jc605 U.S. PTO
10/22/01

12-14-01

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A/PROV

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PTO/SB/16 (8-00)
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

jc605 U.S. PTO
60/339511
10/22/01

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
JOHN	GEIWITZ	Albuquerque, NEW MEXICO

☐ *Additional inventors are being named on the ___ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (280 characters max)

BUILDING AUTOMATION AND CONTROL SYSTEM

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

☒ Customer Number 005179 →

OR *Type Customer Number here*

05179
PATENT TRADEMARK OFFICE

☐ Firm or Individual Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 833
☒ Drawing(s) *Number of Sheets* 215
☒ Application Data Sheet. See 37 CFR 1.76
☐ CD(s), Number
☐ Other (specify)

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☒ Applicant claims small entity status. See 37 CFR 1.27.
☒ A check or money order is enclosed to cover the filing fees
☐ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 13-4213
☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE AMOUNT ($): 80

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE Deborah A. Peacock

Date 10/22/01

TYPED or PRINTED NAME Deborah A. Peacock

REGISTRATION NO. *(if appropriate)* 31,649

Docket Number: 31365-1001

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USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

LENNOX EXHIBIT 1007
Lennox Industries Inc. v. Rosen Technologies LLC, IPR2023-00717, Page 1

Practitioner's Docket No. 31365-1001 ***PATENT***

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: John Geiwitz
Application No.: 0 / UNKNOWN Group No.: UNKNOWN
Filed: October 22, 2001 Examiner: N/A
For: BUILDING AUTOMATION AND CONTROL SYSTEM

Assistant Commissioner for Patents
Washington, D.C. 20231

EXPRESS MAIL CERTIFICATE

"Express Mail" label number EV003479634US
Date of Deposit October 22, 2001

I hereby state that the following *attached* paper or fee

Provisional Application for Patent Cover Sheet with $80 fee check
Specification (833 pp)
Drawings (215 sheets)
Application Data Sheet
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is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10, on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

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(Express Mail Certificate [8-3])

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APPLICATION DATA SHEET

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Correspondence Customer Number::	05179

Application Information

Title Line One::	Building Automation and Control System
Total Drawing Sheets::	215
Formal Drawings?::	No
Application Type::	Provisional
Docket Number::	31365-1001

Representative Information

Registration Number::	005179

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Building Automation & Control System

The "System"

The core product is microprocessor based and is programmable both on-site and remotely. Driven by software and firmware, it is very flexible, but not a traditional PC. While the PC is often promoted as the logical host for building automation control, real-world experience has clearly demonstrated this is not the case. First, the PC is not designed to be "on" 24 hours a day, seven days a week. Second, the PC's inherent lack of reliability and frequent "re-boots" severely cripple its credibility as a security and building automation controller. Third, with heavier usage (primarily internet related) and the number of increasingly complex application programs being run in the home and office, performance of the PC becomes a real challenge. Therefore, we have developed a purpose-built controller designed to be highly efficient and reliable operating 24x7. It is an open system conforming to industry standards for interoperability and has a "Windows" software interface for those who wish to access it via a traditional PC or Palm Pilot.

The System conforms to RS232, RS485, Firewire, Bluetooth X-10 PLC (PLC, Power Line Carrier) control protocol and extended PLC code currently considered "de-facto" standards for building automation applications. As new control protocols (e.g., CEBus, SCP and Echelon) gain acceptance, we are positioned to efficiently work with them all via the expansion ports located on the system platform.

Our unique modular open architecture and real time operating systems provide a "future-proof" system that has never before been available in the building automation industry. New capabilities, applications and components are simply plugged into the platforms expansion ports, greatly extending the useful life of the product. Replacement or upgrade of system components does not require the entire system to be replaced. This benefit is very important to the typical consumer who has not previously purchased such products and is looking to amortize the cost over as long a period as possible. System modularity and remote diagnostics also reduces warranty and ongoing support costs to the end-user, dealer-installer and the Company.

The system is best described in the following four general sections:

I.
"The Platform"

The core system is designed to be the "platform" to manage an increasingly robust complement of building automation products and devices in every new or existing building. Since no one system from any manufacturer will be able to monopolize this market space, we made the fundamental design decision to create an open architecture conforming to industry interoperability standards.

II.
"Touch Screens & User Interface Devices"

We have developed a touch screen based visual user interface that uses familiar icon-based menus that have extensive functionality, is very logical in its layout, and therefore is extremely simple to use. We have also created other "user interface" devises that extend the systems functionality:

- Key Reader Unit
- Phone/Modem/Voice Module
- Web Interface Module
- Personal Data Assistant (Palm Pilot) Interface Module
- Infrared & RF Interface Module

III.
"Expansion Modules"

Adjunct products such as Processor, Peripheral Power, Security, Audio, Expanded HVAC, Expanded Code, and Energy Management Modules greatly extend the functionality and reach of our systems, making it by far the most flexible and useful building automation system platform on the market.

IV.
" System Software"

We have produced software that enables the system to be controlled, up/downloaded to and from, diagnosed, serviced, updated & upgraded via a standard phone line, high speed internet connection, or via a direct connection of a PC to the systems platform DB9 connection.



6,933,849 B2 Aug. 23, 2005

"Components of the System"

The building automation & control system hereafter referred to as the system is comprised and will be described in the scope of this document by the following fifteen components:

I.
System Back Plane

(1) **Platform** (figure 383)

Analog input circuits (figure 384 and 385)
Telephone input/output circuits (figure 386 and 387)
HVAC circuits (figure 388 and 389)
Auxiliary relay circuits (figure 390 and 391)
Expansion card header ports (figure 392 - 395)
RS232 interface circuit (figure 396 and 397)
Power line carrier input/output circuits (figure 398 and 399)
System reset switch (figure 400 and 401)
Protected power output circuit (figure 402 and 403
Switched power output circuit (figure 404 and 405)
System status indicators (figure 406 and 407)
Doorbell/station input/output circuit (figure 408 and 409)
RS485 interface circuit (figure 410 and 411)
Key reader interface circuit (figure 412 and 413)
System power interface (figure 414 and 415)
Siren/strobe output circuit (figure 416 and 417)
Smoke/heat input circuit (figure 418 and 419)
Tamper loop input circuit (figure 420 and 421)
Security module header ports (figure 422 and 423)
Phone/modem/voice module header ports (figure 424 and 425)
Processor module header ports (figure 426 – 431)
Power module header ports (figure 432 and 433)
Platform signal management processor circuit (figure 434 and 435)

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II.
System User Interface Devices

(2) **Touch Screen** (figures 1 – 313 and 436-440)
- Embedded controller circuit
- LCD and backlight circuit
- Address circuit
- Temperature sensor
- IR/RF Receiver/Transmitter circuit
- Back box
- Bezel

(3) **Key Reader** (figure 441 – 446)
- Key signal interface pickup unit
- Status indicator LED
- Bezel

(4) **Phone/Modem/Voice Module** (figure 447 – 449)
- Digital interface circuit
- Telephone signal interface circuit
- Digital vocabulary circuits

(5) **Web Interface Module**

(6) **Personal Data Assistant (PDA) Module**

(7) **Infrared & RF Interface Module**

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III.
System Expansion Modules

(8) **Processor Module** (figure 450 – 455)
- Embedded controller circuit
- Real-Time clock circuit
- RS232 signal drivers
- Signal bus router controller circuit
- Serial communication buffer controller circuit

(9) **Peripheral power Module** (figure 456 and 457)

(10) **Security Module** (figure 458 – 460)
- Output processing circuit
- Input processing circuit

(11) **Audio Module** (figure 461 – 468)
- Embedded controller & RS485 control circuit
- Input/Output 8 channel Digital to Analog converters
- Source select circuitry
- Interface control circuits
- IR signal decode and routing circuits
- Interface buffer circuits with status indicator LED's

(12) **Expanded HVAC Module**

(13) **Energy Management Modules** (figure 469 and 470)
- Electrical service meter receiver module
- Gas service meter receiver module
- Water service meter receiver module

(14) **Expanded Code Modules**
- CEBus PLC Communication Module
- Echelon PLC Communications Module
- SCP & Universal Communications Module

IV.
System Software

(15) **Asynchronous Transfer Linking All Systems (ATLAS)** (figure 314 – 382)
- Installer/programmer master version
- End user residential version
- End user commercial version

(1)

I. Platform (Mother Board)

Function

The platform functions as the back plane of the system allowing signals to travel within the system between sub-systems and expansion modules via connection headers provided for the docking of such modules. The platform also provides the connectors for peripheral Input/Output, or external signals to and from devices such as sensors, solenoids, transducers, and relays.

Features & Applications

The platform is comprised of the following 23 features or sections:

1. Twenty configurable analog input circuits for data acquisition from peripheral devices such as:

    i. Door & window contacts
    ii. Motion detection sensors
    iii. Propane and other gas sensors
    iv. Stress and pressure sensors
    v. Temperature, internal and external sensors
    vi. Water and moisture sensors
    vii. Vehicle detection sensors
    viii. Vibration sensors
    ix. Wind, rain, and humidity sensors
    x. Occupancy detection sensors
    xi. Glass breakage sensors
    xii. Pressure differential sensors

2. One telephone input/output circuit for interface to and from the system via a telephone inside or outside the building also used for auto dial out in the case of an emergency or user programmed conditional such as extreme temperature or over usage of energy. This circuit also allows that system to link to the Internet via a modem dial up.

3. Two Heating Ventilation Air Conditioning (HVAC) circuits for interfacing to two separate zones of HVAC equipment.

4. Four auxiliary relay output circuits for interfacing with devices such as:

    i. Solenoid & magnetic door latches
    ii. Sprinkler & irrigation systems
    iii. Motorized garage door openers
    iv. Motorized window coverings

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v. Motorized projector screens and lifts
vi. Motorized windows and skylights
vii. Devises that actuate via contact closure

5. Three expansion card headers (ports) for upgrades and additional hardware and sub-systems.

6. Power Line Carrier (PLC) data distribution circuit for the input/output of signals to and from the system via the existing power lines in a building.

7. RS232 data bus for linking, down/uploading, diagnosing, and remote servicing of the system.

8. System reset button for hard re-boot of all sub-systems.

9. Protected power distribution circuit supplied to provide power to peripheral devices connected to the system even in the even of a power outage.

10. Switched power distribution circuit supplied to provide power to peripheral devices but does not do so in a power outage.

11. System status indicators for the purpose of providing feedback to the installer/user regarding the condition of the power, system battery back up status, and to aid in the diagnosis and alert the installer/user of system trouble.

12. Doorbell or door station input circuit for triggered interaction between visitors and the system.

13. RS485 data bus for user interface devices such as:

i. Touch screens
ii. Key readers
iii. Card readers
iv. Keypads
v. Monitors & displays
vi. Input/output devices

14. Two key reader circuits for user interface providing controlled access to a building. Both circuits are independent allowing partitioned control of two sections of a building, warehouse, main house, guesthouse, garage, pool house, etc. Key reader circuits can also be used for numeric and/or alpha keypads.

15. Power input connectors for system power from and external power supply or transformer. This circuit also provides for battery backup in the event that electrical power is interrupted.

16. Siren/strobe output connectors for audible & visual alert.

17. Smoke/heat detector connectors.

18. Tamper loop input provided to detect the tampering of critical system components.

19. Security module sub-system headers (3) with input protection circuits designed to dock a sub-system card.

20. Phone/Modem/Voice module headers (2) with internal phone power switching circuits designed to dock a sub-system card.

21. Processor module headers (1) with expansion port driver circuits designed to dock a sub-system card.

22. Power module headers (5) designed to dock a sub-system card.

23. Input/Output platform management processor designed to control the signals distributed between sub-systems.

Platform "System" Applications

The platform is designed to be the baseline and infrastructure of the system allowing the user to implement basic automation functions while providing a modular path for additional functionality and upgrades via sub-system headers and expansion ports.

Typical applications of the system can be described via the following 12 sections and any combination or integration of each of these categories. Sections include but are not limited to the following:

1. Lighting & Outlet Control Applications
2. Security & Safety Applications
3. Heating Ventilation & Air Conditioning Applications
4. Access Control & Information Logging Applications
5. Audio Control Applications
6. Energy Management Applications
7. Internet Interface Applications
8. Telephone Interface Applications
9. Computer Interface Applications
10. Palm Pilot & PDA Interface Applications
11. Time & Task Management Applications
12. IR & RF Handheld Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy

Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

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II. User Interface Devices

(2)
Touch Screen

Function
The touch screen functions as the primary user interface for the system allowing the user to set and change parameters of the system, up/download information from the IR & RF receiver/transmitter located behind the smoked window. The touch screen also acquires, and represents system data regarding system features such as:

General information and programming

Security status armed/disarmed
Present electricity usage
Date and time
Sunrise/set times
Indoor/outdoor temperature
HVAC status
Name of building or owner
Software version currently running
You've got mail envelope for individual users
Messages left for individuals
Last/next scene to run
Next energy management cycle scheduled time
Skip to next menu
More on current menu options
Installer/programmer tools
Relay options and programming

Example: Depending on which key is used to unlock the door and disarm the security system, a message will appear on the general information screen in the event the that user has email or a voice message waiting.

Lights /Outlets & scene programming

Dim, Brighten, On, Off, Flash
Appliance on/off
On/off with sunrise/sunset
Reactions and triggers
Schedules & Time settings
Outlet names, status and wattage
Light names, status and wattage
+/- Value of lights
All lights/outlets programmed for control
One-touch scenes incorporating any light and outlet in the building along with any combination of the other 11 system applications

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Example: In the event of a fire, all lights turn on to light a safe pathway, the HVAC turns off to prevent the transfer of smoke, and the outdoor lights flash to signal for help.

Security/Safety & scene programming

Zones open/closed
Last zone violated
Bypass zones
Interior/exterior
Partition areas of building
Arm/disarm codes & keys
Zone names
Zone chime open/close
Entry/exit delay times
Extreme temperature alert
Numbers called when violated
Monitoring dial and report information
Stay mode
Away mode
Panic button
Hostage, silent alert button
Code keypad
One-touch scenes incorporating any source of audio along with any combination of the other 11 system applications

Example: Arming the security system automatically locks the doors and shuts the overhead garage doors if left open. Disarming the store with a Smart key, automatically turns on all lights, turns on the neon "open" sign, adjusts the temperature, and starts the background music playing in the lobby.

HVAC & scene programming

Heating temperature selections
Fans status and options
Air Conditioners temperature selection
Vents, open or close and status
Valves, open or close and status
Temperature settings when unoccupied
Temperature settings when on vacation
Temperature settings when occupied but sleeping
Status and control of all zones and total zones controlled
+/- values for all temperature settings
Reaction to doors and/or windows left open
One-touch scenes incorporating any combination of HVAC along with any combination of the other 11 system applications

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Example: The HVAC system only cools or heats areas of the building that are occupied with motion. Or – When the security system is armed and the building is unoccupied, lights automatically turn off, the temperature adjusts for maximum energy savings, and the dangerous appliances like coffee pots, curling irons, toasters, etc. have their associated outlets turned off.

Access control & scene programming

Settings for key/code authority
Time logs for entry/exit tracking individuals
Access settings for restricted areas
Program key/codes as triggers
Issue alert when selected key/code is used
One-touch scenes incorporating access control along with any combination of the other 11 system applications

Example: Using a Smart key to disarm the security system and unlock the front door also sets the temperature, music, lights, and other appliances to that particular users preferred settings. Or – The key assigned to the housekeeper or maintenance person only works, unlocks the door and disarms the security, during the day and time frame specified by the end user.

Audio/Video Control & scene programming

Select components controlled
Select up to 24 zones/rooms of distributed audio
Select sources like CD, DSS, Tuner, DVD, etc.
Adjust volume levels in individual or all zones
Program selections for scenes and triggers
Mute when phone rings
Mute when doorbell rings
One-touch scenes incorporating any source of audio along with any combination of the other 11 system applications

Example: Audio sources such as CD's, Radio Stations, DSS, etc. are only played in rooms that are occupied via motion detection. Or – One touch of a user defined icon such as "Party" or "Relax" automatically adjusts the lights, turns on the gas fireplace, adjusts the temperature, and starts appropriate music, as defined by the end user, playing in select areas of the building.

Energy Management & scene programming

Energy management options
Energy scene options and triggers
View present or average usage of electricity
View present or average usage of water & gas
Set triggers to adjust the usage of selected appliances
Program energy saving scenes to be triggered by utility company
Override appliances in energy management mode

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Restrict appliances and set priority levels for energy management
Billing cycle information
Assign priority level of appliances during energy management modes
One-touch scenes incorporating energy management along with any combination of the other 11 system applications

Example: Select a KWH or dollar value for your monthly electricity budget, assign the priority level of your air conditioning and other appliances so that your usage of electricity never exceeds the budgeted amount specified by the end user or triggered by the utility.

Internet Interface & scene programming

Select DSL or Cable modem interface
Set passwords for outside access to the system
Select wed sites to up/download data to/from
WWW button to link to Internet or Intranet
Set up users for email & message access
Connect to manufacture for warrantee registration
Connect to manufacture for upgrades and updates
Connect to manufacture for system diagnostics
Connect to manufacture for new applications
One-touch scenes incorporating Internet and/or Intranet linking along with any combination of the other 11 system applications.

Example: System download local weather and traffic and determine if "wakeup" scene needs to run earlier then 6am based on user selected parameters

Telephone Interface & scene programming

Select language for voice menu
Select vocabulary options
Set password for remote access
Select users for remote access
Select time window for remote access
Select number of rings before system pick up
Select message and mail box options
Select notification options
One-touch scenes incorporating telephone interface features along with any combination of the other 11 system applications

Example: Telephone is disabled from ringing in the master bedroom while "goodnight" scene is active based on user-selected parameters. Or – The system will call four preset phone numbers to deliver alert messages when the security system is violated, or the temperature is too high/low, or a key or code is or is not used at or by a selected time, or if smoke is detected, etc.

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Computer Interface & scene programming

Select computer interface type
Select user options and priorities
Select DSL or Cable modem interface
Set passwords for outside access to the system
Select wed sites to up/download data to/from
WWW button to link to Internet or Intranet
Set up users for email & message access
Connect to manufacture for warrantee registration
Connect to manufacture for upgrades and updates
Connect to manufacture for system diagnostics
Connect to manufacture for new applications
One-touch scenes incorporating computer interface features along with any combination of the other 11 system applications

Example: From the airport or across the country, view, change, or control any system features in a building via one mouse click on your laptop or palmtop computer. Or – Connect to your office to view, change or control the temperature, locks, security system, lights, outlets, audio components, pool/spa, garage doors, window coverings, from anywhere in the world as long as you have access to the internet and the systems software (ATLAS) installed on your computer.

Palm Pilot & PDA Interface & scene programming

Hot Sync select schedules with select PDA's
Down/up load shopping list
Look for open time for all or selected users
Update new control devises added to building for control by PDA
Select PDA interface type
Select user options and priorities
Select modem interface
Set passwords for outside access to the system
Select wed sites to up/download data to/from
Hot Sync button to link to Internet or Intranet
Set up users for email & message access
Connect to manufacture for warrantee registration
Connect to manufacture for upgrades and updates
Connect to manufacture for system diagnostics
Connect to manufacture for new applications
One-touch scenes incorporating PDA interface features along with any combination of the other 11 system applications

Example: From the airport or across the country, view, change, or control any system features in a building via one touch on the display of a Palm Pilot or PDA. Or – Connect to your home to view, change or control the temperature, locks, security system, lights, outlets, audio components, pool/spa, garage doors,

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window coverings, from anywhere in the world as long as you have access to the Palm or wireless internet service.

Time & Task Management & scene programming

Set reminders and alert types
Set appointment times to link with all other users
Request first available time for meeting with all/select users
Set repeat reminders for tasks that reoccur
Program group reminders and appointments
Compare all schedules and look for free time
Time for prescribed medication alert
Conflict in schedules alert
All reminders can require acknowledge to stop alert
Suspend or delay alert
Set triggers or reactions as alerts
One-touch scenes incorporating time task management features along with any combination of the other 11 system applications

Example: Email preset message to moms work PC when child arrives home and uses key to disarm and unlock door. However, if child does not arrive home by predetermined time, (3:45pm) email moms work computer with different preset message every 15 minuets until child arrives at home.

IR & RF Remote Control & scene programming

Select system features controlled by handheld remote control
Specify local (room) or global (whole building) control at each touch screen
Set triggers and/or reactions based on the reception of any RF or IR signal
Program IR or RF signals or groups of signals are transmitted from touch screen
Program IR or RF signals or groups of signals are received by each touch screen
Program combinations of IR/RF signals to be transmitted when a single signal is received.
Program signals to be processed at touch screen or passed through to other components.
One-touch scenes incorporating IR/RF remote control features along with any combination of the other 11 system applications

Example: Ramp lights in living room from 40% to 90% when pause is pressed on the DVD remote control. Return lights to 40% when pause is followed by play being pressed on the DVD remote control. Or – Transmit TV on to channel 3, surround sound amp and processor on to volume level 8, all lights dim to 40%, show door camera on picture in picture and disable chime, close living room window coverings, and send play to DVD player – All with the press of one touch screen icon called "Movie"

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Scene & Macro programming linking all system features

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

Example: When "Goodnight" icon is pressed on the touch screen – Then: Close opened garage doors, lock front and back door, arm security system, adjust temperature to 72 degrees, close all window coverings, fad all lights from 90% to 0% over the next 90 minutes, turn off outlet controlling landscape lights, Check PDA schedule to determine when to run "wakeup" scene but only on weekdays, download weather and traffic information 60 minutes before running "wakeup" scene and adjust if necessary based on user parameters, turn off the master bedroom TV 60 minuets after "goodnight" is pressed, turn off hot water heater outlet unless motion is sensed in master bedroom, route doorbell and phone calls directly to massage machine until "wakeup" is active, and set temperature to 74 degrees 30 minutes before invoking "wakeup" scene.

Touch Screen Application & Menus

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Figure 1

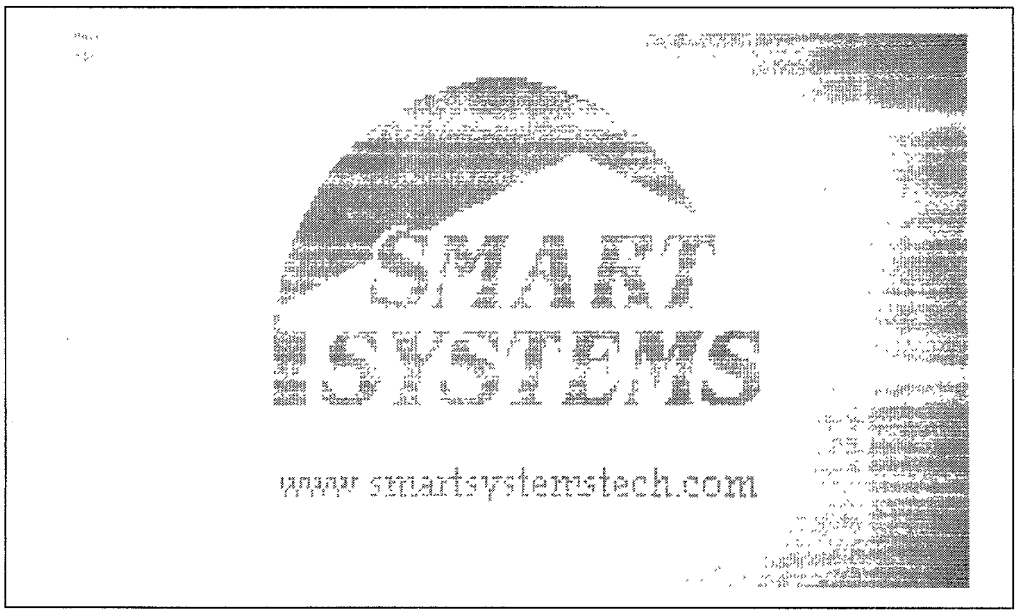
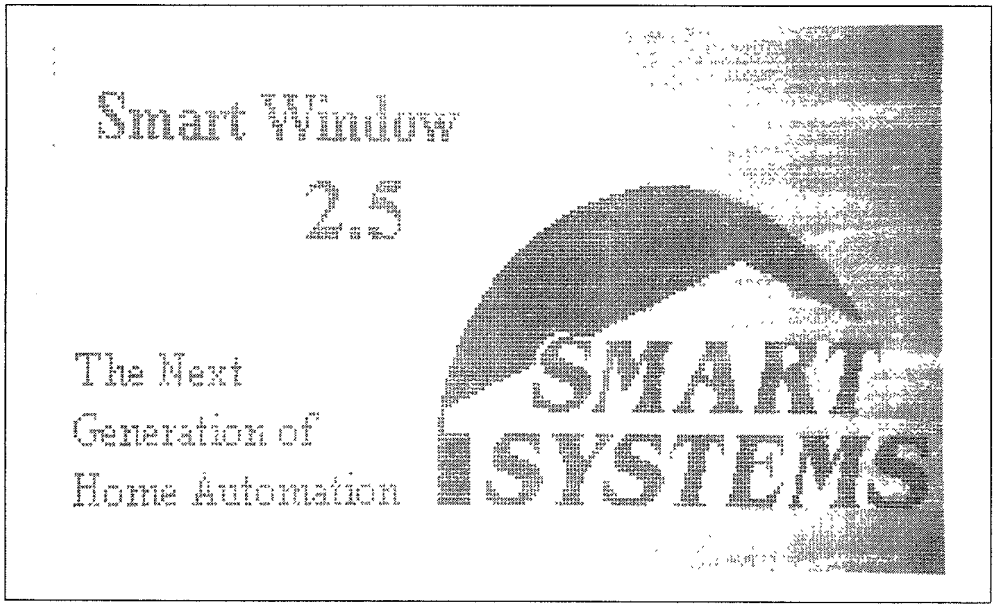


Figure 1 appears when the system is first powered up or when power is restored to the system in the event of a power loss. This screen is only displayed for a few seconds and is replaced by Figure 2.

Figure 2



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Figure 2 appears after Figure 1 when the system is first powered up or when power is restored to the system in the event of a power loss. This screen is only displayed for a few seconds and is replaced by Figure 3.

Figure 3

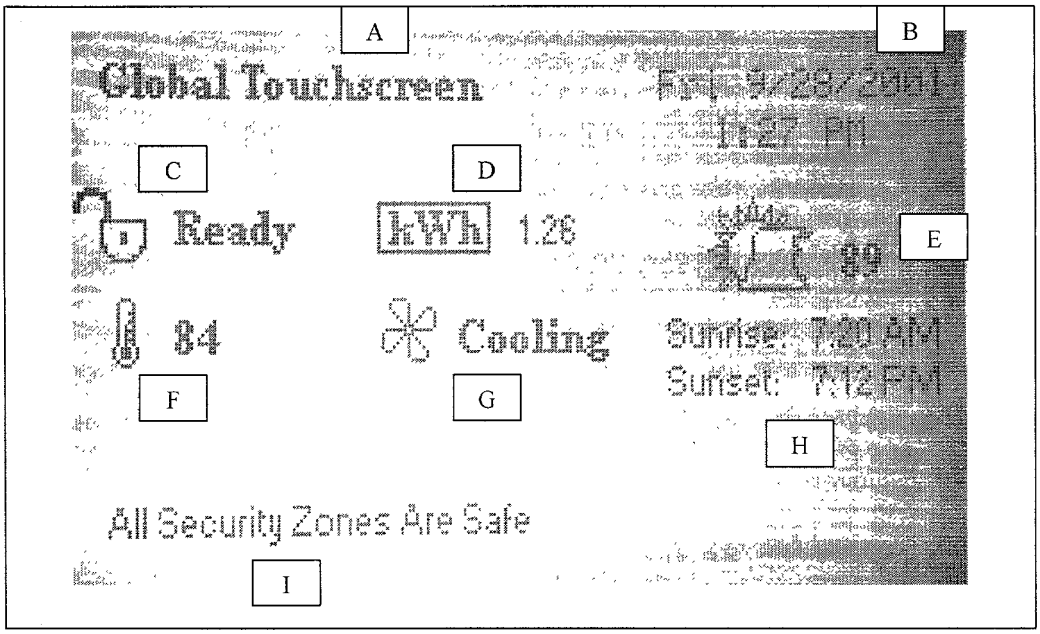


Figure 3 is the first screen that the user sees each time the touchscreen is activated. To preserve the life of the backlight, the touchscreen is programmed to 'time-out' or 'go-dark' after a period of 1 to 5 minutes.

To bring the touchscreen to a ready state, the user presses the 'dark' screen and is immediately shown Figure 3 for a general status update. After the user is finished viewing the general status of the system, another touch on the touchscreen will bring up Figure 4.

Functional Description:

A.) 'Global Touchscreen' is the default listing for the primary system touchscreen. When the system is configured for a user it will be replaced by a family or company name.

B.) Current Date & Time

C.) Security Status – An open lock represents a disarmed security system. A closed lock represents an armed security system. The word 'Ready' indicates that all zones are closed and are ready to arm. If there are security zones open the word 'Ready' will not appear and the open zone names will scroll through the updates listed under 'I' in this section.

D.) kWh and the adjacent number refer to the current electrical energy consumption (kilo Watt hour) of the user's building.

E.) Weather Status – The outdoor temperature and weather condition as reported by an auxiliary weather station device attached to the building.

F.) Current indoor temperature

G.) Current Heating or Cooling Operational Status

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H.) Daily Sunrise and Sunset Times as determined by the latitude and longitude programmed into the system during configuration.
I.) This area of the status screen is reserved for text based status updates related to current system operating instructions and other system messaging to the user. Sample updates for the user include;

- A greeting of "Good Morning! Touch for Control Menus", "Good Afternoon! Touch for Control Menus" or "Good Evening! Touch for Control Menus" appropriate to the time of day.
- A reminder of the most recent scene executed.
- An indication of the zone status and listing of any open zones. In the above example the user is told, "All Security Zones are Safe".
- A reminder of the most recent energy management related scene executed.
- The company's web site: www.smartsystemstech.com.
- Current energy management status, e.g. "Current Energy Management Level: 1"
- Next energy event notification, e.g. "Energy Management Level will Begin at 2:00 PM"

Figure 4

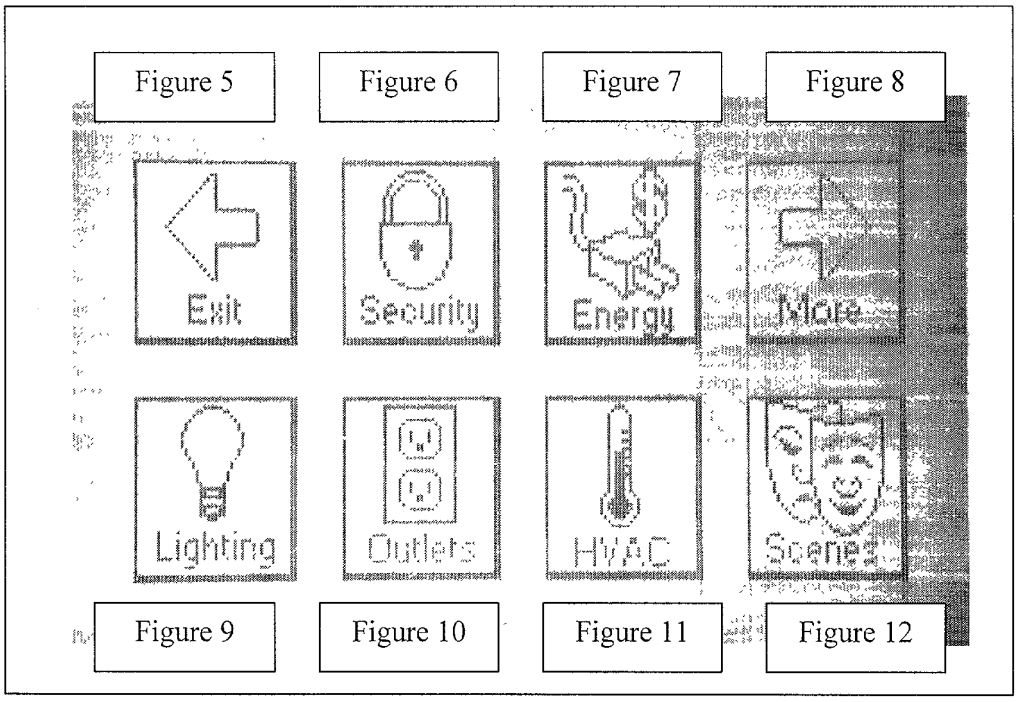


Figure 4 is a navigational menu for primary system features and functions, and represents a centralized point for other Figures, including:

- Figure 5 – 'Exit' returns the user to Figure 3, the Status Screen.
- Figure 6 – 'Security' takes the user to the security controls portion of the system.
- Figure 7 – 'Energy' takes the user to the energy management controls portion of the system.
- Figure 8 – 'More' is a navigational icon to reach more system control icons.

- Figure 9 – 'Lighting' takes the user to the lighting control portion of the system.
- Figure 10 – 'Outlets' takes the user to the outlet control portion of the system.
- Figure 11 – 'HVAC' takes the user to the Heating and Cooling controls portion of the system.
- Figure 12 – 'Scenes' takes the user to the Scene control and programming portion of the system.

The complete functions of each icon are located under the Figure numbers listed above.

Figure 13

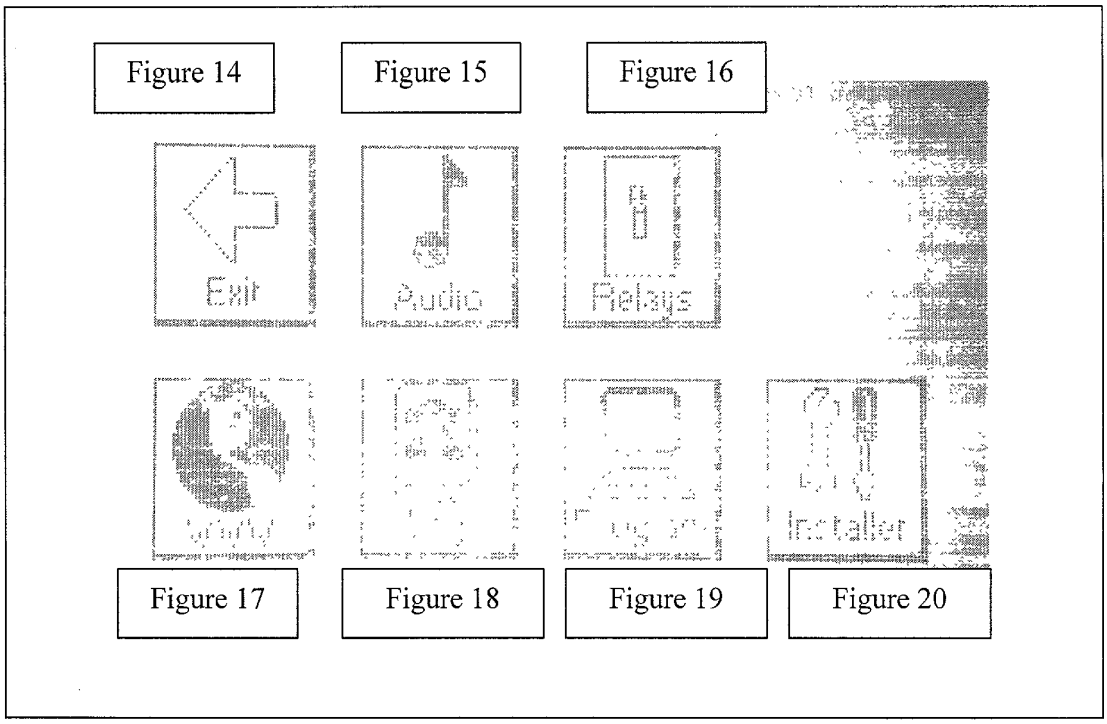


Figure 13 is a navigational menu for primary system features and functions, and represents a centralized point for other Figures, including:

- Figure 14 – 'Exit' returns the user to Figure 4
- Figure 15 – 'Audio' takes the user to the audio controls portion of the system.
- Figure 16 – 'Relays' takes the user to the relays controls portion of the system.
- Figure 17 – 'WWW' takes the user to the World Wide Web interface portion of the system.
- Figure 18 – 'Log' takes the user to the telephone logbook portion of the system.
- Figure 19 – 'Program' takes the user to the user-programming portion of the system.
- Figure 20 – 'Installer' is an installer-only section of the system for set up and configuration.

The complete functions of each icon are located under the Figure numbers listed above.

Figure 21

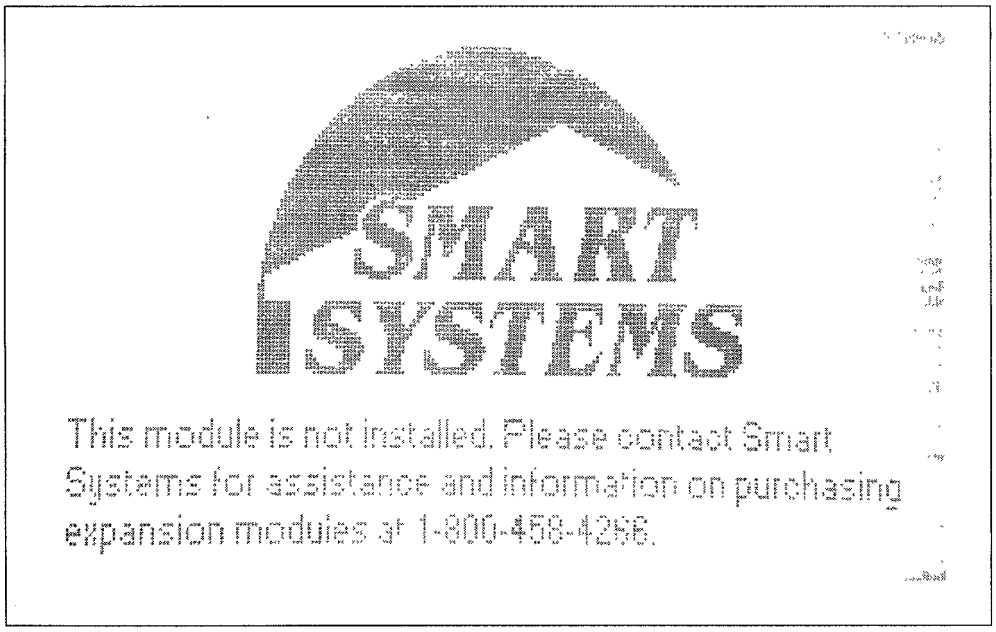


Figure 21 is an automatic display that appears when a control module for a system feature is not installed on or connected to the motherboard. Sample modules that may not come standard to the end user include the World Wide Web feature and Interactive Energy Management for displaying the current energy consumption of the building.

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Figure 6

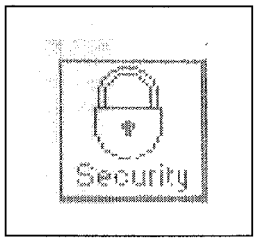


Figure 6 is the icon for accessing user area of the security controls portion of the system. Selecting Figure 6 activates Figure 22.

Figure 22

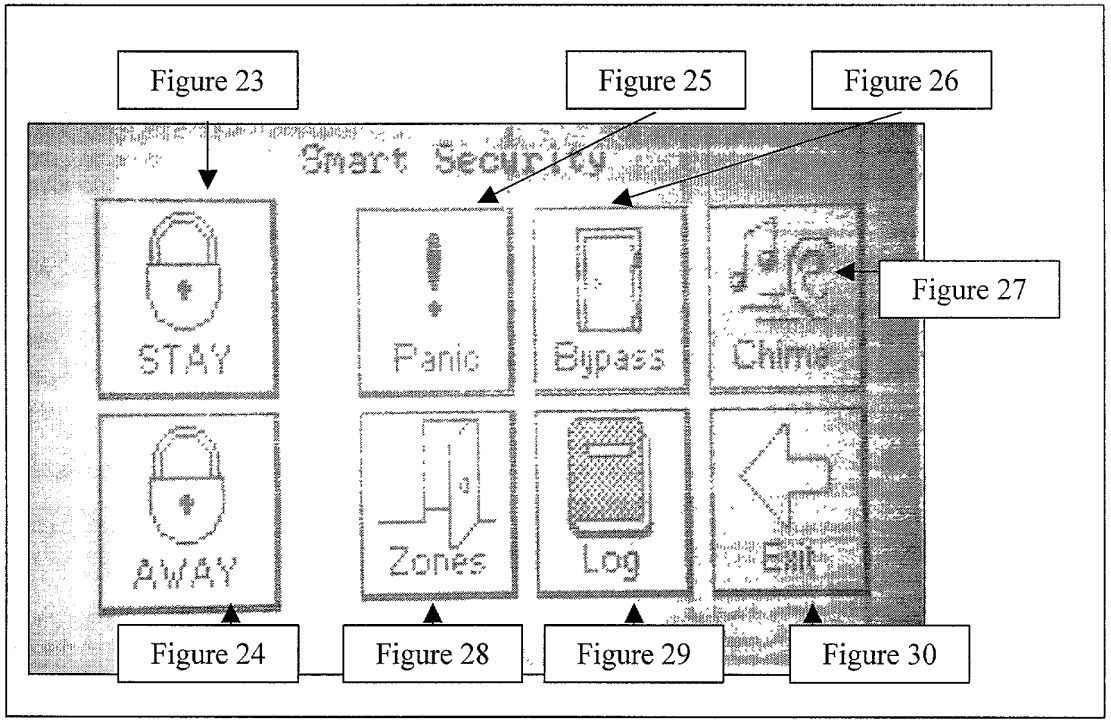


Figure 22 appears after selecting Figure 6. Figure 22 is a basic navigation menu with icons relating to security functions for manipulating the security controls portion of the system. The function of each icon is differentiated by separate Figure classifications.

Selecting Figure 30, the 'Exit' icon, returns the user to Figure 4.

Functional Example: This menu on the touchscreen is for user operation of the security portion of the system. In most cases the user will simply select either the 'Away' or 'Stay' icon and be prompted to enter in a code to arm the system. The remaining icons in Figure 22 relate to emergencies, system modification, status and history.

Figure 23

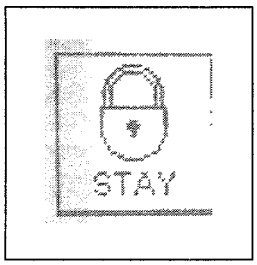


Figure 23 selects a particular status in which to arm the security controls portion of the system. Selecting the 'Stay' feature will prepare the system for arming after a multi-digit user code is entered in Figure 31.

Figure 31

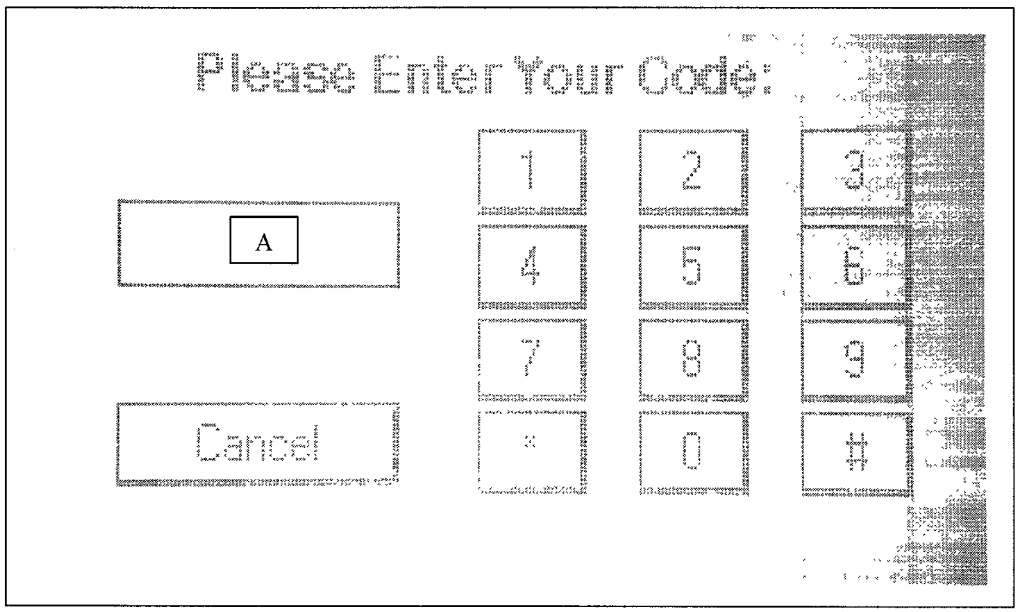


Figure 31 is a numeric keypad that displays after selecting Figure 23. Entering a proper numeric code will arm the security control portion of the system in the 'Stay' mode. For each button selected on the numeric keypad (0-9, ^{X} or #) a '*' appears in the box labeled "A" within Figure 31 for a visual confirmation of a number being selected without revealing the actual number itself. This is for protecting the privacy security code of the user. The cancel button is to clear a partial code that has been entered incorrectly.

Functional Example: 'Stay' automatically prepares the arming of the security sensors & detectors relating to the prevention of an intrusion designated as the perimeter of the building. 'Stay' automatically disables the interior sensors and detectors relating to the prevention of an intrusion within the building. Sensors and detectors related to smoke, gas, glass breakage, heat, water leakage and property protection are assigned a status unrelated to choosing the 'Stay' feature.

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Figure 24

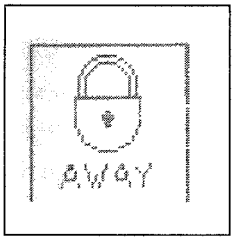


Figure 24 selects a particular status in which to arm the security controls portion of the system. Selecting the 'Away' feature will prepare the system for arming after a multi-digit user code is entered in Figure 32.

Figure 32

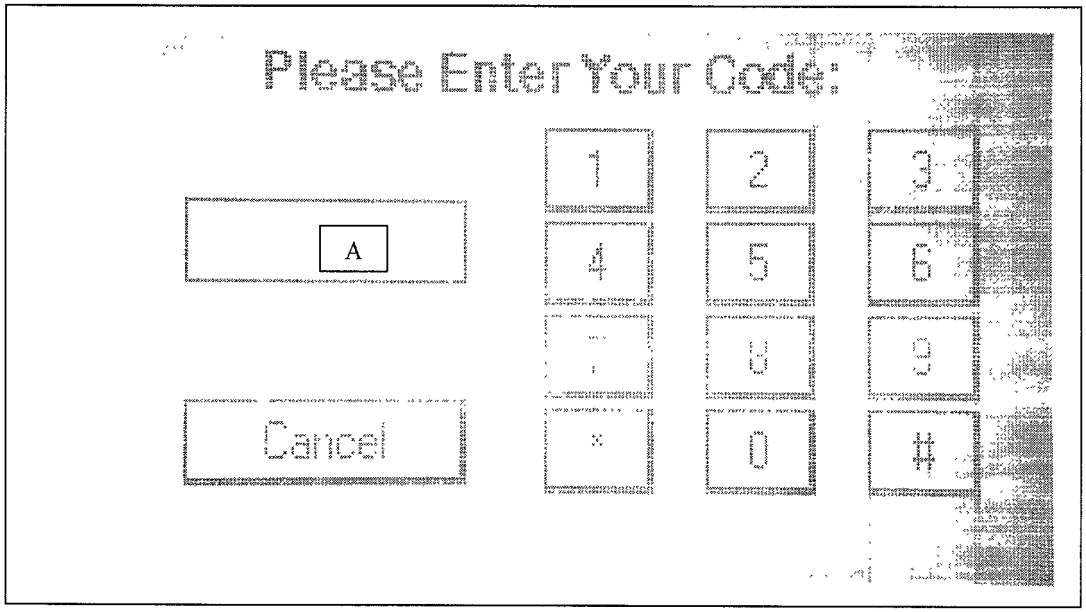


Figure 32 is a numeric keypad that displays after selecting Figure 24. Entering a proper numeric code will arm the security control portion of the system in the 'Away' mode. For each button selected on the numeric keypad (0-9, X or #) a '*' appears in the box labeled "A" within Figure 32 for a visual confirmation of a number being selected without revealing the actual number itself. This is for protecting the privacy security code of the user. The cancel button is to clear a partial code that has been entered incorrectly and returns the user to Figure 22.

Functional Example: 'Away' automatically prepares the arming of the security sensors & detectors relating to the prevention of an intrusion throughout the building. Sensors and detectors related to smoke, gas, glass breakage, heat, water leakage and property protection are assigned a status unrelated to choosing the 'Away' feature.

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Figure 25

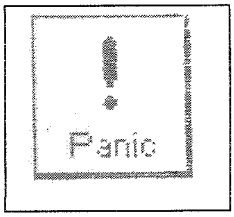


Figure 25 is accessed through Figure 22. Figure 25 is selected by the user to reach a menu for choosing a desired emergency dial out. The emergency dial out services are listed in figure 33.

Figure 33

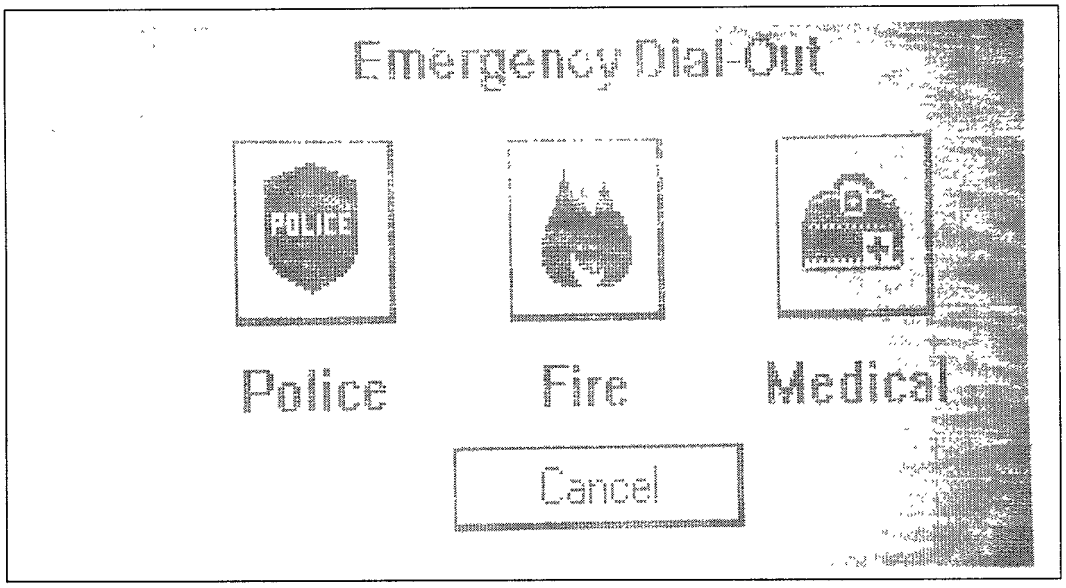


Figure 33 is a navigation screen for the end user to summon emergency services for Police, Fire and Medical response to the building. The communication to each service is dictated by the configuration of the system. 'Cancel' is to disconnect the automatic reporting and return the system to a non-emergency state. "Cancel' also returns the user to Figure 22.

Functional Example: The user selects the appropriate emergency service and the system responds by seizing the phone line to report an emergency to either a fee based central station monitoring service or a programmed call list through the system automatic dialer.

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Figure 26

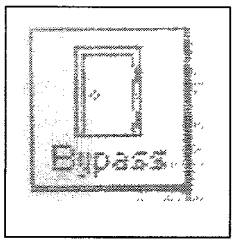


Figure 26 is the navigation icon for selecting building security zones in which to bypass. Selecting Figure 26 takes the user to Figure 34.

Figure 34

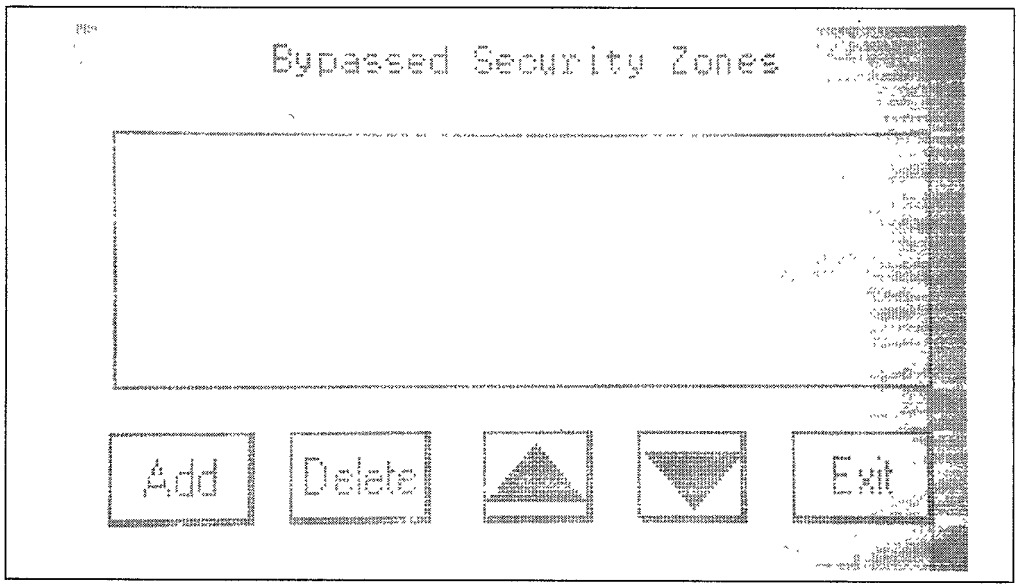


Figure 34 is a listing of the current zones bypassed on the system. In the figure above there are no zones listed. Zones are added to the list by selecting the 'Add' icon. Zones are removed from the list by selecting the 'Delete' icon. When the length of the list exceeds the space within the box, the 'Up Arrow' and 'Down Arrow' icons in Figure 34 are used to navigate the list. The 'Exit' icon returns the user to Figure 22.

Functional Example: Prior to arming the security portion of the system, the user may opt to bypass specific zones from being armed. For instance a window may be bypassed prior to arming to allow venting. A door may be bypassed to allow limited access to a building without completely disarming the security system.

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Figure 27

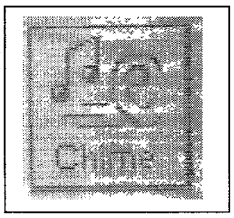


Figure 27 is the navigation icon for selecting security zones that chime. Selecting Figure 27 takes the user to Figure 35.

Figure 35

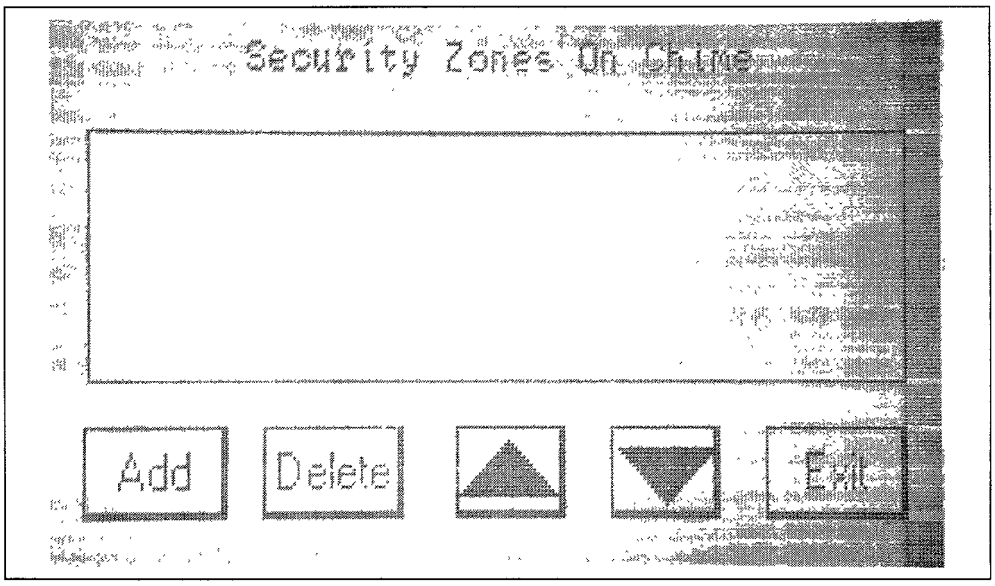


Figure 35 is a listing of the current zones on the system that chime. In the figure above there are no zones listed. Zones are added to the list by selecting the 'Add' icon. Zones are removed from the list by selecting the 'Delete' icon. When the length of the list exceeds the space within the box, the 'Up Arrow' and 'Down Arrow' icons in Figure 35 are used to navigate the list. The 'Exit' icon returns the user to Figure 22.

Functional Example: The user may select an entry door may not chime because it is used frequently, but a window may chime in order to announce an uncommon action.

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Figure 28

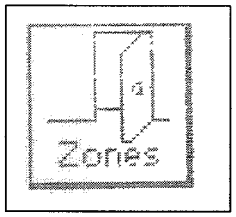


Figure 28 is the navigation icon for selecting the security zones programmed into the system.

Figure 29

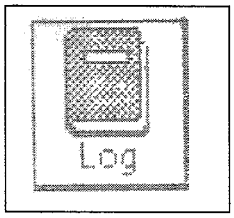


Figure 29 is the navigation icon for viewing a record of the last 1000 security events by the system. Selecting Figure 29 takes the user to Figure 36.

Figure 36

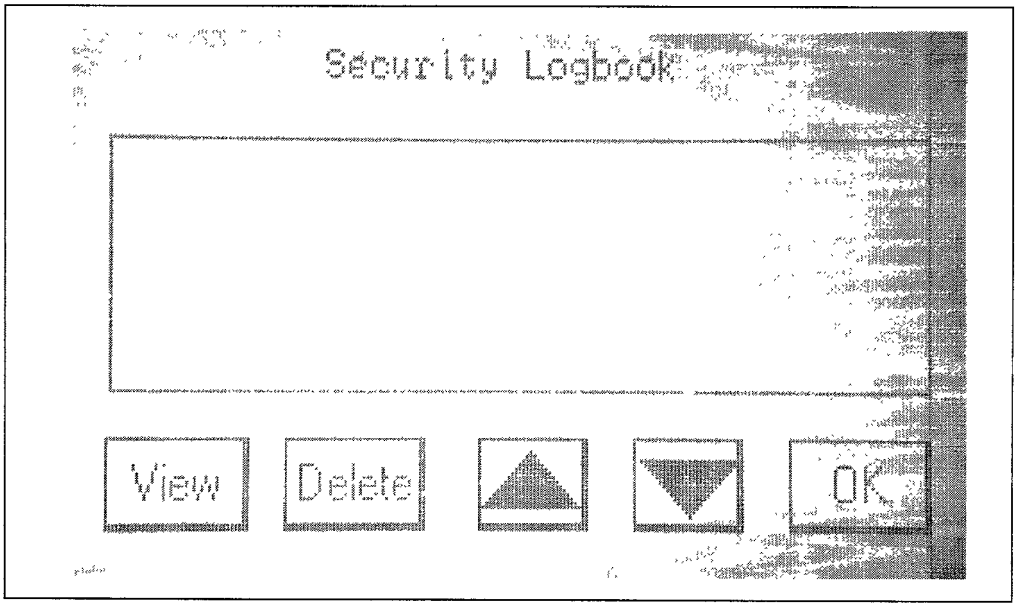


Figure 36 is a listing of the historical security related events of the system, including arming, disarming and alarms. In the figure above there are no events listed. Events are added to the list automatically as they occur. The 'View' icon is selected for additional data relating to a specific event. Specific events can be removed from the list by selecting the 'Delete' icon. When the

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length of the list exceeds the space within the box, the 'Up Arrow' and 'Down Arrow' icons in Figure 36 are used to navigate the list. The 'OK' icon returns the user to Figure 22.

Functional Example: A user may use the Security Logbook to review specific events, including:

- When and by whom the security system has been armed and disarmed
- Which, and in what order, security zones were violated in the event of an intrusion
- Scheduled security events, including arming and disarming
- When and what type of Panic alert was issued by the system

4,959,810

Figure 7

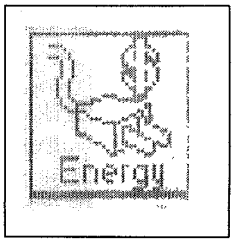


Figure 7 is the icon for accessing user area of the energy management portion of the system. Selecting Figure 7 activates Figure 37.

Figure 37

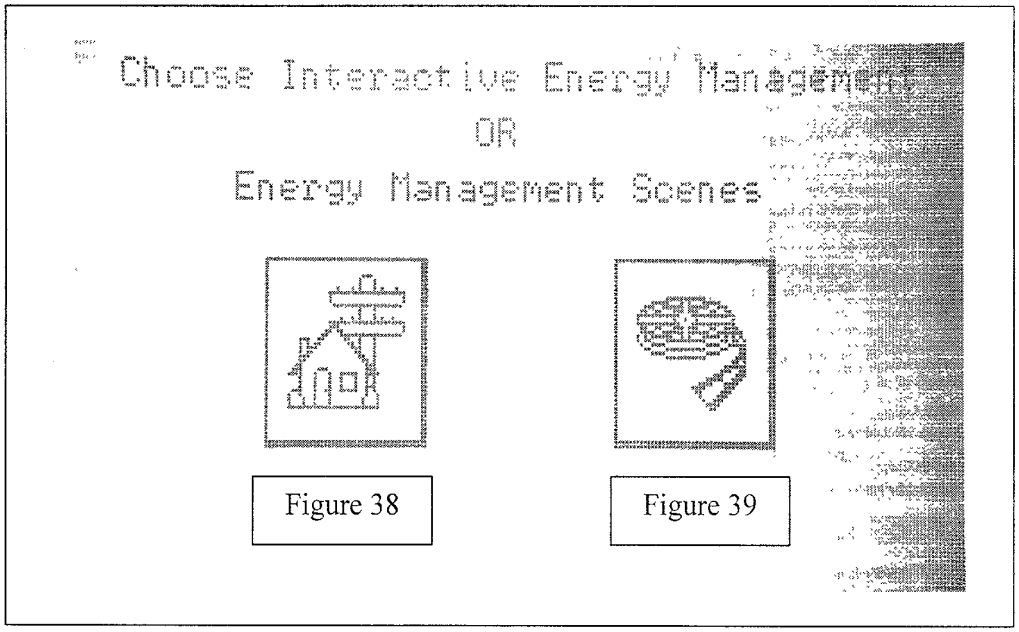


Figure 37 offers a pathway to two different sections of the system energy management features. Figure 38 within Figure 37 is the icon to select interactive energy management and Figure 39 within Figure 37 is the icon to select Energy Management Scenes.

