

**3500 TWO-WAY AUDIO  
ALARM VERIFICATION MODULE  
INSTALLATION MANUAL**

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# 3500

## INSTALLATION MANUAL

### General Description

The Caddx 3500 is a two-way audio (voice) communicator that may be added to a new or existing alarm panel. Once the alarm panel has communicated an alarm, the 3500 will allow a monitoring service operator the ability to monitor a customer's premise for "listen-in" purpose or basic two-way voice communication. This procedure is controlled from the Central Station by use of a Touchtone™ telephone. (See page 20 for operational instructions.)

### Feature Definitions

**Hi-Gain and Low-Gain Listen-in Mode** - When Central Station selects one of these two modes, they can only Listen-in. Hi-gain Listen-in will generally be used in environments with very low noise. Low-gain Listen-in would be used in environments where background noise may distort the audio while they Listen-in.

**VOX Mode** - When in this mode, the 3500 will be voice activated. VOX mode allows a two-way voice exchange between premise and Central Station. The microphone in use can be selected by the Central Station.

**Speaker Phone Mode** - When programmed, this mode can be activated by a trigger on the answer pin. While in this mode, the 3500 will operate identical to VOX mode. Only microphone one and the speaker will be active.

**Line-Hold Mode** - If programmed for this mode, the 3500 will seize the line immediately after the control panel releases the line. The two-way session will begin immediately. (See Location 24)

**Call-Back Mode** - If programmed for this mode, the 3500 will start a timer when the control panel releases the line. During this time, the Central Station can call the premise to begin the two-way session. (See Location 24)

**Controlled Output** - The 3500 has the ability to energize or de-energize (turn on or off) a relay connected to J11 when instructed to by the Central Station. (see terminal drawing)

**Internal Siren Driver** - The 3500 has a built-in voice/siren driver which has nine programmable sounds.

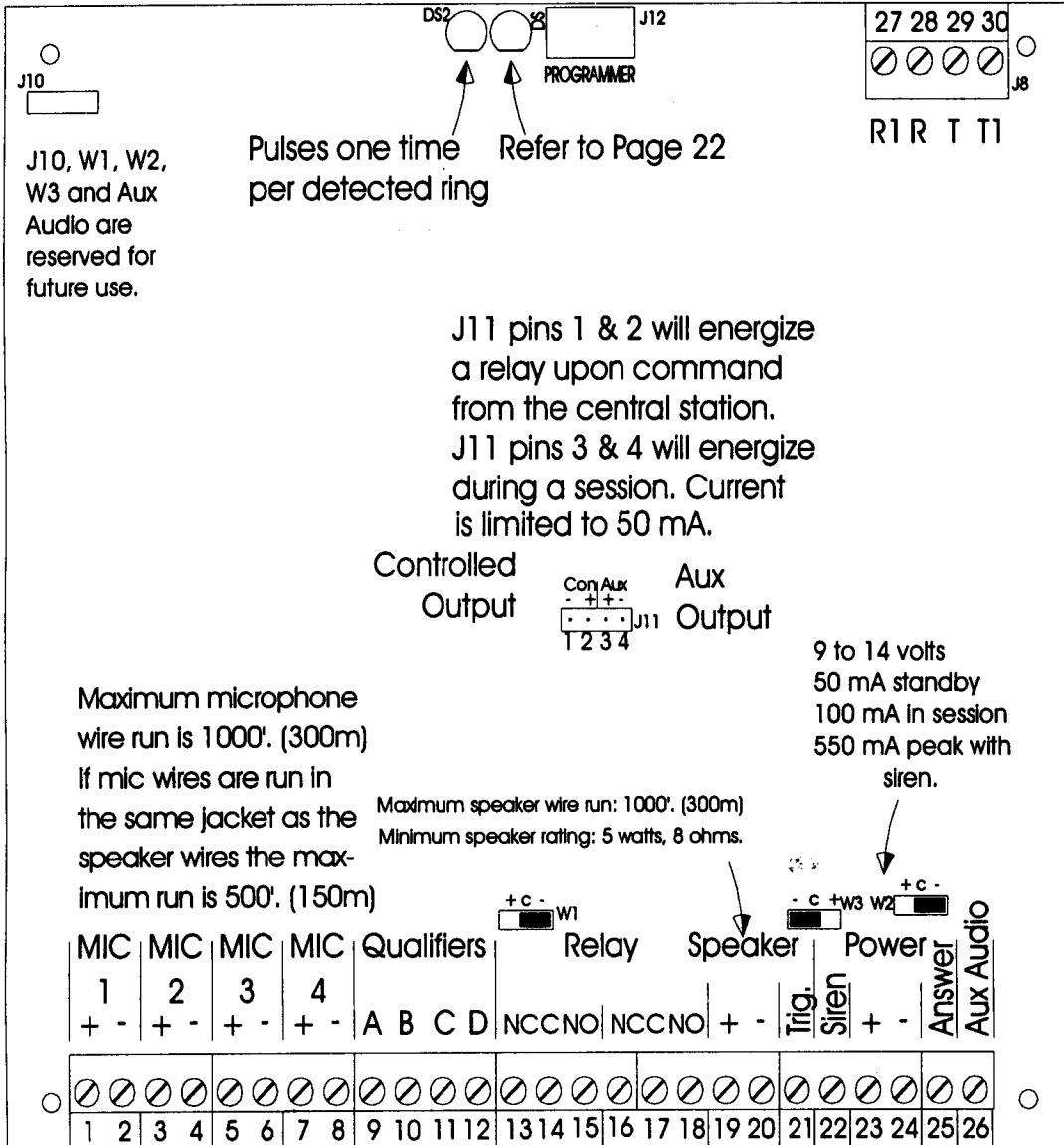
**DPDT Relay** - The 3500 has a DPDT relay which can be used to turn off sirens during a two-way session.

**Microphone Inputs** - The 3500 has 4 microphone inputs. Each input can have 0 to 2 unamplified microphones connected. Input number 4 can be programmed to accept an amplified input. (See Location 19)

**Qualifiers** - There are 4 qualifier inputs (triggers) that can be used to control different sounds from the internal siren driver and/or lock-out the speaker in a panic type situation.

**Line Seize** - The 3500 can be programmed to seize the phone line during call back mode and/or during a two-way session. This eliminates a problem with answering machines answering the phone. (Location 82) **NOTE: If this feature is enabled (default), you should not enable the phone line monitor on the control panel.**

# TERMINAL DRAWING & SPECIAL NOTES



## TERMINAL DESCRIPTION

TERMINAL #	DESCRIPTION
1	Connect positive side of microphone #1.
2	Connect negative side of microphone #1.
3 - 8	See terminal drawing and repeat above sequence with microphones 2-4.
9 - 12	Connect a trigger from the alarm panel to terminal 9 , 10, 11, or 12 if desired to trigger the internal siren driver or enable speaker lock-out. (See locations 20,22,& 112-239)
13 - 18	Terminals 13 - 18 are dry contact relay connections normally used to turn off inside sirens during a two-way session. The relay will remain de-energized in stand-by and will energize when a two-way session is in progress. (See terminal drawings for instructions)
19 (+) and 20 (-)	Connect the internal speaker to terminals 19 and 20. The speaker should be a minimum of 5 watts at a minimum of 8 ohms.
21	Connect the Listen-in trigger from the alarm panel to terminal 21. (See location 18)
22	Connect a trigger from the alarm panel that will be active when the siren should be on to terminal 22.(see locations 18-19)
23	Connect terminal 23 to the AUX power positive terminal on the alarm panel.
24	Connect terminal 24 to the AUX power negative terminal on the alarm panel.
25	Terminal 25 can be programmed to be an answer terminal or a disarm terminal. (See Location 18)
26	This terminal is for future use.

## How to Program the 3500

The program mode can be entered using the 8950 programmer or the 9075 Smart Programmer.

