURE 3.1B: RACK MOUNT ENCLOSURE, REAR VIEW**

### 3.2. LINE CARD INSTALLATION

---

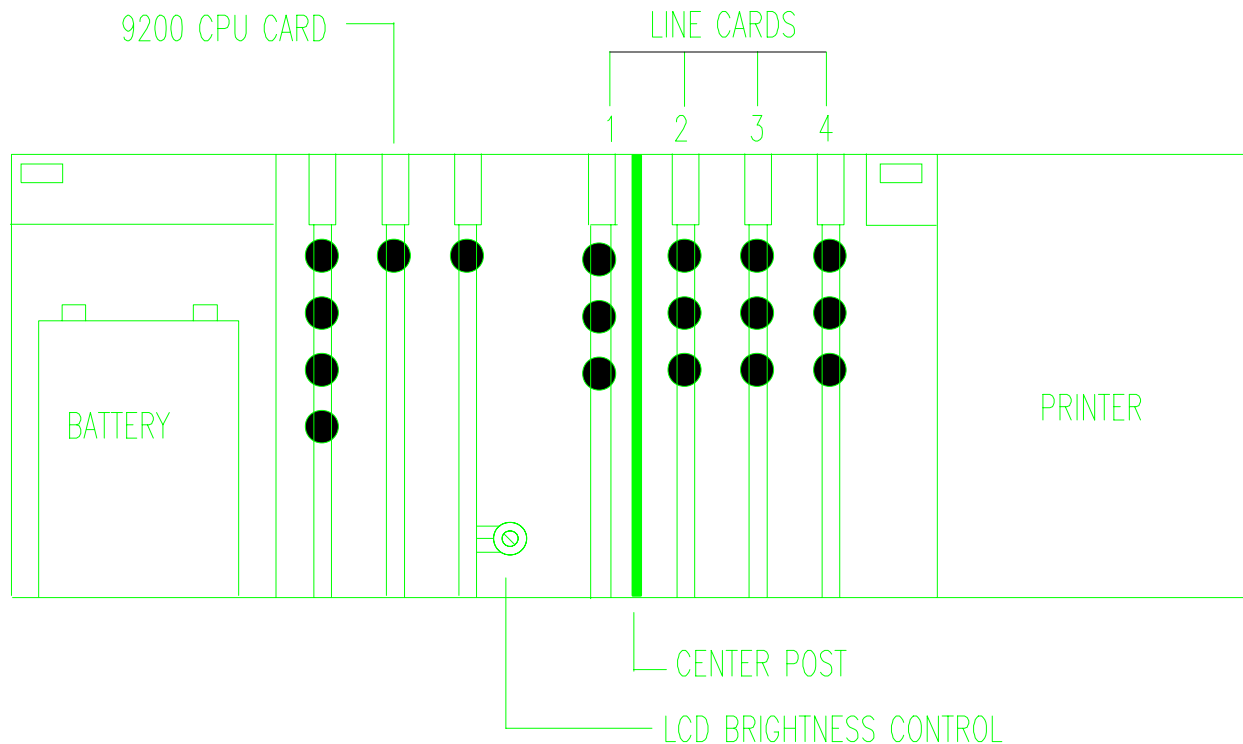
**CAUTION:**

**To reduce the risk of electrical shock and damage to the receiver, follow these steps in the order they are listed here.**

1. Remove ALL power from the system. This includes turning off the 9000's AC power switch.
2. Open the 9000's front panel by squeezing the two release latches located in the upper corners of the panel. Then, gently lower the door until it is fully open.
3. When the door is open, you will see that there are four slots for line cards. If you are using a single line card, place it in location #1 and program it as line card #1. If it is placed in any other slot, the message, "BAD LINE CARD," will display when the unit is powered up. If you have a second line card, place it in position #2 and program it as line card #2 (an additional line card would be in position #3 and programmed as line card #3 and so on). Figure 3.2A shows where each line card should be placed.
4. Orient the line card so that the white plastic card release lever is at the top of the card and the components are facing towards the printer housing.
5. Carefully slide the card into its guides (both top and bottom) until it snaps into its connector at the back of the receiver. Push the card as far into the connector as you can. The card is now in place.
6. Power up the 9000. If you are simply replacing a line card with another card of the same type and are using the same format, your installation is now complete. If you have changed the total number and/or type and format of a line card, continue with step 7.
7. Enter programming mode to select the appropriate format. If you are using the 9032 line card, select format 6. The 9032 will automatically pick the correct format for each transmission. (Programming instructions are in section 5 of this manual.)

#### **REMOVING LINE CARDS**

If you need to remove a card, lift up on the white plastic card release lever. This will pull the card free from the connector. When the card is free, slide it carefully out of the receiver.



**FIGURE 3.2A: LINE CARD LOCATIONS**

### 3.3. LINE CARD EXPANDER CONNECTION

---

The line card expansion port connection can be made by attaching one end of the cable (provided) to the expansion port and the other end to the Model 9001 Line Card Expansion Module.

### 3.4. TELEPHONE LINE CONNECTION

---

See figure 3-A for the location of the phone line inputs. Connections to the 9000 phone jacks are made with a standard 7-foot phone cord (provided with each line card). Figure 3-A also shows which phone line input connects to each line card.

### 3.5. PARALLEL PRINTER CONNECTION

The model 9007, an interface cable which connects the 9000 to a compatible printer, is available from Silent Knight. If you create your own cable, use the pin description table below.

#### EXTERNAL PRINTER CABLE PIN DESCRIPTION

(The Epson 86e/286e is used here as an example. Refer to your printer's manual for specific information.)

9000 PIN #	SIGNAL	EPSON-85e/286e COMPATIBLE PIN #
1	Data Strobe (Low)	1
3	Data Bit 1	2
5	Data Bit 2	3
7	Data Bit 2	4
9	Data Bit 4	5
11	Data Bit 5	6
13	Data Bit 6	7
15	Data Bit 7	8
17	Data Bit 8	9
20	Ground / Auto Feed	14
21	Busy	11
24	Always Logic 0 (Ground)	16
24	Ground	19
27	Ground	33

Pins not listed above are not assigned. Figure 3.5A below shows the wiring sequence of this connector.

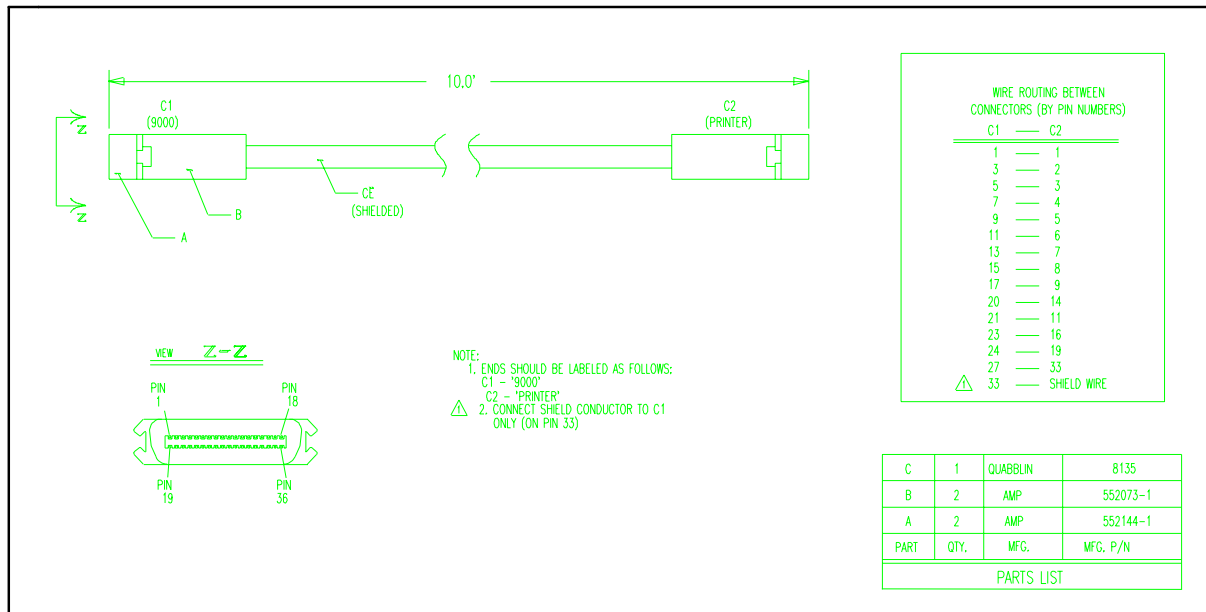


FIGURE 3.5A: WIRING SEQUENCE FOR PARALLEL PRINTER PORT INTERFACE

## SAMPLE DIP SWITCH SETTINGS

(The Epson 86e/286e is used here as an example. Refer to your printer's manual for specific information.)

The following settings should be used with the 9000. Refer to your printer manual for complete information.

### EPSON 85e/286e DIP SWITCH #1

SW	DESCRIPTION	SETTING
1-1	Default Character Set	Off
1-2	Zero Character	On—User Preference
1-3	Character Table	On—User Preference
1-4	Printer Mode	Off—User Preference
1-5	Select Print Quality	Off—User Preference
1-6	International Character	On
1-7	International Character	On
1-8	International Character	On

### EPSON 85e/286e DIP SWITCH #2

SW	DESCRIPTION	SETTING
2-1	Page Length	Off
2-2	Cut Sheet Feeder Mode	Off
2-3	1-inch Skip over Perf.	Off
2-4	Automatic Line Feed	On

### 3.6. LISTEN-IN JACKS

---

The 9000 does not have a built-in amplifier, but you can connect devices to the listen-in jacks located on the 9000 and the 9032 line card. To use either of these jacks, you need a device that can be connected directly to the telephone line and that has its own amplifier.

#### 9000 JACK (LOCATED ON BACK OF 9000)

This audio listen-in jack must be manually operated. See figure 3-A for the location. See section 4.6 for listen-in operation instructions.

#### 9032 JACK (LOCATED ON FRONT OF 9032 LINE CARD)

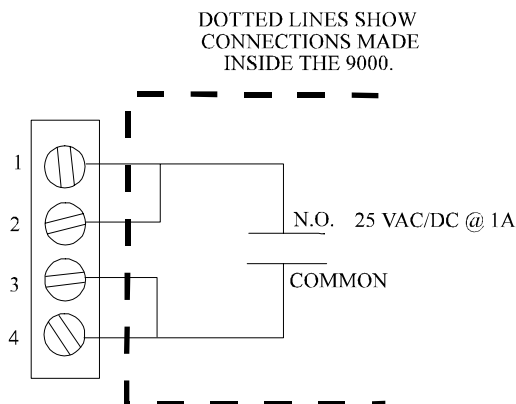
The front of the 9032 line card has an RJ-11 jack that can be used for listen-in. When the 9032's yellow listen-in LED is on, the listen-in function on this line card is available for use. This feature eliminates the need to press the **LISTEN** key, the line card number, and the **ENTER** key. During the last 10 seconds of listen-in time, the LED flashes on and off as a warning that listen-in time is about to expire.

### 3.7. REMOTE ALERT OUTPUT

---

The remote alert output is a normally open relay rated at 25 VAC/DC @ 1 amp. If the alert tone has been selected in programming mode, the relay contacts will be closed in case of trouble or an alarm condition. This contact will also be closed in case of computer trouble even if the alert tone is not selected during programming.

There are two screw terminals for each end of the normally open contact which are connected internally as shown in figure 3.7-A.



**FIGURE 3.7-A: 9000 REMOTE ALERT OUTPUT CONNECTION**

### 3.8. AC POWER CORD CONNECTION

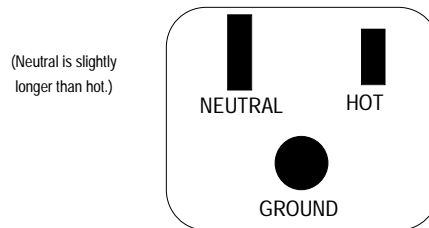
---

1. Before the AC power cord is connected, make sure that the power switch is in the OFF (down) position.
2. Connect the appropriate end of the power cord into its receptacle on the back of the 9000.
3. Plug the other end of the power cord into a 120 VAC 60 Hz outlet (three-prong type only). The outlet should be unswitched, so that power remains on 24 hours a day. The outlet must also be earth grounded. Follow the directions below if you need to measure for proper earth grounding.

#### 3.8.1. CHECKING THE EARTH GROUNDING OF THE AC OUTLET

---

1. Measure the AC voltage between the "hot" terminal and ground and between the hot terminal and neutral. There should be approximately 120 volts vms between hot and ground and 120 volts between hot and neutral. There should be less than 1 volt vms between neutral and ground.



2. If the voltages are not correct, the outlet does not have an earth ground. Ground the outlet by running a #16-gauge (or larger) wire from the outlet to a good earth ground. It may be necessary to have a licensed electrician ground the outlet.

### 3.9. BATTERY CONNECTION

---

1. Open the front panel of the 9000 by squeezing the two latch releases that are located in the upper corners of the panel. Pull forward and down until the door is fully open.
2. Insert the battery into the location at the far left side of the receiver.
3. Connect the RED terminal to the positive (+) side of the battery. Connect the BLACK terminal to the negative (-) side of the battery. Incorrect polarity can damage the battery and the 9000.
4. Close the front panel.



### 3.10. MODEM INSTALLATION

---

The modem port is used to SEND data (unidirectional communication) to a modem. The modem must be a Hayes Smartmodem or compatible that runs at 300 baud. The modem port must be set to 8 bits per character, no parity, 1 stop bit.

MODEM PORT PIN DESCRIPTIONS	
PIN 1	GROUND
PIN 2	TRANSMIT DATA
PIN 3	RECEIVE DATA
PIN 5	CLEAR TO SEND
PIN 7	GROUND
PIN 20	DATA TERMINAL READY

#### 3.10.1. HAYES MODEM CONFIGURATION

---

When a Hayes (or compatible) modem is used to communicate with a CRT (dumb terminal), you must set the configuration switches as shown in the tables below. Note that it is normal for some erroneous characters to appear on the display. To prevent these characters from running into the messages that follow, power up the modem first, then power up the CRT. At the CRT type **[A][T][RETURN]**. The CRT should then display "OK." The modem is now ready.

