

MODEL 4720

HEXADECIMAL PROGRAMMING FORM

APRIL 1990

PART NUMBER 150601

MODEL 4720/4721 EEPROM HEX CODING FORM

Customer name: _____

Phone: _____

Account #: _____
Installer: _____
Date: _____

LCD display is \$### when in address mode, and \$##:\$## when in data mode. \$### is a HEX address in the range \$000 .. \$7FF. \$## is HEX data in the range \$00 .. \$FF.

The keys have the following definitions while in program mode 6:

CHIME = select address mode (same as **STEP** key on 5510, 5520).

TEST = take data, advance to next step (same as **ENTER** key).

STATUS = toggle between HEX and BINARY display modes:

BINARY data display is ----- .. 01234567

(- = bit off = NO, # = bit on = YES)

BYPASS = change the next digit to a HEX letter, where 1..6 correspond to A..F (same as **SHIFT** key on 5510).

MUTE = exit program mode (press twice).

CLEAR = clears the data display to \$00.

OTHER KEYS = Do not use.

To begin HEX programming, press **6** **TEST**, then enter code 0 (installer's code).

To view the next address, press **TEST**

To jump to any address, press **CHIME** # # # **TEST**

To change the data at that address, press # # **TEST**

To enter a HEX # from A..F, press **BYPASS** (shift) - digit **1** - **6**

To exit HEX programming, press **MUTE** **MUTE**

-
- * For binary steps, circle the YES bit #'s.
 - * For HEX steps, fill in the blanks. In some places you can fill in the DECimal number also, which you must convert to HEX before entering on the keypad.
 - * When a step specifies BCD data, that means you should enter the desired numbers as is, without converting to HEX.
 - * Locations marked "na" should not be changed.

-----BEGIN-----

\$000: na

SYSTEM OPTIONS (press STATUS to activate BINARY display mode)

\$001: 0 1 2 3 4 5 6 7 reset options: (default= -1----- = force arm)

.0-.1: default mode (if program mode times out):

----XXXX = \$X0 = disarm (no report)

0---XXXX = \$X1 = disarm (report open)

-1--XXXX = \$X2 = force arm (bypass if not ready) 3

01--XXXX = \$X3 = arm (alarm if not ready)

.2-.6:0 na

.7: bell test at reset

\$002: 0 1 2 3 4 5 6 7 device enables:

.0: dialer (should always be selected)

.1: printer (models 5255,5260)

.2: 1st zone expander (models 4110,4120,4130)

.3: 2nd zone expander (models 4110,4120,4130)

.4: intercom/speakerphone (model 4140)

.5: auxiliary control (model 4150)

.6:0 na (do not select) (used by model 5520)

.7: 4720: model 4200 keystations and/or mechanical key;

CAUTION: This selection precludes use of zones 13-16.

\$003: 0 1 2 3 4 5 6 7

.0: Y=commercial (no CODE2), N=residential (no DOOR ACCESS)

.1: instant if any alarm (internal zones only)

.2: force arm enable (reports CF)

.3: interior on if intrusion alarm

.4: interior delayed if entry (followers - internal zones only)

.5: interior locked while armed (key disabled)

.6: interior off at disarm

.7: automatic interior on at arm

SYSTEM OPTIONS (continued)

\$004: 0 1 2 3 4 5 6 7

- .0: exit warning tone (typ. commercial)
- .1: night troubles silent until disarm
- .2: key beeps to speaker (choose only if no PZT)
- .3: entry beeps to PZT (choose if no internal speaker)
- .4: swinger bypass enable (after 4 consecutive alarms)
- .5: delay bypass reports until armed
- .6: auto unbyypass at disarm
- .7: always need code to bypass (else only if armed)

\$005: 0 1 2 3 4 5 6 7

- .0: access windows used (codes valid only at certain times)
- .1: 4720: report door troubles: DO/DF
- .2: report normal OP/CL
- .3: O/C window enable (no report during window)
4721 CAUTION: .3: may not work properly.
- .4: report O/C trouble: OT/CT (at end of windows)
- .5: report normal door access: DG
- .6: 4720: high security door access (requires 2 codes to open door)
4721: report all areas (OG/CG even when all areas are the same)
- .7: military time display (else AM/PM time display)

\$006: 0 1 2 3 4 5 6 7 (default= -----5--)

- .0-.3 (2nd digit) = highest keystation ID# (to supervise)
(0 if not used)
- .4-.5 = display rate: -- =0= .5 sec
4- =1= 1.0 sec
-5 =2= 1.5 sec (standard)
45 =3= 2.0 sec
- .6: 4720: split bypassing (codes 2-80 can only bypass 1 zone).
4721: split LEDs (separate ARMED & READY for each area).
- .7: 4720: chime to keystation PZTs
4721: show armed areas on LCD.

CAUTION: .7: on CTRL rev. 870827 or earlier is fast clock option.

