

HOME AUTOMATION, INC.

MODEL 1503 VERSION 2

and

Model 1503-LC

INSTALLATION MANUAL

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#### INTRODUCTION

This installation guide is intended as an aid to installing the Model 1503 Version 2 Home Automation System.

The installer should also have thoroughly reviewed and understood the MODEL 1503 Version 2 OWNER'S MANUAL, which has important information regarding final set up of the system.

This manual assumes that the installer has a basic understanding of installing a security system.

In UL Listed Installations, failure to install the Model 1503 and its accessories in accordance with the UL Requirements in this manual and in the Owner's Manual is a violation of the Listing Mark.

## PLANNING

Before you start, your system should be planned. The INSTALLATION PLANNER/CHECKLIST at the end of this manual serves two purposes: First, to help you plan out your system, and second, to perform a final check out once installation is complete.

Plan using the PLANNER/CHECKLIST sheets as follows:

### 1. Zones

- Decide where each contact or detector will be located
- Decide which zone it will go on
- Decide what zone type each zone will be
- Write each contact location on the line under the appropriate zone on the PLANNER/CHECKLIST.
- See SMOKE DETECTOR INSTALLATION GUIDELINES to plan locations for smoke detectors.

### 2. Consoles

Consult the customer on the console location. The console should be easily accessible. Write the console location(s) on the planning sheet.

### 3. Interior Sounder and Outside Siren

Locate both where they cannot be tampered with.

### 4. Home Control Modules

Plan out locations using planning sheets. Keep in mind that the Model 1503 default settings for FLASH FOR ALARM is Unit Number 2.

### 5. Plan energy saver relays or other options.

6. Give consideration to where the Control/Communicator will go. Remember that it needs an unswitched, duplex

receptacle, preferably on its own circuit.

#### INSTALLATION

1. Go over your plan with your customer.
2. Install the entire system. Refer to sections in this manual to see how to install various components.
3. Follow the Power-Up and Checkout procedures.
4. Explain the basics to the customer, deliver all manuals and documentation.
5. Pick up trash, tools and payment.
6. Follow up with your customer to keep her/him satisfied.

#### CONTROL/COMMUNICATOR HOOKUP

1. When choosing a place to mount the Control/Communicator, consider the following:
  - A. A duplex outlet, preferably on its own circuit, is required to be within 5 feet of the control communicator for the power transformer and the X-10 Control Module PL513.
  - B. The Control/Communicator should be protected from weather, temperature extremes and burglars.
  - C. The Control/Communicator makes a faint hissing sound during normal operation. It may not be suitable for mounting in a quiet bedroom.
2. GROUND THE CONTROL/COMMUNICATOR "EARTH GND" TERMINAL TO A COLD WATER PIPE OR 4 FOOT GROUND ROD TO PRESERVE ITS BUILT-IN TRANSIENT PROTECTION. USE 14 GAUGE WIRE. TRANSIENT PROTECTION WILL NOT WORK IF THE CONTROL/COMMUNICATOR IS NOT PROPERLY GROUNDED.
3. Connect the 24 VAC power transformer to the 24 VAC INPUT terminals.
4. Connect the BLACK battery wire to the - (minus) terminal on the battery. DO NOT connect the red wire at this time. DO NOT reverse the connections; the battery fuse will blow. Note that the unit will NOT START on the battery alone. AC power must be applied to engage the low voltage cut out relay. After that, the system will run on the battery without AC power.

5. Plug the X-10 USA Model PL513 module into the outlet above the transformer. Use the supplied 4 conductor modular telephone cable to connect the module to the smaller jack on the processor board. The red LED on the PL513 module should be on, and will blink off when the control/communicator sends commands to it.

For UL Listed Installations, See UNDERWRITER'S LABORATORIES REQUIREMENTS and the various diagrams contained on the following pages.

MODEL 1503 OVERALL CONNECTION DIAGRAM

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## MODEL 1503 CONTROL/COMMUNICATOR INSIDE VIEW

### ABOUT BURGLARY ZONES

Burglary Zones 1 - 15 and 17 and 18 in a Model 1503 Version 2 system require the use of Normally Closed (Open for alarms) switches. Most contacts designed for doors, windows, and motion detectors, glassbreak detectors and other security devices meet this requirement.

An end of line resistor is not required on burglary zones.

Three individual zones are combined into one Loop. Three zones are connected to the Termination panel by internal wiring, installed at the factory. Each zone has a different resistance across it, allowing the Model 1503 to determine which of the three zones on a loop is open. This also allows the Model 1503 to read the resistance of all three zones, and indicate trouble if the resistance of the wiring exceeds 50 ohms.

Zones 1 - 15 are associated with Loops 1-5 as follows.

Zones 1, 2 and 3:	Loop 1
Zones 4, 5 and 6:	Loop 2
Zones 7, 8 and 9:	Loop 3
Zones 10, 11 and 12:	Loop 4
Zones 13, 14 and 15:	Loop 5

Zone 16 is the fire zone, connections are located on the Termination Panel.

Two additional zones, labeled "Auxiliary Inputs Aux 1" and "Aux 2" on the Termination Panel are used as Zones 17 and 18. Connections are made to the Termination Panel. The Model 1503 can not read the loop resistance on Zones 17 and 18.

Security devices that have solid state switching devices, (not a contact or a relay) such as Sentrol's Model 5105, 5125, 5135 and 5400 series glassbreak and shock detectors, should be installed on Zones 17 and 18. Zones 17 and 18 can tolerate higher resistance in the security device when it is closed, which is typical of these types of devices.

Note that Model 1101 Programmable Energy Saver Relays use Zones 17 and 18 as temperature inputs. If you are using two 1101's you cannot use Zones 17 and 18.

### SUGGESTED HOOKUPS FOR BURGLAR ZONE TYPES

ZONE 1, 2, 3: Doors for normal entry and exit.



ZONE 4, 5, 6: Windows, glass break detectors, doors not normally used for entry and exit.

ZONE 7, 8, 9: Non-sleeping area interior motion detectors, traps, etc. For example, DOWNSTAIRS motion detectors if sleeping area and bathrooms are UPSTAIRS.

ZONE 10, 11, 12: Sleeping area motion detectors and traps, i.e bedroom or hallway.

ZONE 13: Panic buttons

ZONE 14, 15: Tamper zones

ZONE 16: Smoke and heat detectors only.

ZONE 17, 18: Any other zone types needed.

Zones 1 - 15 and 17 and 18, can be reprogrammed to different zone types, if desired. See SET UP section in the this manual.

#### BURGLAR ZONE HOOKUPS

1. Use normally closed switches with no end of line resistor. Maximum resistance for each group of 3 zones, combined, is 50 ohms.
2. Power motion detectors from AUX 12VDC.
3. Unused zones MUST HAVE a wire jumper connected across its terminals.
4. See Overall Connection Diagram.

#### FIRE ZONE HOOKUP

1. Use normally open (closed for alarm) 4 wire 'SYSTEM' type smoke detectors, ESL Model 445AT or equivalent, rated 6 - 15 VDC, 1.5 V ripple.
2. Power smoke detectors from SWITCHED +12 VDC.
3. End of line resistor: 1000 ohms. Maximum loop resistance EXCLUDING end of line resistor is 150 ohms. Use HAI Model 1503A0011 End Of Line Resistor Assembly in UL Listed Installations.
4. End of Line Relay Module (ESL Model 204B or equiv.) required for UL installations.



## FIRE ZONE CONNECTIONS

### TELEPHONE CONNECTIONS

1. If an RJ31X jack has been supplied by the telephone company, it is probably wired correctly and the control communicator can be connected by plugging the supplied 8 conductor telephone cable into the RJ31X jack and the PHONE LINE jack on the processor board.

2. Some RJ31X jacks supplied to the alarm industry are reversed jacks. The polarity of the wiring is important to the Model 1503 and some telephone equipment, so follow the checkout procedure carefully. (No damage will occur to the 1503 if the RJ31X is wired backwards.)