**TABLES 3.10.1-A AND 3.10.1-B  
DIP SWITCH SETTINGS FOR HAYES MODEMS  
USED WITH THE 9000 AND THE CRT**

SWITCH	POSITION
1	UP
2	DOWN
3	DOWN
4	DOWN
5	UP
6	UP
7	UP
8	EITHER
9	UP
10	UP

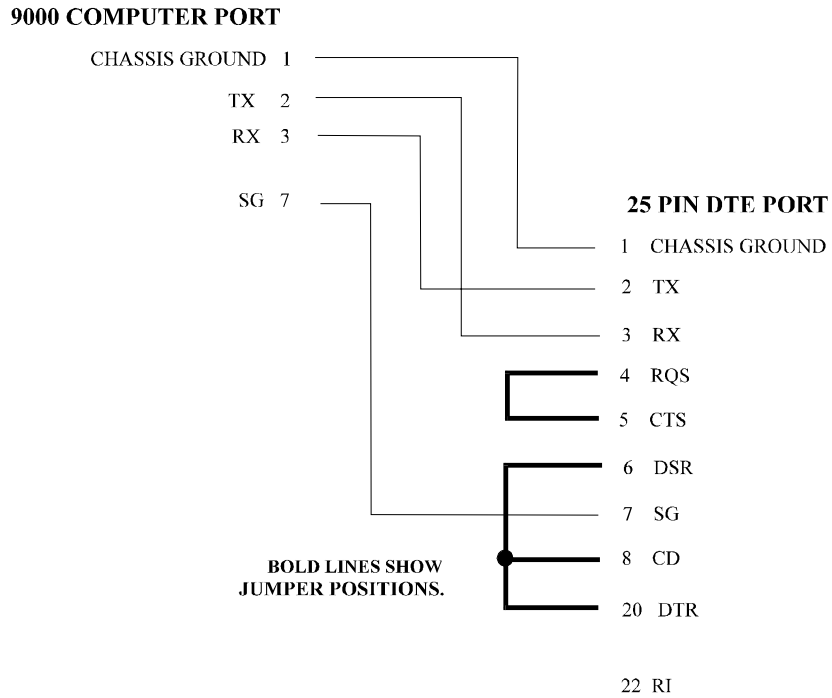
SWITCH	POSITION
1	DOWN
2	UP
3	DOWN
4	DOWN
5	UP
6	UP
7	UP
8	EITHER
9	UP
10	UP

**TABLE 3.10.1-A MODEM DIP SWITCH DESCRIPTIONS**

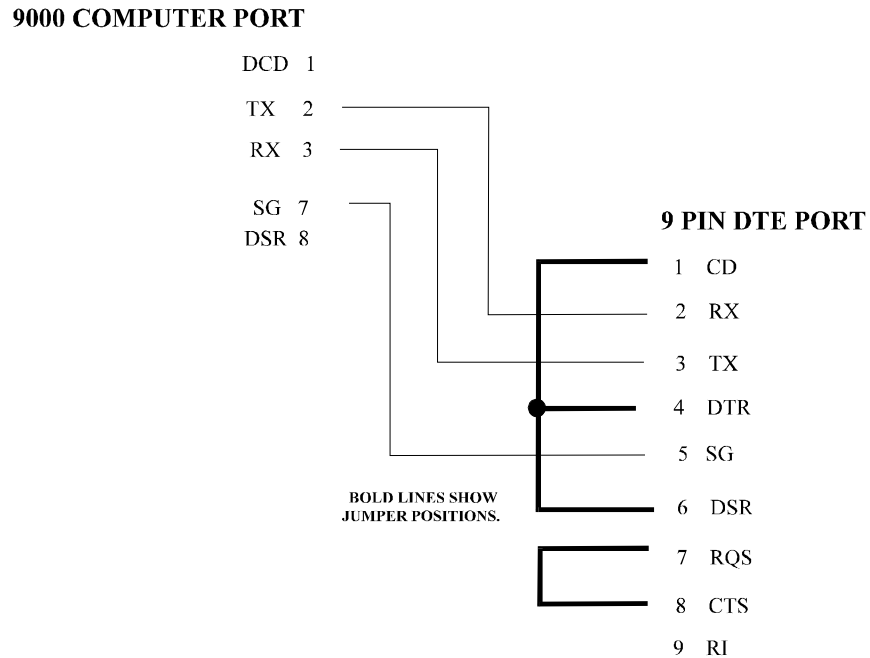
SWITCH	ASSOCIATED COMMAND	POSITION	FUNCTION
1	NONE	UP	The setting that may be used if your computer supports the RS-232C DTR lead (Data Terminal Ready—pin 20). If your computer supports this signal, then the modem can be made to hang up or not answer calls by making this lead false. TR (Terminal Ready) indicator light only comes on when modem is powered on and power to the terminal or computer is on.
		DOWN	Use this setting if your computer does not support the RS-232C DTR lead. The modem ignores state of RS-232C DTR lead and assumes it's always logic TRUE. TR indicator light is always on when modem is powered.
2	V1	UP	Verbal. Result codes are sent in English words.
	V0	DOWN	Non-verbal. Result codes are sent as single digits (0...4).
3	Q1	UP	Quiet. No result codes are sent. Used, for example, with a printer that only receives data and does not require printouts of result codes.
	Q0	DOWN	Non-quiet. Result codes are sent to your terminal screen.
4	E1	UP	Modem will echo characters while in the local command state (that is, on hook).
	E0	DOWN	Modem will not echo characters unless half duplex is selected and the modem is on-line.
5	S0=1	UP	Modem will automatically answer incoming calls on the first ring unless changed by the S command.
	S0=0	DOWN	Modem will not answer phone if it rings.
6	NONE	UP	In on-line mode, this setting enables the computer connected to the modem to determine if a carrier signal is coming from a distant modem by reading the status of the RS-232C carrier detect lead.
		DOWN	Forces the computer to accept locally echoed characters and result codes from the modem. The RS-232C Carrier Detect lead will be logic TRUE at all times, even if no carrier is being received.
7	NONE	UP	Required setting for use with single-line phone installations connected to an RJ11 jack.
		DOWN	Setting with multi-line key set installations connected to an RJ12 or RJ13 phone jack. This setting will make the lamp on the phone light when the Smartmodem picks up the phone.
8	----	EITHER	Switch not used.
9	NONE	UP	Bell 212A, 103
		DOWN	CCITT V.22
10	NONE	UP	Hangs up and goes to command state.
		DOWN	Modem resets.

### 3.11 AUTOMATION COMPUTER CONNECTION

The computer port connects the 9000 to an automation computer. Either a 25-pin or a 9-pin cable can be used. The diagrams below describe the cable.



**FIGURE 3.11-A: 25-PIN CABLE CONNECTION**



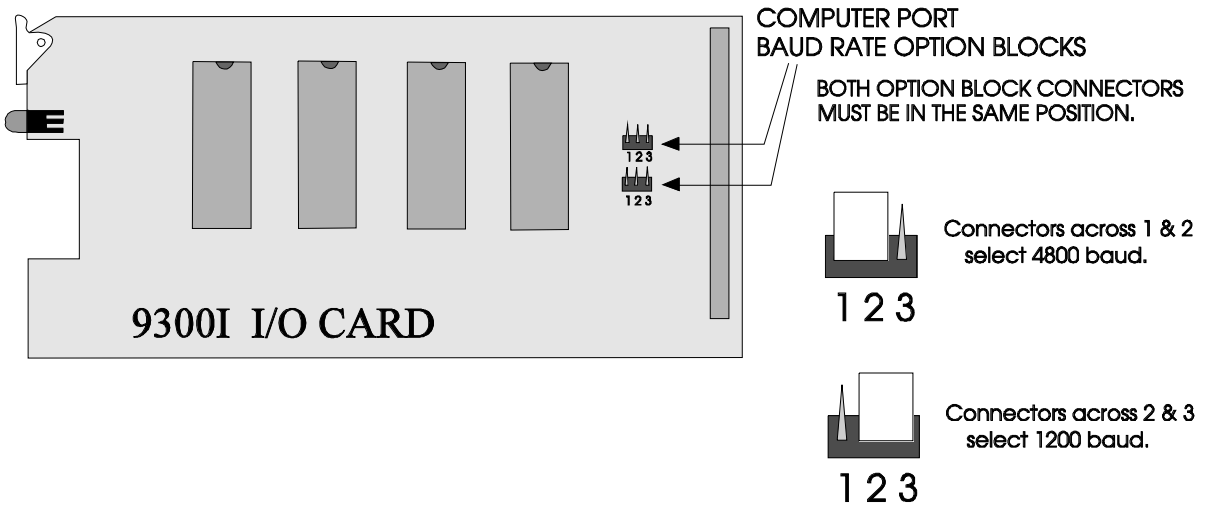
**FIGURE 3.11-B: 9-PIN CABLE CONNECTION**

### 3.11.1 COMPUTER PORT BAUD RATE SELECTION

If you are using a Revision I (or later) 9300 I/O card, you can select the baud rate for the computer port as 1200 or 4800 by changing the position of the option block connectors. If you are using a Revision H or earlier 9300 I/O card, the computer port baud rate is 1200. The chart and diagram below show you how to select the baud rate.

	<b>PORT B With pre Rev. H 9300 card</b>	<b>PORT B With Rev. I or later 9300 card</b>
Baud Rate	1200	4800 when 9300 option block connectors are in positions 1 and 2. 1200 when 9300 option block connectors are in positions 2 and 3.
Bits per Character	8	8
Parity	None	None
# of Stop Bits	1	1

NOTE: The 9300 card is set for 1200 baud at the factory.



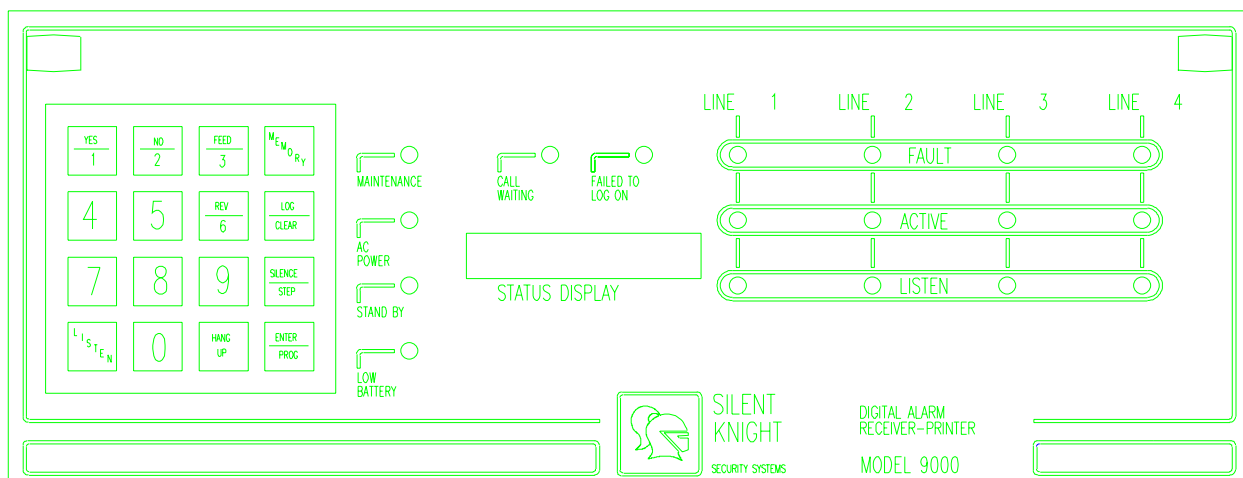
**FIGURE 3.11-A: CHANGING BAUD RATE THROUGH 9300 REV. I CARD**

## SECTION 4. NORMAL OPERATIONS

### 4.1. TOUCHPAD FUNCTION BUTTONS

The front panel of the 9000 is shown in Figure 4.1A on the next page.

KEY	NORMAL MODE FUNCTION	PROGRAMMING MODE FUNCTION
[0]	Selects the digit 0.	Same as normal mode.
[1/YES]	Selects the digit 1.	Respond "Yes" to a programmable selection or selects digit "1", depending on prompt.
[2/NO]	Selects the digit 2.	Respond "No" to a programmable selection or selects digit "2", depending on prompt.
[3/FEED]	Feeds the paper or selects the digit "3", depending on prompt.	Selects digit "3".
[4]	Displays the date and time or selects digit "4", depending on prompt.	Selects the digit 4.
[5]	In conjunction with the [MEMORY] key, displays the most recent "old" calls or selects digit "5", depending on prompt.	Selects the digit 5.
[6/REV]	Reverses the paper and selects the digit 6.	Selects digit "6."
[7], [8], [9]	Selects the digits 7, 8, 9.	Same as normal mode.
[MEMORY]	Reviews old calls.	Same as normal mode.
[LOG/CLEAR]	Requests log on prompt.	Logs on/off the system. Also used to clear incorrect entries.
[SILENCE/STEP]	Silences alert tones that indicate an incoming call or a trouble condition.	Used to move to a specific location. Also clears trouble conditions.
[ENTER/PROG]	Enters hang up and listen-in commands.	Enter information and step through the programming options.
[HANG UP]	Use to manually hang up phone line while listen-in is in progress (that is, to hang up before timeout occurs).	None
[LISTEN]	Enables the listen-in feature.	None



**FIGURE 4.1-A: MODEL 9000 FRONT PANEL**

## 4.2. LED DISPLAYS

LED	MEANING
<b>MAINTENANCE:</b>	This LED will turn on when the printer is removed from its housing.
<b>AC POWER:</b>	This LED will be on as long as AC power is applied to the receiver. It will turn off whenever AC power is off.
<b>STAND BY:</b>	This LED will come on when AC power is interrupted or lost, indicating that the receiver is operating from the stand-by battery power supply.
<b>LOW BATTERY:</b>	When the 9000 receiver is operating on DC battery power, this LED will turn on when the battery voltage drops below a predetermined value (10.2 VDC). The light will remain on until the battery is recharged or until AC power is restored.
<b>CALL WAITING:</b>	This LED will turn on when there is a new event waiting to be displayed. An alert tone will be heard if it is selected during the programming procedure. You can use the <b>MEMORY</b> key and the call waiting LED indicator to acknowledge the most recent call.
<b>FAILED TO LOG ON:</b>	This LED will turn on when an operator has failed to enter his or her log-on code.
<b>FAULT:</b>	Each line card has a red fault LED. If a faulty phone line is detected at the line card, the fault LED will come on. This indicates which telephone line has the problem. The light will remain on until the line problem has been corrected.  A delay is built into the line fault detection circuit. This delay eliminates most false line fault indications.

(table continued on next page)

(continued at previous page)

LED	MEANING
ACTIVE:	Each line card has a green active LED. When the active LED comes on, a call is in process on the specific line card. It will turn off when the line card hangs up.
LISTEN:	Each line card has a yellow listen LED. When the listen LED turns on, the account code currently being processed has been programmed for the listen-in feature. The length of the listen-in time is programmable. When the listen LED begins to flash, the operator has 10 seconds to extend the listen-in time by pressing <input type="button" value="LISTEN"/> <input type="button" value="ENTER"/> . If the operator does not extend the listen-in time, the line card will automatically hang up.

### 4.3. LCD STATUS DISPLAY

---

The status display is a backlit LCD that shows the various alarm and function messages. It functions both in normal mode and in the programming mode.

As the 9000 acknowledges calls and messages, it updates the calls on the LCD and silences the alert tone. The LCD displays alarms as shown below. "NEW" displays at the start of calls that have just come in and "OLD" displays at the start of calls in memory.

```
NEW L.C.# ACCT#  
ALARM CODE
```

```
OLD L.C.# ACCT#  
ALARM CODE
```

### 4.4. SYSTEM POWER UP

---

Apply power to the 9000. When the 9000 powers up, it immediately enters programming mode at step 0. To enter normal operating mode, move to step 15 by pressing     . (If you want programming options to print, move to step 16 instead of step 15 by pressing     .)

If no error message(s) displays, the system is ready for operator log on.

## 4.5. LOG ON/LOG OFF

---

Persons operating the 9000 must log on and off the system. This is a way of keeping track of whom is operating the system at any given time.

You can program a total of 12 codes, but Code 1 is the "master system code" that can only be used for programming and maintenance. Codes 2 through 12 are referred to as "operator codes." Operator codes can be assigned to system operators for performing basic operation of the 9000. **You must have at least two log-on codes—one for programming and maintenance and one for normal operations—in order to operate the 9000.**

If the system is in programming or maintenance mode, an operator must log on with an operator code (codes 2-12) in order to enter normal operation mode.

**To log on the system,** if the LCD is displaying "OPERATOR LOG ON", enter a valid code and press . If the LCD is displaying a different message, press , then a valid code. If the internal printer has been selected, it will print the number of the log-on code used. For instance, if the second log-on code programmed was "1234," using this code to log on will cause the printer to print "LOG ON 2".