\$007: 0 1 2 3 4 5 6 7

- .0: fast restores (alarms can report restore before shutdown)
 - .1: duress enable
 - .2: 4720: ringback (bell test) after closing report
(must report normal O/C)
 - .3: bell test at arm
 - .4: always need code to access aux. outputs (else only if armed)
 - .5: auto-close (at end of window)
 - .6: 4720: auto-open (at end of window)
 - .7: 4720: hourly auto-test when armed (high security applications)
-

INTERNAL (built-in) ZONES

	zone:	1	2	3	4	5	6	7	8		1	1	1	1	1	1	1	
		9	0	1	2	3	4	5	6		9	0	1	2	3	4	5	6
day supervised	\$008:	0	1	2	3	4	5	6	7	\$009:	0	1	2	3	4	5	6	7
24 hour super.	\$00A:	0	1	2	3	4	5	6	7	\$00B:	0	1	2	3	4	5	6	7
N.C. loop	\$00C:	0	1	2	3	4	5	6	7	\$00D:	0	1	2	3	4	5	6	7
N.O. loop	\$00E:	0	1	2	3	4	5	6	7	\$00F:	0	1	2	3	4	5	6	7
speed 2 or 4	\$010:	0	1	2	3	4	5	6	7	\$011:	0	1	2	3	4	5	6	7
speed 3 or 4	\$012:	0	1	2	3	4	5	6	7	\$013:	0	1	2	3	4	5	6	7
24 hour alarm	\$014:	0	1	2	3	4	5	6	7	\$015:	0	1	2	3	4	5	6	7
exit delayed	\$016:	0	1	2	3	4	5	6	7	\$017:	0	1	2	3	4	5	6	7
entry delay 1	\$018:	0	1	2	3	4	5	6	7	\$019:	0	1	2	3	4	5	6	7
entry delay 2	\$01A:	0	1	2	3	4	5	6	7	\$01B:	0	1	2	3	4	5	6	7
interior	\$01C:	0	1	2	3	4	5	6	7	\$01D:	0	1	2	3	4	5	6	7
bypassable	\$01E:	0	1	2	3	4	5	6	7	\$01F:	0	1	2	3	4	5	6	7
chime	\$020:	0	1	2	3	4	5	6	7	\$021:	0	1	2	3	4	5	6	7

\$022:\$ ZONING MODE (default = \$00)
 1st digit = # of areas used (4721 only)
 2nd digit = mode: 0=4720, 1=4721

\$023:\$ -- = DEC last internal zone # (0-16)
 (default = \$10 = DEC 16)

NOTES:

If Model 4200 keystations are used, zones 13-16 cannot be used.

Day supervision: For use with window foils or fire exit doors.
 Violation when disarmed will cause trouble instead of alarm.
 (Select N.C loop; do not select N.O. loop or 24 hour alarm.)

N.C. loop: breaking loop will cause alarm.
 N.O. loop: shorting loop will cause alarm.

To program for UL type burg. zones (N.C. contacts with EOL resistor), select both N.C. and N.O.

Loop response (debounce) speeds:
 speed 1 = .010 seconds
 speed 2 = .062 seconds (standard)
 speed 3 = 1 second
 speed 4 = 10 seconds

Fixed response speeds:
 24HR trouble = 10 seconds
 Day trouble = .062 seconds

EXPANSION ZONES (requires Model 4110, 4120 or 4130)

\$024:\$ __ = DEC ___ last exp1 zone # (0-80)

\$025:\$ __ = DEC ___ last exp2 zone # (0-80)

\$026-027:\$ __ \$ __ residence code for RF (0000-1023)
BCD, leading 0's

There are 64 expansion zones maximum; therefore each step takes 64 bits.

The first bit in each step corresponds to sensor ID#0 of each expander.

If the last internal zone is 16, the first EXP1 zone will be zone 17. If two expanders are used, the 2nd expander will skip the zones used by the 1st expander.

24 hour alarm:

\$028: 01234567	\$029: 01234567	\$02A: 01234567	\$02B: 01234567
\$02C: 01234567	\$02D: 01234567	\$02E: 01234567	\$02F: 01234567

exit delay:

\$030: 01234567	\$031: 01234567	\$032: 01234567	\$033: 01234567
\$034: 01234567	\$035: 01234567	\$036: 01234567	\$037: 01234567

entry delay 1:

\$038: 01234567	\$039: 01234567	\$03A: 01234567	\$03B: 01234567
\$03C: 01234567	\$03D: 01234567	\$03E: 01234567	\$03F: 01234567

4 hour supervised:

\$040: 01234567	\$041: 01234567	\$042: 01234567	\$043: 01234567
\$044: 01234567	\$045: 01234567	\$046: 01234567	\$047: 01234567

N.C. loop (skip if RF; select all 4100 sensors as N.C.):

\$048: 01234567	\$049: 01234567	\$04A: 01234567	\$04B: 01234567
\$04C: 01234567	\$04D: 01234567	\$04E: 01234567	\$04F: 01234567

interior:

\$050: 01234567	\$051: 01234567	\$052: 01234567	\$053: 01234567
\$054: 01234567	\$055: 01234567	\$056: 01234567	\$057: 01234567

bypassable:

\$058: 01234567	\$059: 01234567	\$05A: 01234567	\$05B: 01234567
\$05C: 01234567	\$05D: 01234567	\$05E: 01234567	\$05F: 01234567

DIALER

Computer phone # (for up/downloading):

\$060-067:\$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _
BCD, 16 digits max, trailing \$F's

\$068: 0 1 2 3 4 5 6 7

- .0: retry after 15 minutes if fail
- .1: line #2 enable (requires 4175 module)
- .2:0 na
- .3: ground start
- .4: line monitor enable (requires 4175 module)
- .5: answer ring detect - download in same call
- .6: store OP/CL until TEST (do not use with EXCEPTION OP/CL or 4721)
- .7: up/down report enable (required for download or 4150 reporting)

\$069:\$ _ _ 1st digit = # attempts total
2nd digit = # attempts before fail output

NOTE: If both digits are 0, the system will be local only.