Interactive Energy Management requires an additional module to be installed on the base system and offers a number of upgraded features that rely on the consumption data from a compatible energy service meter owned by the utility. Selecting Figure 38 takes the user to Figure 40.

Energy Management Scenes are energy management macros for standard system features including outlet, lighting and HVAC control. This energy savings feature does not require the

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interactive energy management module and can be triggered normally through common system interfaces and scheduling. Selecting Figure 39 takes the user to Figure 63.

Figure 38

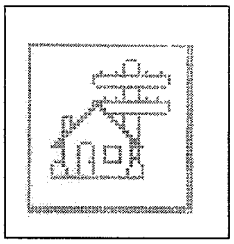


Figure 38 is the icon to select interactive energy management and takes the user to Figure 40.

Figure 40

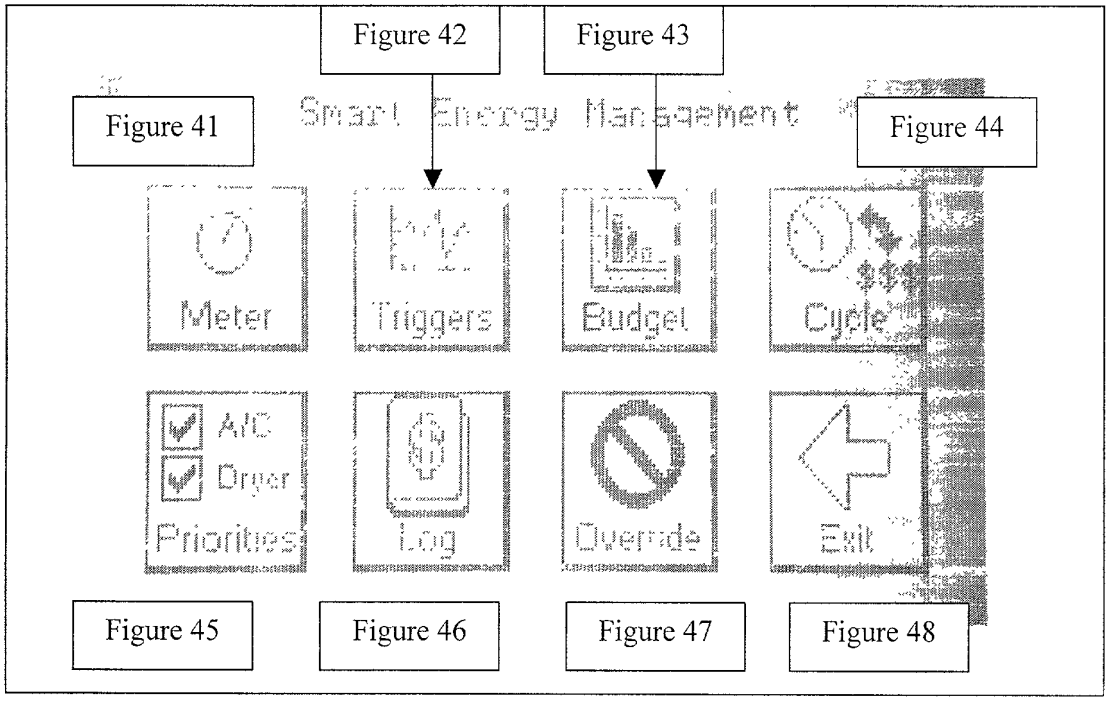


Figure 40 is a navigational menu for Smart Energy Management features and functions, and represents a centralized point for other Figures, including:

- Figure 41 – 'Meter' takes the user to the meter status information screen.
- Figure 42 – 'Triggers' takes the user to the screen where energy consumption peaks initiate energy management scenes.

- Figure 43 – 'Budget' takes the user to the energy management budget screen where monthly actuals and budgets are established.
- Figure 44 – 'Cycle' takes the user to the status screen for the current energy management cycle.
- Figure 45 – 'Priorities' takes the user to screen for programming the devices controlled during a particular energy management cycle.
- Figure 46 – 'Log' takes the user to the logbook for energy management events.
- Figure 47 – 'Override' takes the user to the code protected override screen for energy management cycles.
- Figure 48 – 'Exit' returns the user to Figure 4

The complete functions of each icon are located under the Figure numbers listed above.

Figure 41

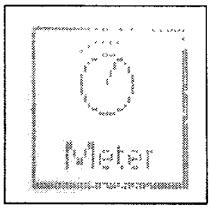


Figure 41 is the icon to select the current meter consumption status and takes the user to Figure 49.

Figure 49

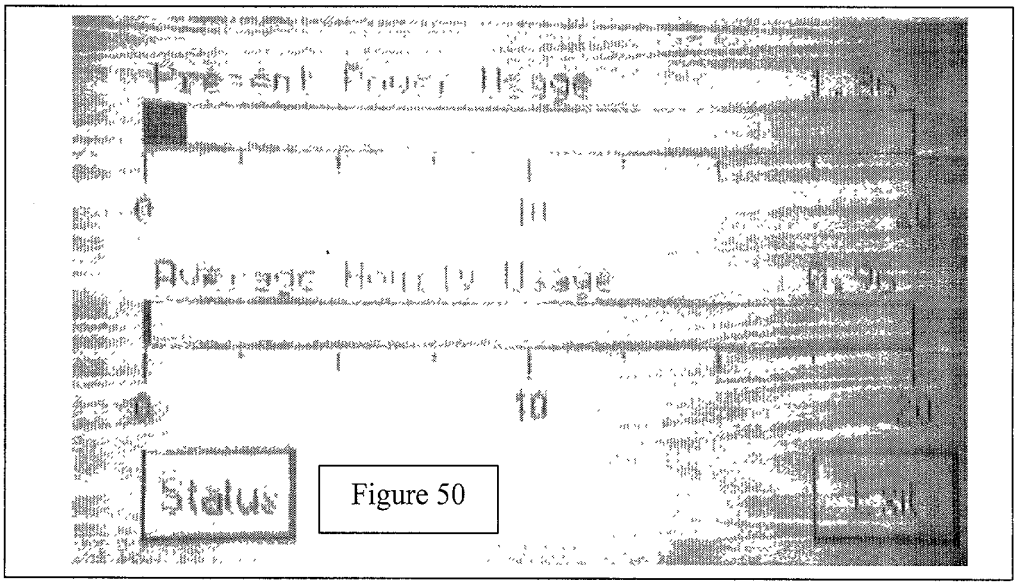


Figure 50

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Figure 49 offers the user two points of information: Present Power Usage and Average Hourly Usage. Present Power Usage is the current kWh value that is displayed in Figure 3. Average Hourly Usage is a historical record of consumption over the hour during which this screen is selected.

See below for Figure 50. 'Exit' returns the user to Figure 40.

Figure 50

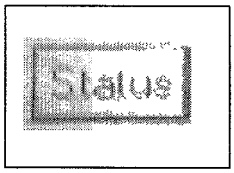


Figure 50 is an icon within Figure 49 for determining which lights, devices and appliances may be consuming energy. Selecting Figure 50 takes the user to Figure 51.

Figure 51

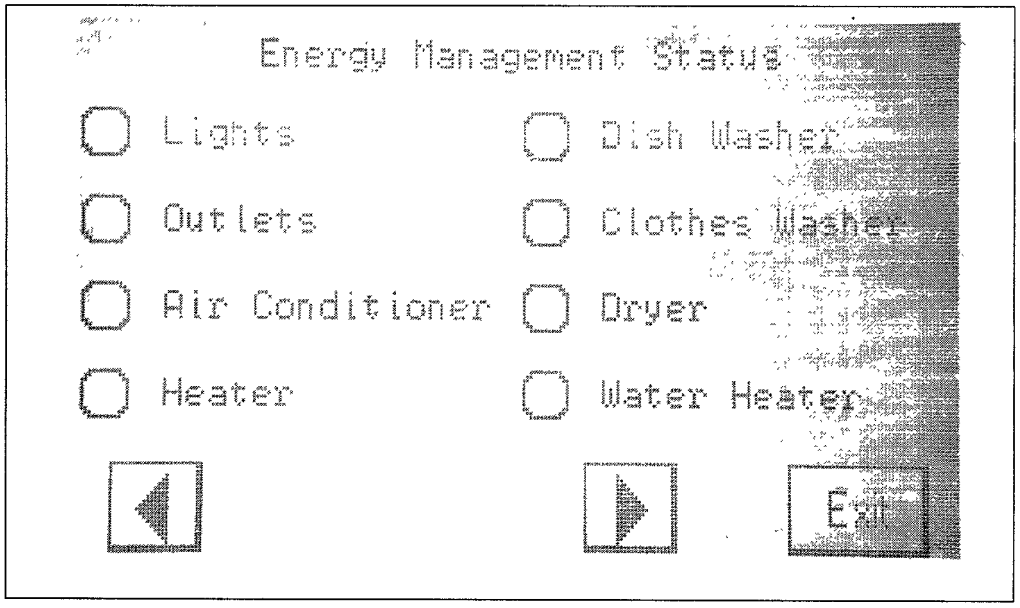


Figure 51 is a selection of devices that may be active and consuming energy. From this screen the user may determine which devices to add to Smart Energy Management for a reduction in energy consumption.

The 'arrow left' and 'arrow right' keys are for choosing among more lighting, devices and appliances than may be listed on one screen. 'Exit' returns the user to Figure 49.

Figure 42

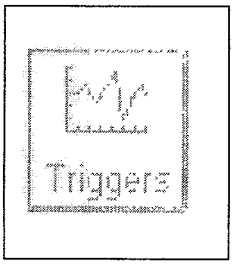


Figure 42 takes the user to Figure 52, where energy consumption peaks initiate specific energy management scenes.

Figure 52

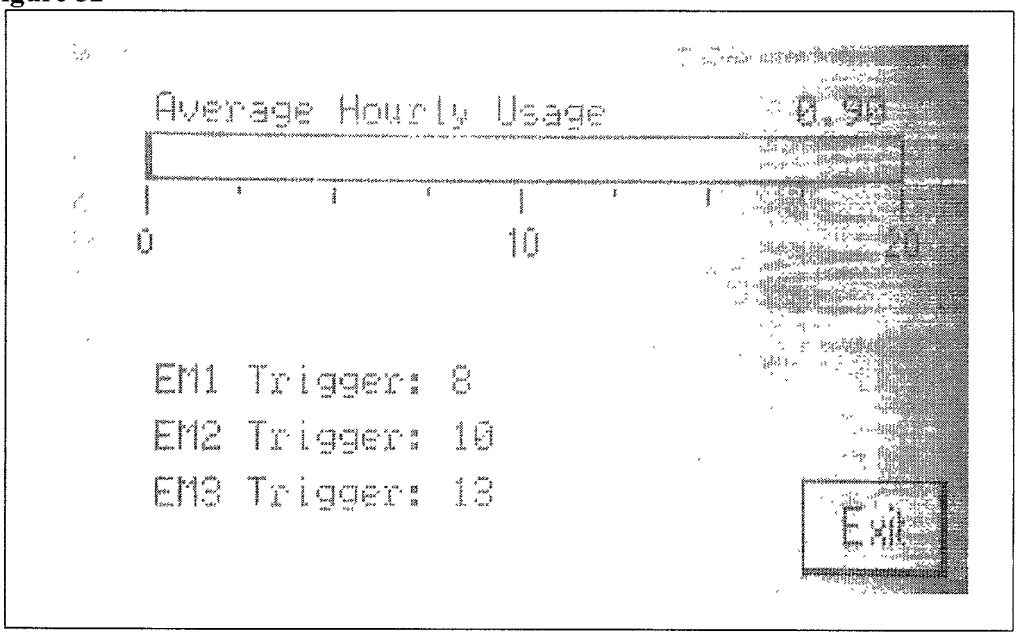


Figure 52 shows the user at what point the Average Hourly Usage of energy triggers an Energy Management Cycle. If the Average Hourly Usage continues to increase, there are 3 programmed levels: EM1, EM2 and EM3 to reduce consumption automatically.

'Exit' returns the user to Figure 40.

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Figure 43

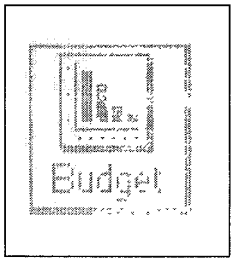


Figure 43 takes the user to the energy management budget screen where monthly actuals and budgets are established. Selecting Figure 43 takes the user to Figure 53.

Figure 53

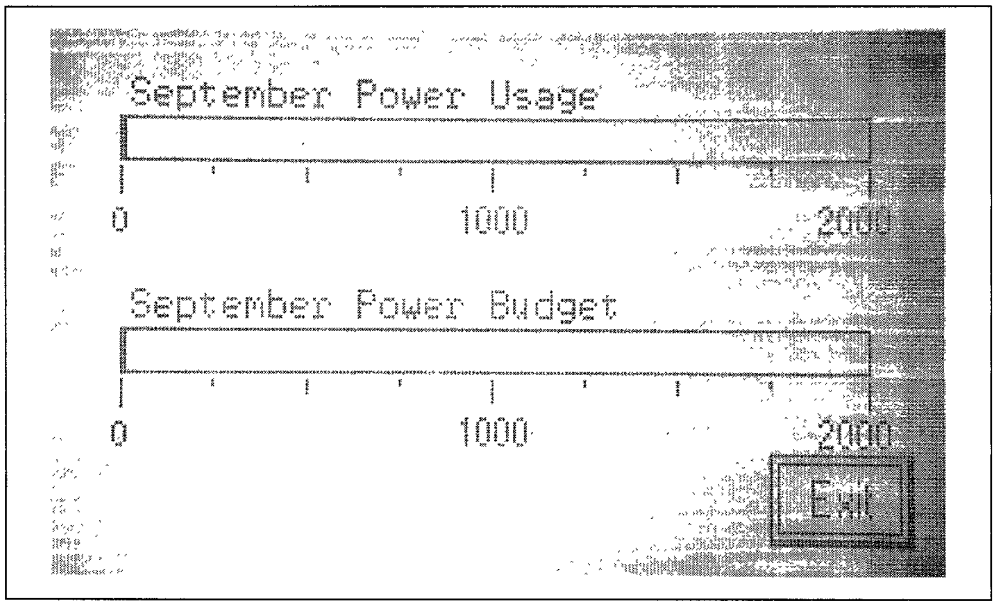


Figure 53 is a comparison graph of the actual building energy usage versus a targeted budget parameter.

'Exit' returns the user to Figure 40.

Figure 44

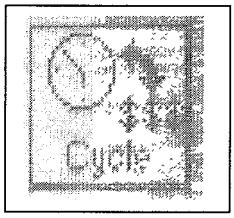


Figure 44 takes the user to the status screen for the current energy management cycle. Selecting Figure 44 takes the user to Figure 54.

Figure 54

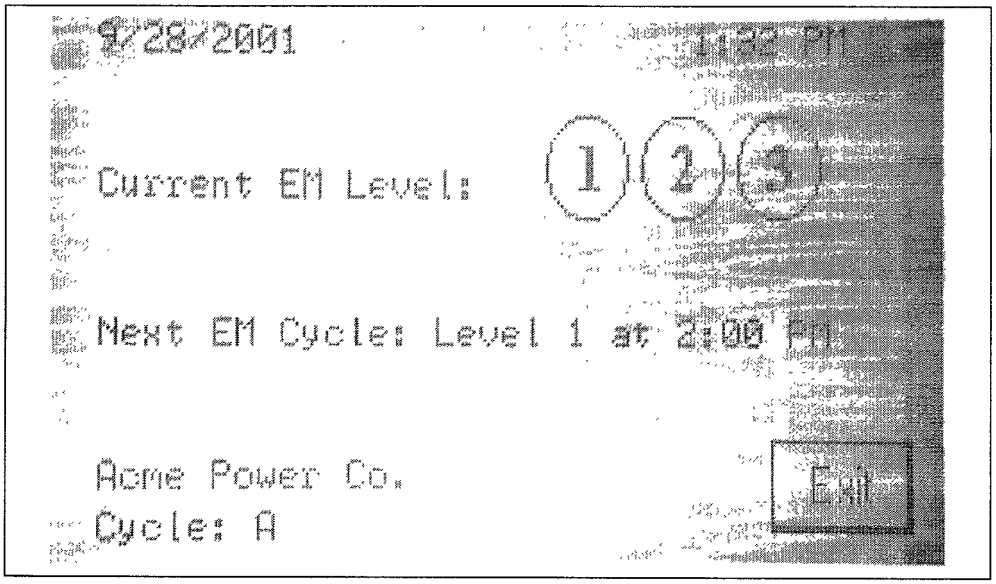


Figure 54 shows the user the current energy management cycle for the present period as well as the next scheduled cycle change.

In an installation where an energy provider is connected to the system as part of a utility sponsored energy management program, the name and energy management status of the provider is located in the lower left of Figure 54.

'Exit' returns the user to Figure 40.

Figure 45

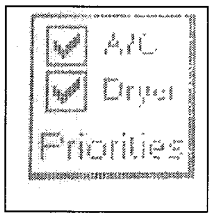


Figure 45 takes the user to Figure 55 for programming the specific devices controlled during a particular energy management cycle.

Figure 55

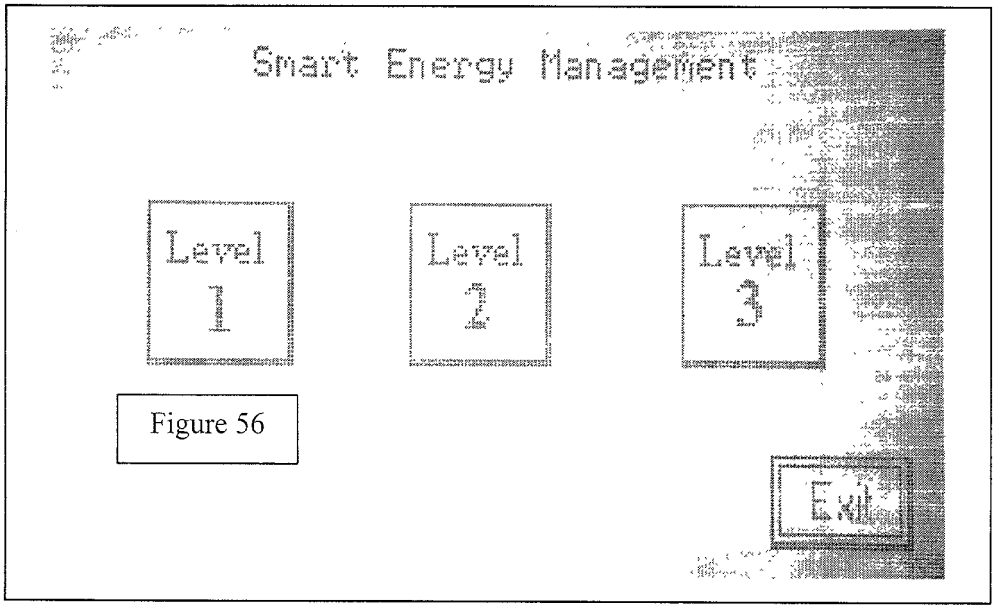


Figure 56

Figure 55 is for the user to select the specific devices programmed into each level of Smart Energy Management, Level 1 being the lowest and Level 3 is the highest.

'Exit' returns the user to Figure 40.

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Figure 56

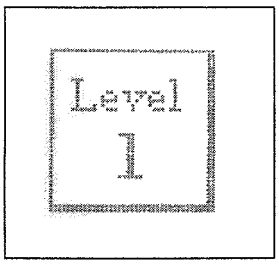


Figure 56 takes the user to the screen where managed lights, devices and appliances can be selected to be part of the Level 1 Smart Energy Management cycle. Selecting Figure 56 takes the user to Figure 57.

Figure 57

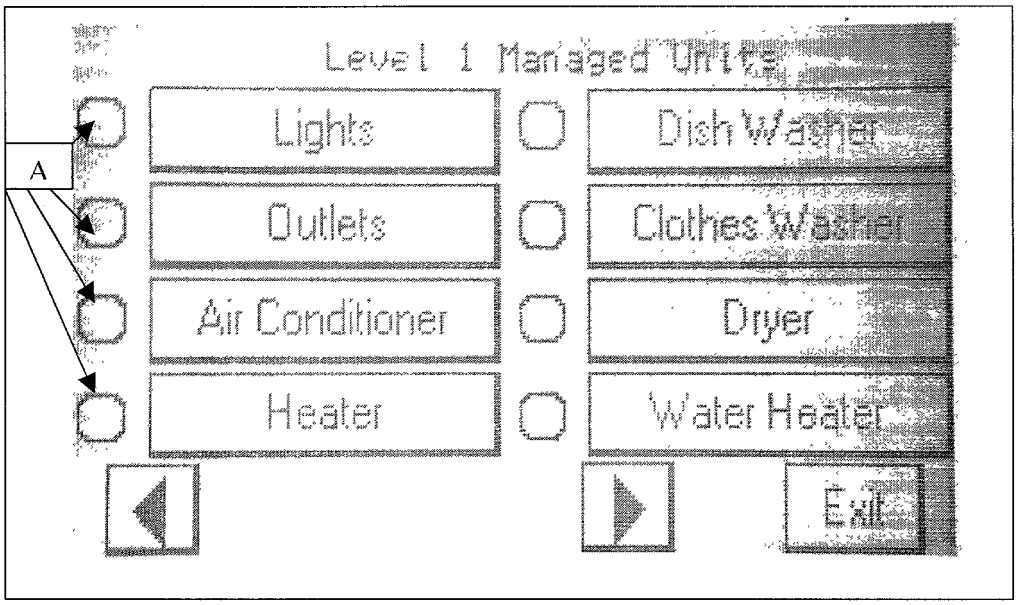


Figure 57 is the screen where the user selects which lights, devices and appliances are disabled during the Level 1 Energy Management cycle. Each cycle is programmed in the same way; the only difference is the amount of lights, devices and appliances selected. Managed units are selected by pressing the circles, labeled 'A' adjacent to the controlled device. When selected the circle is a solid black to the show the unit is being managed by the system.

The 'arrow left' and 'arrow right' keys are for choosing among more lighting, devices and appliances than may be listed on one screen.

'Exit' returns the user to Figure 55.

Figure 46

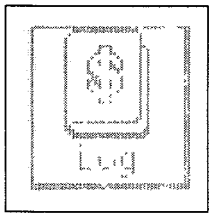


Figure 46 takes the user to the logbook for energy management events. Selecting Figure 46 takes the user to Figure 58.

Figure 58

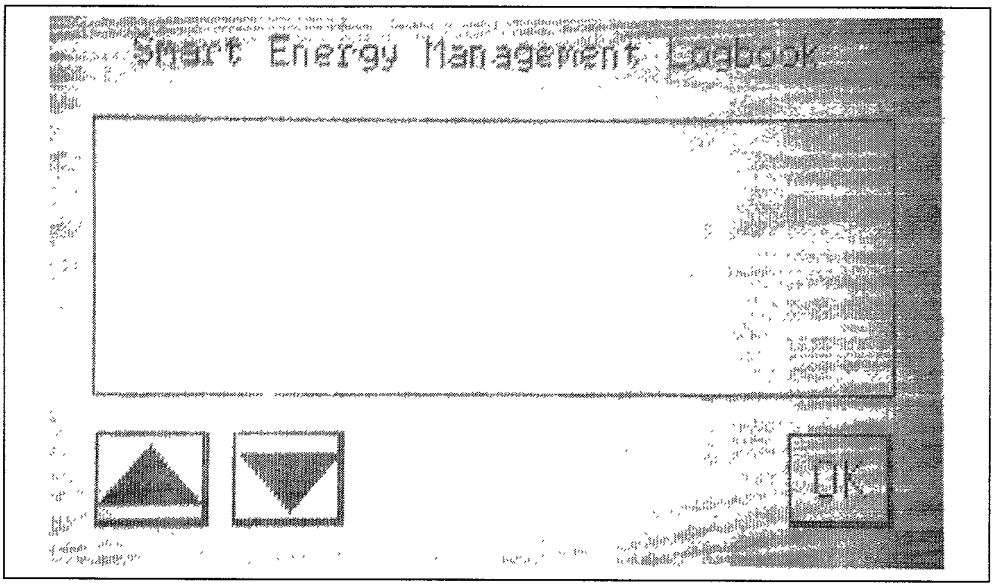


Figure 58 is a listing of the historical Energy Management related events of the system, including scheduled changes in EM cycles, Overrides and energy provider triggered cycles. In the figure above there are no events listed. Events are added to the list automatically as they occur. When the length of the list exceeds the space within the box, the 'Up Arrow' and 'Down Arrow' icons in Figure 58 are used to navigate the list. The 'OK' icon returns the user to Figure 40.

Figure 47

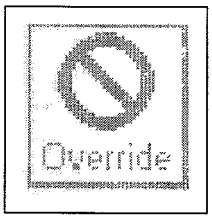


Figure 47 takes the user to the code-protected screen for overriding energy management cycles.

Figure 59

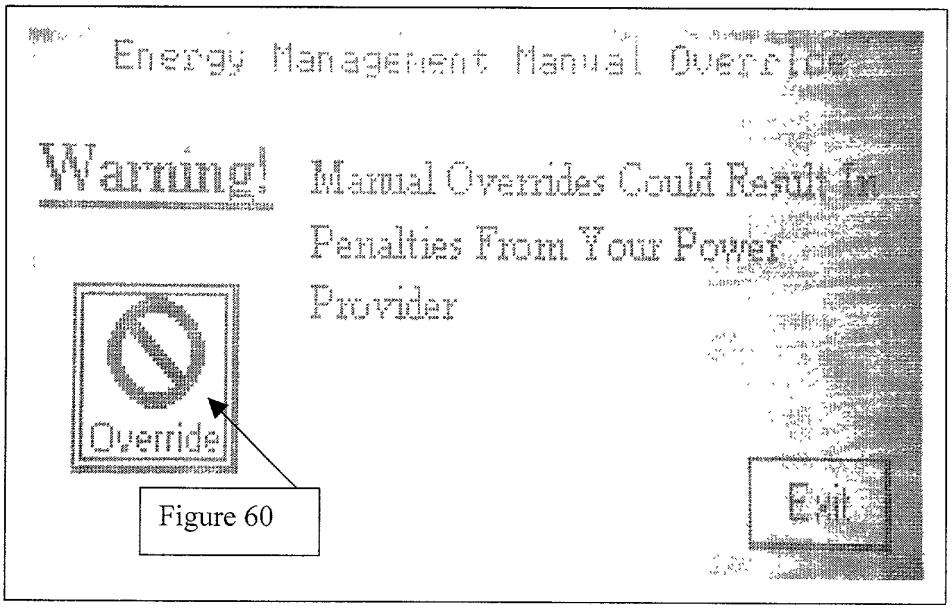


Figure 59 is to warn users that are part of an energy management program sponsored by an energy provider that overriding the energy management cycles programmed into the system may result in penalties. This screen is always displayed prior to the code entry screen in Figure 61.

Selecting Figure 60 within Figure 59 will take the user to Figure 61.

'Exit' returns the user to Figure 40.

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Figure 61

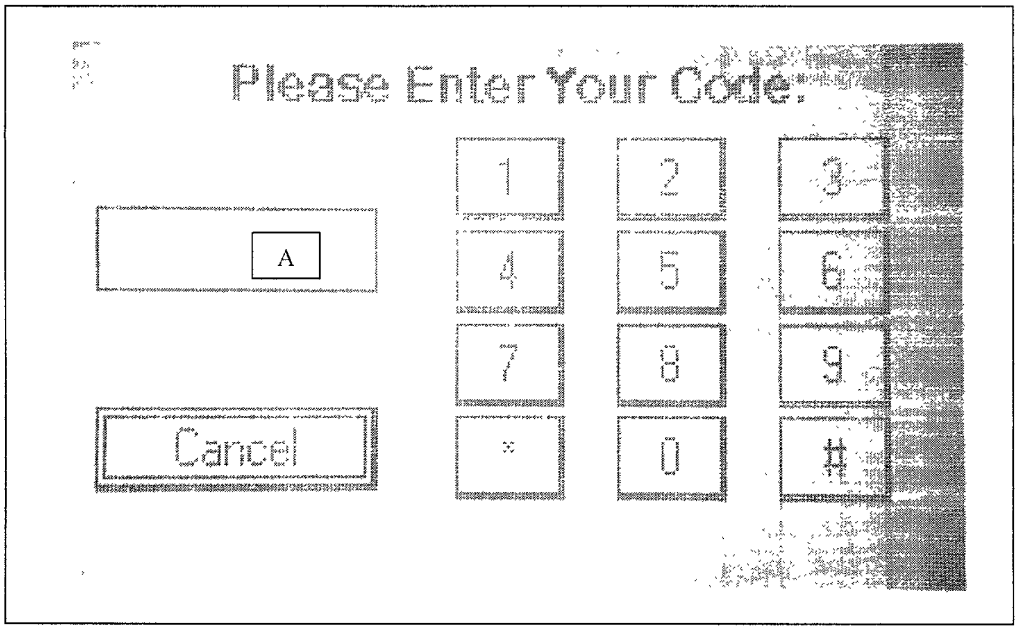


Figure 61 is the screen where the user can enter in a special code to disengage the Smart Energy Management Cycle.

Figure 61 is a numeric keypad that displays after selecting Figure 60. Entering a proper numeric code will disengage the current Smart Energy Management Cycle. For each button selected on the numeric keypad (0-9, X or #) a '*' appears in the box labeled "A" within Figure 220 for a visual confirmation of a number being selected without revealing the actual number itself. This is for protecting the privacy security code of the user.

The cancel button is to clear a partial code that has been entered incorrectly and returns the user to Figure 59.

A successful code entry in Figure 61 takes the user to Figure 62.

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Figure 62

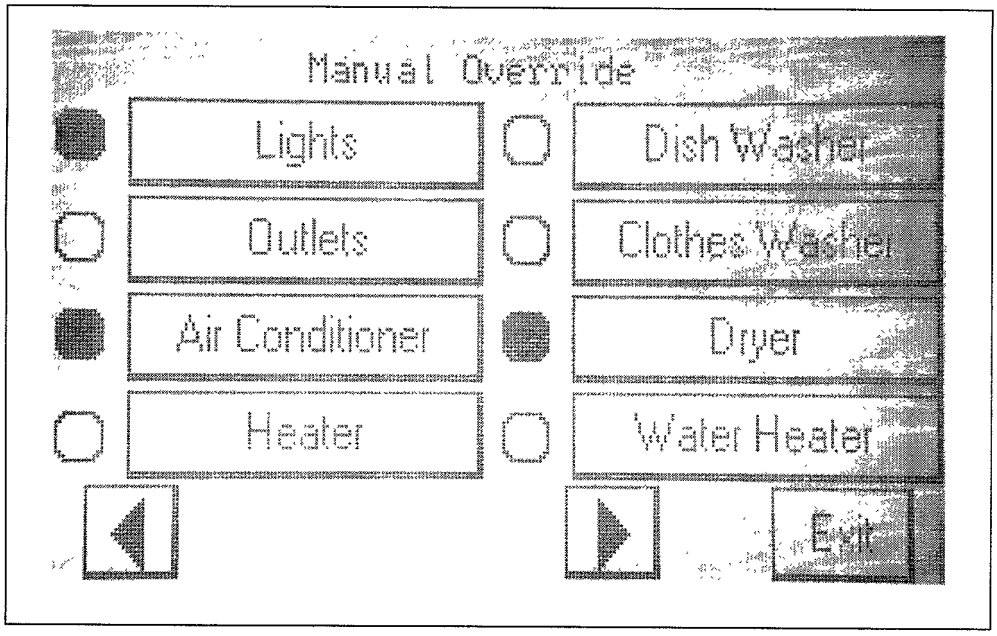


Figure 62 is the screen where the user selects which lights, devices and appliances are returned to normal operation after an Energy Management cycle has been overridden.

The 'arrow left' and 'arrow right' keys are for choosing among more lighting, devices and appliances than may be listed on one screen.

'Exit' returns the user to Figure 59.

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Figure 39

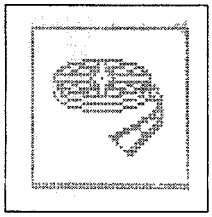


Figure 39 is the icon to select Energy Management Scenes and will take the user to Figure 63.

Figure 63

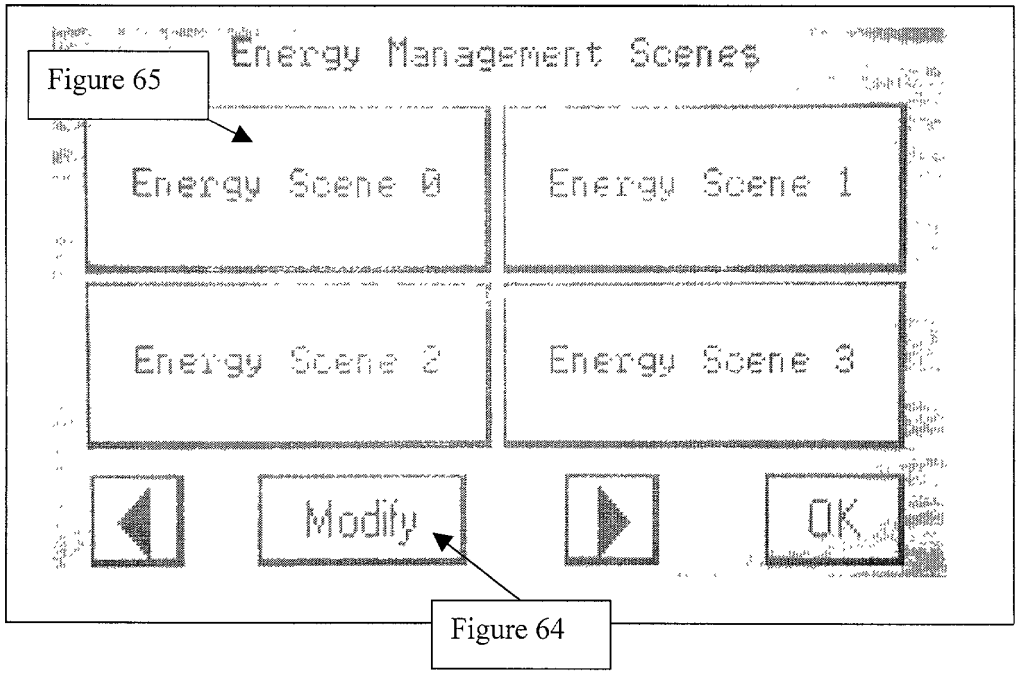


Figure 63 is the navigation menu for scenes that relate directly to energy management, these are in addition to the standard scenes located under Figure 12. Energy Management Scenes are energy management control macros for standard system features including outlet, lighting and HVAC control. This energy savings feature does not require the interactive energy management module and can be triggered normally through common system interfaces and scheduling. To create or alter an energy management scene the user must first select Figure 64 – 'Modify' and choose a desired scene to program, which in the example above is Figure 65.

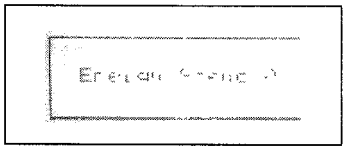
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Figure 64



Selecting Figure 64 is the first step in programming or changing the programming for energy management scenes. After selecting Figure 64 the user can choose any scene to be modified. For example, the user chooses Energy Scene 0, which is Figure 65.

Figure 65



Selecting Figure 65, Energy Scene 0, takes the user to Figure 66, a standard scene programming screen for the system.

Figure 66

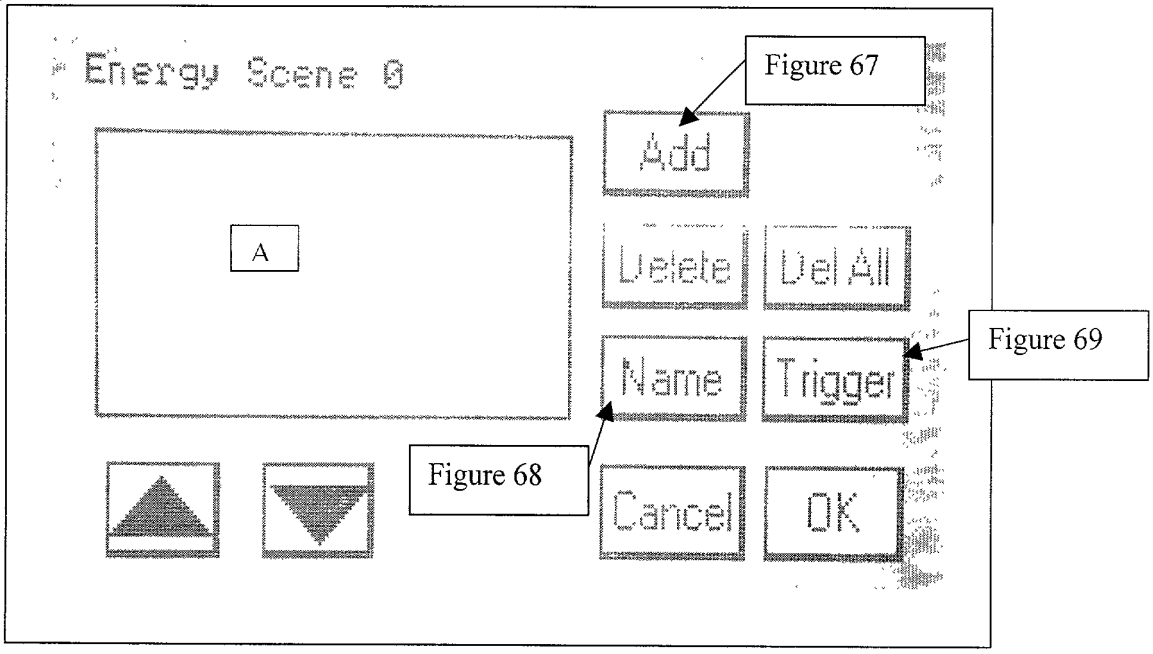
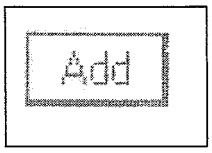


Figure 66 is an empty energy management scene. Commands are listed within the box labeled 'A' in Figure 66; presently there are no commands programmed.

- Figure 67 – 'Add' places the user in record mode and takes the user to Figure 70 to add commands.
- Figure 68 – 'Name' takes the user to the screen where a custom designation can be typed in for this energy management scene.
- Figure 69 – 'Trigger' takes the user to the standard scene trigger screen where they can select the methods through which the scene is initiated.

Figure 67



Selecting Figure 67 – 'Add' places the user in record mode and takes the user to Figure 70 to add commands to the selected energy management scene.

Figure 70

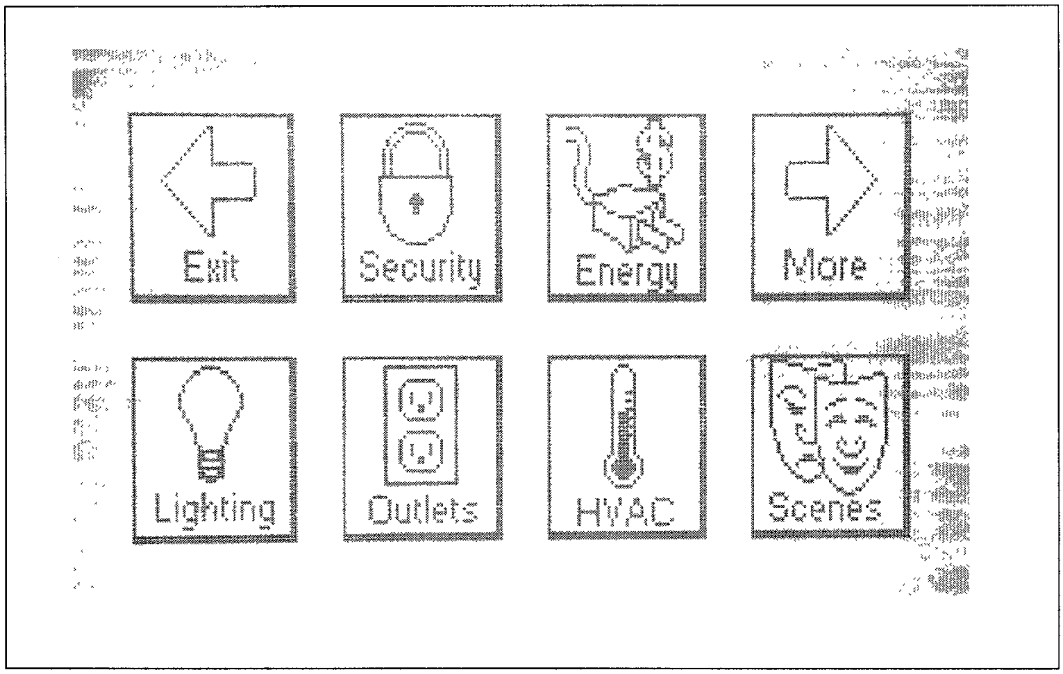


Figure 70 is the main navigational menu in record mode. From this menu the user selects which features to add to the energy scene in Figure 66. Selecting the 'Lighting' icon will display the controlled lighting icons as normal and allow the user to select which lights to add to the scene and the status to which they are set. For example, the user may choose a hall light that is controlled by the system to turn off (0%) as part of the scene. They may also select the 'HVAC'

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icon to setback a particular zone for heating or cooling. When finished, the user selects the 'Energy' icon to return to Figure 66 and view the commands entered into the scene.

Figure 68



Figure 68 – 'Name' takes the user to Figure 71, the screen where a custom designation can be typed in for this energy management scene.

Figure 71

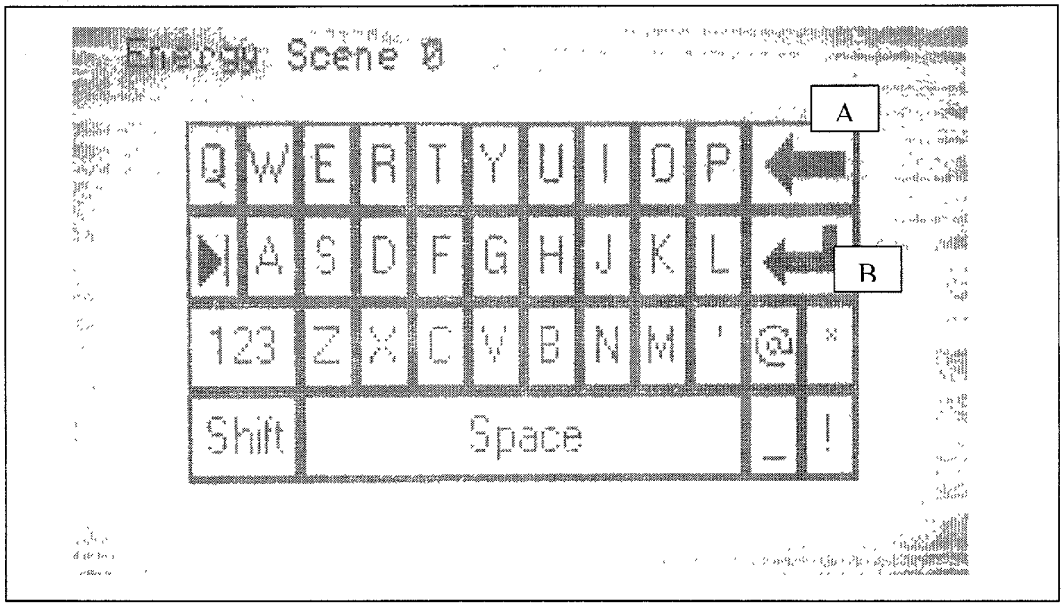


Figure 71 is a typical keypad for entering a custom name for this particular scene. To erase 'Energy Scene 0' the user presses the backspace icon, labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 66.

Figure 69



Figure 69 – 'Trigger' takes the user to Figure 72, the standard scene trigger screen where users can select the methods through which the scene is initiated.

Figure 72

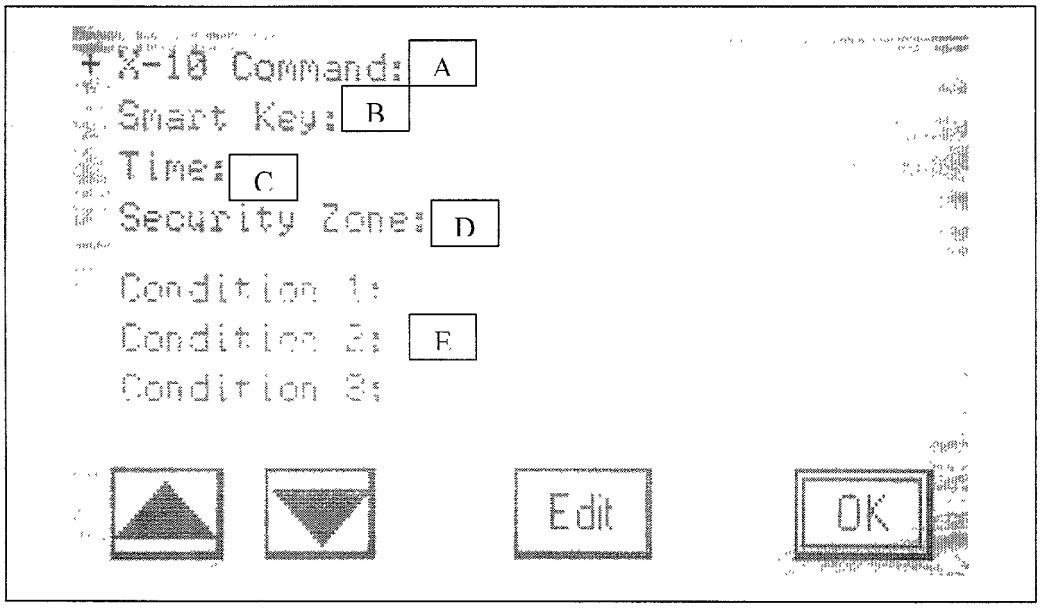


Figure 72 is the standard scene trigger screen where the user can select additional methods through which the scene is initiated. Scenes are always triggered by pressing the scene icon on the touchscreen and may also be triggered by additional methods as programmed in Figure 72. The 'up' and 'down' arrows within Figure 72 move the '+' symbol that is adjacent to the X-10 Command line up and down and selects the trigger which the user wishes to add. When the '+' symbol is adjacent to the proper trigger the user presses the 'Edit' icon to add or change triggers.

Functional Description:
A.) Scenes may be triggered by an incoming X-10 address to the system; for example, an auxiliary control device may transmit an X-10 signal with the address of 'A1' that will initiate this scene. There are 256 possible X-10 addresses beginning with a House Code of 'A' thru 'P' and a unit code of 1 thru 16. (e.g. B3, M14, K1, etc.)

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B.) Scenes may also be trigger by Smart Keys either to specific keys or in groups. For example, an energy management scene can be programmed to initiate whenever the last person leaves the building and arms the security system.
C.) Scenes may also be triggered at a specific time of day. For example, the last person to leave forgot to use their Smart Key to arm the security and initiate the energy management scene so at a predetermined point the system will automatically run the scene itself.
D.) Scenes may also be triggered by a specific security zone or group of zones. Opening a window may initiate a scene to deactivate all nearby controlled HVAC units to prevent energy loss.
E.) The initiation of scene by triggers can be conditioned upon system status and time. The system features the following conditionals: Armed, Armed Away Mode, Armed Stay Mode, Disarmed, Daytime, Nighttime, Weekend, Weekday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. For example, a scene trigger may be 10pm. The condition could be a certain day of the week, such as Friday, to makes sure an office would be more energy efficient going into a weekend.

Pressing the 'OK' icon returns the user to Figure 66.

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Figure 9

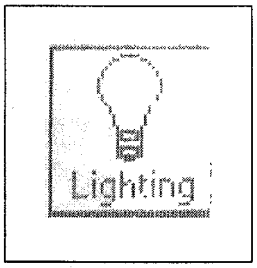


Figure 9 – 'Lighting' takes the user to the lighting control portion of the system. Selecting Figure 9 takes the user to Figure 73.

Figure 73

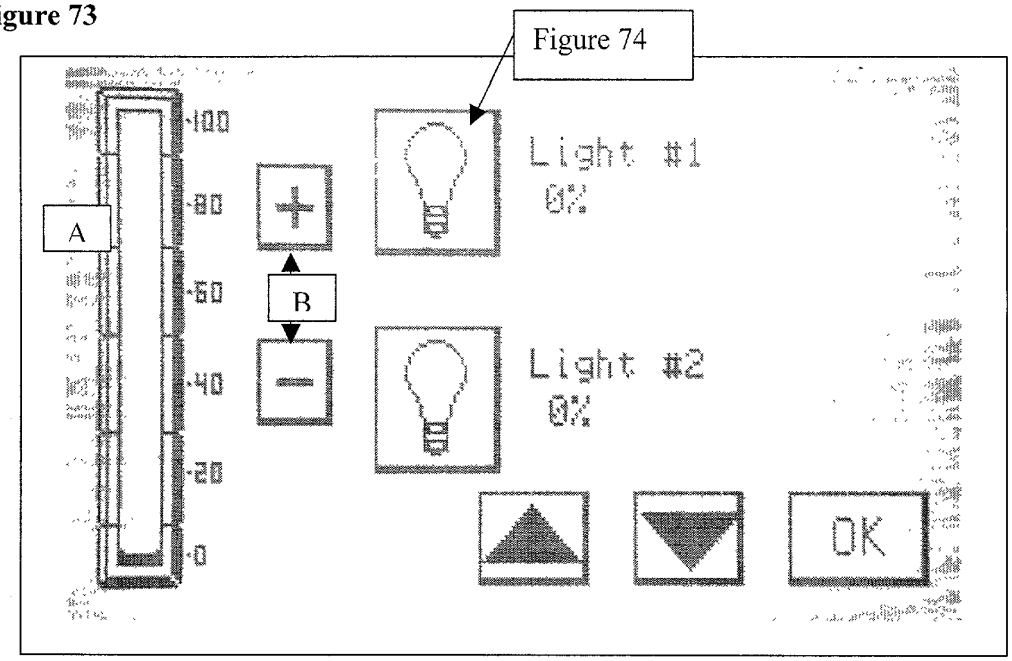
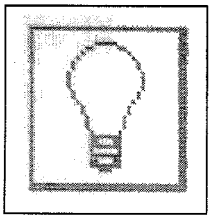


Figure 73 is the standard navigation menu for viewing and manipulating the controlled lighting configured into the system. For lighting to be controlled by the system, the switch is replaced with a "smart" switch that communicates using a compatible power line carrier protocol. The system currently supports the X-10 protocol discussed in Figure 72.

Figure 74



Selecting Figure 74 within Figure 73 allows the user to change the illumination value of the controlled light. Controlled lighting can be adjusted through two methods: the power bar labeled 'A' and the precision adjustment icons +/- labeled 'B'. The power bar adjusts the controlled light in increments of 20% and can be instantly set by choosing the desired value within the bar. For example, the user may press the area next to '60' within the bar to illuminate the light to 60%. Or for more precise adjustments the user may change the illumination value in increments of 1% by using the + or the –. The current illumination value of the controlled light is displayed to the right of the light icon and under the name of the light.

To move from page to page of controlled lighting the user presses the 'up' or 'down' arrows in Figure 73 to scroll through the available controlled lighting loads. Each controlled light has a default name that corresponds to its position out of the 200 potential controlled lighting loads. For example, before the name of the light is configured it will read Light #2.

Selecting the 'OK' icon within Figure 73 returns the user to Figure 4.

Figure 75

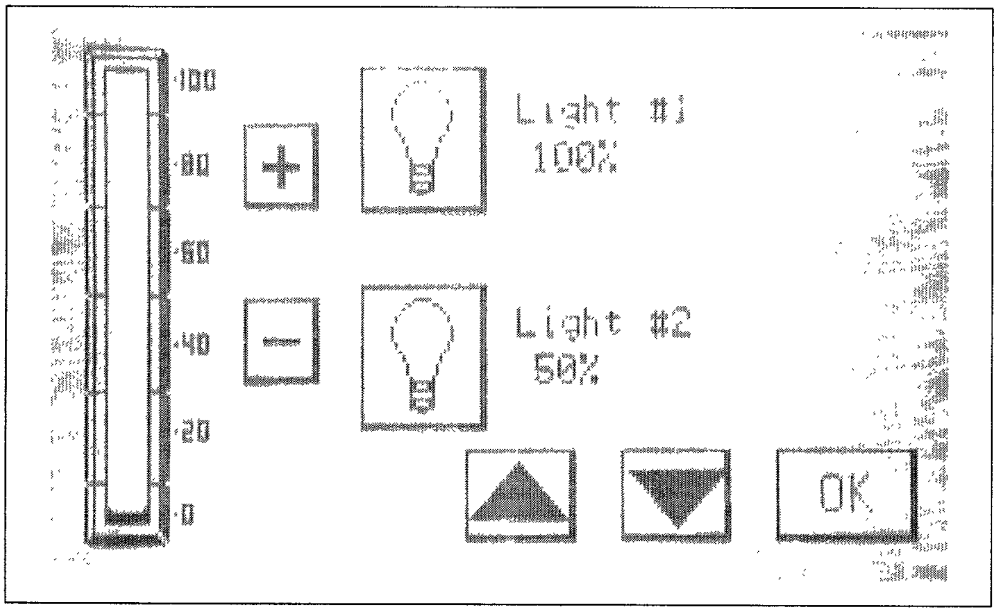


Figure 75 shows the current illumination value of Light #1 and Light #2.

Figure 10

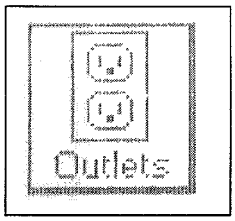


Figure 10 'Outlets' takes the user to the outlet control portion of the system. Selecting Figure 10 takes the user to Figure 76.

Figure 76

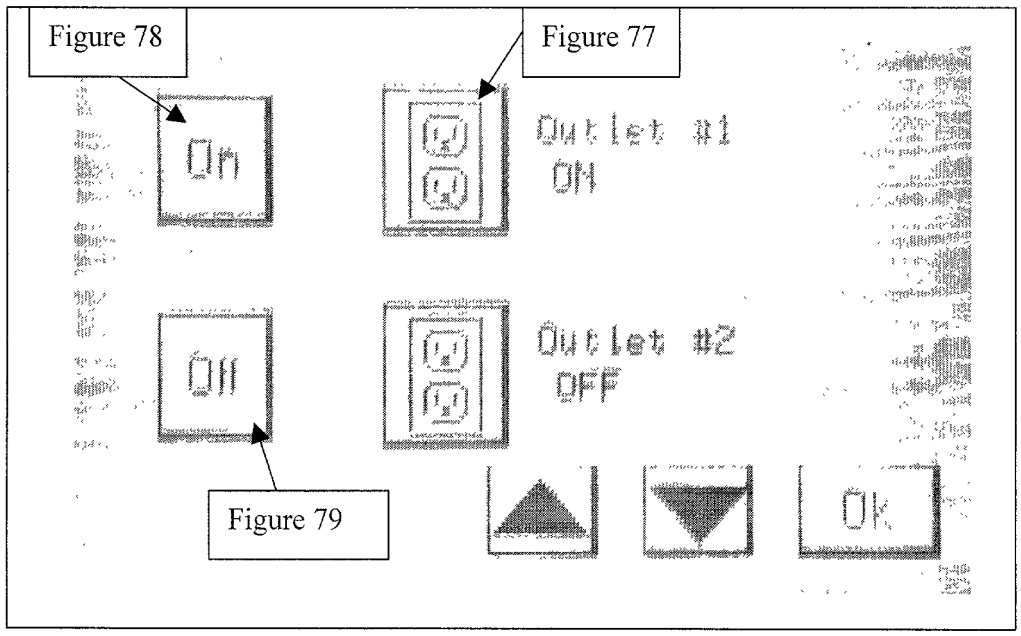


Figure 76 is the Outlet control portion of the system. The current status, on or off, of the controlled outlet is displayed to the right of the outlet icon and under the name of the light.

Selecting Figure 77 within Figure 76 allows the user to change the status of the controlled outlet. Controlled outlets can be adjusted to 'On' in Figure 78 or 'Off' in Figure 79.

To move from page to page of controlled outlets the user presses the 'up' or 'down' arrows in Figure 76 to scroll through the available controlled outlet loads. Each controlled outlet has a default name that corresponds to its position out of the 50 potential controlled outlet loads. For example, before the name of the outlet is configured it will read Outlet #2.

Selecting the 'OK' icon within Figure 76 returns the user to Figure 4.

Figure 11

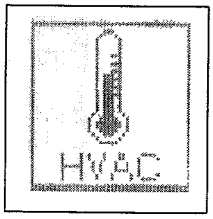


Figure 11 – 'HVAC' takes the user to the Heating and Cooling controls portion of the system. Selecting Figure 11 takes the user to Figure 80.

Figure 80

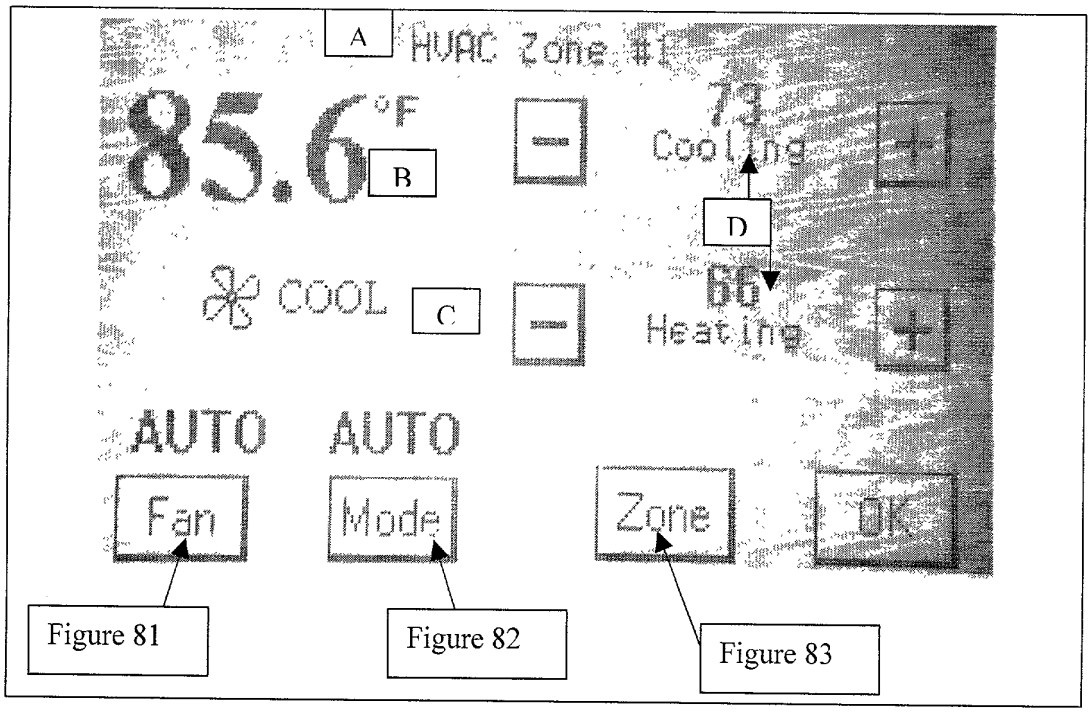
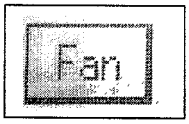


Figure 80 is the primary navigation screen for manipulating the controlled HVAC zones within the system.

Functional Description:
A.) HVAC Zone #1 – the default name for this controlled zone. The name for each zone is only configured by the installer.
B.) 85.6° F – The current temperature in that zone as measured by the thermistor in the touchscreen.
C.) Fan Symbol and 'Cool' – The current operating status of the controlled HVAC system. In this case the system is running the air conditioning to cool the controlled zone.
D.) 73° Cooling and 66° Heating – The current high and low set point at which the heating or cooling system will activate.

Selecting the 'OK' icon in Figure 80 will return the user to Figure 4.

Figure 81



Selecting Figure 81 within Figure 80 will adjust the operational status of the fan in the controlled HVAC unit. Repeatedly pressing Figure 81 will cycle through the following options: On, Off and Auto.

Figure 84

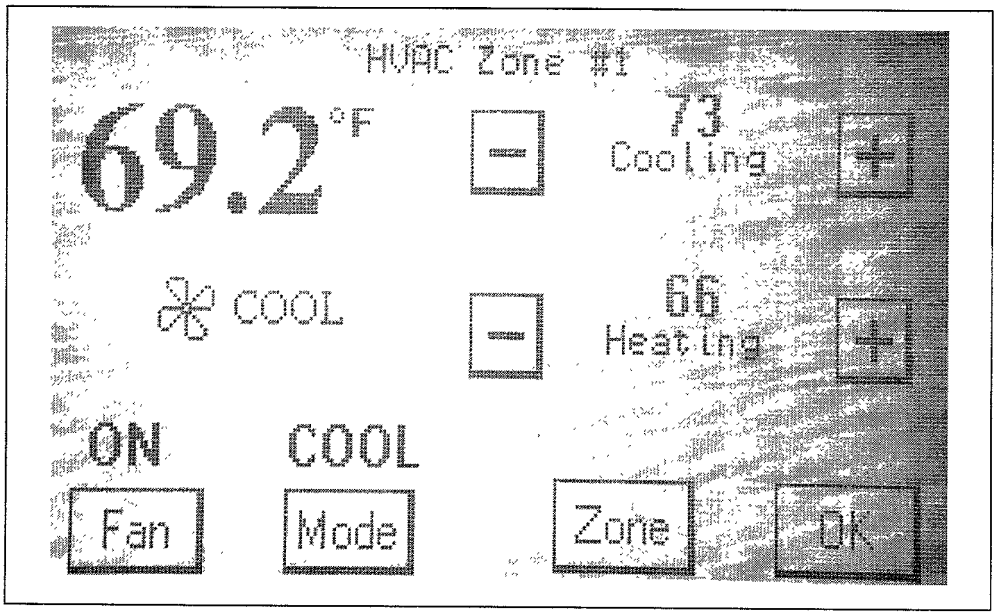
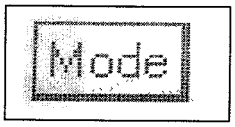


Figure 84 is a sample screen where Figure 81 has been pressed to change the Fan status to 'ON'.