**To log off the system,** press . The LCD should now display "OPERATOR LOG OFF." Enter your operator code, then press .



## 4.6. LISTEN/HANG UP

---

**To listen**, press **LISTEN**, then the line card number, then **ENTER**. This will keep the call on-line for the programmed amount of time. The listen light will begin blinking 10 seconds before the 9000 hangs up automatically. To prevent automatic hang up, press **LISTEN**, then the line card number, then **ENTER**.

If you're using a 9032 line card, you can listen in directly from the RJ-11 jack on the front of the line card (that is, without having to press **LISTEN** + the line card number + **ENTER**).

**To hang up** before the listen-in time expires, press **HANG UP**, then the line card number, then **ENTER**.

If the call waiting light turns on while you are listening, the alert tone will sound. Press the **MEMORY** key as many times as necessary to view all new calls that have come in. When you have viewed them all, the call waiting LED will turn off automatically. The display will show the alarm and the alert tone will be silenced.

**NOTE:** If the 9000 is receiving a message in SIA format with listen-in from Silent Knight alarm panel (models 2820, 4720, 4724, 4734), and a new alarm or message is generated on the panel side during the listen-in time, the panel will hang up so that it can report the event while the 9000 is still listening. In this situation, the operator must hang up the 9000 manually to prevent the line from remaining blocked during the listen-in period. If no new alarm is generated on the panel during the listen-in time, both the panel and the 9000 will automatically hang up when the listen-in time expires.

#### 4.7. REVIEWING CALLS IN MEMORY

---

The most recent calls are available for you to view. When the memory is full, the oldest calls are deleted to make room for new calls. (The number of calls stored in memory is approximately 100, depending on the size of the call data.)

**To review old calls,** press **MEMORY**. Calls display one at a time starting with the most recent. To return to the most recent call at any time, press **5 MEMORY**. (Note that if a call is waiting to be processed, pressing **MEMORY** will display the waiting call. See below.)

**To review waiting calls,** that is, calls that come in while another call is being processed, press **MEMORY** to display the waiting call. A new call will display the word "NEW" before it begins.

**Calls that come in while the receiver is in programming or maintenance mode,** can be displayed or printed after you return to normal operations. Press **MEMORY** to display calls; restore the printer to normal to print calls.

#### 4.8. ADJUSTING LCD CONTRAST

---

The LCD contrast can be changed if necessary. This may become desirable, for example, if the brightness of the room or location in which the 9000 is installed should change.

To change the LCD brightness, follow the steps below:

1. Open the front panel of the 9000 by squeezing the two latch releases located in the upper corners of the panel. Gently lower the door until it is fully open.
2. Adjust the potentiometer on the printed circuit board (located to the immediate left of the first line card). Turn the potentiometer clockwise for a brighter display and counter-clockwise to make the display dimmer. (Refer to figure 3.2A in section 3.2 for location of the potentiometer.)

Making the LCD too bright will cause it to be unreadable and will shorten the lifespan of the LCD.

## 4.9. PRINTER PAPER REPLACEMENT

---

**RECOMMENDED PRINTER PAPER:** SEIKO thermal print paper ATP-201-21125. This type of paper is available from Silent Knight (model number 5257). Using any other type of paper may cause the print head to wear out prematurely.

As the printer paper approaches the end of the roll, a red line will appear on the edge of the paper. Replace the paper roll when this line becomes visible or when "NO PAPER" displays on the LCD.

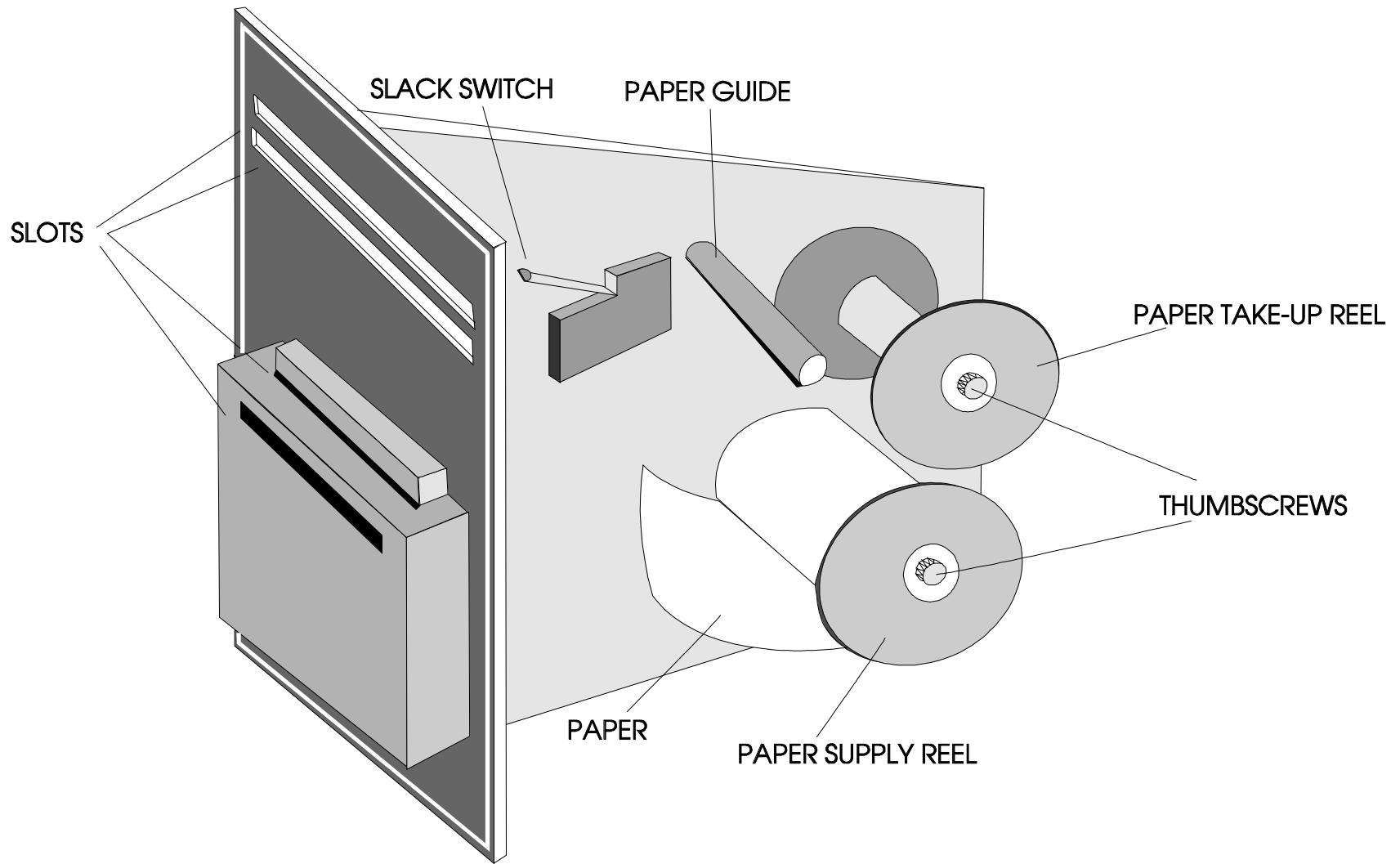
Calls that come in during the paper change procedure will be stored in the 9000's buffer memory. These calls will be printed as soon as the paper has been replaced. The date and time printed for the call records the actual time the call was received.

The steps for changing the paper appear below. Figure 4.9-A shows the locations of the parts of the on-board printer that are used when reloading paper. Figure 4.9-B shows the path of the printer paper.

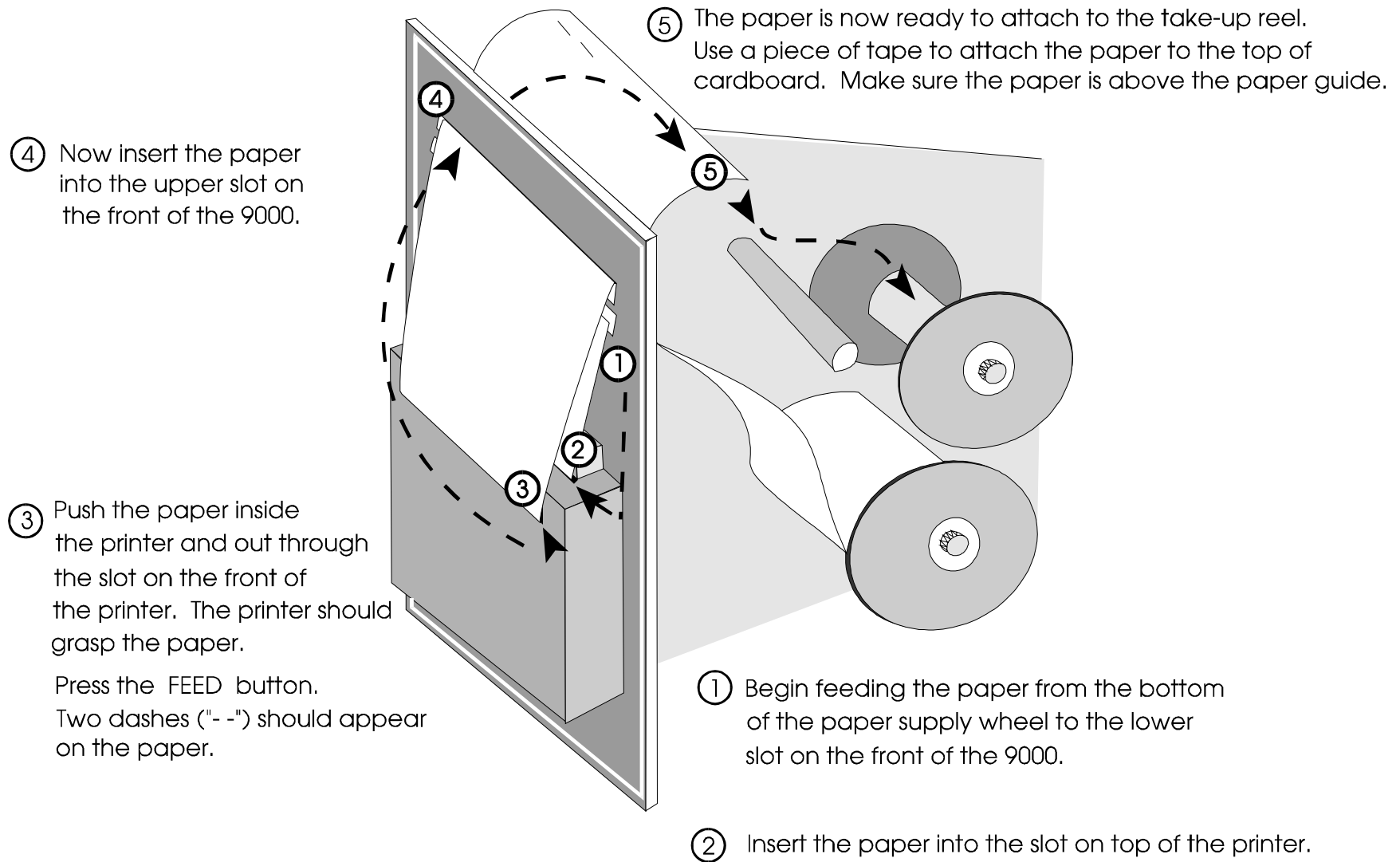
1. Squeeze the two releases underneath the printer and pull the printer out. Unscrew the thumbscrews from the top and bottom paper holders. Make sure the 9600 card behind the printer housing does not slide loose from the connector on the 9000 back panel.
2. Remove the message paper roll from the top paper holder. Then move the empty cardboard cylinder from the bottom paper holder to the top paper holder.
3. Make sure the paper is straight, then mount the new paper roll onto the paper supply reel (lower reel). Fasten both thumbscrews. Pull the end of the paper through the lower paper slot.
4. Feed the paper through the paper path as shown in figure 4.9-B.
5. When you've finished feeding the paper, push the printer module back into its slot. It is very important that both the top and bottom edges of the printer housing are lined up in their guides. Slide the housing carefully into the receiver. It is now ready. Messages that were received during the paper change procedure will be printed.

### PROBLEMS THAT COULD OCCUR DURING PAPER INSTALLATION

- If the printer does not grasp the paper when you push it into the slot on the on-board printer, the printer paper edge may be torn or uneven. If this is the case, correct the problem and reinstall the paper.
- If the two dashes do not print after you press **FEED**, the paper roll has been put in backwards. Remove the paper and reinsert it correctly.



**FIGURE 4.9-A: ON-BOARD PRINTER READY FOR PAPER RELOAD**



**FIGURE 4.9-B: ON-BOARD PRINTER PAPER PATH**

## 4.10. TESTING THE SYSTEM

---

### **IMPORTANT:**

The 9000 should be tested regularly to ensure complete and proper operation.

Because there are so many variations in dialer parameters and phone line conditions, the only way to be absolutely certain that all subscribers can communicate with the 9000 is to test every subscriber's dialer individually. Subscribers must test their communicators every 30 days to make sure the 9000 receives the information.

When you install a new 9000, test every manufacturers' panels for each format. This is necessary because different manufacturers' panels may operate differently even if all panels use the same format.

At the end of each day, call each line card from your phone. Make sure each line card answers and hangs up and that the 9000's on-board printer prints out "NO DATA".

---

## **SECTION 5. PROGRAMMING**

---

### **5.1. ENTERING/EXITING PROGRAMMING MODE**

---

Before you begin programming, make sure that AC power is present. When the 9000 powers up, it automatically enters programming mode at step 0. To move to other options, press **[STEP]** plus the number of the option plus **[ENTER]**. (The option numbers and descriptions of options appear in this section.) If you are already in normal operation mode and want to go into programming mode, log off the system with your operator code and enter your master access code.

The receiver continues to receive even in programming mode. As you come out of programming mode, make sure there is not a trouble message for any of the line cards. If one line card is receiving a message while you leave programming mode, the 9000 will display a trouble message. If this happens, enter the main access code to return to programming mode. When the line card has finished receiving the message, use the **[STEP]** key to step out of programming mode. Make sure that the trouble message has disappeared. If it doesn't disappear, repeat this procedure.

To leave programming mode at any point, use the **[STEP]** key to go to Step 15 or 16. Do this by pressing **[STEP]**, then the step number, then **[ENTER]**.

## 5.2. PROGRAMMING STEPS

The printer does not always print out programming options exactly the same as the LCD. The table in section 7.5 cross-references printer and LCD messages.

**TABLE 5.2-A: PROGRAMMING STEPS**

STEP #	OPTION NAME	DESCRIPTION
0	<b>PRINTER ALWAYS PRINTS Y/N?</b>	Select Yes to enable the 9000's built-in printer.
1	<b>LC ADDED TO ACCT # Y/N?</b>	This step refers to the actual printed message. You can choose to print the client's account number and the line card number on the same line or on separate lines. This option was designed as a paper-saving feature. If Yes is selected, both numbers will be on the same line separated by a dash (-).
2	<b>ALERT TONE Y/N?</b>	Selecting Yes here causes the alert tone to sound when a trouble condition exists and when calls are coming in. The relay contacts on the back of the 9000 will also close when this happens.
3	<b>CONNECTION ON CENTRONICS Y/N?</b>	If you are using an external parallel printer, select Yes for this option.
4	<b>COMPUTER OPTION Y/N?</b>	Select Yes to allow communication with a computer.
5	<b>MODEM OPTION Y/N?</b>	If you wish to send data to an external dumb terminal in a different location over a telephone line, select Yes.
	<b>TOUCH TONE DIAL Y/N?</b>	Select Yes to enable TouchTone dialing at the modem port. This option appears only if "Yes" is selected for the Modem Option.
	<b>PHONE #</b>	Enter the telephone number (up to 15 digits) that the modem should call (option displays only if a modem was selected).
6	<b>NUMBER OF L.C.</b>	Enter the number of line cards (1-12) that will be used on your system.
	<b>DIALER FORMAT LC#</b>	Select the dialer formats for each line card. Formats are 0 through 7. (See section 1.3 or 7.1 for information about which formats are compatible with which line cards.) Record line card options in Table 5.3-II.
	<b>ACKNOWLEDGEMENT TIME LC#</b>	Use this option to program the duration of the acknowledgement tone that the line card sends when a call comes in. The options are 0 (.75 seconds) through 9 (5 seconds). 0 = 0.75 seconds 1 = 1 second 2 = 1.5 seconds 3 = 2 seconds 4 = 2.5 seconds 5 = 3 seconds 6 = 3.5 seconds 7 = 4 seconds 8 = 4.5 seconds 9 = 5 seconds
	<b>2300 ACKNOWLEDGEMENT FIRST LC#</b>	If Yes is selected, the first acknowledgment tone is a 2300 Hz tone. If the 2300 Hz tone is not acknowledged, a second tone at 1400 Hz follows.