\$06A:\$ _ _ 1st digit = # hours low ac report delay
2nd digit = # rings to trigger download (0 if not used)

NOTE: If answer ring detect is selected, there will be 4 less rings if system is armed (2 minimum).

"REPORT TO" steps: (determine which events report to which phone #'s)

PH#: 1 2 3 4 1 2 3 4

\$06B: 0 1 2 3 4 5 6 7
ALARMS TROUBLES

NOTE: Trouble restores always go to same ph# as troubles.

\$06C: 0 1 2 3 4 5 6 7
BYPASS RESTORES

NOTE: 4150 always reports to ph#4 only.

\$06D: 0 1 2 3 4 5 6 7
OpenRst OP/CL

NOTE: Code 0 will always report.

\$06E: 0 1 2 3 4 5 6 7
DOOR TEST

\$06F: 0 1 2 3 4 5 6 7
Must Dial
report touchtone →

NOTE: .4: touchtone line#1
.5: touchtone line#2
.6: touchtone only
.7:0 na

PHONE NUMBERS

BCD, 16 digits max, trailing \$F's

\$A=pause, \$B=*, \$C=#, \$D=2nd dial tone

\$070-077: \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ Phone #1

\$078-07F: \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ Phone #2

\$080-087: \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ Phone #3

\$088-09F: \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ Phone #4

ACCOUNT NUMBERS

packed BCD, 6 digits max, leading 0's

\$090-092:\$ \$ \$ Account #1
 \$093:\$ - - 1st digit = # attempts (before switching)
 2nd digit = receiver format (0-6)

\$094:\$ = DEC listen-in default time (sec)
 (0 if not used, \$14=DEC 20 minimum if used)

\$095: 0 1 2 3 4 5 6 7
 .0: listen only to alarms and test
 .1: use line 1 only
 .2: use line 2 only
 .3: direct line (demo mode)
 .4-.7:0 na

\$96-97:\$00 na

 \$098-09A:\$ _ _ \$ _ _ \$ _ _ Account #2 FORMATS

\$09B:\$
 1st digit = # attempts
 2nd digit = receiver format

0=SEIA8 (SK 9000)
 1=FSK1 (SK 8520)
 2=FSK2 (SK 9000)
 3=BFSK 1400Hz (RAD 6000)
 4=BFSK 2300Hz (RAD 6000)
 5=SEIA20 (SK 9000)
 6=SK 4+2 (SK 8520)
 7=SESCOA 4+2
 other=na

\$09C:\$ = DEC listen-in time

\$09D: 0 1 2 3 4 5 6 7
 .0: listen only to alarms and test
 .1: use line 1 only
 .2: use line 2 only
 .3: direct line

\$9E-9F:\$00 na

 \$0A0-0A2:\$ \$ \$ Account #3

\$0A3:\$ - - 1st digit = # attempts
 2nd digit = receiver format

\$0A4:\$ = DEC listen-in time

\$0A5: 0 1 2 3 4 5 6 7
 .0: listen only to alarms and test
 .1: use line 1 only
 .2: use line 2 only
 .3: direct line

\$A6-A7:\$00 na (possible options for model 5260)

 NOTE: Account #4 is used when up/down loading.

\$0A8-0AA:\$ \$ \$ Account #4

\$0AB:\$ - - 1st digit = # attempts
 2nd digit = receiver format

\$0AC:\$ = DEC listen-in time (sec)

\$0AD: 0 1 2 3 4 5 6 7
 .0: listen only to alarms and test
 .1: use line 1 only
 .2: use line 2 only
 .3: direct line

INTERCOM Model 4140

\$0AE:\$ _ _ = DEC _ _ intercom timeout (seconds)

\$0AF:\$ 0 1 2 3 4 5 6 7

- .0: long distance call enable
- .1: phone timeout enable (same time as intercom)
- .2: one way listen-in
- .3: dial TOUCHTONE
- .4: need dial tone to dial memory ph#
- .5: memory dial only
- .6:0 na
- .7:0 na

1 2 3 4 5 6 7 8 Station ID#

\$0E0: 0 1 2 3 4 5 6 7 Ring stations

\$0B1: 0 1 2 3 4 5 6 7 Listen-in stations

Memory phone #'s BCD, 12 digits max, trailing \$F's

\$0B2-0B7:\$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ MEM#1

\$0B8: 0 1 2 3 4 5 6 7 Quiet stations (no alert/alarm tones) [rev900212]

\$0B9: not used

\$0BA-0BF:\$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ \$ _ _ MEM#2

TIME DELAYS

CAUTION: Unused timers should be set to \$01 (do NOT set to \$00).