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Figure 82



Selecting Figure 82 within Figure 80 will adjust the operational mode of the controlled HVAC unit. Repeatedly pressing Figure 82 will cycle through the following options: Cool, Heat and Auto.

Figure 85

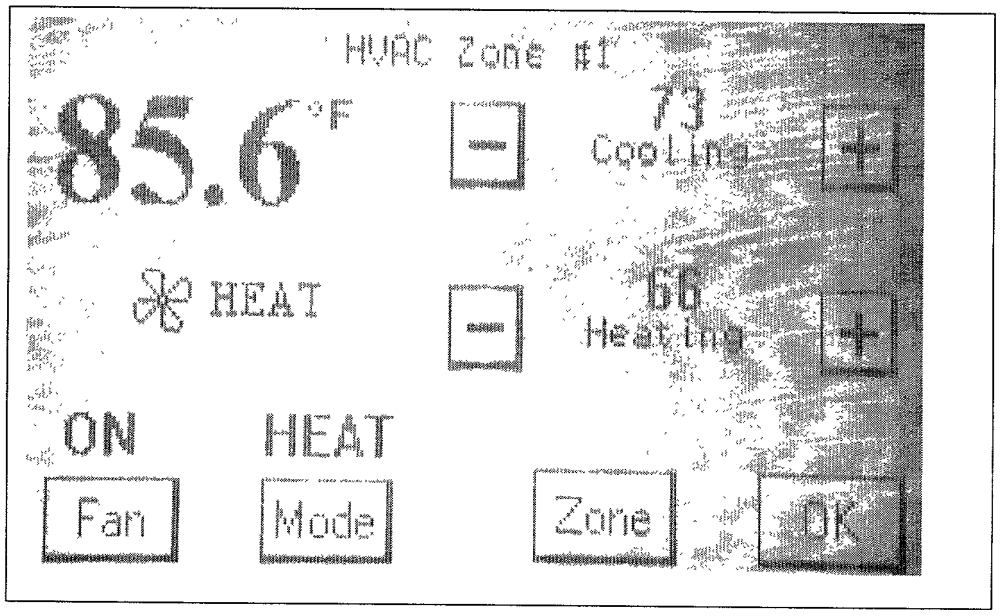


Figure 85 is a sample screen where Figure 82 has been pressed to change the system status to 'HEAT'.

Figure 83

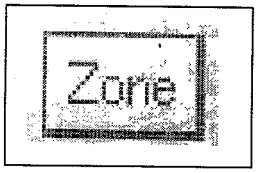


Figure 83 allows the user to cycle through the controlled HVAC zones of the system. Repeatedly pressing Figure 83 will cycle the user through each controlled zone.

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Figure 12

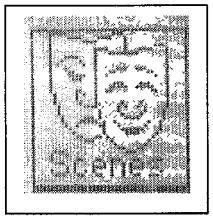


Figure 12 – 'Scenes' takes the user to the Scene control and programming portion of the system.

Figure 86

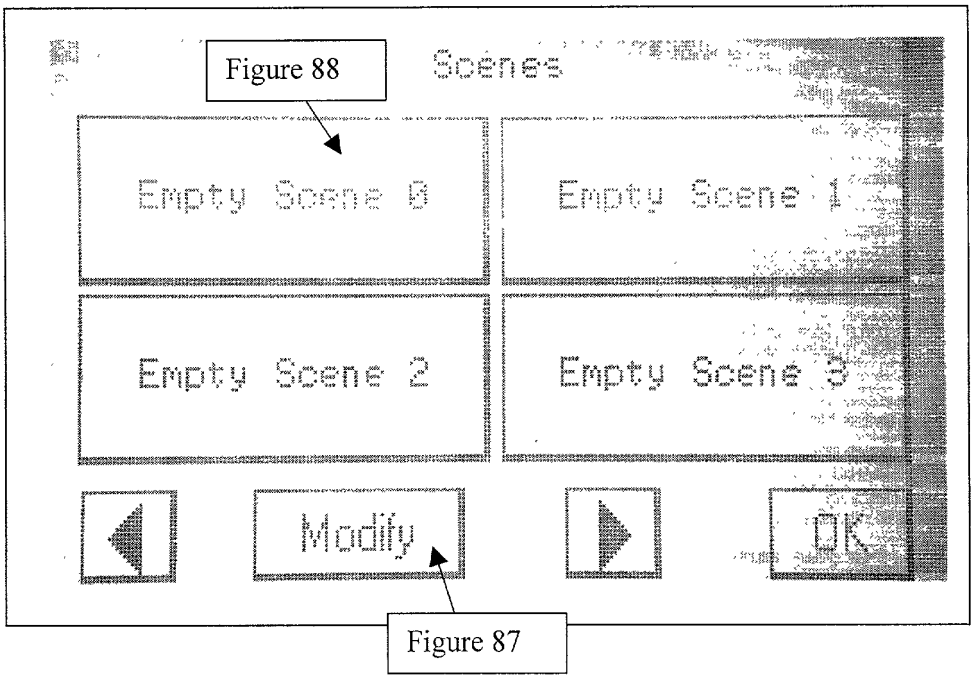
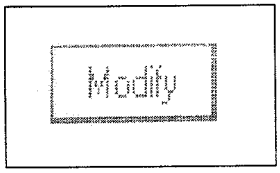


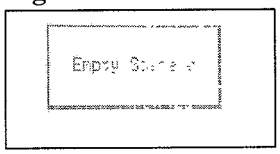
Figure 86 is the navigation menu for general scene macros, including security, outlet, lighting and HVAC control. Scenes can be triggered normally through the touchscreen or through triggers. To create or alter a scene the user must first select Figure 87 – 'Modify' and choose a desired scene to program, which in the example above is Figure 88.

Figure 87



Selecting Figure 87 is the first step in programming or changing the programming for scenes. After selecting Figure 87 the user can choose any scene to be modified. For example, the user chooses Empty Scene 0, which is Figure 88.

Figure 88



Selecting Figure 88, Empty Scene 0, takes the user to Figure 89, a standard scene programming screen for the system.

Figure 89

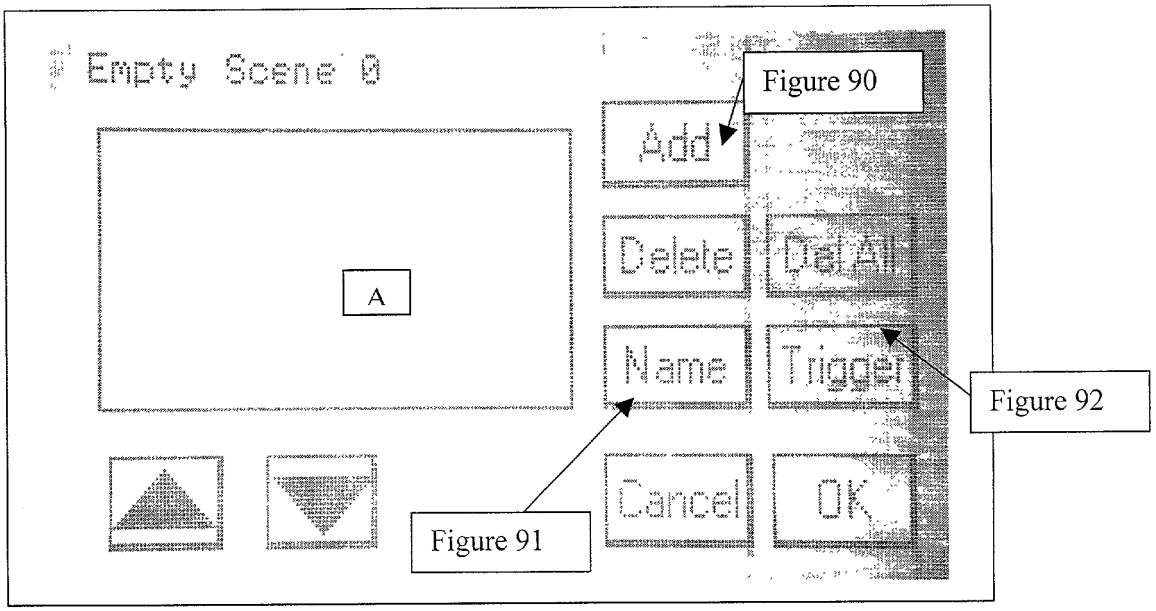
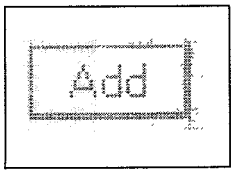


Figure 89 is an empty scene. Commands are listed within the box labeled 'A' in Figure 89; presently there are no commands programmed.

- Figure 90 – 'Add' places the user in record mode and takes the user to Figure 93 to add commands.
- Figure 91 – 'Name' takes the user to the screen where a custom designation can be typed in for this scene.
- Figure 92 – 'Trigger' takes the user to the standard scene trigger screen where they can select the methods through which the scene is initiated.

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Figure 90



Selecting Figure 90 – 'Add' places the user in record mode and takes the user to Figure 93 to add commands to the selected scene.

Figure 93

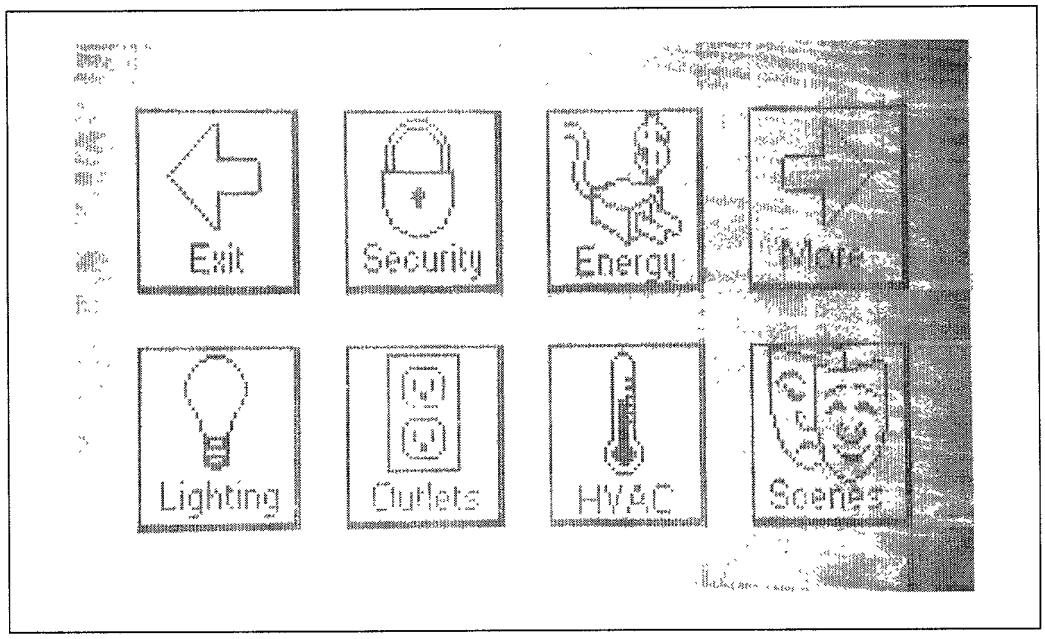


Figure 93 is the main navigational menu in record mode. From this menu the user selects which features to add to the empty scene in Figure 89. Selecting the 'Lighting' icon will display the controlled lighting icons as normal and allow the user to select which lights to add to the scene and the status to which they are set. For example, the user may choose a hall light that is controlled by the system to turn off (0%) as part of the scene. They may also select the 'HVAC' icon to setback a particular zone for heating or cooling. The user may also select the Security icon to arm the system as part of the scene. When finished, the user selects the 'Scenes' icon to return to Figure 89 and view the commands entered into the scene.

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Figure 91

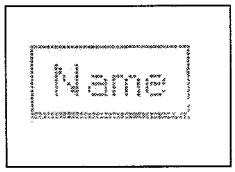


Figure 91 – 'Name' takes the user to Figure 94, the screen where a custom designation can be typed in for this scene.

Figure 94

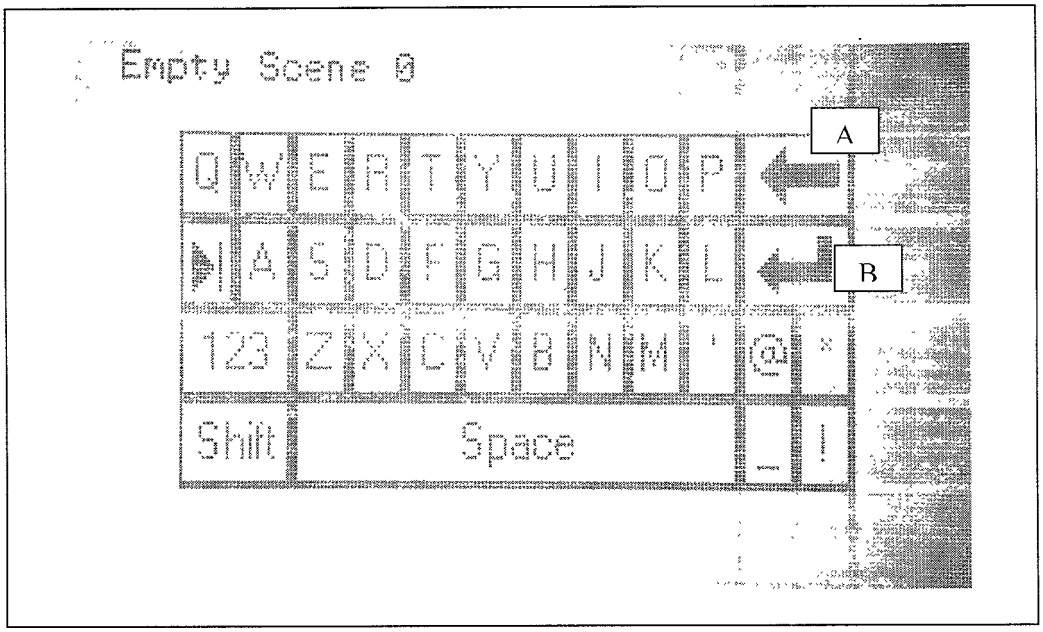


Figure 94 is a typical keypad for entering a custom name for this particular scene. To erase 'Empty Scene 0' the user presses the backspace icon, labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 89.

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Figure 92

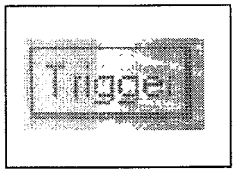


Figure 92 – 'Trigger' takes the user to Figure 95, the standard scene trigger screen where users can select the methods through which the scene is initiated.

Figure 95

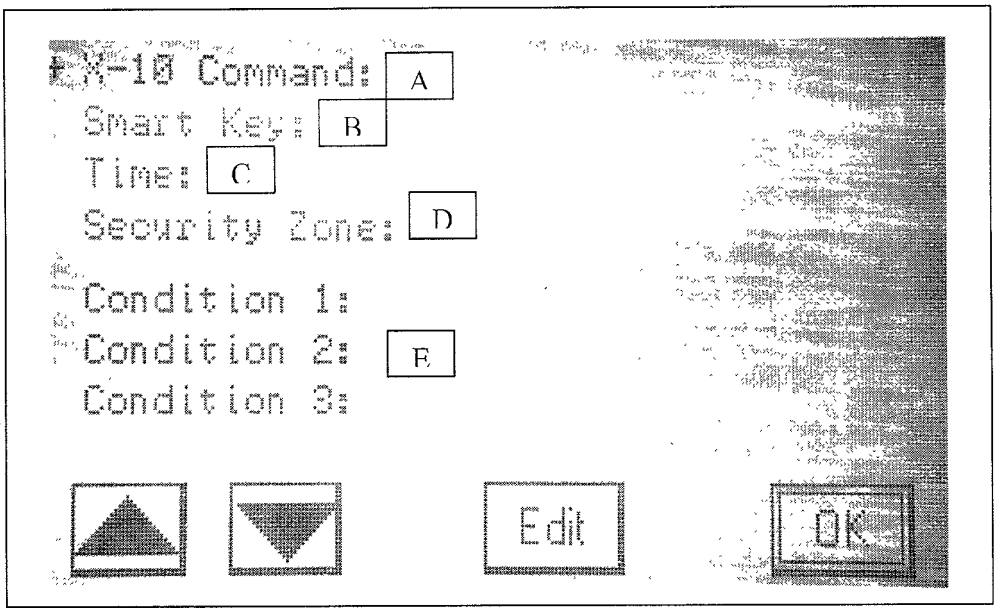


Figure 95 is the standard scene trigger screen where the user can select additional methods through which the scene is initiated. Scenes are always triggered by pressing the scene icon on the touchscreen and may also be triggered by additional methods as programmed in Figure 95. The 'up' and 'down' arrows within Figure 95 move the '+' symbol that is adjacent to the X-10 Command line up and down and selects the trigger which the user wishes to add. When the '+' symbol is adjacent to the proper trigger the user presses the 'Edit' icon to add or change triggers.

Functional Description:

A.) Scenes may be triggered by an incoming X-10 address to the system; for example, an auxiliary control device may transmit an X-10 signal with the address of 'A1' that will initiate this scene. There are 256 possible X-10 addresses beginning with a House Code of 'A' thru 'P' and a unit code of 1 thru 16. (e.g. B3, M14, K1, etc.)

B.) Scenes may also be trigger by Smart Keys either to specific keys or in groups. For example, an energy management scene can be programmed to initiate whenever the last person leaves the building and arms the security system.

C.) Scenes may also be triggered at a specific time of day. For example, the last person to leave forgot to use their Smart Key to arm the security and initiate the scene, therefore at a predetermined point the system will automatically run the scene itself.

D.) Scenes may also be triggered by a specific security zone or group of zones. Opening a window may initiate a scene to turn on lights as a warning.

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E.) The initiation of scene by triggers can be conditioned upon system status and time. The system features the following conditionals: Armed, Armed Away Mode, Armed Stay Mode, Disarmed, Daytime, Nighttime, Weekend, Weekday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. For example, a scene trigger may be 10pm. The condition could be a certain day of the week, such as Friday, to makes sure a home was closed down before a vacation trip.

Pressing the 'OK' icon returns the user to Figure 89.

Figure 96

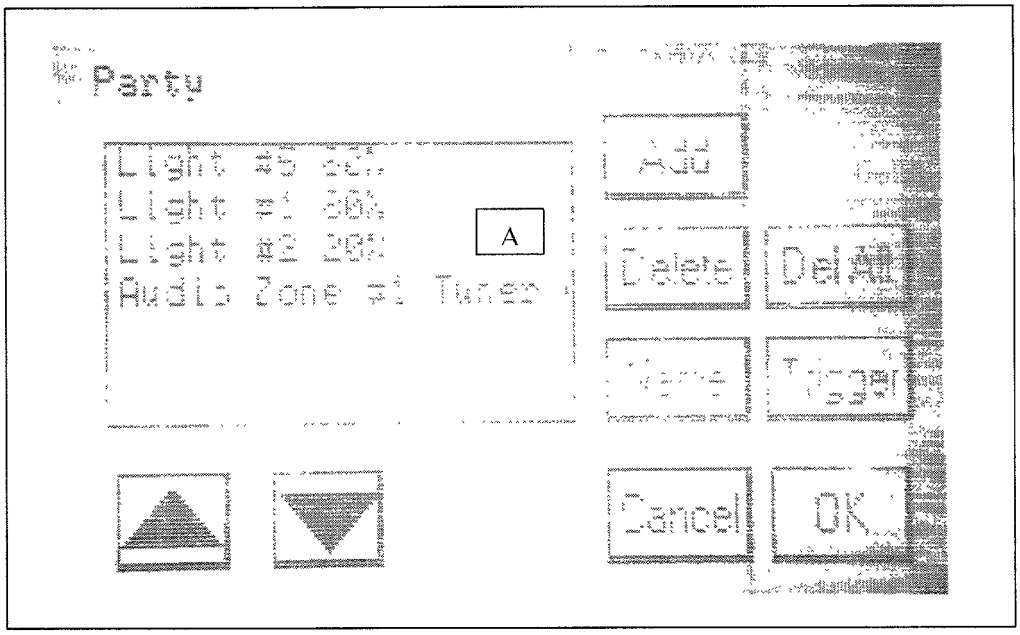


Figure 96 is a sample screen where Figure 89 has been modified to include the commands located in the box labeled 'A'. Figure 96 also includes a custom scene name – 'Party'.

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Figure 15

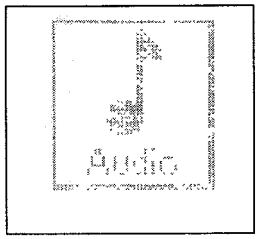


Figure 15 – 'Audio' takes the user to the audio controls portion of the system. Selecting Figure 15 takes the user to Figure 97.

Figure 97

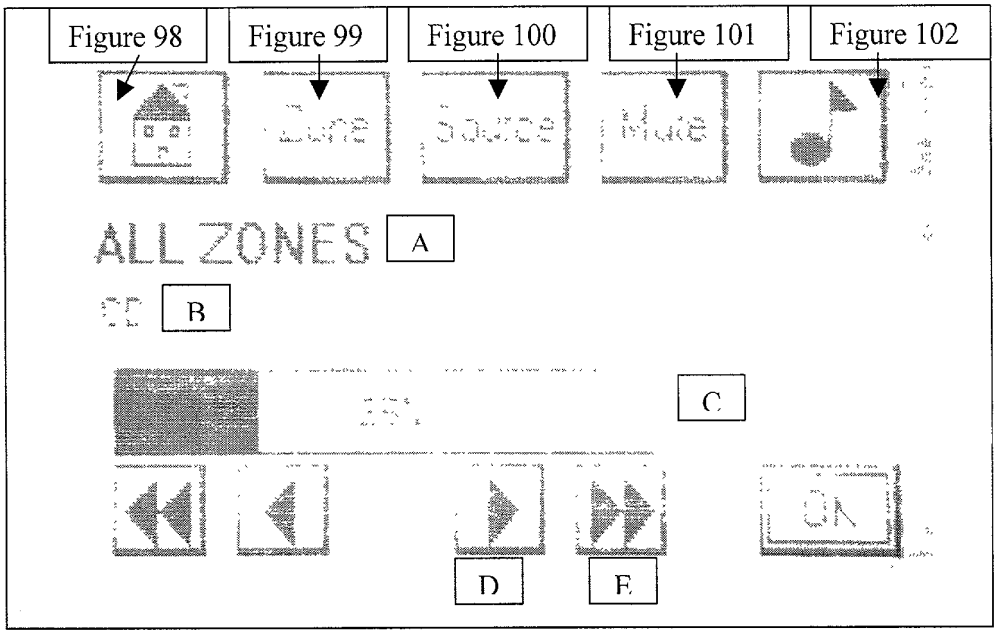


Figure 97 is the main navigational menu for the audio control portion of the system. Figure 97 includes these additional figures:

- Figure 98 – 'House' allows the user to select All Zones for immediate control.
- Figure 99 – 'Zone' allows the user to select individual zones for control.
- Figure 100 – 'Source' allows the user to toggle between the sources connected to the system.
- Figure 101 – 'Mute' allows the user to mute the zone or zones being controlled.
- Figure 102 – 'Music Note' functions as an On/Off switch for the zone or zones being controlled.

Functional Description:
A.) 'All Zones' – References that the touchscreen is controlling all the audio zones in the same fashion and that any command performed will change all zones simultaneously.
B.) 'CD' – The current source for all zones.
C.) 'Volume' – The current volume for all zones is 25%.
D.) 'Single Arrow' – Adjusts the volume in increments of 1%.
E.) 'Double Arrow' – Adjusts the volume in increments of 5%.

Pressing the 'OK' icon returns the user to Figure 13.

Figure 98

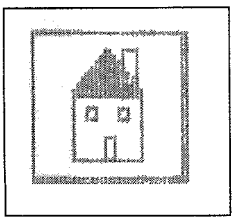


Figure 98 – 'House' allows the user to select All Zones for immediate control. Selecting Figure 98 takes the user to Figure 103.

Figure 103

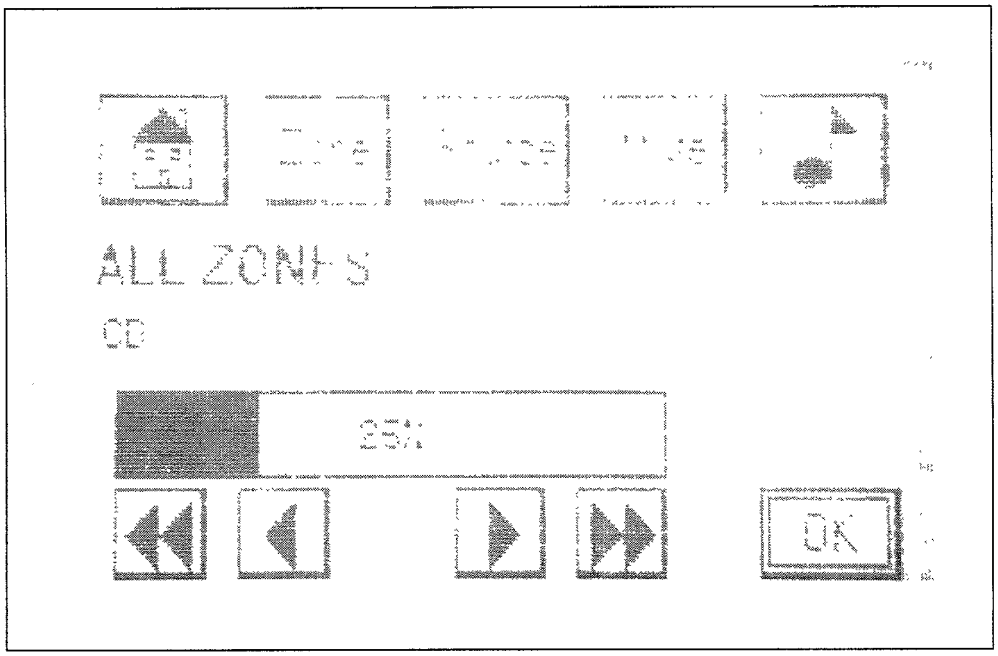


Figure 103 shows that all zones are being controlled, the source is the CD player and the volume is 25%. Any changes made in this configuration will change each zone connected to the system simultaneously.

Pressing the 'OK' icon returns the user to Figure 66.

Figure 99

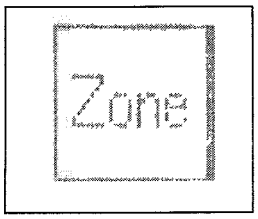


Figure 99 – 'Zone' allows the user to select individual zones for control. Selecting Figure 99 takes the user to Figure 104.

Figure 104

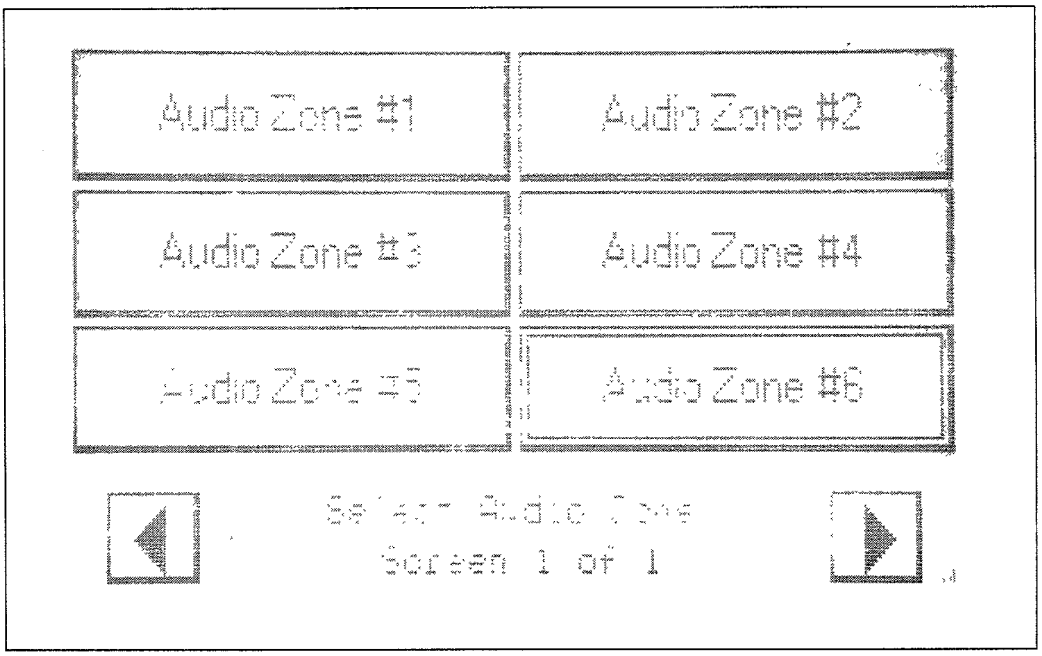


Figure 104 allows the user to select a specific zone for audio control. Audio zones are added in groups of six, with a maximum of 24. When more zones are present the system will represent the number of additional screens and allow the user to cycle between them with the navigational arrows at the bottom of Figure 104. When the zones are labeled during configuration the zone names will appear instead of the default zone names as shown in Figure 104.

Figure 100

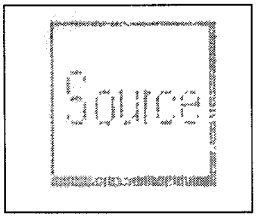
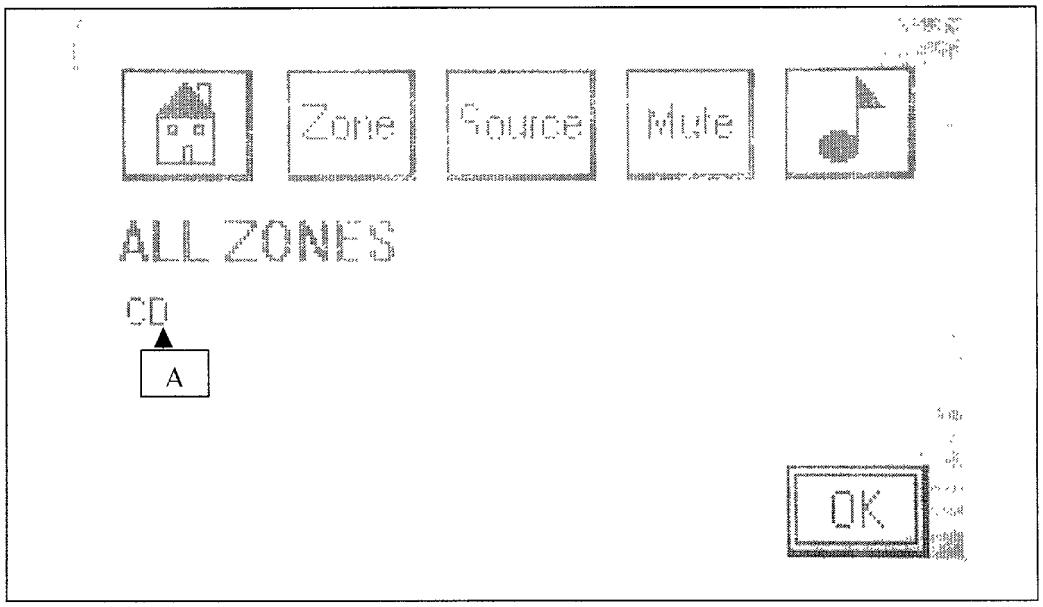


Figure 100 – 'Source' allows the user to toggle between the sources connected to the system. Selecting Figure 100 will change the status area labeled 'A' in Figure 105.

Figure 105



The area labeled 'A' in Figure 105 represents the current source supplying the controlled zone or zones. In the example above the source is 'CD'. Other standard options include Tuner, Tape and Aux. The source designations can be customized by the installer during configuration.

Pressing the 'OK' icon returns the user to Figure 13.

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Figure 101

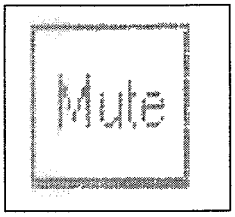


Figure 101 – 'Mute' allows the user to mute the zone or zones being controlled.

Figure 106

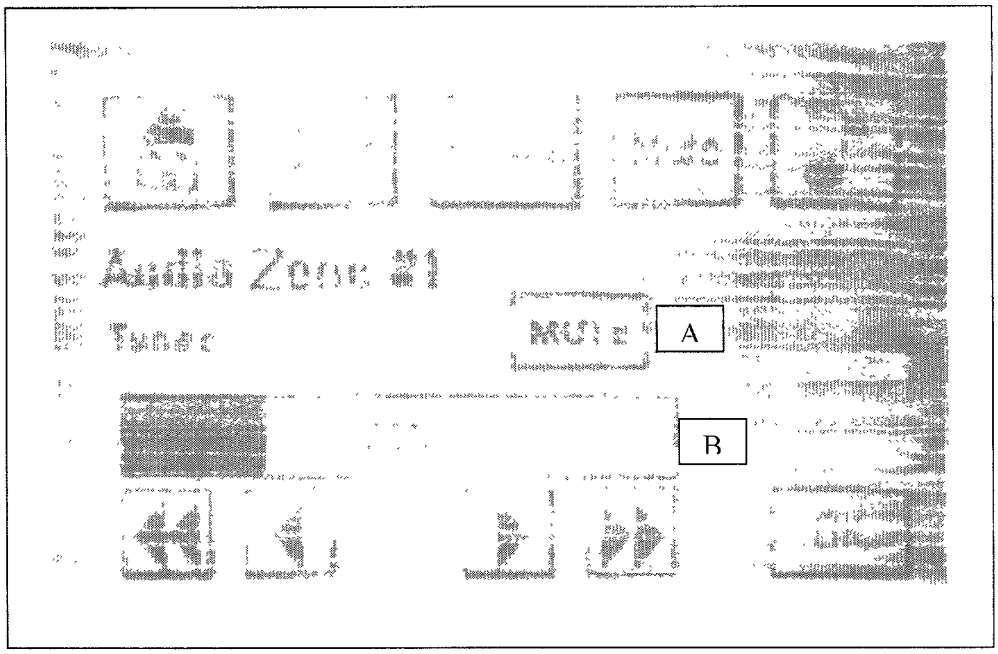


Figure 106 shows that Audio Zone #1 has been muted. Pressing Figure 101 will display the Mute icon labeled 'A' within Figure 106. Pressing Figure 101 while the Mute icon is displayed will remove the icon and restore the volume indicated in the volume bar labeled 'B'.

Pressing the 'OK' icon returns the user to Figure 13.

Figure 102

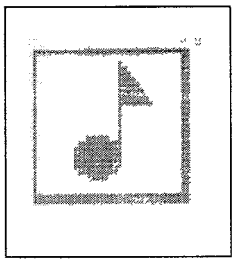
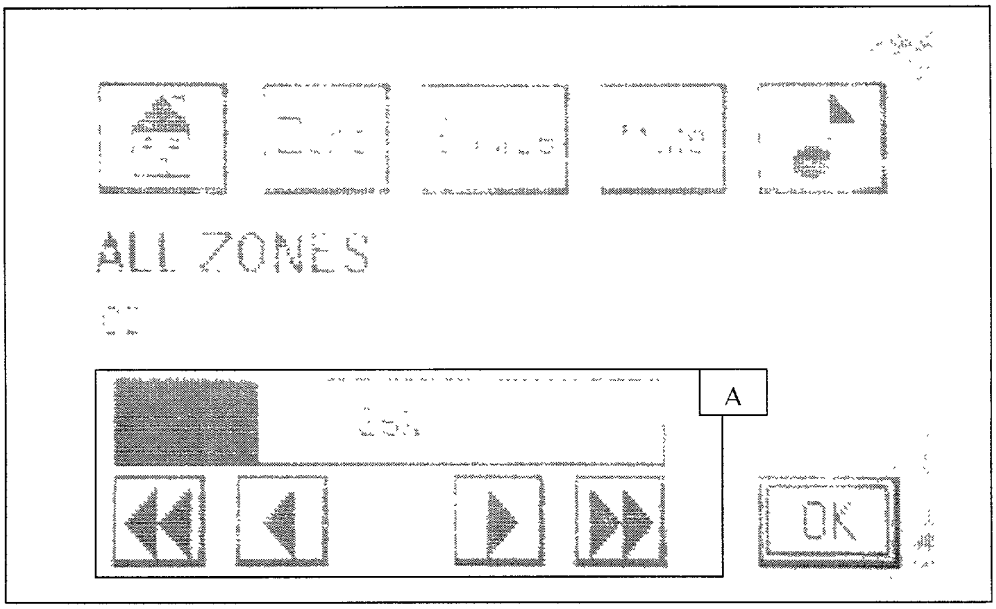


Figure 102 – 'Music Note' functions as an On/Off switch for the zone or zones being controlled. Selecting the music note will remove the volume bar and volume adjusters (boxed with the label 'A') from Figure 107.

Figure 107



Pressing the 'OK' icon returns the user to Figure 13.

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Figure 16

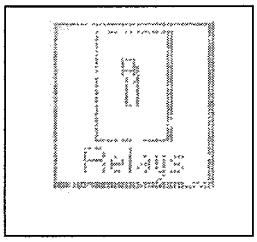


Figure 16 – Relays takes the user to the relays controls portion of the system. Selecting Figure 16 takes the user to Figure 108.

Figure 108

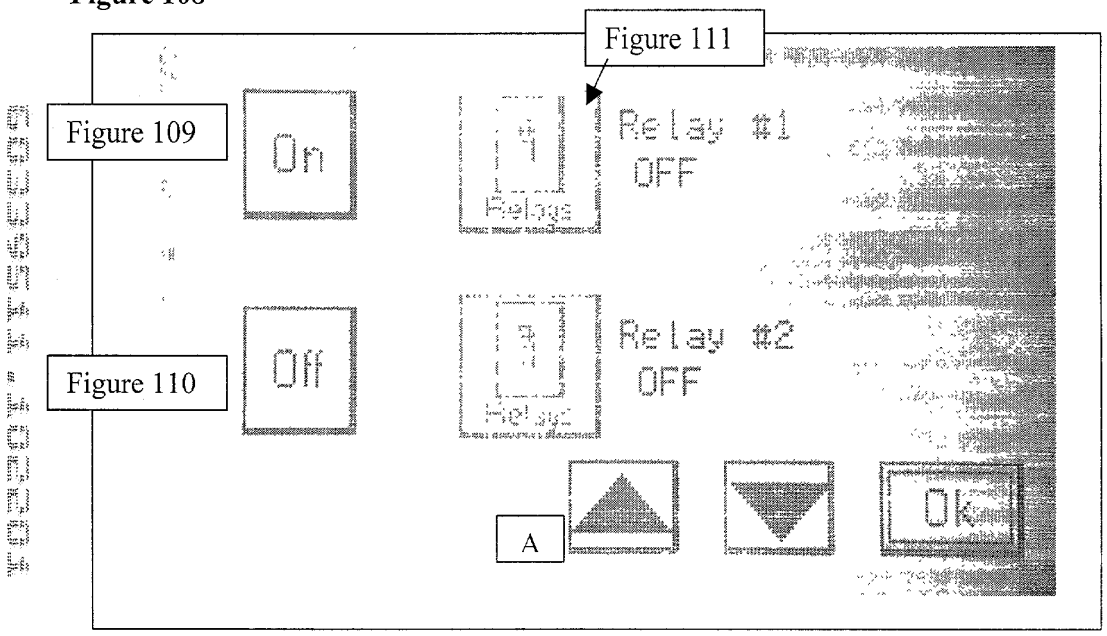


Figure 108 is the main navigational menu for the relay control portion of the system. Relays are contact closure connectors for integrating non-system peripherals such as automated window and pool coverings, retractable home theater screens and sprinkler systems. Figure 108 includes these additional figures:

- Figure 109 – 'On' allows the user to open a relay.
- Figure 110 – 'Off' allows the user to close a relay.
- Figure 111 – 'Relays' selects the relay the user wishes to control.

Functional Description:
A.) The 'up' and 'down' arrows allow the user to toggle through the 4 relays included on the motherboard. When expansion cards are included the user automatically toggles through the additional relays as well.

Pressing the 'OK' icon returns the user to Figure 13.

Figure 111

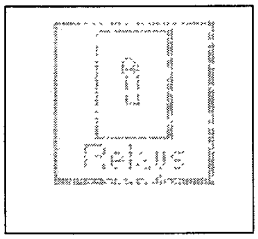


Figure 111 – 'Relays' selects the relay the user wishes to control.

Figure 109

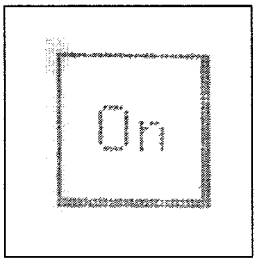


Figure 109 – 'On' allows the user to open a relay.

Figure 112

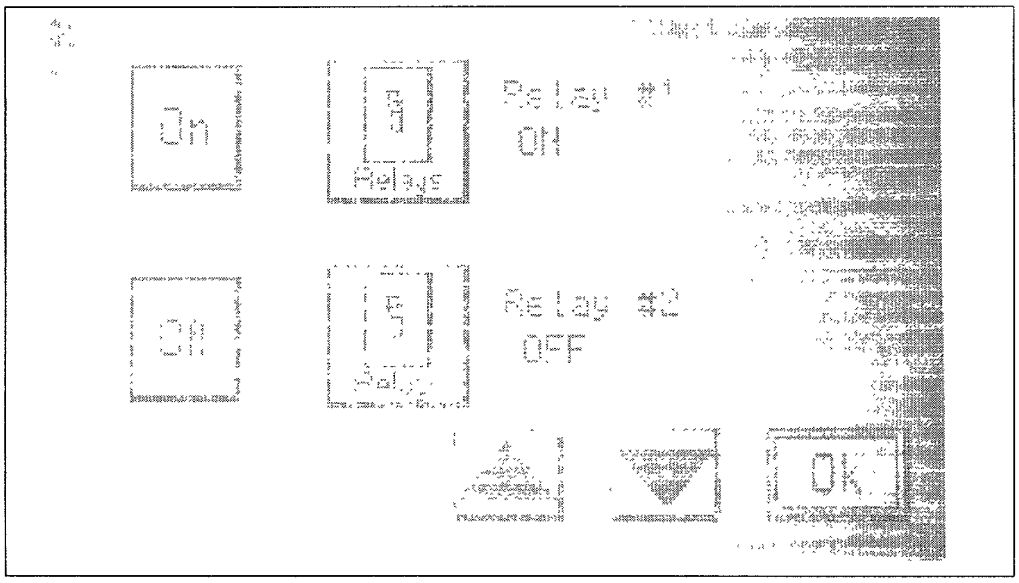


Figure 112 is a sample screen that shows Relay #1 is open and Relay #2 is closed.

Pressing the 'OK' icon returns the user to Figure 13.

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Figure 110

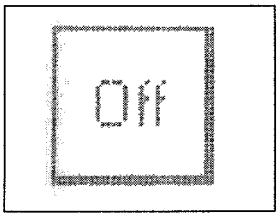


Figure 110 – 'Off' allows the user to close a relay.

Figure 113

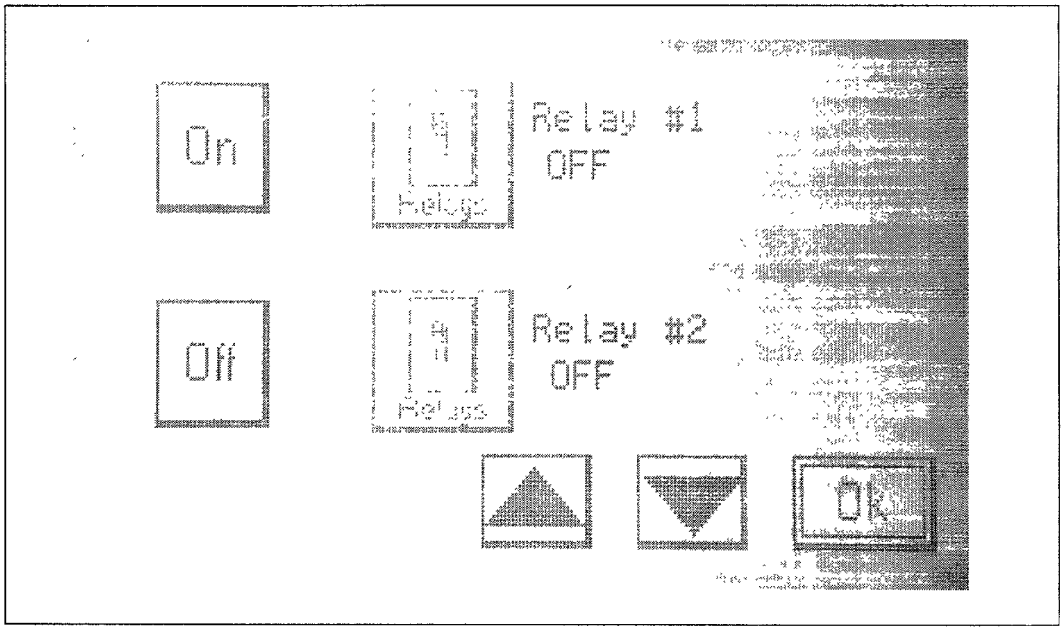


Figure 112 is a sample screen that shows both Relay #1 and Relay #2 are closed.

Pressing the 'OK' icon returns the user to Figure 13.

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Figure 17

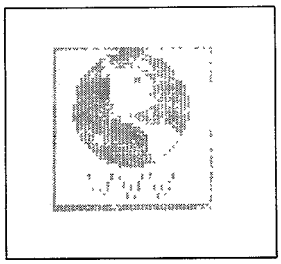


Figure 17 – 'WWW' takes the user to the World Wide Web interface portion of the system.

The delivery of web content is a fee-based service by the Company that delivers a customized batch of information to the user. The information delivered is based on the preferences of the user and includes business news/stock quotes, sports, news headlines and stories, lifestyle, special interest, traffic updates, weather, community updates, health information and more.

The web feature connects the individual system to the Company's central server for downloads on a preset schedule. The frequency of updates is based upon the level of service subscribed to by the user. The Company's central server polls thousands of web portals for content and delivers the information to the user base upon the local and geographically relevant zip codes.

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Figure 18

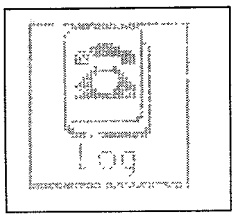


Figure 18 – 'Log' takes the user to the telephone logbook portion of the system. Selecting Figure 18 takes the user to Figure 114.

Figure 114

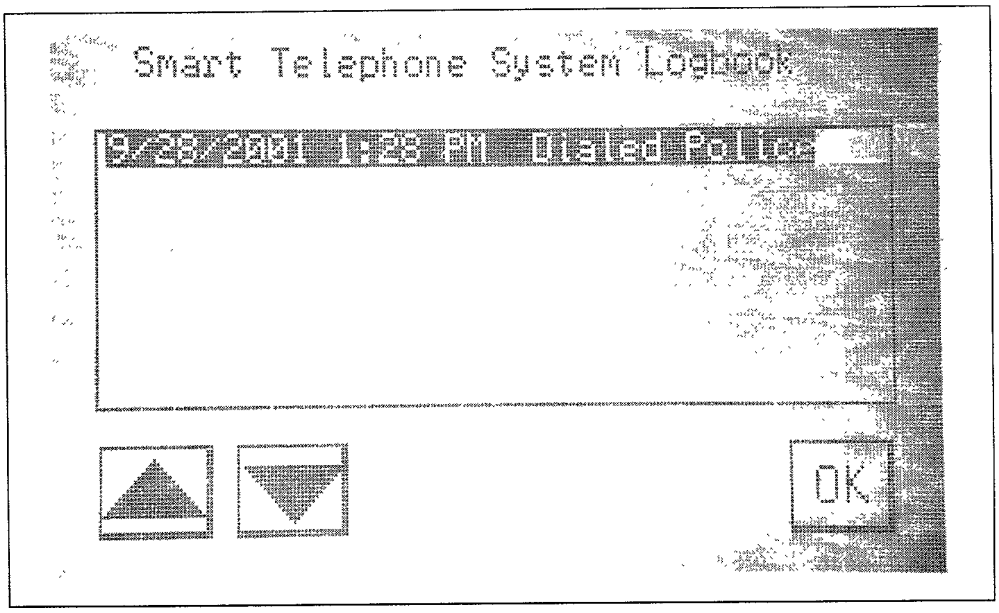


Figure 114 is the system log for every time that it made a call in response to an event. Figure 114 includes the example where the system called the police in response to an intrusion. The system logs all police, fire and medical related dial-outs for confirmation. When the amounts of logged events exceeds the display area, the 'up' and 'down' arrows are used to scroll through additional entries.

Pressing the 'OK' icon returns the user to Figure 13.

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Figure 19

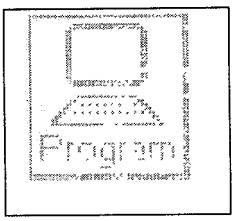


Figure 19 – 'Program' takes the user to the user-programming portion of the system. Selecting Figure 19 will take the user to Figure 115.

Figure 115

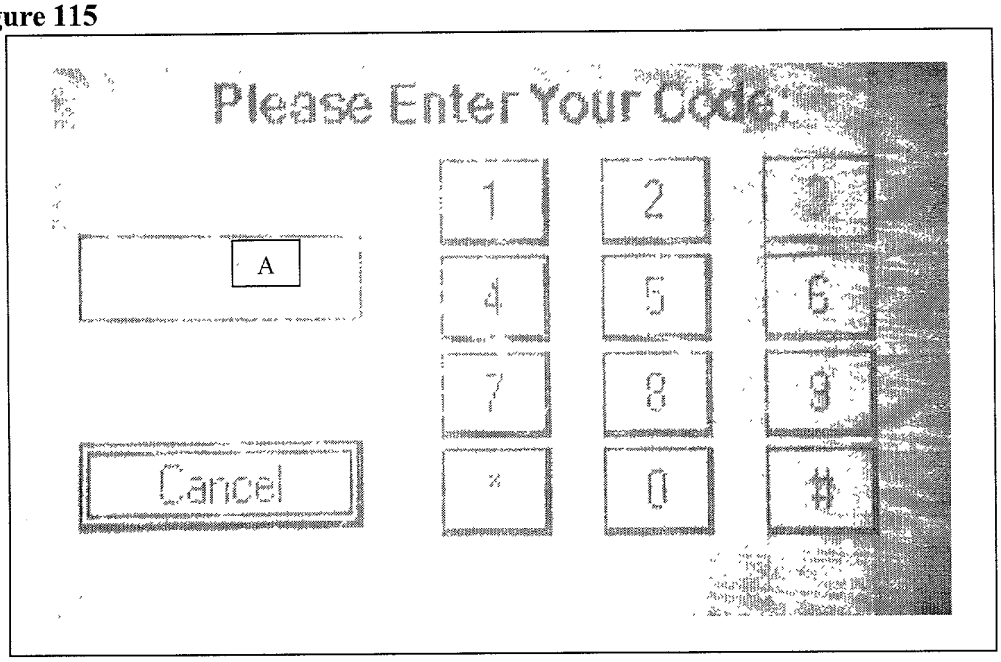


Figure 115 is the screen where the user can enter in a code to allow access to the user programming portion of the system. This code is independent from and will not work as a security code, the system does not allow the same code for both purposes as a security feature.

Figure 115 is a numeric keypad that displays after selecting Figure 19. For each button selected on the numeric keypad (0-9, * or #) a '*' appears in the box labeled "A" within Figure 115 for a visual confirmation of a number being selected without revealing the actual number itself. This is for protecting the privacy of the users access code.

The cancel button is to clear a partial code that has been entered incorrectly.

A successful code entry in Figure 115 takes the user to Figure 117. An unsuccessful code entry takes the user to Figure 116.

Figure 116

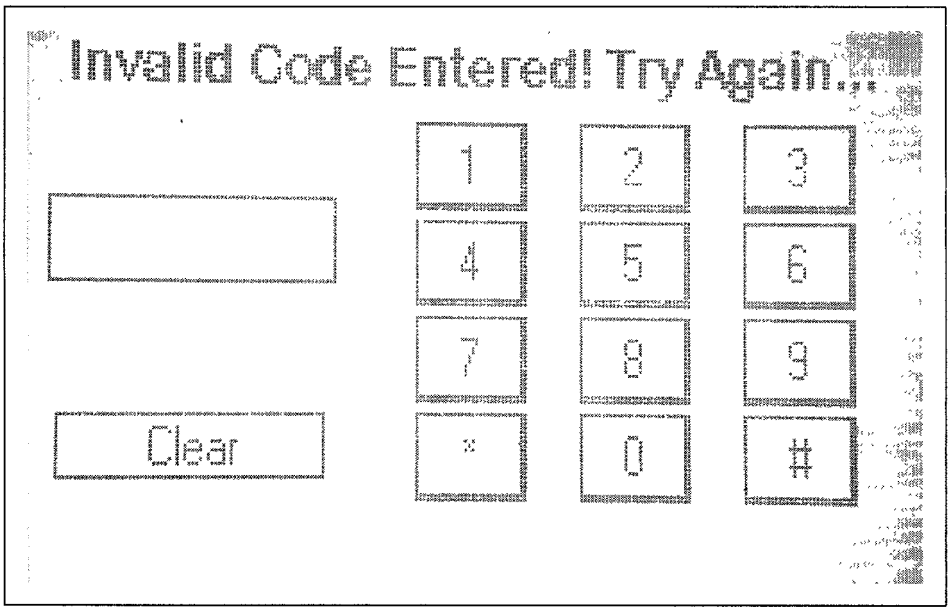
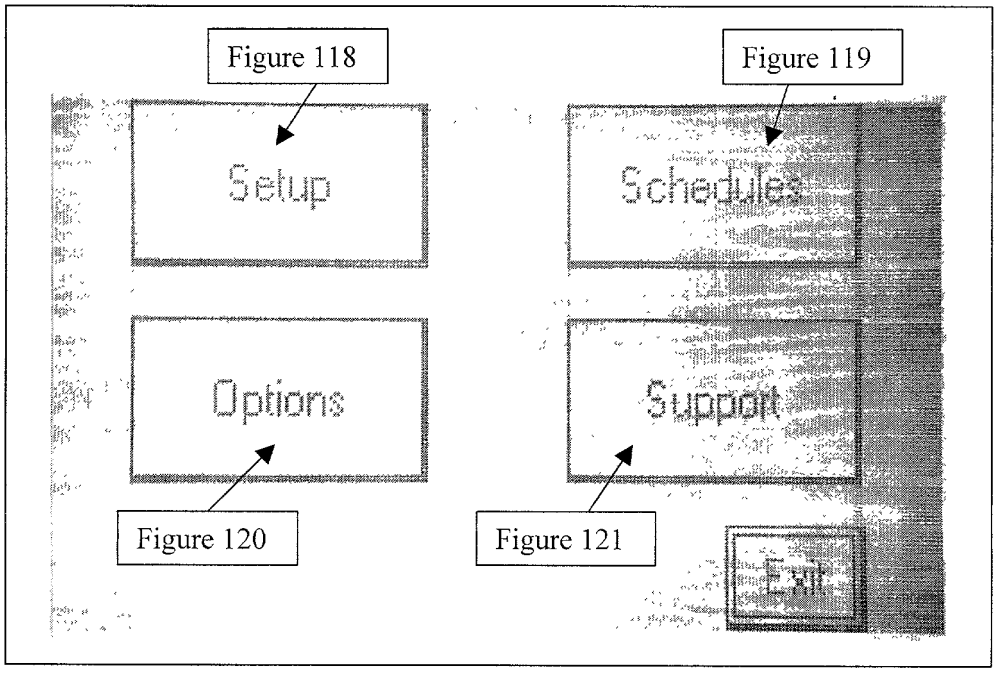


Figure 116 is an unsuccessful code entry from Figure 115. A successful code entry in Figure 116 takes the user to Figure 117.

Figure 117



6633554.1 - 6633554

Figure 117 is the primary navigational screen for system configuration by the user. Figure 117 includes:

- Figure 118 – 'Setup' allows the user to configure the system setup parameters.
- Figure 119 – 'Schedules' allows the user to set feature schedules.
- Figure 120 – 'Options' allows the user to select and configure system options.
- Figure 121 – 'Support' allows the user to allow remote access to the system through the telephone line and Atlas software.

Pressing 'Exit' returns the user to Figure 13.

Figure 118

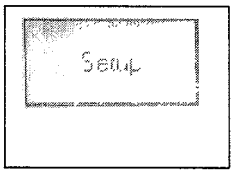
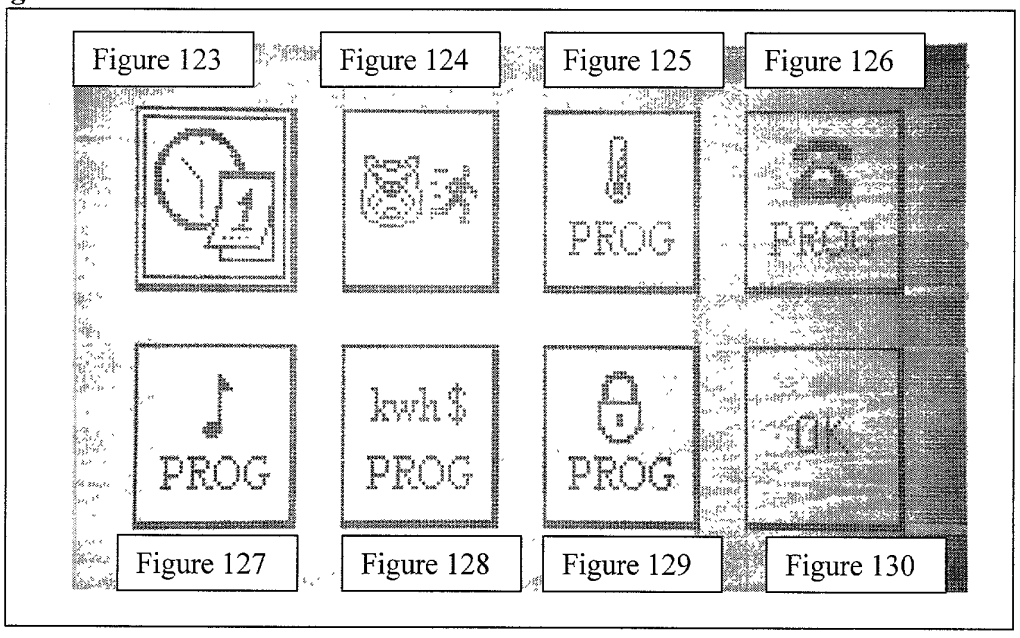


Figure 118 – 'Setup' allows the user to configure the system setup parameters. Selecting Figure 118 takes the user to Figure 122.

Figure 122



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Figure 122 is the primary navigational screen for system configuration by the user. Figure 122 includes:

- Figure 123 – 'Date and Time' allows the user to configure the system date and time settings.
- Figure 124 – 'Deterrents' allows the user to set controlled lighting for burglary deterrent.
- Figure 125 – 'Temperature Programming' allows the user to configure HVAC zones.
- Figure 126 – 'Telephone Programming' allows the user to configure the system auto dialer call list.
- Figure 127 – 'Audio Programming' allows the user to name audio zones and sources.
- Figure 128 – 'Energy Programming' allows the user to configure energy management parameters.
- Figure 129 – 'Security Programming' allows the user to configure security system parameters.
- Figure 130 – 'OK' returns the user to Figure 13.

Figure 123

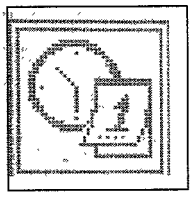


Figure 123 – 'Date and Time' allows the user to configure the system date and time settings. Selecting Figure 123 takes the user to Figure 131.

Figure 131

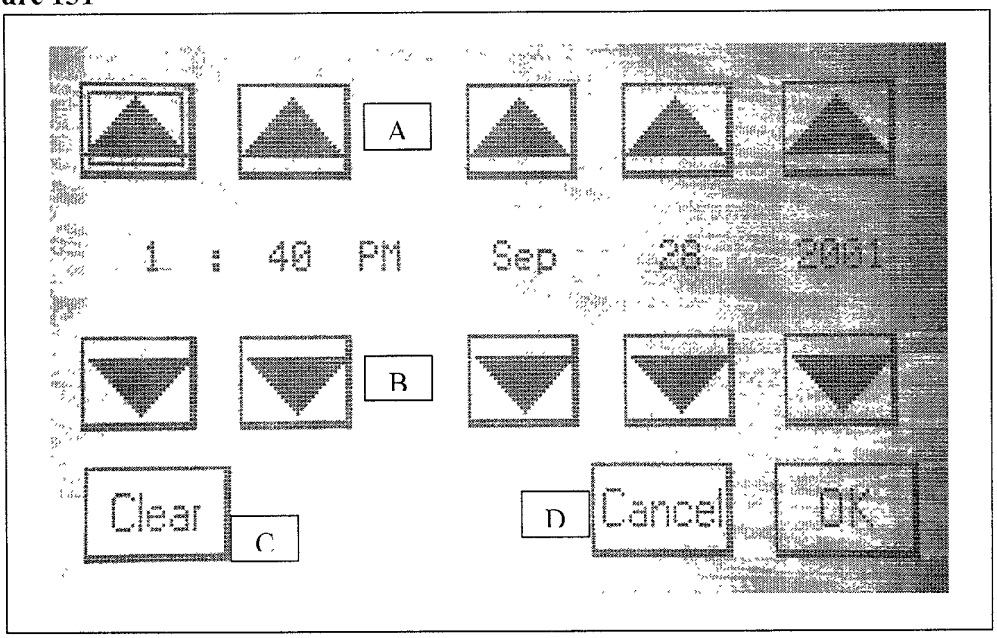


Figure 131 displays the current system time and date and allows alteration of both. The arrows labeled 'A' above the current time and date display increase the number or month within the vertical column. The arrows labeled 'B' below the current time and date display decrease the number or month within the vertical column. The Clear icon, labeled 'C', clears the current data displayed within Figure 131. The Cancel icon, labeled 'D', cancels any changes.