3. IT IS IMPERATIVE THAT THE PHONE LINE COMING INTO THE HOUSE BE CONNECTED TO A GROUNDED SURGE ARRESTOR OUTSIDE THE HOUSE. IT IS THE RESPONSIBILITY OF THE TELEPHONE COMPANY TO PROVIDE THIS SURGE ARRESTOR.

INSPECT THE INCOMING PHONE LINES. THE FIRST THING THAT THEY SHOULD GO TO IS A SMALL BOX ON THE OUTSIDE OF THE HOME. THERE SHOULD BE A HEAVY GROUND WIRE COMING FROM THIS BOX GOING TO A COLD WATER PIPE OR A SEPARATE GROUNDING ROD.

IF THERE IS NO SURGE ARRESTOR OR IF THE GROUND WIRE IS MISSING, HAVE THE CUSTOMER INSIST THAT THE TELEPHONE COMPANY INSTALL ONE FOR THE SAFETY OF THE CUSTOMER.

4. WHEN WIRING IN AN RJ31X JACK, MAKE SURE THAT THE INCOMING PHONE LINES GO TO THE TELEPHONE COMPANY SURGE ARRESTOR BEFORE THEY GO TO THE RJ31X JACK.

5. When the RJ31X is installed as shown, plug the 8 conductor phone cable into the PHONE LINE jack on the processor board and the RJ31X jack. If necessary, bend the tabs up on the cable to ensure a tight fit that will not fall out.

6. Verify the following if you have trouble during check out: With the system running, the RJ31X jack properly connected and all phones on-hook (hung up), the PHONE LINE LED should be OFF. If it is on, reverse the RED and GREEN wires to both the house phones and the telephone company wires at the RJ31X jack. When the receiver is picked up on any phone, the PHONE LINE LED will come on. When the phone line rings, the PHONE LINE LED will flash.

If the phone cable is disconnected at the control/communicator PHONE LINE jack, the PHONE LINE LED should be ON.

If the Model 1503 access code is entered on an in house telephone, the 1503 will disconnect the phones from the phone company lines and supply its own talk voltage to the phones. The PHONE LINE LED will be off in this case.

#### COMMUNICATOR OUTPUTS

1. The terminals marked "COMMUNICATOR" on the Termination Panel can be used for radio communications or any other type of auxiliary communications to augment the built-in digital and voice dialer.
2. Any communications device can be used with the Model 1503, provided that it can be set up as follows:
  - a. 12 Volts DC power
  - b. 12 Volts DC voltage triggered inputs
  - c. 2 (or more) channels
3. The "Communicator" outputs are activated 3 seconds before Model 1503 dialer begins to dial, either using its built-in digital dialer or voice dialer.
4. Communicator outputs can supply 100 mA MAX each. These outputs are included in the total DEVICES load, which cannot exceed 400 mA.
5. The following events will activate the BURG output: Burglar alarms, (including panic zones) medical emergency button, police emergency button, duress alarms. Fire alarms and the fire emergency button will activate the FIRE output.

## RJ31X JACK CONNECTIONS

### CONSOLE HOOKUP

1. 4 consoles MAXIMUM per system.
2. Use 4 conductor 22 gage wire, 1000 feet maximum length. Consoles can be homerun or daisy chained. This length shall be divided by the total number of consoles used. For example, for 4 consoles, the maximum length reduces to 250 feet.
3. Set first console DIP switch 1 on, all others off.

Set second console DIP switch 2 on, all others off.  
Set third console DIP switch 3 on, all others off.  
Set fourth console DIP switch 4 on, all others off.

4. Note that the order of the terminals are different for the console and the Model 1503 control/communicator.

5. If mounted on a wall, the console should be mounted so that the LCD display is at or slightly above eye level. Consoles should be kept out of the reach of young children. A good height is approximately 58 inches from the floor to the bottom of the enclosure.

6. Flush mount consoles come with two brackets that clamp the backbox to drywall, paneling and other wall material 3/8 to 1 inch thick. Remove the console keypad from the backbox, install the aluminum backbox with the brackets provided then replace the console keypad.

7. Consoles in wood enclosures are provided with 7 foot telephone type cables and an RJ11 jack for convenient installation. Follow the color codes shown in the console drawing in case one console is moved from room to room using multiple jacks. (Not recommended but it can be done.) Tie a knot in the cord inside the wooden enclosure as a strain relief. Put rubber feet on the bottom of the wood enclosure if it is used on a table top.

8. There is an adjustment for viewing angle on the console printed circuit board. (A small blue pot.) This has been set to its best value at the factory, however you may wish to tweak it. The best contrast is obtained when looking straight into or slightly up at the LCD display.

9. Console Fuse: The console uses a solid state "polyfuse" labeled "F1". If the console is connected backwards or is defective, F1 will be hot to the touch. To restore F1, remove power for 30 seconds.

10. Console Self Test: Disconnect the console from the control/communicator. Turn all console DIP switches off. Connect +12 and GND terminals to a 12 volt source (or a fresh 9 volt transistor battery.) The console will beep and the LEDs will light one at a time in sequence. Keystrokes will be displayed on the screen as A (FIRE) through S (ENTER), 0 - 9 and \*, #. At the end of the top line of the display, it will take 16 keystrokes to begin putting characters on the bottom line of the display. The display backlight should come on with the first keystroke. Hold the keypad by its edges to keep your fingers off of the traces on the back of the keypad.



CONSOLE CONNECTIONS  
FLUSH MOUNT AND TABLETOP ENCLOSURES

INTERIOR SOUNDER HOOKUP

1. The interior sounder is LOUD. Do not put it in a room where pets or children can't get away from it.
2. Wheelock Model 34T-12 fire horn connections must be used in UL Listed Installations.
3. The Model 1503 interior sounder output can provide 250 mA max.

OUTSIDE SIREN HOOKUP

1. Wire tamper switches to tamper zone.
2. Siren can draw 1 amp MAXIMUM. Use a relay connected directly to the battery if higher current is required.

REMOTE ARM/DISARM SWITCH

1. If desired, a remote keyswitch, keypad or hidden arm/disarm toggle can be connected to the system. The switch should be momentary close.
2. A closure of the switch contacts will toggle the arming mode between OFF and AWAY modes. (Entry delay is still active.)
3. The ARMED and OK TO ARM outputs can supply up to 100 mA each. These outputs are included in the total DEVICES load, which cannot exceed 400 mA.
4. Connections to a typical keypad (Corby Model 7020) are shown.

NOTE: In UL Listed Installations, the Listed Ademco Model 9789 keyswitch shall be used.

PANIC SWITCHES

1. Use normally closed (open for alarm) switches.



INTERIOR SOUNDER AND OUTSIDE SIREN CONNECTIONS

REMOTE KEYSWITCH CONNECTIONS

REMOTE KEYPAD CONNECTIONS

#### AUXILIARY OUTPUTS

1. Aux. outputs 1 and 2 are controlled as UNIT NUMBER 17 and 18, respectively.
2. AUX OUTPUT 1 will provide 12 VDC when UNIT NUMBER 17 is ON.
3. AUX OUTPUT 2 will provide 12 VDC when UNIT NUMBER 18 is ON.
4. Devices connected to AUX OUTPUTS should be located within 3 feet of the Model 1503 unit.
5. Maximum current draw from each AUX OUT is 100 mA. These outputs are included in the total DEVICES load, which cannot exceed 400 mA.

#### HEATING/AIR CONDITIONING ENERGY SAVER RELAYS

1. AUX OUT 1 and 2 can be used to provide on/off control for central air conditioning units. Use a MPI-206P relay connected as shown. Splice into the wire carrying power to the thermostat - it is usually RED.
2. This connection provides an ENERGY SAVER feature. When the ENERGY SAVER is ON, the a/c or heat is turned OFF. No changes to the thermostat are required.
3. When the ENERGY SAVER is OFF, the air conditioner / heater runs normally.
4. Install the 1 K ohm 1 watt resistor as shown to reduce the turn on lag for air conditioning thermostats with anticipators.
5. Energy saver relays may cause problems with certain programmable thermostats. It is best to use energy saver relays with plain thermostats.