### **Using the 8950 Programmer**

Plug in the 8950 into the 4-pin male outlet marked "Programmer" on the PC Board and the 3500 will enter the program mode. The programmer will display location 000 and the data in this location. To advance one location at a time, press the[#] key. To advance to a specific location, press the location number followed by the [#] key. To enter data in a location, press the number to be entered followed by the [\*] key. For example: To program a "12" in Location 20, press [2][0][#][1][2][\*].

### **Using the 9075 Smart Programmer**

Plug in the 4 pin plug into the 4-pin male outlet marked "Programmer" on the PC Board. Do not plug in the six pin connector. The programmer will display the date and time. Press [A] to enter the program mode at this time. Refer to the paragraph above for programming instructions.

### **Important Function Codes**

[9][1][0][#] Type this code in the programmer to return the 3500 to factory default.

[9][3][0][#] Type this code in the programmer to return the 3500 to the initial power-up state (This will not effect the programming).

**LOCATION 0: HI-GAIN LISTEN-IN MODE MICROPHONE VOLUME** (Default = 15)

Location 0 controls the volume of the microphones when Hi-Gain Listen-in Mode is selected by the Central Station. The possible value for this location is 0 to 15 (Maximum volume is 15 and the minimum is 0).

**LOCATION 1: RESERVED**

**LOCATION 2: LO-GAIN LISTEN-IN MODE MICROPHONE VOLUME** (Default - 8)

Location 2 controls the volume of the microphones when Low-Gain Listen-in Mode is selected by the Central Station. The possible value for this location is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 3: RESERVED**

**LOCATION 4: HI-GAIN TALK MODE SPEAKER VOLUME** (Default = 15)

The volume of the speaker when Hi-Gain talk is selected by Central Station is controlled by Location 4. The possible value for Location 4 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 5: RESERVED**

**LOCATION 6: VOX MODE SPEAKER VOLUME** (Default = 15)

Location 6 controls the volume of the speaker when VOX mode is selected by the Central Station. The possible value for Location 6 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 7: RESERVED**

**LOCATION 8: VOX MODE MICROPHONE VOLUME** (Default - 15)

Location 8 controls the volume of the microphone when VOX mode is selected by the Central Station. The possible value for Location 8 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 9: RESERVED**

**LOCATION 10: HANDS-FREE SPEAKER PHONE MODE SPEAKER VOLUME** (Default - 10)

Location 10 controls the volume of the speaker when speaker phone operation is selected at the site. The possible value for Location 10 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 11: RESERVED**

**LOCATION 12: HANDS-FREE SPEAKER PHONE MODE MICROPHONE VOLUME** (Default - 15)

Location 12 controls the volume of the microphone #1 when speaker phone operation is selected at the site. The possible value for Location 12 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 13: RESERVED**

**LOCATION 14: SIREN DRIVER SPEAKER VOLUME** (Default = 11)

Location 14 controls the volume of the speaker when the internal siren driver is active. The possible value for Location 14 is 0 to 15 (Maximum volume is 15 and minimum is 0).

**LOCATION 15: RESERVED**

**LOCATION 16: INDICATOR TONE VOLUME** (Default - 6)

Location 16 controls the volume for all indicator tones heard by the Central Station during a two-way session. This location will not effect the audio level of the speaker or the microphones. The possible value for Location 16 is 0 to 15 (15 is the maximum volume and 0 is the minimum).

**LOCATION 17: RESERVED**

**LOCATION 18: SIREN DRIVER, ANSWER/DISARM, & TRIGGER TERMINAL CHARACTERISTICS** (Default = 9)

Location 18 controls the operation of the answer/disarm terminal, trigger terminal, and the internal siren driver.

If the Answer/Disarm terminal is set to disarm, when a trigger is received, the 3500 will end the two-way session. If it is set to answer, a trigger will start/stop a speaker phone session (**A speaker phone session will not time out**). The Answer/Disarm and Listen-in trigger terminal can be programmed to be activated by a negative voltage switching to a positive (edge rising) or a positive voltage switching to a negative (edge falling).

Add the values in this table that correspond to the desired characteristics. If none of these characteristics are desired, program a "0".

VALUE	DESCRIPTION
1	Answer/Disarm terminal set to answer
2	Answer/Disarm terminal edge rising
4	Listen-in trigger terminal edge rising
8	Siren driver enabled

**LOCATION 19: FORCED HANG/UP, SIREN TRIGGER, & MICROPHONE 4 CHARACTERISTICS** (Default = 5)

Location 19 enables/disables forced hang-up and controls Microphone 4 level and the siren trigger edge.

The siren trigger can be programmed to be activated by a negative voltage switching to a positive (edge rising), or a positive voltage switching to a negative (edge falling).

Microphone 4 input level can be programmed to be high or low. If programmed to be low, it will require an amplified input.

VALUE	DESCRIPTION
1	Siren trigger edge rising
2	Microphone 4 input level is low
4	Forced hang-up enabled

If forced hang-up is enabled and a trip on a new qualifier is detected, the two-way session will be terminated in the amount of time programmed in Location 34 cannot be extended.

Add the values in this table that correspond to the desired characteristics. If none of these characteristics are desired, program a "0".

**LOCATION 20: QUALIFIER INPUT TERMINALS POLARITY** (Default - 0)

Location 20 determines if the four qualifier terminals are active with a positive voltage (high), or a negative voltage (low).

If the voltage on one or more of the qualifier terminals matches the polarity programmed in this location and a siren trigger is detected, the siren selected for that qualifier (Location 112-239) will be initiated. Qualifier A is the highest priority, and D is the lowest.

Add the values in this table that correspond to the desired characteristics. If none of these characteristics are desired, program a "0".

If speaker lock-out is programmed for a qualifier in Location 22 and that qualifier is active, the Central Station will not be allowed to turn on the speaker, but Listen-in only (regardless of the other qualifiers).

VALUE	DESCRIPTION
1	Qualifier A active high
2	Qualifier B active high
4	Qualifier C active high
8	Qualifier D active high

**LOCATION 21: RESERVED** (Must be 0)

**LOCATION 22: QUALIFIER INPUT TERMINALS SPEAKER LOCK-OUT** (Default = 0)

Location 22 determines if any qualifier will activate speaker lock-out.

If a qualifier is active (see Location 20) and speaker lock-out is programmed in this location, the Central Station will not be allowed to turn on the speaker at the premise.

**NOTE: THIS DOES NOT STOP THE INTERNAL SIREN DRIVER FROM ACTIVATING IF IT IS TRIGGERED.**

Add the values in this table that correspond to the desired characteristics. If none of these characteristics are desired, program a "0".

VALUE	DESCRIPTION
1	Qualifier A lock-out is active
2	Qualifier B lock-out is active
4	Qualifier C lock-out is active
8	Qualifier D lock-out is active

**LOCATION 23: RESERVED** (Must be 0)

**LOCATION 24: OPERATING MODE** (Default = 0)

Location 24 determines if the 3500 will operate in the line-hold or call-back mode when a Listen-in trigger is received. If a 1 is programmed in this location, the 3500 will not release the line after any communication which causes a Listen-in to be triggered. The Listen-in session will start immediately. If a 0 is programmed in this location, the 3500 will release the line and wait for the Central Station to call it back before starting a Listen-in session. (See Locations 48-59 & 74)

**LOCATION 25: RESERVED** (Must be 0)

**LOCATION 26: CALL-BACK WINDOW TIMER** (Default 5)

Location 26 will determine the amount of time in 1 (one) minute increments the 3500 will wait for a call-back, if enabled in Location 24 or by the Central Station. Possible value for Location 26 is 0 - 15.

**LOCATION 27: RESERVED**

**LOCATION 28: SESSION INACTIVITY HANG-UP TIME** (Default = 3)

Location 28 is used to determine how long the 3500 will remain on the phone line with no activity from the Central Station. This time is programmed in 30 second increments.