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Pressing 'OK' returns the user to Figure 122.

Figure 124

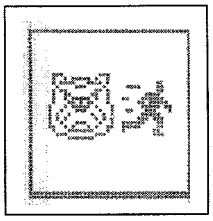


Figure 124 – 'Deterrents' allows the user to set controlled lighting for burglary deterrent. Selecting Figure 124 takes the user to the Figure 73 where the user chooses which controlled lights react in a random pattern during the evening and an Away alarm status.

Figure 125

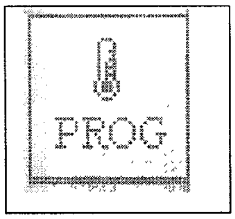


Figure 125 – 'Temperature Programming' allows the user to configure HVAC zones, including zone names default set points. Selecting Figure 125 takes the user to Figure 80 where the user can change the zone names and establish a default set point for each zone.

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Figure 126

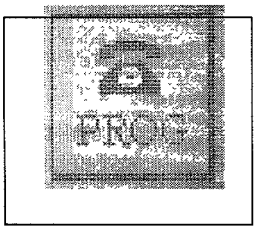


Figure 126 – 'Telephone Programming' allows the user to configure the system auto dialer call list. Selecting Figure 126 takes the user to Figure 132.

Figure 132

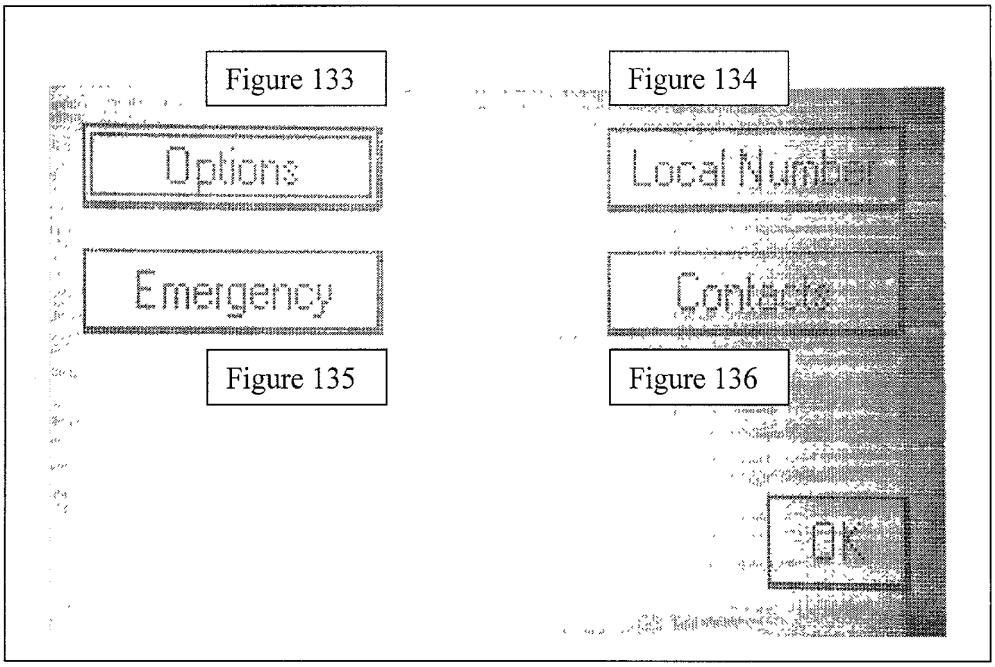


Figure 132 is the main navigation menu for the user to configure the phone based features of the system. Figure 132 also includes the following figures:

- Figure 133 – 'Options' allows the user to set the dial-in features.
- Figure 134 – 'Local Number' allows the user to configure the system identification.
- Figure 135 – 'Emergency' allows the user to configure the system identification for the emergency auto dialer call list.
- Figure 136 – 'Contacts' allows the user to configure the system auto dialer call list.

Pressing 'OK' returns the user to Figure 122.

Figure 133

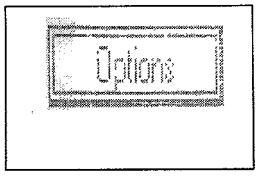


Figure 133 – 'Options' allows the user to set the dial-in features. Selecting Figure 133 takes the user to Figure 137.

Figure 137

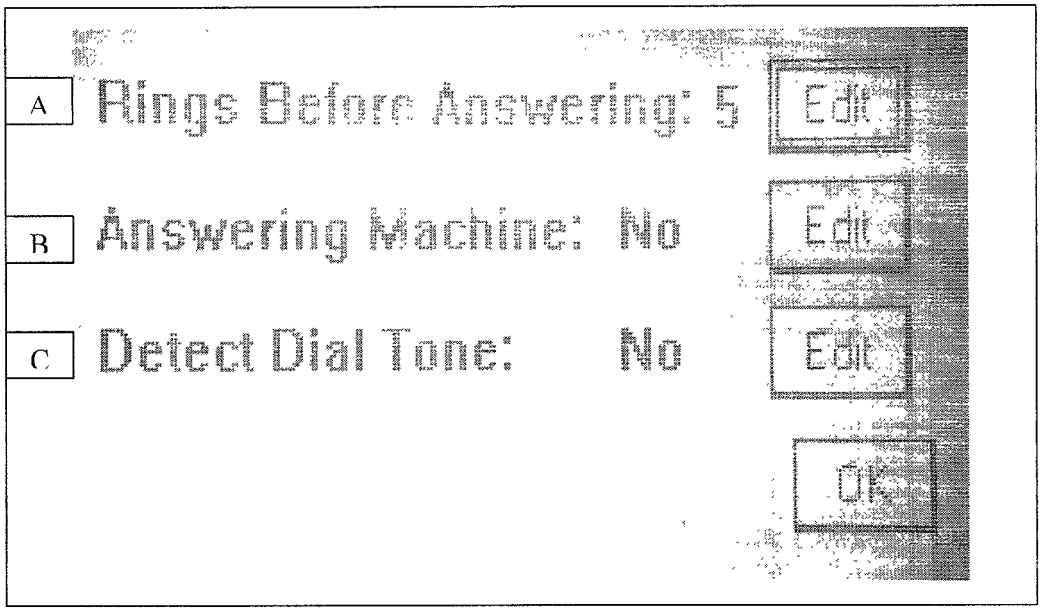


Figure 137 configures the dial-in features of the system. The 'Rings Before Answering', labeled 'A' is the amount of rings the system will pass before is seizes the line and prompts the caller to enter an access code. The 'Edit' button within the same horizontal line as 'A', allows the user to toggle through the number of rings: 1-9. 'Answering Machine', labeled 'B' is adjusted by toggling the Edit button on the same line to read either Yes or No. 'Detect Dial Tone', labeled 'C', is an automatic system feature that can be adjusted by toggling the Edit button on the same line to read either Yes or No.

Pressing 'OK' returns the user to Figure 132.

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Figure 134

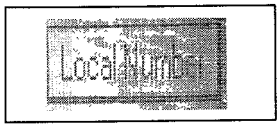


Figure 134 – 'Local Number' allows the user to configure the system identification. Selecting Figure 134 takes the user to Figure 138.

Figure 138

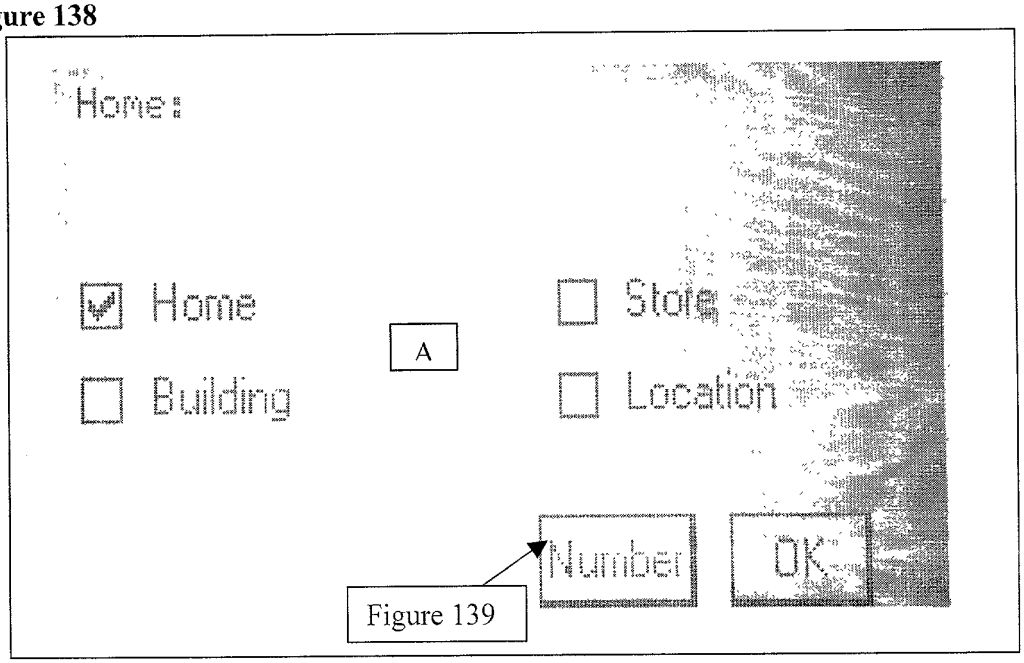
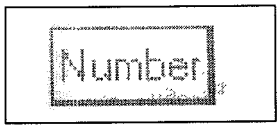


Figure 138 allows the user to program the identification number the system announces when it auto dials its call list. To enter the identification number the user selects Figure 139. To declare the type of building in which the system resides the user chooses one of the building types listed adjacent to label 'A'.

Pressing 'OK' returns the user to Figure 132.

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Figure 139



Selecting Figure 139 within Figure 138 takes the user to Figure 140.

Figure 140

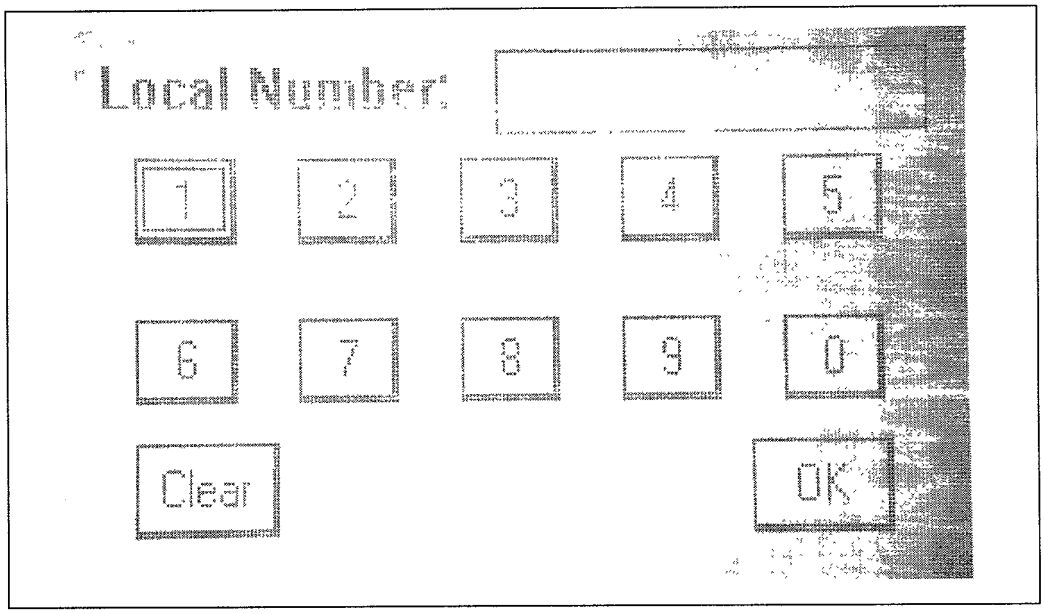


Figure 140 allows the user to enter an identification code of up to 12 digits for the system to announce when it calls the auto dial list. The 'Clear' icon within Figure 140 allows the user to enter a completely new code.

Pressing 'OK' returns the user to Figure 138.

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Figure 135

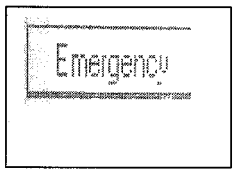


Figure 135 – 'Emergency' allows the user to configure the system emergency auto dialer call list. Selecting Figure 135 takes the user to Figure 141.

Figure 141

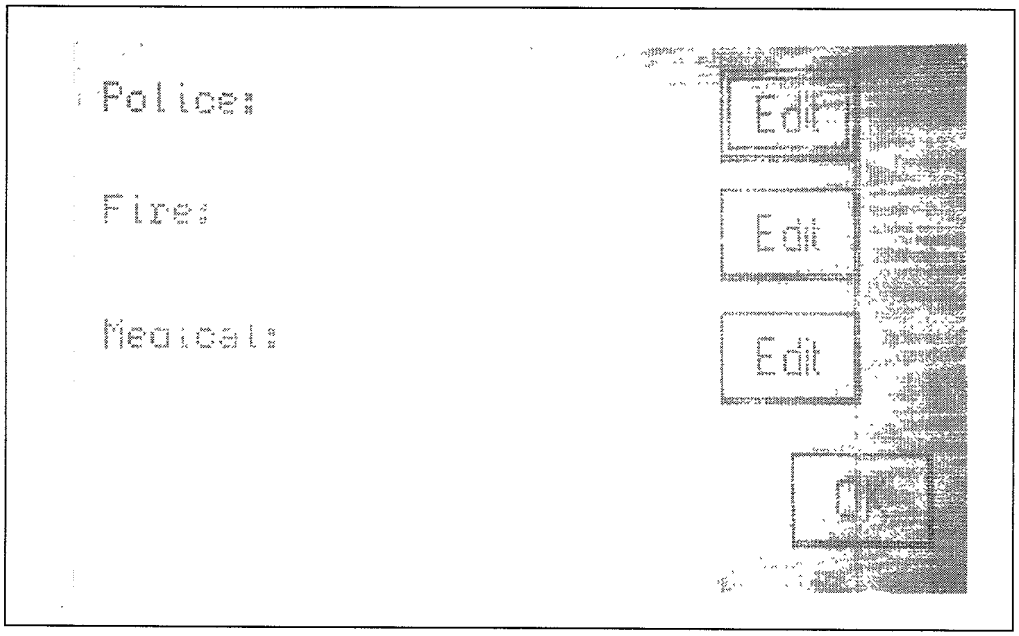


Figure 141 allows the user to configure an identification number for each emergency service that the system calls on the auto dial list.

Pressing 'OK' returns the user to Figure 132.

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Figure 136

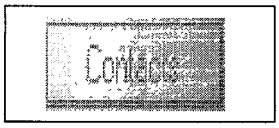


Figure 136 – 'Contacts' allows the user to configure the system auto dialer call list. Selecting Figure 136 takes the user to Figure 142.

Figure 142

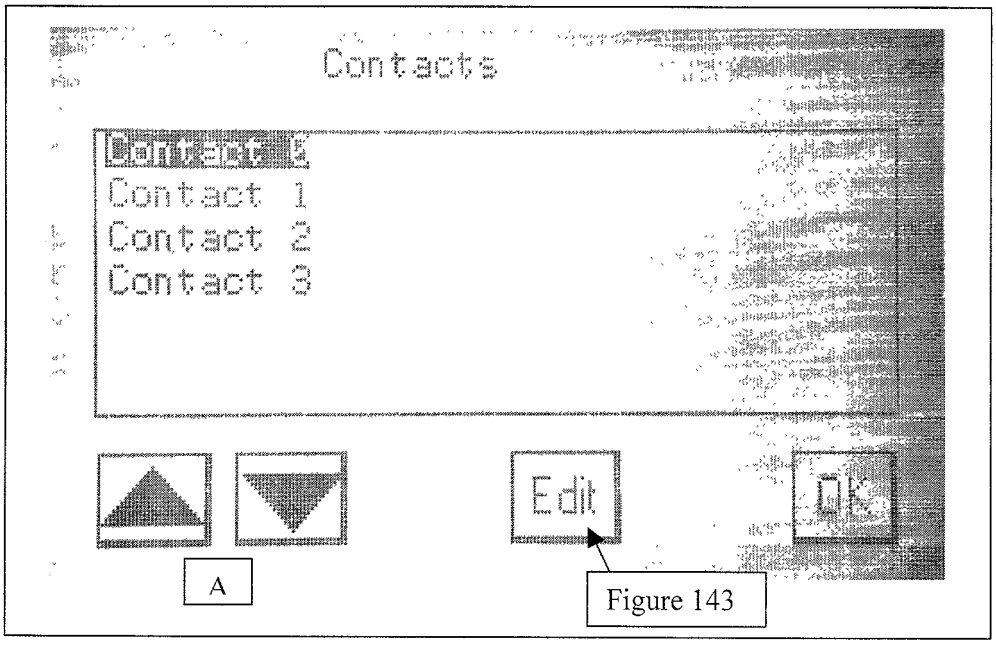


Figure 142 allows the user to select up to 4 contacts for the system to dial directly and announce the nature of an emergency. The 'up' and 'down' arrows adjacent to label 'A' allow the user to toggle between the four contacts. When a contact is highlighted the user may edit the configuration of that contact by selecting Figure 143.

Pressing 'OK' returns the user to Figure 132.

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Figure 143

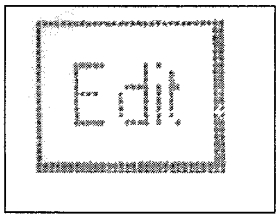


Figure 143 allows the user to configure the contacts in the auto dial list. Selecting Figure 143 takes the user to Figure 144.

Figure 144

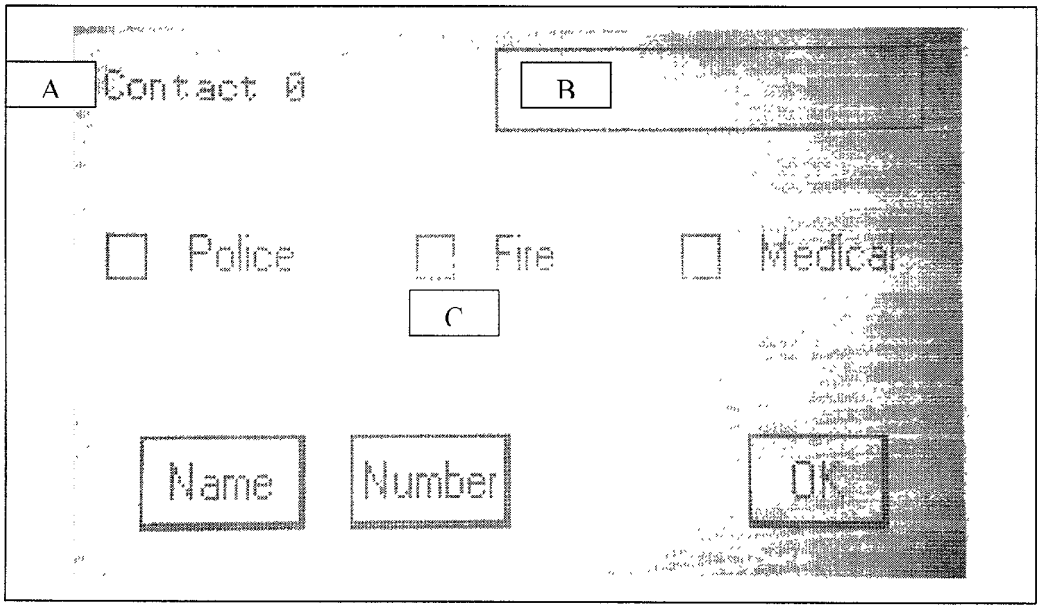


Figure 144 allows the user to enter the contact's name and to choose the type of alert in which the contact will be called.

Functional Description:
A.) The default setting is 'Contact 0', selecting the 'Name' icon on the lower left of the screen will take the user to an alphanumeric keypad to enter the name of the person or business being contacted.
B.) The empty box is filled by selecting the 'Number' icon and entering the telephone number of the person or business being contacted.
C.) Allows the user to select the nature of the emergency to which the contact is notified. One or all announcements can be chosen.

Pressing 'OK' returns the user to Figure 142.

Figure 127

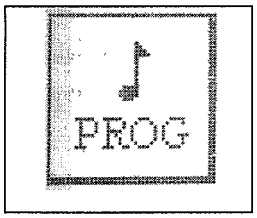


Figure 127 – 'Audio Programming' allows the user to name audio zones and sources. Selecting Figure 127 takes the user to Figure 145.

Figure 145

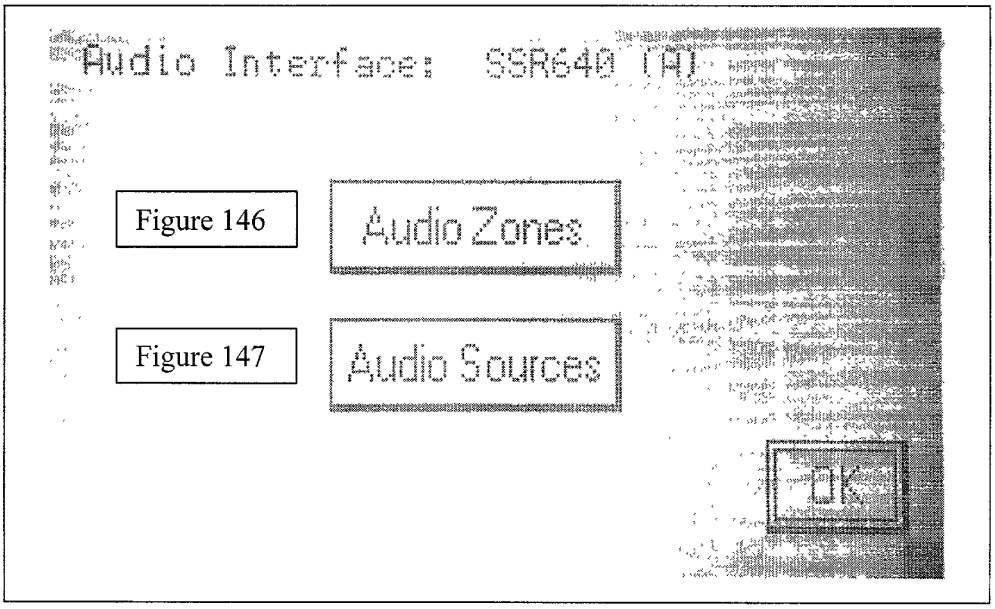


Figure 145 allows the user to select between naming the Audio Zone and the Audio Sources. Selecting Figure 146 takes the user to Figure 148. Selecting Figure 147 takes the user to Figure 151.

Pressing 'OK' returns the user to Figure 122.

Figure 146

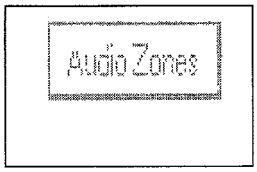


Figure 146 allows the user to custom label each audio zone. Selecting Figure 146 takes the user to Figure 148.

Figure 148

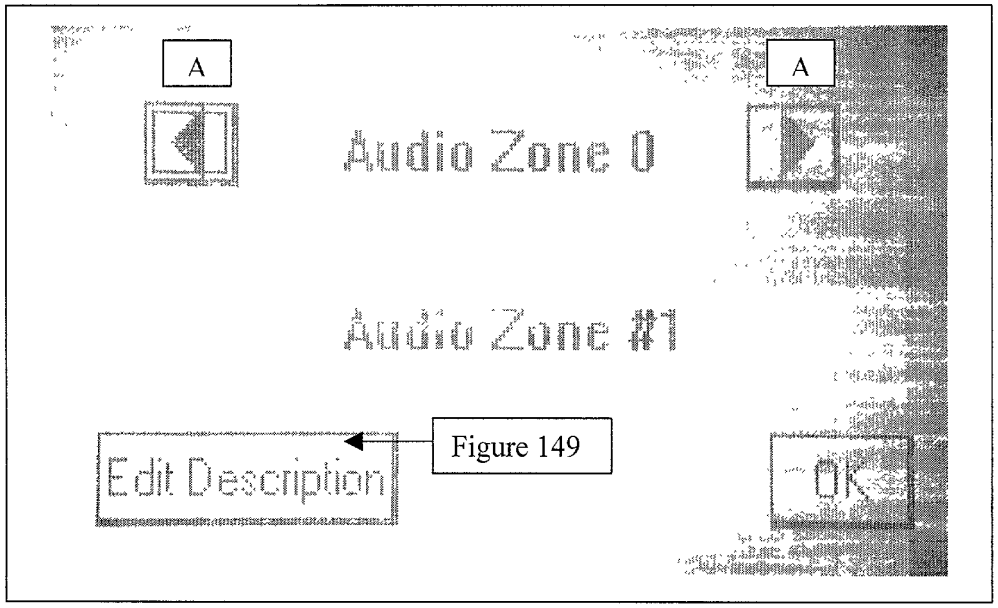
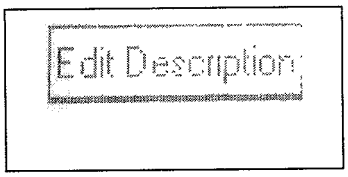


Figure 148 allows the user to scroll between each audio zone using the arrows labeled 'A' within Figure 148. Selecting Figure 149 takes the user to Figure 150 to edit the chosen audio zone.

Pressing 'OK' returns the user to Figure 145.

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Figure 149



Selecting Figure 149 takes the user to Figure 150 to edit the chosen audio zone.

Figure 150

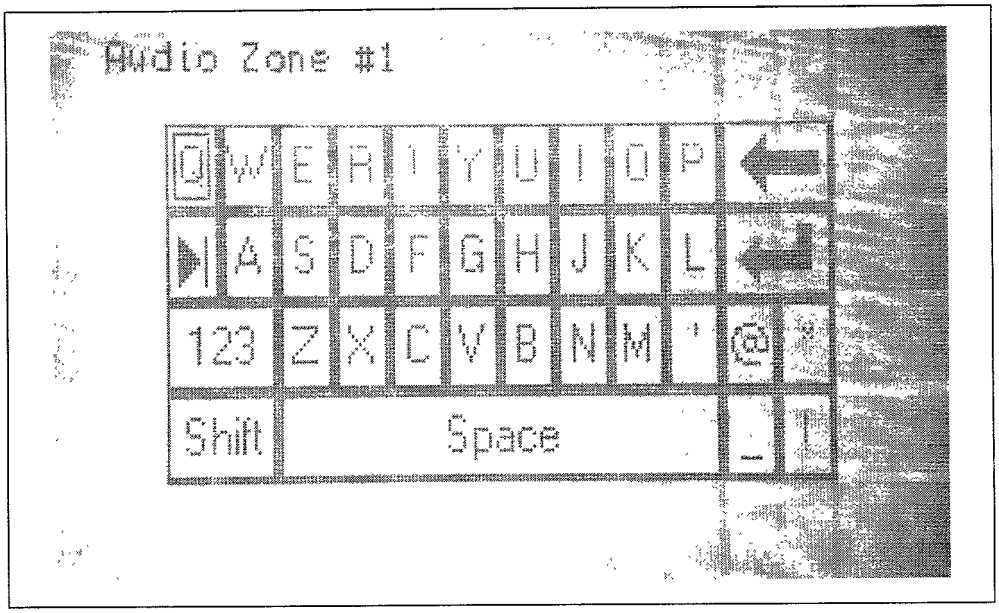


Figure 150 is the alphanumeric keypad to custom label the desired audio zone.

9633954.4

Figure 147

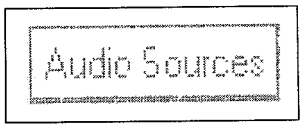


Figure 146 allows the user to custom label each audio source. Selecting Figure 147 takes the user to Figure 151.

Figure 151

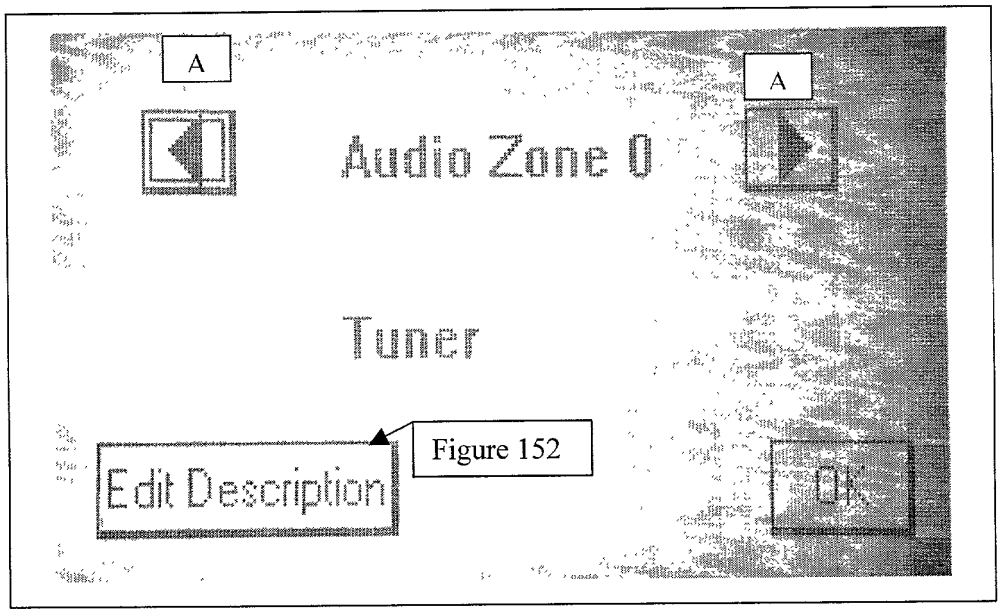


Figure 151 allows the user to scroll between each audio source using the arrows labeled 'A' within Figure 148. Selecting Figure 149 takes the user to Figure 150 to edit the chosen audio source.

Pressing 'OK' returns the user to Figure 145.

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Figure 128

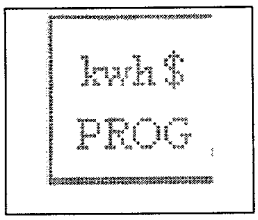


Figure 128 is the screen where the homeowner programs the actual cost of the energy they use to generate real time consumption information in dollar terms. For example, homeowners can take the information from their monthly statement from the energy provider and enter it into the system to better establish budgets and consumption patterns.

Figure 129

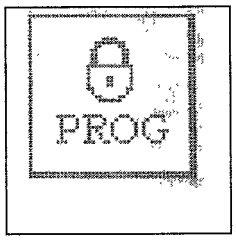


Figure 129 – 'Security Programming' allows the user to configure security system parameters. Selecting Figure 129 takes the user to Figure 153.

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Figure 153

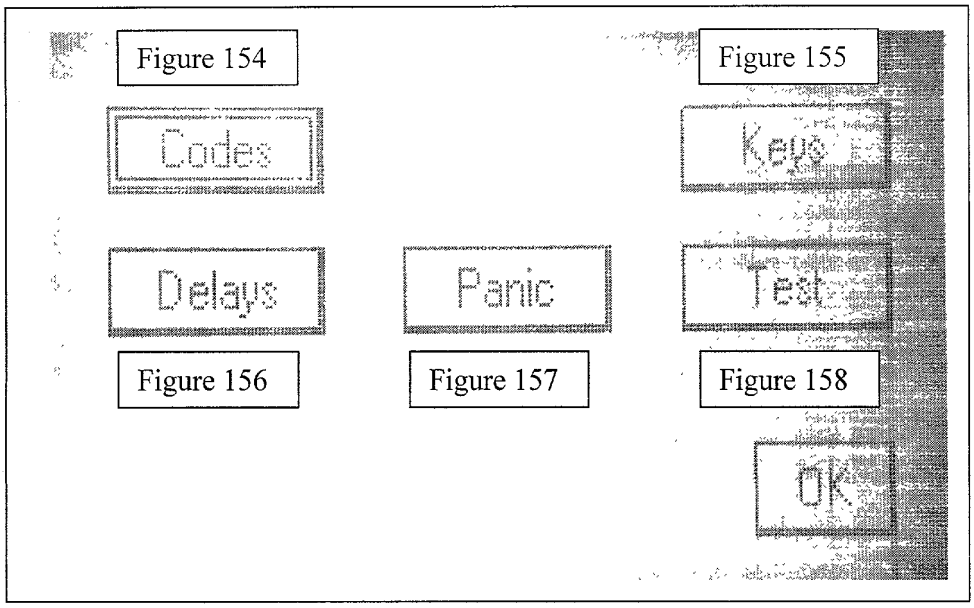


Figure 153 is the main navigation screen for the user configuration of security parameters, including code and key access, zone delays, panic settings and security system tests. Figure 153 includes the following Figures:

- Figure 154 – 'Codes' allows users to program the user level access codes for the system.
- Figure 155 – 'Keys' allows users to program the user level access Smart Keys for the system.
- Figure 154 – 'Delays' allows users to program the zone delays for each entry/exit security zone.
- Figure 154 – 'Panic' allows users to program the system response to a panic alarm.
- Figure 154 – 'Test' allows users to routinely test the security system.

Pressing 'OK' returns the use to Figure 122.

Figure 154

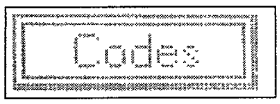


Figure 154 allows the user to program the user level access codes for the system. Selecting Figure 154 takes the user to Figure 159.

Figure 159

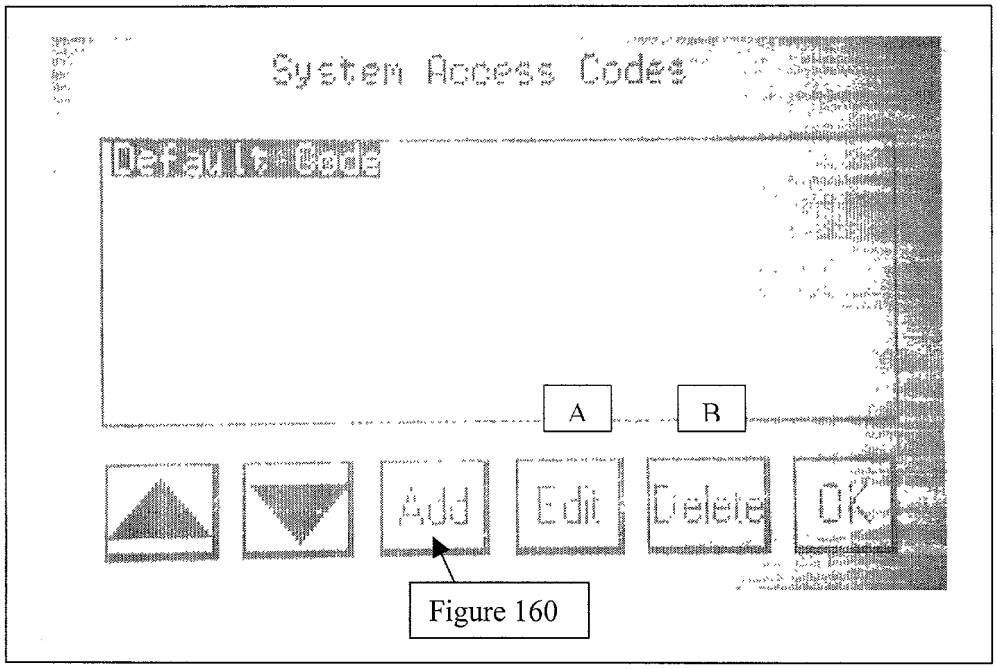
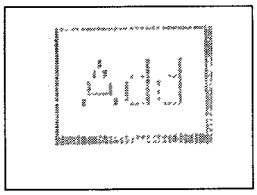


Figure 159 lists the names of the users programmed into the system. Presently, only the default code is programmed into the system. The 'up' and 'down' arrows allow the user to scroll through the codes programmed into the system. Selecting Figure 160 will take the user to Figure 161 where user codes can be added. To modify existing user codes, the user can press the 'Edit' button labeled 'A' within Figure 159. Codes that the user wishes to be deleted are done so by scrolling the highlight to the proper code and pressing the Delete icon labeled 'B'.

Pressing 'OK' returns the use to Figure 153.

6,693,561 - 6/2004

Figure 160



Selecting Figure 160 will take the user to Figure 161 where user codes can be added.

Figure 161

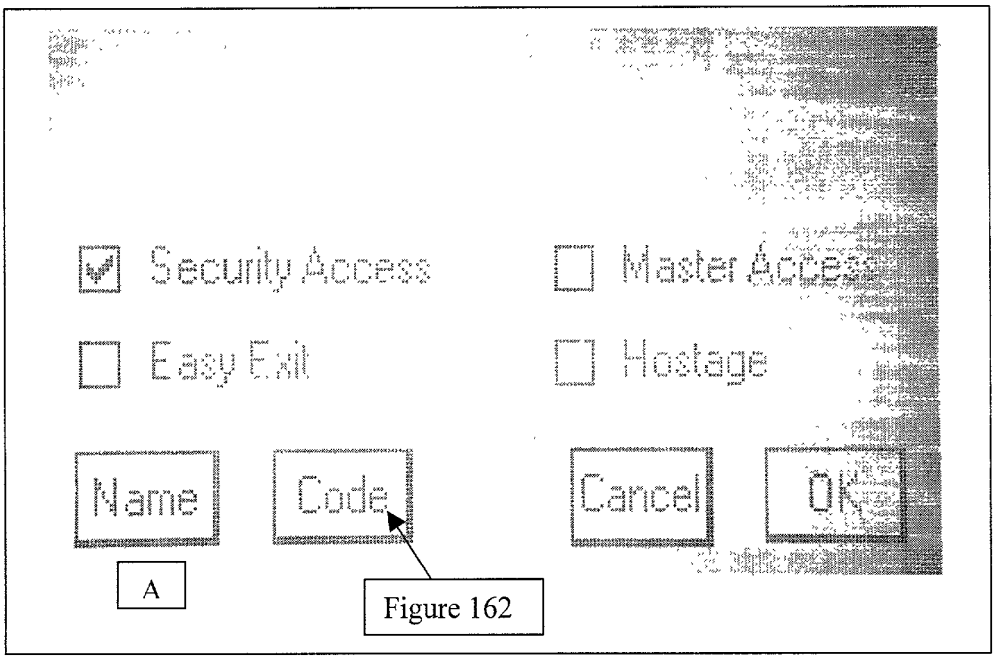
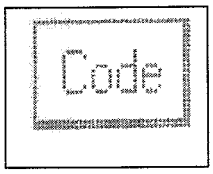


Figure 161 allows the user to program the type of access code, as well as the code itself. To enter in the code label the user selects the 'Name' icon labeled 'A' within Figure 161 and is taken to the alphanumeric keypad to enter the name. Selecting Figure 162 within Figure 161 takes the user to Figure 163 for code entry.

After the name and code are entered into Figure 161 above, the user may choose the level of access for that particular code. For example, the user may choose to give a contractor a code that allows security arming only, called 'Easy Exit', so that they do not have full time access. Hostage codes would activate a silent alarm in the event that it was entered. Security access allows normal operation of the security system and master access would allow access to all areas of user programming and energy management overrides.
Pressing 'Cancel' will clear the changed information and pressing 'OK' will return the user to Figure 159.

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Figure 162



Selecting Figure 162 takes the user to Figure 163.

Figure 163

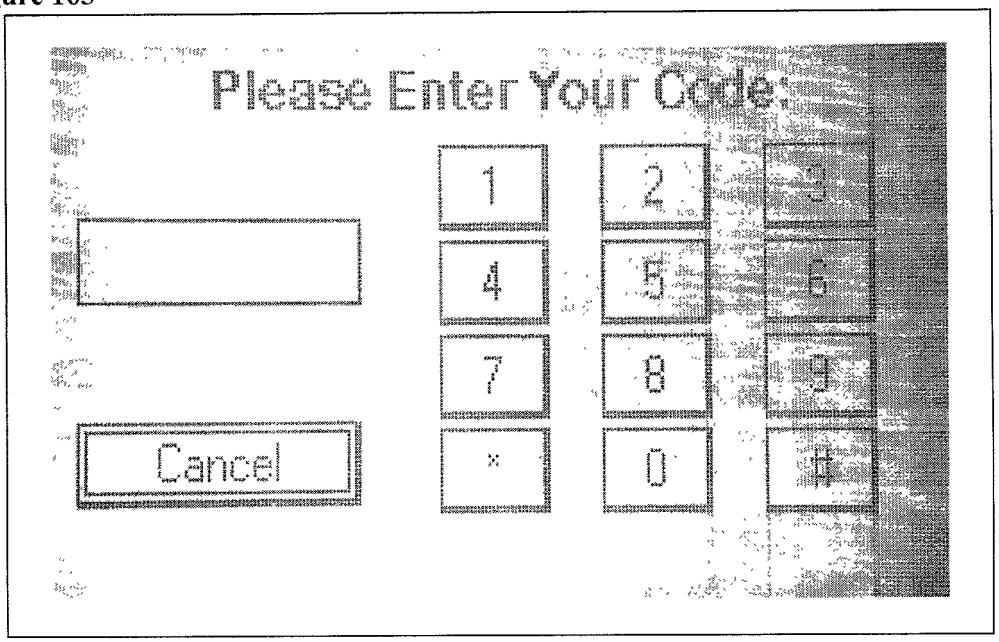


Figure 163 allows the user to enter the actual access code that will be programmed into the system. The code itself must be five characters in length to return the user to Figure 161.

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Figure 156

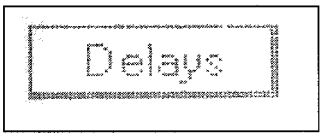


Figure 154 – 'Delays' allows users to program the zone delays for each entry/exit security zone. Selecting Figure 156 will take the user to Figure 164.

Figure 164

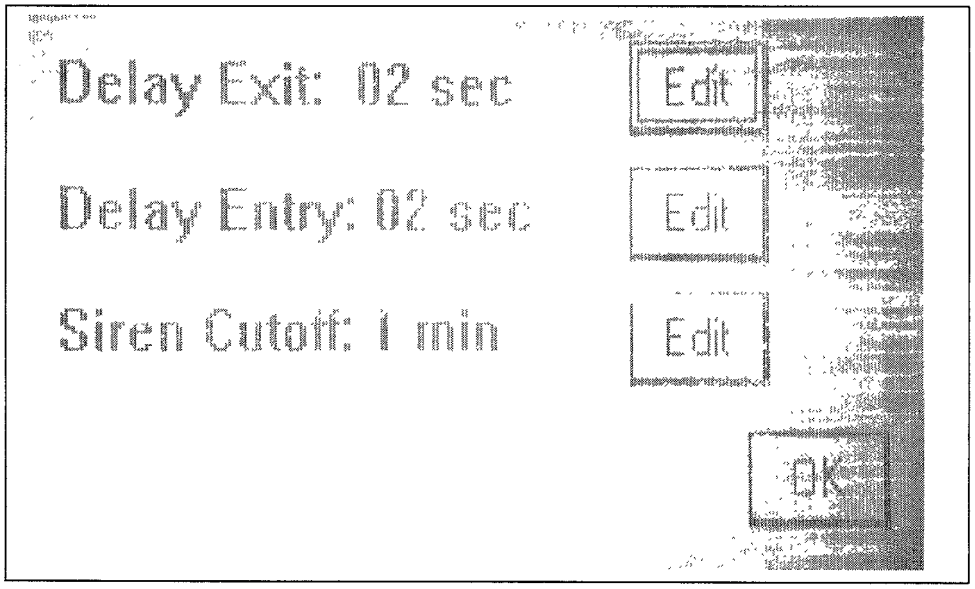


Figure 164 allows the user to configure the length of the delay time for each entry/exit zone and the amount of time the siren will sound during an alarm before shutting off. To adjust the times listed next to each field the user presses the 'Edit' button on the same horizontal plane within Figure 164.

Pressing 'OK' returns the use to Figure 153.

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Figure 157



Figure 154 – 'Panic' allows users to program the system response to a panic alarm. Selecting Figure 157 takes the user to Figure 165.

Figure 165

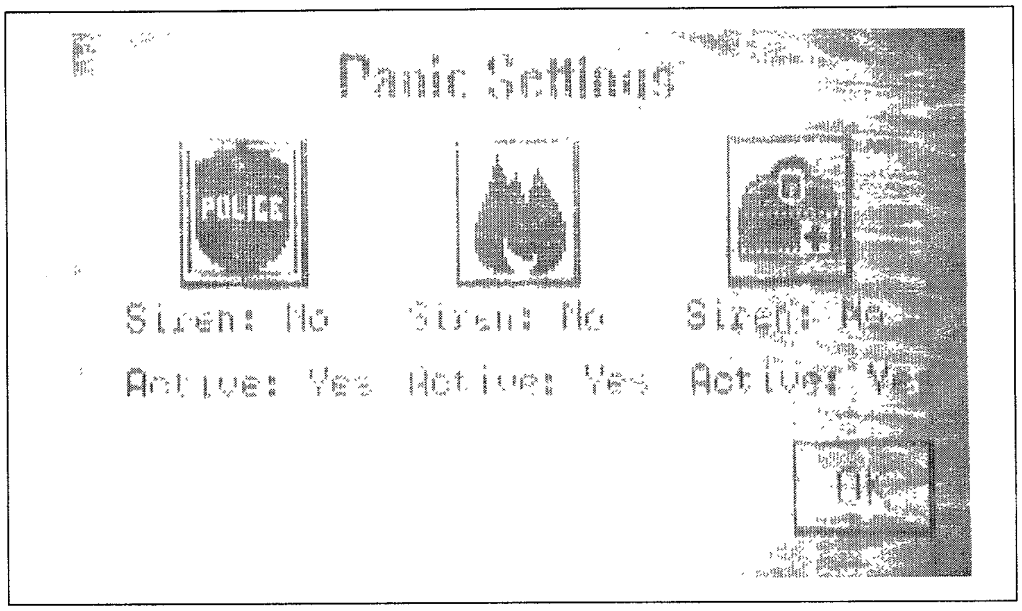


Figure 165 allows the user to declare whether the system will respond to each Panic setting and whether or not the siren will sound during this alarm.

Pressing 'OK' returns the use to Figure 153.

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Figure 155

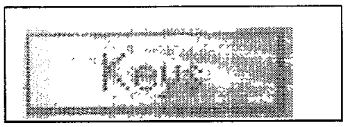


Figure 155 – 'Keys' allows users to program the user level access Smart Keys for the system. Selecting Figure 155 takes the user to Figure 166.

Figure 166

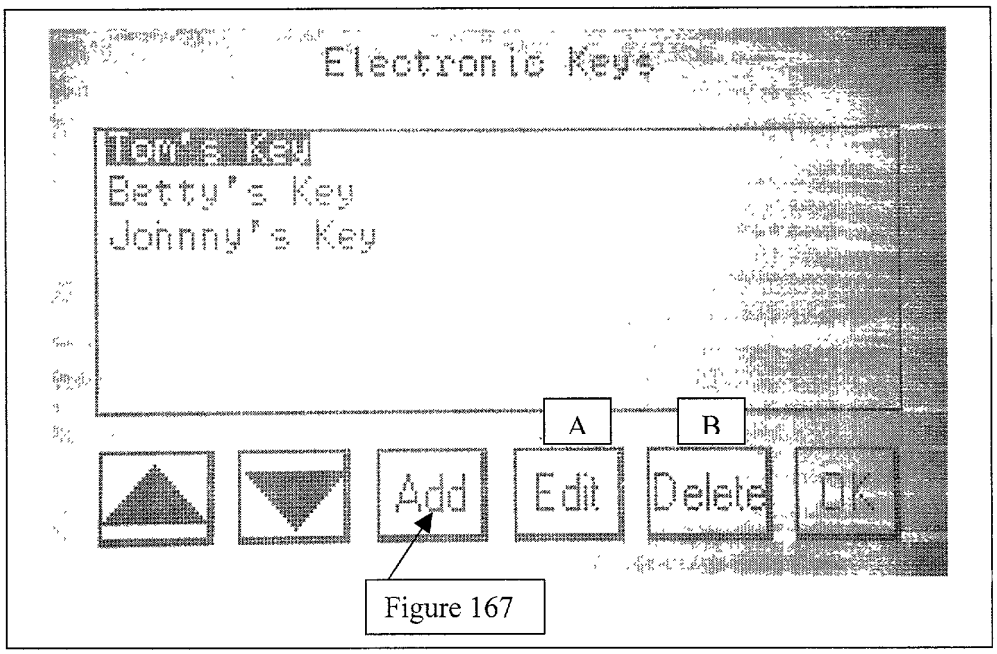
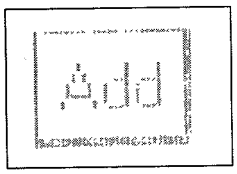


Figure 166 lists the names of the Smart Key users programmed into the system. The 'up' and 'down' arrows allow the user to scroll through the codes programmed into the system. Selecting Figure 167 will take the user to Figure 168 where Smart Keys can be added. To modify existing Smart Keys, the user can press the 'Edit' button labeled 'A' within Figure 166. Smart Keys that the user wishes to be deleted are done so by scrolling the highlight to the proper Key and pressing the Delete icon labeled 'B'.

Pressing 'OK' returns the use to Figure 153.

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Figure 167



Selecting Figure 167 will take the user to Figure 168 where Smart Keys can be added.

Figure 168

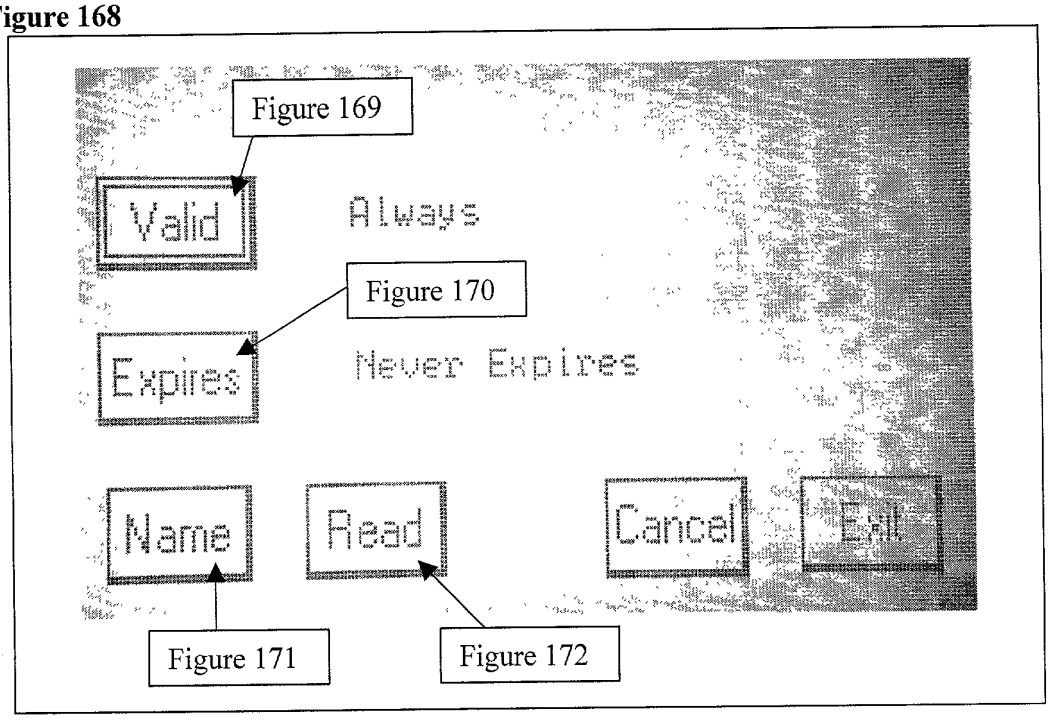


Figure 168 is the main navigation screen for Smart Key configuration. Figure 168 includes the following Figures:

- Figure 169 – 'Valid' toggles the users ability to use this Smart Key between Always, Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, Saturdays, Sundays, Days, Nights, Weekends and Weekdays.
- Figure 170 – 'Expires' takes the user to a screen where the time, month, date and year can be programmed where they key will be removed from the system.
- Figure 171 – 'Name' allows the user to configure the name of the Smart Key User.
- Figure 170 – 'Read' prompts the user to place the key onto a Smart Key Reader to 'read' the key into the system.

'Cancel' clears recent changes and pressing 'Exit' returns the user to Figure 153.

Figure 171

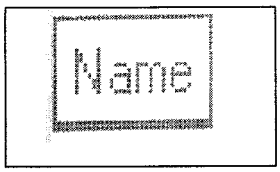


Figure 171 – 'Name' allows the user to configure the name of the Smart Key User. Selecting Figure 171 takes the user to Figure 173.

Figure 173

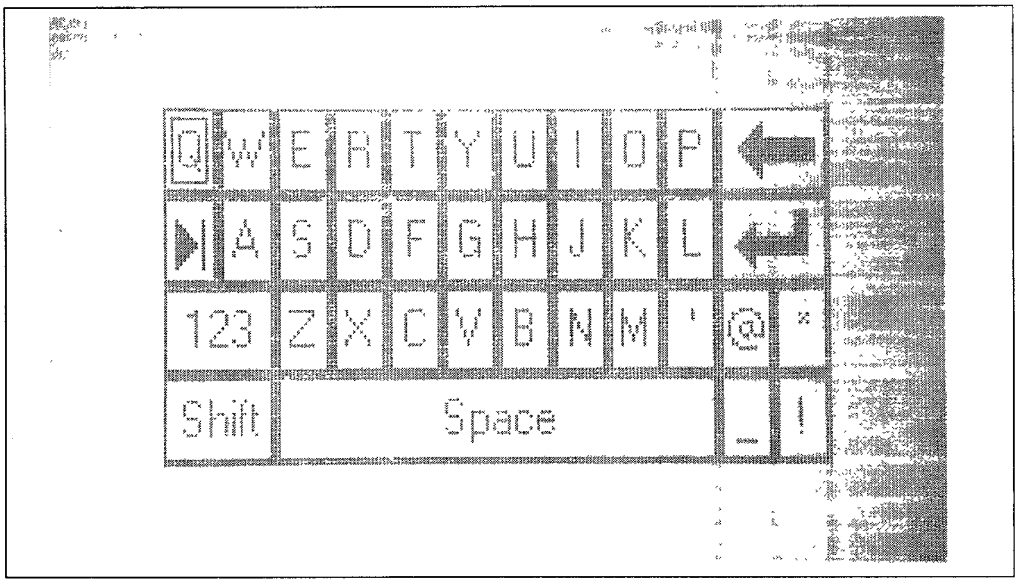
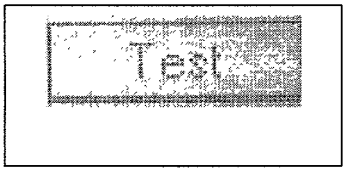


Figure 173 is the alphanumeric keypad to custom label the desired Smart Key.

Figure 158



Pressing Figure 158 sounds an alarm for 3 seconds to test the system functionality on a routine basis.

Figure 119

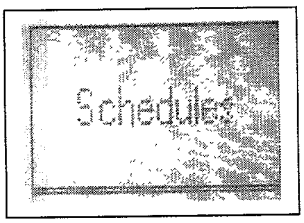


Figure 119 – 'Schedules' allows the user to set feature schedules. Selecting Figure 119 takes the user to Figure 174.

Figure 174

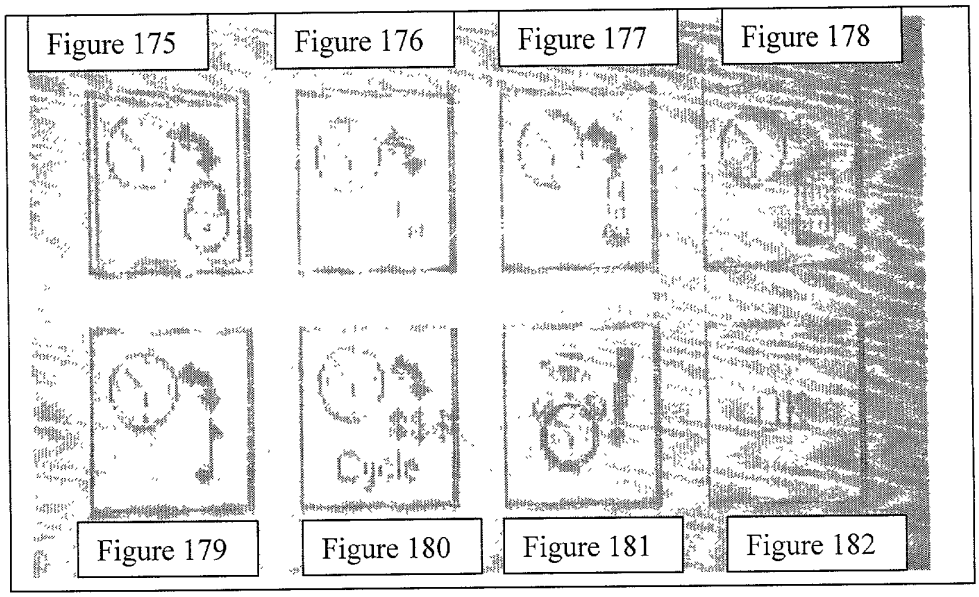


Figure 174 is the primary navigational screen for programming scheduled features by the user. Figure 174 includes:

- Figure 175 – 'Security Scheduling' allows the user to configure scheduled security arming and disarming.
- Figure 176 – 'Lighting Scheduling' allows the user to configure scheduled lighting turning on and off.
- Figure 177 – 'Temperature Scheduling' allows the user to configure scheduled temperature settings.
- Figure 178 – 'Outlet Scheduling' allows the user to configure scheduled outlets turning on and off.
- Figure 179 – 'Audio Scheduling' allows the user to configure scheduled audio zones turning on and off.
- Figure 178 – 'EM Cycle Scheduling' allows the user to configure scheduled EM cycles turning on and off.
- Figure 177 – 'Reminders' allows the user to configure and schedule tasks and reminders.

Pressing Figure 182, 'OK' returns the user to Figure 117.

Figure 175

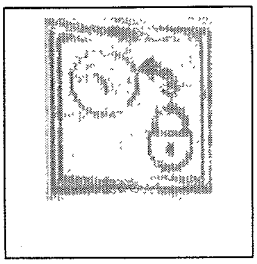


Figure 175 – 'Security Scheduling' allows the user to configure scheduled security arming and disarming. Selecting Figure 175 takes the user to Figure 183.

Figure 183

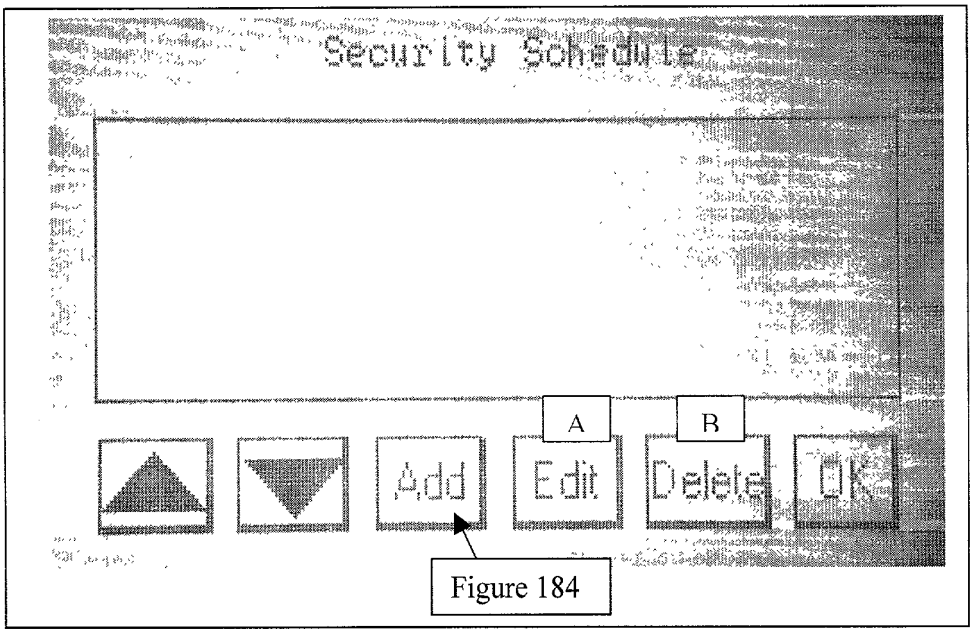
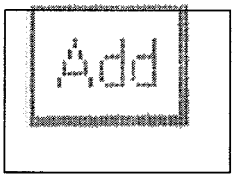


Figure 183 lists security scheduling events programmed into the system. Presently, there are no security schedules programmed into the system. The 'up' and 'down' arrows within Figure 183 allow the user to scroll through the codes programmed into the system. Selecting Figure 184 will take the user to Figure 185 where security schedules can be added. To modify existing security schedules, the user can press the 'Edit' button labeled 'A' within Figure 183. Security schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

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Figure 184



Selecting Figure 184 – 'Add' takes the user to Figure 185 to add commands to the security schedule.