DEC-HEX conversion for common times:

10 \$0A	25 \$19	60 \$3C	120 \$78
15 \$0F	30 \$1E	90 \$5A	180 \$B4
20 \$14	45 \$2D	100 \$64	240 \$F0

\$0C0:\$ ___ = DEC ___ shutdown time (#sec/10) (1-255)

EXAMPLE: 15 minutes=900 seconds; 900/10=90; 90=\$5A

\$0C1:\$ ___ = DEC ___ exit time (sec) (1-255)

\$0C2:\$ ___ = DEC ___ entry 1 time (seconds) (1-255)

\$0C3:\$ ___ = DEC ___ entry 2 time (seconds) (1-255)

\$0C4:\$ ___ = DEC ___ swinger bypass window (hours) (1-24)

\$0C5:\$ ___ = DEC ___ RF supervision interval (hours) (2-24)

\$0C6:\$ ___ = DEC ___ door strike time (approx. seconds) (1-15)

\$0C7:\$ ___ = DEC ___ 4720: maximum door open time (seconds) (1-255)

\$0C8:\$ ___ = DEC ___ alarm report delay (seconds) (1-255)

\$0C9: 0 1 2 3 4 5 6 7 days when business is closed (typ. SUN)

S M T W T F S - (.0=SUNDAY - .6=SATURDAY) (4721:CAUTION)

\$0CA: 0 1 2 3 4 5 6 7 days when special windows are used (typ. SAT)

S M T W T F S - (.0=SUNDAY - .6=SATURDAY)

\$0CB:\$ ___ weekly/daily auto test:

\$10 = SUN test \$00 = no auto test

\$11 = MON test \$18 = daily test (required by UL)

\$12 = TUE test

\$13 = WED test

\$14 = THU test

\$15 = FRI test

\$16 = SAT test

\$0CC-0CD:\$ ___ : ___ test time:

BCD, military hour:min

04 17

ACCESS OPTIONS determines which codes can access which functions.

NOTE: Even# codes in bits 0-3, odd# codes in bits 4-7.

DR = door access
 BY = bypass/un-bypass
 CL = arm and test
 OP = disarm

PRIMARY CODES:

\$0CE:	0 1 2 3	4 5 6 7	\$0CF:	0 1 2 3	4 5 6 7
	DR BY CL OP	DR BY CL OP		DR BY CL OP	DR BY CL OP
	code 0	code 1		code 2	code 3
\$0D0:	0 1 2 3	4 5 6 7	\$0D1:	0 1 2 3	4 5 6 7
	DR BY CL OP	DR BY CL OP		DR BY CL OP	DR BY CL OP
	code 4	code 5		code 6	code 7
\$0D2:	0 1 2 3	4 5 6 7			
	DR BY CL OP	DR BY CL OP			
	code 8	code 9			

SECONDARY CODES:

Codes 10-19:	\$0D3:	01234567	\$0D4:	01234567
\$0D5: 01234567	\$0D6:	01234567	\$0D7:	01234567
Codes 20-29:	\$0D8:	01234567	\$0D9:	01234567
\$0DA: 01234567	\$0DB:	01234567	\$0DC:	01234567
Codes 30-39:	\$0DD:	01234567	\$0DE:	01234567
\$0DF: 01234567	\$0E0:	01234567	\$0E1:	01234567
Codes 40-49:	\$0E2:	01234567	\$0E3:	01234567
\$0E4: 01234567	\$0E5:	01234567	\$0E6:	01234567
Codes 50-59:	\$0E7:	01234567	\$0E8:	01234567
\$0E9: 01234567	\$0EA:	01234567	\$0EB:	01234567
Codes 60-69:	\$0EC:	01234567	\$0ED:	01234567
\$0EE: 01234567	\$0EF:	01234567	\$0F0:	01234567
Codes 70-79:	\$0F1:	01234567	\$0F2:	01234567
\$0F3: 01234567	\$0F4:	01234567	\$0F5:	01234567
Codes 80-89:	\$0F6:	01234567	\$0F7:	01234567
\$0F8: 01234567	\$0F9:	01234567	\$0FA:	01234567
Codes 90-99:	\$0FB:	01234567	\$0FC:	01234567
\$0FD: 01234567	\$0FE:	01234567	\$0FF:	01234567

NOTE: Code 99 is also the high security code.
 If using high security door access, do NOT give code 99 any access, since several people will know that code.

SECRET CODES

NOTE: Secret codes can be programmed using mode 7 instead of mode 6.
BCD, 3 digits min, 6 digits max, leading \$F's
unused codes = \$FFFFFF

PRIMARY CODES:

\$100-102:	\$ _ _	\$ _ _	\$ _ _	code 0
\$103-105:	\$ _ _	\$ _ _	\$ _ _	code 1
\$106-108:	\$ _ _	\$ _ _	\$ _ _	code 2
\$109-10B:	\$ _ _	\$ _ _	\$ _ _	code 3
\$10C-10E:	\$ _ _	\$ _ _	\$ _ _	code 4
\$10F-111:	\$ _ _	\$ _ _	\$ _ _	code 5
\$112-114:	\$ _ _	\$ _ _	\$ _ _	code 6
\$115-117:	\$ _ _	\$ _ _	\$ _ _	code 7
\$118-11A:	\$ _ _	\$ _ _	\$ _ _	code 8
\$11B-11D:	\$ _ _	\$ _ _	\$ _ _	code 9

SECONDARY CODES:

\$11E-120:	\$ _ _	\$ _ _	\$ _ _	code 10
\$121-123:	\$ _ _	\$ _ _	\$ _ _	code 11
\$124-126:	\$ _ _	\$ _ _	\$ _ _	code 12
\$127-129:	\$ _ _	\$ _ _	\$ _ _	code 13
\$12A-12C:	\$ _ _	\$ _ _	\$ _ _	code 14
\$12D-12F:	\$ _ _	\$ _ _	\$ _ _	code 15
\$130-132:	\$ _ _	\$ _ _	\$ _ _	code 16
\$133-135:	\$ _ _	\$ _ _	\$ _ _	code 17
\$136-138:	\$ _ _	\$ _ _	\$ _ _	code 18
\$139-13B:	\$ _ _	\$ _ _	\$ _ _	code 19
\$1 - -228:	...	(codes 20-98)		
\$2 - -22B:	\$ _ _	\$ _ _	\$ _ _	code 99 (may be used as high security code).
\$22C-22E:	na			
\$22F:	\$ _ _	DURESS TRIGGER	(must also select duress enable)	
		BCD, 2 digits max,	leading \$F's	

DOOR STATIONS (commercial systems only)

Determines which doors can be accessed by each code.
 (door# = keystation ID#)

NOTE: Door #0 is not used.

PRIMARY CODES:

	* 1	2	3	4	5	6	7		8	9	A	B	C	D	E	F	door ID#	
\$230:	0	1	2	3	4	5	6	7	\$231:	0	1	2	3	4	5	6	7	code 0
\$232:	0	1	2	3	4	5	6	7	\$233:	0	1	2	3	4	5	6	7	code 1
\$234:	0	1	2	3	4	5	6	7	\$235:	0	1	2	3	4	5	6	7	code 2
\$236:	0	1	2	3	4	5	6	7	\$237:	0	1	2	3	4	5	6	7	code 3
\$238:	0	1	2	3	4	5	6	7	\$239:	0	1	2	3	4	5	6	7	code 4
\$23A:	0	1	2	3	4	5	6	7	\$23B:	0	1	2	3	4	5	6	7	code 5
\$23C:	0	1	2	3	4	5	6	7	\$23D:	0	1	2	3	4	5	6	7	code 6
\$23E:	0	1	2	3	4	5	6	7	\$23F:	0	1	2	3	4	5	6	7	code 7
\$240:	0	1	2	3	4	5	6	7	\$241:	0	1	2	3	4	5	6	7	code 8
\$242:	0	1	2	3	4	5	6	7	\$243:	0	1	2	3	4	5	6	7	code 9

SECONDARY CODES:

	* 1	2	3	4	5	6	7		8	9	A	B	C	D	E	F		
\$244:	0	1	2	3	4	5	6	7	\$245:	0	1	2	3	4	5	6	7	code 10
\$246:	0	1	2	3	4	5	6	7	\$247:	0	1	2	3	4	5	6	7	code 11
\$248:	0	1	2	3	4	5	6	7	\$249:	0	1	2	3	4	5	6	7	code 12
\$24A:	0	1	2	3	4	5	6	7	\$24B:	0	1	2	3	4	5	6	7	code 13
\$24C:	0	1	2	3	4	5	6	7	\$24D:	0	1	2	3	4	5	6	7	code 14
\$24E:	0	1	2	3	4	5	6	7	\$24F:	0	1	2	3	4	5	6	7	code 15
\$250:	0	1	2	3	4	5	6	7	\$251:	0	1	2	3	4	5	6	7	code 16
\$252:	0	1	2	3	4	5	6	7	\$253:	0	1	2	3	4	5	6	7	code 17
\$254:	0	1	2	3	4	5	6	7	\$255:	0	1	2	3	4	5	6	7	code 18
\$256:	0	1	2	3	4	5	6	7	\$257:	0	1	2	3	4	5	6	7	code 19
\$258-2F5:	... (codes 20..98)																	
\$2F6:	0	1	2	3	4	5	6	7	\$2F7:	0	1	2	3	4	5	6	7	code 99

NOTE: Code 99 may be used as the high security code.

\$2F8-2FF: na

ACCESS WINDOW POINTERS (GROUP# for each CODE#)

Determines when each code is valid by pointing to 1 of 16 windows, with separate pointers for normal and special days.

.0-3 = normal pointer (also group pointer for 4721 AREA CONTROL)

.4-7 = special pointer

0=always valid

1=never valid

2-15=window# (see WINDOW TIMES)

PRIMARY CODES:

SPEC NORM

\$300:\$ -- code 0 *
 \$301:\$ -- code 1 *
 \$302:\$ -- code 2
 \$303:\$ -- code 3
 \$304:\$ -- code 4
 \$305:\$ -- code 5
 \$306:\$ -- code 6
 \$307:\$ -- code 7
 \$308:\$ -- code 8
 \$309:\$ -- code 9

SECONDARY CODES:

SPEC NORM

\$30A:\$ -- code 10
 \$30B:\$ -- code 11
 \$30C:\$ -- code 12
 \$30D:\$ -- code 13
 \$30E:\$ -- code 14
 \$30F:\$ -- code 15
 \$310:\$ -- code 16
 \$311:\$ -- code 17
 \$312:\$ -- code 18
 \$313:\$ -- code 19
 ...
 \$363:\$ -- code 99

NOTE: Code 99 is also the high security code.
 If using high security, you should make code 99 always valid.