**LOCATION 29: RESERVED**

**LOCATION 30: SESSION START-UP MICROPHONE SELECTION** (Default = 4)

Location 30 is used to determine which microphone will be active when the two-way session is started. Program the values from the chart below. **NOTE: The values in this chart are the only valid entries.**

VALUE	DESCRIPTION
0	Microphone 1 on
1	Microphone 2 on
2	Microphone 3 on

VALUE	DESCRIPTION
3	Microphone 4 on
4	All Microphones on
5, 6, 7	No Microphones on

**LOCATION 31: RESERVED** (Must be 0)

**LOCATION 32: NEW TRIP SAME QUALIFIER HANG-UP TIME** (Default = 2)

Location 32 is used to determine where the 3500 will set the session timer when a new trip is received on the same qualifier during a two-way session. This time is programmed in 10 second increments and will be extended if there is any activity from the Central Station.

**LOCATION 33: RESERVED**

**LOCATION 34: NEW TRIP DIFFERENT QUALIFIER HANG-UP TIME** (Default = 3)

Location 34 is used to determine where the 3500 will set the session timer when a new trip is received on a different qualifier during a two-way session. This time is programmed in 10 second increments and can only be extended by activity from the Central Station if forced hang-up is disabled in Location 19.

**LOCATION 35: RESERVED**

**LOCATION 36: TIME REMAINING TONE INDICATOR "A TIME"** (Default = 2)

Location 36 is used to determine how many seconds will remain when the 3500 sends tone Indicator A to the Central Station. This time is used to alert the Central Station that the two-way session will be terminated if there is no further activity from them (Central Station). This time is programmed in 10 second increments.

**LOCATION 37: RESERVED**

**LOCATION 38: TIME REMAINING TONE INDICATOR "B TIME"** (Default = 1)

Location 38 is used to determine how many seconds will remain when the 3500 sends tone Indicator B to the Central Station. This time is used to alert the Central Station that the two-way session will be terminated if there is no further activity from them (Central Station). This time is programmed in 10 second increments.

**LOCATION 39: RESERVED**

**LOCATION 40: CONTROLLED OUTPUT POWER-UP STATE** (Default = 0)

Location 40 is used to determine in what state the controlled output attached to the 3500 (See Terminal Drawing on page 3) will be in, if power is lost and reapplied. If a 1 is programmed, the controlled output will be on. If a 0 is programmed, the controlled output will be off.

**LOCATION 41: RESERVED** (Must be 0)

**LOCATION 42: NUMBER OF RINGS TO ANSWER DURING CALL-BACK** (Default = 4)

Location 42 determines the number of rings the 3500 must see before answering the call while in the call-back mode (See Location 24). Valid entries are 0 - 15. If a 0 is programmed, the 3500 will not release the line, but will begin waiting for the access code immediately. **If no Listen-in trigger is received, the 3500 will not answer at all.**

**LOCATION 43: RESERVED** (Must be 0)

**LOCATION 44: WAITING FOR PIN DIGIT HANG-UP TIME** (Default = 1)

Location 44 determines the number of seconds the 3500 will wait for the Central Station to begin putting in their access code when calling back for a two-way session (See Location 48 - 58). If they haven't begun typing in the code by this time, the 3500 will hang up (disconnect). This time is programmable in 10 second increments.

**LOCATION 45: RESERVED**



**LOCATION 46: WRONG PIN ENTRIES** (Default = 3)

Location 46 determines how many attempts can be made at entering valid access codes when calling back for a two-way session. If this location is 0, unlimited attempts can be made. Valid entries are 0 -15.

**LOCATION 47: RESERVED** (Must be 0)

**LOCATIONS 48-59: CALL-BACK MODE ACCESS CODE** (Default = 123456)

Locations 48, 50, 52, 54, 56, and 58 contain the access code used to start a Listen-in session when the 3500 is in a call-back mode. The valid entries are 0-12 & 15. (10 = 0 , 11 = \*, and 12 = #) If less than 6 digits are desired, program a 15 at the end of the desired code. If location 48 contains a 15 any digit will access the 3500. If location 48 contains a 0, no access code is required. **NOTE: Locations 49, 51, 53, 55, 57, and 59 are RESERVED and must be 0.**

**LOCATIONS 60-71: RESERVED** (Must be 0)

**LOCATION 72: WAITING FOR LINE HOLD ACCESS DIGIT TIME-OUT** (Default = 6)

Location 72 determines how long the 3500 will wait for the line-hold digit while in the line-hold mode. This time is programmable in 10 second increments. (See Location 24 and 74) If the digit is not received during this time, the 3500 will hang-up (disconnect).

**LOCATION 73: RESERVED**

**LOCATION 74: LINE HOLD MODE ACCESS DIGIT** (Default = 11)

Location 74 is used to determine the line-hold access digit. This digit is required to start a two-way session if line-hold mode is used. (See Location 24) If this location is 0, no access digit is required. Valid entries are 0 - 12 & 15 (10 = 0, 11 = \*, and 12 = #) If this location is a 15, any digit will access.

**LOCATIONS 75-77: RESERVED** (Must be 0, 3, 0)

**LOCATION 78: ANTI-LOCK-UP TONE TIME** (Default = 4)

Location 78 is used to determine at what interval the anti-lock-up tone will be heard at the Central Station. This tone is used to prevent noise in an exceptionally loud environment from interfering with Central Station's control of the two-way session. The possible value of Location 78 is 0 - 15. If a 0 is programmed, then there will be no tone generated. This is programmable in 2 second increments.(see location 82)

**LOCATIONS 79-81: RESERVED** (Must be 0, 5, 5)

**LOCATION 82: LINE SEIZE & TONE INDICATOR ENABLE** (Default = 15)

Location 82 enables the level change indicator tone, anti-lock-up tone, and line seize functions . If programmed the 3500 will sound 3 quick tones at the Central Station when the command level is changed, and/or send a tone to the Central Station at the anti-lock-up interval (see Location 78). It also has the ability to disconnect the house phones, or leave them connected during a two-way session. If programmed to seize the phone line, the 3500 will disconnect the house phones during a two-way session. Add the values in the following table that correspond to the desired characteristics.

VALUE	DESCRIPTION
1	Send tone indicator for level change
2	Seize premise phone during call-back window time
4	Seize premise phone during session
8	Send tone indication at anti-lock-up interval (see Location 78)

**NOTE:** If the 3500 is programmed to seize the phone line (default) DO NOT enable the phone line monitor on the control panel.

**LOCATION 83 - 111: RESERVED (Must be 0)**

**LOCATIONS 112-239: QUALIFIER SIREN PATTERNS (See programming worksheet for defaults)**

Locations 112-239 are used to control the siren pattern for the four qualifier terminals. If a qualifier is active (see Location 20), and a trigger is received on the siren terminal, the siren (tone) programmed for that qualifier will sound.

Each qualifier has a possibility of up to 8 tones and each tone will sound for the programmed time.

Chart A below list all locations for each qualifier tone. Each tone can be programmed with a value from Chart B. When the first tone with a "15" programmed is reached, the 3500 will go back to tone 1 and start over until the siren terminal resets.

Each tone's play time consist of 2 locations. Location A = (first location in 1 second increments) and B = (second location in 10 second increments). Program the value for the time desired in the correct locations.