Figure 185

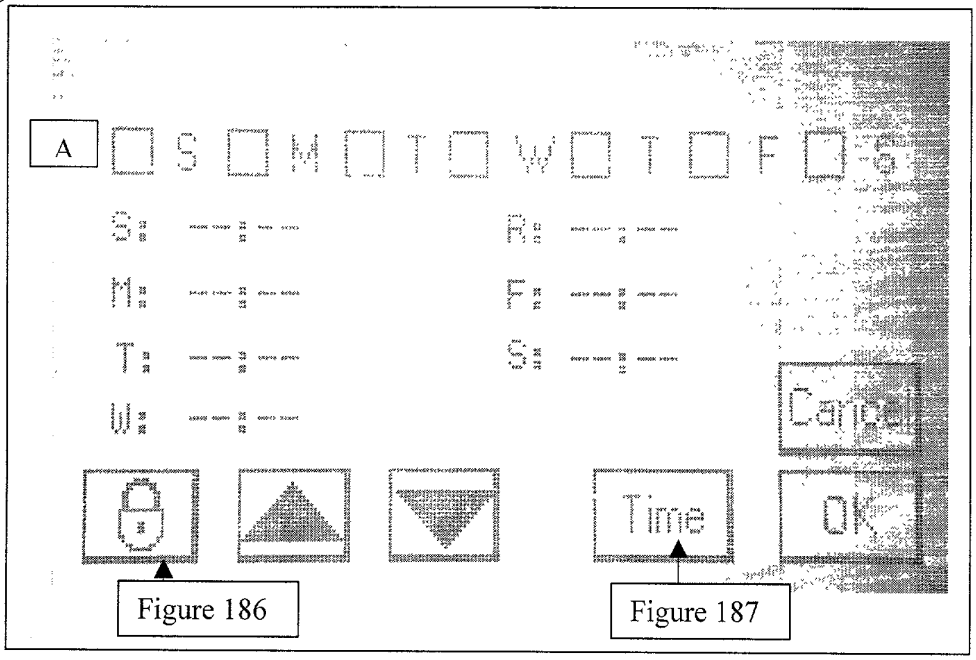


Figure 185 allows the user to specify the exact date and times for security schedules. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 185 allow the user to scroll through multiple security schedules.

- Figure 186 takes the user to Figure 188 to choose the scheduled security level.
- Figure 187 takes the user to Figure 189 to choose the exact time the schedule is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 183.

Figure 186

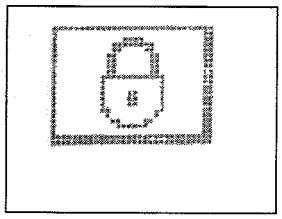


Figure 186 takes the user to Figure 188 to choose the scheduled security level.

Figure 188

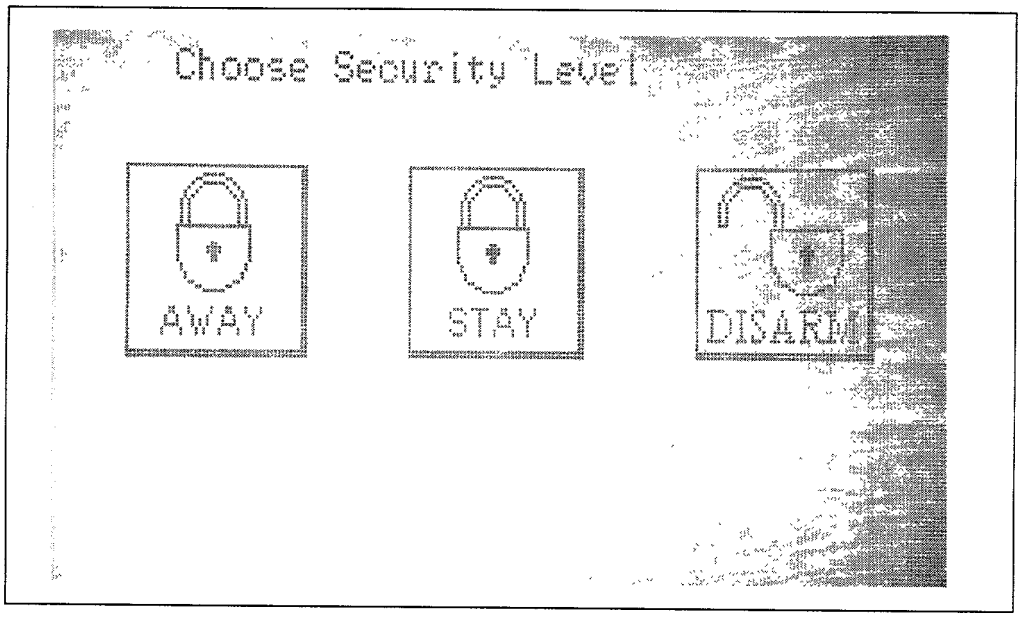


Figure 188 allows the user to choose the desired security level for the schedule being programmed. For example, the user may wish to have the security system to be armed in the Stay mode every night by 11pm, if the system is not already in that state. Choosing a security level returns the user to Figure 185.

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Figure 187

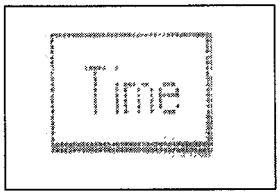


Figure 187 takes the user to Figure 189 to choose the exact time the schedule is initiated.

Figure 189

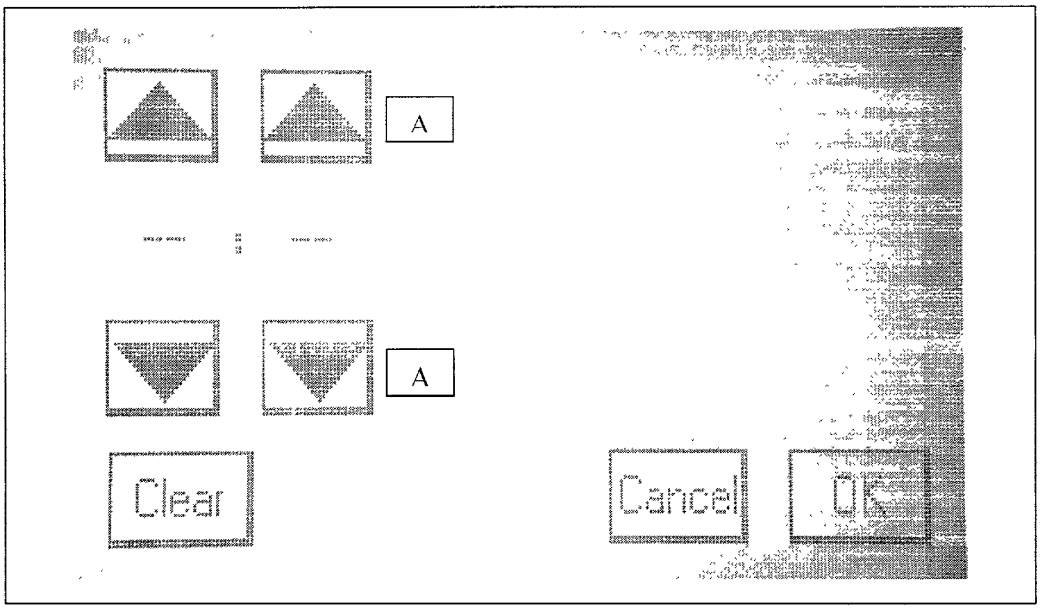


Figure 189 displays the schedule time when configured through the arrows labeled 'A' above below the empty time figure.

The Clear icon clears the current data displayed within Figure 189. The Cancel icon cancels any changes.

Pressing 'OK' returns the user to Figure 185.

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Figure 176

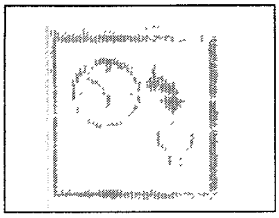


Figure 176 – 'Lighting Scheduling' allows the user to configure scheduled lighting turning on and off. Selecting Figure 176 takes the user to Figure 190.

Figure 190

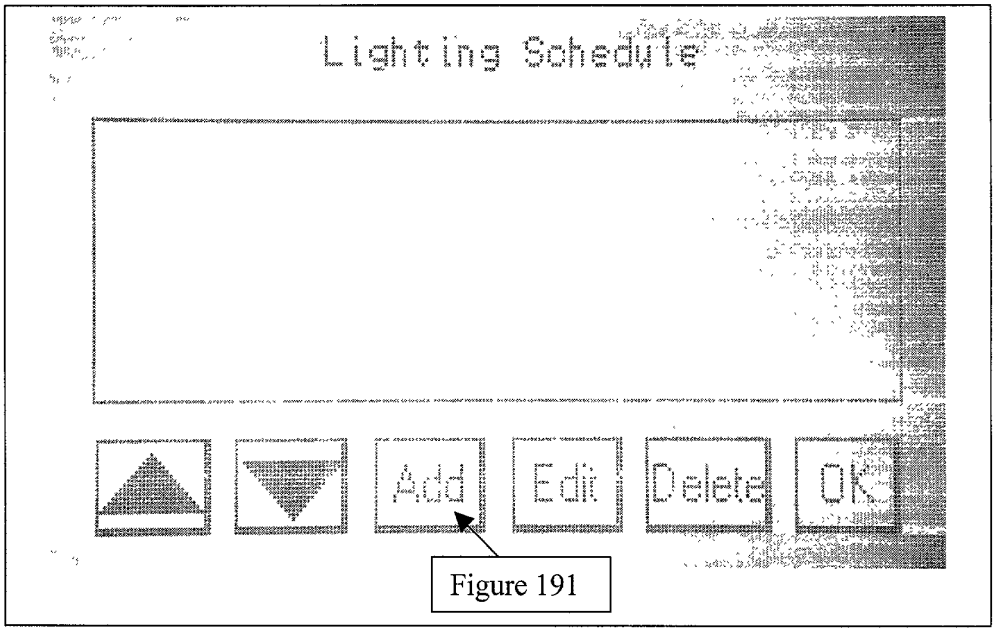
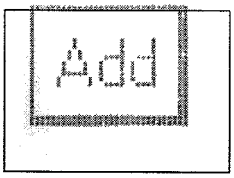


Figure 190 lists lighting scheduling events programmed into the system. Presently, there are no lighting schedules programmed into the system. The 'up' and 'down' arrows within Figure 190 allow the user to scroll through the codes programmed into the system. Selecting Figure 191 will take the user to Figure 192 where lighting schedules can be added. To modify existing lighting schedules, the user can press the 'Edit' button labeled 'A' within Figure 190. Lighting schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

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Figure 191



Selecting Figure 191 – 'Add' takes the user to Figure 192 to add commands to the lighting schedule.

Figure 192

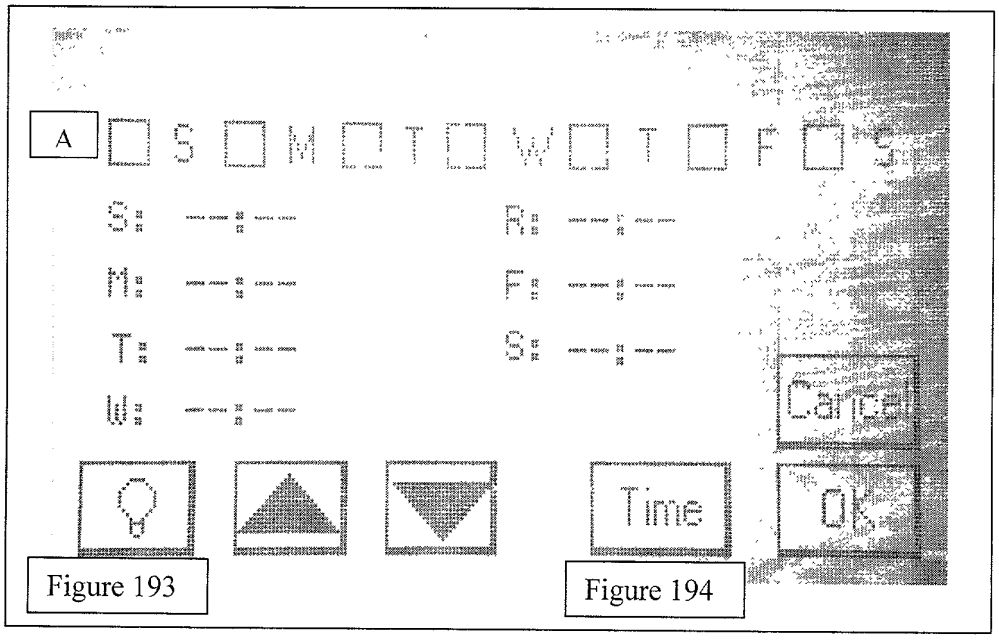


Figure 192 allows the user to specify the exact date and times for lighting schedules. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 192 allow the user to scroll through multiple lighting schedules.

- Figure 193 takes the user to Figure 195 to choose the scheduled lighting level.
- Figure 194 takes the user to Figure 196 to choose the exact time the schedule is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 190.

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Figure 193

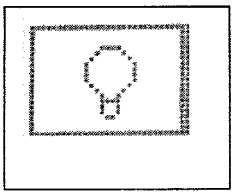


Figure 193 takes the user to Figure 195 to choose the scheduled lighting level.

Figure 195

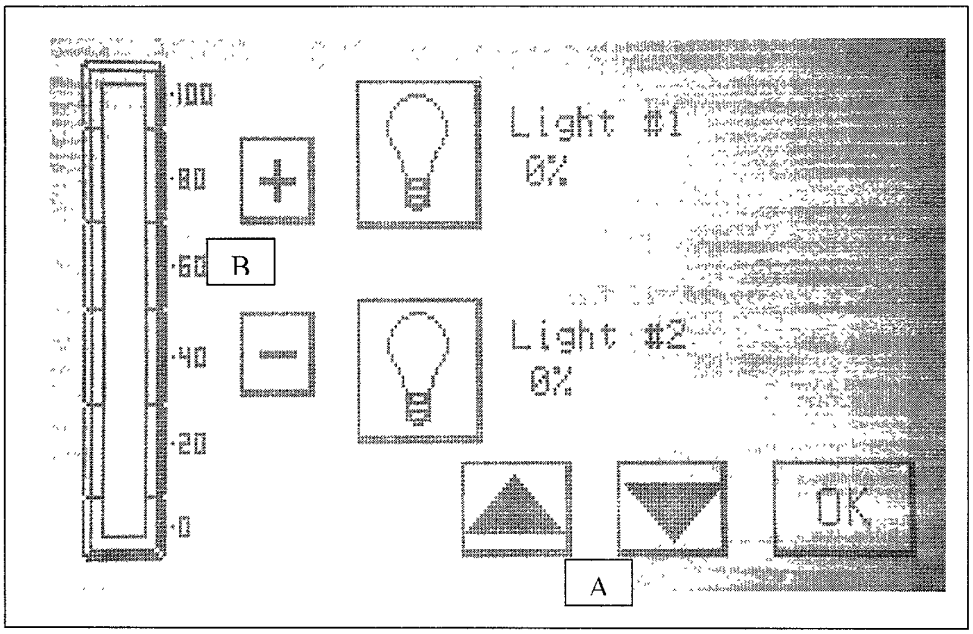


Figure 195 allows the user to choose the desired lighting level for the schedule being programmed. To scroll between controlled lights the user selects the 'up' and 'down' arrows labeled 'A' to add more lights to the schedule. Once a controlled light is selected the user chooses the illumination value on the power bar labeled 'B' or the adjacent +/-.

Pressing 'OK' returns the user to Figure 192.

Figure 194

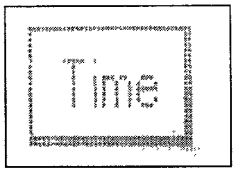


Figure 194 takes the user to Figure 196 to choose the exact time the schedule is initiated.

Figure 196

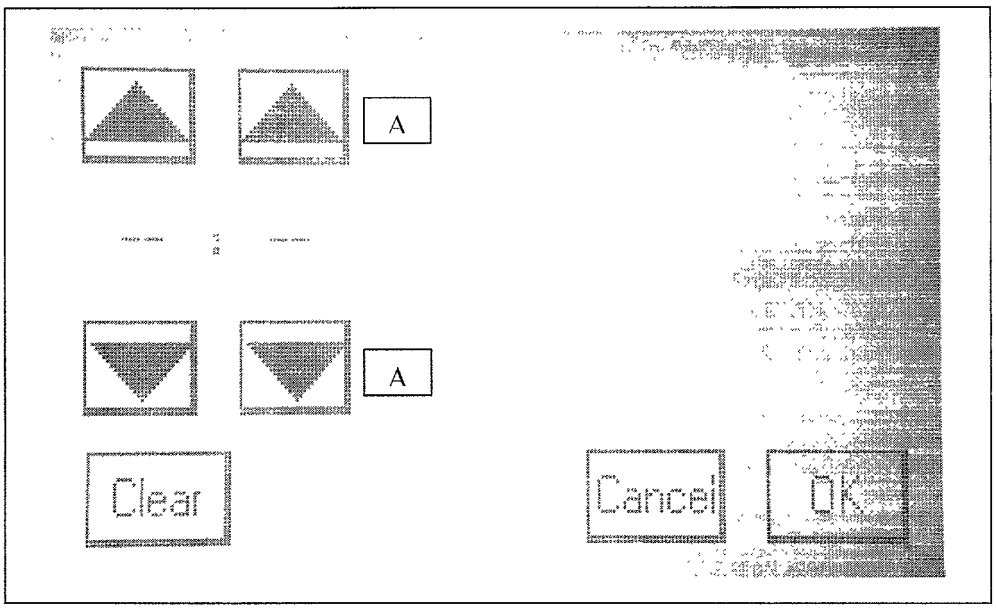


Figure 196 displays the schedule time when configured through the arrows labeled 'A' above below the empty time figure.

The Clear icon clears the current data displayed within Figure 196. The Cancel icon cancels any changes.

Pressing 'OK' returns the user to Figure 192.

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Figure 197

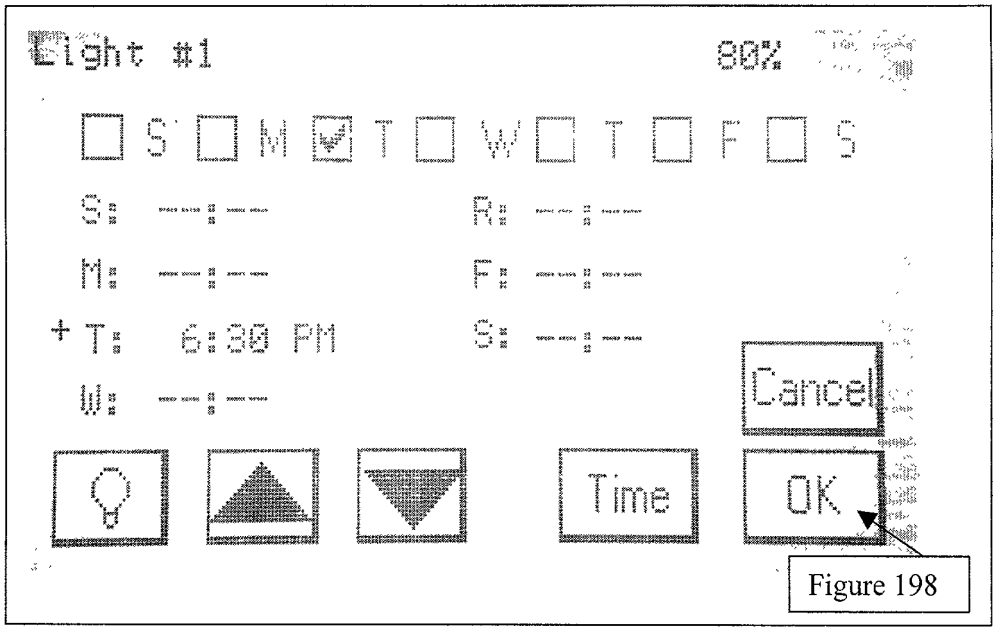


Figure 197 is a sample lighting schedule screen where Light #1 will illuminate to 80% on Tuesday at 6:30pm.

Figure 198

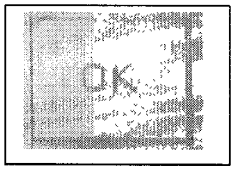


Figure 198 takes the user to Figure 199.

6653544.1

Figure 199

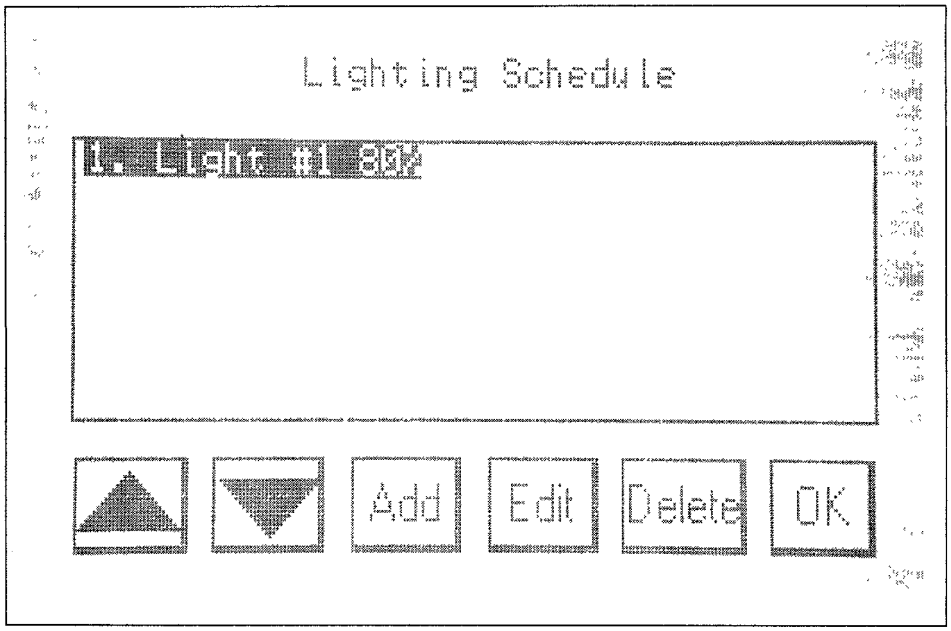


Figure 199 is a sample lighting schedule screen where Light #1 will illuminate to 80% in a programmed lighting schedule.

9695514.1

Figure 177

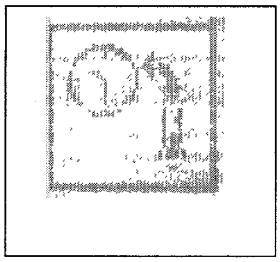


Figure 177 – 'Temperature Scheduling' allows the user to configure scheduled temperature settings. Selecting Figure 177 takes the user to Figure 200.

Figure 200

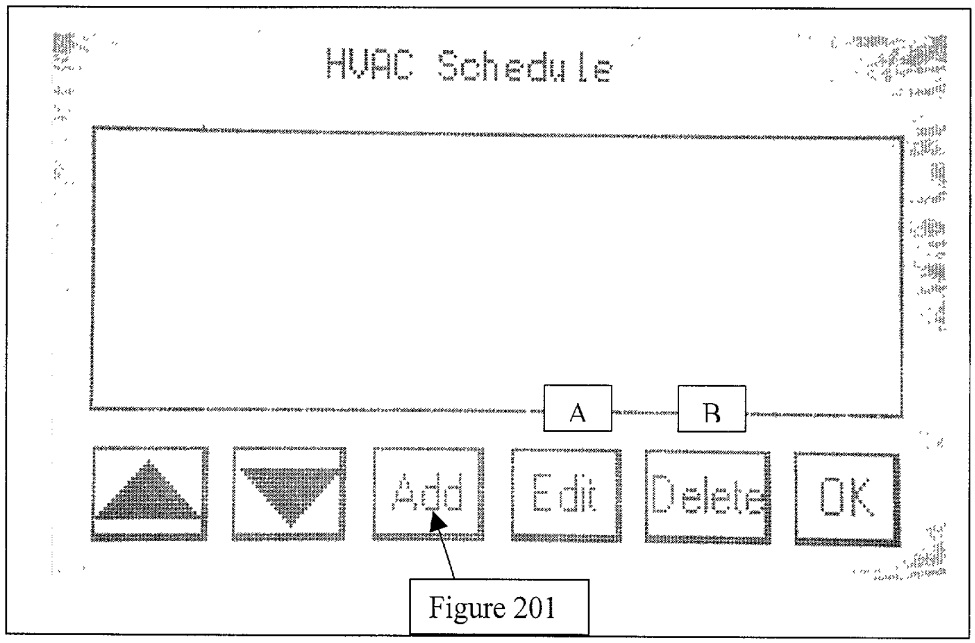
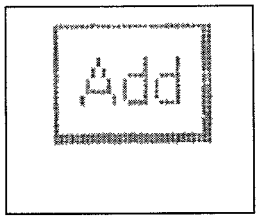


Figure 200 lists HVAC scheduling events programmed into the system. Presently, there are no HVAC schedules programmed into the system. The 'up' and 'down' arrows within Figure 200 allow the user to scroll through the HVAC schedules programmed into the system. Selecting Figure 201 will take the user to Figure 202 where HVAC schedules can be added. To modify existing HVAC schedules, the user can press the 'Edit' button labeled 'A' within Figure 200. HVAC schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

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Figure 201



Selecting Figure 201 – 'Add' takes the user to Figure 202 to add commands to the HVAC schedule.

Figure 202

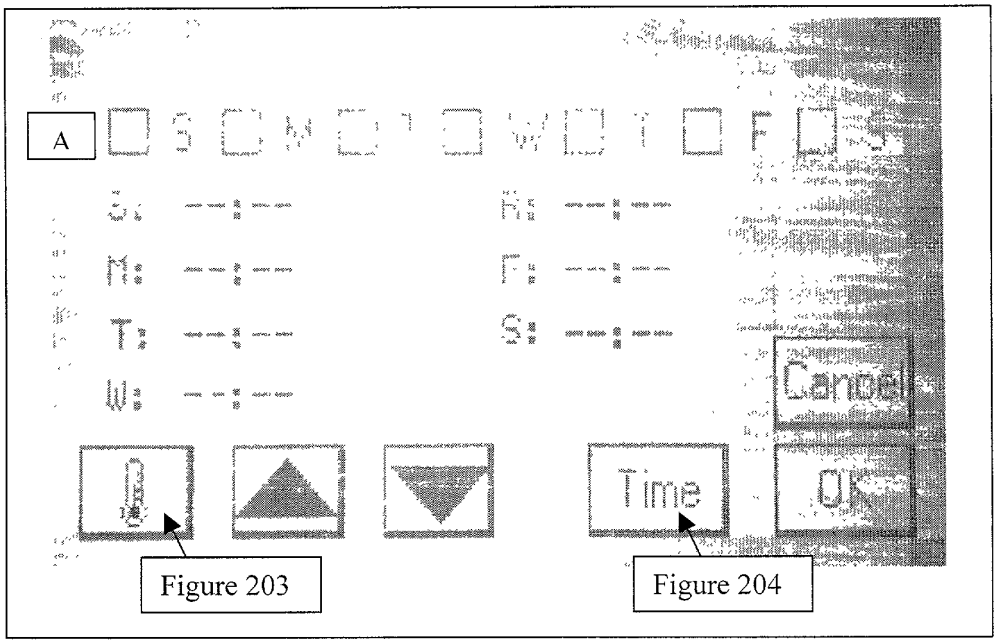


Figure 202 allows the user to specify the exact date and times for HVAC schedules. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 202 allow the user to scroll through multiple HVAC schedules.

- Figure 203 takes the user to Figure 205 to choose the scheduled HVAC level.
- Figure 204 takes the user to Figure 207 to choose the exact time the schedule is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 200.

Figure 203

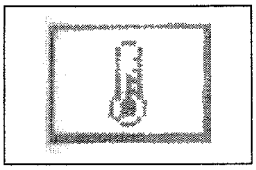


Figure 203 takes the user to Figure 205 to choose the scheduled HVAC level.

Figure 205

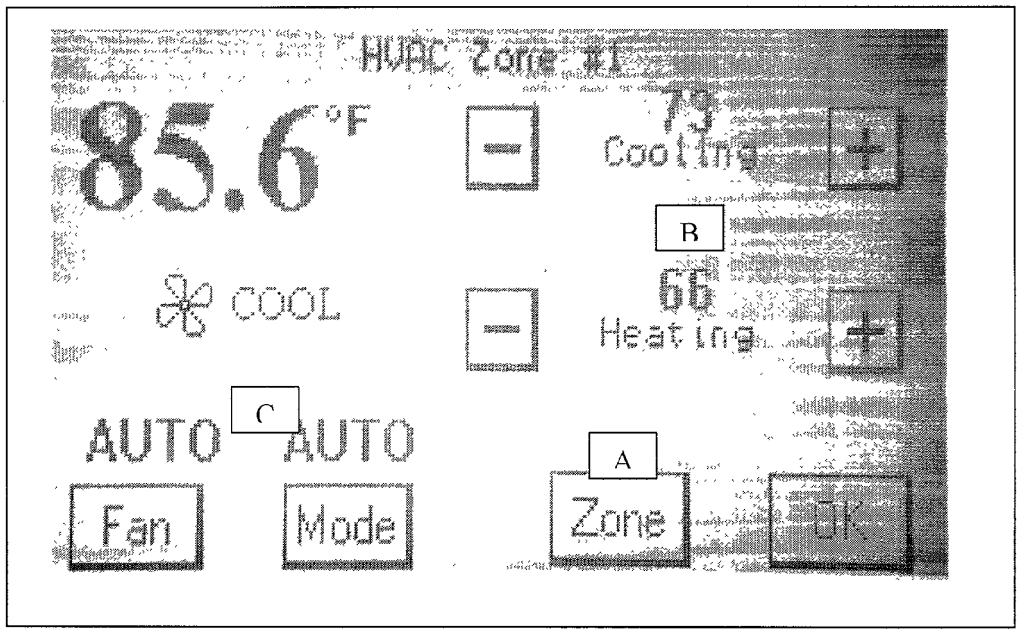


Figure 205 allows the user to choose the desired heating and cooling levels for the schedule being programmed. To scroll between controlled HVAC zones the user selects the zone icon labeled 'A' to add more zones to the schedule. Once a controlled zone is selected the user chooses the heating and cooling set points labeled 'B' as well as the Fan and Mode Status labeled 'C'.

Pressing 'OK' returns the user to Figure 202.

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Figure 204

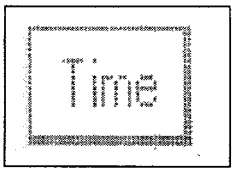


Figure 204 takes the user to Figure 206 to choose the exact time the schedule is initiated.

Figure 206

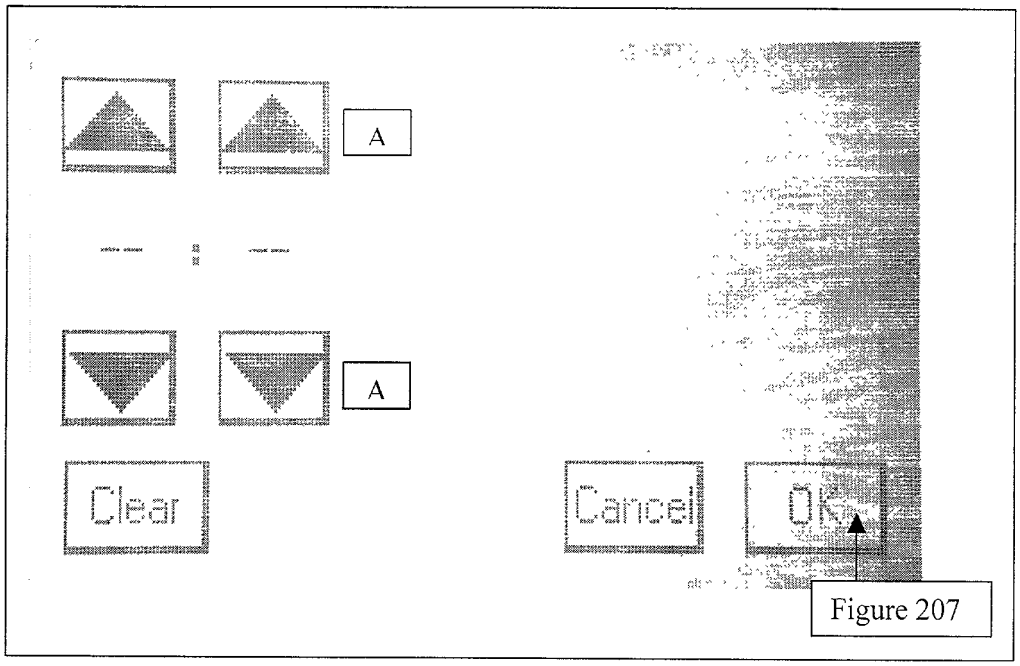
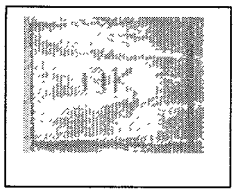


Figure 206 displays the schedule time when configured through the arrows labeled 'A' above below the empty time figure.

The Clear icon clears the current data displayed within Figure 206. The Cancel icon cancels any changes.

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Figure 207



Selecting Figure 207 within Figure 206 takes the user to Figure 208.

Figure 208

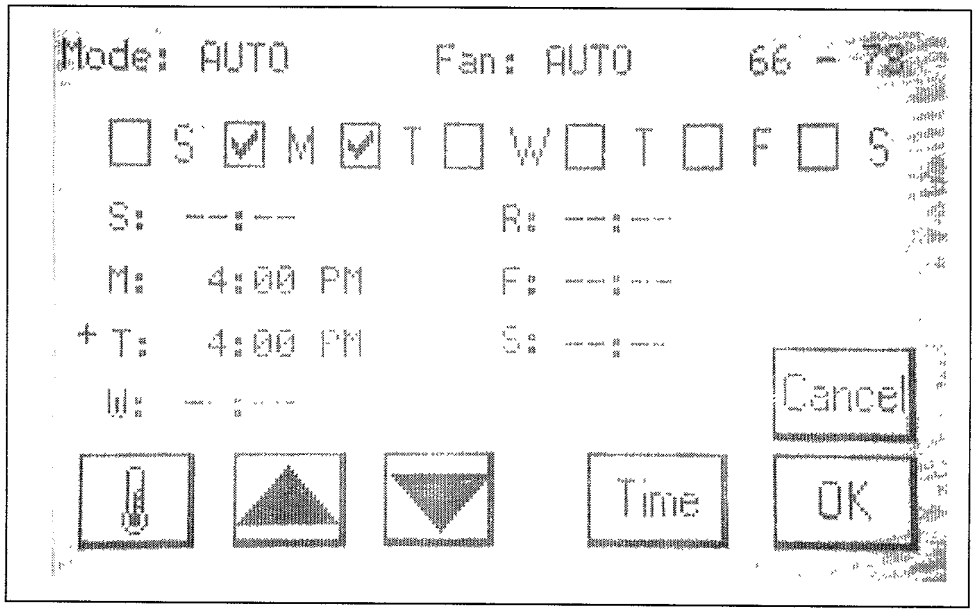


Figure 208 is a sample HVAC schedule screen where HVAC Zone #1 will have a 'auto' Mode and Fan status and a temperature range of 66 to 73 on Monday and Tuesday at 4pm.

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Figure 178

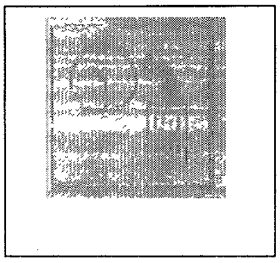


Figure 178 – 'Outlet Scheduling' allows the user to configure scheduled outlets turning on and off. Selecting Figure 178 takes the user to Figure 209.

Figure 209

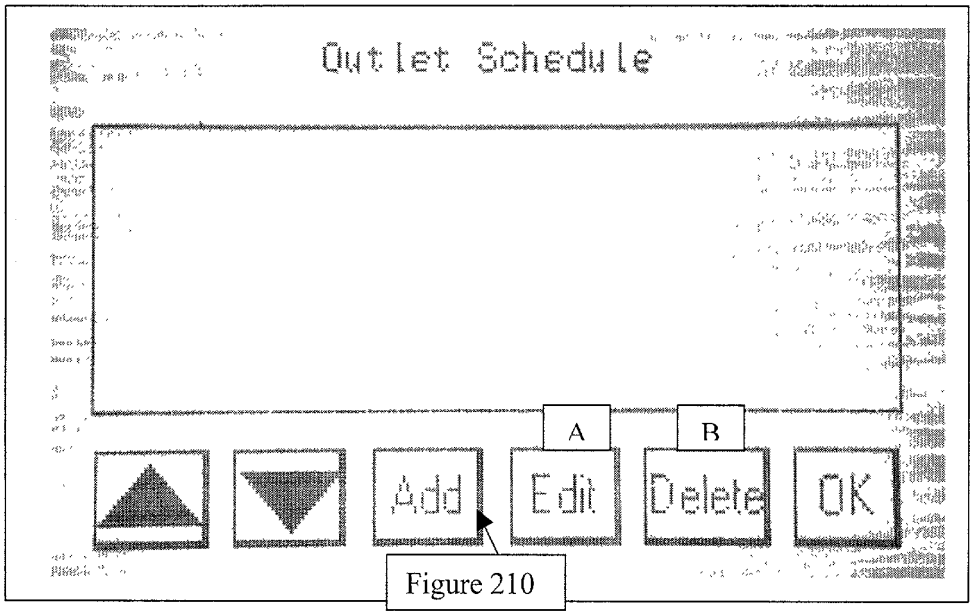
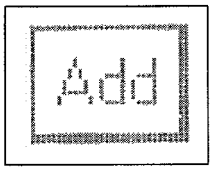


Figure 209 lists outlet scheduling events programmed into the system. Presently, there are no outlet schedules programmed into the system. The 'up' and 'down' arrows within Figure 209 allow the user to scroll through the outlets programmed into the system. Selecting Figure 210 will take the user to Figure 211 where outlet schedules can be added. To modify existing outlet schedules, the user can press the 'Edit' button labeled 'A' within Figure 209. Outlet schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

Figure 210



Selecting Figure 210 – 'Add' takes the user to Figure 211 to add commands to the Outlet schedule.

Figure 211

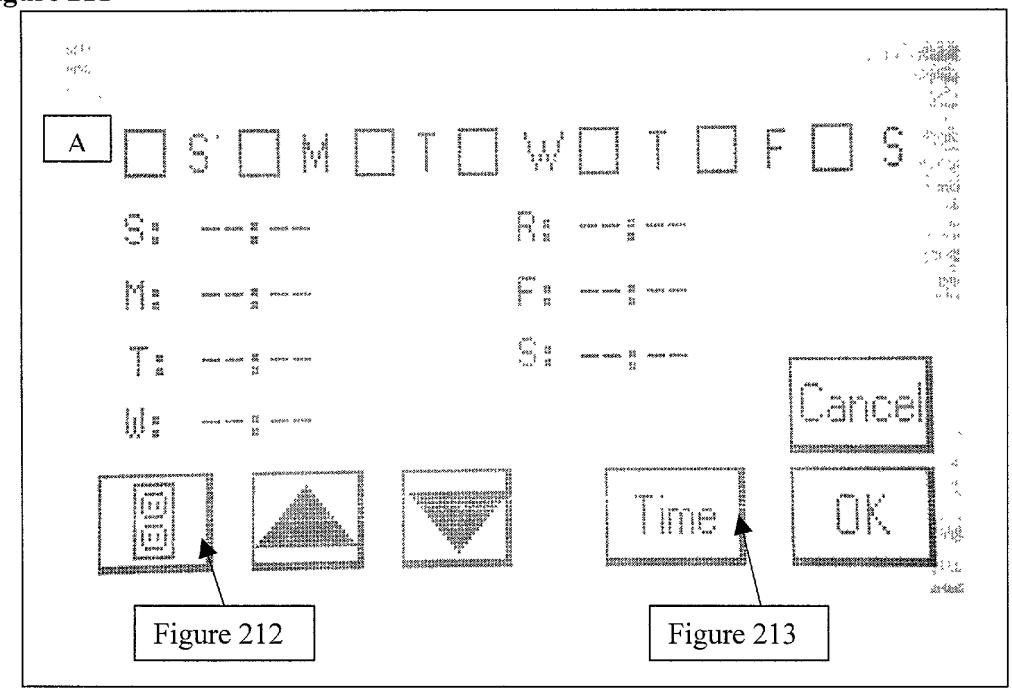


Figure 211 allows the user to specify the exact date and times for outlet schedules. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 211 allow the user to scroll through multiple outlet schedules.

- Figure 212 takes the user to Figure 214 to choose the scheduled outlet status.
- Figure 213 takes the user to Figure 215 to choose the exact time the schedule is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 209.

Figure 212

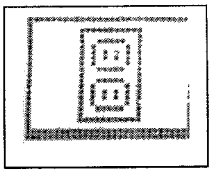


Figure 212 takes the user to Figure 214 to choose the scheduled outlet status.

Figure 214

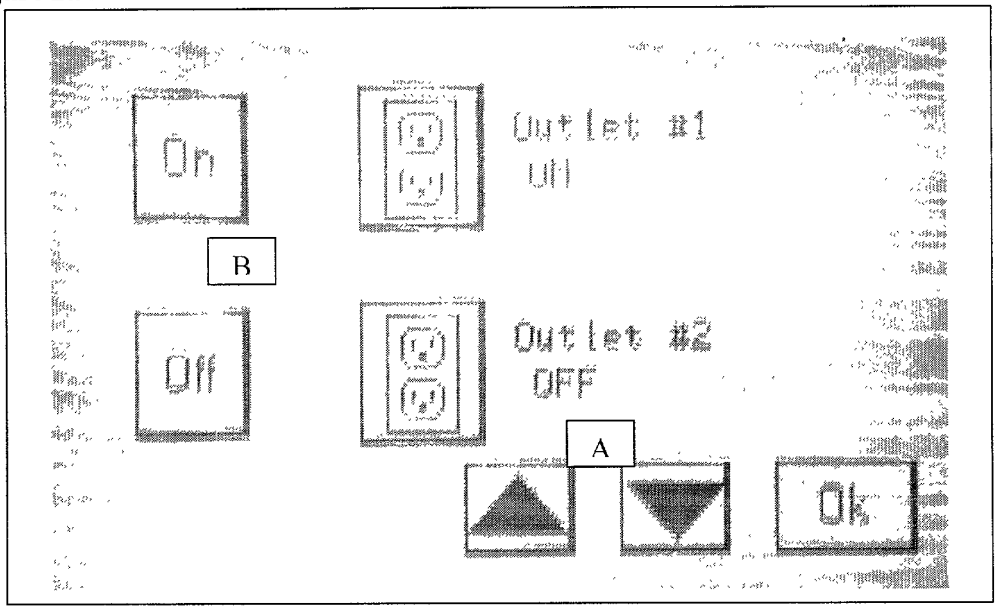


Figure 214 allows the user to choose the desired outlet status for the schedule being programmed. To scroll between controlled outlets the user selects the 'up' and 'down' arrows labeled 'A' to add more outlets to the schedule. Once a controlled outlet is selected the user chooses the On or Off status, labeled 'B' within Figure 214.

Pressing 'OK' returns the user to Figure 211.

Figure 213

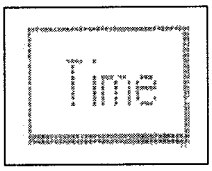


Figure 213 takes the user to Figure 215 to choose the exact time the schedule is initiated.

Figure 215

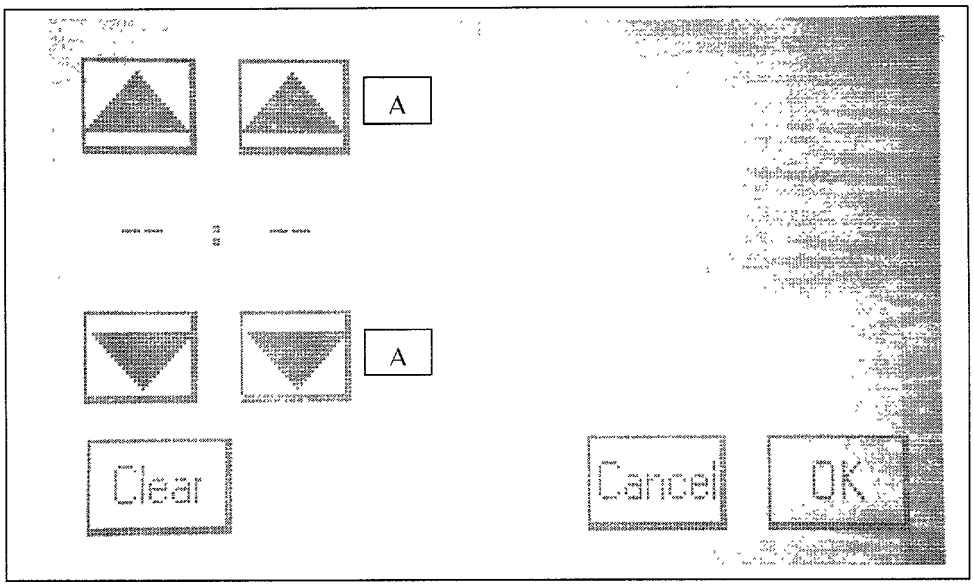


Figure 215 displays the schedule time when configured through the arrows labeled 'A' above below the empty time figure.

The Clear icon clears the current data displayed within Figure 215. The Cancel icon cancels any changes.

Pressing 'OK' returns the user to Figure 211.

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Figure 179

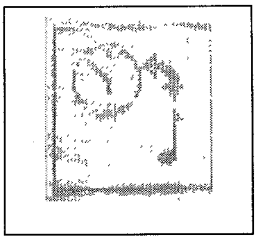


Figure 179 – 'Audio Scheduling' allows the user to configure scheduled audio zones turning on and off. Selecting Figure 179 takes the user to Figure 216.

Figure 216

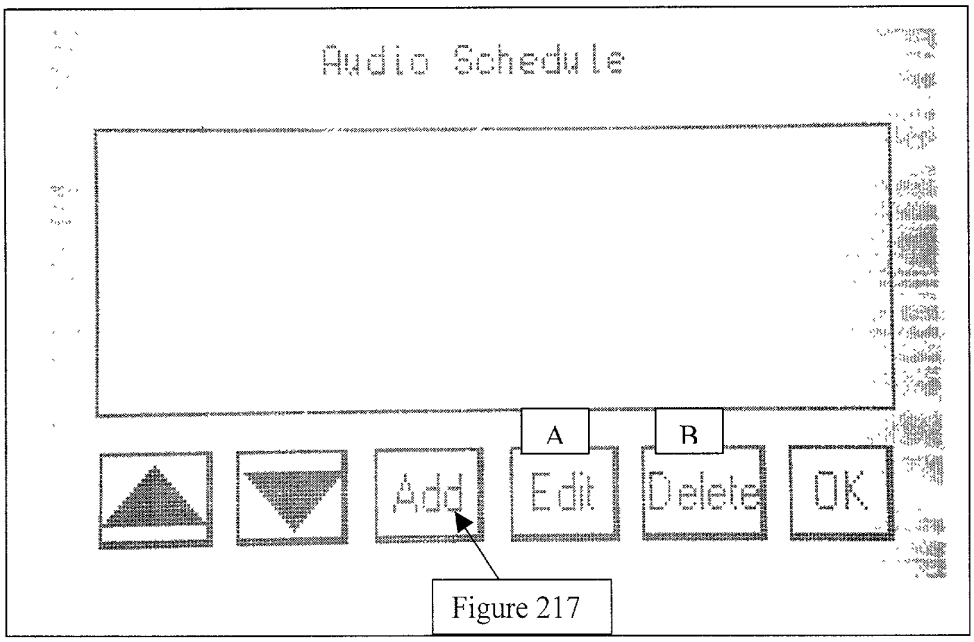
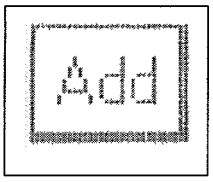


Figure 216 lists audio scheduling events programmed into the system. Presently, there are no audio schedules programmed into the system. The 'up' and 'down' arrows within Figure 216 allow the user to scroll through the schedules programmed into the system. Selecting Figure 217 will take the user to Figure 218 where audio schedules can be added. To modify existing audio schedules, the user can press the 'Edit' button labeled 'A' within Figure 216. Audio schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

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Figure 217



Selecting Figure 217 – 'Add' takes the user to Figure 218 to add commands to the audio schedule.

Figure 218

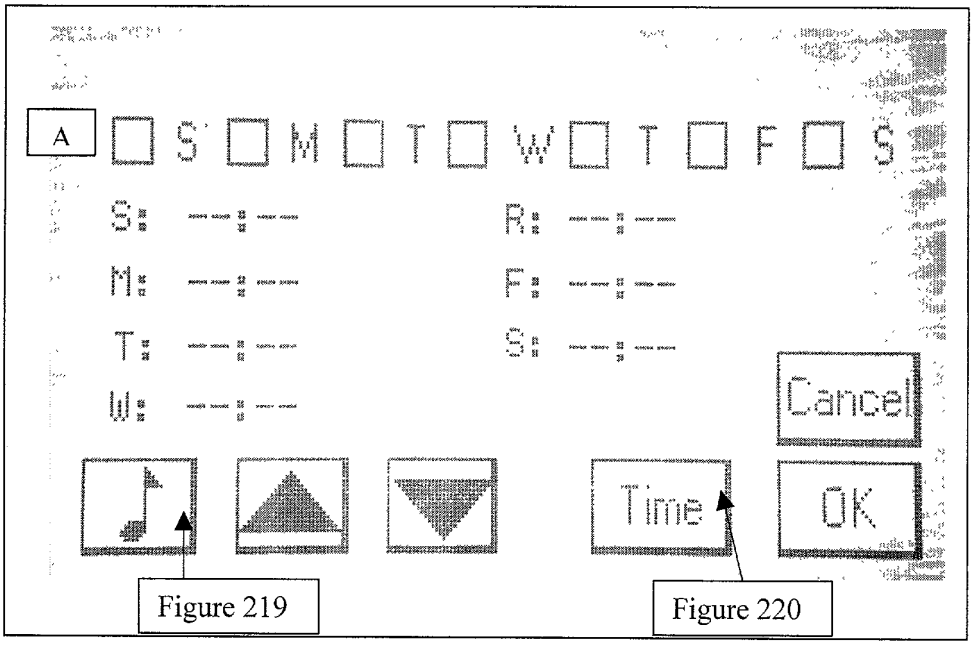


Figure 218 allows the user to specify the exact date and times for audio schedules. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 218 allow the user to scroll through multiple audio schedules.

- Figure 219 takes the user to Figure 221 to choose the scheduled audio zone.
- Figure 220 takes the user to Figure 222 to choose the exact time the schedule is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 216.

Figure 219

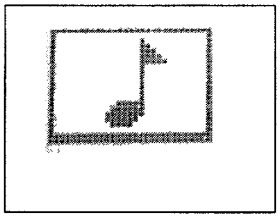


Figure 219 takes the user to Figure 221 to choose the scheduled audio zone.

Figure 221

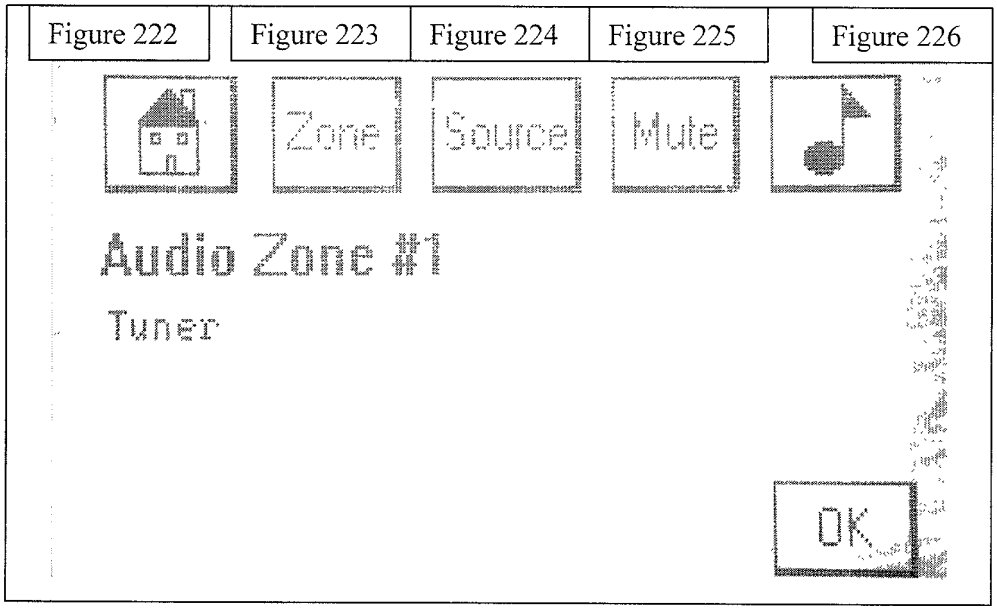


Figure 221 is the main navigational menu for the audio scheduling portion of the system. Figure 221 includes these additional figures:

- Figure 222 – 'House' allows the user to select All Zones for immediate control.
- Figure 223 – 'Zone' allows the user to select individual zones for control.
- Figure 224 – 'Source' allows the user to toggle between the sources connected to the system.
- Figure 225 – 'Mute' allows the user to mute the zone or zones being controlled.
- Figure 226 – 'Music Note' functions as an On/Off switch for the zone or zones being controlled.

Functional Description:
A.) 'Audio Zone #1' – References that the touchscreen is presently set to control audio zone #1.
B.) 'Tuner' – The current source for Audio Zone #1.

Pressing the 'OK' icon returns the user to Figure 218.

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Figure 223

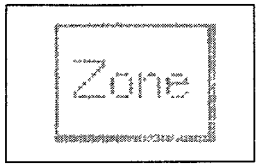


Figure 223 – 'Zone' allows the user to select individual zones for control. Selecting Figure 223 takes the user to Figure 227.

Figure 227

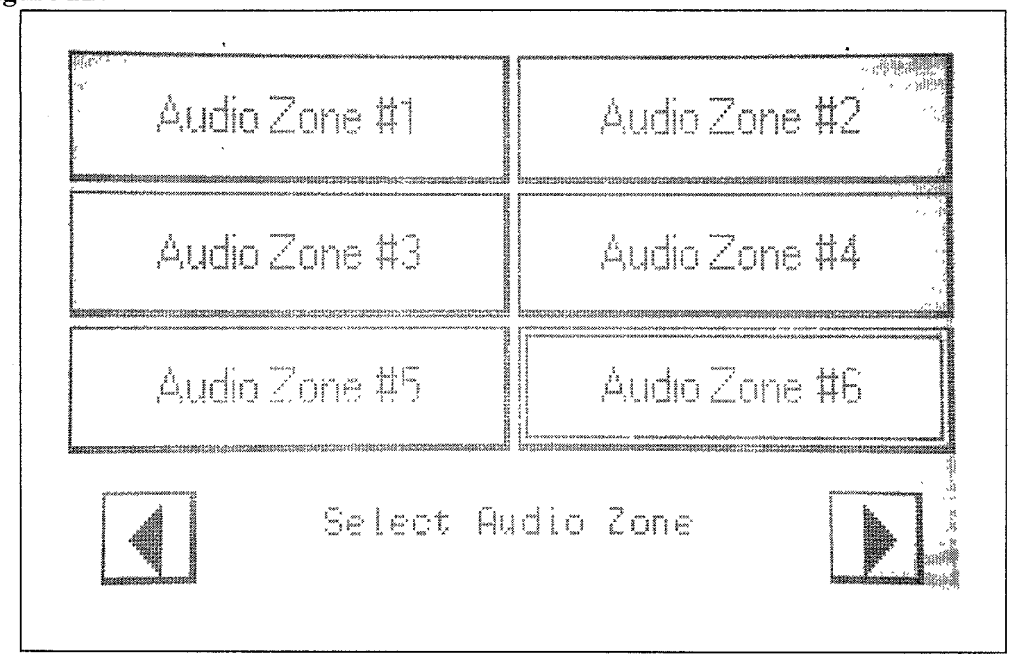


Figure 227 allows the user to select a specific zone for audio scheduling. When the user desires to view other zones than the primary six displayed, they may use the 'left' and 'right' arrow within figure 227 scroll through them. Selecting an Audio Zone takes the user to Figure 221.

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Figure 224

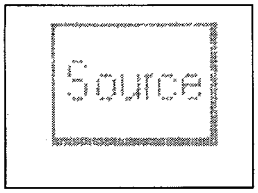


Figure 224 – 'Source' allows the user to toggle between the sources for the zone being scheduled.

Figure 228

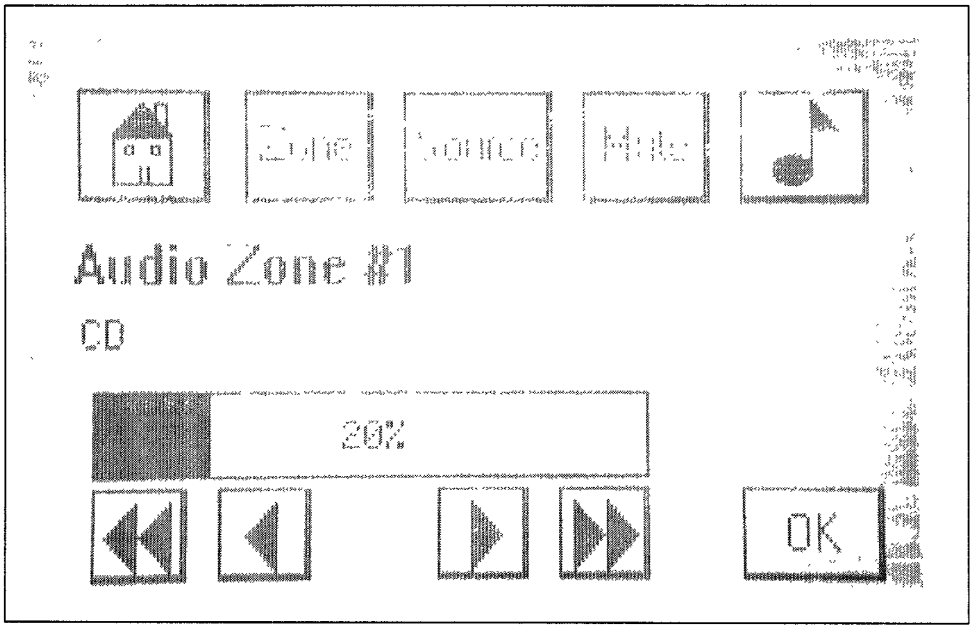


Figure 228 shows that Audio Zone #1 is at 20% with the CD as the source for a schedule.

Pressing the 'OK' icon returns the user to Figure 218.

Figure 220

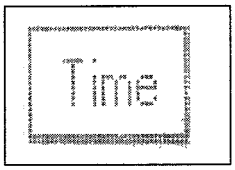


Figure 220 takes the user to Figure 299 to choose the exact time the schedule is initiated.

Figure 229

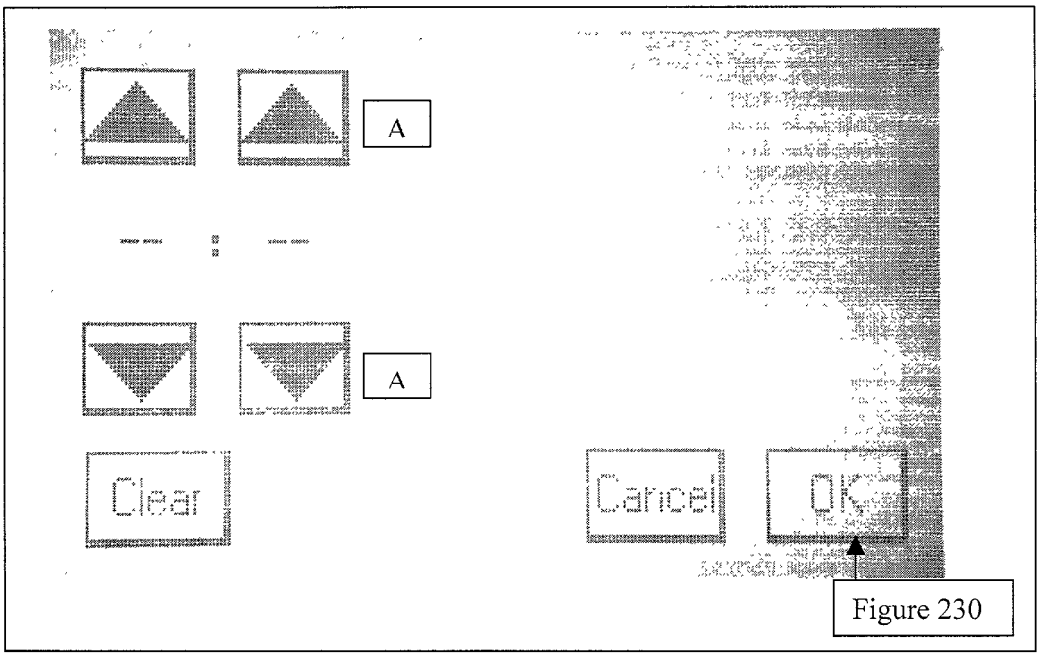
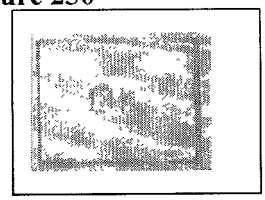


Figure 229 displays the schedule time when configured through the arrows labeled 'A' above and below the empty time figure.

The Clear icon clears the current data displayed within Figure 229. The Cancel icon cancels any changes.

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Figure 230



Pressing Figure 230 takes the user to a sample screen in Figure 231.