NOTE: Energy Saver Relays have not been investigated by UL.

#### PROGRAMMABLE SETBACK TEMPERATURE ENERGY SAVER MODULES

1. The Model 1101 Programmable Energy Saver Module use Aux In 1 / Aux Out 1 or Aux 2 In / Aux Out 2 as a pair to read in temperature and control the setback temperature of the house. One or two Model 1101's can be connected to a Model 1503 Version 2.

2. Run a 4 conductor wire from the Control/Communicator to each Model 1101. The Model 1101 should be mounted on an interior wall, preferably close to the HVAC thermostat. Run a 2 conductor wire from the Model 1101 to the thermostat. Connect the Model 1101 between the RED wire going to the thermostat and the RED terminal on the thermostat.

3. Energy Saver Modules should not be used with some setback thermostats, as the thermostat may contain backup battery that will be discharged when the energy saver relay is engaged. The 1K ohm resistor shown in the drawing may prevent this from happening in some thermostats. Recommended thermostats are simple, round Honeywell T-87 thermostats. For automatic switchover from heat to cool, consider a Honeywell T-874 (mechanical) or an Enerstat DSP-300 (electronic) thermostat. Hang the 1K ohm resistor inside the wall, away from the Model 1101 and the thermostat.

4. The 1K ohm resistor provided with the Model 1101 is attached to a length of wire. The resistor is shrink wrapped at one end. Stuff the resistor end into the wall, away from the Model 1101 and the thermostat. This resistor performs two functions: (1). On simple mechanical thermostats, it keeps the air conditioning mode "anticipator" in the thermostat warm. This decreases the response time for the air conditioner to come on when it is taken out of setback mode. (2). On some electronic thermostats, such as the Enerstat DSP-300, this resistor provides sufficient current to the thermostat to keep it working, even when the Model 1101 is in setback mode.

5. The 1K ohm resistor shown in the connection diagram generates heat when the energy saver module is on. Therefore, it can not be mounted inside the energy saver enclosure, as it will cause the temperature read by the energy saver module to be wrong.

NOTE: PESMs have not been investigated by UL.

MODEL 1101 PROGRAMMABLE ENERGY SAVER MODULE CONNECTIONS

HOME CONTROL MODULES

Install the X-10 or compatible control modules EXACTLY AS DESCRIBED in the instructions that come with the modules. Watch the load ratings and types of load allowed.

See Owner's Manual for more information on module types.

The Model 1503 is designed to send signals to any device

compatible with the X-10 Powerhousetm carrier-current protocol. Wiring systems can be 120V single phase two wire, 120/240 V single phase three wire, or 120/208 V three phase four wire. Note that 240 V modules will not work properly on 208 V circuits.

There are two suppliers of X-10 modules at this time, X-10 (USA), marketed under X-10 Powerhouse, Radio Shack, Stanley, Sears and other names; and Leviton, marketed under the Leviton name. These names are trademarks of the appropriate manufacturers. Leviton manufactures a line of commercial modules that can handle a wide range of loads.

NOTE: Line Carrier device operation was not investigated by UL.

#### X-10 TROUBLESHOOTING TIPS

1. If any light does not work, check the HOUSE CODE on the module. It must be set to the same house code as the Model 1503.

2. Operate the troublesome module locally to ensure that power is getting to it. You should be able to turn the light or appliance on using its switch (turn it on, then off, then on again for plug in modules, press the on/off switch for wall switch modules.)

3. Three-way wall mounted lamp switches must be installed using the exact procedure described in their instruction sheet. The key to success with three-way wall mounted lamp modules is to identify the wire that was connected to the COMMON terminal of the old manual switches and to following the instructions precisely.

4. Modules that work intermittently from the Model 1503 but reliably locally usually have a problem "hearing" the X-10 signal over the power lines. Some tips:

- Make sure connections to the modules and to the PL513 controller are tight. Loose fuses, wirenuts, circuit breakers, terminal blocks, corrosion, etc. can sometimes inhibit the X-10 signal while allowing power to pass.

- Run a separate wire from the Model 1503 Control/Communicator directly to the fuse or breaker panel to ensure that the X-10 signal has a clear path to the panel where it can be distributed to the other circuits. Try changing the phase that the PL513 is on.

- Install a .1 MFD 600 volt non-polarized capacitor between the phase that the PL513 controller is on and

the other phase(s). BE VERY CAREFUL DURING INSTALLATION. Be sure that the capacitor is on the protected side of the fuses or breakers. This will bridge the signal to the other phases.

- Items such as electric heaters (resistive loads) and power filters (capacitive loads) tend to absorb the X-10 signal. Try relocating them, if possible.

- Interference from neighboring systems can be solved by changing the house code to a different one from the neighboring system.

#### SYSTEM POWER UP PROCEDURE

1. Carefully review hookups to the loops, grounds, sirens and consoles.

2. Make sure that no one is standing by a siren or sounder that may sound unexpectedly.

NOTE: Follow this power up procedure to verify proper operation of the power supply, battery charger and low voltage cut out relay.

3. The positive lead to the battery should be disconnected at this time. Make sure that the red battery wire is not touching anything.

4. Plug in the power transformer.

- The AC ON LED should illuminate.

- The Model 1503 will make a faint hiss. This is normal.

- The STATUS LED should begin blinking at a rate of 1 blink per second. This indicates that the Model 1503 processor and software are working.

- The phone line LED should be OFF (if all telephones are on hook (hung up) and the RJ31X jack is properly connected.

5. Unplug the power transformer to kill the system. Connect the red battery wire to the + (positive) battery terminal. The system should not start.

6. Plug in the power transformer. The system should start.

7. Unplug the power transformer. The system should continue to run on the battery (as evidenced by the



flashing STATUS LED) Plug the transformer back in and secure it to the outlet.

#### TELEPHONE CHECK OUT

1. Verify that the Telephone company surge arrestor is properly grounded.
2. Verify that the incoming telephone lines are run to the surge arrestor first, then from the surge arrestor to the RJ31X jack, then from the RJ31X jack to the house phones.
3. The PHONE LINE LED in the on the Control/Communicator processor board should off when the phones are hung up.
4. Pick up an in-house phone, wait about 1 second, then press the # key. You should hear the menu on the phone. If not, check to see that the RJ31X jack is properly wired and connected to the Control/Communicator processor board. There should be no interference from the telephone company while the menu is being read over the phone.
5. Record the owner's NAME and ADDRESS in the ADDRESS speech memory as shown in SET UP ADDRESS in the OWNER'S MANUAL. (Press 8, 9, then 1111 or the current MASTER CODE to record the address.)

NOTE: DO NOT record any TOUCH TONES in the ADDRESS!!

6. Record a help message in the MESSAGE memory (Press 8, then 1 to record) to initialize the memory. Suggestion for message: "For service call XYZ Systems at 555-1234".
7. Check that all in-house phones are working.

#### CONSOLE CHECK OUT

1. The console(s) should be operating. The consoles should operate independently of one another. If one console mimics another, their addresses are set the same. Check the DIP switch settings on the consoles.
2. With all doors and windows closed, all motion detectors normal, the bottom line of the display should read SYSTEM OK. If there are any trouble indications that occurred during installation, press CANCEL to acknowledge them and silence the beeper.

3. Set the time and date by pressing SET-UP TIME, entering the time on the keypad, then AM or PM, then entering the DATE (enter date as 6 characters; Jan 1, 89 as 010189) and DAY OF WEEK (1=MON, 7=SUN.)