*NOTE: Codes 0 and 1 are always valid, regardless of the options.

\$364-36E: na

\$36F: 0 1 2 3 4 5 6 7 4721: Areas (1-8) that should be closed at end of closing window (for reporting OT or CA).

4721: VALID AREAS for each GROUP:

AREA#: 1 2 3 4 5 6 7 8

 \$370: 0 1 2 3 4 5 6 7 GROUP 0 (codes with normal pointer=0)
 \$371: 0 1 2 3 4 5 6 7 GROUP 1
 \$372: 0 1 2 3 4 5 6 7 GROUP 2
 \$373: 0 1 2 3 4 5 6 7 GROUP 3
 \$374: 0 1 2 3 4 5 6 7 GROUP 4
 \$375: 0 1 2 3 4 5 6 7 GROUP 5
 \$376: 0 1 2 3 4 5 6 7 GROUP 6
 \$377: 0 1 2 3 4 5 6 7 GROUP 7
 \$378: 0 1 2 3 4 5 6 7 GROUP 8
 \$379: 0 1 2 3 4 5 6 7 GROUP 9
 \$37A: 0 1 2 3 4 5 6 7 GROUP 10
 \$37B: 0 1 2 3 4 5 6 7 GROUP 11
 \$37C: 0 1 2 3 4 5 6 7 GROUP 12
 \$37D: 0 1 2 3 4 5 6 7 GROUP 13
 \$37E: 0 1 2 3 4 5 6 7 GROUP 14
 \$37F: 0 1 2 3 4 5 6 7 GROUP 15

WINDOW TIMES: (BCD, military hours \$00:\$00 .. \$23:\$59)

NOTE: Enter the time windows during which users should open/close; do NOT enter the full time during which the system is normally in the disarmed/armed state.

NOTE: CT or OA will report at the end of the open window.
OT or CA will report at the end of the close window.

NOTE: The day begins at 00:00 and ends at 23:59.

NOTE: To select NEVER for OP or CL, enter \$FF for the UNTIL hour.

NORM OP/CL		FROM		UNTIL	
\$380-383:	\$	- :		\$	- : -
\$384-387:	\$	- : -		\$	- : -

Normal Open
Normal Close

NORM ACCESS		FROM		UNTIL	WINDOW#
\$388-38B:	\$	- :		\$	- : -
\$38C-3BF:	\$	- : -		\$	- : -
\$390-393:	\$	- : -		\$	- : -
\$394-397:	\$	- : -		\$	- : -
\$398-39B:	\$	- : -		\$	- : -
\$39C-39F:	\$	- : -		\$	- : -
\$3A0-3A3:	\$	- : -		\$	- : -
\$3A4-3A7:	\$	- : -		\$	- : -
\$3A8-3AB:	\$	- : -		\$	- : -
\$3AC-3AF:	\$	- : -		\$	- : -
\$3B0-3B3:	\$	- : -		\$	- : -
\$3B4-3B7:	\$	- : -		\$	- : -
\$3B8-3BB:	\$	- : -		\$	- : -
\$3BC-3BF:	\$	- : -		\$	- : -

#2
#3
#4
#5
#6
#7
#8
#9
#10 (A)
#11 (B)
#12 (C)
#13 (D)
#14 (E)
#15 (F)

SPEC OP/CL		FROM		UNTIL	
\$3C0-3C3:	\$	- :		\$	- : -
\$3C4-3C7:	\$	- : -		\$	- : -

Special Open
Special Close

SPEC ACCESS		FROM		UNTIL	WINDOW#
\$3C8-3CB:	\$	- :		\$	- : -
\$3CC-3CF:	\$	- : -		\$	- : -
\$3D0-3D3:	\$	- : -		\$	- : -
\$3D4-3D7:	\$	- : -		\$	- : -
\$3D8-3DB:	\$	- : -		\$	- : -
\$3DC-3DF:	\$	- : -		\$	- : -
\$3E0-3E3:	\$	- : -		\$	- : -
\$3E4-3E7:	\$	- : -		\$	- : -
\$3E8-3EB:	\$	- : -		\$	- : -
\$3EC-3EF:	\$	- : -		\$	- : -
\$3F0-3F3:	\$	- : -		\$	- : -
\$3F4-3F7:	\$	- : -		\$	- : -
\$3F8-3FB:	\$	- : -		\$	- : -
\$3FC-3FF:	\$	- : -		\$	- : -

NOTE:
Special windows will be used on days selected as special at \$0CA. On days selected as closed (at \$0C9), only codes 0 or 1 can access the system.

LCD SYSTEM MESSAGES

Normally these should not be changed.

If a message is made longer, all the subsequent messages and their pointers would have to be revised.