Figure 231

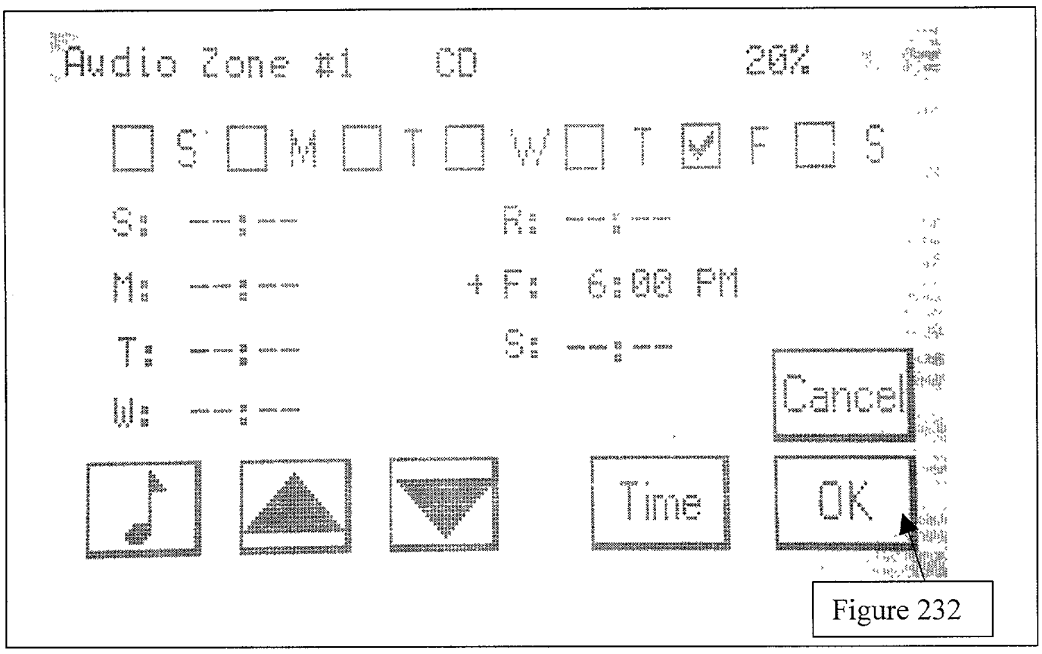
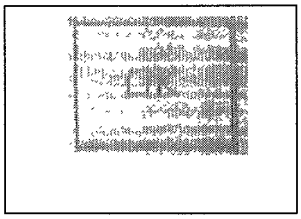


Figure 231 is a sample screen for audio scheduling. As displayed above, the schedule is Audio Zone #1 has the CD as a source, a volume of 20% and will activate on Friday at 6pm.

Figure 232



Pressing Figure 232 takes the user to a sample screen in Figure 233.

Figure 233

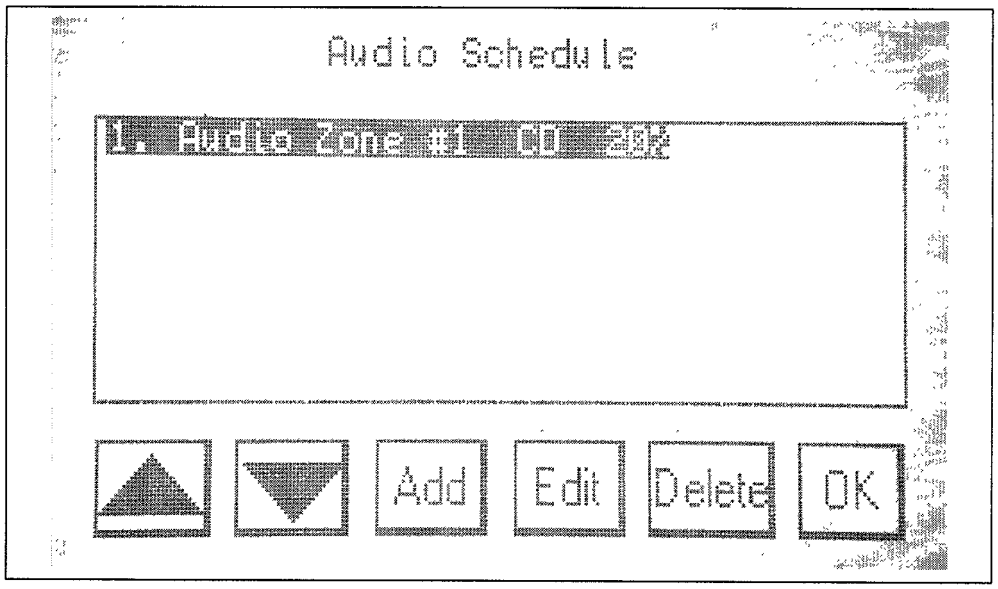


Figure 233 is a sample screen for a completed audio schedule.

Figure 180

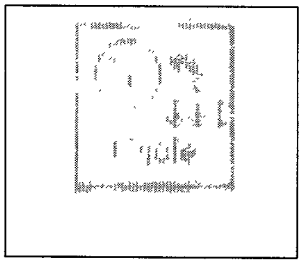


Figure 180 – 'EM Cycle Scheduling' allows the user to configure scheduled Energy Management cycles turning on and off. In an installation where an energy provider is connected to the system as part of a utility sponsored energy management program, EM cycles are scheduled to take advantage of different pricing structures during different parts of the day. For example, afternoon and early evening rates are the most expensive. The middle of the night is the least expensive.

Figure 181

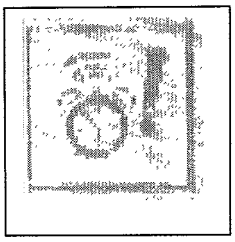


Figure 181 – 'Reminders' allows the user to configure and schedule tasks and reminders. Selecting Figure 181 will take the user to Figure 234.

Figure 234

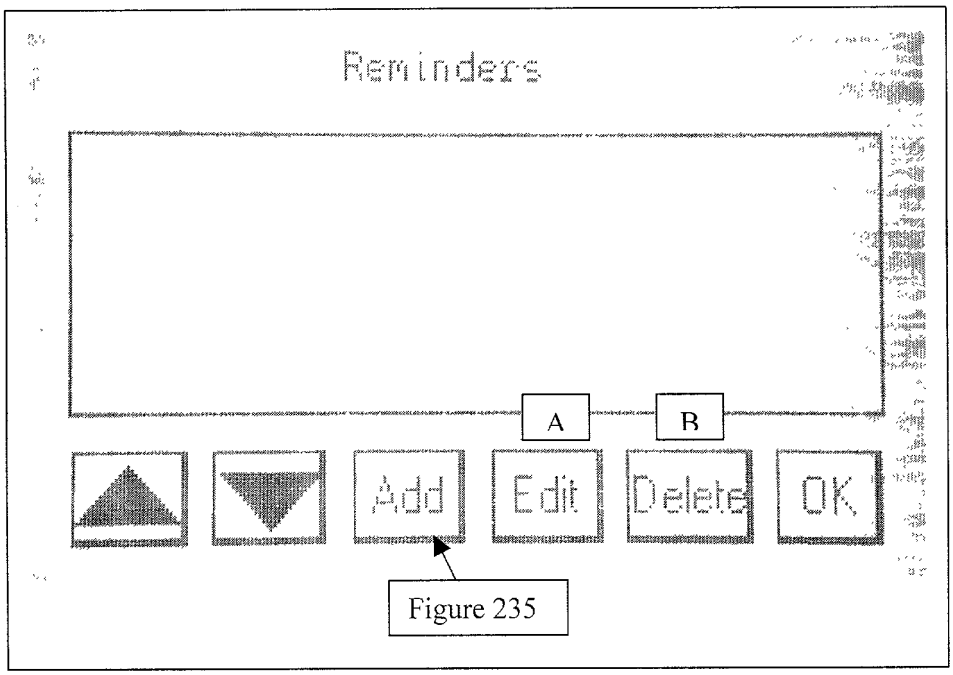
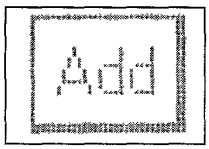


Figure 234 lists Reminders programmed into the system. Presently, there are no reminders programmed into the system. The 'up' and 'down' arrows within Figure 234 allow the user to scroll through the reminders programmed into the system. Selecting Figure 235 will take the user to Figure 236 where reminders can be added. To modify existing reminders, the user can press the 'Edit' button labeled 'A' within Figure 234. Reminder schedules that the user wishes to be deleted are done so by scrolling the highlight to the schedule and pressing the Delete icon labeled 'B'.

Pressing the 'OK' icon will return the user to Figure 174.

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Figure 235



Selecting Figure 235 – 'Add' takes the user to Figure 236 to schedule reminders.

Figure 236

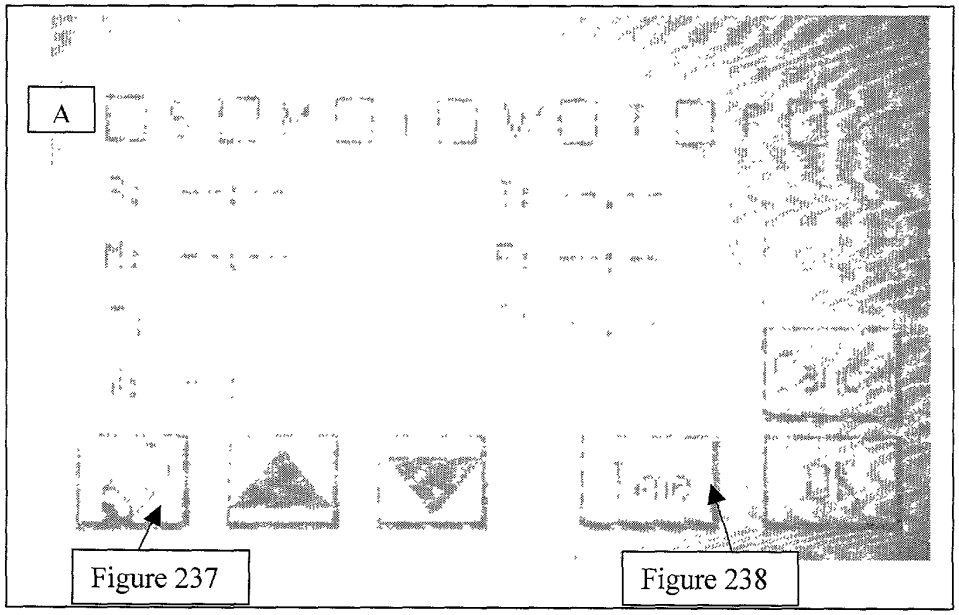


Figure 236 allows the user to specify the exact date and times for reminders. The row labeled 'A' represents each day of the week, beginning with Sunday. To select each day the user presses the box adjacent to the letter representing the day of the week, once selected the box is filled by a check mark. The 'up' and 'down' arrows within Figure 236 allow the user to scroll through multiple reminders.

- Figure 237 takes the user to Figure 239 to enter the text reminder.
- Figure 238 takes the user to Figure 240 to choose the exact time the reminder is initiated.

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 234.

Figure 237

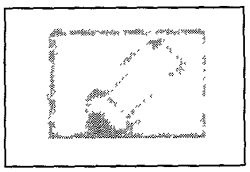


Figure 237 takes the user to Figure 239 to enter the text reminder.

Figure 239

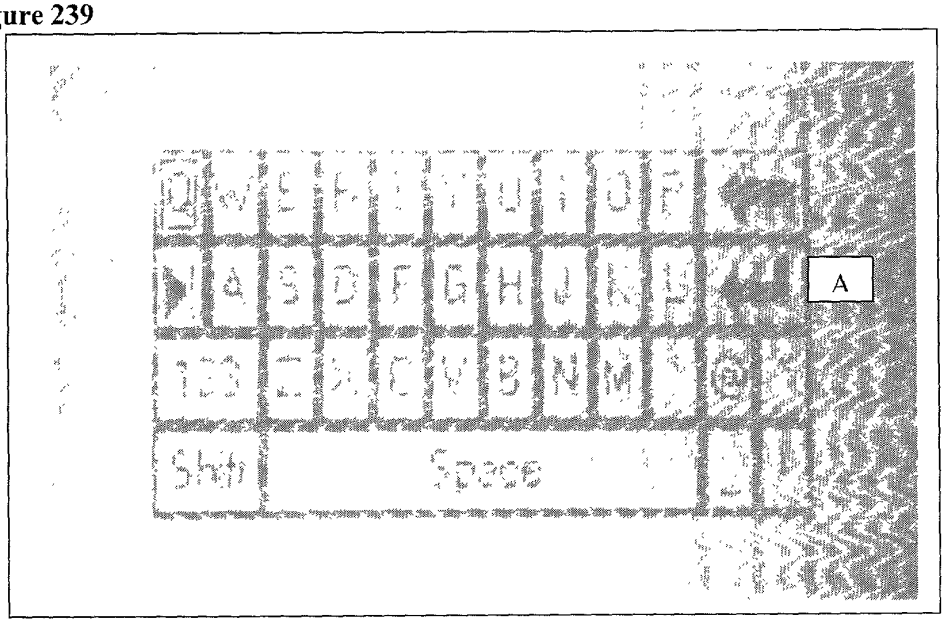


Figure 239 is a typical keypad for entering a text reminder. When finished entering the message, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'A' in this figure. Selecting enter also returns the user to Figure 236.

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Figure 238

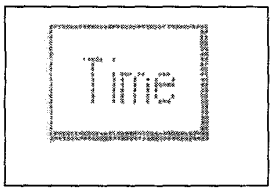


Figure 238 takes the user to Figure 240 to choose the exact time the reminder is initiated.

Figure 240

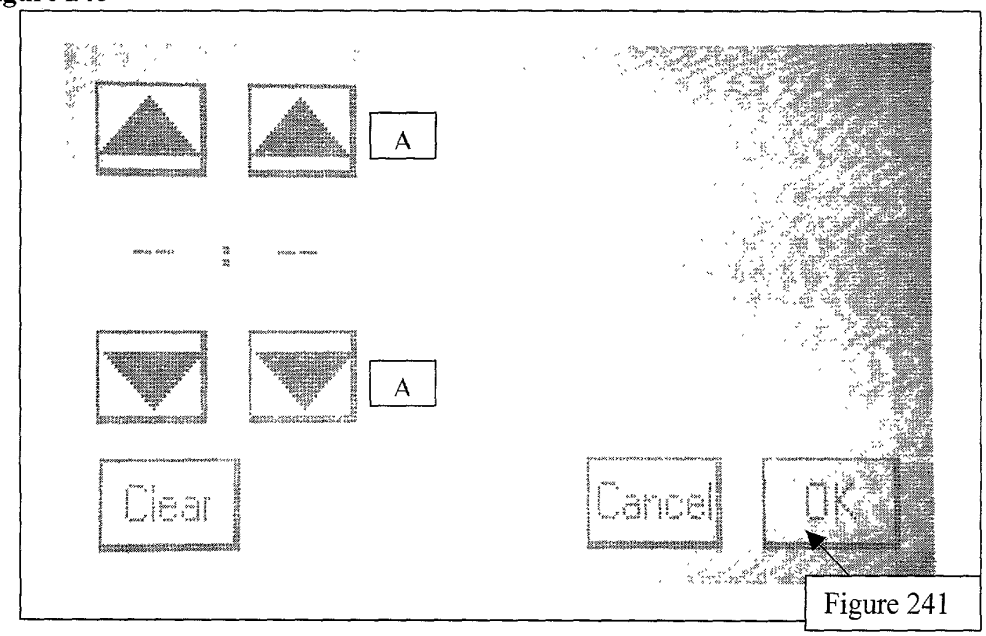


Figure 240 displays the schedule time when configured through the arrows labeled 'A' above below the empty time figure.

The Clear icon clears the current data displayed within Figure 189. The Cancel icon cancels any changes.

Figure 241 – 'OK' returns the user to Figure 236.

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Figure 242

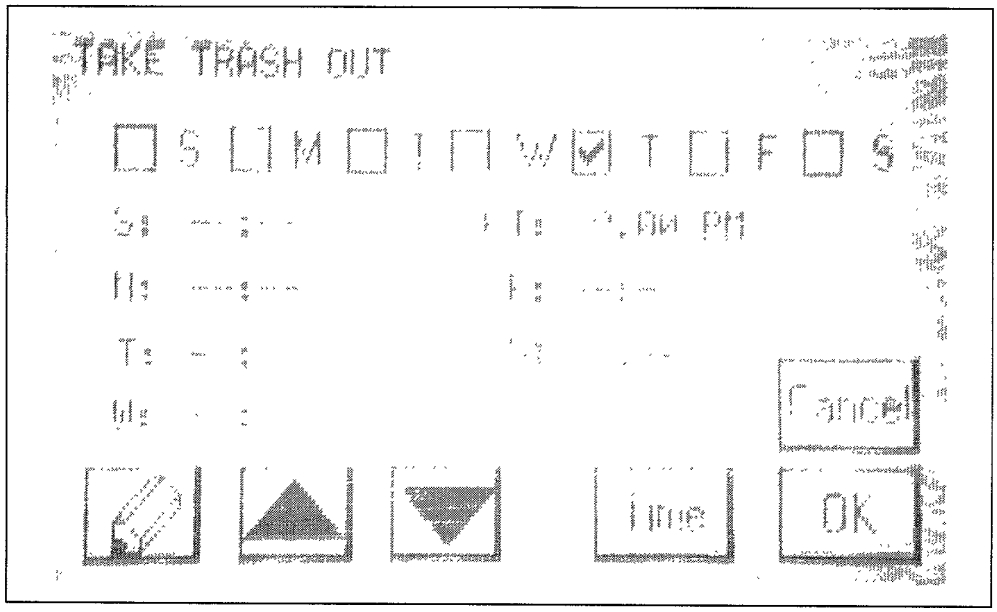


Figure 242 is sample reminder schedule where the message is 'Take Trash Out' on Thursday at 9pm.

Figure 120

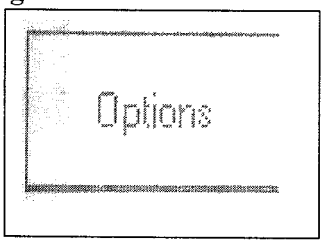


Figure 120 – 'Options' allows the user to select and configure system options. Selecting Figure 120 takes the user to Figure 243.

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Figure 243

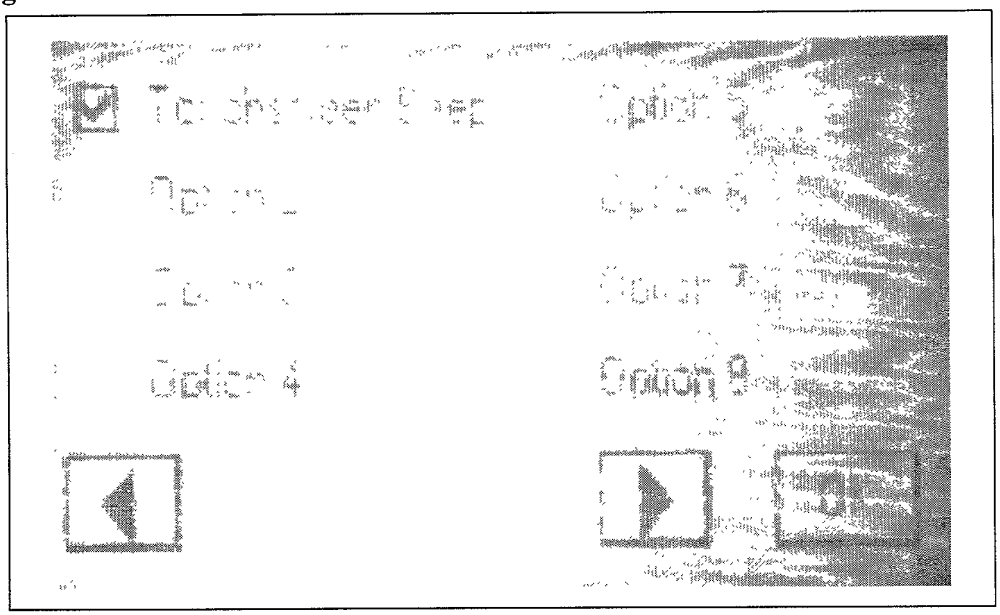


Figure 243 lists the available options that the user may adjust relating to system performance. IN the example above the user may choose whether or not the touchscreen performs a confirmation beep each time the screen is pressed. When there are more options than available space on a single screen the user may use the 'left' and 'right' arrows for scrolling to additional selections.

Pressing 'OK' returns the user to Figure 117.

Figure 121

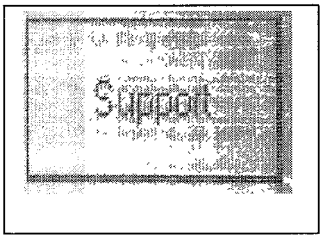


Figure 121 – 'Support' allows the user to allow remote access to the system through the telephone line and Atlas software. Selecting Figure 121 takes the user to Figure 244.

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Figure 244

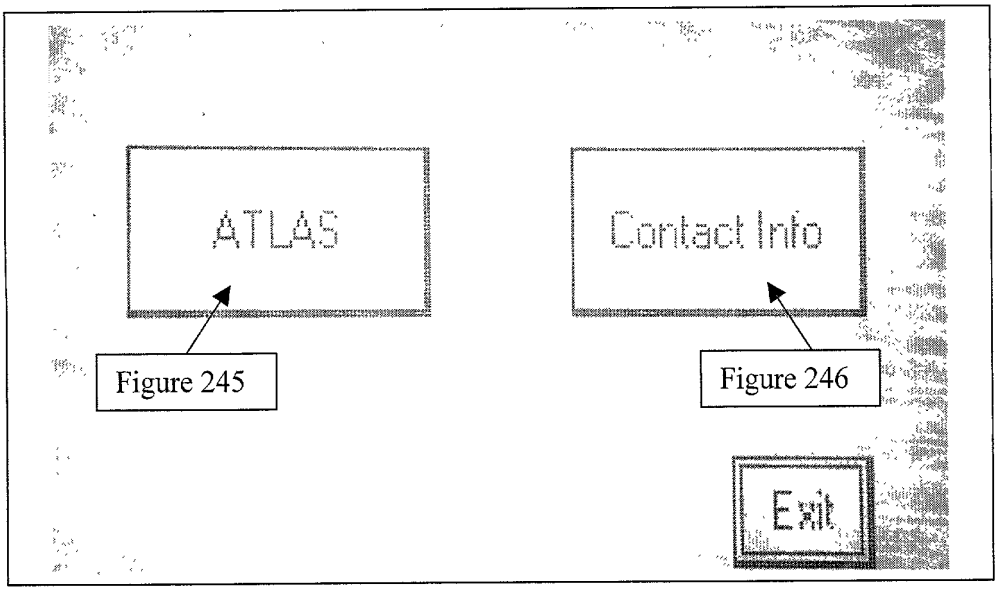


Figure 244 is the main navigation screen user tech support. Figure 244 includes the additional Figures:

- Figure 245 – 'Atlas' allows an installer to remotely access the system through the Atlas software.
- Figure 246 – 'Contact Info' to provide contact information for the installer to the user.

Pressing 'Exit' within Figure 244 returns the user to Figure 117.

Figure 245

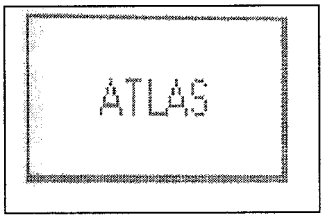


Figure 245 – 'Atlas' allows an installer to remotely access the system through the Atlas software. Selecting Figure 245 takes the user to Figure 247.

Figure 247

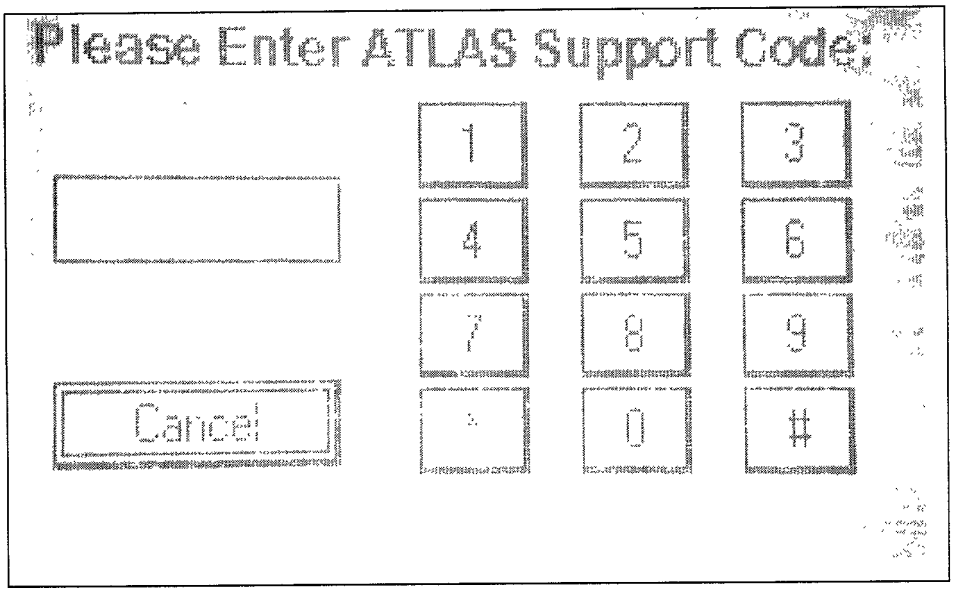
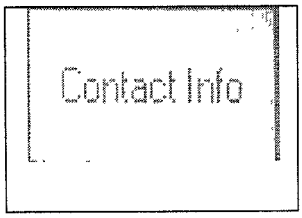


Figure 247 is for the user to enter an access code that allows an installer to remotely dial in to the system to perform programming changes and system diagnostics. A correct code entry returns the user to Figure 244.

Figure 246



When pressed, Figure 246 – 'Contact Info' provides general contact information for the installer, including phone numbers and tech support help lines.

Figure 20

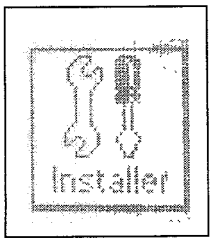


Figure 20 is the icon for accessing installer programming area of the system configuration portion of the system. Selecting Figure 20 activates Figure 248.

Figure 248

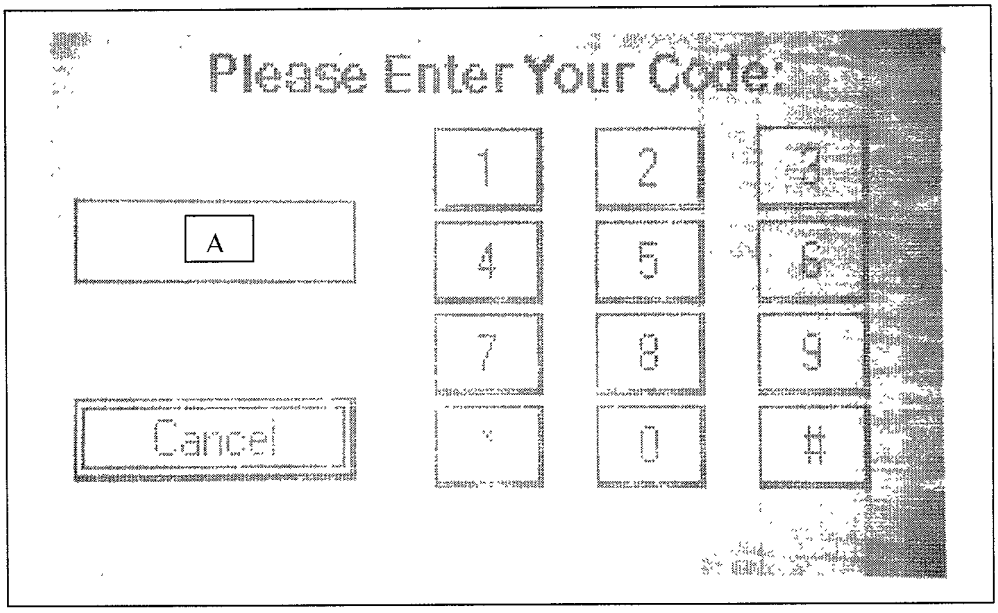


Figure 248 is a numeric keypad that displays after selecting Figure 20. Entering a proper numeric code will allow the installer access to the system configuration portion of the system. For each button selected on the numeric keypad (0-9, X or #) a '*' appears in the box labeled "A" within Figure 248 for a visual confirmation of a number being selected without revealing the actual number itself. This protects the user from accessing unauthorized system configuration areas. The cancel button is to clear a partial code that has been entered incorrectly.

Figure 249

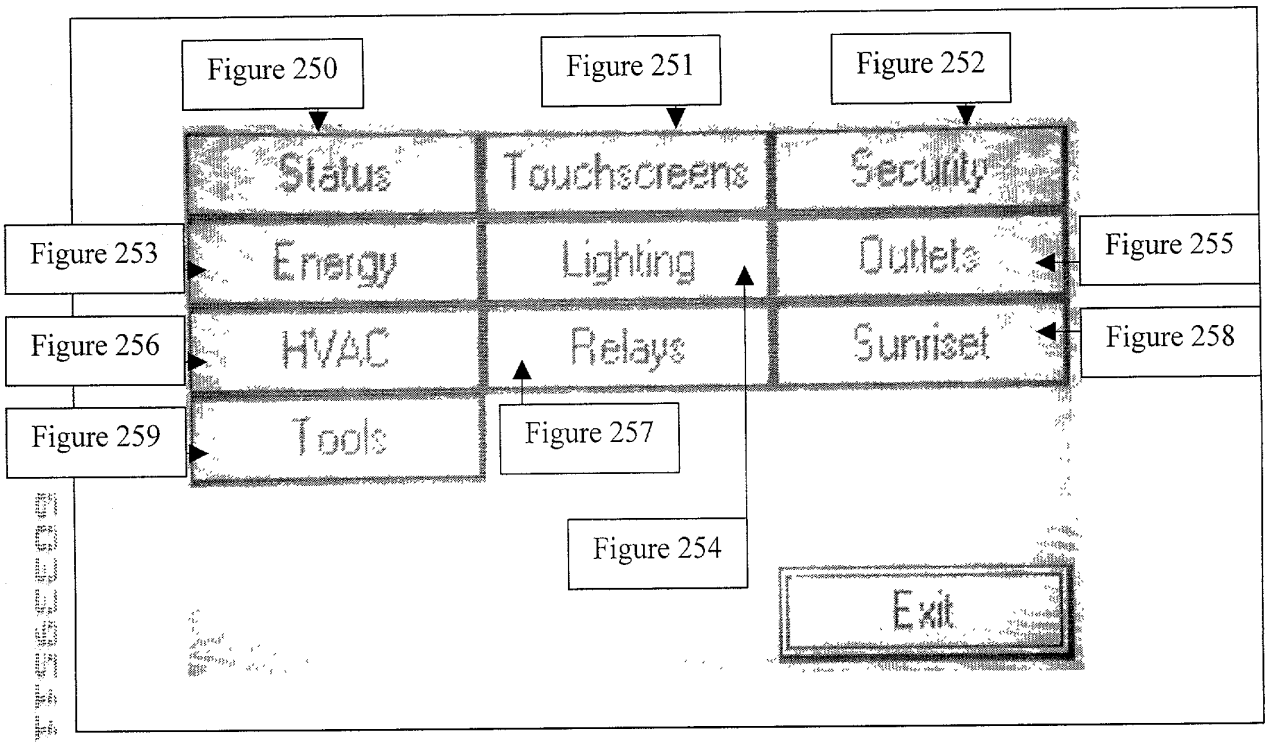


Figure 249 is the primary navigation screen for the installer to configure the basic operation of the system for the user. Figure 249 includes;

- Figure 250 – 'Status' takes the installer to the system status screen.
- Figure 251 – 'Touchscreens' takes the installer to the touchscreen configuration screen.
- Figure 252 – 'Security' takes the installer to the security system configuration screen.
- Figure 253 – 'Energy' allows the installer to configure the interactive energy management hardware connected to the system.
- Figure 254 – 'Lighting' takes the installer to the lighting control configuration screen.
- Figure 255 – 'Outlets' takes the installer to the outlet control configuration screen.
- Figure 256 – 'HVAC' takes the installer to the Heating and Cooling controls configuration screen.
- Figure 257 – 'Relays' takes the installer to the relay control configuration screen.
- Figure 258 – 'Sunriset' takes the installer to the Sunrise/Sunset configuration screen.
- Figure 259 – 'Tools' takes the installer to the system tools screen.

The complete functions of each icon are located under the Figure numbers listed above.

Figure 250

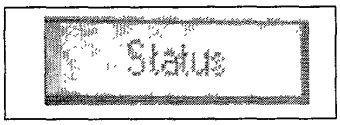


Figure 250 is accessed through Figure 248. Figure 250 is selected by the installer to reach a menu for viewing the current system hardware status. Selecting Figure 250 takes the installer to Figure 260.

Figure 260

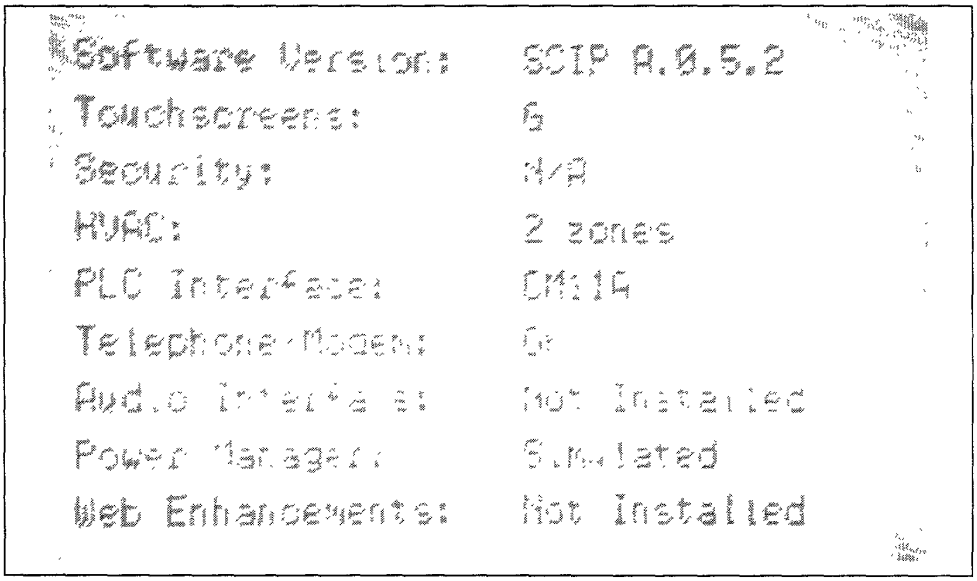


Figure 260 lists the current version of the system software and the current system hardware. Pressing anywhere on the screen in Figure 260 will return the user to Figure 249.

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Figure 251

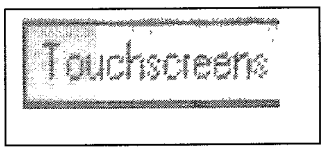


Figure 251 is accessed through Figure 249. Figure 251 is selected by the installer to reach a menu for configuring the system touchscreens. Selecting Figure 251 takes the installer to Figure 261.

Figure 261

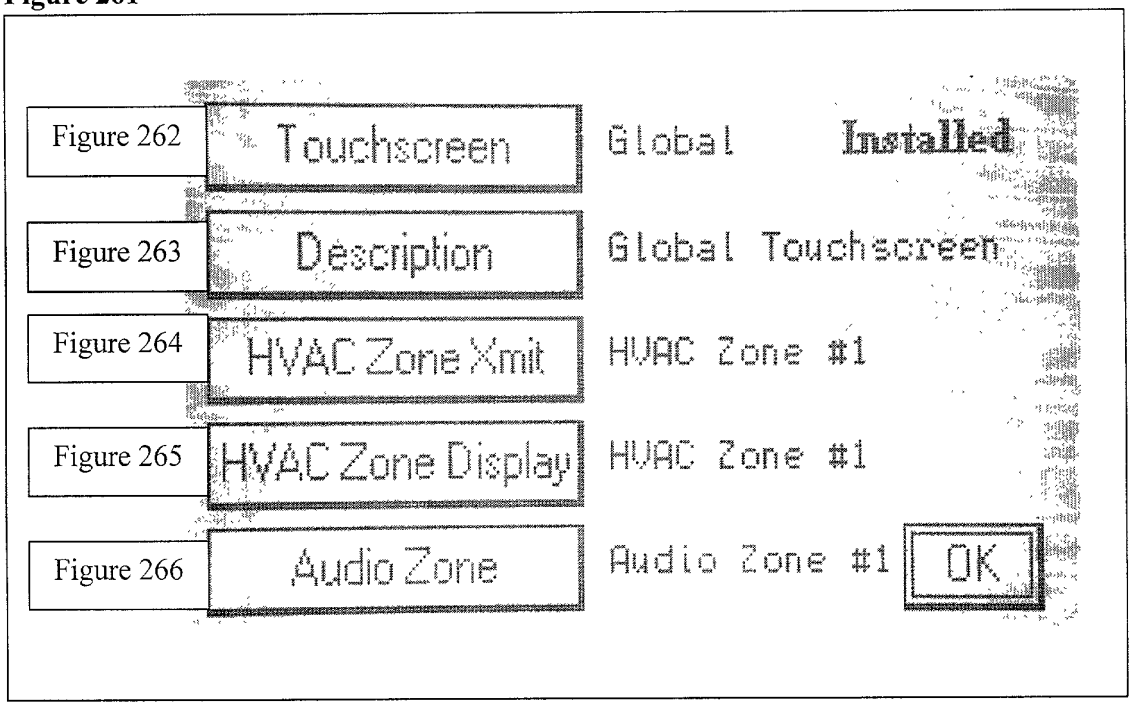
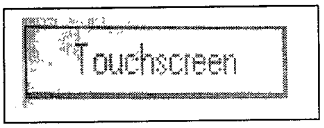


Figure 261 is the navigational screen for configuring each system touchscreen. The primary touchscreen connected to the system is referred to as the 'Global Touchscreen' and the current configuration is displayed by default. Pressing the 'OK' icon returns the user to Figure 231.

- Figure 262 – 'Touchscreen' displays the current status of the primary touchscreen and when pressed, takes the installer to the individual touchscreen customization screen.
- Figure 263 – 'Description' displays the current status of the primary touchscreen and when pressed, takes the installer to the individual touchscreen designation screen.
- Figure 264 – 'HVAC Zone Xmit' displays the current zone being controlled by the global touchscreen.
- Figure 265 – 'HVAC Zone Display' shows the HVAC zone displayed first by the global touchscreen.
- Figure 266 – 'Audio Zone' shows the audio zone displayed first by the global touchscreen.

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Figure 262



Selecting Figure 262 takes the installer to Figure 267 where they can customize system touchscreens.

Figure 267

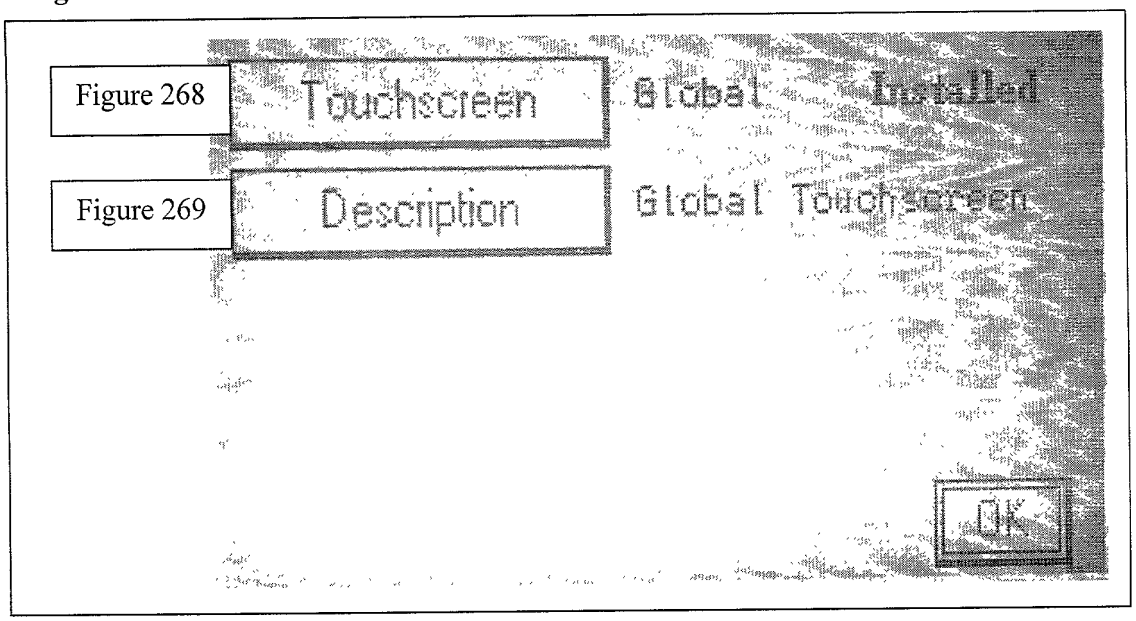


Figure 267 is the primary navigational screen for installers to customize the system touchscreens for the end user. The default screen indicating the presence of a global touchscreen connected to the system is shown above.

- Figure 268 – 'Touchscreen' toggles the installer through each touchscreen connected to the system. The designation for each touchscreen will display to the right of Figure 268 within Figure 267 as the icon is pressed each time.
- Figure 269 – 'Description' shows additional text based information related to the touchscreen, which may include location and functional information. When the proper touchscreen is displayed in Figure 268, Figure 269 is pressed to add additional descriptive information.

Pressing 'OK' returns the user to Figure 249.

Figure 268



Figure 268 – 'Touchscreen' toggles the installer through each touchscreen connected to the system and displays the information within Figure 267.

Figure 269

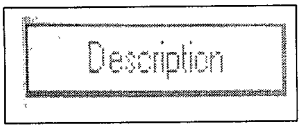


Figure 269 – 'Description' shows additional text based information related to the touchscreen, which may include location and functional information. When the proper touchscreen is displayed in Figure 268, Figure 269 is pressed to add additional descriptive information. Selecting Figure 269 takes the user to Figure 270.

Figure 270

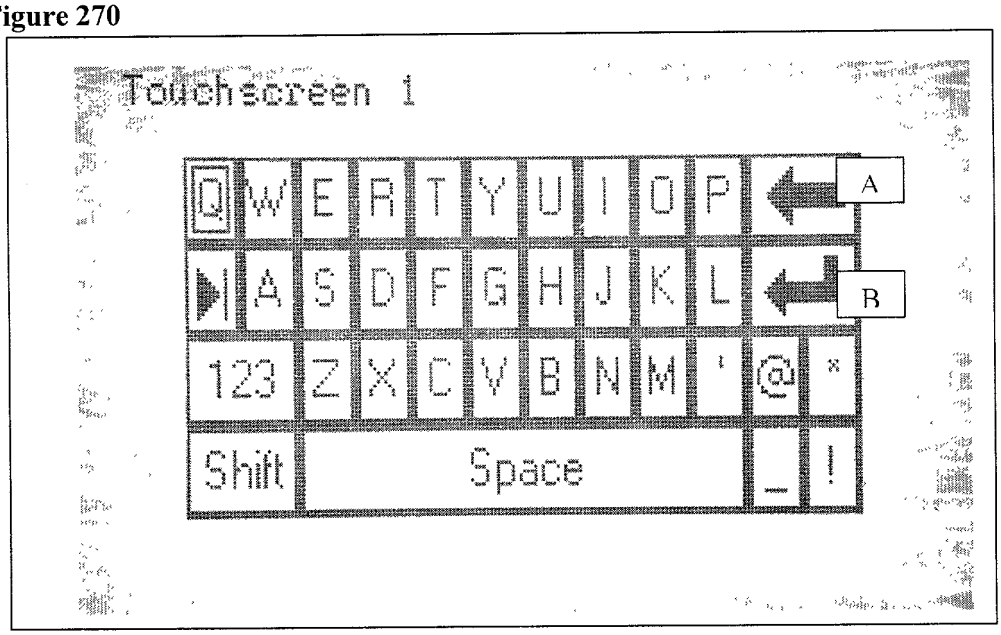


Figure 270 is a typical keypad for entering a custom name for this particular touchscreen. To erase 'Touchscreen 1' the user presses the backspace icon, labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 267.

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Figure 252

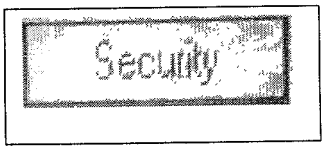


Figure 252 – 'Security' takes the installer to the security system configuration screen. Selecting Figure 252 takes the user to Figure 271.

Figure 271

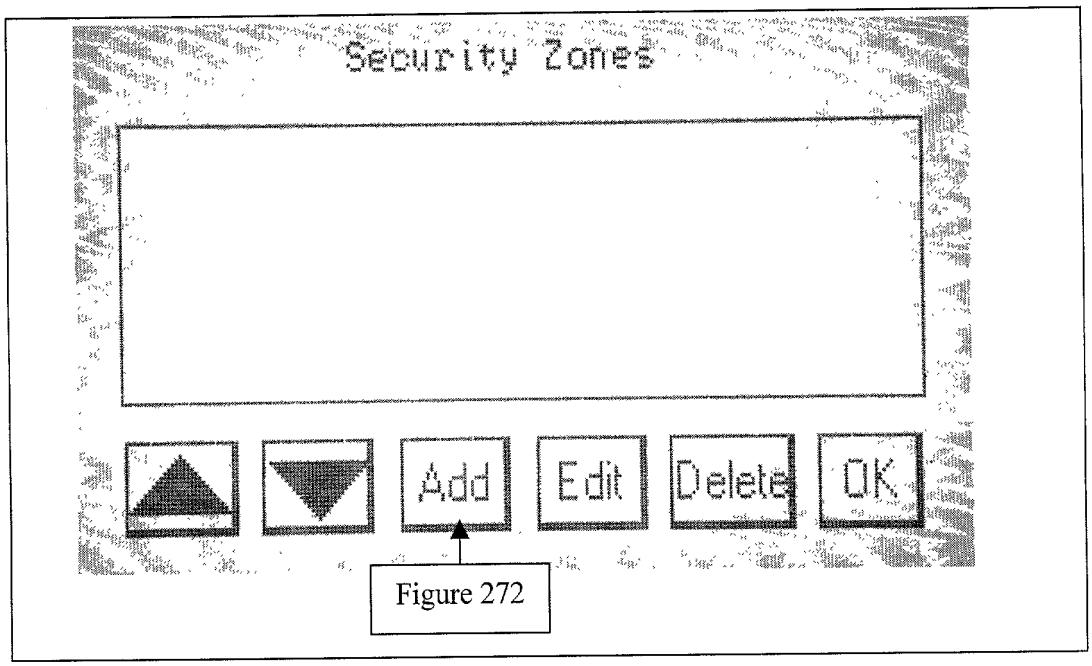
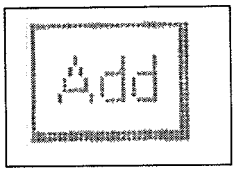


Figure 271 is a listing of the security zones entered into the system. In the figure above there are no events listed. Zones are added to the list automatically as they entered by the installer. When the length of the list exceeds the space within the box, the 'Up Arrow' and 'Down Arrow' icons in Figure 271 are used to navigate the list.

Pressing the 'OK' icon returns the user to Figure 249.

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Figure 272



Selecting Figure 272 will take the user to Figure 273 where security zones can be added.

Figure 273

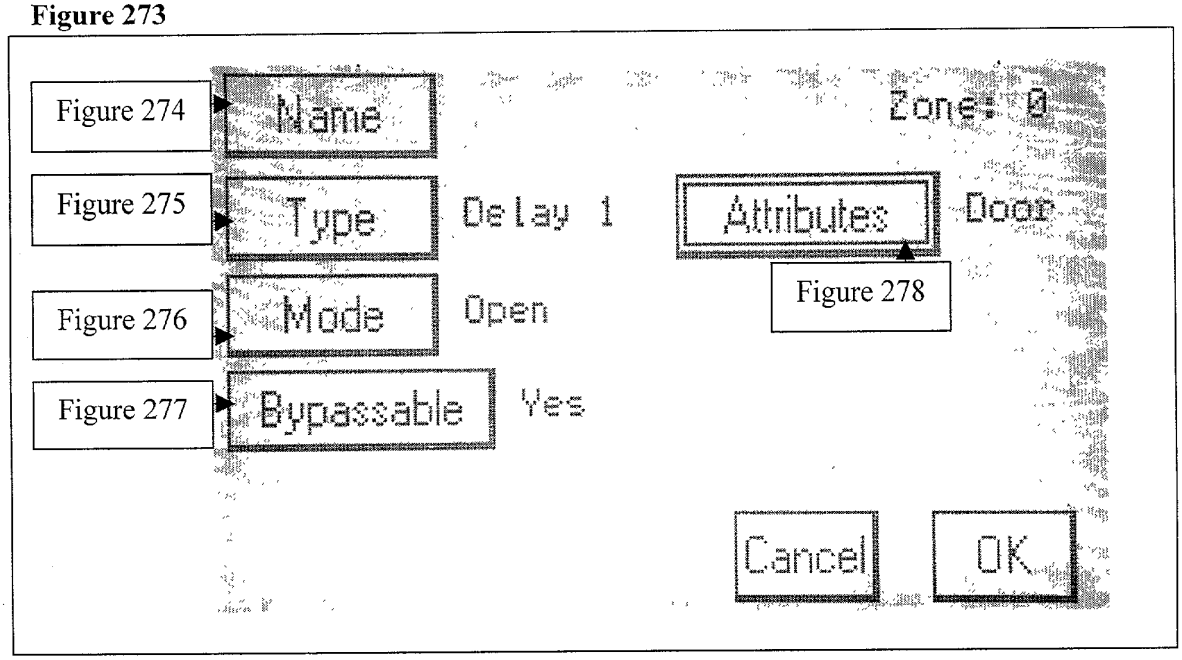


Figure 273 is the main programming screen for adding security zones. Figure 273 includes the following Figures:

- Figure 274 – 'Name' allows the installer to configure the name of the security zone.
- Figure 275 – 'Type' allows the installer to configure the type of the security zone.
- Figure 276 – 'Mode' allows the installer to configure the mode of the security zone.
- Figure 277 – 'Bypassable' allows the installer to configure whether the user may bypass the security zone.
- Figure 278 – 'Attributes' allows the installer to declare the attributes of the security zone.

'Cancel' clears recent changes and pressing 'Exit' returns the user to Figure 271.

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Figure 274

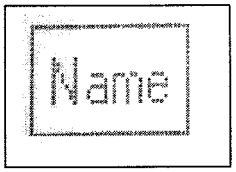


Figure 274 – 'Name' allows the installer to configure the name of the security zone. Selecting Figure 274 will take the installer to Figure 279.

Figure 279

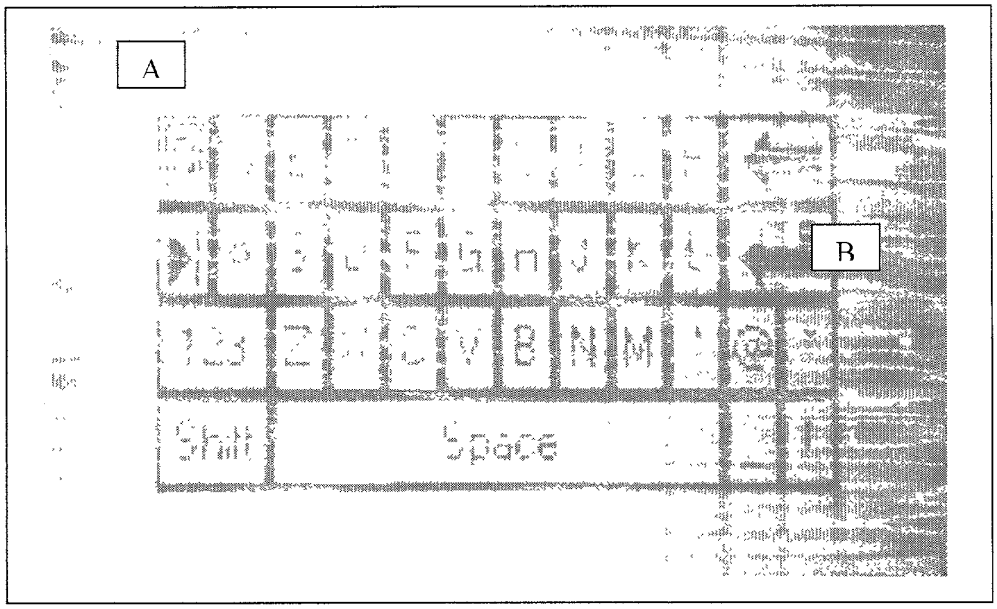


Figure 279 is a typical keypad for entering a custom name for this security zone. As entered, the characters in the zone name will appear in the area labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 273.

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Figure 275

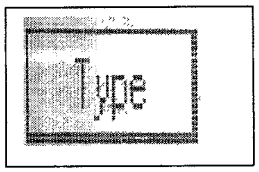


Figure 275 – 'Type' allows the installer to configure the type of the security zone. Pressing Figure 275 repeatedly will toggle the installer through the following choices: Delay 1, Delay 2, Instant, Follower, Interior, Tamper, Fire, Medical, Police and Inactive.

Figure 276

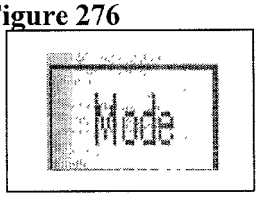


Figure 276 – 'Mode' allows the installer to configure the mode of the security zone. Pressing Figure 276 repeatedly will toggle the installer through the following choices: Open, Closed and EOL.

Figure 277

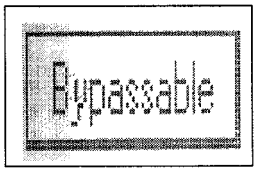


Figure 277 – 'Bypassable' allows the installer to configure whether the user may bypass the security zone. Pressing Figure 277 repeatedly will toggle the installer through the following choices: Yes or No.

Figure 278

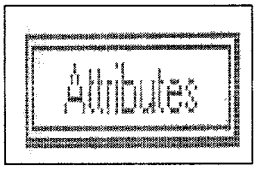


Figure 278 – 'Attributes' allows the installer to declare the attributes of the security zone. Pressing Figure 278 repeatedly will toggle the installer through the following choices: Door, Window, Motion, Glass, Gas, Water, Freeze and Heat.

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Figure 253

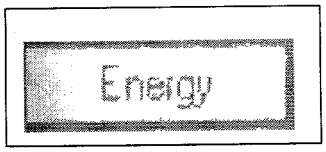


Figure 253 – 'Energy' allows the installer to configure the interactive energy management hardware connected to the system. The Interactive Energy Management module can only be configured by the installer. The Interactive Energy Management module includes a transceiver that receives the information broadcast through radio frequency technology from a 'smart' meter, similar to the operation of a cordless phone. Each Interactive Energy Management has a programmable serial number to receive the proper signal from the household meter.

Figure 254

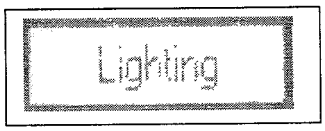


Figure 254 – 'Lighting' takes the installer to the lighting control configuration screen. Selecting Figure 254 takes the installer to Figure 280.

Figure 280

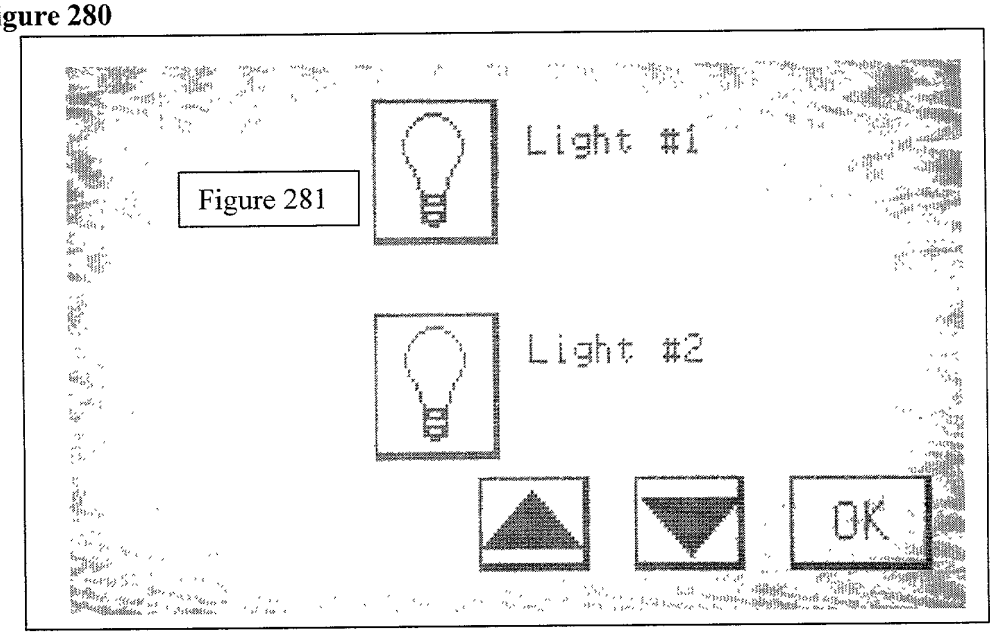
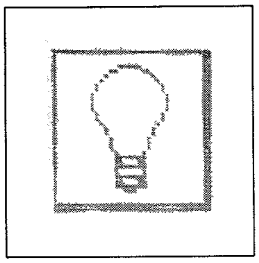


Figure 280 is the primary navigational screen for installers to configure controlled lights for the end user. The default screen for un-configured lights is shown above.

Selecting Figure 281 – 'Light #1' takes the user to Figure 282 to configure the controlled light.

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Figure 281



Selecting Figure 281 takes the user to Figure 282 to configure the controlled light.

Figure 282

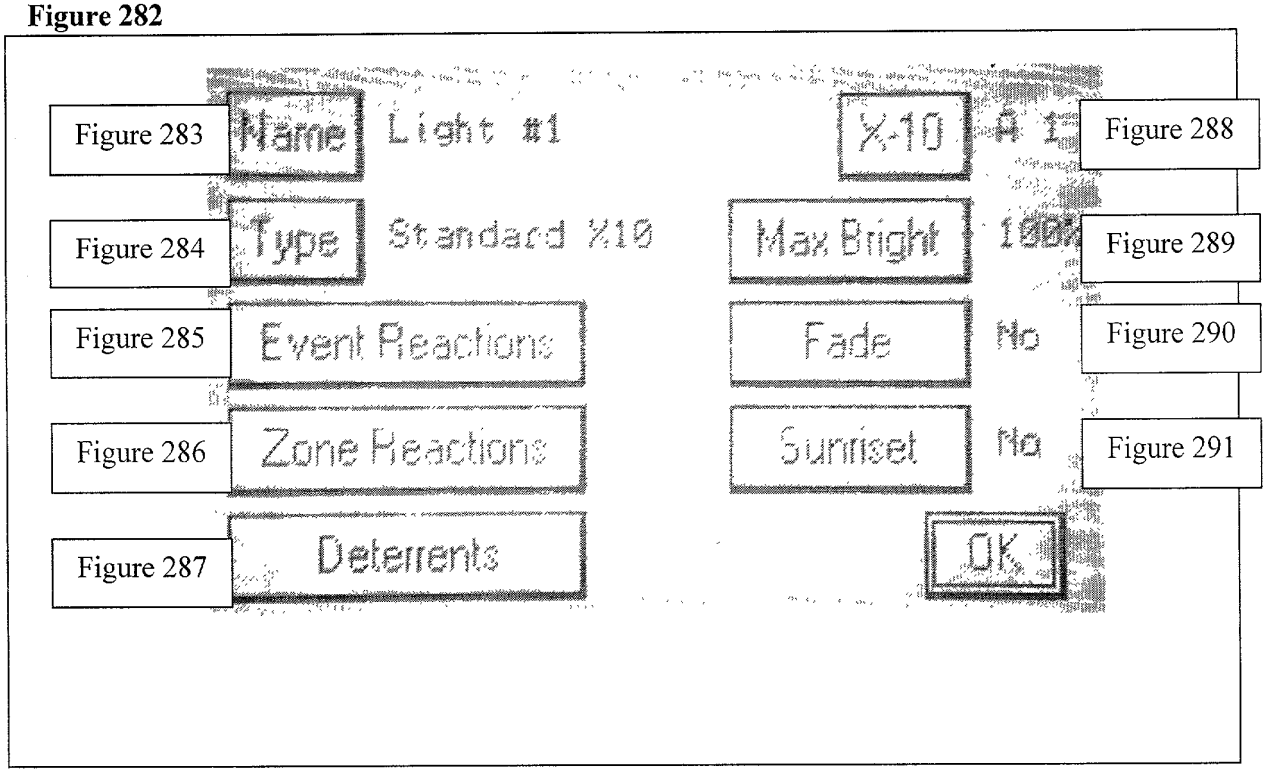


Figure 282 is the navigational screen for configuring an individual controlled light.

- Figure 283 – 'Name' displays the current default label for this controlled light position.
- Figure 284 – 'Type' toggles the installer to the current communication protocol for the controlled light.
- Figure 285 – 'Event Reactions' allows the installer to choose which events the controlled light will react to.
- Figure 286 – 'Zone Reactions' allows the installer to choose which security zones the controlled light will react to.
- Figure 287 – 'Deterrents' allows the installer to configure the controlled light's activation during a deterrent event.
- Figure 288 – 'X-10' displays the current communication protocol for the controlled light.

- Figure 289 – 'Max Bright' allows the installer to the maximum illumination value of the controlled light.
- Figure 290 – 'Fade' allows the installer to configure the controlled light to fade out rather than snap off.
- Figure 291 – 'Sunriset' allows the installer to configure the controlled light's reaction to sunrise or sunset: Automatic 'On' at Sunset and Automatic 'Off' at Sunrise.

Pressing the 'OK' icon returns the user to Figure 280.

Figure 283

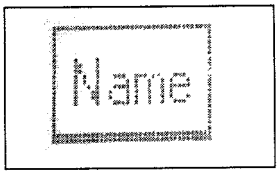


Figure 283 – 'Name' displays the current default label for this controlled light position. Selecting Figure 283 takes the installer to Figure 292.