(continued on next page)

**Table 5.2-A (continued)**

<b>STEP #</b>	<b>OPTION NAME</b>	<b>DESCRIPTION</b>
6 (cont.)	<b>FAST INTERGROUP TIME Y/N?</b>	<p>The waiting time between groups of data (first and second event) is called INTERGROUP TIME. Most dialers have an intergroup time of three to five seconds. Some dialers require more than five seconds of intergroup time.</p> <p>The Fast Intergroup Time feature can save approximately five seconds between each event.</p> <p>If all dialers in your installation have the 3 to 5 second intergroup time, you can use the fast intergroup feature without any special procedures.</p> <p>If your installation has a mixture of dialers that use 3 to 5 seconds and dialers that require more than 5 seconds, you can still use the fast intergroup feature; however, the dialers that require longer times should call the central station once for each event, instead of sending all the data in one call.</p>
	<b>LISTEN-IN ACCOUNT Y/N?</b>	Select Yes to enable the listen-in feature.
	<b>LISTEN-IN ACCOUNT STARTS AT</b>	Enter the number of the first listen-in account. (This option displays only if you enable listen-in.)
	<b>LISTEN-IN ACCOUNT ENDS AT</b>	Enter the number of the last listen-in account. (This option displays only if you enable listen-in.)
		<b>NOTE:</b> When you enter account numbers that start with zero (such as account # 0123), omit the zero (enter "123" instead). For example, if you wish to listen to accounts 0123 through 0200, you should enter "123" for the starting number and "200" for the ending number.
	<b>LISTEN-IN TIME L.C.#</b>	Use this option to program the duration of listen-in. The range is 20 - 255 seconds. (This option displays only if you enable listen-in.)
	<b>DELAY BEFORE HANDSHAKE</b>	<p>This option displays instead of Select Acknowledgement Time if you selected option 2 (SIA FSK) for dialer format. Use this option to program the duration of the delay before handshake. The options are:</p> <p>1 = 0.5 seconds                  2 = 1 second                  3 = 1.5 seconds                  4 = 2 seconds</p>
7	<b>HOW MANY LOG-ON CODES? (2-12)</b>	Enter the number of log-on codes that will be programmed to access the system. You can program up to 12 log-on codes which allow operators to log on or off the system. Code 1, the main access code, is the only code that can put the system into programming or maintenance mode. <b>It cannot</b> be used to log on or off the system. To log on or off in normal mode (that is, not in programming mode), enter a code other than Code 1.
	<b>VALID LOG ON CODE #</b>	Program the log-on codes (1-5 digits).

**table continued on next page**



**Table 5.2-A (continued)**

STEP #	OPTION NAME	DESCRIPTION
8	<b>PROGRAM L.C.# Y/N?</b>	<p>In step 8 you can choose to have line card IDs tied to operator IDs to create unique IDs for the line cards. This option is useful for installations that have more than one 9000 and want a way of assigning unique IDs to each line card. This would be a way to avoid the confusion of, for example, two different Line Card #1s (from different 9000s) receiving reports at the same time.</p> <p>If you select Yes for this option, the system will assign line card numbers. The first two digits of the first operating code will determine the line card number for line card number 1, the first two digits of the second operating code will determine the line card number for line card number 2, and so on.</p> <p><b>EXAMPLE:</b> If the first operating code is 12345, then Line Card #1 will become Line Card #12. If the second operating code is 4432, then Line Card #2 will become Line Card #44 and so on.</p> <p><b>NOTES:</b> If you use this option, the first two digits of all log-on codes must be unique.</p> <p>If you are using 12 line cards but not 12 operator codes, the extra cards will have the original line card numbers. For example if you select this option and are using only two operating codes, then line cards 3 through 12 will be reported as line cards 3 through 12.</p>
9	<b>DEALER ID#</b>	This option is for Westec dealers only. Used with Westec 600 and Westec Touch-Tone formats on 9032W, 9032 and (obsolete) 9002 line cards.
10	<b>MONTH</b>	Enter the current month.
11	<b>DAY</b>	Enter the current day.
12	<b>YEAR</b>	Enter the last two digits of the current year.
13	<b>HOUR</b>	The hour clock is in 24 hour (military) time. For example, to set the time for 2:00 PM, enter "14".
14	<b>MINUTE</b>	Enter the current minute.
15		Takes you out of programming mode and prompts you to log on. (Options do not print.)
16		Takes you out of programming mode and prompts you to log on. If you selected the printer option or if you have an external printer, the options will print.

### 5.3. YOUR PROGRAMMING SELECTIONS

---

Use the tables in this section to record your programming selections.

**TABLE 5.3-A: SYSTEM OPTIONS**

<b>SYSTEM OPTIONS</b>	<b>DEFAULT</b>	<b>YOUR SELECTION</b>
PRINTER ALWAYS PRINTS	No	
ADD LC TO ACCT #	No	
ALERT TONE	No	
CONNECTION ON CENTRONICS	No	
COMPUTER OPTION	Yes	
MODEM OPTION	1	
TOUCH TONE DIAL	No	
PHONE NUMBER	1111111111111111	
NUMBER OF L.C. (Record line card options in Table 5.3-B.)	12	
HOW MANY LOG ON CODES? (Record log-on codes in Table 5.3-C.)	12	
PROGRAM L.C. #	No	
DEALER ID#	111	
MONTH	11	
DAY	11	
YEAR	11	
HOUR	11	
MINUTE	11	

**TABLE 5.3-B: LINE CARD OPTIONS**

Note that the table below lists all possible line card options, though not all options are available for each format.

OPTION	DEFAULT	LINE CARD NUMBER					
		1	2	3	4	5	6
DIALER FORMAT L.C.#--	1						
ACK. TIME L.C.#--	1						
ACK 2300 FIRST Y/N?	N						
FAST INTERGROUP TIME Y/N	N						
LISTEN-IN ACC. Y/N?	Y						
LISTEN-IN ACC. STARTS AT	111111						
LISTEN-IN ACC. ENDS AT	111111						
LISTEN-IN TIME--	111111						
DELAY BEFORE HANDSHAKE	1						

OPTION	DEFAULT	LINE CARD NUMBER					
		7	8	9	10	11	12
DIALER FORMAT L.C.#--	1						
ACK. TIME L.C.#--	1						
ACK 2300 FIRST Y/N?	N						
FAST INTERGROUP TIME Y/N	N						
LISTEN-IN ACC. Y/N?	Y						
LISTEN-IN ACC. STARTS AT	111111						
LISTEN-IN ACC. ENDS AT	111111						
LISTEN-IN TIME	111111						
DELAY BEFORE HANDSHAKE	1						

**TABLE 5.3-C: LOG ON CODES**

CODE #	CODE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

## SECTION 6. TROUBLESHOOTING

### 6.1. ERROR MESSAGES

MESSAGE	WHAT IT MEANS
BAD DATA	The 9000 has received data in a format it does not recognize; or, the telephone lines are noisy.
BATTERY RESTORE	This message will appear after the AC power has been restored and the battery has had time to recharge. It will also occur if a new battery is inserted after a battery lost message.
BATTERY TROUBLE	The battery does not have sufficient power to operate the system. This message appears when the battery charge is becoming too low (below 10.2 VDC).
COMPUTER RESTORE	This message appears after the computer link trouble has been corrected.
COMPUTER TROUBLE	The 9000 cannot properly communicate with the computer. If this message appears, check to determine if the RS-232 port has been set up correctly and that the cables are wired correctly.
EXTERNAL DEVICE PROBLEM	A device that has been enabled is not connected to the 9000. This situation can slow down call processing time.
HELP HELP	This message will display when the alarm code transmitted was not recognized by the 9000, even though the format was recognized.
LINE CARD TROUBLE (#)	The specified line card has a trouble condition. The conditions that can cause this message include: <ul style="list-style-type: none"> <li>• The line card is missing from its slot.</li> <li>• There is a bad connection between the line card and the 9000. Try removing and reinserting the line card. This may eliminate the problem.</li> <li>• An electrical malfunction has developed on one of the printed circuit boards.</li> <li>• The line card is busy processing a call when the operator comes out of programming mode.</li> </ul>
LINE FAULT	The telephone line has developed a malfunction.
LINE RESTORE	The telephone line malfunction has been corrected.
NO DATA or DATA LOST	One of the following conditions has occurred: The 9000 receiver answered the telephone line but no data was received; an incompatible format was received; or the telephone lines were noisy. ("NO DATA" is also the normal message displayed after a system test.)
SIO TROUBLE	The hardware path between the microcontroller and the connector to the automation computer may have a problem.
SYSTEM AC LOST	AC power has been lost. The 9000 receiver is running on its backup battery power supply.
SYSTEM AC RESTORE	The 9000 receiver is once again operating on AC power. The backup battery is being recharged.

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MESSAGE	WHAT IT MEANS
TOUCHPAD PROBLEM	There is a malfunction in a touchpad key(s).
UNDEF CODE	The 9000 accepted the format that was transmitted, but the alarm code was not recognized by the system.
9001 TROUBLE	A malfunction may have occurred in the 9001. This message will appear if the cable between the 9000 and the 9001 has been removed.

## 6.2. TROUBLESHOOTING TECHNIQUES

SYMPTOM	POSSIBLE REASONS/SOLUTIONS
A line card's red and yellow LEDs alternate between on and off.	The line card is not selected. (Line cards must be enabled through programming step 6.)
A line card's green (active) LED is not on steadily when it should be, for example, when a transmitter calls in.	The line card is not answering the call. The most likely cause is that the 9000 is in maintenance mode. This will happen if: the printer is out of paper; the printer card is not properly inserted into its slot; or the buffer is full because of an external device problem.
"NO DATA", "DATA LOST", or "BAD DATA" messages display.	When these messages display, the 9000 is not interpreting data properly. Common causes for this problem are: 1) a line card that is improperly programmed for a format it cannot handle; 2) noise problems on the telephone line.  If the 9000 receives data, the print-out will have an arrow pointing to the bad data. This information can help you determine which transmitter has the problem.  ("NO DATA" is also the normal message displayed after a system test.)
Line feed does not work properly on an external printer.	The printer's auto feed DIP switch probably needs to be turned on. Refer to your printer manual for the location of the switch.
Letters cut off on the first line of a print-out from the on-board printer.	The slack switch under the paper needs adjustment. Move the slack switch up until the first line prints properly. (See figure 4.9A in section 4.9 for the location of this switch.)
Alert tone sounds when you are not in programming mode.	Refer to the trouble message indicated on the LCD.
In an automated central station where a printer (either on-board or external) has been selected to act as a backup to the computer, the printer will automatically start printing information when the computer does not respond. The "COMPUTER TROUBLE" message goes into the buffer and appears later at the computer or on the printer. The situations shown in the right column can cause the printer to function as a backup to the computer.	The computer is busy and is not accepting data from the 9000. This is a normal situation.  The computer does not recognize the information the 9000 is generating.  The cable between the 9000 and the computer has been disconnected or interrupted.

## SECTION 7.

### REPORTING FORMATS

#### 7.1. REPORTING FORMATS COMPATIBLE WITH THE 9000

Table 7.1-A below describes in detail the formats that can be used with the 9000 and the companies and/or panels that use the formats. While we have tried to provide as much information as possible about other manufacturers' products, this list should not be considered complete. You should always test a panel, following the procedure described in section 4.10, to make sure that it is compatible with the 9000.

Note that in the "Transmitters" column below, manufacturers' names appear in bold. When a specific series or model is listed next to a manufacturer, the series or model has been tested for compatibility. If a manufacturer only is listed, then some of the manufacturer's models are compatible with the 9000, but we do not have specific information.

**TABLE 7.1-A: FORMATS COMPATIBLE WITH THE MODEL 9000**

FORMAT	DESCRIPTION	CARD #/ FORMAT #	TRANSMITTERS
SK 3/1 Tone Burst	Produces a 3-digit account and a 1-digit alarm code (0-9 only). A valid message is 2 groups/rounds. Maximum of 4 groups/rounds before redialing. (This is an old format.)	9032 / 6 9002 / 0	<b>SK</b> 1420, 2730, 5104, 5205
SK 4/1 FSK (FSK0) (FSK80)	Produces a 4-digit account and a 1-digit alarm code (0-9 only). This is a high-speed single round format using frequency shift keying for transmission.	9032 / 6 9002 / 0	<b>SK</b> 1400, 2730
SK 4+2	Produces a 4-digit account and a 2-digit alarm code in a tone burst/pulse format. Each digit can be programmed from (0-F) hex on Napco and FBI panels. Because there is no standard in hex, it is advisable to follow the table in the 4720 manual (P/N 150476) as a reference. This allows English translation by the 9000 (20 pps).	9032 / 6 9002 / 0	<b>SK</b> 1420, 2605, 2730, 2820, 4720, 5104, 5107, 5205, 5207 <b>Napco</b> Mag Alert series <b>FBI</b> Legend series
Sescoa 3/1 Tone Burst Franklin 3/1 Tone Burst	Produces a 3-digit account and a 1-digit alarm code in a tone burst format. Each digit can be programmed from (0-9). Because there is no standard, this format reports in codes only. A valid message is 2 groups/rounds. Maximum of 4 groups/rounds before redialing.	9032 / 6 9002 / 0	<b>SK</b> 1400, 1420, 2730, 5104, 5205 <b>Franklin</b> <b>Napco</b> Mag Alert <b>Sescoa</b>

(table continued on next page)