4. The console should now show the time and date on the top line, "SYSTEM OK" on the bottom line.

#### BURGLAR ZONE CHECK OUT

1. With all doors and windows closed, all motion detectors and security devices normal, you should have "system OK" on the console. Press SHOW # (TEST). The zones (1 - 5) should read between 19 and 30, the fire zone (F) should read around 155. One count of "bobble" is normal. The T= indicator is for the telephone line - 00 is hung up, 10 is off hook, 11 is local access, 20 is ring, 30 is dead line. See Owner's manual. The B indicator may start out as 0, then go to a normal value of 205 or so after 10 seconds. B= will be lower if the battery is discharged, but not below 180.

2. If any zones are abnormal, check your wiring. If the battery indication is low, make sure that the battery is connected securely. Give the battery a chance to charge.

3. Press CANCEL twice to return to the time, date and status display. Have a partner go around the house and trip each sensor one at a time. The display should indicate the correct zone "IN ALARM" when the zone is tripped, then return to SYSTEM OK when the zone is secured. Be sure that the zone type indicated (ENTRY/EXIT, PERIMETER, ETC.) is correct for the zone being tested.

4. If the zone being checked is armed, (i.e. PANIC/TAMPER type, which is always armed) the alarm will be activated. Press SECURITY-OFF and 1111 or the current MASTER CODE to silence the alarm. Or, bypass the PANIC and TAMPER zone(s) before you start.

#### FIRE ZONE CHECK OUT

1. Press CANCEL to return the console to the SYSTEM OK indication. Check the fire zone per the sensor manufacturer's instructions. The fire alarm should be activated (pulsing interior sounder, exterior siren.)

2. Press CANCEL to silence the alarm. The display will still indicate that the FIRE ZONE is in alarm.

3. Press HOME or ASLEEP or AWAY and the master code to arm the system, then OFF and the master code to disarm. This arm/disarm cycle will reset the smoke detector. If the cause for alarm (i.e. smoke) has cleared, the display will return to SYSTEM OK.

NOTE: Be sure that the DIAL OUT DELAY is long enough so that you can cancel the alarm before the system dials out. Or, bypass the fire zone (Zone 16) before you start.

#### HOME CONTROL CHECKOUT

1. Set the HOUSE CODE on the Model 1503 to the same HOUSE CODE set on all of the modules. (in SET-UP, 2 (MISC) on the console)
2. Press ALL, ON on the console. All lamp type modules should go on. Note that appliance modules and auxiliary outputs do not respond to ALL ON.
3. Press ALL, OFF on the console. All modules should go off. Note that auxiliary outputs (units 17 and 18) do not respond to ALL OFF.
4. Operate each unit number individually, verify that it works and write down its unit number and description on the PLANNING/CHECKLIST sheets.
5. Ensure that sprinklers and auxiliary inputs and outputs (air conditioning relays) are working.

#### CUSTOMER CHECKOUT

After you have completed the system check out and everything works, be sure that the customer knows how to:

1. Disarm/silence the system. (SECURITY-OFF, 1111 or current master code.) Have the customer practice until he/she is comfortable with this operation!
2. Change his codes (SET-UP, 1).
3. Get the menu over the in-house phones.

You should also:

4. Demonstrate arming and disarming.

5. Demonstrate home control.
6. Demonstrate set-up and programming.
7. Show him how to program the dial out numbers.
8. Deliver the Owner's Manual and copies of the Planning/Checkout sheets.
9. If the customer has subscribed to a central monitoring service, this should be explained to him.

#### IN CASE OF TROUBLE

#### CONSOLES

If you experience trouble that seems to be with a console, try disconnecting the console and running the console self test as described under CONSOLE HOOKUPS in this manual. If the console does not run the self test properly, it should be returned to Home Automation, Inc. for repair.

Garbage characters on the LCD display could be a result of: A and B terminals connected backwards or poorly, or 2 or more consoles have the same address (DIP switch settings.)

#### CONTROL/COMMUNICATOR

If you experience trouble with the control/communicator, check the STATUS LED on the processor board. It should be blinking once per second, indicating the proper operation of the microprocessor and memory.

To check the Model 1503 Random Access Memory, (RAM) press the RESET button. The STATUS LED should stop flashing for a moment, then start flashing again. This indicates that all program RAM is working properly.

Phone line problems, or problems with the Model 1503 voice are usually the result of the RJ31X jack being improperly wired. Check RJ31X jack wiring carefully, as described in this manual.

A last ditch effort might be to disconnect the power transformer and battery, then reconnect both. The status light should begin blinking.

In the event that the Control/Communicator is found defective, the CPU board can be removed without

disconnecting all of the house wiring from the termination board. Then the CPU (or processor board) can be repaired and reinstalled easily.

Follow this procedure for removing the Control/Communicator CPU board:

1. Disconnect the battery

2. Remove fuse on termination board or unplug the power transformer.

3. Disconnect the RJ31X cable AT BOTH ENDS!! (If you only disconnect it at the Model 1503 CPU, the house phones won't work.)

4. Disconnect the X-10 cable.

5. Gently disconnect the ribbon cable connector at the termination board.

6. Remove 6 nuts and washers; 3 on the top edge of the CPU cover and 3 on the bottom edge. Do NOT remove the two nuts or 1 screw on the face of the cover.

7. Remove the CPU board with cover.

8. Protect the back of the CPU board with cardboard, pack carefully. Home Automation will not be responsible for returned items damaged due to inadequate packaging.

9. BE SURE to put your return address INSIDE the package and return the CPU and cover assembly to Home Automation, Inc. Please write a brief description of the problem that you are having. Also, include your phone number during the day so that we can reach you if we have any questions.

10. Call Home Automation, Inc. for a return authorization number to help us track your return. Write the R. A. # on the outside of the package.

11. INSTALLATION: follow the removal process in reverse. Follow the POWER UP ad CHECK OUT procedures in this manual.

FOR HELP: Call Home Automation, Inc., between the hours of 8:30 AM and 5 PM Central time, at (504) 833-7256.

SET-UP

This section describes the items that the installer must set up as part of system installation. Set up for the Digital Communicator and Zone Types are covered in this manual. All other SET-UP items, including delay times, zone and unit names, voice dialer and codes are covered in the Owner's Manual, Document No. 1503R0000.

SET-UP items are stored permanently in the system, even if the battery and AC power are disconnected. The "default" settings in are the ones that have been set at the factory. You can review or change the set up items easily, as shown below.

If changes have been made from the default settings, it is suggested that they be written in the space provided at the end of this section.

Note: the default Master Code is 1111.

To enter the SET-UP facility, press the SET-UP key.

To set the time, press the TIME key.

To set the date, press the DATE key.

To set up the VOICE dialer, press the DIAL key.

To set up CODES, press 1.

To set up delays and other items, press 2.

To set up zone, unit and button names, press 7.

Follow the prompts on the bottom line of the display.

For DIAL, CODES (1) and MISC (2) categories, press SHOW to advance to the next item, SET-UP to go back to the previous item. To change an item, key in the new value and press ENTER. Press CANCEL to leave the existing setting. Press CANCEL when you are finished.

These items are covered in detail in the Owner's Manual.

#### SPECIAL SET-UP

NOTE TO THE USER: ITEMS IN SPECIAL SET UP ARE CONFIGURED BY YOUR DEALER AT TIME OF INSTALLATION AND SHOULD NOT BE CHANGED.

THE ZONE TYPES MUST ONLY BE CHANGED TO THE VALUES INDICATED IN TABLE 2 IN THE APPENDIX. OTHERWISE, UNPREDICTABLE OPERATION MAY RESULT.

IMPORTANT: When changing zone types, the new value to which you have set the item DOES NOT TAKE EFFECT UNTIL YOU PRESS THE RESET BUTTON ON THE MODEL 1503 CONTROL/COMMUNICATOR PROCESSOR BOARD. (Note: Software

versions 2.10 (September 1991) and later do not require the reset button to be pressed.)

To enter zone type set-up, press the SET-UP key, then 9, then enter your master code.

A warning message will appear saying "DON'T FOOL WITH THESE! SEE MANUAL."

Press SHOW to see the next item, SET-UP to see the previous item.