\$400-4BF: ASCII text for steps \$4C0-4DF

Each message is stored in ASCII (in the range \$20..\$7E),
(see ASCII-HEX conversion chart at the end of this form),
with bit 7 of the last character set (to signify end_of_message).
The index (pointer) location contains the last 2 HEX digits of
the address of the first character in the message.

addr:index message pointed to (index range \$00..\$BF)

\$4C0:\$00	*	
\$4C1:\$01	BYPASSED	
\$4C2:\$09	NOT READY	
\$4C3:\$0D	READY	
\$4C4:\$12	TROUBLE	
\$4C5:\$19	LOW BATTERY	
\$4C6:\$24	SILENCED	
\$4C7:\$2C	OPEN	(not used)
\$4C8:\$30	SERVICE	(changeable from 5540)
\$4C9:\$37	WALK TEST	
\$4CA:\$00	*	
\$4CB:\$40	DATE	
\$4CC:\$44	TIME	
\$4CD:\$48	INTERCOM	
\$4CE:\$50	PHONE	
\$4CF:\$55	DOOR	
\$4D0:\$59	ARMED	
\$4D1:\$5E	CODE2	
\$4D2:\$63	INSTANT	
\$4D3:\$6A	COMPLETE	Change to msg. of your choice if split 4721.
\$4D4:\$72	PERIMETER	Change to "PARTIAL" if 4721.
\$4D5:\$00	*	
\$4D6:\$00	*	
\$4D7:\$7B	RESTRICTED	
\$4D8:\$85	TRY AGAIN	
\$4D9:\$8E	ENTER CODE	
\$4DA:\$94	CODE	
\$4DB:\$98	_SEC TO_	This message includes a space at the beginning and end.
\$4DC:\$A0	EXIT	
\$4DD:\$A4	ALARM	
\$4DE:\$A9	DEVICE	
\$4DF:\$AF	KEYSTATION	

LCD SYSTEM MESSAGES (continued)

addr:index message pointed to (index range = \$00-9F)

\$4E0:\$01	SUN	
\$4E1:\$04	MON	
\$4E2:\$07	TUE	
\$4E3:\$0A	WED	
\$4E4:\$0D	THU	
\$4E5:\$10	FRI	
\$4E6:\$13	SAT	
\$4E7:\$00	*	
\$4E8:\$16	AM_	This message includes a space at the end.
\$4E9:\$19	PM_	This message includes a space at the end.
\$4EA:\$1C	REPORTING	
\$4EB:\$25	LISTENING	
\$4EC:\$2E	UP/DOWNLOAD	
\$4ED:\$39	ZONE	(not used)
\$4EE:\$00	*	
\$4EF:\$00	*	
\$4F0:\$3D	PAPER	
\$4F1:\$00	*	
\$4F2:\$42	DATA LOST	
\$4F3:\$4B	FAILED	
\$4F4:\$51	BATTERY	
\$4F5:\$58	AC	
\$4F6:\$5A	LINE 1	
\$4F7:\$60	LINE 2	
\$4F8:\$66	HOLDUP	
\$4F9:\$6C	FIRE	
\$4FA:\$70	MEDICAL	
\$4FB:\$77	PANIC	
\$4FC:\$7C	INTRUSION	
\$4FD:\$85	TAMPER	
\$4FE:\$8B	GAS	
\$4FF:\$8E	AUXILIARY	

\$500-59F: ASCII text for steps \$4E0-4FF

NOTES: Index byte = last 2 HEX digits of the address of the first character in the message.

Bit 7 is set in the last character of each message.

ZONE TYPES

1st digit (.4-.7) determines audible options:

- 0= normal audible
- .4) 1= silent alarm
- .5) 2= delayed alarm report (see timer at \$0C8)
- 3= silent and delayed report
- .6) 4= delayed external bell (no external bell unless dialer fails)
- 5= na
- 6= delayed report and delayed bell
- 7= na
- .7) 8= no bell shutdown (until disarm)

2nd digit (.0-.3) determines zone type:

- 0= HOLDUP (must be selected as silent alarm)
- 1= FIRE (no shutdown required by UL)
- 2= MEDICAL
- 3= PANIC
- 4= INTRUSION (BURGLARY)
- 5= TAMPER
- 6= GAS
- 7= UNDEF AUX
- 8= WATER
- 9= HEAT
- A= COLD
- B= local auxiliary (not reported)
- C= unused zone (4720: no report or display)
- D= doorbell
- E,F= not used

Typical examples:

- \$10 = HOLDUP, silent alarm
- \$81 = FIRE, no shutdown
- \$04 = INTRUSION, normal
- \$24 = INTRUSION, delayed report
- \$44 = INTRUSION, delayed external bell

\$5A0:\$ 00 na

BUILT-IN ZONES:

AUD TYPE	AUD TYPE	AUD TYPE	AUD TYPE
\$5A1:\$ -- Z1	\$5A2:\$ -- Z2	\$5A3:\$ -- Z3	\$5A4:\$ -- Z4
\$5A5:\$ -- Z5	\$5A6:\$ -- Z6	\$5A7:\$ -- Z7	\$5A8:\$ -- Z8
\$5A9:\$ -- Z9	\$5AA:\$ -- Z10	\$5AB:\$ -- Z11	\$5AC:\$ -- Z12
\$5AD:\$ -- Z13	\$5AE:\$ -- Z14	\$5AF:\$ -- Z15	\$5B0:\$ -- Z16

EXPANSION ZONES: (typically zones 17..80)

AUD TYPE	AUD TYPE	AUD TYPE	AUD TYPE
\$5B1:\$ -- Z17	\$5B2:\$ -- Z18	\$5B3:\$ -- Z19	\$5B4:\$ -- Z20
\$5ED:\$ -- Z77	\$5EE:\$ -- Z78	\$5EF:\$ -- Z79	\$5F0:\$ -- Z80

(FIRE key) AUD TYPE	(EMER key) AUD TYPE	(POLICE key) AUD TYPE
\$5F1:\$ -- Z81	\$5F2:\$ -- Z82	\$5F3:\$ -- Z83

\$5F4-5FF: na

ZONE LOCATIONS:

NOTES:

Words are stored just like system messages, with bit 7 set in the last character of each word.