**CHART A (QUALIFIER TONE LOCATIONS)**

	QUALIFIER A	QUALIFIER B	QUALIFIER C	QUALIFIER D
TONE 1 SOUND	112	144	176	208
TONE 1 PLAY TIME A, B	114, 115	146, 147	178, 179	210, 211
TONE 2 SOUND	116	148	180	212
TONE 2 PLAY TIME A, B	118, 119	150, 151	182, 183	214, 215
TONE 3 SOUND	120	152	184	216
TONE 3 PLAY TIME A, B	122, 123	154, 155	186, 187	218, 219
TONE 4 SOUND	124	156	188	220
TONE 4 PLAY TIME A, B	126, 127	158, 159	190, 191	222, 223
TONE 5 SOUND	128	160	192	224
TONE 5 PLAY TIME A, B	130, 131	162, 163	194, 195	226, 227
TONE 6 SOUND	132	164	196	228
TONE 6 PLAY TIME A, B	134, 135	166, 167	198, 199	230, 231
TONE 7 SOUND	136	168	200	232
TONE 7 PLAY TIME A, B	138, 139	170, 171	202, 203	234, 235
TONE 8 SOUND	140	172	204	236
TONE 8 PLAY TIME A, B	142, 143	174, 175	206, 207	238, 239

**CHART B (QUALIFIER TONE SOUNDS)**

VALUE	DESCRIPTION
0	Word "Alarm"
1	Word "Emergency"
2	Word "Fire"
3	Word "Help"
4	Word "Burglary"

VALUE	DESCRIPTION
5	High to Low Siren
6	High to Low Sawtooth Siren
7	High to Low Triangular Siren
8	Steady Siren
15	Silence

**EXAMPLE OF QUALIFIER SIREN PATTERN PROGRAMMING**

To program Qualifier A to (1) say "FIRE" for 10 seconds, (2) sound a steady siren for 5 seconds, (3) say "HELP" for 15 seconds, and then (4) start over, you would program the following:

LOCATION	DATA
112	2
114, 115	0, 1
116	8
118, 119	5, 0
120	3
122, 123	5, 1
124	15

**NOTE:** The following locations are Reserved and must be 0: Locations 113, 117, 121, 125, 129, 133, 137, 141, 145, 149, 153, 157, 161, 165, 169, 173, 177, 181, 185, 189, 193, 197, 201, 205, 209, 213, 217, 221, 225, 229, 233, and 237.

**PROGRAMMING WORKSHEETS**

LOCATION	PAGE	DESCRIPTION	DATA	"DEFAULT"
0	5	HI-GAIN LISTEN-IN MODE		"15"
1	5	"RESERVED"		"0"
2	5	LO-GAIN LISTEN-IN MODE MICROPHONE VOLUME		"8"
3	5	"RESERVED"		"0"
4	5	HI-GAIN TALK MODE SPEAKER VOLUME		"15"
5	5	"RESERVED"		"0"
6	5	VOX MODE SPEAKER VOLUME		"15"
7	5	"RESERVED"		"0"
8	5	VOX MODE MICROPHONE VOLUME		"15"
9	5	"RESERVED"		"0"
10	5	HANDS-FREE SPEAKER PHONE MODE SPEAKER VOLUME		"10"
11	5	"RESERVED"		"0"
12	5	HANDS-FREE SPEAKER PHONE MODE MICROPHONE VOLUME		"15"
13	5	"RESERVED"		"0"
14	5	SIREN DRIVER SPEAKER VOLUME		"11"
15	5	"RESERVED"		"0"
16	5	INDICATOR TONE VOLUME		"6"
17	6	"RESERVED"		"0"
18	6	SIREN DRIVER, ANSWER/DISARM, TRIGGER TERMINAL CHAR.		"9"
19	6	FORCED HANG/UP, SIREN TRIGGER, MICROPHONE D CHAR.		"5"
20	6	QUALIFIER INPUT POLARITY		"0"

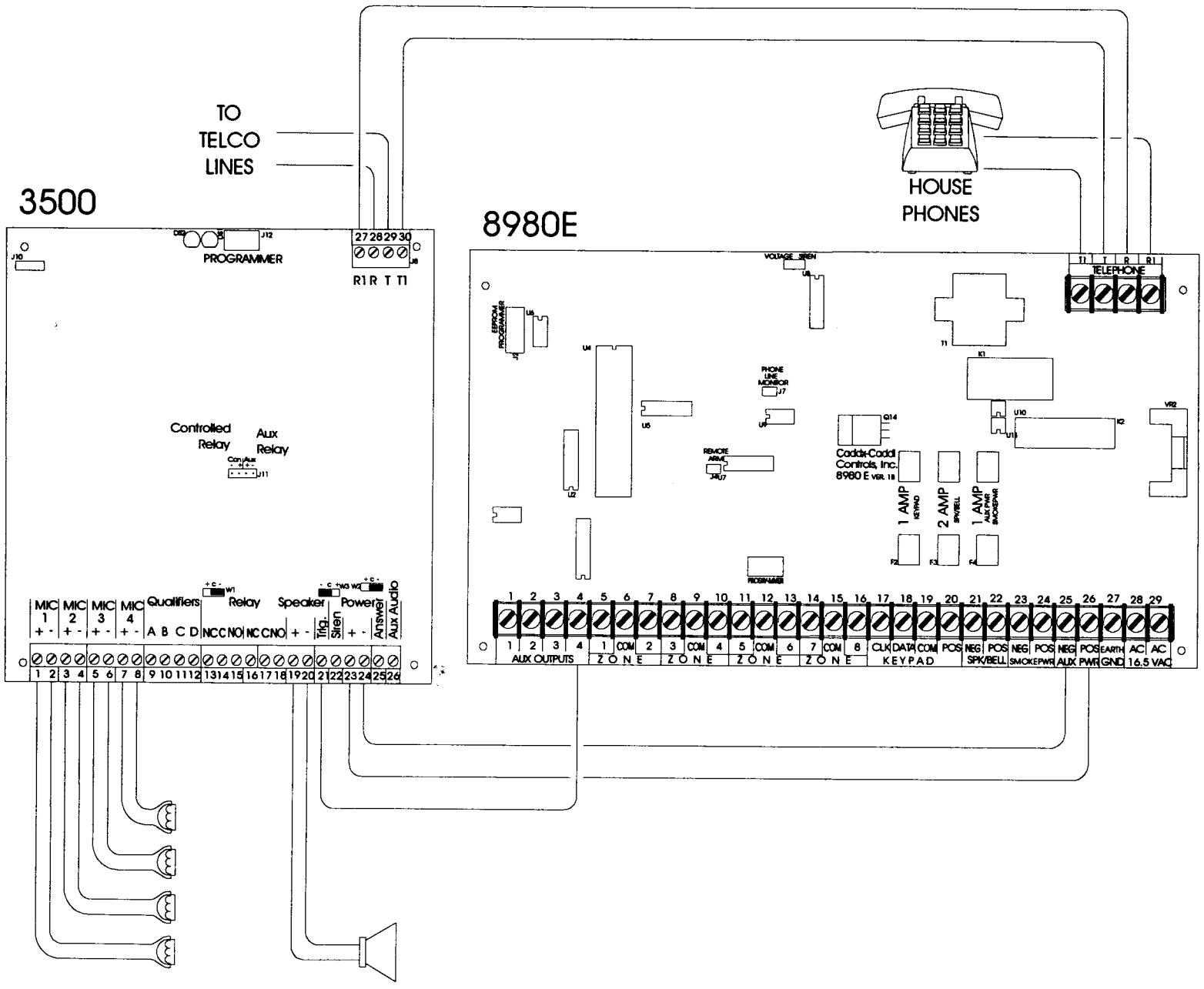
LOCATION	PAGE	DESCRIPTION	DATA	"DEFAULT"
21	7	"RESERVED"		"0"
22	7	QUALIFIER INPUT TERMINALS SPEAKER LOCK-OUT		"0"
23	7	"RESERVED"		"0"
24	7	OPERATING MODE		"0"
25	7	"RESERVED"		"0"
26	7	CALL-BACK WINDOW TIMER		"5"
27	7	"RESERVED"		"0"
28	7	SESSION INACTIVITY HANG-UP TIME		"3"
29	7	"RESERVED"		"0"
30	7	SESSION START-UP MICROPHONE SELECTION		"4"
31	7	"RESERVED"		"0"
32	8	NEW TRIP SAME QUALIFIER HANG-UP TIME		"2"
33	8	"RESERVED"		"0"
34	8	NEW TRIP DIFFERENT QUALIFIER HANG-UP TIME		"3"
35	8	"RESERVED"		"0"
36	8	TIME REMAINING TONE INDICATOR A TIME		"2"
37	8	"RESERVED"		"0"
38	8	TIME REMAINING TONE INDICATOR B TIME		"1"
39	8	"RESERVED"		"0"
40	8	CONTROLLED RELAY POWER-UP STATE		"0"
41	8	"RESERVED"		"0"
42	8	NUMBER OF RINGS TO ANSWER DURING CALL-BACK		"4"
43	8	"RESERVED"		"0"
44	8	WAITING FOR PIN DIGIT HANG-UP TIME		"1"
45	8	"RESERVED"		"0"
46	9	WRONG PIN RETIRES		"3"
47	9	"RESERVED"		"0"
48 - 59	9	CALL-BACK MODE ACCESS CODE		"123456"
60 - 67	9	"RESERVED"		"0"
68 - 69	9	"RESERVED"		"10", "0"
70 - 71	9	"RESERVED"		"0", "15"
72	9	WAITING FOR LINE HOLD ACCESS DIGIT TIME-OUT		"6"
73	9	"RESERVED"		"0"
74	9	LINE HOLD MODE ACCESS DIGIT		"11"
75	9	"RESERVED"		"0"
76 - 77	9	"RESERVED"		"3", "0"
78	9	ANTI-LOCK-UP TONE TIME		"4"
79	9	"RESERVED"		"0"
80 - 81	9	"RESERVED"		"0", "5"