#### MODEL AND SOFTWARE VERSION NUMBER

The first item in the SPECIAL SET UP category shows you what model number and software version is installed.

#### NUMBER OF EXPANSION ENCLOSURES: (MODEL 1503 VERSION 2 ONLY)

If you are using one or more Model 1102 Expansion Enclosures, this item must be set to the number of 1102's connected to the system. If not, this item must be set to 0.

The default for NUMBER OF EXP ENCL is 0.

#### ENABLE THIRD AUX:

This option allows the ARM/DISARM TOGGLE input and the OK TO ARM output on the Model 1503 to be converted to a third general-purpose auxiliary input/output. This auxiliary input/output may be used just like the two standard auxiliary inputs/outputs (zones 17 and 18). For example, the Model 1503 can now support three Model 1101 Programmable Energy Saver Modules without requiring a Model 1102 Expansion Enclosure.

Note that when this third auxiliary input/output is enabled, the ARM/DISARM TOGGLE input and the OK TO ARM output may no longer be used with a remote keypad. ARM/DISARM TOGGLE becomes Zone 19. OK TO ARM becomes Unit number 19. The ARMED output still functions normally.

Set ENABLE THIRD AUX to 1 to use zone and unit number 19 on Model 1503-LC units and Model 1503 Version 2 units without Model 1102 Expansion Enclosures.

Z 1 TYPE through Z 80 TYPE (MODEL 1503 VERSION 2)

Z 1 TYPE through Z 19 TYPE (MODEL 1503-LC)

This item specifies the zone type for each zone. The possible choices are listed in Table 2 in the Appendix.

To change a zone type, press the new zone type number, then the ENTER key. Press the SHOW key to advance to the next zone. When you are finished setting zone types, go to the Model 1503 Control/Communicator, open the enclosure door and momentarily press the RESET button in the upper right hand corner of the circuit board mounted on the door. The new zone type will be in effect only after you have pressed the RESET button. (Systems with Version 2.10 (September 1991) software and later do not require the reset button to be pressed.)

See DESCRIPTION OF ZONE TYPES for more information on each zone type.

See MODEL 1503 DEFAULT SETTINGS in the Appendix for default zone types.

#### ZONE RESPONSE TIME

All zones, in the Model 1503 and in the Model 1102 are set to 300 milliseconds fixed response time.

#### EEPROM VERSION NUMBER

The final entry in the SPECIAL SET-UP category is the EEPROM VERSION NUMBER. This number is used by the system whenever the Control/Communicator is powered up or reset to determine whether or not its EEPROM is configured properly.

This number will remain constant for the version of the system software installed in your Control/Communicator.

Changing the EEPROM VERSION NUMBER will cause the Control/Communicator to change ALL SET-UP items in ALL CATEGORIES back to the factory defaults when the Control/Communicator is powered up or reset.

The ONLY reason to change this number would be to restore your system to factory defaults for all set-up items. You will then have to set-up the entire system.

To change ALL SET-UP ITEMS BACK TO FACTORY DEFAULTS:  
Change the EEPROM VERSION NUMBER to any number other than its current number, then press the reset button on the Model 1503 Control/Communicator processor board. After about 20 seconds, the STATUS light on the processor board



will begin blinking again. ALL SET-UP ITEMS, including codes, will be set to factory defaults. Phone numbers for dial out will be deleted! The EEPROM VERSION NUMBER will be set back to its original value.

#### SET-UP DIGITAL COMMUNICATOR

NOTE TO THE USER: THE DIGITAL COMMUNICATOR IS SET UP BY THE COMPANY MONITORING YOUR ALARM. DO NOT CHANGE ANY SETTINGS IN THE DIGITAL COMMUNICATOR WITHOUT CONSULTING THE MONITORING COMPANY!

The Model 1503 digital communicator uses standard 4/2, 20 pps, 1800 Hz data, 2300 Hz handshake, dual round compared format.

Although the alarm codes can be changed, we recommend that the alarm codes set up at the factory be used to minimize the risk of installer error in programming the digital communicator. Simply enter the phone numbers and account codes, then verify the alarm codes.

4/2 format can be received by any central station with modern equipment. Compatible receivers are Ademco, Radionics, Osborne-Hoffman, Linear, FBI, Silent Knight and most others.

#### DESCRIPTION OF 4/2 FORMAT

The 4/2 format consists of a four digit account code, from 0000 to 9999 and a two digit alarm code from 00 to 99. When the digital communicator calls the central station receiver, the latter answers and sends a brief 2300 Hz tone called a "Handshake" tone. The digital communicator then reports digits of the account and alarm codes as bursts of 1800 Hz tone; the digit 8 is represented by eight bursts of tone. A message, or "round" consists of an account code and an alarm code. Two rounds are sent, and two consecutive rounds must match at the receiver. If they do, the central station receiver sends another brief 2300 Hz tone to acknowledge to the digital dialer that the message has been properly received. If the rounds don't match, the receiver does not send the second tone and the digital dialer tries again, up to 5 times. If the rounds are not acknowledged after 5 tries, the digital dialer hangs up and tries the entire call again.

If the digital dialer does not get a handshake signal 45 seconds after it begins dialing, it hangs up and tries again. The dialer will try the FIRST PHONE NUMBER 5 times, then go to the SECOND PHONE NUMBER and try that 5 times. After that, the system will indicate COMMUNICATIONS FAILURE on the console display and the digital

communicator will not try again until another reportable event occurs.

The digital communicator can report alarm zone trips, alarm cancels, low battery, and fire zone trouble. It may also be set-up to generate an automatic test signal at periodic intervals. The communicator may be set up to call a second phone number using a second account number in the event that it is unable to communicate successfully using the first phone number and account.

### 3/1 FORMAT

Older central stations may require a 3/1 format. To use 3/1 format, both account numbers must be changed to 3 digit codes and EVERY alarm code must be changed to a 1 digit code. Do not mix code lengths!

NOTE: The Model 1503 transmits only in FAST (20 PPS) mode. It cannot be used with SLOW (10 PPS) 3/1 format receivers.

### PHONE AND ACCOUNT NUMBERS

To Set up the Digital Communicator, press the SET-UP key, then 8, then enter the master code. The first item in the DIGITAL COMMUNICATOR category is the FIRST PHONE NUMBER. To see the next item in this category, press SHOW. To see the previous item, press SET-UP. To exit the set-up facility, press CANCEL.

Enter the FIRST PHONE NUMBER on the keypad. This enables the Digital Communicator. You can cause a 2 second pause during dialing by pressing the TIME key. Press ENTER when done.

To disable the digital communicator, enter a single "-" for the FIRST and SECOND PHONE NUMBER by pressing the HOME-CONTROL-OFF key, then ENTER.

Press SHOW to advance to the FIRST ACCT NUMBER:. Key in the 4 digit account number (3 digits if using 3/1 format) and press ENTER.

The FIRST ACCT NUMBER will be used when the central station is called using the FIRST PHONE NUMBER. The SECOND PHONE NUMBER, if specified, will be called if the communicator is unable to successfully communicate using the FIRST PHONE NUMBER/FIRST ACCT NUMBER. The SECOND ACCT NUMBER will be used when the central station is called using the SECOND PHONE NUMBER.

Each phone number may be up to 24 digits long. Each account code must be four digits long, 0-9999.

The various alarm codes are sent when the indicated alarm zone is tripped. Each alarm code must be two digits long, 01-99. If the alarm code is set to 0 or 00 no code will be sent when the zone is tripped.

#### ALARM CODES

Press SHOW to advance the display to ZONE 1 ALARM CODE. Press SHOW to advance to the next zone, SET-UP to go to the previous zone

To change an alarm code, enter two digits for 4/2 format, or one digit when using 3/1 format, then press the ENTER key.

The digital communicator is set up at the factory to transmit a code when the battery is low or trouble with the fire zone is detected. If these codes are set to 0 or 00, no code will be sent when the trouble condition is detected.