Index pointer = last 2 HEX digits of address of 1st character in word.

Locations are split into two words so that redundant words need not be duplicated.

Unique locations may be placed entirely in word 1 or word 2.

Unused words should be left blank (index =\$00).

A space is automatically inserted between the 1st and 2nd words when they are displayed.

Total length of both words, including space between, must not exceed 13-14 characters.

To program all words from the keypad, it is recommended that the words be allocated 16 characters each, so that the indexes will be \$00, \$10, \$20, \$30, etc. and so that words can be lengthened later without affecting all the subsequent words. This would limit you to just 10 1st words and 10 second words.

1st WORD:

\$601-69F: ASCII text for steps \$6A1-6F0

WORD 1 POINTERS (index range = \$00-9F):

addr:index zone# word pointed to

```

-----
 6A0:  $00   na
$6A1:  $    1  - - - - -
$6A2:  $    2  - - - - -
$6A3:  $    3  - - - - -
$6A4:  $    4  - - - - -
$6A5:  $    5  - - - - -
$6A6:  $    6  - - - - -
$6A7:  $    7  - - - - -
$6A8:  $    8  - - - - -
$6A9:  $    9  - - - - -
$6AA:  $   10  - - - - -
$6AB:  $   11  - - - - -
$6AC:  $   12  - - - - -
$6AD:  $   13  - - - - -
$6AE:  $   14  - - - - -
$6AF:  $   15  - - - - -
$6B0:  $   16  - - - - -
$6B1-6F0: ... (zones 17..80)
$6F1-6F8: 4721: AREA NAME WORD 1 POINTERS
$6F9-6FF: na

```

2nd WORD:

\$701-79F: ASCII text for steps \$7A1-7FF

WORD 2 POINTERS (index range = \$00-9F):

addr:index zone# word pointed to

```

-----
$7A0:  $00    na
$7A1:  $ ---  1  - - - - - - - - - - - - - -
$7A2:  $ ---  2  - - - - - - - - - - - - - -
$7A3:  $ ---  3  - - - - - - - - - - - - - -
$7A4:  $ ---  4  - - - - - - - - - - - - - -
$7A5:  $ ---  5  - - - - - - - - - - - - - -
$7A6:  $ ---  6  - - - - - - - - - - - - - -
$7A7:  $ ---  7  - - - - - - - - - - - - - -
$7A8:  $ ---  8  - - - - - - - - - - - - - -
$7A9:  $ ---  9  - - - - - - - - - - - - - -
$7AA:  $ --- 10  - - - - - - - - - - - - - -
$7AB:  $ --- 11  - - - - - - - - - - - - - -
$7AC:  $ --- 12  - - - - - - - - - - - - - -
$7AD:  $ --- 13  - - - - - - - - - - - - - -
$7AE:  $ --- 14  - - - - - - - - - - - - - -
$7AF:  $ --- 15  - - - - - - - - - - - - - -
$7B0:  $ --- 16  - - - - - - - - - - - - - -
$7B1-7F0: ... (zones 17..80)
$7F1-7F8: 4721: AREA NAME WORD 2 POINTERS
$7F9-7FD: na
$7FE:$47, $7FF:$20 or $21 (model #)

```

ASCII-HEX conversions:

space \$20	0 \$30	@ \$40	P \$50	a \$61	p \$70
! \$21	1 \$31	A \$41	Q \$51	b \$62	q \$71
" \$22	2 \$32	B \$42	R \$52	c \$63	r \$72
# \$23	3 \$33	C \$43	S \$53	d \$64	s \$73
\$ \$24	4 \$34	D \$44	T \$54	e \$65	t \$74
% \$25	5 \$35	E \$45	U \$55	f \$66	u \$75
& \$26	6 \$36	F \$46	V \$56	g \$67	v \$76
' \$27	7 \$37	G \$47	W \$57	h \$68	w \$77
(\$28	8 \$38	H \$48	X \$58	i \$69	x \$78
) \$29	9 \$39	I \$49	Y \$59	j \$6A	y \$79
* \$2A	: \$3A	J \$4A	Z \$5A	k \$6B	z \$7A
+ \$2B	; \$3B	K \$4B		l \$6C	
, \$2C	< \$3C	L \$4C		m \$6D	
- \$2D	= \$3D	M \$4D		n \$6E	
. \$2E	> \$3E	N \$4E		o \$6F	
/ \$2F	? \$3F	O \$4F			

To set	To set	To set	To set	To set	To set
bit 7:	bit 7:	bit 7:	bit 7:	bit 7	bit 7:
\$Ax	\$Bx	\$Cx	\$Dx	\$Ex	\$Fx

-----END-----