Figure 292

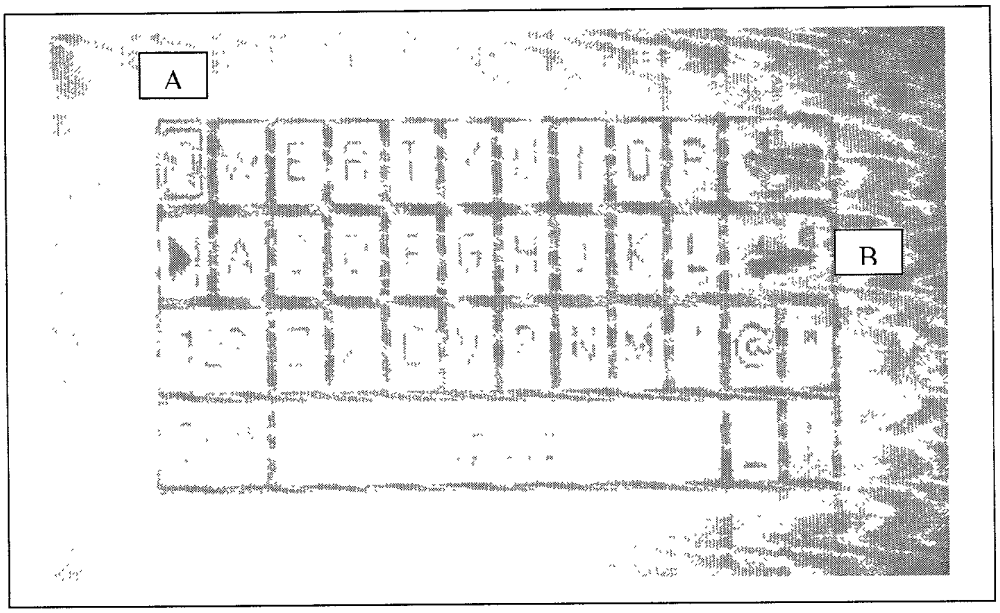


Figure 292 is a typical keypad for entering a custom name for this controlled light. As entered, the characters in the zone name will appear in the area labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 282.

Figure 284

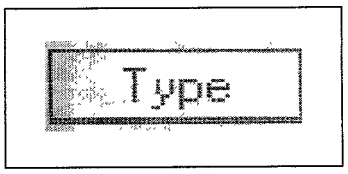


Figure 284 – 'Type' toggles the installer to the current communication protocol for the controlled light.

Figure 285

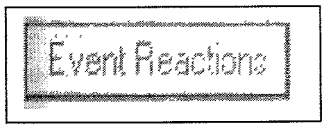


Figure 285 – 'Event Reactions' allows the installer to choose which events the controlled light will react to. Selecting Figure 285 takes the installer to Figure 293.

Figure 293

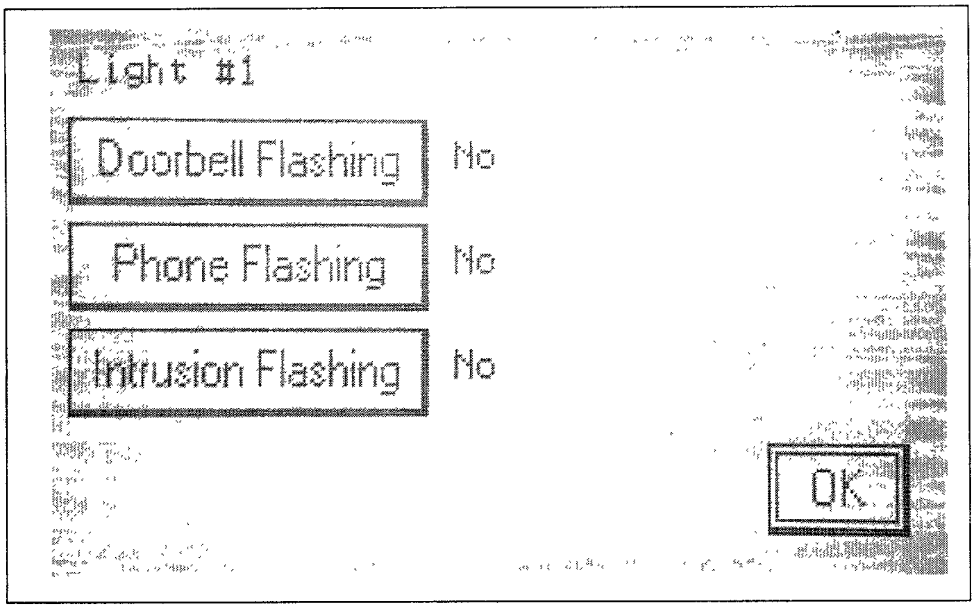


Figure 293 displays the event reaction choices available to the installer. Pressing any of the above icons will toggle the status from 'No' to 'Yes' and the controlled light will respond accordingly.

Pressing 'OK' will return the user to Figure 282.

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Figure 286

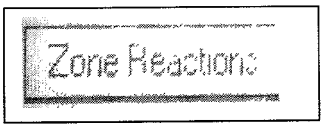


Figure 286 – 'Zone Reactions' allows the installer to choose which security zones the controlled light will react to. Selecting Figure 286 will take the installer to Figure 294.

Figure 294

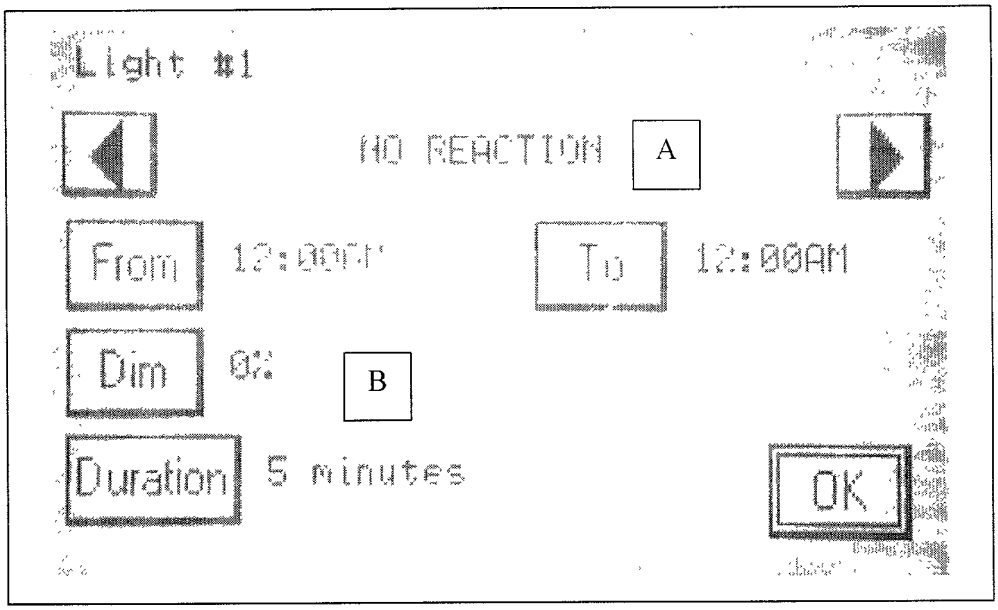


Figure 294 allows the installer to configure the controlled lights reaction to security zones. In the example above there is no programmed reaction. In the area labeled 'A' the user may choose the 'left' and 'right' arrow to toggle through the programmed security zones. The installer may also customize the controlled lights reaction by establishing a time frame in which it will respond, the illumination value and the duration with which it will remain 'On' in the area labeled 'B'.

Pressing 'OK' will return the installer to Figure 282.

Figure 287

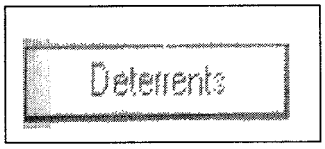


Figure 287 – 'Deterrents' allows the installer to configure the controlled light's activation during a deterrent event. Selecting Figure 287 will take the installer to Figure 295.

Figure 295

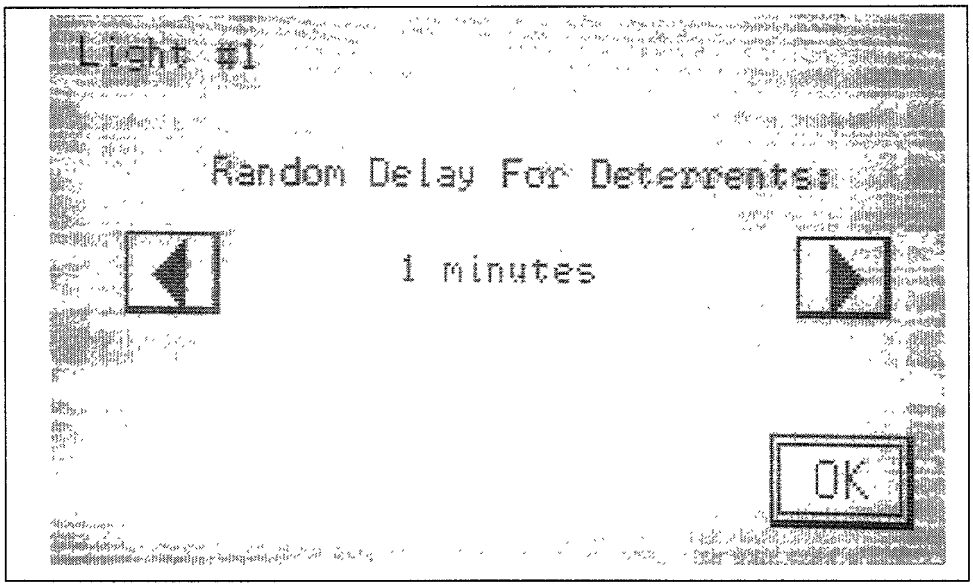


Figure 295 allows the installer to toggle the number of minutes for which the light will be 'On' during a deterrent schedule by using the 'left' and 'right' arrows.

Pressing 'OK' will return the installer to Figure 282.

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Figure 288

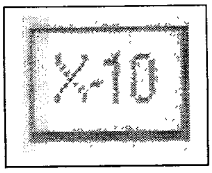


Figure 288 – 'X-10' displays the current communication protocol for the controlled light. Selecting Figure 288 will take the installer to Figure 296.

Figure 296

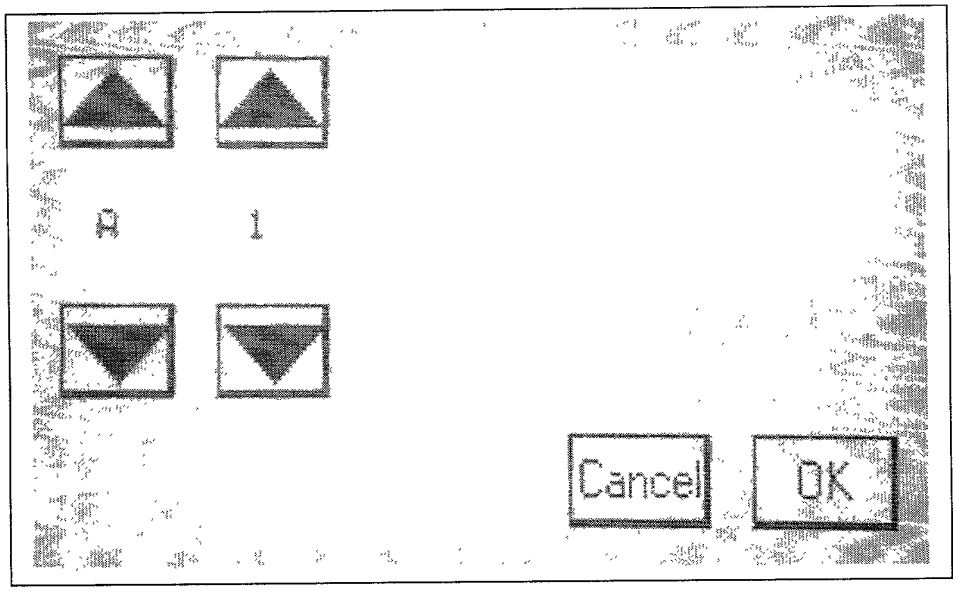


Figure 296 is the screen that codes the controlled light to the proper power line carrier address. There are 256 possible X-10 addresses beginning with a House Code of 'A' thru 'P' and a unit code of 1 thru 16. (e.g. A1, B3, M14, K1, etc.)

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 282.

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Figure 289



Figure 289 – 'Max Bright' allows the installer to the maximum illumination value of the controlled light. Selecting Figure 289 takes the user to Figure 297.

Figure 297

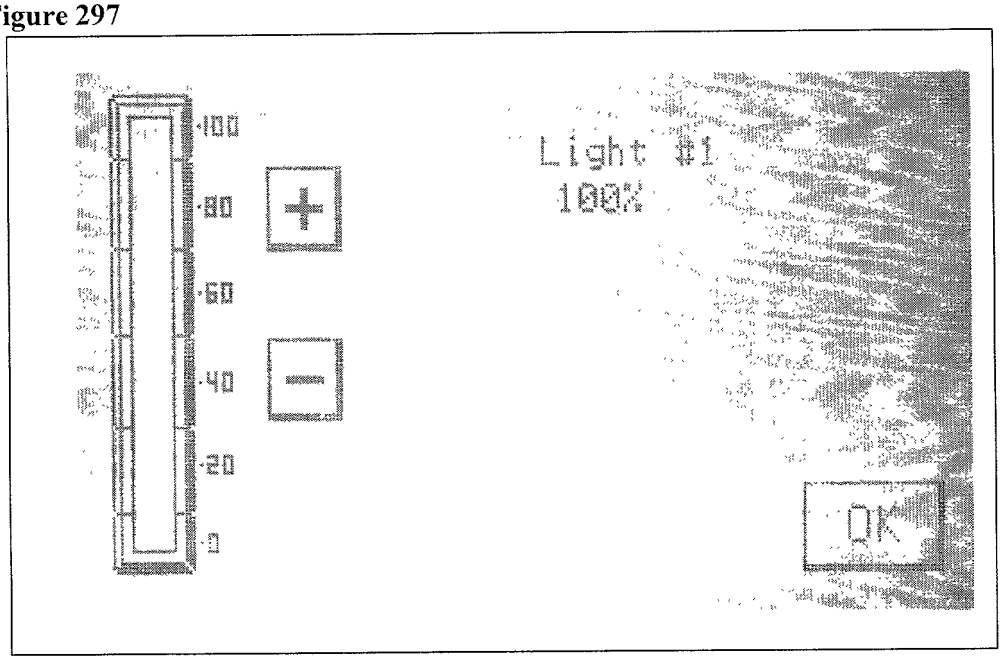


Figure 297 allows the installer to set the maximum illumination value of the controlled light for energy management purposes. For example, the installer may set the light to only achieve a maximum of 90% illumination. This works only with incandescent lighting and is typically done at the users request.

Pressing 'OK' returns the user to Figure 282.

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Figure 255

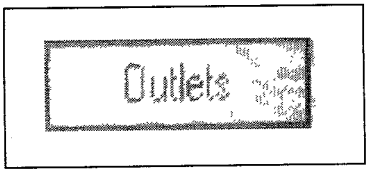


Figure 255 – 'Outlets' takes the installer to the outlet control configuration screen. Selecting Figure 255 takes the installer to Figure 298.

Figure 298

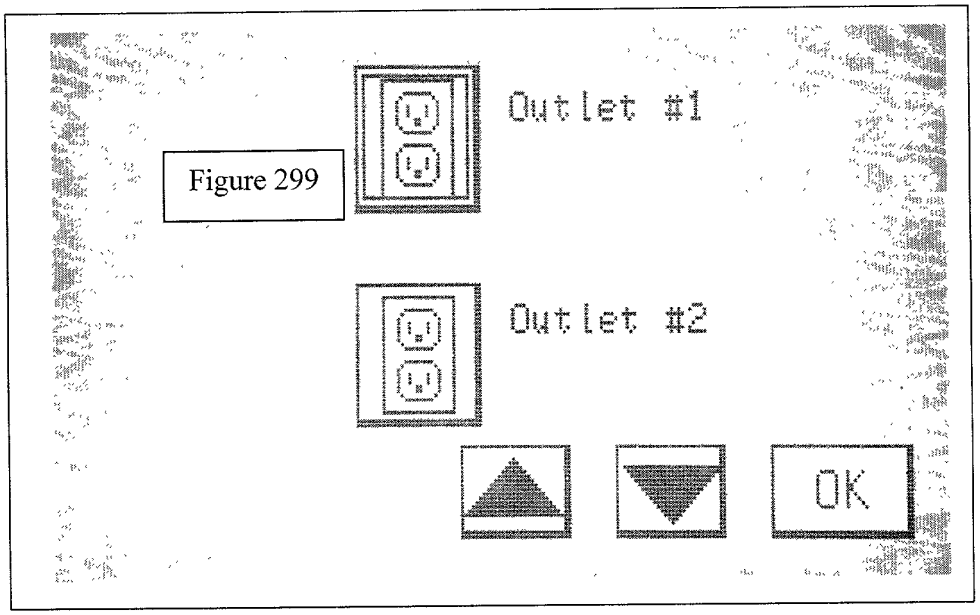


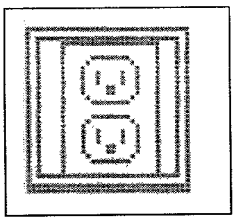
Figure 298 is the primary navigational screen for installers to configure controlled outlets for the end user. The default screen for un-configured outlets is shown above.

Selecting Figure 299 – 'Outlet #1' takes the user to Figure 300 to configure the controlled outlet.

Pressing the 'OK' icon returns the user to Figure 249

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Figure 299



Selecting Figure 299 takes the user to Figure 300 to configure the controlled outlet.

Figure 300

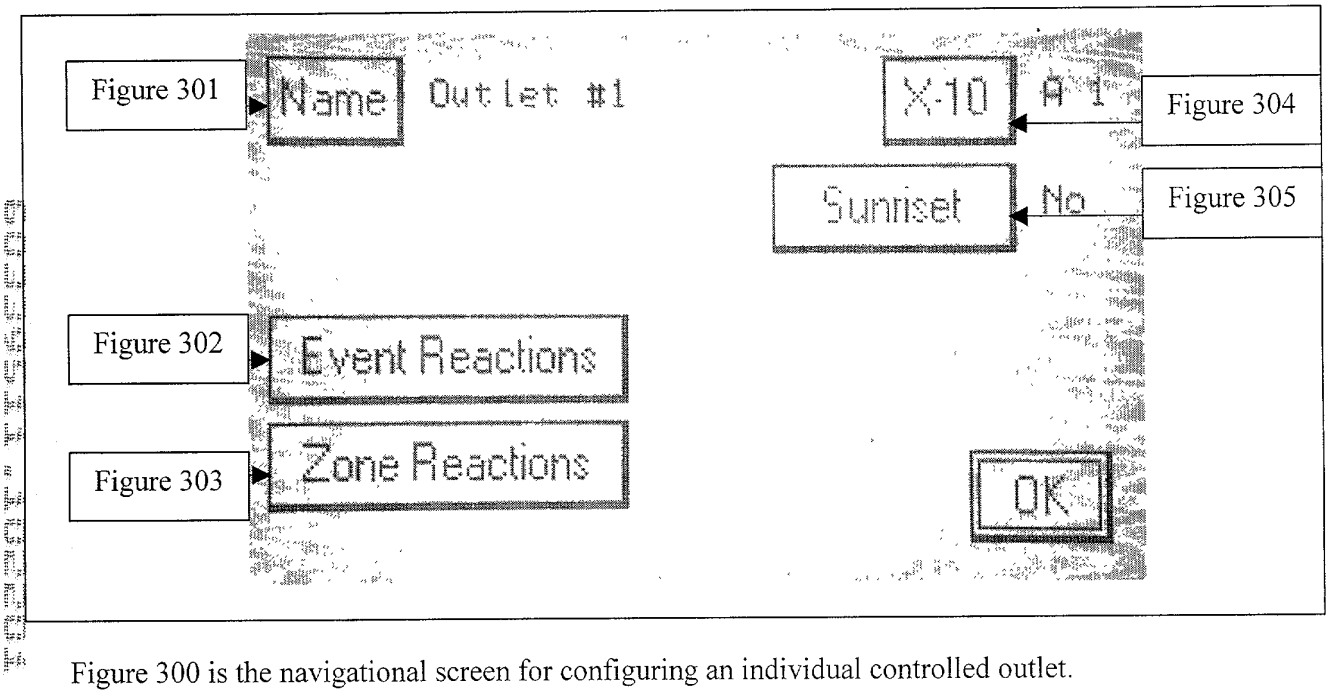


Figure 300 is the navigational screen for configuring an individual controlled outlet.

- Figure 301 – 'Name' displays the current default label for this controlled outlet position.
- Figure 302 – 'Event Reactions' allows the installer to choose which events the controlled outlet will react to.
- Figure 303 – 'Zone Reactions' allows the installer to choose which security zones the controlled outlet will react to.
- Figure 304 – 'X-10' displays the current communication protocol for the controlled outlet.
- Figure 305 – 'Sunriset' allows the installer to configure the controlled outlet's reaction to sunrise or sunset: Automatic 'On' at Sunset and Automatic 'Off' at Sunrise.

Pressing the 'OK' icon returns the user to Figure 298.

Figure 301

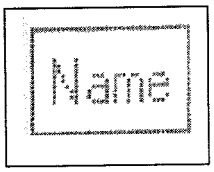


Figure 301 – 'Name' displays the current default label for this controlled outlet position. Selecting Figure 301 takes the installer to Figure 306.

Figure 306

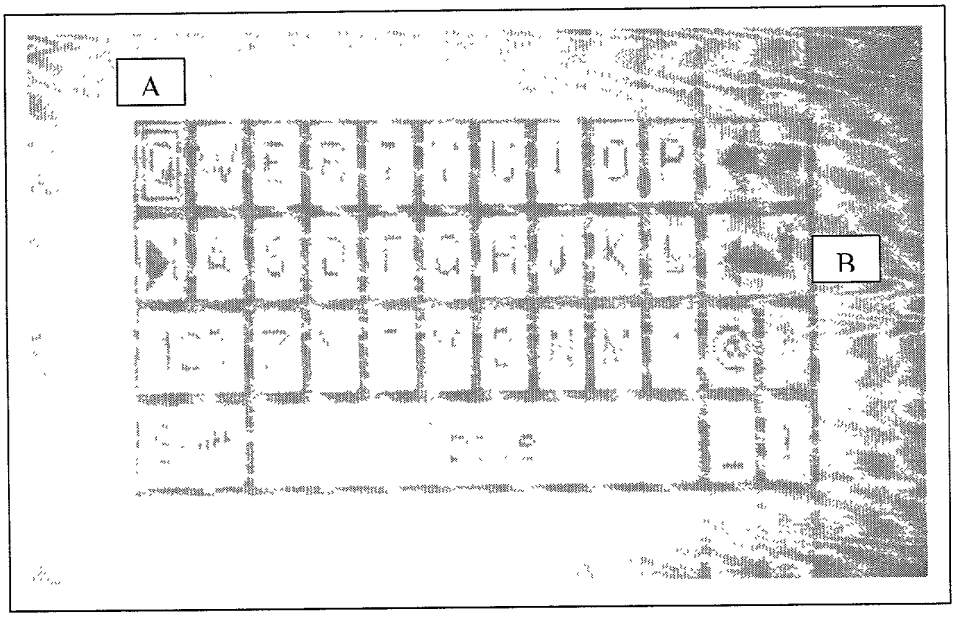


Figure 306 is a typical keypad for entering a custom name for this controlled outlet. As entered, the characters in the zone name will appear in the area labeled 'A' in this figure, for the exact number of characters and spaces to reach the beginning of the line. When finished entering a new name, with upper and lower cases, numbers and punctuation as desired, the user selects the enter icon, labeled 'B' in this figure. Selecting enter also returns the user to Figure 300.

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Figure 302

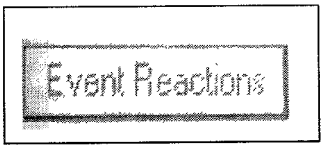


Figure 302 – 'Event Reactions' allows the installer to choose which events the controlled outlet will react to. Selecting Figure 302 takes the installer to Figure 307.

Figure 307

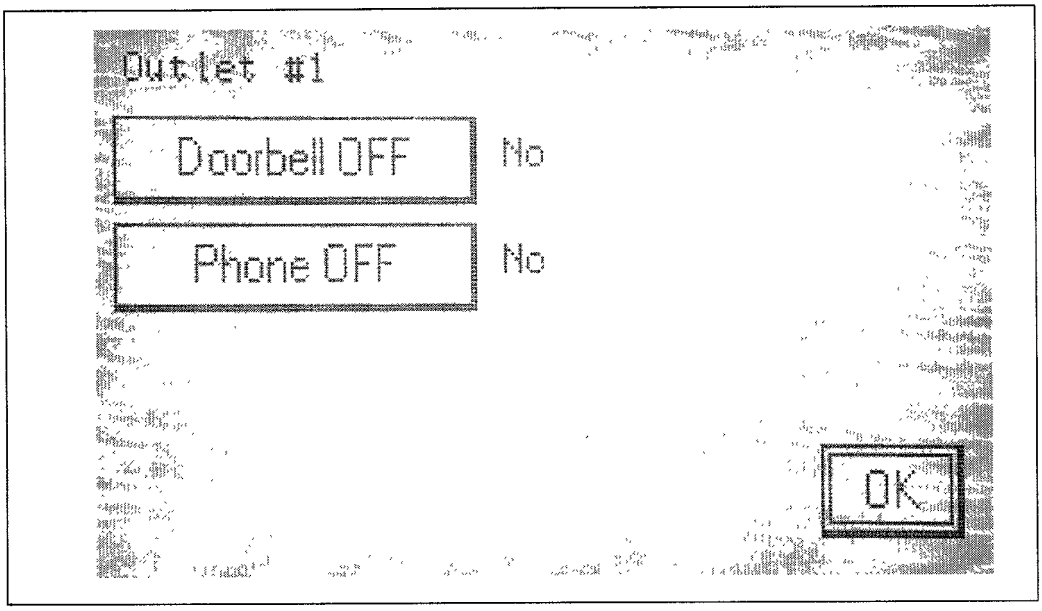


Figure 307 displays the event reaction choices available to the installer. Pressing any of the above icons will toggle the status from 'No' to 'Yes' and the controlled light will respond accordingly.

Pressing 'OK' will return the user to Figure 300.

Figure 303

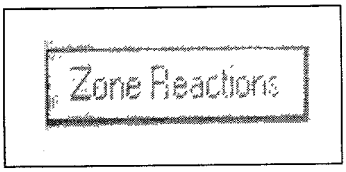


Figure 303 – 'Zone Reactions' allows the installer to choose which security zones the controlled outlet will react to. Selecting Figure 303 will take the installer to Figure 308.

Figure 308

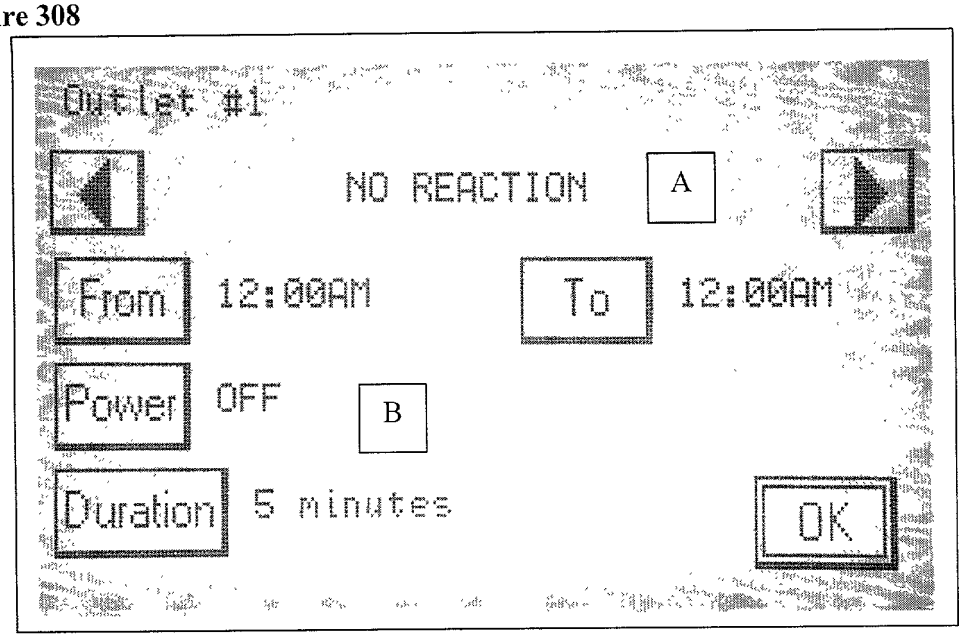


Figure 308 allows the installer to configure the controlled outlet's reaction to security zones. In the example above there is no programmed reaction. In the area labeled 'A' the user may choose the 'left' and 'right' arrow to toggle through the programmed security zones. The installer may also customize the controlled outlet's reaction by establishing a time frame in which it will respond, the power status and the duration with which it will remain 'On' in the area labeled 'B'.

Pressing 'OK' will return the installer to Figure 300.

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Figure 304

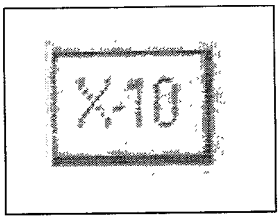


Figure 304 – 'X-10' displays the current communication protocol for the controlled outlet. Selecting Figure 304 will take the installer to Figure 309.

Figure 309

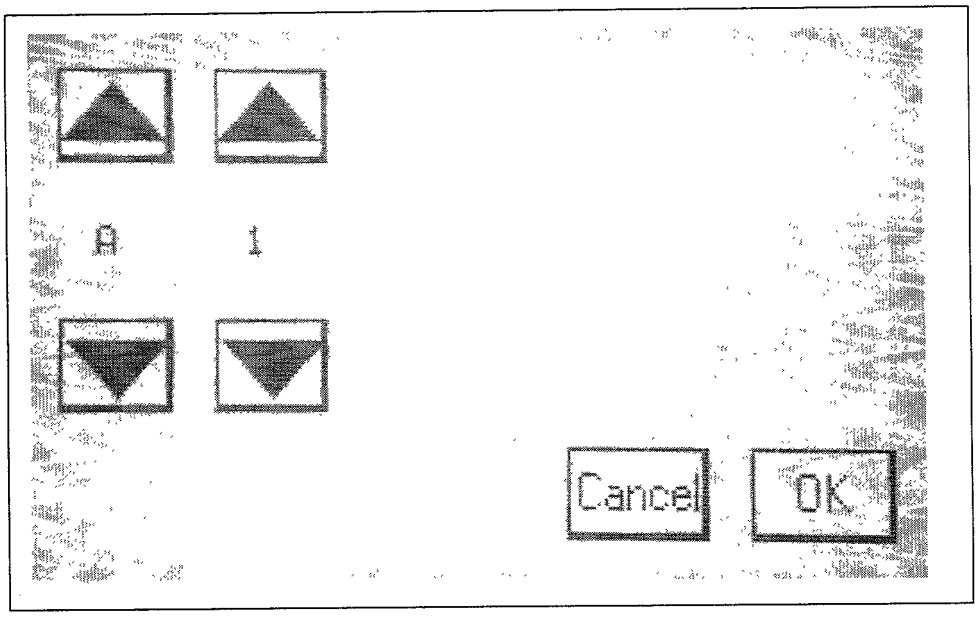


Figure 309 is the screen that codes the controlled outlet to the proper power line carrier address. There are 256 possible X-10 addresses beginning with a House Code of 'A' thru 'P' and a unit code of 1 thru 16. (e.g. A1, B3, M14, K1, etc.)

'Cancel' clears recent changes and pressing 'OK' returns the user to Figure 300.

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Figure 256

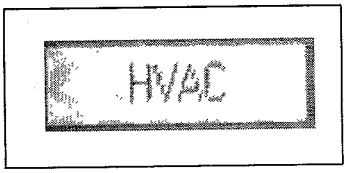


Figure 256 – 'HVAC' takes the installer to the Heating and Cooling controls configuration. In this area the installer can establish the proper settings for the HVAC unit in the system control programming.

Figure 257

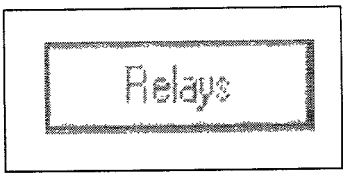


Figure 257 – 'Relays' takes the installer to the relay control configuration. In this area the installer can establish the proper settings for the relays that are interacting with auxiliary devices in the system control programming.

Figure 258

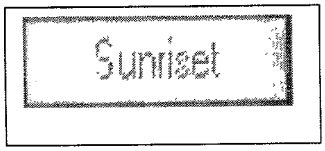


Figure 258 – 'Sunriset' takes the installer to the Sunrise/Sunset configuration screen. Selecting Figure 258 takes the user to Figure 310.

Figure 310

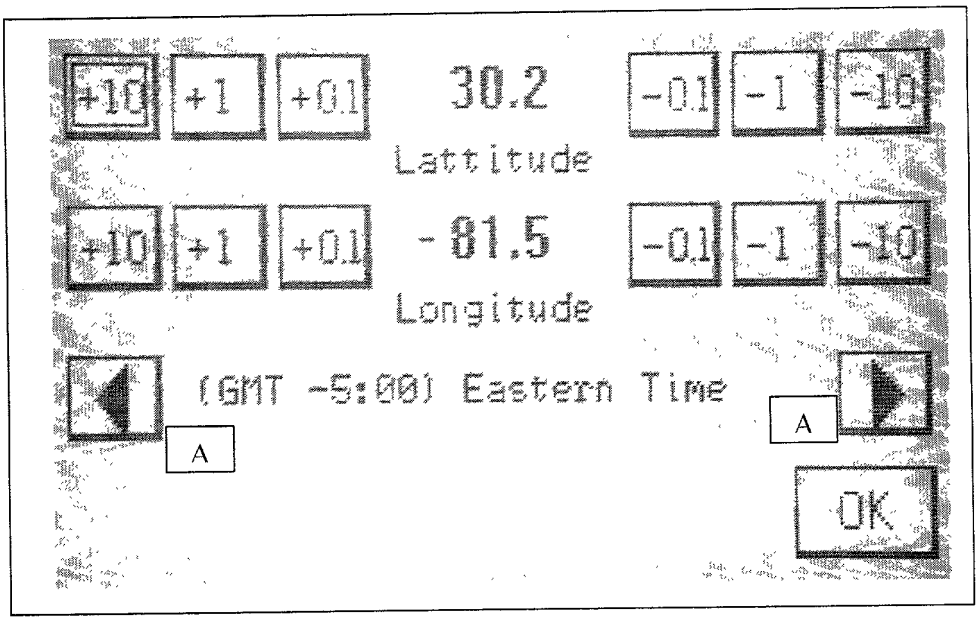


Figure 310 allows the installer to program the exact geographic position of the system on the earth through latitude and longitude and the proper time zone in order for it to maintain the correct sunrise and sunset information. The correct time zone is reached by toggling the 'left' or 'right' arrows labeled 'A' within Figure 310.

Pressing 'OK' returns the installer to Figure 249.

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Figure 259



Figure 259 – 'Tools' takes the installer to the system tools screen. Selecting Figure 259 takes the user to Figure 311.

Figure 311

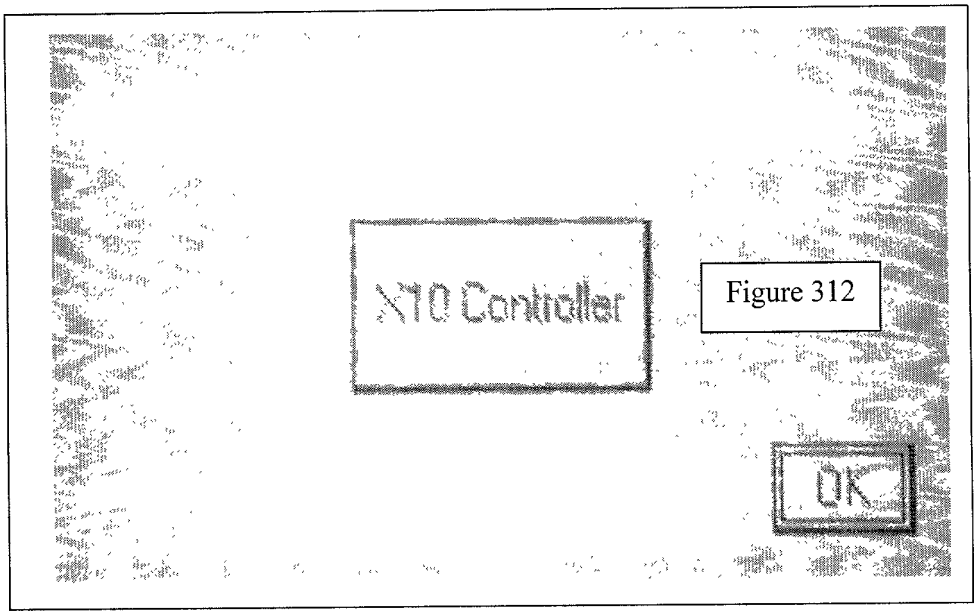


Figure 311 allows the installer to reach an X-10 transmit screen to facilitate the installation of the system. Selecting Figure 312 within Figure 311 takes the installer to Figure 313.

Pressing 'OK' returns the installer to Figure 249.

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Figure 312

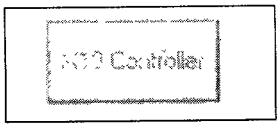


Figure 312 allows the installer to reach an X-10 transmit screen to facilitate the installation of the system.

Figure 313

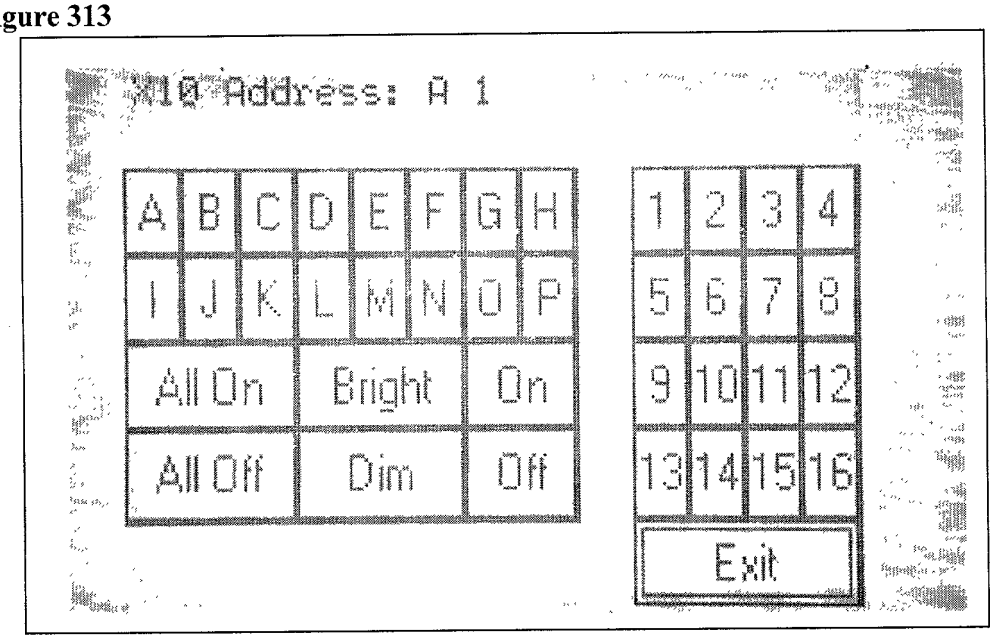


Figure 313 allows the installer to select specific X-10 codes to transmit through the building power line to confirm proper installation and function of certain devices and to program the address into other devices. For example, the installer may broadcast an 'A1' command to make a controlled light is functioning properly or the installer may wish to assign an address to switch that can only be programmed through the receipt of an X-10 signal.

Pressing 'Exit' returns the installer to Figure 311.

(3)
Key Reader

Function
The key reader functions as the primary user interface when entering & exiting the building. One touch of a preprogrammed key will arm/disarm the security system as well as invoke any number of scenes, reactions or macros programmed by the end user to be triggered by the key. Individual keys are programmed in the system and assigned to the individual user providing data between the key reader and the system in the form of:

- Time/Date of entry/exit
- Person entering/exiting the building or areas of the building
- Priority level of individual keys
- Time/Date individual keys are active for arm/disarming, entry/exit
- Scenes that are triggered by the use of an individual key
- Conditions under which triggers are active such as day of week or time of day, only on weekends or weekday, only if building is unoccupied or select users keys are used first, etc.

Features & Applications
The key reader mounts in a single electrical switch box and connects to standard bell wire or category five twisted pair wires that connect to one of the two key reader inputs on the systems platform. The key reader houses a bi-metallic circular docking pad for the smart key that applies a small amount of voltage across an applied key while it derives a unique encrypted code from the key and delivers that code back to the system via input terminals located on the platform. The key reader also provides feedback via a dual-color LED located directly above the docking pad. This LED turns red when the system is armed and green when the system is disarmed. It also provides feedback in the form of a blinking LED with varying frequencies to indicate system trouble, a violated security zone, or that motion in present in the building.

(4)
Phone/Modem/Voice Module

Function
The Phone/Modem/Voice module is an add-on circuit board that plugs into the designated headers on the platform of the system. Once installed it allows the system to connect to a standard phone line allowing the end user to control all features of the system via voice driven menus and keystrokes on any touchtone phone inside or outside the building.

Features & Applications
Phone control from outside the building requires an access code that is programmed by the end user. From inside the building, any touchtone phone can access and control all features with the press of the # or * key on the phone. The modem section of this module

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allows a computer to be connected either locally or globally for the purpose of viewing, changing, and controlling system features via a personal computer. The systems voice vocabulary is digitally driven from this module and allows the system to deliver instructions or messages to end-users. The vocabulary is very comprehensive and programmable to deliver any combination of words, numbers, or syllables over the phone line. The addition of this module provides voice menu & touchtone control of:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

The modem section of this module also contains an auto-dialer that seizes the phone line and dials out to 4 independent user programmed numbers in the event of an emergency. The voice drivers deliver real-time information regarding the status of any system feature.

(5)

WEB Interface Module

Function

The WEB interface module provides the high-speed data interface and system memory required to access the system via an Internet connection. This module allows the system to link directly to a predetermined website that contains specific (virtual) information pertaining to the building that contains the system. Once the system is linked to the appropriate website, the authorized end user has virtual control with three-dimensional representation of the building and interactive control of system features.

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Features & Applications
With the Web interface module the end user is able to log on to a specific website that links graphical representations of a buildings individual controls for:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

This graphical user interface represents the actual status of lights, security, locks, doors/windows opened or closed, appliances on/off, how much energy is being used, and who was the last person to enter/exit the building. With the point and click of a mouse, the user can adjust any aspect of the building a while watching a virtual representation reflect such changes. This feature allows the end user to virtually be in and control a building or home, from any web-connected computer in the world.

(6)
PDA Palm Pilot Interface Module

Function
The PDA Palm Pilot interface module provides the wireless data interface and system memory required to access the system via a PDA or Palm wireless network. This module allows the system to link directly to a predetermined PDA address that contains specific information pertaining to the building that contains the system. Once the system is linked to the appropriate address, the authorized end user has control with two-dimensional representation of the building and interactive control of system features. This module also provides the PDIR Infrared communication path to up/download data between the

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system and individual PDA's via the IR window located at the top of the touch screen bezel.

Features & Applications
With the PDA Palm Pilot interface module the end user is able to connect to an address that contains specific graphical representations of a buildings individual controls for:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

This graphical user interface represents the actual status of lights, security, locks, doors/windows opened or closed, appliances on/off, how much energy is being used, and who was the last person to enter/exit the building. With the stylist the user can tap on areas of the PDA screen and adjust any aspect of the building a while watching virtual representation reflect such changes. This feature allows the end user to virtually be in and control a building or home, from any PDA-connected location in the world.

(7)

IR/RF Remote Control Interface Module

Function
The IR/RF interface module provides the wireless data interface and system memory required to access the system via a handheld remote control. This module allows the system to link directly to and from standard remote control devices that accompany audio/video equipment. This module also provides the IR Infrared and RF Radio Frequency communication path to up/download data between the system and individual remote controls via the IR window located at the top of the touch screen bezel.

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Features & Applications
With the IR/RF remote control interface module the end user is able to use conventional universal remote control devices to interface and control:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

This module allows the system to receive, learn, and transmit IR and RF signals and data via the IR window located at the top of the touch screen bezel. Once a signal is learned, it can be used as a trigger to invoke any combination of system features or scenes.

III. Expansion Modules

(8)
Processor Modules

Function
The Processor module, whether a residential or commercial version, is a standard feature of the system in the form of circuit board that plugs into the designated headers on the platform of the system. Once installed it provides the varying levels of processing power, system memory, Input/Output signal and data routing, and firmware the system requires depending on the application.

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Features & Applications

The processor module determines the exact features and functions of the rest of the components in the system. One version of the processor module is dedicated to single residential applications, other processor modules are used to support:

- Multi-family dwellings
- Light commercial buildings under 10,000 square feet
- Commercial buildings larger than 10,000 square feet
- Warehouses and storage facilities
- Factories and assembly lines
- Restaurants
- Hotels & Motels
- Apartments and Condominiums
- Schools & Collages
- Government buildings
- Churches & Temples
- Grocery stores
- Gas and service stations
- Strip malls
- Shopping centers
- Professional office complexes
- Movie theaters
- Large, Medium, and small retail showrooms
- Home improvement centers
- Department stores
- Boardrooms and conference centers
- Convenient stores
- Cruses and large private ships

The processing power, memory capabilities, and I/O requirements differ depending on the varying combinations of benefits and features required by these different structures. Each processor module is designed to be plugged into the same system platform making the rest of the components to the system universal in application. Each processor module automatically updates and/or changes the Icon's and menus on the touch screen appropriately.

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(9)

Peripheral Power Modules

Function

The peripheral power module is a necessary module for providing power to peripheral sensors and components that do not derive their power from the systems main power supply. The peripheral power module plugs into the designated headers on the platform of the system.

Features & Applications

The peripheral power module supplies a clean and protected 2 amps, larger versions available, to provide the following devices with power to function and interact with the system.

- Solenoid & magnetic door latches
- Sprinkler & irrigation systems
- Motorized window coverings
- Motorized windows and skylights
- Devises that actuate via contact closure
- Motion detection sensors
- Propane and other gas sensors
- Stress and pressure sensors
- Temperature, internal and external sensors
- Water and moisture sensors
- Vehicle detection sensors
- Vibration sensors
- Wind, rain, and humidity sensors
- Occupancy detection sensors
- Glass breakage sensors
- Pressure differential sensors
- Touch screens
- Key readers
- Card readers
- Keypads
- Monitors & displays
- Input/output devices

The peripheral power module also incorporates surge protection and circuit isolation that protects the systems connection to the phone line. Designed to be a separate component from the rest of the system, it acts as a governing device that cannot be physically installed and powered on until the rest of the components are in place. Since the power supply section of most electronic systems is the most vulnerable component, we designed the peripheral power module to be disposable and swappable so that the remainder or the system components are not sacrificed in a power serge or lightning related system failure.

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(10)

Security Module

Function

The security module, whether a residential or commercial version, is a standard feature of the system in the form of circuit board that plugs into the designated headers on the platform of the system. Once installed it provides the processing power, system memory, Input/Output signal processing, and firmware the system requires depending on the application. Each Security module is designed to control 20 zones; multiple security modules can be added to the system to expand the total number of security zones by multiples of 20 zones up to 240 zones without requiring a memory upgrade. When using the security module as an expansion module, an additional chassis and power module is required for every 80 zones of security.

Features & Applications

Security circuits are a basic and standard feature of the system and achieved via 20 analog input terminals, 2 smoke/heat input terminals, and output terminals for siren and strobe, all located on the platform. Other means of communicating with security devices include low voltage RS232 & RS485 wire connections as well as devices that can be controlled with RF Radio Frequency, interfaces also located on the platform. As with all other features provided by the system, security features are linked to programmable logical conditions or "triggers" selected by the end user at the touch screen or via the systems icon based software and a PC. The number of "triggers" is limited only by the systems memory and the end users imagination. Security triggers can also be programmed to operate under general system conditionals in order to provide the most benefit and flexible applications. The security module acquires data from devices such as:

- Door & window contacts
- Motion detection sensors
- Propane and other gas sensors
- Stress and pressure sensors
- Temperature, internal and external sensors
- Water and moisture sensors
- Vehicle detection sensors
- Vibration sensors
- Wind, rain, and humidity sensors
- Occupancy detection sensors
- Glass breakage sensors
- Pressure differential sensors
- Bio Warfare and toxic chemical sensors

Once data is acquired by one or any combination of the devices listed above, the security module will generate a reaction with or an output to devises such as:

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- Sirens and Strobes
- Solenoid & magnetic door latches
- Sprinkler & irrigation systems
- Motorized garage door openers
- Motorized window coverings
- Motorized projector screens and lifts
- Motorized windows and skylights
- Devises that actuate via contact closure
- Lighting & Outlet control
- Heating Ventilation & Air Conditioning
- Access Control & Information Logging
- Audio/Video equipment
- Energy Management control
- Internet Interface
- Computer Interface
- Palm Pilot & PDA
- Time & Task Management
- IR & RF Remote Control

All security and safety functions and features are programmable by the installer or end user via the following devices:

- Touch screens
- Key readers
- Card readers
- Keypads
- Monitors & displays
- Personal Computers
- Palm Pilot PDA
- Input/output devices

The touch screen and key reader both include auditable and visual indicators that indicate the status of the system:

- Armed
- Disarmed
- Trouble
- Bypassed zone
- Tamper detection
- Home mode
- Away mode
- Vacation mode
- Phone connection

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- Last armed/disarmed by
- Time for service
- Open/closed zones
- System power status
- Back up battery status
- Communication status/trouble
- Scheduled arm/disarm times

(11)

Audio Module

Function

The Audio module is an add-on component that provides the control and amplification for six separate audio/video sources multiplexed to 24 zones, rooms, or sets of speakers. Additional zones can be added by cascading up to six audio module components together for control and amplification of 144 zones, rooms, or sets of speakers. Source selection, volume levels, mute when phone or doorbell rings, scene programming and all other features of each of the source equipment connected to the system, are interfaced with and controlled via icons on the individual touch screens located in or near each audio zone or room.

Features & Applications

1. Six individual stereo amplifiers with independent zone, or room operation
2. 4 pairs of RCA inputs for connecting audio/video sources
3. Customizable source names for each piece of equipment
4. Preamp outputs for additional amplifiers or powered sub woofers
5. Simple operation from touch screens local or global in the building
6. Visual confirmation of IR signal on the touch screen
7. Auto mute for phone or doorbell
8. Master control status from any touch screen
9. Audio scenes & functions interact with all other system features:

    - Lighting & Outlet Control Applications
    - Security & Safety Applications
    - Heating Ventilation & Air Conditioning Applications
    - Access Control & Information Logging Applications
    - Energy Management Applications
    - Telephone Interface Applications
    - Internet Interface Applications
    - Computer Interface Applications
    - Palm Pilot & PDA Interface Applications
    - Time & Task Management Applications
    - IR & RF Remote Control Applications

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One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

(12)

Expanded HVAC Module

Function

Two zones of HVAC control are a basic and standard feature of the system and achieved via relay-controlled input/output terminals located on the platform and the temperature sensors built into each touch screen. Each expanded HVAC module is designed to add control of four additional zones; multiple HVAC modules can be added to the system to expand the total number of HVAC zones by multiples of 4 zones up to 82 zones without requiring a memory upgrade. When using the HVAC module as an expansion module, an additional chassis and power module is required for every 8 zones of control added.

Features & Applications

Other means of communicating with HVAC control devices include low voltage RS232 & RS485 wire connections as well as HVAC devices that can be controlled with RF Radio Frequency and/or PLC Power Line Carrier interfaces also located on the platform. As with all other features provided by the system, HVAC features are linked to programmable logical conditions or "triggers" selected by the end user at the touch screen or via the systems icon based software and a PC. The number of "triggers" is limited only by the systems memory and the end users imagination. HVAC triggers can also be programmed to operate under general system conditionals in order to provide the most benefit and flexible applications. The following list includes some of the more common triggers and reactions.

Control Options:

- Central Heating
- Central Cooling
- Evaporative Cooling
- Heat Pumps
- Baseboard Heat
- Radiant Heat
- Dampers
- Baffles
- Zone Controlled
- Electric Heat Strip

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- Forced Air
- Motion Activated
- Multi Stage Compressors
- Hybrid Systems
- Auto Setback Systems
- Commercial Systems
- Residential Systems
- Multi Dwelling Systems

HVAC scenes & functions interact with any combination of other system features:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

(13)

Energy Management Modules

Function

The energy management module provides the wireless data interface and system memory required to connect and derive data from the electrical, gas, and water service meters associated with the building that houses the system. The system receives the transmitted wireless signals from the service meters via the Energy Management Receiver module. (see figure 469 and 470) This module receives and decodes the same wireless signal that is broadcasted for the original purpose of remote meter reading, a technology

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by the utility company to enhance the efficiency of the laborious meter reading process for billing.

Features & Applications
The Energy Management module allows the system to instantaneously review the amount of electricity, gas, and water being used at any given time or as an average used per hour, day, week, and month. This information can be displayed in dollars or Kilo Watt Hours (Kwh) on the touch screen or via a connected palm pilot or computer. Once the system acquires these signals from the individual service meters, the data is used to:

- Represent the amount of each resource being consumed.

- Provide feedback regarding consumption, to the end user, via the display on the touch screen in a format similar to that of an automobiles fuel gauge.

- Allow the end user to program budget parameters at the touch screen that will automatically adjust or turn on/off combinations of appliances in order to keep the usage of electricity, gas, and/or water within the budgeted amount.

  Example: If the temperature in the building is set for 70 degrees, and the user chooses to also run the electric dishwasher, cloths dryer, oven range, hot water heater, and/or washing machine, then the system controls the air conditioner level to adjust to 76 degrees, the close dryer to complete it's cycle, then the hot water heater to run, but not while the cloths dryer is running, then after the hot water completes it's cycle, start the dishwasher and washing machine. After the dishwasher and washing machine complete their cycles, the air conditioner returns to 70 degrees but only if the oven range is not using the majority of the budgeted electricity. If other appliances are using an amount of electricity that when combined with that required by the air conditioning unit to cool the building to 70 degrees, then the system calculates and commands a compromised cooling temperature between 70 and 76 degrees.

- Allow the energy provider to access the system via a phone, wireless, PLC-Power Line Carrier, Internet or computer connection, to trigger the building to enter into a predetermined energy management control mode. This feature provides service providers and utility companies the ability to "shed" the amount of electricity, or other resource, required for a building or group of buildings that incorporate the system.

- Empower the system to store in its memory, the amount and user patterns of electricity, gas, and/or water to be downloaded and formatted for utility billing purposes, forecasting demand, formulating user patterns, identifying unusual usage patterns, and eliminating the expensive process of manual meter reading.

- Energy Management scenes & functions interact with all and any combination of other system features:

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- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
- Time & Task Management Applications
- IR & RF Remote Control Applications

One-touch scenes incorporating: Lighting & Outlet Control Applications, Security & Safety Applications, Heating Ventilation & Air Conditioning Applications, Access Control & Information Logging Applications, Audio Control Applications, Energy Management Applications, Internet Interface Applications, Telephone Interface Applications, Computer Interface Applications, Palm Pilot & PDA Interface Applications, Time & Task Management Applications, and IR & RF Handheld Remote Control Applications based on user-selected parameters.

(14)

Expanded Code Modules

Function

The system has been designed with an open architecture approach that allows it to utilize several expanded protocols or codes that are available today.

Features & Applications

Since different consumers can and will elect different code, we have designed expansion modules that enable the system to utilize 12 different PLC-Power Line Carrier, or wireless code protocols from other manufactures:

1. CE Bus - Consumer Electronic Bus
2. Echelon - Lon works Bus
3. SCP – From Microsoft
4. Blue Tooth – IEEE Standard
5. Firewire - IEEE Standard
6. Leviton Extended Code
7. Two Way X10
8. Two Way A10
9. Home Plug – Industry Bus
10. UPnP Universal Plug and Play – Industry Bus
11. Home RF – Industry Bus
12. Standard X10 – De facto Standard

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Each protocol or code utilized by the system interacts and controls any combination of system features and applications such as:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
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IV. System Sotware

(15)

System Software

Function

We have produced ATLAS software that enables the system to be controlled, up/downloaded to and from, diagnosed, serviced, updated & upgraded via a standard phone line, high speed internet connection, or via a direct connection of a PC to the systems platform DB9 connection.

Features & Applications

Named ATLAS, an acronym for Asynchronous Transfer Linking All Systems, is available in many formats for different applications:

- Multi-family dwellings
- Light commercial buildings under 10,000 square feet
- Commercial buildings larger than 10,000 square feet
- Warehouses and storage facilities

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- Factories and assembly lines
- Restaurants
- Hotels & Motels
- Apartments and Condominiums
- Schools & Collages
- Government buildings
- Churches & Temples
- Grocery stores
- Gas and service stations
- Strip malls
- Shopping centers
- Professional office complexes
- Movie theaters
- Large, Medium, and small retail showrooms
- Home improvement centers
- Department stores
- Boardrooms and conference centers
- Convenient stores
- Cruses and large private ships

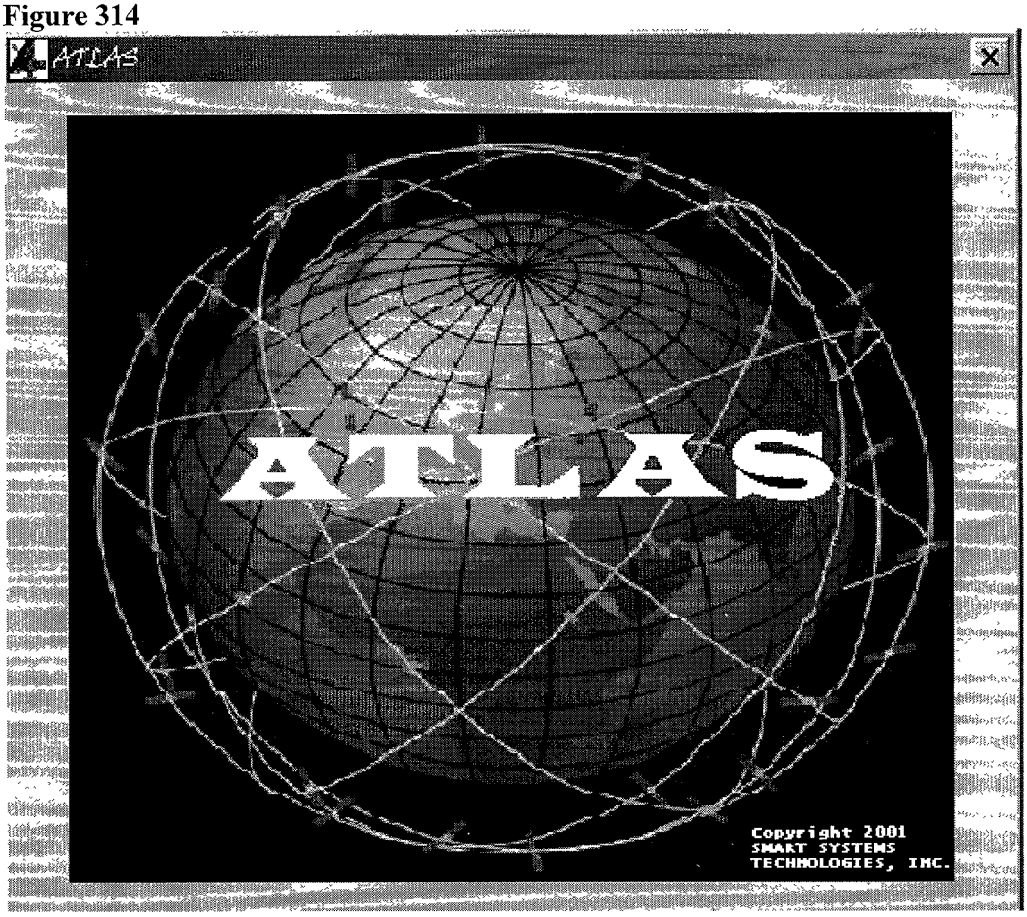
System Software (ATLAS) scenes & functions interact with all and any combination of other system features:

- Lighting & Outlet Control Applications
- Security & Safety Applications
- Heating Ventilation & Air Conditioning Applications
- Access Control & Information Logging Applications
- Audio/Video Control Applications
- Energy Management Applications
- Telephone Interface Applications
- Internet Interface Applications
- Computer Interface Applications
- Palm Pilot & PDA Interface Applications
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Figure 314

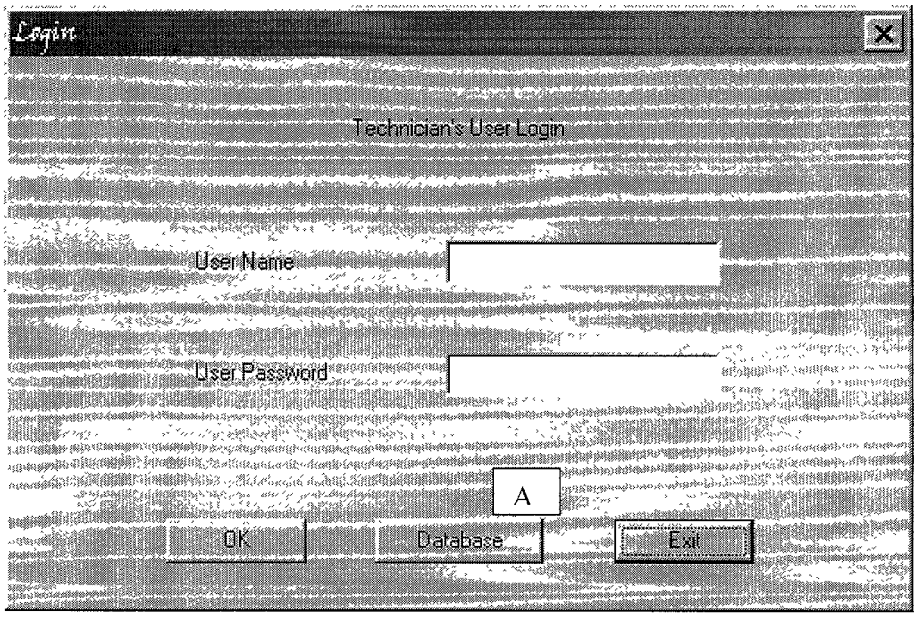


The Asynchronous Transfer Linking All Systems (ATLAS) software has the same programming functionality as the sytem has directly through the touchscreen with the additional features listed below:

- ATLAS is used by the integrator (installer) of the system to run diagnostics on the installed system from a remote location. This is achieved by the integrator dialing into the system via phone line.
- The integrator may also check or troubleshoot any problems with the system by dialing into the system and transfer the programming currently running. Any problems may be fixed remotely and then transfer the file back to the system.
- The integrator or manufacturer can use ATLAS to update any installed system as upgrades to the system become available.
- In duplicate installations by the integrator they can use ATLAS to program basic functionality, save that information into a file and as the installations are completed, simply download the programming file to each system. Once the basic functionality is saved to file the integrator may customize the file for each indivudual installation as needed.
- Once the system is installed, the end user will use ATLAS to customize any programming via a link from the RS232 port on the system to any external PC.
- Once the system is installed, the end user will use ATLAS to customize any programming from any remote computer by dialing into the system via phone line.