The digital communicator will not dial out until the DIAL OUT DELAY has expired. If the alarm is canceled prior to the expiration of the DIAL OUT DELAY, no transmission will take place. After the DIAL OUT DELAY has expired, though, all alarm trips will be transmitted followed by a CANCEL code.

#### AUTOMATIC TEST TIME

The communicator may be set-up to automatically send a test code to the central station on a periodic basis. AUTOMATIC TEST TIME is used to set the time and days of the week of the test, and TEST CODE specifies the code that will be transmitted for the test.

To activate the automatic test, press the SHOW key while in the DIGITAL COMMUNICATOR category until the display reads "AUTOMATIC TEST TIME." Press the DATE key and select one or more days of the week for the test transmission, then press ENTER. Now press the TIME key and enter the time of the automatic test transmission, then AM or PM.

To disable the automatic test, press the DATE key and then 0 for never, and ENTER.

When the digital communicator is used, all voice dial outs will be delayed for five minutes after the expiration of the dial out delay to allow time for the central station to call the premises after an alarm code has been sent.

If the digital communicator is unable to successfully communicate with the central station, the user will be alerted to the COMMUNICATOR trouble condition. When the

system status is requested using the voice, this condition is reported over the phone as "SECURITY PHONE MESSAGE" trouble.

MODEL 1503 DEFAULT SETTINGS in the Appendix shows the items that may be specified for the digital communicator and their default values.

#### SET-UP VOICE DIALER ADDRESS (MODEL 1503 VERSION 2 ONLY)

The final set up item is accomplished over the telephone. This is the address that the system says when it dials out in an emergency. Your voice will be recorded on computer chips in the Model 1503 Version 2 Control/Communicator and saved to be played back in the emergency message when the system dials out for an alarm.

Pick up an inside phone. Press the # key on the telephone within 3 seconds of picking up the phone. The Model 1503 will respond with menu.

Press 8 on the telephone keypad. The unit will say "Message is:" then play back the message in the MESSAGE memory. THIS IS NOT THE ADDRESS MEMORY. Then the message menu will be spoken, which is:

- 1: RECORD MESSAGE
- 8: REPEAT MESSAGE
- 3: PLAY ADDRESS

Press 3 to see if your address has been entered by your installer. The Model 1503 will say ADDRESS IS: then play the address.

To record your address, Press 9, then enter the MASTER CODE. The unit will say RECORD ADDRESS, then BEEP.

In a normal tone of voice, say your name and address and any helpful information for locating your house. For example:

"THE JONES RESIDENCE, 1234 JOHNSON STREET, CORNER OF JOHNSON AND THIRD STREET, UPTOWN"

The unit will beep after 8 seconds, then play the address back to you. If you are not happy with the sound, re-record by pressing 9 and the MASTER CODE. If you would like to hear the address again, press 3 for PLAY ADDRESS.

If you accidentally press 9 but have not entered your master code and do not wish to record a new address, simply hang up the phone. The address can only be recorded from a local (in house) phone.

NOTE: WHEN THE MODEL 1503 SAYS "RECORD ADDRESS - BEEP" ANY PREVIOUS ADDRESS RECORDED ON YOUR SYSTEM IS ERASED. ALWAYS VERIFY THAT YOU HAVE YOUR NAME AND ADDRESS IN YOUR SYSTEM IF YOU HAVE ENTERED THIS FUNCTION.

NOTE: WHEN RECORDING THE ADDRESS, DO NOT PRESS ANY TOUCH TONE KEYS ON YOUR PHONE UNTIL THE SECOND BEEP, INDICATING THAT RECORDING IS COMPLETE. IF YOU DO PRESS A TOUCH TONE KEY ON THE PHONE BEFORE THE SECOND BEEP, THE TONE WILL BE RECORDED ON THE MESSAGE. THIS WILL CAUSE IMPROPER PERATION WHEN THE SYSTEM DIALS OUT. RE-RECORD THE ADDRESS.

#### DESCRIPTION OF ZONE TYPES

See table 2 in the Appendix.

#### ENTRY/EXIT (Types 0, 4, 5)

Entry/Exit zone types are intended for doors. Entry/Exit (Type 0) zones are armed in security modes HOME, ASLEEP and AWAY. In HOME and AWAY modes, there is an entry delay (defined by ENTRY DELAY in Set-Up) on entry/exit zones to allow you to get into the house and turn off the alarm before it sounds. In ASLEEP mode, there is no entry delay, so that the alarm sounds immediately if someone opens a door when the security system is in ASLEEP mode.

There are two special types of ENTRY/EXIT zones for use with garage doors, or doors that are far away from the control console. They are called DOUBLE ENTRY DELAY (Type 4) and QUADRUPLE ENTRY DELAY (Type 5) zones. These zones have double or quadruple the ENTRY DELAY to give you additional time to reach the console to disarm the system upon returning. Only the ENTRY DELAY is extended on these zone types. The EXIT DELAY is not extended.

If an ENTRY-EXIT zone is tripped first, PERIMETER, HOME INTERIOR and AWAY INTERIOR zones will also be delayed to allow you to reach the console.

#### PERIMETER (Type 1)

Perimeter zone types are intended for windows and exterior doors not requiring an entry delay. Perimeter zones are armed in security modes HOME, ASLEEP and AWAY. There is NO entry delay on a perimeter zone. If a window or door on this zone is opened while the security system is in HOME, ASLEEP OR AWAY mode, the alarm will sound immediately.

#### HOME INTERIOR (Type 2)

Home interior zones are intended for motion detectors in

areas where no one should be while you are sleeping in your home. For example, if you have a two story home and sleep upstairs, your downstairs motion detector(s) should be on a HOME INTERIOR ZONE.

Home interior zones are armed in security modes ASLEEP and AWAY only. There is no delay on a HOME INTERIOR zone. Home interior zones are NOT armed in HOME mode, so that you may move about freely in your home when the security system is in HOME mode, while still having the windows and doors protected.

#### ASLEEP INTERIOR (Type 3)

Asleep interior zones are for all other areas of your home, where no one should be while you are away. In the previous example, your upstairs motion detector(s) should be on an ASLEEP INTERIOR zone.

ASLEEP INTERIOR zones are armed only when the security mode is AWAY.

#### PANIC (Type 16) AND TAMPER (Type 19)

Panic and tamper zones are for emergency pushbuttons and tamper switches. For example, the tamper switch on your outside siren may be wired into a TAMPER zone so that the alarm will be activated if anyone tries to open the casing to disconnect it. If you have a PANIC button in your home, it will be wired to a PANIC zone so that the alarm will sound immediately when the button is pressed.

PANIC and TAMPER zones are ALWAYS ARMED, even if the security mode is OFF. There is no delay on PANIC and TAMPER zones, however, the Model 1503 waits the DIAL OUT DELAY before dialing out.

TAMPER zones should be used for items such as gun cabinets and liquor closets.

#### DURESS EMERGENCY (SILENT DIAL OUT) - (Type 18)

If you wish to have a button in your home that activates a SILENT dial out, that is, one with no lights flashing, no interior sounder and no exterior sounder, that button should be connected to a zone, and the zone type for that zone should be changed to DURESS EMERGENCY.

Use caution in assigning a zone type to DURESS EMERGENCY. If this zone is accidentally tripped, you will not know that the Model 1503 is making a silent dial out, and hence won't know to stop it if it was a mistake.

To stop a silent dial out once it has started, you must go to the console and press SECURITY-OFF then enter your master or auxiliary code number.

#### SUPERVISED MEDICAL EMERGENCY (Type 48)

If you have a medical emergency pushbutton other than the one on the console, it will be connected to a zone for which the zone type will be set to MEDICAL EMERGENCY. The medical emergency pushbutton will operate exactly as described for the MEDICAL EMERGENCY BUTTON on the console.

Note: In UL Listed Home Health Care applications, the Digital Communicator shall be utilized. Medical initiating circuits must be connected as shown in this manual. In UL Listed Installations, Medical Zone Types must be contained in Model 1102 Expansion Enclosures.

