NX-582E
AES RADIO INTERFACE

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GENERAL DESCRIPTION

The NX582-E is a microprocessor-controlled AES radio interface. This interface allows any or all events from the NX8/NX8E control panel to be reported via the AES radio Models 7050-E, 7050-DLR (v2.2 or higher), 7450, 7450-XL, 7750, and 7750-F.

ENCLOSURE INFORMATION

Inside the can, several 2-holed insertion points have been constructed. This allows for either vertical or horizontal placement of the modules. **Notice that the insertion points have two sizes of holes -- a larger hole and a smaller hole**.

Diagram 1: The black plastic PCB guides are grooved on one edge where the PC Board will be seated. The end with the half-moon protrusion fits into the larger hole. The smaller hole is for the screw.

Diagram 2:   Place the *first* black plastic PCB guide in the top insertion point, grooved edge downward. The half-moon protrusion will be in the large hole. It does not require force. Insert one of the provided screws into the smaller hole (from inside the can) to secure it in place. A screwdriver should reach through the notch that runs the length of the guide to tighten the screw. The *second* PCB guide should be positioned opposite of the first (grooved edge up) and placed in the lower insertion point, using the same procedures described above. Once mounted, screw it in securely.

Diagram 3: The PC board should slide freely in the grooves of both guides.
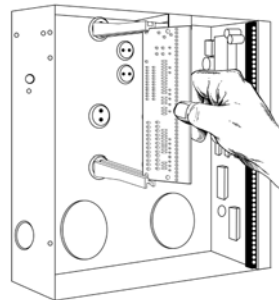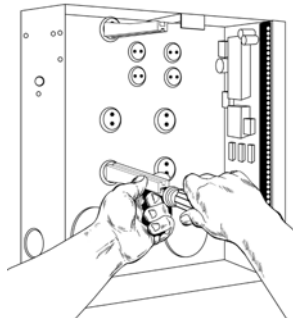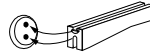
ADDRESSING

The NX582-E has a fixed address of 77. When programming the interface, enter the Program Mode and select the device address as [7]-[7]. (See "Programming the NX582-E", page 5.)

ENROLLING

The NX8/NX8E has the ability to automatically find and store in its memory the presence of all keypads, zone expanders, wireless receivers, and any other device on the keypad buss. This allows these devices to be supervised by the control panel and illuminate the "Service" LED if one is not detected. To enroll the devices, enter the Program Mode of the NX8/NX8E control panel using the procedure outlined in the Installation Manual. When the Program Mode is exited, the NX8/NX8E will automatically enroll the devices. The enrolling process takes about 12 seconds, during which time the "Service" LED will illuminate. User codes will not be accepted during the enrolling process. Once a module is enrolled, if it is not detected by the control, the "Service" LED will illuminate.

UNDERSTANDING THE LIGHTS

The NX582-E has five (5) red LEDs along the front of the board. These LEDs provide valuable information about the status of the NX582-E and the AES radio as follows:

LED	DESCRIPTION
DS1	*Flashes* each time the NX582-E has an opportunity to speak to the control panel. It should be flashing about two times each second.
DS3	*Flashes* when it is attempting to establish communication with the AES radio.
DS4	*Flashes* when the AES radio acknowledges receipt of the event message.
DS5	*Flashes* when the NX582-E sends a test "Ping" to the AES radio.
DS6	*Flashes* when the AES radio responds with a good reply to the test "Ping".
NOTE: DS3 through DS6 will be off if the system is initialized, normal and waiting for a new event to report.	
DS2	The sixth LED is located toward the back of the board. It is used for hardware, and will only glow dimly when connected to the NX8/NX8E control.

WIRING THE INTERFACE

Wire the 3-position terminal on the NX582-E to the NX8/NX8E control panel keypad interface as follows: Positive to KP POS, COM to KP COM, and DATA to KP DATA. Connect the wiring harness from the NX582-E connector labeled J6 to the AES radio connector labeled J1. Refer to connection diagram.

NX-582E LAYOUT

TERMINAL DESCRIPTION

Table 1.1

POS	Connect to the KP POS terminal of the NX8/NX8E. Current draw is 30 mA for the NX582-E.
COM	Connect to the KP COM terminal of the NX8/NX8E.
DATA	Connect to the KP DATA terminal of the NX8/NX8E.
J6	Connect to the cable of the AES radio.