**Table 7.1-A continued**

<b>FORMAT</b>	<b>DESCRIPTION</b>	<b>CARD #/ FORMAT #</b>	<b>TRANSMITTERS</b>
Radionics Hex	Produces a 3-digit account and a 1-digit alarm code in a double round pulse format (10-40pps). Only the troubles, restores, and open/closing reports are extended using (B-F) in hex. All others are reported as (0-9). (Old format.)	9032 / 6 9002 / 0	<b>SK 5107</b> <b>Moose</b> <b>Radionics</b>
Silent Knight FSK1 (FSK81)	Produces a 4-digit account and a 2-digit alarm code in one call. The dialer can report up to 8 events, then must hang up and call back to complete full report. It transmits (00-99) which can be translated into English by using the table in the 4720 manual (P/N 150476). (Same codes as 4+2.)	9032 / 6 9002 / 0	<b>SK 1420, 2605, 2730, 2820, 4720, 5205, 5207</b>
Silent Knight FSK2 (FSK86)	Produces a 6-digit account and a 4-digit alarm code in one call. The dialer can send up to 8 events in one call. It transmits (0000-99FF) (first two bytes are only valid in decimal values). Use the table in the 4720 manual (P/N 150476) to convert to English. (Same codes as SIA.)	9032 / 6 9002 / 0	<b>SK 2605, 2820, 4720, 5205, 5207</b>
Extended 3/1 formats	Produces a 3-digit account and a 1-digit alarm code in a double round pulse format (10-40pps). Each block of data (2 rounds), must be followed by a repeat of the account number. The second block of data will contain the extended information. This provides two rows of information on the 9000 which can be interpreted as a 2-digit alarm code. The account number cannot have repetitive digits (333, 888, etc.). They will produce a false printout on the 9000 and automation computer.	9032 / 6 9002 / 0	<b>SK 5240 series</b> <b>FBI Legend series, 4600</b> <b>Napco Mag Alert series</b>
Extended 4/1 formats (Requires custom software #9330.)  Radionics with Checksum will no longer function with this software.	Produces a 4-digit and a 1-digit alarm code in a double round pulse format (10-40pps). The format requires the same parameters of data as 3/1 and will print out the same, with exception of the number digits in the account number.	9032 / 6 9002 / 0	<b>C&amp;K</b> <b>Napco Mag Alert series (and others)</b> <b>FBI Legend series (and others)</b> <b>Sescoa</b>
Radionics with Checksum (also called "3/1 Partially Extended" by other manufacturers)	Produces a 3-digit account and a 1-digit alarm code in a single-round pulse format (40pps). The format uses a checksum value to verify data, eliminating the need for a second round. O/C, troubles, and restores are extended.	9032 / 6	<b>C&amp;K</b> <b>Napco Mag Alert series (and others)</b> <b>FBI Legend series (and others)</b> <b>Sescoa</b>

(continued on the next page)

**Table 7.1-A continued**

<b>FORMAT</b>	<b>DESCRIPTION</b>	<b>CARD #/ FORMAT #</b>	<b>TRANSMITTERS</b>
Radionics BFSK	Produces a 3-digit account and English status information using binary frequency shift key transmission. There is a separate round for each message, which is to be followed by an ack tone. Can process up to 6 rounds of data in one call.	9032 / 6	<b>SK</b> 2605, 2750, 2820, 4720, 5104, 5205, 5207 <b>FBI</b> Legend series (and others)
Ademco TouchTone	Produces a 4-digit account. Multi-zone status is represented in one call in a single row of digits, representing zones. The information is transmitted using DTMF in a single transmission.	9032 / 6	<b>Ademco</b>
Acron TouchTone (slow only)	Produces a 3-digit account. Multi-zone status is represented in one call in a single row of digits, representing zones. The information is transmitted using DTMF in a single transmission.	9032 / 6	<b>Acron</b>
Sescoa Superspeed (rev. E or greater)	Produces a 4-digit account and a 3-digit alarm code using a single-round pulse format (40 pps). The data is decoded into English account information. A 2300Hz ack tone must be selected on the 9000 to assure proper operation.	9032 / 6	<b>Sescoa</b>
Westec TouchTone (9032W)	Produces a 4-digit account number with a 2-digit alarm code in English accompanied with a binary matrix which can be decoded by the user to inform of account status. It uses touch tone frequencies to transmit data. (Requires a customized 9032.)	9032W / 5	<b>Westec</b> 1000, 2000, 3000 (and others)
SIA 8 & 20	Produces a 6-digit account number with English alarm codes, using frequency shift key format. The data is verified using a checksum comparison procedure. SIA-8 can handle 8 events at a time. SIA-20 handles up to 20.	9004I / 2	<b>SK</b> 2605, 2820, 4720, 5104, 5205, 5207 <b>DT</b> 665, 670 <b>Caddx-Caddi</b> <b>Morse</b>
ITI SX, IVB, & V	Produces a 5-digit account code with a 2-digit alarm code in English using a 40-50pps double round pulse format.	9004I / 7	<b>ITI</b> SX, IVB, V



7.2. FORMAT 0/ENGLISH

2-DIGIT CODE IN FORMAT 0	9000 RECEIVER PRINT-OUT
00	PANIC ALARM
01	ALARM 01
02	ALARM 02
03	ALARM 03
04	ALARM 04
05	ALARM 05
06	ALARM 06
07	ALARM 07
08	ALARM 08
09	HOLD UP ALARM
10	ALARM 10
11	ALARM 11
12	ALARM 12
13	ALARM 13
14	ALARM 14
15	ALARM 15
16	ALARM 16
17	ALARM 17
18	ALARM 18
19	ALARM 19
20	ALARM RESTORE 10
21	ALARM RESTORE 11
22	ALARM RESTORE 12
23	ALARM RESTORE 13
24	ALARM RESTORE 14
25	ALARM RESTORE 15
26	ALARM RESTORE 16
27	ALARM RESTORE 17
28	ALARM RESTORE 18
29	ALARM RESTORE 19
30	TEST
31	PHONE TROUBLE 01
32	PHONE TROUBLE 02
33	EXPANSION TROUBLE
34	DOOR OPEN
35	PHONE RESTORE 01
36	PHONE RESTORE 02
37	EXPANSION RESTORE
38	CANCEL
39	DATA LOST
40	CLOSE ID 00
41	CLOSE ID 01
42	CLOSE ID 02
43	CLOSE ID 03
44	CLOSE ID 04
45	CLOSE ID 05
46	CLOSE ID 06
47	CLOSE ID 07
48	CLOSE ID 08
49	CLOSE ID 09

2-DIGIT CODE IN FORMAT 0	9000 RECEIVER PRINT-OUT
50	SHUNT 10
51	SHUNT 11
52	SHUNT 12
53	SHUNT 13
54	SHUNT 14
55	SHUNT 15
56	SHUNT 16
57	SHUNT 17
58	SHUNT 18
59	SHUNT 19
60	AC TROUBLE
61	TROUBLE 01
62	TROUBLE 02
63	TROUBLE 03
64	TROUBLE 04
65	TROUBLE 05
66	TROUBLE 06
67	TROUBLE 07
68	TROUBLE 08
69	LOW BATTERY
70	AC RESTORE
71	RESTORE 01
72	RESTORE 02
73	RESTORE 03
74	RESTORE 04
75	RESTORE 05
76	RESTORE 06
77	RESTORE 07
78	RESTORE 08
79	BATTERY RESTORE
80	DOOR ID 00
81	DOOR ID 01
82	DOOR ID 02
83	DOOR ID 03
84	DOOR ID 04
85	DOOR ID 05
86	DOOR ID 06
87	DOOR ID 07
88	DOOR ID 08
89	DOOR ID 09
90	OPEN ID 00
91	OPEN ID 01
92	OPEN ID 02
93	OPEN ID 03
94	OPEN ID 04
95	OPEN ID 05
96	OPEN ID 06
97	OPEN ID 07
98	OPEN ID 08
99	OPEN ID 09

### 7.3 SIA EVENT CODES

For most SIA event codes, the two letters that make up the code have a standard meaning. The meaning of the first letter of the code is shown in table 7.3-A. The meaning of the second letter of the code is shown in table 7.3-B. For example, suppose you have the event code “BA.” From Table 7.3-A, you can see that when “B” is the first letter of a code, it means “Burglary” and when “A” is the second letter of a code, it means “Alarm.”

CODE	MEANING
A	A.C.
B	BURGLARY
E	EXPANSION
F	FIRE
G	GAS
H	HOLDUP
K	HEAT
L	PHONE LINE
M	MEDICAL
P	PANIC
Q	EMERGENCY
S	SPRINKLER
T	TAMPER
U	UNDEFINED
V	SPECIAL
W	WATER
X	TRANSMITTER BATTERY
Z	COLD

CODE	MEANING
A	ALARM
B	SHUNTED
C	CANCEL
F	FORCE ARMED
G	STATUS
H	ALARM RESTORE
I	SUPERVISORY RESTORE
J	TROUBLE RESTORE
R	RESTORE
S	SUPERVISORY
T	TROUBLE
U	SHUNT RESTORE
V	ABORT
W	AUXILIARY
S	TEST
Z	HOLDUP

The letters C, D, O, R, and Y are reserved for codes that do not conform to the same conventions as other SIA event codes. Event codes beginning with these letters have individual meanings that are described in Table 7.3-D.

The 9000 also supports the following special codes that appear in Table 7.3-C below.

**TABLE 7.3-C: SPECIAL CODES**

CODE	DESCRIPTION
DA	TEMPERATURE
DB	AIR FLOW
DI	HUMIDITY
DM	FLUID LEVEL
DQ	NO AIR FLOW
DR	DOOR ID
RH	ARMED
RI	DISARMED
RJ	CLEAR
RK	UNARMED
RL	AUXILIARY RESTORE

Table 7.3-D beginning on the next page correlates SIA event codes to the ASCII codes sent by the 9000 to an automation computer. These are events that have been reported to the 9000 by a 4720/4724/4734 panel. The table shows how the event codes are reported depending on which dialer format and line card format are used. The table shows only the event code data from the 9000 output.

**EXAMPLE:**

Suppose the following event was reported:

Account number 3568 has a burglary alarm in zone 56 on 02-15-93 at 6:45 AM. The panel at the account uses the SIA dialer format. Line card number 5, programmed for line card format #2, is reporting.

The complete data transmission from the 9000 to the automation computer would be (in ASCII):

```
` 021593 " 0645 " 25 . 3568 " BA56 <checksum> <cr>
```

Table 7.3-D would show “BA#” where # is equal to the zone number (in this case “56”).

The following characters have special meaning in Table 7.3-D.

- # = Zone number (0-4 digits.)
- s = space
- y = a number, 0-9
- z = a number, 0-8

**NOTES:** The 4720/4724/4734 does not support all SIA event codes. Codes that are not supported have blank entries in the table.

In some cases the codes sent by the 4724 and the 4734 are slightly different. These differences are noted in Table 7.3-D.

Some versions of the 9000 may not support all codes listed in Table 7.3-D.

(The SIA event codes and descriptions in Table 7.3-D are reprinted from “Table 6: Event Block Data Code Definitions,” in *Digital Communication Standard, February 1993 Revision*, published by the Security Industry Association. Reprinted with permission of the Security Industry Association.)

**TABLE 7.3-D: SIA EVENT CODES AS SENT BY THE 9000 TO AN AUTOMATION COMPUTER**

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
AR	AC Restoral (4724)	AR#	AR#	ARs	ARs	70	sR0A
AR	AC Restoral (4734)	AR#	AR#	ARs	ARs	70	sR00
AT	AC Trouble (4724)	AT#	AT#	ATs	ATs	60	sT0A
AT	AC Trouble (4734)	AT#	AT#	ATs	ATs	60	sT00
BA	Burglary Alarm	BA#	BA#	sA1y	A1y	1y	sA0z
BB	Burglary Bypass	BB#	BB#	sB1y	B1y	5y	sT0z
BC	Burglary Cancel						
BH	Burglary Alarm Restore	BH#	BH#	sH1y	H1y	2y	sR0z
BJ	Burglary Trouble Restore	BJ#	BJ#	sH1l	H1l	2y	sR0z
BR	Burglary Restoral	BR#	BI#	sH1y	H1y	2y	sR0z
BS	Burglary Supervisory	BS#	BS#	T01	T01	6l	sT0z
BT	Burglary Trouble	BT#	BT#	sT01	sT01	6l	sT0z
BU	Burglary Unbypass	BU#	BU#	sH1y	H1y	2y	sR0z
BX	Burglary Test						
CA	Automatic Closing	CA#	CA#	CL00	CL00	40	CL00
CE	Closing Extend						
CF	Forced Closing	CF#	CF#			4y	
CG	Close Area (4724)	CG#	CG#	CL0y	CL0y	4z	sR09
CG	Close Area (4734)	CG#	CG#	CL0y	CL0y	4z	CL00
CI	Fail to Close						
CJ	Late Close						
CK	Early Close						
CL	Closing Report	CL#	CL#	CL0y	CL0y	4y	CL0y
CP	Automatic Closing						
CT	Late to Open (4724)	CT#	CT#	CL0y	CL0y	40	CL0y
CT	Late to Open (4734)	CT#	CT#	CL0y	CL0y	40	CL00
CW	Was Forced Armed	CW#	CW#				sF0y
CZ	Point Closing						
DC	Access Closed						
DD	Access Denied (4724)	DD#	DD#	sD00	sD00	30	sR09
DD	Access Denied (4734)	DD#	ES0#	sD00	sD00	39	sT0C
DF	Door Forced	DF#	DF#	DOs	DOs	34	sR09
DG	Access Granted	DG#	DG#	DR0y	DR0y	8y	sR09
DK	Access Lockout						
DO	Access Open	DO#	DO#	DOs	DOs	34	sR09
DR	Door Restore (4724)						
DR	Door Restore (4734)	DR#	DR#	DR00		39	sT0C
DS	Door Station	DS#	DS#	DR00	D00	80	sR09
DT	Access Trouble						
DU	Dealer ID						
ER	Expansion Restoral	ER#	ER#	ERs	ERs	37	sR0C
ET	Expansion Trouble	ET#	ET#	ETs	ETs	33	sT0C
FA	Fire Alarm	FA#	FA#	sA0y	sA0y	0y	sA0z

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**Table 7.3-D continued**

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
FB	Fire Bypass (4724)	FB#	FB#	sB10	sB00	50	sB0z
FB	Fire Bypass (4734)	FB#	FB#	sB10	sB00	50	sT0z
FH	Fire Alarm Restore	FH#	FH#	sR0y	sR0y	7y	sR0z
FI	Fire Test Begin						
FJ	Fire Trouble Restore	FJ#	FJ#	sR0y	sR0y	7y	sR0z
FK	Fire Test End						
FR	Fire Restoral	FR#	FR#	sR0y	sR0y	7y	sR0z
FS	Fire Supervisory (4724)	FS#	FS#	T01	T01	6y	sS0z
FS	Fire Supervisory (4734)	FS#	FS#	T01	T01	6y	sT0z
FT	Fire Trouble	FT#	FT#	sT0y	sT0y	6y	sT0z
FU	Fire Unbypass	FU#	FU#	sH10	H10	20	sR0z
FX	Fire Test						
FY	Missing Fire Trouble						
GA	Gas Alarm	GA#	GA#	sA0y	sA0y	0y	sA0z
GB	Gas Bypass (4724)	GB#	GB#	sB10	sB00	50	sB0z
GB	Gas Bypass (4734)	GB#	GB#	sB10	sB00	50	sT0z
GH	Gas Alarm Restore	GH#	GH#	sR0y	sR0y	7y	sR0z
GJ	Gas Trouble Restore	GJ#	GJ#	sR0y	sR0y	7y	sR0z
GR	Gas Restoral	GR#	GR#	sR0y	sR0y	7y	sR0z
GS	Gas Supervisory (4724)	GS#	GS#	T01	T01	6y	sS0z
GT	Gas Supervisory (4734)	GS#	GS#	T01	T01	6y	sT0z
GT	Gas Trouble	GT#	GT#	sT0y	sT0y	6y	sT0z
GU	Gas Unbypass	GU#	GU#	sH10	H10	20	sR0z
GX	Gas Test						
HA	Holdup Alarm	HA#	HA#	sA0y	sA0y	0y	sA0z
HB	Holdup Bypass (4724)	HB#	HB#	sB10	sB00	50	sB0z
HB	Holdup Bypass (4734)	HB#	HB#	sB10	sB00	50	sT0z
HH	Holdup Alarm Restore	HH#	HH#	sR0y	sR0y	7y	sR0z
HJ	Holdup Trouble Restore	HJ#	HJ#	sR0y	sR0y	7y	sR0z
HR	Holdup Restoral	HR#	HR#	sR0y	sR0y	7y	sR0z
HS	Holdup Supervisory (4724)	HS#	HS#	T01	T01	6y	sS0z
HS	Holdup Supervisory (4734)	HS#	HS#	T01	T01	6y	sT0z
HT	Holdup Trouble	HT#	HT#	sT0y	sT0y	6y	sT0z
HU	Holdup Unbypass	HU#	HU#	sH10	H10	20	sR0z
JA	User Code Tamper						
JD	Date Changed						
JH	Holiday Changed						
JL	Log Threshold						
JO	Log Overflow						
JR	Schedule Executed						
JS	Schedule Changed						
JT	Time Changed						
JV	User Code Changed						
JX	User Code Deleted						