#### SUPERVISED FIRE (Type 32)

Fire zone 16 in the Model 1503 and any zone in the Model 1102 Expansion Enclosure can be programmed as a Supervised Fire Zone. In UL Listed Installations, any fire zone must be supervised and connected as shown in this manual.

#### FIRE EMERGENCY BUTTON (Type 33)

This zone type activates the fire alarm for a NORMALLY CLOSED, OPEN FOR ALARM loop. It is not supervised as required for UL Listed Installations and shall NOT be used in such installations.

#### AUXILIARY INPUT (Type 64)

A zone defined as an AUXILIARY INPUT will not be used for security. It may only be used to activate "button" commands or to conditionalize programs.

#### PROGRAMMABLE ENERGY SAVER MODULE (Type 80)

This zone type is for use with the Model 1101 PESH. It converts the zone and the corresponding Unit Number to operate the Model 1101.

#### OUTDOOR TEMPERATURE (Type 81)

Use this zone type for outdoor temperature modules.

#### UNDERWRITER'S LABORATORIES (UL) INSTALLATION REQUIREMENTS

1. The line carrier (X-10) operation is considered supplementary. Operation of the line carrier devices was not investigated by UL.

2. The Model 1101 Programmable Energy Saver Module has not been investigated by UL.

3. For those zones programmed as PANIC, DURESS or POLICE EMERGENCY, the initiating device shall be a UL Listed Hold Up Device switch.

4. For connection of smoke detectors to the Control/Communicator, refer to requirements under FIRE ZONE HOOKUP and FIRE ZONE CONNECTIONS diagrams in this manual.

5. Operation of the COMMUNICATOR OUTPUTS has not been investigated by UL. Connection to the Communicator Outputs shall be contained within the same room with a total wiring distance not exceeding 20 feet.

6. The Digital Communicator shall be connected and programmed for home health care applications. The Model 1503 Digital Communicator is compatible with the Ademco Model 685 receiver.

7. Recognized energy limited cable shall be employed, 22 AWG minimum for all connections.

8. The audible signal appliance shall be the Listed Wheelock Model 34T-12 Fire Horn, rated 9 - 15.6 VDC, 85 dB(A) with 2 reflecting planes. The audible signal shall be mounted indoors in a central location. The audible signal appliance can be connected to either the "HORNS-INT" or "HORNS-EXT" circuits. In the case of the latter, the OUTSIDE SIREN DELAY shall be set to 0 seconds.

9. If the remote arm/disarm switch is used, it shall be the Listed Ademco Model 9789.

10. Operation of the controls with the MPI-206 energy saver relays or the Model 1101 energy saver module was not conducted by UL.

11. Refer to the Model 1503 Owner's Manual (Document No. 1503R0000) for programming requirements in UL Listed Installations.

12. Zones 1 - 15 shall not be used as medical initiating type loops.

13. For the monitoring of burglar alarm initiating devices, the zone type shall provide an audible output (i.e., not DURESS).

#### SMOKE DETECTOR INSTALLATION GUIDELINES

1. Ceiling mounted smoke detectors should be located in the center of the room or hall, or not less than 4



inches from any wall. When the detector is mounted on a wall, the top of the detector should be 4 to 12 inches from the ceiling.

2. Do not install smoke detectors where normal ambient temperatures are above 100 deg. F (37.8 deg. C) or below 40 deg. F (4 deg. C). Also, do not locate the detector in front of air conditioners, heating registers or other locations where normal air circulation will keep smoke from entering the detector.

3. Additional information on Household Fire Warning is available at nominal cost from: The National Fire Protection Association, Battery March Park, Quincy, MA. 02269. Request Standard No. NFPA 74. Contact your home Insurance Company for a possible reduction of your insurance premium.

4. A smoke detector should be located between the sleeping area and the rest of the family living unit.

5. In family living units with more than one sleeping area, a smoke detector should be provided to protect each

6. A smoke detector should be located on each story.

7. For complete details on proper location and installation of smoke detectors, refer to the instructions supplied with the smoke detector.

#### TABLE 1 - MODEL 1503 DEFAULT SETTINGS

Use this list to make a record of the settings in your system.

SET-UP DIAL (VOICE DIALER)	DEFAULT:	SET TO:
TELEPHONE ACCESS: 0=OFF, 1=ON	1	
ANSWER OUTSIDE CALL? 0=NO 1=YES	1	
REMOTE COMMANDS OK? 0=NO 1=YES	1	
RINGS BEFORE ANSWER: 1 - 10	8	
DIAL TYPE: 0=TONE 1=PULSE	0	
MY PHONE NUMBER (Set to owner's phone number)	-	
DIAL OUT NUMBER 1: (set to owner's office number)	-	
DIAL OUT 1 ON:		

(set to open office hours/days)	MTWTF 9:00 AM
DIAL OUT 1 OFF:	
(set to closed office hours/days)	MTWTF 5:00 PM
DIAL OUT NUMBER 2:	-
DIAL OUT 2 ON:	MTWTFSS 12:00 AM
(always on)	
DIAL OUT 2 OFF:	NEVER
DIAL OUT NUMBER 3:	-
DIAL OUT 3 ON:	MTWTFSS 12:00 AM
(always on)	
DIAL OUT 3 OFF:	NEVER
DIAL OUT NUMBER 4:	-
DIAL OUT 4 ON:	MTWTFSS 12:00 AM
(always on)	
DIAL OUT 4 OFF:	NEVER
FIRE DIAL ORDER	
(order of calls for FIRE ALARM)	1 2 3 4
BURGLAR DIAL ORDER	
(order of calls for BURGLAR ALARM)	1 2 3 4
MEDICAL DIAL ORDER	
(order of calls for MEDICAL button	1 2 3 4
AND medical zone)	
FREEZE DIAL ORDER	
(Order of calls for FREEZE alarm)	1 2 3 4
SET-UP 1 - CODES	
NEW MASTER CODE	1111
NEW AUX. CODE #1	0000 (disabled)
AUX CODE #1 ON TIME/DAY:	MTWTFSS 12:00 AM
(always on)	
AUX CODE #1 OFF TIME/DAY:	NEVER
NEW AUX CODE #2	0000 (disabled)
NEW AUX CODE #3	0000 (disabled)
NEW AUX CODE #4	0000 (disabled)
NEW DURESS CODE	0000 (disabled)
NEW ACCESS CODE	1111
HIGH SECURITY MODE: 0=NO 1=YES	0
ENABLE AUTO BYPASS	1

SET-UP 2 - MISCELLANEOUS

ENTRY DELAY 15 - 45 SECONDS	15	
EXIT DELAY 15 - 180 SECONDS	15	
OUTSIDE SIREN DELAY 0 - 60 SECONDS	15	
DIAL OUT DELAY 0 - 60 SECONDS	15	
HOUSE CODE: 1=A - 16=P	A	
ON FOR ALARM UNIT #s: (lights to turn on for alarm)	129 (all lights on)	
FLASH FOR ALARM UNIT: (outdoor light)	2	
ENTRY/EXIT CHIME 0=NO 1=YES	1	
BEEP ON TROUBLE? 0=NO 1=YES	1	
QUICK-ARM ENABLED 0=NO 1=YES	0	
TIME CLOCK 1 ON TIME:	12:00 AM	MTWTFSS
TIME CLOCK 1 OFF TIME:	NEVER	
TIME CLOCK 2 ON TIME:	12:00 AM	MTWTFSS
TIME CLOCK 2 OFF TIME:	NEVER	
TIME CLOCK 3 ON TIME:	12:00 AM	MTWTFSS
TIME CLOCK 3 OFF TIME:	NEVER	
LATITUDE	30	
LONGITUDE	90	
TIME ZONE	6	
FREEZE ALARM ENABLED:	0	

SET UP 7 - ZONE, UNIT AND BUTTON NAMES

No names are programmed by default. The display shows the zone type (ENTRY-EXIT, PERIMETER, etc.) when no names are programmed.