LOCATION	PAGE	DESCRIPTION	DATA	"DEFAULT"
82	9	LINE SEIZE & LEVEL CHANGE INDICATOR ENABLE		"7"
83 - 111	10	"RESERVED"		"0"
112	10	QUALIFIER A TONE 1 SOUND		"2"
114 - 115	10	QUALIFIER A TONE 1 PLAYTIME		"4", "0"
116	10	QUALIFIER A TONE 2 SOUND		"8"
118 - 119	10	QUALIFIER A TONE 2 PLAYTIME		"4", "0"
120	10	QUALIFIER A TONE 3 SOUND		"15"
122 - 123	10	QUALIFIER A TONE 3 PLAYTIME		"4", "0"
124	10	QUALIFIER A TONE 4 SOUND		"15"
126 - 127	10	QUALIFIER A TONE 4 PLAYTIME		"4", "0"
128	10	QUALIFIER A TONE 5 SOUND		"15"
130 - 131	10	QUALIFIER A TONE 5 PLAYTIME		"4", "0"
132	10	QUALIFIER A TONE 6 SOUND		"15"
134 - 135	10	QUALIFIER A TONE 6 PLAYTIME		"4", "0"
136	10	QUALIFIER A TONE 7 SOUND		"15"
138 - 139	10	QUALIFIER A TONE 7 PLAYTIME		"4", "0"
140	10	QUALIFIER A TONE 8 SOUND		"15"
142 - 143	10	QUALIFIER A TONE 8 PLAYTIME		"4", "0"
144	10	QUALIFIER B TONE 1 SOUND		"4"
146 - 147	10	QUALIFIER B TONE 1 PLAYTIME		"4", "0"
148	10	QUALIFIER B TONE 2 SOUND		"5"
150 - 151	10	QUALIFIER B TONE 2 PLAYTIME		"4", "0"
152	10	QUALIFIER B TONE 3 SOUND		"15"
154 - 155	10	QUALIFIER B TONE 3 PLAYTIME		"4", "0"
156	10	QUALIFIER B TONE 4 SOUND		"15"
158 - 159	10	QUALIFIER B TONE 4 PLAYTIME		"4", "0"
160	10	QUALIFIER B TONE 5 SOUND		"15"
162 - 163	10	QUALIFIER B TONE 5 PLAYTIME		"4", "0"
164	10	QUALIFIER B TONE 6 SOUND		"15"
166 - 167	10	QUALIFIER B TONE 6 PLAYTIME		"4", "0"
168	10	QUALIFIER B TONE 7 SOUND		"15"
170 - 171	10	QUALIFIER B TONE 7 PLAYTIME		"4", "0"
172	10	QUALIFIER B TONE 8 SOUND		"15"
174 - 175	10	QUALIFIER B TONE 8 PLAYTIME		"4", "0"
176	10	QUALIFIER C TONE 1 SOUND		"0"
178 - 179	10	QUALIFIER C TONE 1 PLAYTIME		"4", "0"
180	10	QUALIFIER C TONE 2 SOUND		"6"
182 - 183	10	QUALIFIER C TONE 2 PLAYTIME		"4", "0"
184	10	QUALIFIER C TONE 3 SOUND		"15"

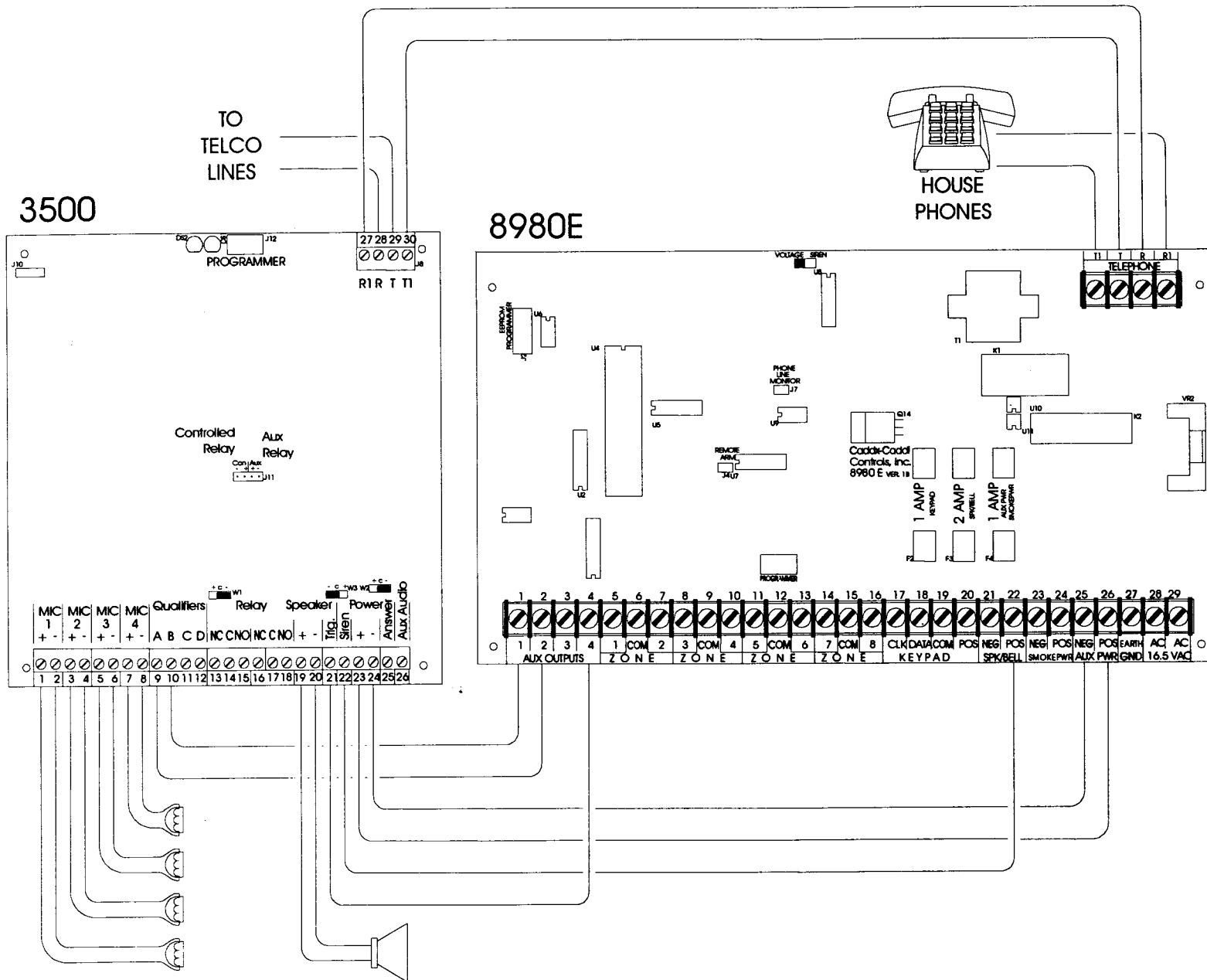
LOCATION	PAGE	DESCRIPTION	DATA	"DEFAULT"
186 -187	10	QUALIFIER C TONE 3 PLAYTIME		"4", "0"
188	10	QUALIFIER C TONE 4 SOUND		"15"
190 -191	10	QUALIFIER C TONE 4 PLAYTIME		"4", "0"
192	10	QUALIFIER C TONE 5 SOUND		"15"
194 -195	10	QUALIFIER C TONE 5 PLAYTIME		"4", "0"
196	10	QUALIFIER C TONE 6 SOUND		"15"
198 - 199	10	QUALIFIER C TONE 6 PLAYTIME		"4", "0"
200	10	QUALIFIER C TONE 7 SOUND		"15"
202 203	10	QUALIFIER C TONE 7 PLAYTIME		"4", "0"
204	10	QUALIFIER C TONE 8 SOUND		"15"
206 -207	10	QUALIFIER C TONE 8 PLAYTIME		"4", "0"
208	10	QUALIFIER D TONE 1 SOUND		"1"
210 -211	10	QUALIFIER D TONE 1 PLAYTIME		"4", "0"
212	10	QUALIFIER D TONE 2 SOUND		"7"
214 -215	10	QUALIFIER D TONE 2 PLAYTIME		"4", "0"
216	10	QUALIFIER D TONE 3 SOUND		"15"
218 - 219	10	QUALIFIER D TONE 3 PLAYTIME		"4", "0"
220	10	QUALIFIER D TONE 4 SOUND		"15"
222 -223	10	QUALIFIER D TONE 4 PLAYTIME		"4", "0"
224	10	QUALIFIER D TONE 5 SOUND		"15"
226 - 227	10	QUALIFIER D TONE 5 PLAYTIME		"4", "0"
228	10	QUALIFIER D TONE 6 SOUND		"15"
230 - 231	10	QUALIFIER D TONE 6 PLAYTIME		"4", "0"
232	10	QUALIFIER D TONE 7 SOUND		"15"
234 - 235	10	QUALIFIER D TONE 7 PLAYTIME		"4", "0"
236	10	QUALIFIER D TONE 8 SOUND		"15"
238 - 239	10	QUALIFIER D TONE 8 PLAYTIME		"4", "0"