(continued on next page)

**Table 7.3-D continued**

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
KA	Heat Alarm	KA#	KA#	sA0y	sA0y	0y	sA0z
KB	Heat Bypass (4724)	KB#	KB#	sB10	sB00	50	sB0z
KB	Heat Bypass (4734)	KB#	KB#	sB10	sB00	50	sT0z
KH	Heat Alarm Restore	KH#	KH#	sR0y	sR0y	7y	sR0z
KJ	Heat Trouble Restore	KJ#	KJ#	sR0y	sR0y	7y	sR0z
KR	Heat Restoral	KR#	KR#	sR0y	sR0y	7y	sR0z
KS	Heat Supervisory (4724)	KS#	KS#	T01	T01	6y	sS0z
KS	Heat Supervisory (4734)	KS#	KS#	T01	T01	6y	sT0z
KT	Heat Trouble	KT#	KT#	sT0y	sT0y	6y	sT0z
KU	Heat Unbypass	KU#	KU#	sH10	H10	20	sR0z
LB	Local Program						
LD	Local Program						
LE	Listen-in Ended						
LF	Listen-in Begin	*	*	*	*	*	*
<sup>1</sup> LR	Phone Line Restoral	LR#	LR#	LR0e	LR0e	3e	sR0B
LS	Local Program Success						
<sup>2</sup> LT	Phone Line Trouble	LT#	LT#	LT0p	LT0p	3p	sT0B
LU	Local Program Fail						
LX	Local Programming Ended						
MA	Medical Alarm	MA#	MA#	sA0y	sA0y	0y	sA0z
MB	Medical Bypass (4724)	MB#	MB#	sB10	sB00	50	sB0z
MB	Medical Bypass (4734)	MB#	MB#	sB10	sB00	50	sT0z
MH	Medical Alarm Restore	MH#	MH#	sR0y	sR0y	7y	sR0z
MJ	Medical Trouble Restore	MJ#	MJ#	sR0y	sR0y	7y	sR0z
MR	Medical Restoral	MR#	MR#	sR0y	sR0y	7y	sR0z
MS	Medical Supervisory (4724)	MS#	MS#	T01	T01	6y	sS0z
MS	Medical Supervisory (4734)	MS#	MS#	T01	T01	6y	sT0z
MT	Medical Trouble	MT#	MT#	sT0y	sT0y	6y	sT0z
MU	Medical Unbypass	MU#	MU#	sH10	H10	20	sR0z
NF	Forced Perimeter Arm						
NL	Perimeter Armed						
OA	Automatic Opening	OA#	OA#	OP00	OP00	90	OP00
OC	Cancel Report						
OG	Open Area	OG#	OG#	OP0y	OP0y	9z	sR09
OI	Fail to Open						
OJ	Late Open						
OK	Early Open						
OP	Opening Report	OP#	OP#	OP0y	OP0y	9y	OP0y

<sup>1</sup>When “e” follows the code, it means the actual data will be “5” for panel phone line #1 or “6” for panel phone line #2.

<sup>2</sup>When “p” follows the code, it means the actual data will be “1” for panel phone line #1 or “2” for panel phone line #2.

(continued on next page)

Table 7.3-D continued

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
OR	Disarm From Alarm	OR#	OR#	OR0y	OR0y	9y	sR0y
OT	Late To Close (4724)	OT#	OT#	OP0y	OP0y	90	sR09
OT	Late To Close (4734)	OT#	OT#	OP0y	OP0y	90	OP00
OZ	Point Opening						
PA	Panic Alarm	PA#	PA#	sA0y	sA0y	0y	sA0z
PB	Panic Bypass (4724)	PB#	PB#	sB10	sB00	50	sB0z
PB	Panic Bypass (4734)	PB#	PB#	sB10	sB00	50	sT0z
PH	Panic Alarm Restore	PH#	PH#	sR0y	sR0y	7y	sR0z
PJ	Panic Trouble Restore	PJ#	PJ#	sR0y	sR0y	7y	sR0z
PR	Panic Restoral	PR#	PR#	sR0y	sR0y	7y	sR0z
PS	Panic Supervisory (4724)	PS#	PS#	T01	T01	6y	sS0z
PS	Panic Supervisory (4734)	PS#	PS#	T01	T01	6y	sT0z
PT	Panic Trouble	PT#	PT#	sT0y	sT0y	6y	sT0z
PU	Panic Unbypass	PU#	PU#	sH10	H10	20	sR0z
QA	Emergency Alarm	QA#	QA#	sA0y	sA0y	0y	sA0z
QB	Emergency Bypass	QB#	QB#	sB10	sB00	50	sB0z
QH	Emergency Alarm Restore	QH#	QH#	sR0y	sR0y	7y	sR0z
QJ	Emergency Trouble Restore	QJ#	QJ#	sR0y	sR0y	7y	sR0z
QR	Emergency Restoral	QR#	QR#	sR0y	sR0y	7y	sR0z
QS	Emergency Supervisory	QS#	QS#	T01	T01	6y	sS0z
QT	Emergency Trouble	QT#	QT#	sT0y	sT0y	6y	sT0z
QU	Emergency Unbypass	QU#	QU#	sH10	H10	20	sR0z
RA	Remote Programmer Call Failed						
RB	Remote Program Begin						
RC	Relay Close						
RD	Remote Program Denied						
RN	Remote Reset						
RO	Relay Open						
RP	Automatic Test	RP#	RP#	sXs	sXs	30	sR09
RR	Power Up						
RS	Remote Program Success						
RT	Data Lost (4724)	RT#	RT#	sT09	sT09	39	sT09
RT	Data Lost (4734)	RT#	RT#	sT09	sT09	39	sR09
RU	Remote Program Fail						
RX	Manual Test	RX#	RX#	sXs	sXs	30	sR09
SA	Sprinkler Alarm	SA#	SA#	sA0y	sA0y	0y	sA0z
SB	Sprinkler Bypass (4724)	SB#	SB#	sB10	sB00	50	sB0z
SB	Sprinkler Bypass (4734)	SB#	SB#	sB10	sB00	50	sT0z
SH	Sprinkler Alarm Restore	SH#	SH#	sR0y	sR0y	7y	sR0z
SJ	Sprinkler Trouble Restore	SJ#	SJ#	sR0y	sR0y	7y	sR0z
SR	Sprinkler Restoral	SR#	SR#	sR0y	sR0y	7y	sR0z
SS	Sprinkler Supervisory (4724)	SS#	SS#	T01	T01	6y	sS0z
SS	Sprinkler Supervisory (4734)	SS#	SS#	T01	T01	6y	sT0z
ST	Sprinkler Trouble	ST#	ST#	sT0y	sT0y	6y	sT0z

(continued on next page)

**Table 7.3-D continued**

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
SU	Sprinkler Unbypass	SU#	SU#	sH10	H10	20	sR0z
TA	Tamper Alarm	TA#	TA#	sA0y	sA0y	0y	sA0z
TB	Tamper Bypass (4724)	TB#	TB#	sB10	sB00	50	sB0z
TB	Tamper Bypass (4734)	TB#	TB#	sB10	sB00	50	sT0z
TE	Test End						
TH	Tamper Alarm Restore	TH#	TH#	sR0y	sR0y	7y	sR0z
TJ	Tamper Trouble Restore	TJ#	TJ#	sR0y	sR0y	7y	sR0z
TR	Tamper Restoral	TR#	TR#	sR0y	sR0y	7y	sR0z
TS	Test Start	TS#	TS#	T01	T01	6y	sS0z
TT	Tamper Trouble	TT#	TT#	sT0y	sT0y	6y	sT0z
TU	Tamper Unbypass	TU#	TU#	sH10	H10	20	sR0z
UA	Untyped Zone Alarm	UA#	UA#	sA0y	sA0y	0y	sA0z
UB	Untyped Zone Bypass (4724)	UB#	UB#	sB10	sB00	50	sB0z
UB	Untyped Zone Bypass (4734)	UB#	UB#	sB10	sB00	50	sT0z
UH	Untyped Alarm Restore	UH#	UH#	sR0y	sR0y	7y	sR0z
UJ	Untyped Trouble Restore	UJ#	UJ#	sR0y	sR0y	7y	sR0z
UR	Untyped Zone Restoral	UR#	UR#	sR0y	sR0y	7y	sR0z
US	Untyped Zone Supervisory (4724)	US#	US#	T01	T01	6y	sS0z
US	Untyped Zone Supervisory (4734)	US#	US#	T01	T01	6y	sT0z
UT	Untyped Zone Trouble	UT#	UT#	sT0y	sT0y	6y	sT0z
UU	Untyped Zone Unbypass	UU#	UU#	sH10	H10	20	sR0z
UX	Undefined						
UY	Untyped Missing Trouble						
UZ	Untyped Missing Alarm						
VI	Printer Paper In						
VO	Printer Paper Out						
VR	Printer Restore						
VT	Printer Trouble						
VX	Printer Test						
VY	Printer Online						
VZ	Printer Offline						
WA	Water Alarm	WA#	WA#	sA0y	sA0y	0y	sA0z
WB	Water Bypass (4724)	WB#	WB#	sB10	sB00	50	sB0z
WB	Water Bypass (4734)	WB#	WB#	sB10	sB00	50	sT0z
WH	Water Alarm Restore	WH#	WH#	sR0y	sR0y	7y	sR0z
WJ	Water Trouble Restore	WJ#	WJ#	sR0y	sR0y	7y	sR0z
WR	Water Restoral	WR#	WR#	sR0y	sR0y	7y	sR0z
WS	Water Supervisory (4724)	WS#	WS#	T01	T01	6y	sS0z
WS	Water Supervisory (4734)	WS#	WS#	T01	T01	6y	sT0z
WT	Water Trouble	WT#	WT#	sT0y	sT0y	6y	sT0z
WU	Water Unbypass	WU#	WU#	sH10	H10	20	sR0z
XE	Extra Point						
XF	Extra RF Point						
XI	Sensor Reset						

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Table 7.3-D continued

4720/4724/4734 DIALER FORMAT		SIA	FSK2	FSK1	SK4+2	FSK1 & SK4+2	BFSK
9000 LINE CARD FORMAT		2	0, 6	0	0	6	1, 6
Event Code	Signal Description						
XR	Transmitter Battery Restoral						
XT	Transmitter Battery Trouble						
XW	Forced Point						
YB	Busy Seconds						
YC	Communications Fail						
YD	Receiver Line Card Trouble						
YE	Receiver Line Card Restored						
YF	Parameter Checksum Fail						
YG	Parameter Changed						
YK	Communications Restoral						
YM	System Battery Missing						
YN	Invalid Report						
YO	Unknown Message						
YP	Power Supply Trouble						
YQ	Power Supply Restored						
YR	System Battery Restoral	YR#	YR#	YRs	YRs	79	sR09
YS	Communications Trouble						
YT	System Battery Trouble	YT#	YT#	YTs	YTs	69	sT09
YW	Watchdog Reset						
YX	Service Required						
YY	Status Report						
ZA	Freeze Alarm	ZA#	ZA#	sA0y	sA0y	0y	sA0z
ZB	Freeze Bypass (4724)	ZB#	ZB#	sB10	sB00	50	sB0z
ZB	Freeze Bypass (4734)	ZB#	ZB#	sB10	sB00	50	sT0z
ZH	Freeze Alarm Restore	ZH#	ZH#	sR0y	sR0y	7y	sR0z
ZJ	Freeze Trouble Restore	ZJ#	ZJ#	sR0y	sR0y	7y	sR0z
ZR	Freeze Restoral	ZR#	ZR#	sR0y	sR0y	7y	sR0z
ZS	Freeze Supervisory (4724)	ZS#	ZS#	T01	T01	6y	sS0z
ZS	Freeze Supervisory (4734)	ZS#	ZS#	T01	T01	6y	sT0z
ZT	Freeze Trouble	ZT#	ZT#	sT0y	sT0y	6y	sT0z
ZU	Freeze Unbypass	ZU#	ZU#	sH10	H10	20	sR0z

## 7.4. SAMPLE PRINTOUTS

---

The figures below are samples of printouts that may be produced when particular formats are used. Note that some reporting formats do not distinguish between certain types of reports, such as between waterflow and fire alarm reports, or between supervisory and trouble reports. Central station personnel must keep track of how the zones are programmed at each installation, so they can identify what kind of report is being received from a particular zone.

```
DATE 06-02-89 TIME 12:02
ACC. 01-900
CODE 0   ZONE 9
CODE 4   ZONE 7
CODE 9   ZONE 4
```

**FIGURE A: 3/1 EXTENDED  
FORMAT 6**

```
DATE 06-02-89 TIME 11:36
ACC. 01-1234
CODE 9   ZONE 8

DATE 06-02-89 TIME 11:30
ACC. 01-1234
CODE 0   ZONE 2
```

**FIGURE B: 4/1 EXTENDED  
FORMAT 6**

```
DATE 06-02-89 TIME 11:10
ACC. 01-710
CODE 4
CODE 8
CODE 2
CODE 8
```

**FIGURE C: 3/1 TONE  
BURST FORMAT 1/0/6**

```
DATE 06-02-89 TIME 11:47
ACC. 01-107
CODE 1
CODE F   ZONE 2
CODE E   ZONE 3
CODE E   ZONE 4
```

**FIGURE D: RADIONICS HEX  
FORMAT 6**

```
DATE 06-02-89 TIME 11:31
ACC. 01-1234
CODE 0
CODE 2
```

**FIGURE E: 4/1 FSK0  
FORMAT 0/6**

```
DATE 06-02-89 TIME 11:12
ACC. 01-2710
CODE 4   ZONE 0
CODE 5   ZONE 3
CODE 6   ZONE 2
CODE 0   ZONE 3
```

**FIGURE F: 4+2 & FSK1  
FORMAT 6**

```
DATE 06-02-89 TIME 11:44
ACC. 01-107
CODE 3
CODE 1
TROUBLE 05
```

**FIGURE G: RADIONICS  
HEX FORMAT 0**

```
DATE 06-02-89 TIME 11:14
ACC. 01-2710
CLOSE ID 00
SHUNTED 13
TROUBLE 02
ALARM 03
```

**FIGURE H: 4+2 & FSK1  
FORMAT 0**

```
DATE 06-02-89 TIME 11:54
ACC. 81-004720
PANIC ALARM 81
MEDICAL ALARM 82

DATE 06-02-89 TIME 11:54
ACC. 01-004720
FIRE TROUBLE 01
FIRE TROUBLE 02
FIRE TROUBLE 03
```

**FIGURE I: FSK2  
FORMAT 0/6**

DATE 06-02-89 TIME 11:07  
ACC. 01-710  
CLOSE ID 00  
TROUBLE 03  
TROUBLE 07  
ALARM 08  
FORCE ARMED

**FIGURE J: RADIONICS  
BFSK FORMAT 1**

DATE 06-02-89 TIME 10:54  
ACC. 02-92999  
AUXILIARY 82  
CANCEL 82  
EMERGENCY ALARM 81  
CANCEL 81  
FIRE ALARM 80  
CANCEL 80

**FIGURE K: 9004I ITI  
FORMAT 7**

DATE 06-02-89 TIME 10:40  
ACC. 02-2710  
BURGLARY ALARM 1  
BURGLARY ALARM 2  
BURGLARY ALARM 3  
BURGLARY ALARM 4  
BURGLARY ALARM 5  
UNDEF. ALARM 6  
EMERGENCY ALARM 8  
FIRE ALARM 7

**FIGURE L: SIA 9004I  
FORMAT 2**

DATE 06-02-89 TIME 10:58  
ACC. 03-1234  
CODE 0444 4444 4  
  
DATE 06-02-89 TIME 10:59  
ACC. 03-1234  
CODE 0222 2222 2  
-----

**FIGURE M: 9003 ADEMCO  
DTMF FORMAT 3**

DATE 06-29-93 TIME 10:10  
ACC. 02-3323  
ALARM RESTORE 03

**FIGURE N: SESCOA  
SUPERFAST  
FORMAT 6**

---

## SECTION 8.

# COMMUNICATION PROTOCOL DESCRIPTION

---

This section of the manual describes the protocol for communication between the 9000 and an automation computer. This protocol is proprietary and was developed specifically for the 9000.