SET UP 8 DIGITAL COMMUNICATOR - DON'T FOOL WITH THESE!

FIRST PHONE NUMBER	-
FIRST ACCT NUMBER	0000
SECOND PHONE NUMBER	-
SECOND ACCT NUMBER	0000
AUTOMATIC TEST TIME	NEVER
TEST CODE	98
ZONE 1 ALARM CODE	01
ZONE 2 ALARM CODE	02
ZONE 3 ALARM CODE	03
ZONE 4 ALARM CODE	04
ZONE 5 ALARM CODE	05

ZONE 6 ALARM CODE	06
ZONE 7 ALARM CODE	07
ZONE 8 ALARM CODE	08
ZONE 9 ALARM CODE	09
ZONE 10 ALARM CODE	10
ZONE 11 ALARM CODE	11
ZONE 12 ALARM CODE	12
ZONE 13 ALARM CODE	13
ZONE 14 ALARM CODE	14
ZONE 15 ALARM CODE	15
FIRE ALARM CODE	16
ZONE 17 ALARM CODE	17
ZONE 18 ALARM CODE	18
ZONE 19 ALARM CODE	19
ZONE 20 ALARM CODE	20
ZONE 21 ALARM CODE	21
ZONE 22 ALARM CODE	22
ZONE 23 ALARM CODE	23
ZONE 24 ALARM CODE	24
ZONE 25 ALARM CODE	25
ZONE 26 ALARM CODE	26
ZONE 27 ALARM CODE	27
ZONE 28 ALARM CODE	28
ZONE 29 ALARM CODE	29
ZONE 30 ALARM CODE	30
ZONE 31 ALARM CODE	31
ZONE 32 ALARM CODE	32
ZONE 33 ALARM CODE	33
ZONE 34 ALARM CODE	34
ZONE 35 ALARM CODE	35
ZONE 36 ALARM CODE	36
ZONE 37 ALARM CODE	37
ZONE 38 ALARM CODE	38
ZONE 39 ALARM CODE	39
ZONE 40 ALARM CODE	40
ZONE 41 ALARM CODE	41
ZONE 42 ALARM CODE	42
ZONE 43 ALARM CODE	43
ZONE 44 ALARM CODE	44
ZONE 45 ALARM CODE	45
ZONE 46 ALARM CODE	46
ZONE 47 ALARM CODE	47
ZONE 48 ALARM CODE	48
ZONE 49 ALARM CODE	49
ZONE 50 ALARM CODE	50

ZONE 51 ALARM CODE	51
ZONE 52 ALARM CODE	52
ZONE 53 ALARM CODE	53
ZONE 54 ALARM CODE	54
ZONE 55 ALARM CODE	55
ZONE 56 ALARM CODE	56
ZONE 57 ALARM CODE	57
ZONE 58 ALARM CODE	58
ZONE 59 ALARM CODE	59
ZONE 60 ALARM CODE	60
ZONE 61 ALARM CODE	61
ZONE 62 ALARM CODE	62
ZONE 63 ALARM CODE	63
ZONE 64 ALARM CODE	64
ZONE 65 ALARM CODE	65
ZONE 66 ALARM CODE	66
ZONE 67 ALARM CODE	67
ZONE 68 ALARM CODE	68
ZONE 69 ALARM CODE	69
ZONE 70 ALARM CODE	70
ZONE 71 ALARM CODE	71
ZONE 72 ALARM CODE	72
ZONE 73 ALARM CODE	73
ZONE 74 ALARM CODE	74
ZONE 75 ALARM CODE	75
ZONE 76 ALARM CODE	76
ZONE 77 ALARM CODE	77
ZONE 78 ALARM CODE	78
ZONE 79 ALARM CODE	79
ZONE 80 ALARM CODE	80
FREEZE ALARM CODE	81
FIRE EMERG CODE	82
POLICE EMERG CODE	83
MEDICAL EMERG CODE	84
DURESS ALARM CODE	85
BATTERY LOW CODE	86
FIRE ZN TRBL CODE	87
CANCEL CODE	99

Zone Codes 20 through 80: Model 1503 Version 2 only.

SET UP 9 SPECIAL - DON'T FOOL WITH THESE! SEE MANUAL!

MODEL NUMBER AND SOFTWARE VERSION

NUMBER OF EXP ENCL. 0

ENABLE THIRD AUX:	0
Z 1 TYPE	0 (entry/exit)
Z 2 TYPE	0 (entry exit)
Z 3 TYPE	0 (entry/exit)
Z 4 TYPE	1 (perimeter)
Z 5 TYPE	1 (perimeter)
Z 6 TYPE	1 (perimeter)
Z 7 TYPE	2 (home interior)
Z 8 TYPE	2 (home interior)
Z 9 TYPE	2 (home interior)
Z 10 TYPE	3 (asleep interior)
Z 11 TYPE	3 (asleep interior)
Z 12 TYPE	3 (asleep interior)
Z 13 TYPE	16 (panic)
Z 14 TYPE	19 (tamper)
Z 15 TYPE	19 (tamper)
Z 16 TYPE (this cannot be changed)	32 (fire)
Z 17 TYPE	64 (auxiliary input)
Z 18 TYPE	64 (auxiliary input)
Z 19 TYPE	64 (auxiliary input)

Model 1503 Version 2 systems only:

Z 20 TYPE through Z 80 TYPE:	64 (auxiliary input)
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NOTE: NOT ALL ZONES CAN BE SET TO ALL TYPES. SEE TABLE 2 in this manual.

EEPROM VERSION NUMBER version (don't change - see manual)	Depends on software
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TABLE 2

ZONE TYPES

ZONE TYPE NUMBER	DESCRIPTION
0	ENTRY/EXIT
1	PERIMETER

2	HOME INTERIOR
3	ASLEEP INTERIOR
4	DOUBLE DELAY ENTRY/EXIT
5	QUADRUPLE DELAY ENTRY/EXIT
16	PANIC
17	POLICE EMERGENCY BUTTON
18	DURESS EMERGENCY (SILENT DIAL OUT)
19	TAMPER
32	SUPERVISED FIRE **
48	MEDICAL EMERGENCY BUTTON
54	FREEZE ALARM
64	AUXILIARY INPUT.
80	PROGRAMMABLE ENERGY SAVER MODULE ***
81	OUTDOOR TEMPERATURE ***

\*\* ONLY ZONE 16 in MODEL 1503 units can be used as a SUPERVISED FIRE ZONE.

\*\*\* Only zones 17, 18 and 19 in MODEL 1503 units can be set as PESM (80) and OUTDOOR TEMP (81) types.

Zones 17 - 80 in MODEL 1102 EXPANSION ENCLOSURES can be set to ANY zone type, including 32, 80 and 81.

Remember to press the RESET button in the Model 1503 Control/Communicator after changing a zone type.

TABLE 3

CHARACTER CODES for SET-UP 7, NAMES

CODE	CHAR	CODE	CHAR
00	SPACE	48	P
01	!	49	Q
02	"	50	R
03	#	51	S
04	\$	52	T
05	%	53	U
06	&	54	V
07	'	55	W
08	(	56	X
09	)	57	Y
10	*	58	Z
11	+	59	[
12	,	60	YEN
13	-	61	]
14	.	62	^
15	/	63	_
16	0	64	`
17	1	65	a
18	2	66	b

19	3	67	c
20	4	68	d
21	5	69	e
22	6	70	f
23	7	71	g
24	8	72	h
25	9	73	i
26	:	74	j
27	;	75	k
28	<	76	l
29	=	77	m
30	>	78	n
31	?	79	o
32	@	80	p
33	A	81	q
34	B	82	r
35	C	83	s
36	D	84	t
37	E	85	u
38	F	86	v
39	G	87	w
40	H	88	x
41	I	89	y
42	J	90	z
43	K	91	{
44	L	92	
45	M	93	}
46	N	94	RIGHT ARROW
47	O	95	LEFT ARROW