**NOTE: THE FOLLOWING LOCATIONS ARE RESERVED AND MUST BE "0":**

**LOCATIONS 113, 117, 121, 125, 129, 133, 137, 141, 145, 149, 153, 157, 161, 165, 169, 173, 177, 181, 185, 189, 193, 197, 201, 205, 209, 213, 217, 221, 225, 229, 233, AND 237.**

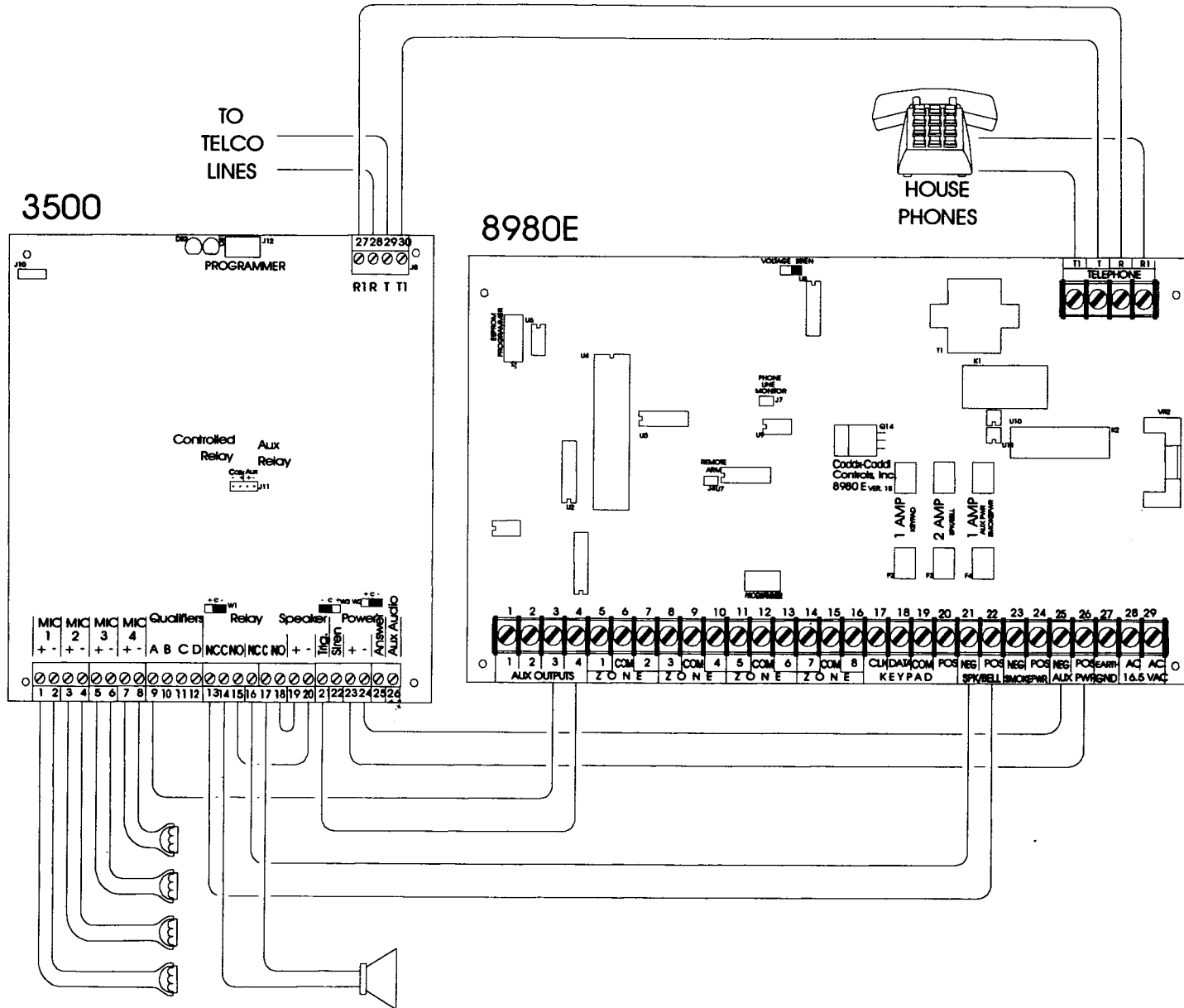


EXAMPLE 1

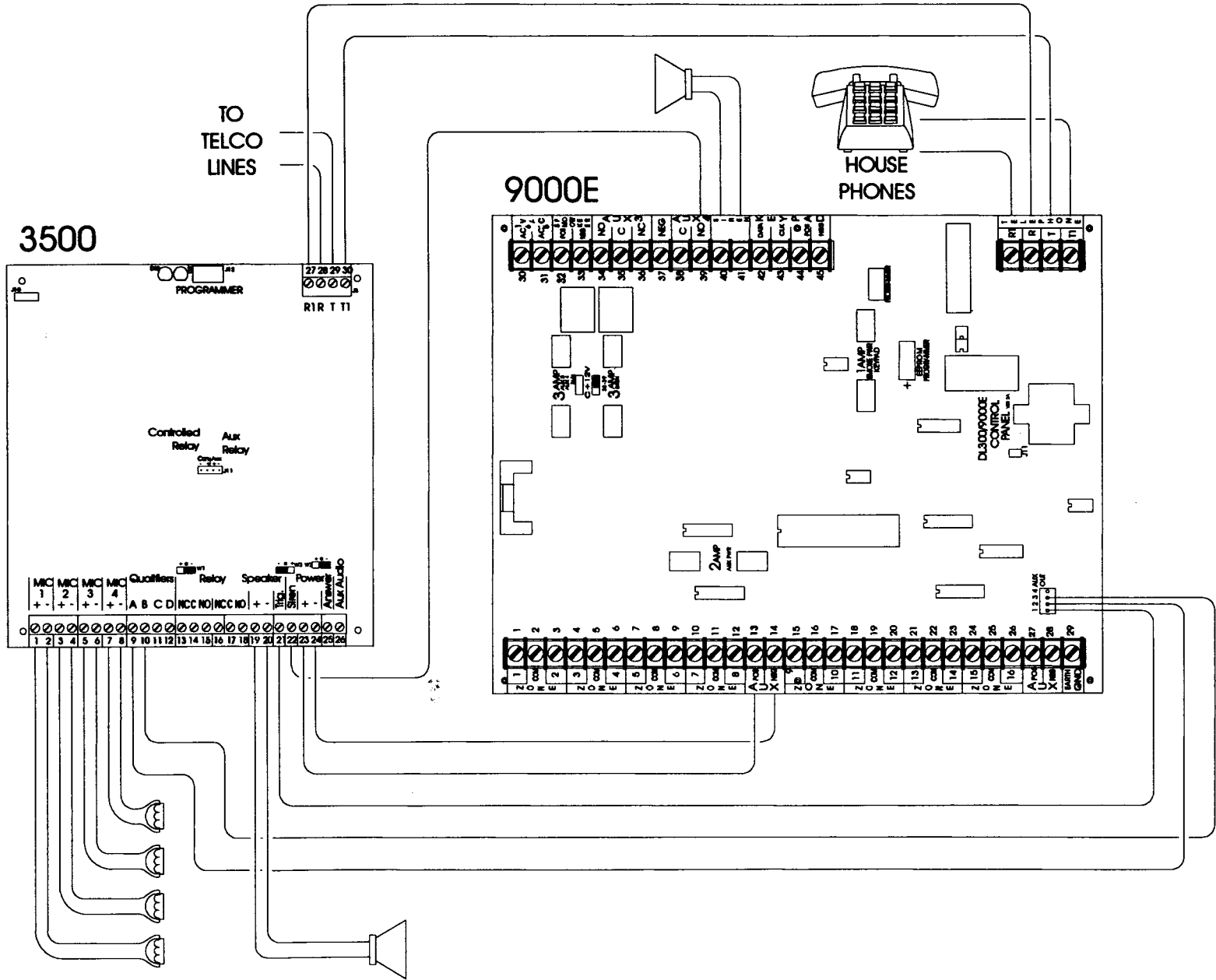


EXAMPLE 2





EXAMPLE 3



**EXAMPLES 1 - 4 PROGRAMMING PROCEDURES**

**EXAMPLE #1**

Example #1 shows the basic Listen-in configuration for the 3500 connected to an 8980E. In this example, the internal siren driver of the 3500 is not used and no speaker lock-out is used. For all communications that produce a Listen-in trigger, the 3500 will go into line-hold or call-back mode as programmed in Location 24 and allow all functions. For this example, program the following locations in the 8980E and the 3500.

8980E	3500
Location 148 = 7	Location 18 = 1
Location 241 = 9	Location 20 = 15
	Location 24 = 1

**EXAMPLE #2**

Example #2 shows a Listen-in configuration which uses the internal siren driver of the 3500. Qualifier A will produce a fire voice/siren. Qualifier B will produce a burglary voice/siren.

If you also desire to use the siren driver on the control panel for an outside speaker, program a "0" in location 132 on the 8980E. Connect according to the drawing and also connect a speaker to terminals 21 and 22 on the 8980E.

8980E	3500
Location 132 = 1	Location 20 = 12
Location 148 = 7	Location 24 = 1
Location 241 = 9	

**EXAMPLE #3**

Example #3 shows a Listen-in configuration in which Qualifier A is used to lock-out the speaker when a panic signal is sent to Central Station. In this example the siren driver on the 8980E is used but will be turned off by the 3500's relay during the two-way session. In this example, the Central Station will not be able to talk to the premise when a panic is sent.

8980E	3500
Location 132 = 2	Location 18 = 1
Location 148 = 7	Location 20 = 14
Location 241 = 9	Location 22 = 1
	Location 24 = 1

**EXAMPLE #4**

Example #4 shows a Listen-in configuration with a 9000E control panel in which the 3500's built in siren driver is used for the internal speakers and the 9000E's siren driver is used for the external speakers.

9000E	3500
Location 224 - 227 = 0, 0, 15 (F), 15 (F)	Location 20 = 12
Location 228 - 231 = 0, 0, 13 (D), 0	Location 24 = 1
Location 232 - 235 = 0, 0, 13 (D), 1	
Location 509 = 9	

**NOTE:** The examples above are using the line-hold mode. If you want to use the call-back mode program a "0" in location 24 of the 3500. In the above examples the locations described must be programmed. Other locations in the control panel and the 3500 may be programmed as desired to customize your installation.

## GENERAL OPERATING INSTRUCTIONS

The two-way audio portion is triggered by a transition on the trigger terminal (edge is programmable). The partition or zone type (alarm or panic) that caused the trigger, can be input on the four qualifier inputs. Each of these terminals can be programmed to allow the central station to listen-in only (as in silent panic) or programmed for voice communication.