WIRE REQUIREMENTS

Table 2.1

Length (Feet)	Wire Gauge	
	Connected to NX8/NX8E	Connected to NX-320
250	24	24
500	24	22
1000	22	20
2000	20	16
2500	18	16

PROGRAMMING THE NX582-E

USING THE LED KEYPAD

- **Entering the Program Mode**
  To enter the Program Mode, press [✱]-[**8**]. At this time, the five function LEDs (Stay, Chime, Exit, Bypass, & Cancel) will begin to flash. Next, enter the "Go To Program Code" (Factory Default is [**9**]-[**7**]-[**1**]-[**3**]). If the "Go To Program Code" is valid, the "Service" LED will flash and the five function LEDs will illuminate steady. You are now in the Program Mode and ready to select the module to program.

- **Select the Module to Program**
  All modules connected to the NX8/NX8E are programmed through the keypad. Enter the address of the NX582-E, which is [**7**]-[**7**], followed by [**#**]. The Armed LED will illuminate while it is waiting for a programming location to be entered. Other module entry numbers can be found in their corresponding manuals.

- **Programming a Location**
  Once the number of the module to be programmed has been entered, the "Armed" LED will illuminate, indicating it is waiting for a programming location to be entered. Any location can be accessed by directly entering the desired programming location followed by the pound [**#**] key. If the location entered is a valid location, the "Armed" LED will extinguish, the "Ready" LED will illuminate and the binary data for the first segment of this location will be shown by the zone LED's. While entering new data, the "Ready" LED will begin flashing to indicate a data change in process. The flashing will continue until the new data is stored by pressing the [✱] key. Upon pressing the [✱] key, the keypad will advance to the next segment and display its

data. This procedure is repeated until the last segment is reached. Pressing the [#] key will exit from this location, and the "Armed" LED will illuminate again waiting for a new programming location to be entered. If the desired location is the next sequential location, press the [POLICE] key. If the previous location is desired press the [FIRE] key. If the same location is desired press the [MEDIC] key. To review the data in a location, repeat the above procedure, pressing the [✱] key without any numeric data entry. Each time the [✱] key is pressed, the programming data of the next segment will be displayed for review.

- **Exiting a Location**
  After the last segment of a location is programmed, pressing the [✱] key will save the data, exit that location, turn the "Ready" LED off and the "Armed" LED on. The [✱] key must be pressed or the data will not be changed. Press the [#] key to exit a location before the last segment without saving the changes. As before, you are now ready to enter another programming location. If an attempt is made to program an invalid entry for a particular segment, the keypad sounder will emit a triple error beep (beep, beep, beep), and remain in that segment awaiting a valid entry.

- **Exiting the Program Mode:**
  When all the desired changes in programming have been made, it is time to exit the program mode. Pressing the [Exit] key will exit this programming level, and go to the "Select a Module To Program" level. If no additional modules are to be programmed, pressing the [Exit] key again will exit the program mode. If there is a module to be programmed, it may be selected by entering its address followed by the [#] key. The procedure for programming these devices is the same, except the locations will be for the module selected.

USING THE LCD KEYPAD

- All steps required for programming are the same as the aforementioned LED keypad. The LCD keypad display will prompt you for the data required. While in the programming mode, and not in a location, the number in parenthesis is the location you were previously changing. For example, if the display reads "Enter location, then #   (5)", it is reminding you that location 5 was the last location you programmed. Refer also to "Programming Data" which follows.

PROGRAMMING DATA

Programming data is always one of two types. One type of data is numerical, which can take on values from 0 -15 or 0 -255 depending on the segment size. The other type of data, feature selection data, is used to turn features on or off. Use the following procedures with these two data types:

1. **Numerical Data**
   Numerical data is programmed by entering a number from 0-255 on the numeric keys of the system keypad. To view the data in a location, a binary process is used. With this process, the LED=s for zones 1 through 8 are utilized, and the numeric equivalents of their illuminated LED=s are added together to determine the data in a programming location. The numeric equivalents of these LED=s are as follows:

Zone 1 LED = **1**	Zone 5 LED = **16**
Zone 2 LED = **2**	Zone 6 LED = **32**
Zone 3 LED = **4**	Zone 7 LED = **64**
Zone 4 LED = **8**	Zone 8 LED = **128**

   Example: If the numerical data to be programmed in a location is "66", press [**6**]-[**6**] on the keypad. The LED=s for Zone 2 and Zone 7 will become illuminated indicating 66 is in that location (2 + 64 = 66). Once the data is programmed, press the [r] key to enter the data and advance to the next segment of that location. After the last segment of a location is programmed, pressing the [r] key will exit that location, turn the "Ready" LED off and the "Armed" LED on. As before, you are now ready to enter another programming location. If an attempt is made to program a number too large for a particular segment, the keypad sounder will emit a triple beep, indicating an error, and remain in that segment awaiting a valid entry.