### 8.1. CONVENTIONS OBSERVED IN THIS PROTOCOL DESCRIPTION

---

This protocol description uses the term “automation computer” to refer to a computer that receives data from the 9000 and interprets it through software that automates the central station.

For the purposes of this protocol description, a “message” is any data the 9000 is passing to an automation computer. We’ll reserve the term message for discussions of the string as a whole.

The term “call from panel” will refer to the complete data stream from a panel to the 9000. The term “event data” will refer to the actual data (that is, alarms, troubles, and so on) that are part of a call from a panel.

The term “system message” will refer to messages the 9000 sends to an automation computer about its internal status.

Another convention of this protocol description is to use hexadecimal values to refer to data (rather than the ASCII characters that represent the values). Hexadecimal numbers will be represented with a \$ symbol in front of them as in “\$0A”.

8.2. DATA STRING DESCRIPTION AND SPECIAL CHARACTERS

TABLE 8.2-A: DATA STRING DESCRIPTION

DATA ELEMENT	BYTE(S) OCCUPIED	DESCRIPTION / SIGNIFICANCE
<b>Identifier</b>	1	The first byte of a message is the identifier. This byte is always \$01 or \$27. \$01 = a system message \$27 = a call from a panel
<b>Date</b>	2-7	The next 6 bytes are the date in MMDDYY format, where each byte contains the ASCII code for the digits 0-9.
<b>Separator</b>	8	The byte after the date is a separator. It will always be \$22.
<b>Time</b>	9-12	The time, in the 24-hour military format, at which the 9000 receives the message occupies bytes 9-12. Each byte contains the ASCII code for the digits 0-9.
<b>Separator</b>	13	The separator \$22 occupies byte 13. The actual call or message data follows this byte.
<b>Format number</b>	14	In a call, byte 14 is the format number, which indicates the format of the line card the call was received in.
<b>Line card number</b>	15	Byte 15 is the line card number. In some cases you may need to decode the line card number. (See Section 8.3.5 for more information.)
<b>Separator</b>	16	Byte 16 is a separator that precedes the actual call or message data. The data can be either \$05 or \$2E. \$05 = the 9000's programmable option, L.C. # ADDED TO ACCOUNT?, (programming step 10), has been enabled. \$2E = the 9000's programmable option, L.C. # ADDED TO ACCOUNT?, (programming step 10), has been disabled.
<b>Account #</b>	Variable, beginning at position 17.	Can be 1-6 bytes long. ASCII codes for the digits 0-9 and characters A-Z are acceptable data.
<b>Separator</b>	Variable	The separator \$22 separates the account number from the first event.

(continued on next page)

**Table 8.2-A continued**

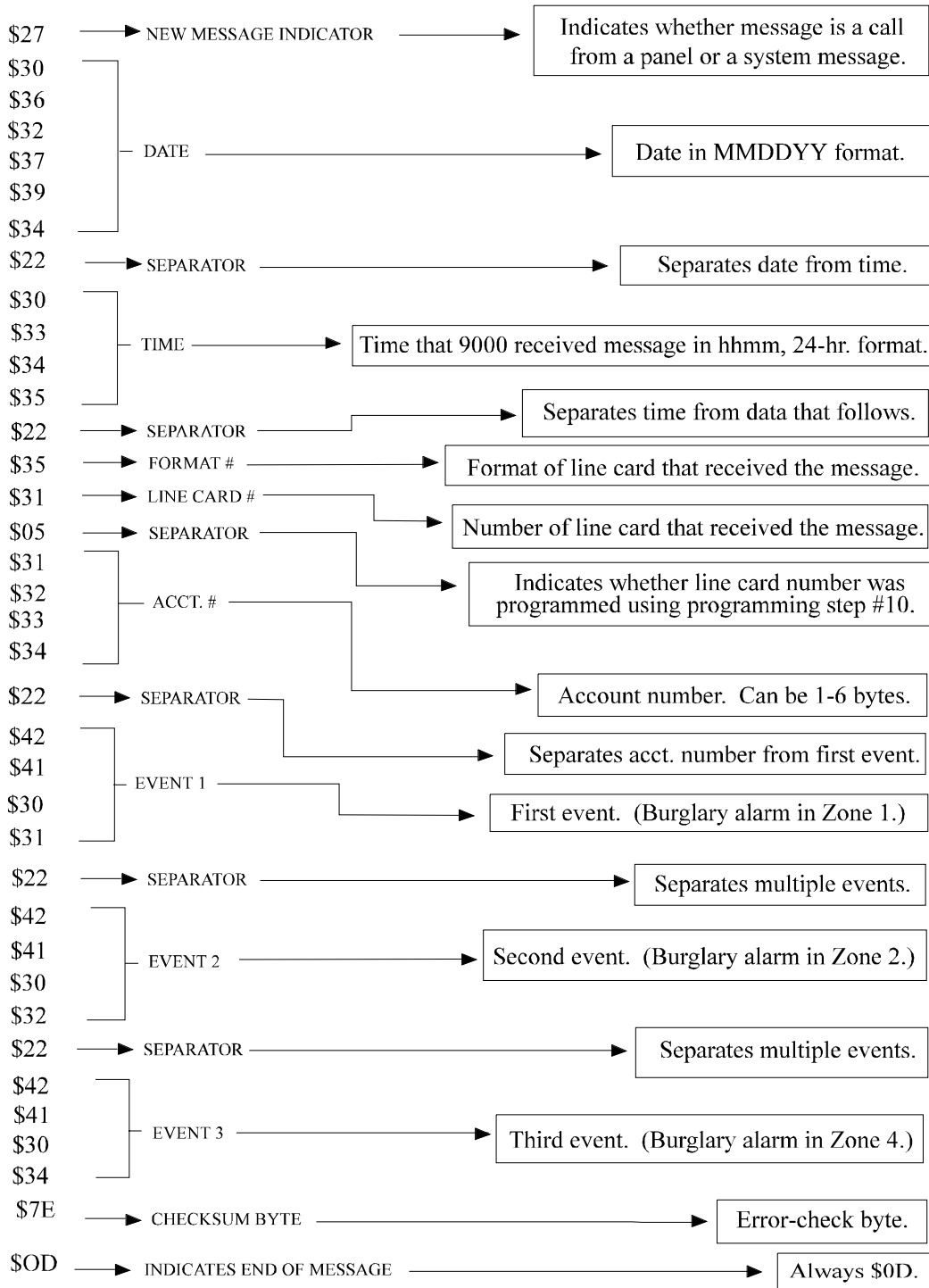
<b>DATA ELEMENT</b>	<b>BYTE(S) OCCUPIED</b>	<b>DESCRIPTION / SIGNIFICANCE</b>
<b>Event Data (Alarms and System Messages)</b>	Variable	Alarms can be up to 11 characters. Multiple alarms are separated by \$22 (ASCII code for the double quotation mark).  System messages, (indicated when the first byte of the message is \$01), are always sent separately. For example, if two line cards have a problem at the same time, the 9000 will send one message for each line card.
<b>Checksum</b>	1 byte. Follows event data.	Error-check byte. (See Section 8.3.4 for more information.)
<b>End of Message Indicator (carriage return)</b>	1 byte. Last byte in call.	This byte is always \$0D and indicates the end of the message.

**TABLE 8.2-B: SPECIAL CHARACTERS USED IN THE PROTOCOL**

<b>HEX VALUE</b>	<b>MEANING</b>
\$27	If this character is the first byte in a string, the data that follows is an actual call from a subscriber (rather than a system message).
\$01	If this character is the first byte in a string, the data that follows is a system message (rather than a call from a panel).  When \$01 is sent from the automation computer to the 9000, it indicates that the trap that has been set for the account should be canceled (see Section 8.5.3 for more information).
\$02	When \$02 is sent from the automation computer to the 9000, it means that the account should be trapped (see Section 8.5.3 for more information).
\$22	Separator. Separates the date from the time; separates the time from the data that follows; separates multiple events occurring in the same message.
\$05	The programmable option (step 10) that combines line card numbers with account numbers has been <b>disabled</b> for this account.
\$2E	The programmable option (step 10) that combines line card numbers with account numbers has been <b>enabled</b> for this account.
\$23	No data.
\$21	Bad data mixed with good data in the same call.
\$2C	Long call; more data to come for this call.
\$0D	Indicates end of message.
\$2A	Listen in begins.
\$4C	Listen-in command. (See Section 8.5.2 for more information.)
\$48	Hang up line card command. (See Section 8.5.2 for more information.)

### 8.3 CALLS FROM PANELS

The basic format of a message is shown in the example below. For a complete description of each data element, see Table 8.2-A.

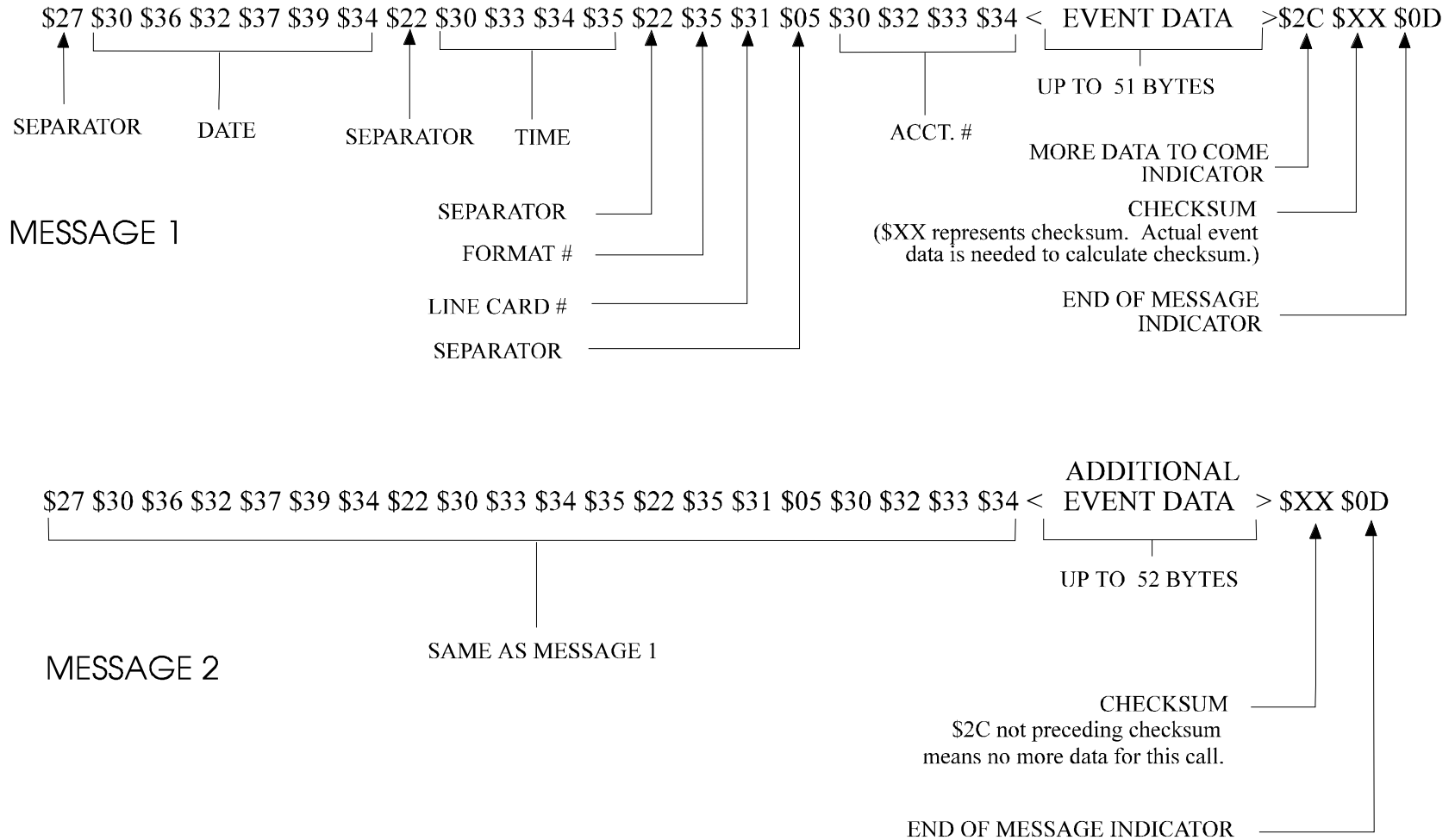


**FIGURE 8.3-A: EXAMPLE MESSAGE**



### 8.3.1 LONG CALLS

The 9000 can send up to 70 bytes per message to an automation computer. When event data is more than 70 bytes, the 9000 breaks up the data into 70-byte chunks ending in a separator \$2C, a checksum byte, and the end of message indicator \$0D.



**FIGURE 8.3.1-A: LONG EVENT DATA**

### **8.3.2 BAD DATA**

---

When the 9000 receives data it cannot interpret, it precedes the data with \$23. The 9000 accepts 8 characters of bad data. This allows operators to determine, if possible, the account number of the panel sending the bad data for troubleshooting purposes. Causes for bad data include: Noise on the telephone line and non-matching first and second rounds of data. In these cases, the 9000 prints "BAD DATA".

A single message could include more than one string of bad data, indicating, for example, that the first and second rounds of data did not match each other.

### **8.3.3 GOOD DATA WITH BAD DATA**

---

Good data can be mixed with bad data in one call. \$21 indicates good data after bad. Good data always starts with an account number (note that this would be the case even if the account number had already been passed before the bad data occurred).

### **8.3.4 CHECKSUM**

---

The checksum byte always precedes the end of message character. Each data string has a checksum as the second to the last byte. The checksum is the only error-checking of data the 9000 performs. The checksum calculation is shown below. The result of the calculation should equal the transmitted checksum value.

1. Add the first byte of the message to the second byte.
2. Clear bit 7 of the result.
3. Set bit 6 of the result.
4. Add this result to the next byte of the message.
5. Repeat steps 2, 3, and 4 until the last byte of event data (that is, up to and including the byte preceding the checksum). The range of the checksum is \$40 to \$7F.

### 8.3.5 CALCULATING LINE CARD NUMBERS

If line cards have been programmed for the PROGRAM L.C.# option (step 10), byte 16 of the message will be \$2E. You will need to perform the calculation below in order to know which line card originally sent the data.

#### EXAMPLE:

Suppose the line card byte is \$7F. To determine which line card sent the message, use the following procedure:

1. Subtract \$30 from the line card byte. In this example, the line card number is \$7F.  
 $\$7F - \$30 = \$4F$
2. Convert \$4F to decimal. The resulting number, 79, is the line card number.

## 8.4 SYSTEM MESSAGES

The character \$01 at the beginning of a data string indicates that the 9000 is reporting its internal status. A sample system message is shown in figure 8.4-A. Table 8.4-A lists the possible system messages and what format the data can take.