The system will operate in the following manner, regardless of how a two-way session is started.

1. The session timer is started (see location 28).
2. All microphones are on (see location 30).
3. Low gain listen-in audio mode is selected (automatic).
4. Level 0 command set is active (automatic).

Once triggered, the 3500 will operate in one of two modes which are programmable: (1) LINE HOLD or (2) CALL BACK. The following explains how the 3500 will operate in these two modes:

### LINE HOLD MODE

1. The phone line is seized from the control panel and all premise phones.(see location 82)
2. Line disconnects (goes off hook).
3. Sends a tone indicator to the central station (if the internal siren is in use it will stop for 1 second during this time).
4. If a line hold digit (see location 74) has been programmed the system will wait for the digit to be received before a two way session is started. If the digit is not received before the time-out period (see location 72) then the system will return to the stand-by mode and wait for a new trip.
5. If the line hold digit is received or not programmed, the system will start a two way session.

### CALL-BACK MODE

1. The phone line is seized from the control panel and all premise phones.(see location 82)
2. Starts the call back window timer (see location 26). If the time runs out before the number of rings has been reached, the system will return to the stand-by mode and wait for a new trip.
3. Waits for the selected number of rings (see location 42), then goes off hook. If the call-back mode is programmed for 0 rings, then the system will go off hook immediately.
4. Send a continuous indicator tone to the central station until the pin digit time out (see location 44), or a digit is received (if the internal siren is sounding, it will silence during this time). When a digit is received, the pin digit time out is reset, and the indicator tone is silenced. If the internal siren was tripped, it is turned back on.
5. Wait for the pin (see locations 48 - 59) to match, the [#] key may be used during pin entry to clear the pin buffer. If the pin does not match after a set number of attempts (see location 46) the system will return to the stand-by mode and wait for a new trip. If the pin is validated, the system will silence the siren and start a two-way session.

If the answer / disarm input terminal is programmed for answer, then the hands-free speaker phone mode is entered and exited by a transition (see location 18) on this terminal. If a siren is triggered while the unit is in the hands-free speaker phone mode, the mode is terminated and the siren will sound. The speaker phone mode is always overridden by alarm trips.

If the internal siren driver is enabled, the siren driver is activated by a transition on the siren input terminal (see location 19). The siren pattern that plays is selected by the four qualifier input terminals (see locations 112-239). If none of the qualifier terminals are active(see location 20), then no internal siren is generated.