2. **Feature Selection Data**
   Feature selection data will display the current condition (on or off) of eight features associated with the programming location and segment selected. Pressing a button on the touchpad (1 - 8) that corresponds to the "feature number" within a segment will toggle (on/off) that feature. Pressing any numeric key between [**1**] and [**8**] for selection of a feature will make the corresponding LED illuminate (feature ON). Press the number again, and the LED will extinguish (feature OFF). You will see that numerous features can be selected from within one segment. For instance, if all eight features of a segment are desired, pressing [**1**]-[**2**]-[**3**]-[**4**]-[**5**]-[**6**]-[**7**]-[**8**] will turn on LED's 1 thru 8 as you press the keys, indicating that those features are enabled. **LCD Keypad Users Note**: The numbers of the enabled features will be displayed. However, the features not enabled will display a (-) hyphen. After the desired setting of features is selected for this segment, press the [✱] key. This will enter the data and automatically advance to the next segment of the location. When you are in the last segment of a location and press the [✱] to enter the data, you will exit that location. This will now turn the "Ready" LED off and the "Armed" LED on. As before, you are now ready to enter another programming location.

PROGRAMMING THE LOCATIONS

Location 0 - Account Code (6 segments numerical data)

This account number is provided by AES. Enter the account code followed by a "10" in the segment immediately after the last digit. If the account code is 6 digits long, program all 6 digits.

Location 1 - Partitions To Be Reported (1 segment feature selection data)

This location contains the partition(s) that should be included when reporting via the AES radio. If you wish to exclude any partition from reporting, simply turn off the LED corresponding to that particular partition. ***NOTE: If the partition LED is off, NO event from that partition will report, regardless of what is programmed in locations 3 through 6.***

LED	Partition	LED	Partition
1	1	5	5
2	2	6	6
3	3	7	7
4	4	8	8

Location 2 - Transmission Format (1 segment numerical data)

Location 2 contains the transmission format to be used**.**

Number	Format
0	Contact ID
1	SIA
2	4+2

Locations 3 & 4 - Events That Can be Enabled When Phone Fault Is Detected (8 segments feature selection data)

Locations 3 and 4 are used to select certain events to be sent via the AES radio when a phone fault condition is detected. Turn the LED on for the corresponding events to be reported. These events will <u>only</u> be sent if the phone line is bad or faulted. Refer to the programming worksheets on pages 9-13 for events.

Locations 5 & 6 - Events That Can Be Enabled When Phone Line Is Good (8 segments of feature selection data)

Locations 5 and 6 are used to select certain events to be sent via the AES radio. Turn the LED on for the corresponding events to be reported. These reports will only be sent when the phone line is good. ***Note: If you want the reports sent regardless of the phone line condition (good or faulted), you must program locations 3 through 6.***

PROGRAMMING WORKSHEETS

LOC	DESCRIPTION	
0	**Account Code** (from provider) Default: **AAAAAA**	
1	**Partition Event Enables**	
	1 - Partition 1 ❏ *2 - Partition 2* ❏ *3 - Partition 3* ❏ *4 - Partition 4* ❏	*5 – Partition 5* ❏ *6 – Partition 6* ❏ *7 – Partition 7* ❏ *8 – Partition 8* ❏
2	**Transmission Format**	
	0 - Contact ID ❏ 1 - SIA ❏ 2 - 4+2 ❏	
3	**Events That Can Be Enabled During Phone Fault** (8 segments)	
	Segment 1	
	1 - Alarm ❏ 2 - Restore ❏ 3 - Shunt ❏ 4 - Shunt Restore ❏	*5 - Tamper* ❏ *6 - Tamper Restore* ❏ *7 - Trouble* ❏ *8 - Trouble Restore* ❏
	Segment 2	
	1 - Sensor Low Battery ❏ *2 - Sensor Low Batt Restore* ❏ *3 - Sensor Missing* ❏ *4 - Sensor Missing Restore* ❏ 5 – 8 Reserved	
	Segment 3	
	1 - Reserved 2 - Reserved *3 - Duress* ❏ *4 - Auxiliary 1* ❏	*5 – Auxiliary 2* ❏ *6 - Holdup (Silent Panic)* ❏ *7 - Keypad Panic* ❏ *8 - Keypad Tamper* ❏
	Segment 4	
	1 - Box Tamper ❏ *2 - Box Tamper Restore* ❏ *3 - AC Fail* ❏ *4 - AC Restore* ❏	*5 - Low Battery (system)* ❏ *6 - Low Battery Restore* ❏ *7 - Fuse (over current)* ❏ *8 - Fuse (over current)* *Restore* ❏
	Segment 5	
	1 - Siren Tamper ❏ *2 - Siren Tamper Restore* ❏ *3 - Phone Line Monitor* ❏ *4 - Phone Monitor Restore* ❏	*5 - Expander Trouble* ❏ *6 - Exp. Trouble Restore* ❏ *7 - Fail to Communicate* ❏ 8 - Log Full ❏