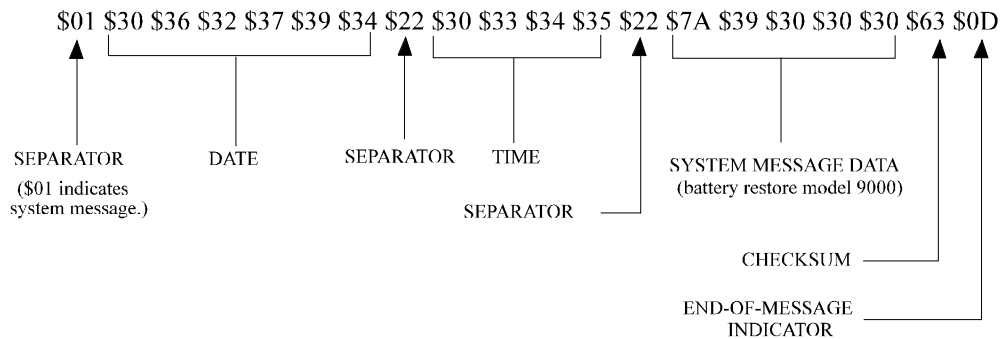


FIGURE 8.4-A: SYSTEM MESSAGE

**TABLE 8.4-A: SYSTEM MESSAGES**

Table 8.4-A lists the system messages. Some system messages are one byte. Other messages are always sent with other information, such as the line card number. All system messages are sent separately. For example, if two line cards have a problem at the same time, the 9000 will send one message for each line card. System messages are always followed by the checksum byte and a carriage return (\$0D).

<b>SYSTEM MESSAGE</b>	<b>MEANING (PRINTED MESSAGE)</b>
\$77	AC LOST
\$78	AC RESTORE
\$7B	COMPUTER TROUBLE
\$7D	COMPUTER RESTORE
\$70 + 2 bytes for line card number	LINE CARD TROUBLE
\$71 + 2 bytes for line card number	PHONE LINE TROUBLE
\$73 + 2 bytes for line card number	PHONE LINE RESTORE
\$79 + 4 bytes indicating model 9000 or 9001. (See Note 1 below.)	BATTERY TROUBLE 9000/9001
\$7A + 4 bytes indicating model 9000 or 9001. (See Note 1 below.)	BATTERY RESTORE 9000/9001
\$7F + 2 bytes indicating the <i>number of</i> the log on code (not the code itself).	LOG ON OPERATOR
\$7E + 2 bytes indicating the <i>number of</i> the log off code (not the code itself).	LOG OFF OPERATOR

<sup>1</sup>**NOTE:** The 4 bytes are the ASCII coded values for the model numbers “9000” or “9001”. For example, “\$79 \$39 \$30 \$30 \$31” means “battery trouble with model 9001”.

### 8.5.1 ACKING AND NACKING DATA

---

The computer must respond to messages sent by the 9000 with an ACK or NACK.

An ACK (\$06) is sent when the computer's checksum calculation agrees with the checksum value sent in the message and the general format of the message looks correct (for example, the last byte was \$0D).

A NACK (\$15) is sent whenever the computer suspects an error in the transmission of the message. The computer must respond within one minute of receiving the last byte of a message.

The 9000 ignores any other communication from the computer when it is awaiting ACKing or NACKing.

Generally, after two NACKs or two minutes of no response from the computer, the 9000 generates a "computer trouble" message.

- If the computer ACKs the data, the 9000 will send any additional data in its buffer.
- If the computer NACKs the data, the 9000 will immediately re-send the data.

If the computer NACKs a second time, the 9000 will generate a computer trouble message.

If the computer does not respond the second time the 9000 sends the data, the 9000 will NACK itself and will send the data to the computer a third time. If the computer does not respond after the third time the data is sent, the 9000 will generate a computer trouble message.

## 8.5.2 LISTEN-IN AND HANG UP REQUESTS

*NOTE:* This feature requires the 9082-E (or later) CPU card.

### Requests originating from the panel:

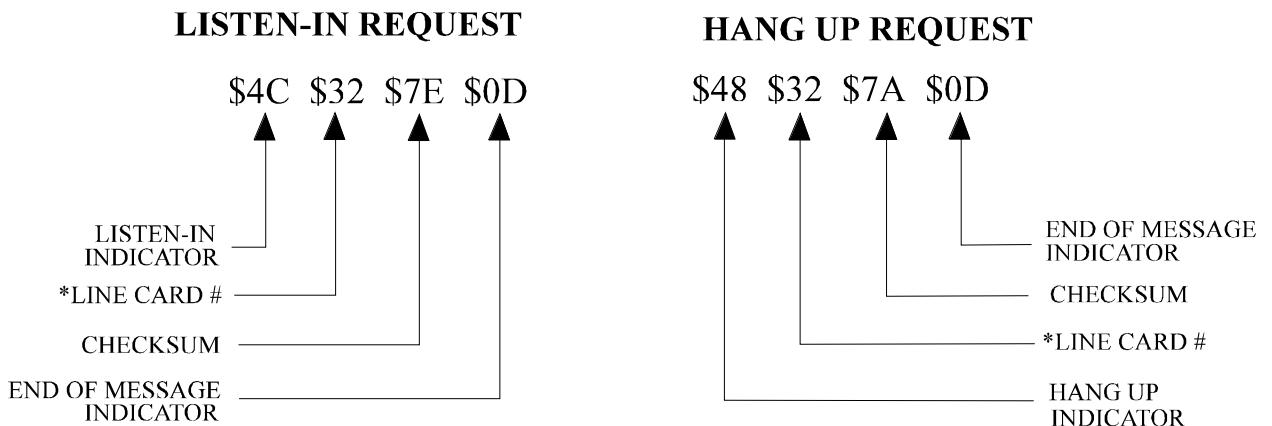
In a message that the 9000 sends to an automation computer, \$2A preceding the checksum byte indicates that the panel has requested listen-in.

### Requests originating from the automation computer:

- To listen to a line card, send L (\$4C) followed by actual line card number (in hex) + \$30, a checksum, and \$0D (end of call character). To extend listen-in time, repeat the listen-in command.
- To hang up a line card, send H (\$48) followed by the actual line card number (in hex) + \$30, a checksum, and \$0D (end of call character).

### Line card number

When sending listen-in or hang up requests, send the actual slot number that the line card occupies (in hex) + \$30. Line card numbers are 1-12, which when added to \$30 give a range of \$31-\$42.



\*NOTE: Line card #2 is used as an example.  
Add \$30 to the actual line card number.

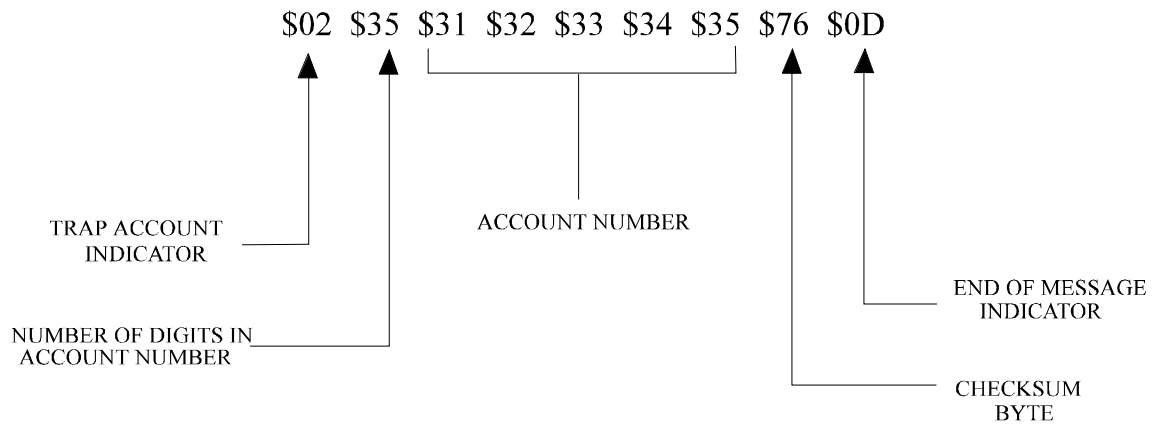
**FIGURE 8.5.2-A: SENDING LISTEN-IN AND HANG UP REQUESTS FROM AN AUTOMATION COMPUTER TO THE 9000**

See section 4.6 of this manual for operation of the listen-in/hang up feature.

### 8.5.3 TRAPPING

Trapping is a feature that allows the automation computer to “trap” certain account numbers when they call into the 9000. One use of trapping is to check for subscribers who have not made their payments. Only SIA formats can send and receive account numbers for trapping.

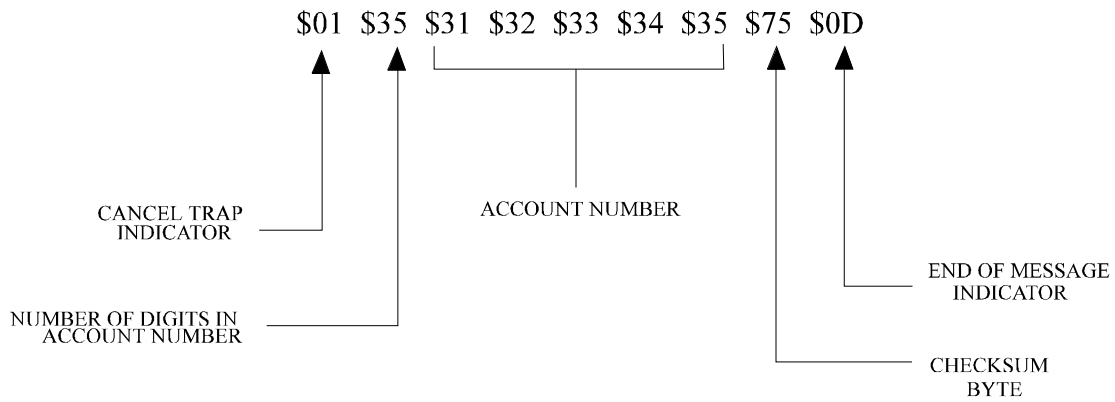
**To request a trap an account**, the computer sends the trap account indicator, \$02, plus the number of digits in the account number plus the account number itself, followed by the checksum and end of message indicator.



**FIGURE 8.5.3-A: SENDING A TRAP ACCOUNT REQUEST**

When the 9000 receives the codes indicating that an account number should be trapped, it sends the trapped account number to all SIA line cards. If the trapped account number calls a line card, the line card sends a message to the panel requesting the panel to call the up/downloading computer directly. This allows the up/downloading computer to put the panel in service mode if the operator chooses to do so. The 9000 will send an ACK (\$06) to the automation computer if it accepts the trap command. The 9000 will send a NACK (\$15) if it rejects the trap command.

To cancel a trap request, the computer sends the cancel trap account indicator, \$01, plus the number of digits in the account number plus the account number itself, followed by the checksum and end of message indicator.



**FIGURE 8.5.3-B: SENDING A CANCEL TRAP ACCOUNT REQUEST**



TABLE 8.6-A: US ASCII CHARACTER CODE

Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
NUL	00	DC4	14	(	28	<	3C	Q/q	51/71
SOH	01	NACK	15	)	29	=	3D	R/r	52/72
STX	02	SYN	16	*	2A	>	3E	S/s	53/73
ETX	03	ETB	17	+	2B	?	3F	T/t	54/74
EOT	04	CAN	18	,	2C	@	40	U/u	55/75
ENQ	05	EM	19	-	2D	A/a	41/61	V/v	56/76
ACK	06	SUB	1A	.	2E	B/b	42/62	W/w	57/77
BEL	07	ESC	1B	/	2F	C/c	43/63	X/x	58/78
BS	08	FS	1C	0	30	D/d	44/64	Y/y	59/79
HT	09	GS	1D	1	31	E/e	45/65	Z/z	5A/7A
LF	0A	RS	1E	2	32	F/f	46/66	[	5B
VT	0B	US	1F	3	33	G/g	47/67	\	5C
FF	0C	SPACE	20	4	34	H/h	48/68	]	5D
CR	0D	!	21	5	35	I/i	49/69	/	5E
S0	0E	"	22	6	36	J/j	4A/6A	—	5F
S1	0F	#	23	7	37	K/k	4B/6B	‘	60
DLE	10	\$	24	8	38	L/l	4C/6C	{	7B
DC1	11	%	25	9	39	M/m	4D/6D		7C
DC2	12	&	26	:	3A	N/n	4E/6E	}	7D
DC3	13	‘	27	;	3B	O/o	4F/6F	~	7E
PUNCH IN CARD ROWS						P/p	50/70	DEL	7F

## SECTION 9.

### APPENDIX

#### 9.1. PRINTER/LCD DISPLAY CROSS-REFERENCE

The printer does not always print programming options exactly the same as the LCD. The following table cross-references printer and LCD messages.

PRINTER	LCD DISPLAY
PRINTER ALWAYS	PRINTER ALWAYS PRINTS Y/N
OPTION OF LC#	ADD LC TO ACCT # Y/N
ALERT TONE?	ALERT TONE Y/N
PARALLEL COMM?	CONNECTION ON CENTRONICS Y/N
COMPUTER COMM.?	COMPUTER OPTION Y/N
MODEM COMM?	MODEM OPTION Y/N
TOUCH TONE DIAL?	TOUCH TONE DIAL Y/N
PHONE #	PHONE NUMBER
NO. OF L.C.	NUMBER OF L.C.
<sup>1</sup> DIALER FORMAT	DIALER FORMAT L.C.#--
ACKNOWLEDGE TIME	ACKNOWLEDGEMENT TIME L.C.#--
ACK 2300 FIRST?	ACK 2300 FIRST Y/N
FAST INTERGROUP?	FAST INTERGROUP TIME Y/N
LISTEN-IN ACC.?	LISTEN-IN ACC. Y/N?
LISTEN-IN ACC. S	LISTEN-IN ACC. STARTS AT
LISTEN-IN ACC. E	LISTEN-IN ACC. ENDS AT
LISTEN-IN TIME	LISTEN-IN TIME L.C. #--
HANDSHAKE DELAY	DELAY BEFORE HANDSHAKE
NO. OF CODES?	HOW MANY LOG ON CODES?
<sup>2</sup> VALID CODE	VALID LOG ON CODES#--
PROGRAM L.C.#	PROGRAM L.C. #Y/N
DEALER ID#	DEALER ID#
MONTH	MONTH
DAY	DAY
YEAR	YEAR
HOUR	HOUR
MINUTE	MINUTE

<sup>1</sup>The LCD display will show the line card number you are currently programming.

<sup>2</sup>The LCD display will show the log-on code number you are currently programming.

## 9.2 ABOUT THIS REVISION

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The 3/95 revision of this manual is a major revision containing the additions and updates described below. (Some sections were rearranged and page numbers changed to accommodate added material.)

- Updated line card installation information to clarify procedural differences between when you are replacing a line card or removing one altogether (Section 3.2).
- Updated remote alert output connection information to include a picture (Section 3.7).
- Added information about connecting an automation computer to the 9000 (Section 3.11).
- Added SIA event codes (Section 7.3).
- Added computer protocol information (Section 8). Previously, this information was contained in a separate document.

**Silent Knight  
Model 9000  
Digital Alarm Receiver**

*Addendum to Installation Manual (P/N 150261)*

Section 3 of the Model 9000 Installation Manual refers to *pre-installed* line cards. Effective immediately, line cards are no longer shipped with the 9000. You must order the line cards you need—models 9004I and 9032—separately. Line card installation instructions are included with the line cards. *(Please note that the 9103 line card is no longer available.)*

P/N 800026

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