The following is a description of the levels and how they may be used:

Levels of the modes may be changed at any time by pressing [\*] followed by the level number you wish to access. The [#] key may be pressed at any time to delete the last key pressed from the key buffer. If no key is pressed for three seconds, then the buffer is automatically cleared. You may press [\*][0] to return to the beginning.

LEVEL 0	DIGIT	CONTROL LEVEL
	0	Returns to the initial session settings when it is tripped. This includes the microphone
	1	High gain talk to the premises and extends session time.
	2	Two way VOX (voice) and extended session time.
	3	High gain listen-in from the premises and extends session time.
	4, 5, 7, 8, 9	Extends session time.
	6	Low gain listen-in from the premises and extends session time.
	88	Terminates session and starts the call back mode.
	99	Terminates session and returns to the stand-by mode and waits for a new trip.

Levels 1, 2, 7, 8, & 9 are not supported, and will revert to level 0.

LEVEL 3	DIGIT	MICROPHONE CONTROL (ZONING)
	0	Returns to the initial session settings when it was tripped. This includes the microphone
	1	Turns microphone 1 on, all other microphones off, and extends session time.
	2	Turns microphone 2 on, all other microphones off, and extends session time.
	3	Turns microphone 3 on, all other microphones off, and extends session time.
	4	Turns microphone 4 on, all other microphones off, and extends the session time.
	5, 6, 7, 8	Extends the session time.
	9	Turns all microphones on and extends the session time.

LEVEL 4	DIGIT	OUTPUT CONTROL (TOGGLING)
	0	Returns to the initial session settings when it was tripped. This includes the microphones
	1	Toggles the controlled output and extends the session time.
	2, 3, 4, 5, 6, 7, 8	Extends the session time.
	9	Turns the controlled output on.

LEVEL 5	DIGIT	OUTPUT CONTROL (TURN OFF)
	0	Returns to the initial session settings when it was tripped. This includes the microphones
	1	Turns the controlled output off and extends the session time.
	2, 3, 4, 5, 6, 7, 8	Extends the session time.
	9	Turn the controlled output off

LEVEL 6	DIGIT	OUTPUT CONTROL (TURN ON)
	0	Returns to the initial session settings when it was tripped. This includes the microphones
	1	Turns the controlled output on and extends session time.
	2, 3, 4, 5, 6, 7, 8	Extends session time.
	9	Turns the controlled output on.

If the session was triggered with a qualifier that was programmed to lock out the speaker (silent panic), then any digit that would normally turn the speaker on is not allowed and will only extend the session time.

If a new alarm trigger is active during a two-way session and forced hang-up is enabled (see location 19), the session time cannot be extended.

If the answer/disarm input terminal is programmed for disarm and a two-way session is in progress, then a transition (see location 18) on this terminal will put the system back into the stand-by mode and wait for a new trip.

### TONES

Indicator tones may be heard at the central station during a two way session. The definition of these indicator tones are as follows:

STONE	DESCRIPTION
One high tone beep.	Time remaining reminder A (see location 36).
One low tone beep.	Time remaining reminder B (see location 38).
One low tone followed by one high tone.	New alarm alert for same trigger / partition.
One high tone followed by one low tone followed by one high tone	New alarm alert for different trigger / partition.
Four high tones.	System waiting for line hold access digit.
Continuous on/off high tone that will stop after a digit is received.	System waiting for access pin.
A quick low tone (if enabled).	Anti lock-up.
Three quick low tones (if enabled).	Acknowledge to level change command.

### LED'S

LED	MODE	DESCRIPTION
LED1	Power up	Flash 5 times fast for one set only.
	Waiting for call back	Flash 3 times slow.
	Two-way session mode	Flash 2 times fast
	Stand by mode	Flash 1 time slow
	Speaker phone mode	Flash 5 times fast.
	Waiting for valid pin	Flash 3 times fast.
LED2	Ring	Pulse 1 time per detected ring.

## **LOCAL TELEPHONE COMPANY INTERFACE INFORMATION**

### **TELEPHONE CONNECTION REQUIREMENTS**

Except for telephone company provided ringers, all connections to the telephone network shall be made through standard plugs and standard telephone company provided jacks or equivalent in such a manner as to allow for immediate disconnection of the terminal equipment. Standard jacks shall be so arranged that if the plug connected thereto is withdrawn, no interference to the operation of the equipment at the customers premises which remains connected to the telephone network, shall occur by reason of such withdrawal.

### **INCIDENCE OF HARM**

Should terminal equipment or protective circuitry cause harm to the telephone network, the telephone company shall, where practical, notify the customer that temporary discontinuance of service may be required; however, where prior notice is not practical, the telephone company may temporarily discontinue service if such action is deemed reasonable in the circumstances. In the case of such temporary discontinuance, the telephone company shall promptly notify the customer who will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

### **CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES**

The telephone company may make changes in its communications facilities, equipment, operations, or procedures where such action is reasonably required and proper in its business. Should any such change render the customers terminal equipment incompatible with the telephone company facilities, the customer shall be given adequate notice to make modifications to maintain uninterrupted service.

### **GENERAL**

The FCC prohibits customer provided terminal equipment be connected to party lines.

### **IMPORTANCE OF THE RINGER EQUIVALENCE NUMBER**

The Ringer Equivalence Number of this device is 0.2 B. This number is a representation of the electrical load that it applies to your telephone line.

### **MALFUNCTION OF THE EQUIPMENT**

In the event that the device should fail to operate properly, the customer shall disconnect the equipment from the telephone line to determine if it is the customers equipment that is not functioning properly. If the problem is with the device the customer shall discontinue use until it is repaired.

### **EQUIPMENT INFORMATION**

MANUFACTURER OF CONNECTING EQUIPMENT: CADDX-CADDI CONTROLS INC.  
FCC REGISTRATION NUMBER: GCQ4DC-17266-AL-E  
RINGER EQUIVALENCE: 0.2 B

## SPECIFICATIONS

OPERATING VOLTAGE	9 - 14 VOLTS DC
CURRENT (STANDBY)	50 mA
IN SESSION	100 mA
INTERNAL SIREN DRIVER (WHEN ON)	550 mA PEAK
VOICE AND/OR SIREN DRIVER	INTERNAL SIREN DRIVER (PROGRAMMABLE)
OPERATING TEMPERATURE	32° - 120° F
DIMENSIONS	6" WIDE 6" LENGTH 1.5" HIGH
TELEPHONE REQUIREMENTS	TOUCHTONE™

## FIVE YEAR LIMITED WARRANTY

CADDX-CADDI CONTROLS, INC. GUARANTEES THIS PRODUCT AGAINST DEFECTIVE PARTS AND WORKMANSHIP FOR TWENTY-FOUR (24) MONTHS FROM DATE OF MANUFACTURING. IF ANY DEFECT APPEARS DURING THE WARRANTY PERIOD RETURN IT TO CADDX, POSTAGE PREPAID. THE UNIT WILL BE REPAIRED AND RETURNED.

FOR THE REMAINING 36 MONTHS OF WARRANTY, THE UNIT WILL BE REPAIRED FOR A FEE NOT TO EXCEED \$10.00 PLUS SHIPPING AND HANDLING.

CADDX ASSUMES NO LIABILITY FOR CONSEQUENTIAL OR INDIRECT DAMAGE AND ACCEPTS NO RESPONSIBILITY FOR REPAIRING DAMAGE TO THE PRODUCT CAUSED BY MISUSE, CARELESS HANDLING, OR WHERE REPAIRS HAVE BEEN MADE BY OTHERS.

NO OTHER GUARANTEE, WRITTEN OR VERBAL, IS AUTHORIZED BY OR ON BEHALF OF CADDX-CADDI CONTROLS, INC., GLADEWATER, TEXAS

CADDX-CADDI CONTROLS, INC  
1420 NORTH MAIN STREET  
GLADEWATER, TEXAS 75647  
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FAX 903-845-6811

3500 INSTALLATION MANUAL  
3500-I.B97 REV B (03/13/97)