	Segment 6
	1 - Open ❑ *5 - Autotest* ❑
	2 - Close ❑ 6 - Program Start ❑
	3 - Exit Error ❑ 7 - Program End ❑
	4 - Recent Close ❑ *8 - Download Start* ❑

Segment 6
1 - Open ❑   *5 - Autotest* ❑
2 - Close ❑   6 - Program Start ❑
3 - Exit Error ❑   7 - Program End ❑
4 - Recent Close ❑   *8 - Download Start* ❑

Segment 7
1- Download Complete ❑   *4- Ground Fault Restore* ❑
2- Cancel ❑   *5- Maintenance Test* ❑
3- Ground Fault ❑   6- 8 Reserved

Segment 8   Reserved

4   **Events That Can Be Enabled During Phone Fault**
(8 segments)

Segments 1 - 7   Reserved

Segment 8
1 – 7 Reserved
8 - Fail to Communicate / Data Lost ❑

5   **Events That Can Be Enabled During Phone Normal**
(8 segments)

Segment 1
1 - Alarm ❑   *5 - Tamper* ❑
2 - Restore ❑   *6 - Tamper Restore* ❑
3 - Shunt ❑   *7 - Trouble* ❑
4 - Shunt Restore ❑   *8 - Trouble Restore* ❑

Segment 2
1 - Sensor Low Battery ❑   *3 - Sensor Missing* ❑
2 - Sensor Low Battery   *4 - Sensor Missing Restore* ❑
  Restore ❑   5 – 8 Reserved

Segment 3
1 – 2 Reserved   *6 - Holdup (Silent Panic)* ❑
3 - Duress ❑   *7 - Keypad Panic* ❑
4 - Auxiliary 1 ❑   *8 - Keypad Tamper* ❑
5 - Auxiliary 2 ❑

Segment 4
1 - Box Tamper ❑   *5 - Low Battery (system)* ❑
2 - Box Tamper Restore ❑   *6 - Low Battery Restore* ❑
3 - AC Fail ❑   *7 - Fuse (overcurrent)* ❑
4 - AC Restore ❑   *8 – Fuse Restore* ❑

Segment 5
1 - Siren Tamper ❑   *5 - Expander Trouble* ❑
2 - Siren Tamper Restore ❑   *6 - Exp. Trouble Restore* ❑
3 - Phone Line Monitor ❑   *7 - Fail to Communicate* ❑
4 - Phone Monitor Restore ❑   8 - Log Full ❑

	Segment 6
	1 - Open ❏ *5 - Autotest* ❏ 2 - Close ❏ 6 - Program Start ❏ 3 - Exit Error ❏ 7 - Program End ❏ 4 - Recent Close ❏ *8 - Download Start* ❏
	Segment 7
	1 - Download Complete ❏ *4 - Ground Fault Restore* ❏ *2 - Cancel* ❏ *5 - Maintenance Test* ❏ *3 - Ground Fault* ❏ 6 – 8 Reserved
	Segment 8 Reserved
6	**Events That Can Be Enabled During Phone Normal** (8 segments)
	Segment 1 – 7 Reserved
	Segment 8
	1 – 7 Reserved *8 - Fail to Communicate - Data Lost* ❏

SYSTEM NOTES

SPECIFICATIONS

OPERATING POWER	**12VDC Supplied from NX8 or NX8E or NX-320**
AUXILIARY POWER	**Supplied from NX8/NX8E or NX-320**
CURRENT DRAW	**30 mA**
OPERATING TEMPERATURE	**32 to 120 degrees F**
DIMENSIONS	**4.0" Wide** **3.25" High** **1.0" Deep**
SHIPPING WEIGHT	**1 lbs.**