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Figure 315

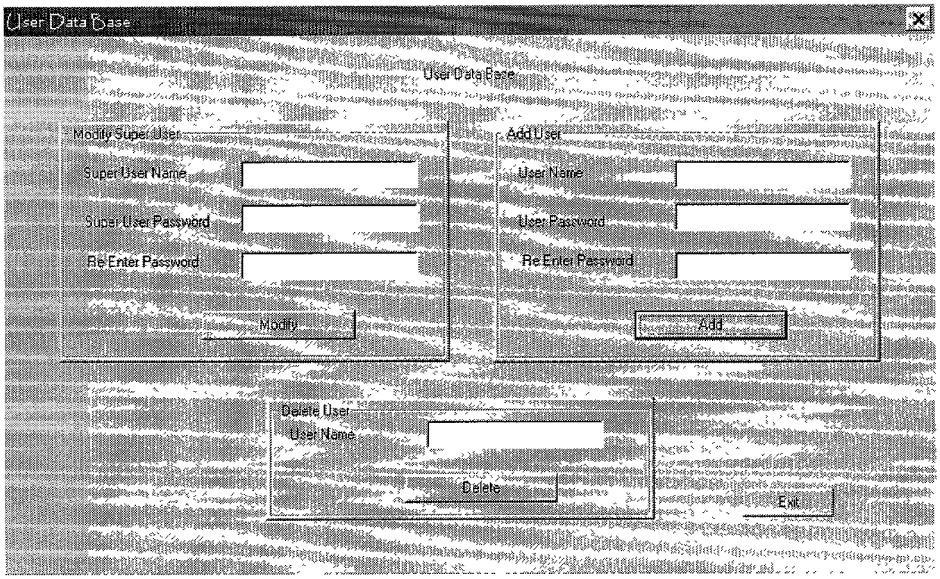


When the ATLAS software program is opened up on the laptop or desktop computer, Figure 314 will appear on the screen briefly and then will open with Figure 315. Figure 315 is the opening screen in which the Technician (integrator) or end user will enter the user name and password to access the software.

Upon initial opening of the ATLAS software, the user is required to set up a "Super User" (Figure 316) which has the ability to access any portion of the software and thus all aspects of the programming. To enter users to the system, click on the database icon (A) and that will open the next screen (Figure 316). From the screen shown in Figure 316, any additional users are set up to access the software and the programming capabilities. From this area the Super User may also delete any users from the software.

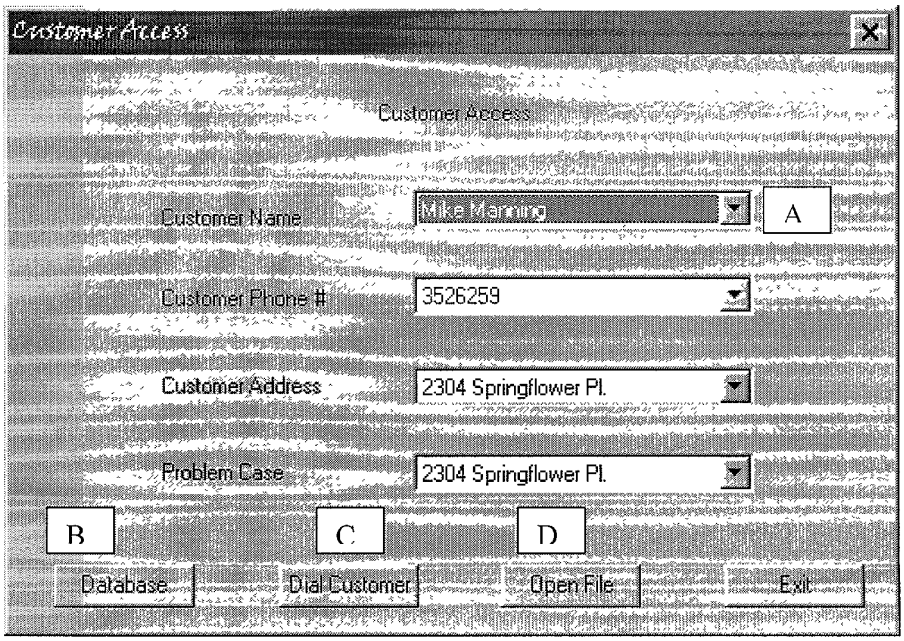
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Figure 316



After initially entering the users, upon opening the software the user will simply enter their name and password. That will then take them to Figure 317 where they have the option to select a customer already in the database (A), add a customer to the database (B), dial up the customer's system (C) or open a programming file (D).

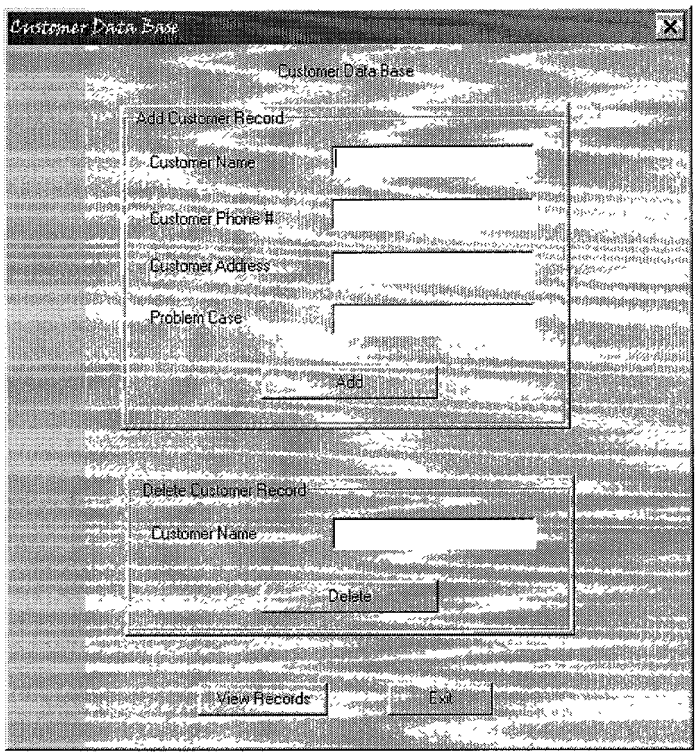
Figure 317



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Clicking on the Database icon (B) will take the user to Figure 318. This screen gives the user the option to either add or delete customers from the database.

Figure 318

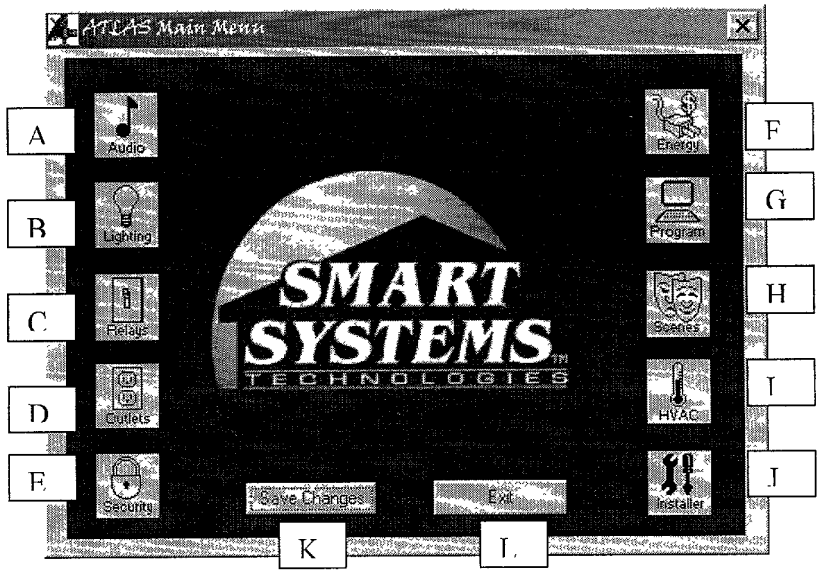


Once the customer information is added the user then can select the Open File icon (Figure 317D) and open either a previously saved programming file or the default file.

Opening the programming file will bring up Figure 319.

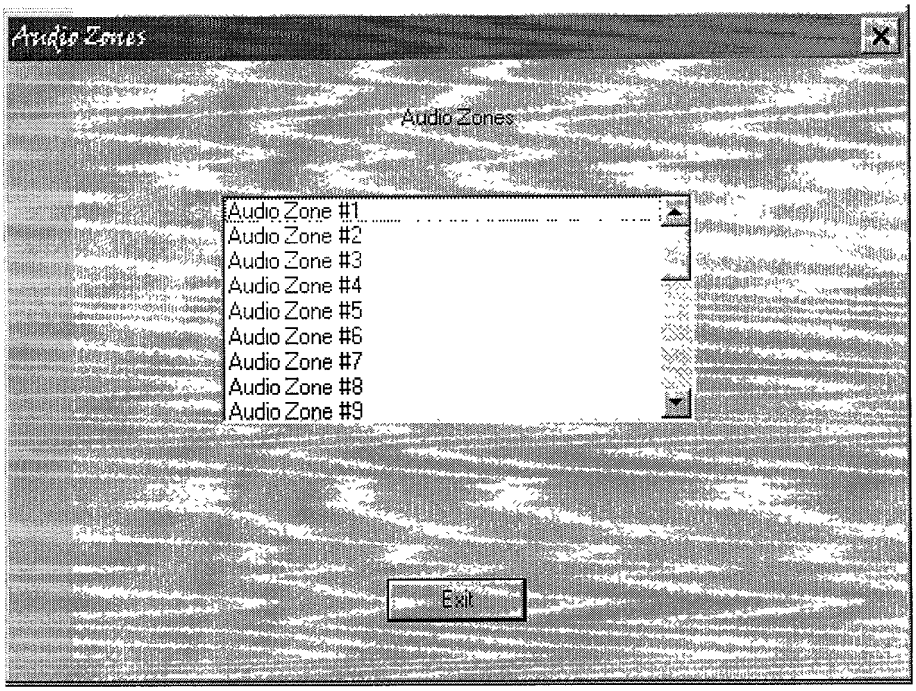
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Figure 319



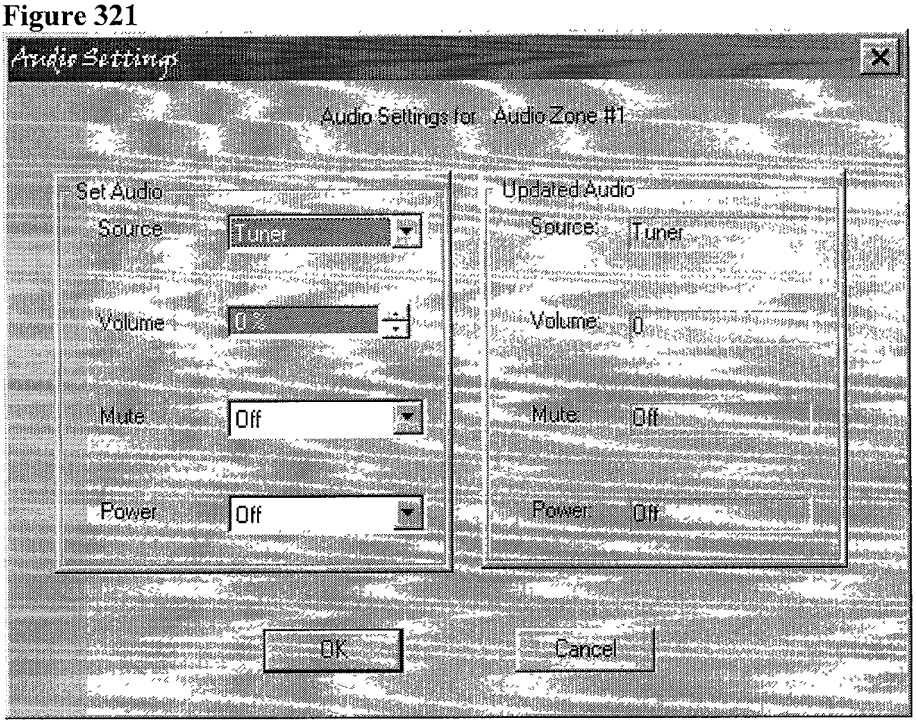
Clicking on the Audio icon (Figure 319A) will open the following screen, Figure 320. Once the zone to program is selected by clicking on the zone, Figure 321 will be brought up. The options given in Figure 321 are to change the source (Tuner, CD, Tape or Aux), the volume (1-100%), mute on or off and power on or off.

Figure 320



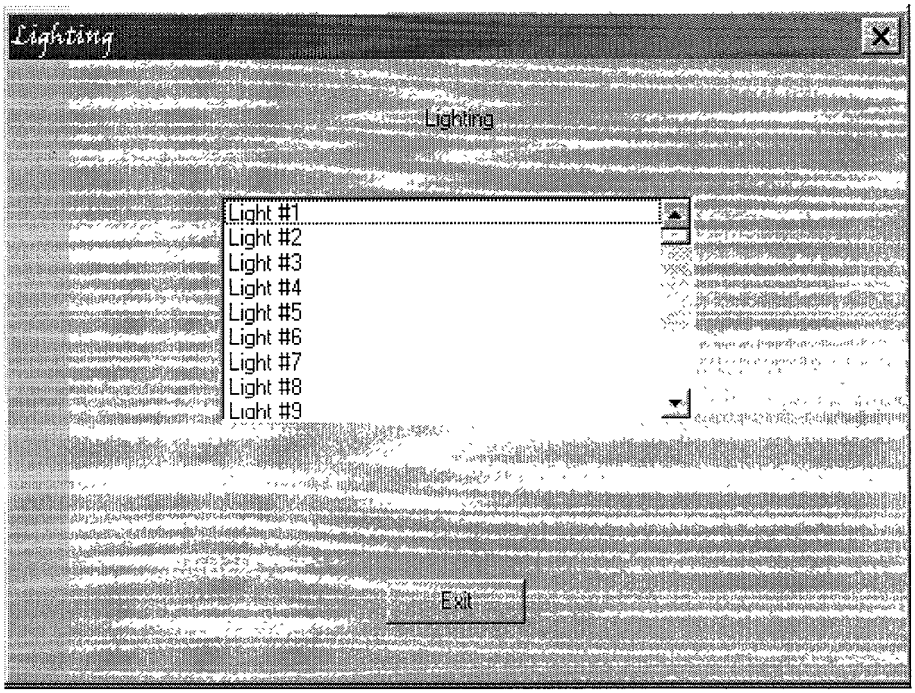
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Figure 321



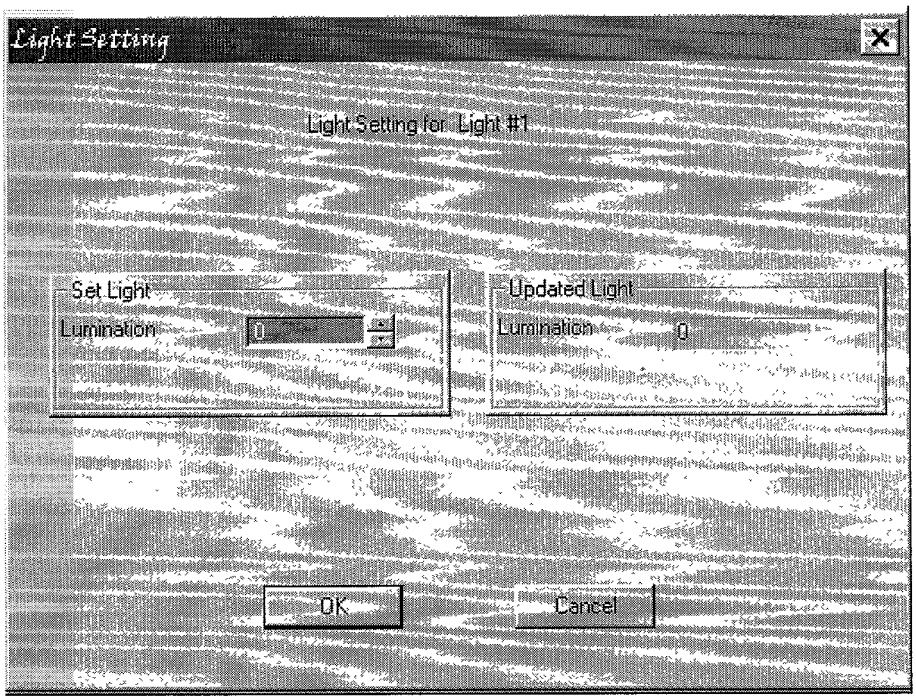
Selecting the lighting icon (Figure 319B) will open the following screen, Figure 322.

Figure 322



Once the specified light is selected by clicking on the corresponding description, Figure 323 will open. Figure 323 will allow the user to adjust the light dim value from 1-100%.

Figure 323



Selecting the relay icon (Figure 319C) will open the list of available relays for programming. This screen is shown in Figure 324. Once the relay is selected, Figure 325 gives the user the option to set the relay state as either off or on.

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Figure 324

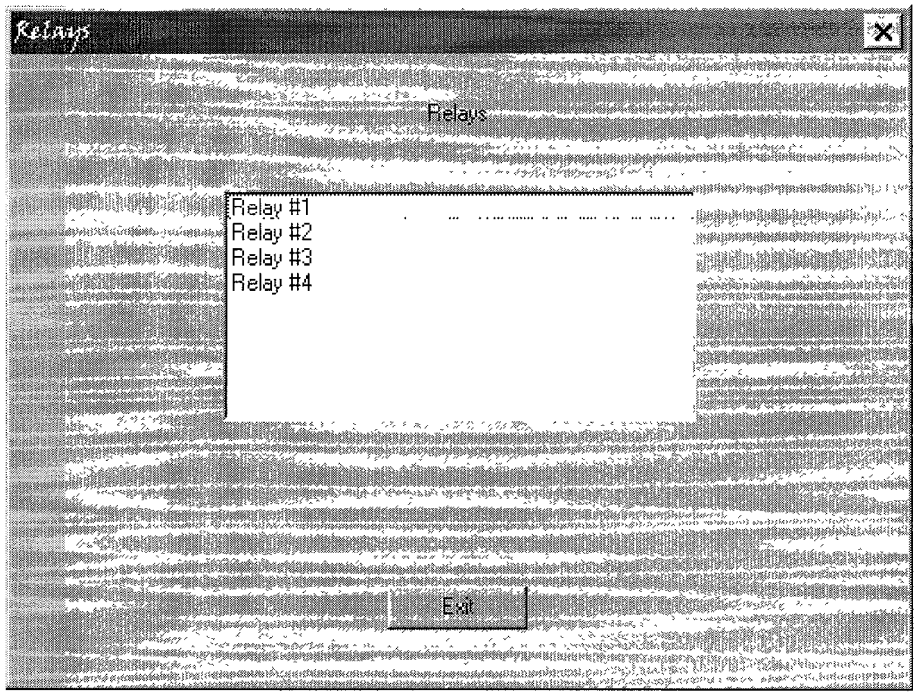
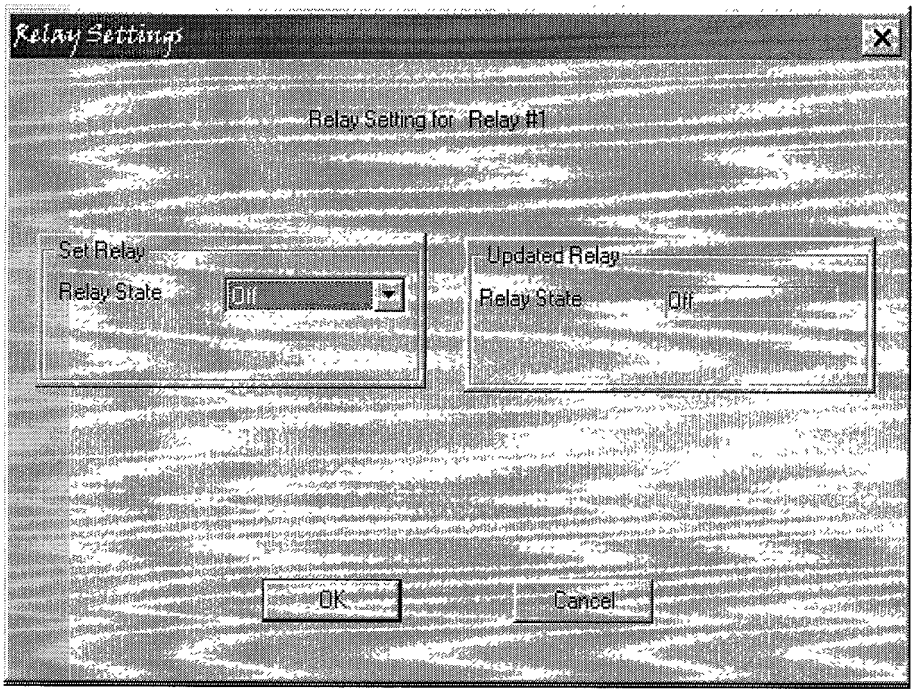


Figure 325



Selecting the outlets icon (Figure 319D) will open the list of available relays for programming. This screen is shown in Figure 326. Once the desired outlet is selected, the screen shown in Figure 327 gives the user the option to set the outlet state as either off or on.

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Figure 326

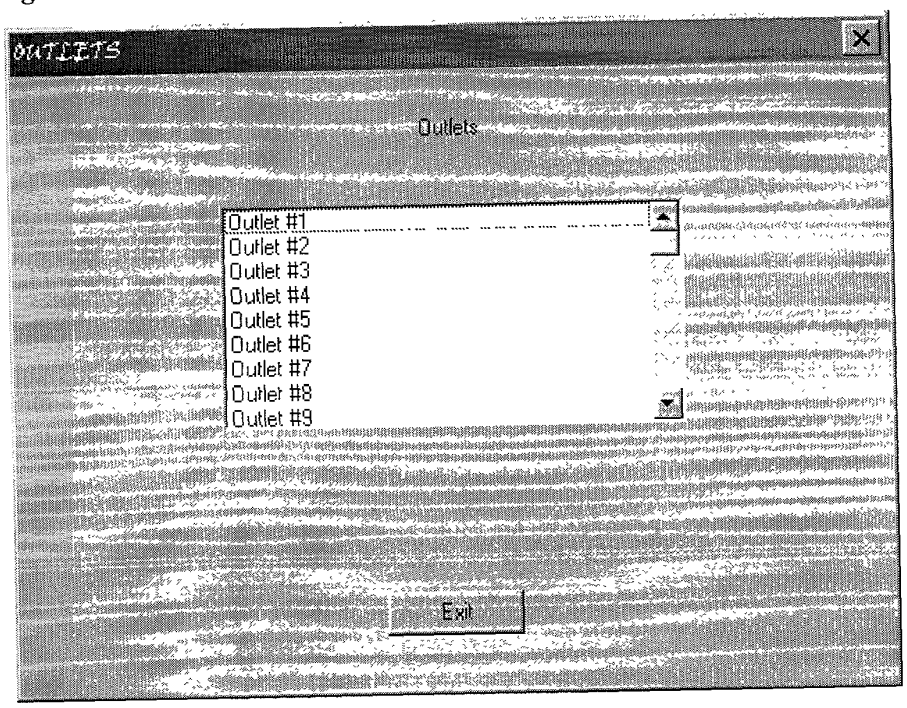
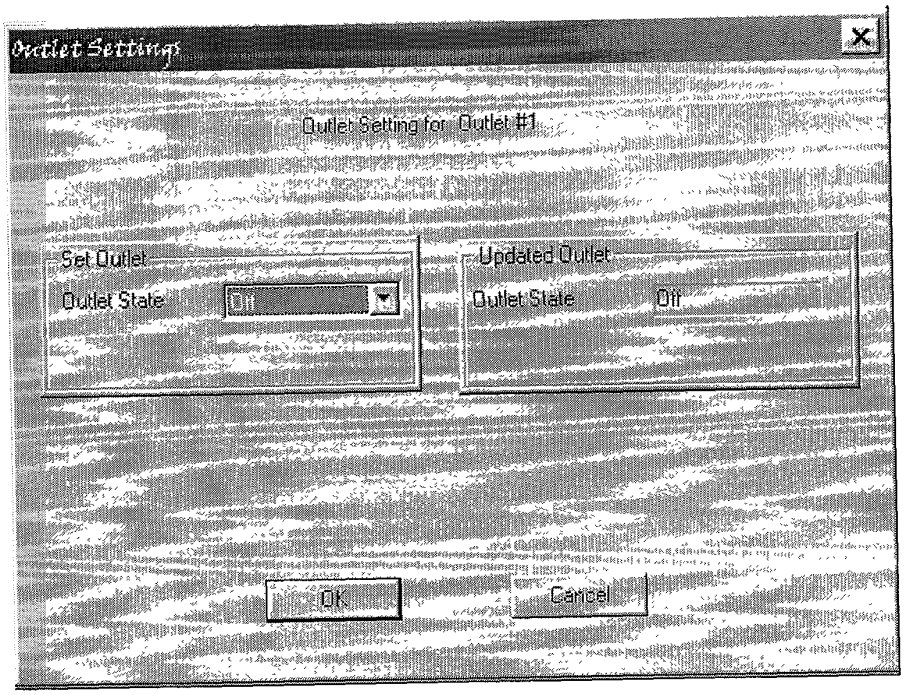


Figure 327



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Selecting the security icon (Figure 319E) will open the list of security options, Figure 328. By selecting arm status, the user can select disarmed, armed stay or armed away, as shown in Figure 329. The user may also view or add Bypassed Zones (Figure 330), Chimed Zones (Figure 331) and Open Zones (Figure 332). The user can also access the Security Log Book and view the entire log or a specific item (Figure 333).

Figure 328

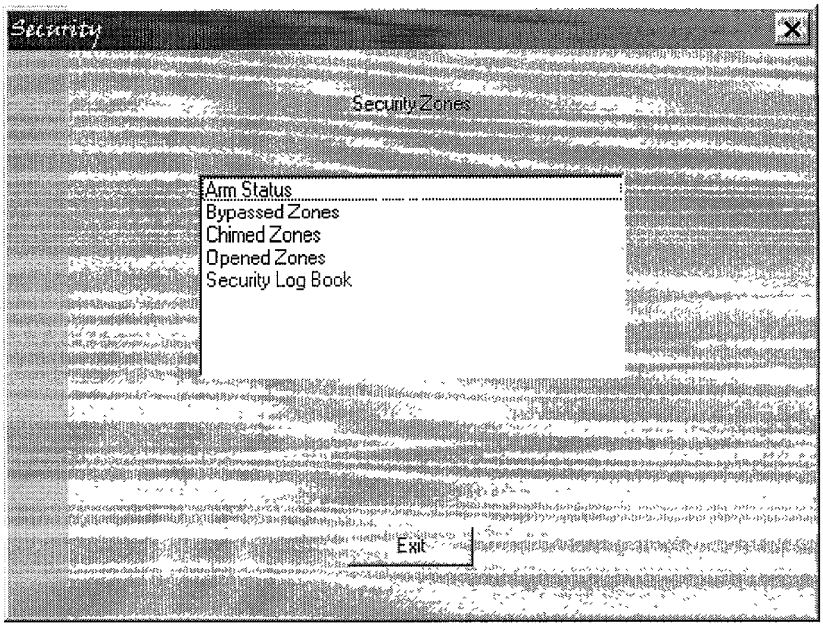
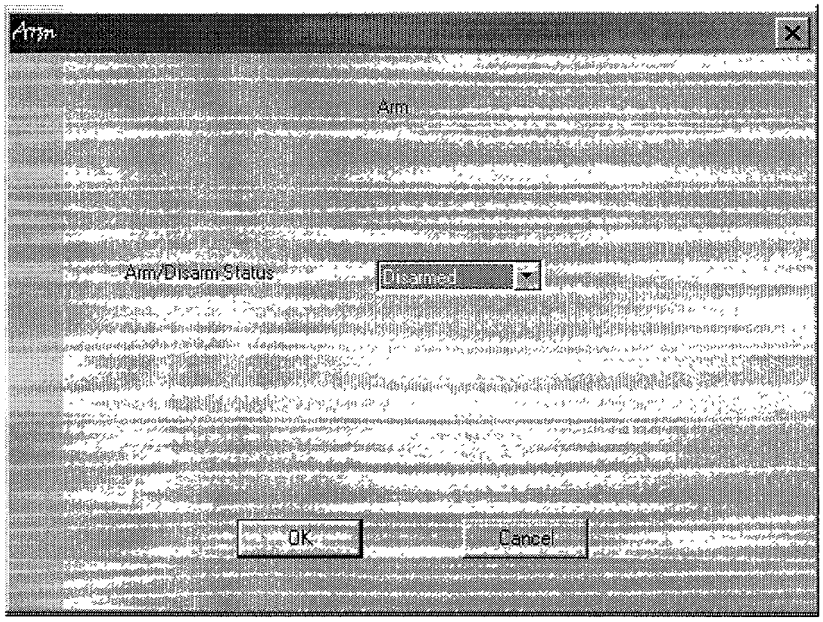


Figure 329



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Figure 330

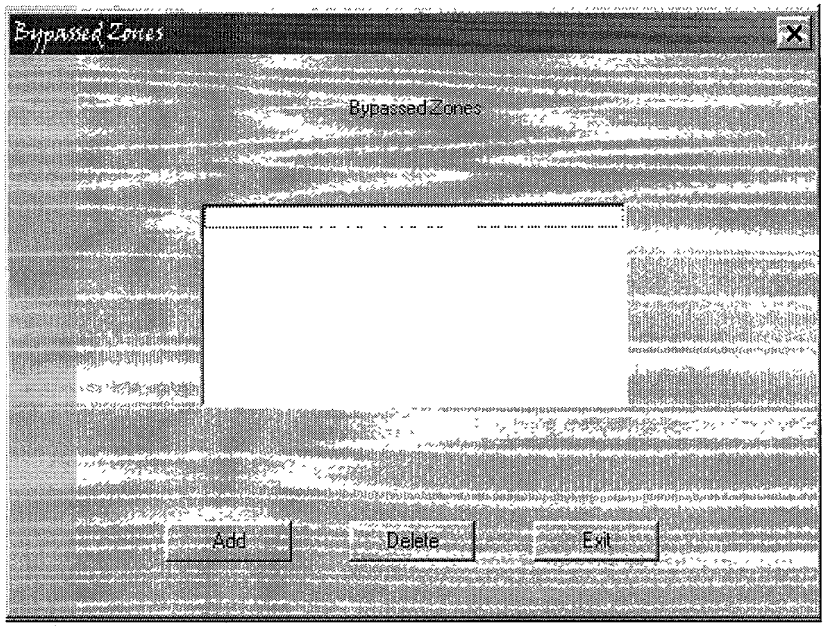
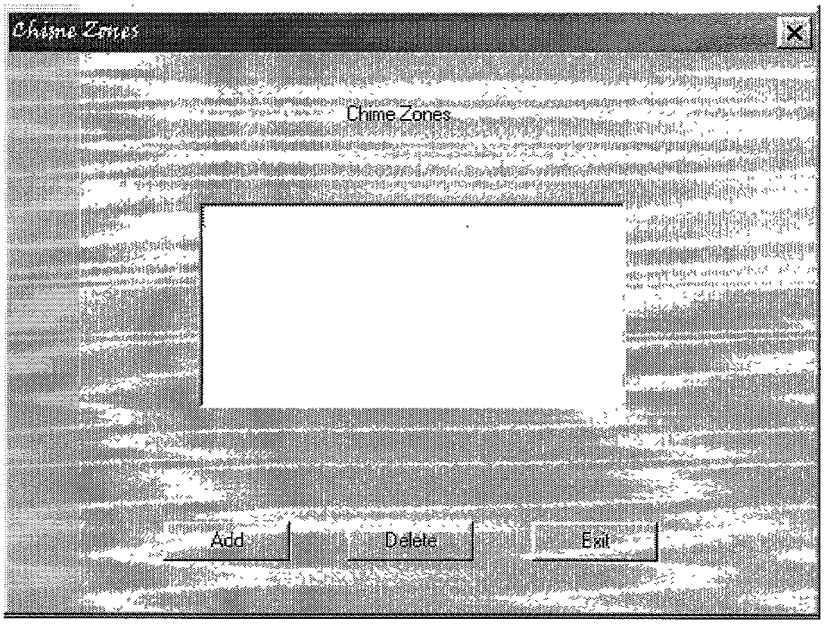


Figure 331



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Figure 332

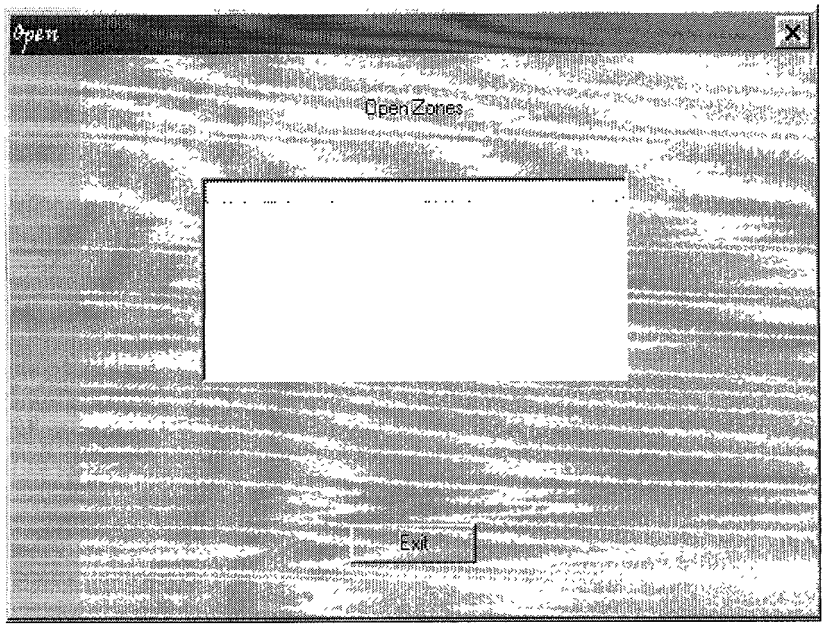
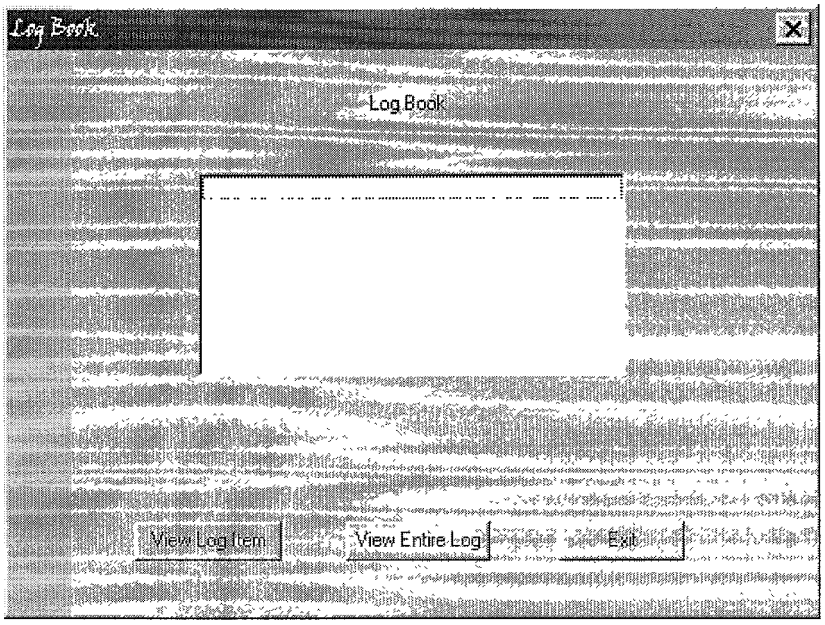


Figure 333



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Selecting the Energy icon (Figure 319F) will open the Energy Management Scenes screen, Figure 334. This screen has a listing of the Energy Management Scenes options. To Modify a scene, select modify and then the specific scene to alter. Choosing to modify a scene will take the user to Figure 335.

Figure 334

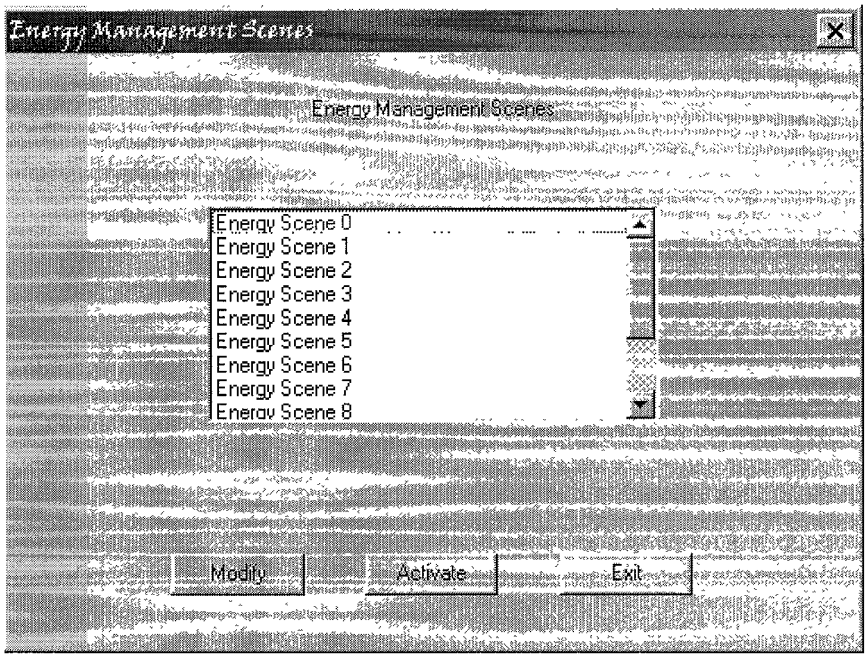
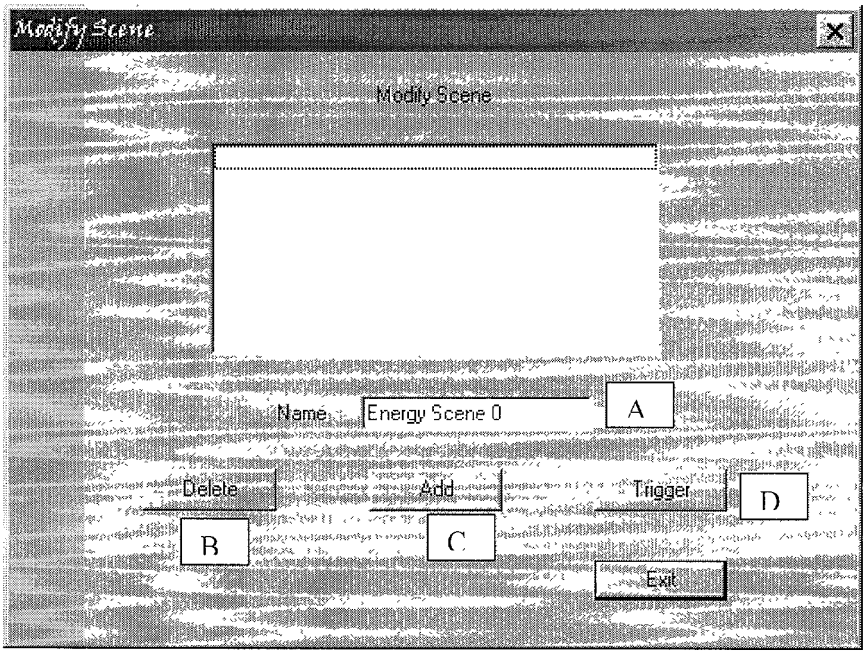


Figure 335



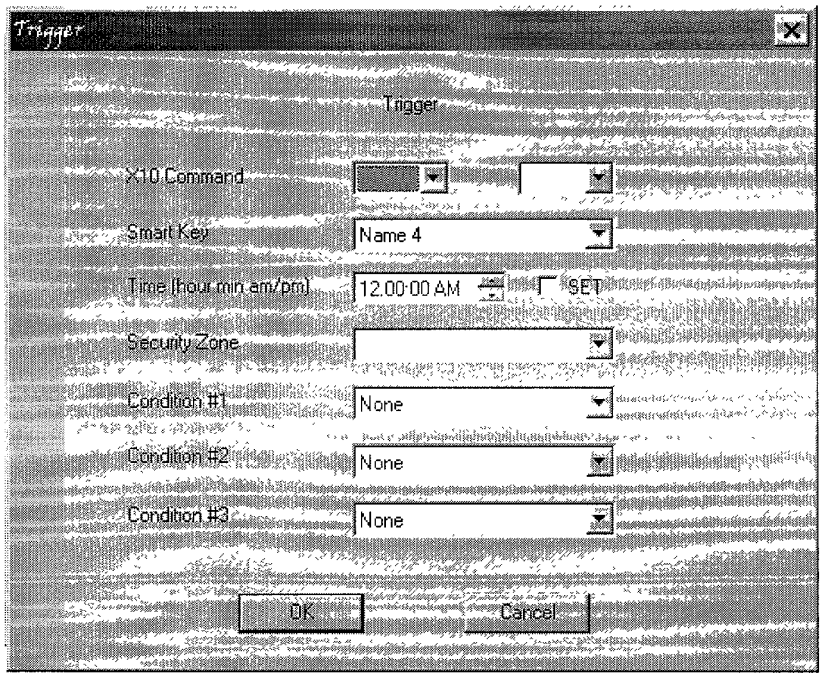
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From the Modify Scene screen (Figure 335) the user can rename the scene (A), delete the chosen scene (B), or add the following functions to the scene (C):
Audio
HVAC
Lighting
Outlets
Relays
Security

The user can also specify that the scene run based on a trigger (Figure 335D). Figure 336 shows the screen to select a trigger. The following can be used as triggers for the Energy Management Scene:
An X-10 Command
Smart Key Use
Specified Time
Specified Security Zone
Or any of the following Conditions:
Armed
Armed away mode
Armed stay mode
Disarmed
Day Time
Night Time
Weekend
Weekday
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

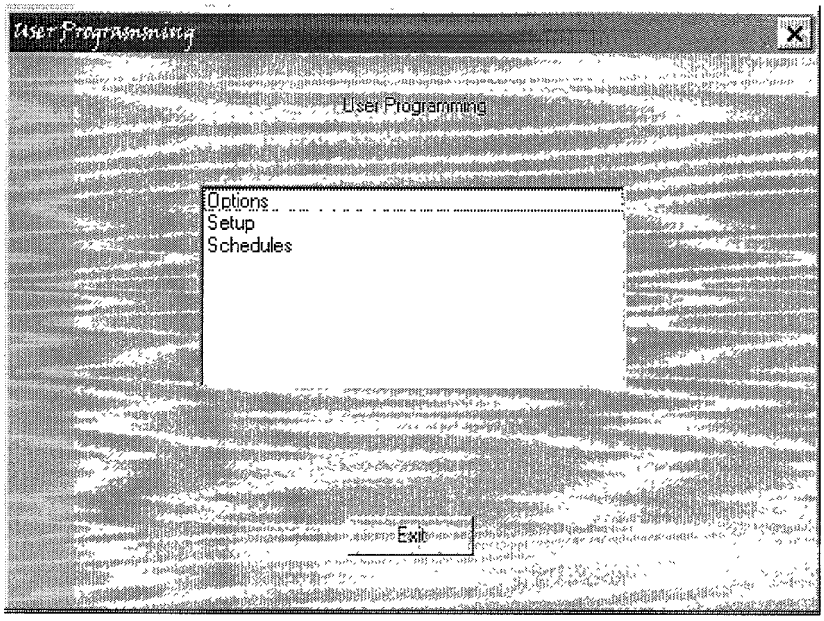
Triggers can also be a combination of any of the above.

Figure 336



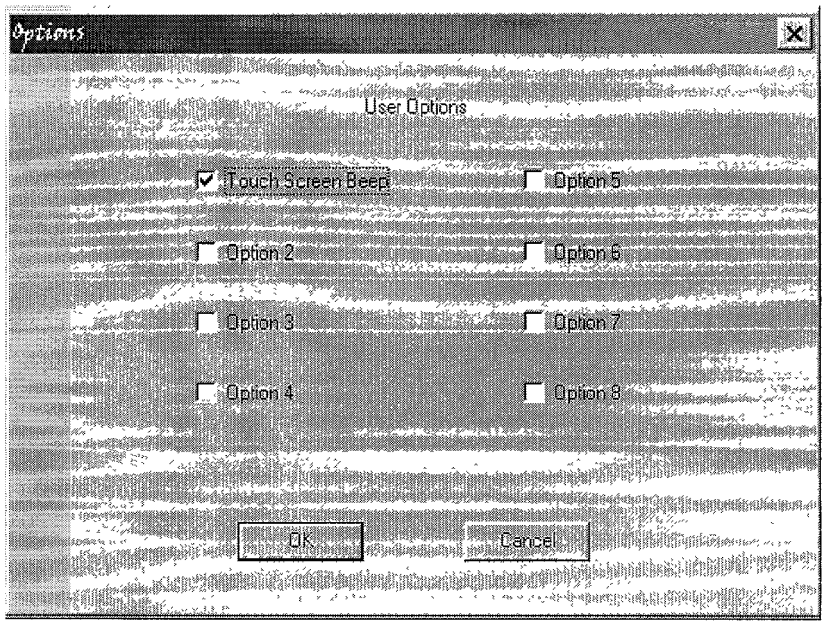
Clicking on the Program icon (Figure 319G) will open the User Programming section. It will access the User Programming menu which includes: Options, Setup and Schedules (Figure 337).

Figure 337



The user options allows the selection of system functions to be turned on or off, such as Touch Screen Beep. See Figure 338.

Figure 338



Selecting the Setup functions from Figure 337 will open Figure 339. This screen will take you to the additional screens to select the following settings:

Audio Settings (Figure 340)
Date & Time Settings (Figure 341)
Deterrence Settings
Phone Settings (Figure 342)
Power Management Settings
Security Settings (Figure 343-350)
- System codes (Figure 344)
- Edit system code and determine code type (Figure 345)
- Add system code and determine code type (Figure 346)
- Selecting Delay settings (Figure 347)
- System Keys (Figure 348)
- Add System Key (Figure 349)
- Panic Settings (Figure 350)

Temperature Settings

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Figure 339

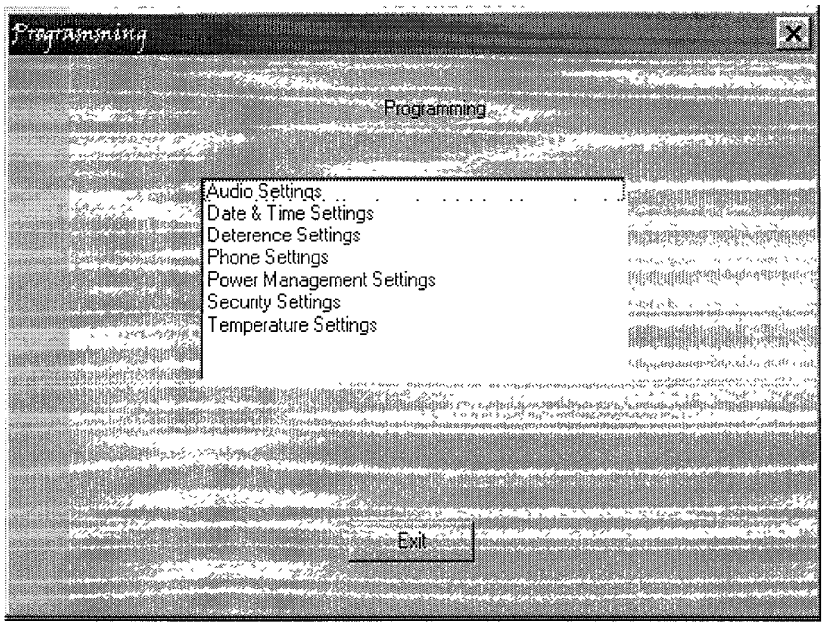
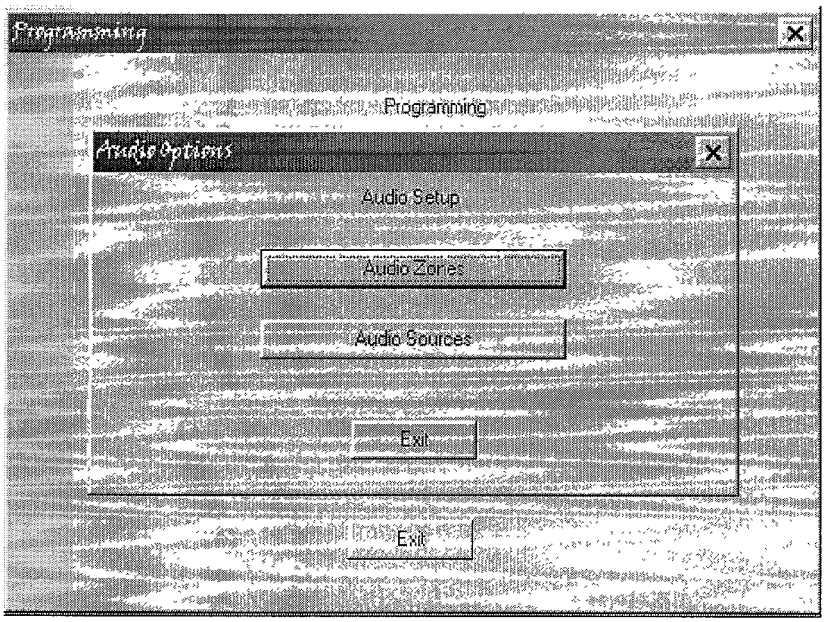


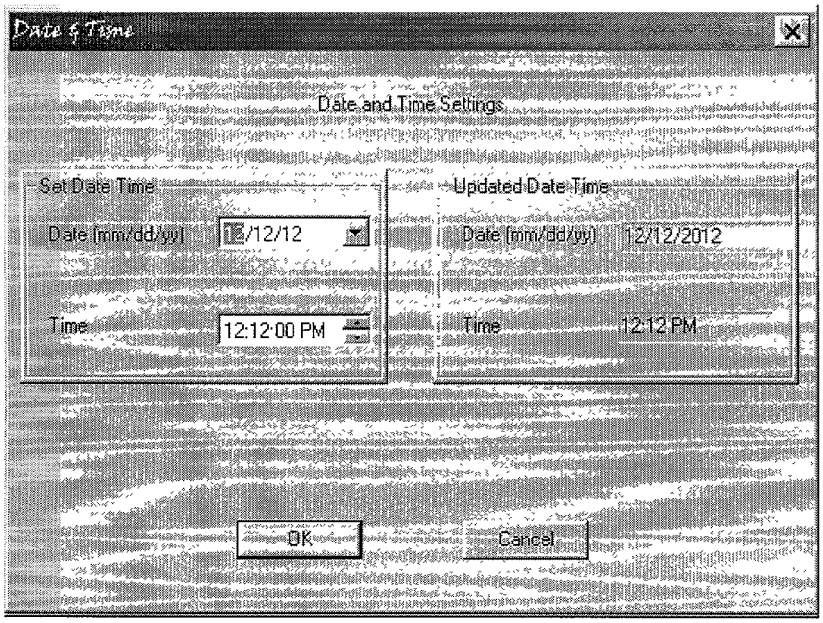
Figure 340



See Figures 320 and 321 for Audio Setup.

4836536.4

Figure 341



US 9,534,794 B2

Figure 342

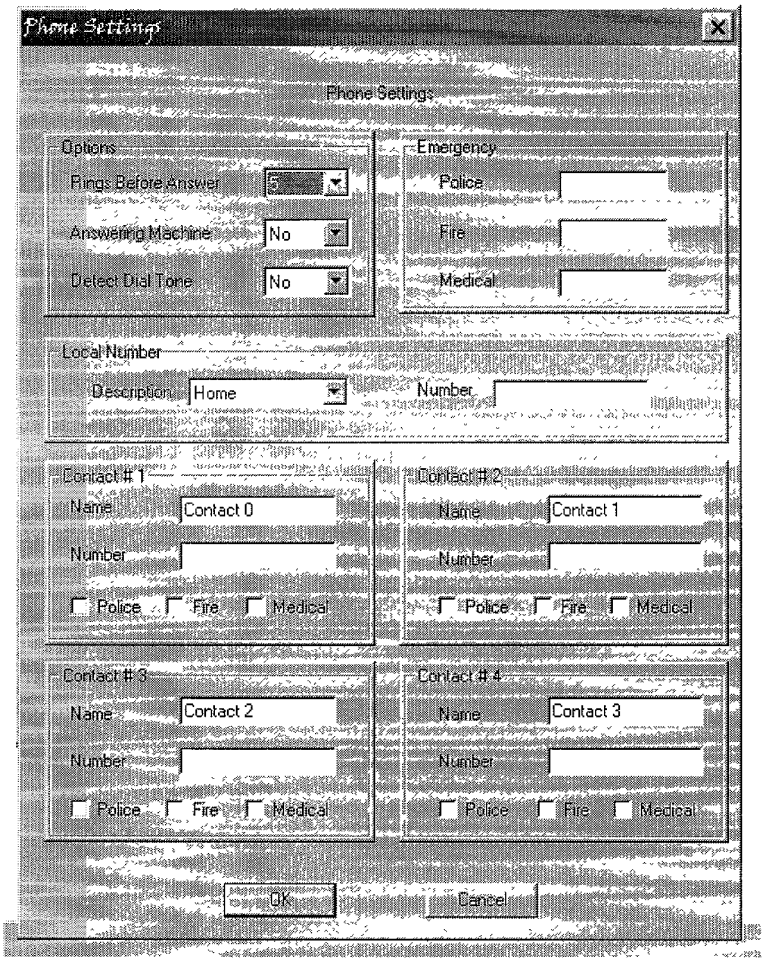

Phone Settings
Phone Settings
Options
Rings Before Answer
Answering Machine
No
Detect Dial Tone
No
Emergency
Police
Fire
Medical
Local Number
Description
Home
Number
Contact # 1
Name
Contact 0
Number
Police
Fire
Medical
Contact # 2
Name
Contact 1
Number
Police
Fire
Medical
Contact # 3
Name
Contact 2
Number
Police
Fire
Medical
Contact # 4
Name
Contact 3
Number
Police
Fire
Medical
OK
Cancel

Figure 343

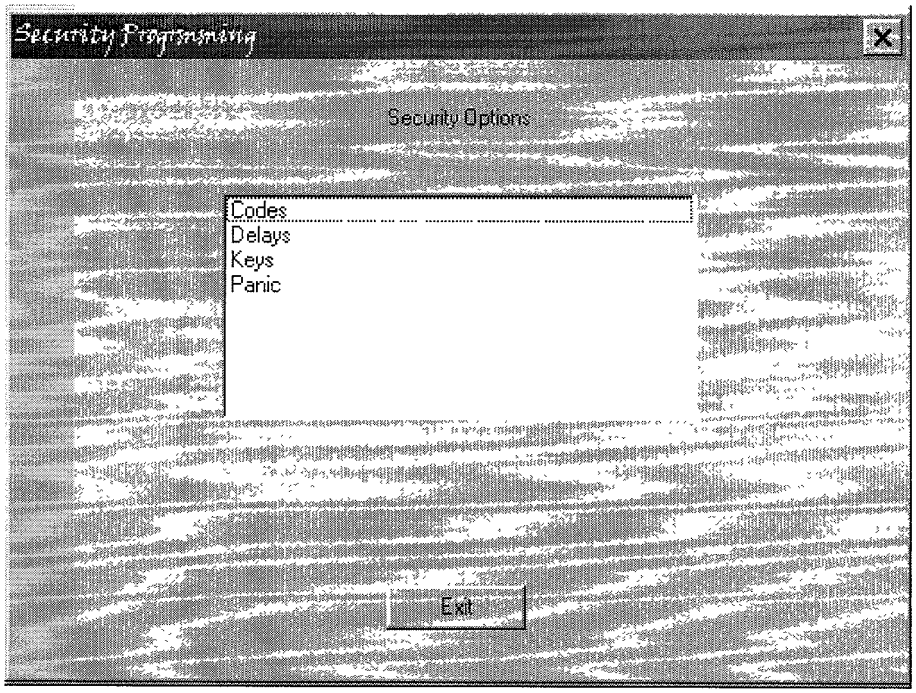
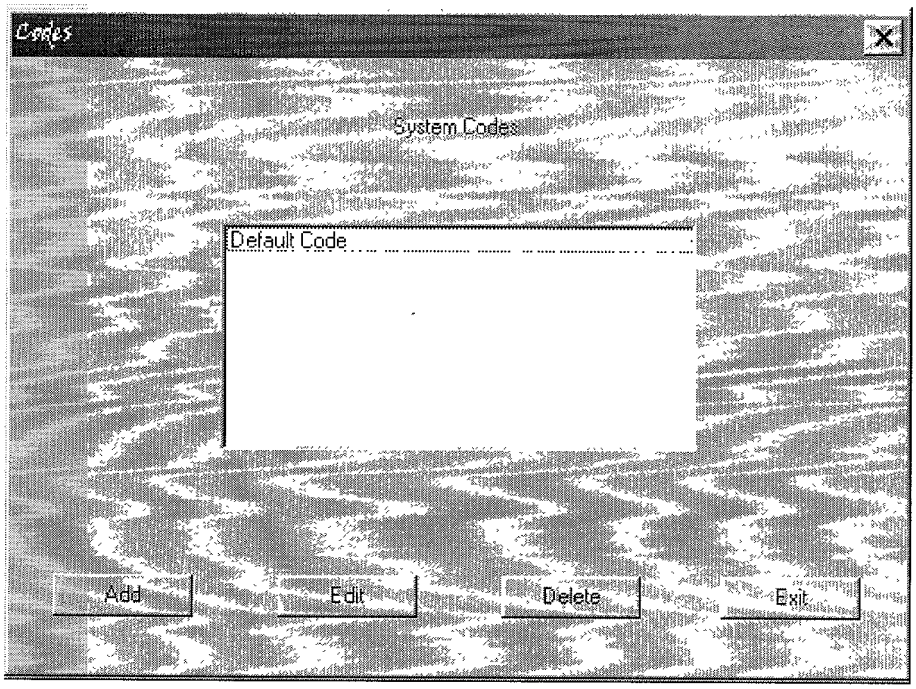


Figure 344



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Figure 345

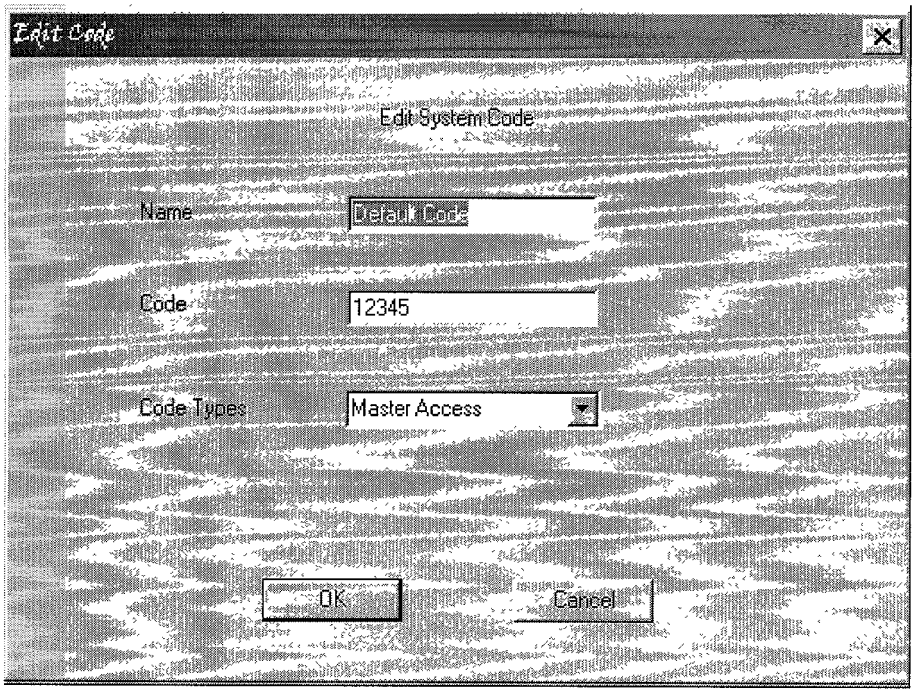
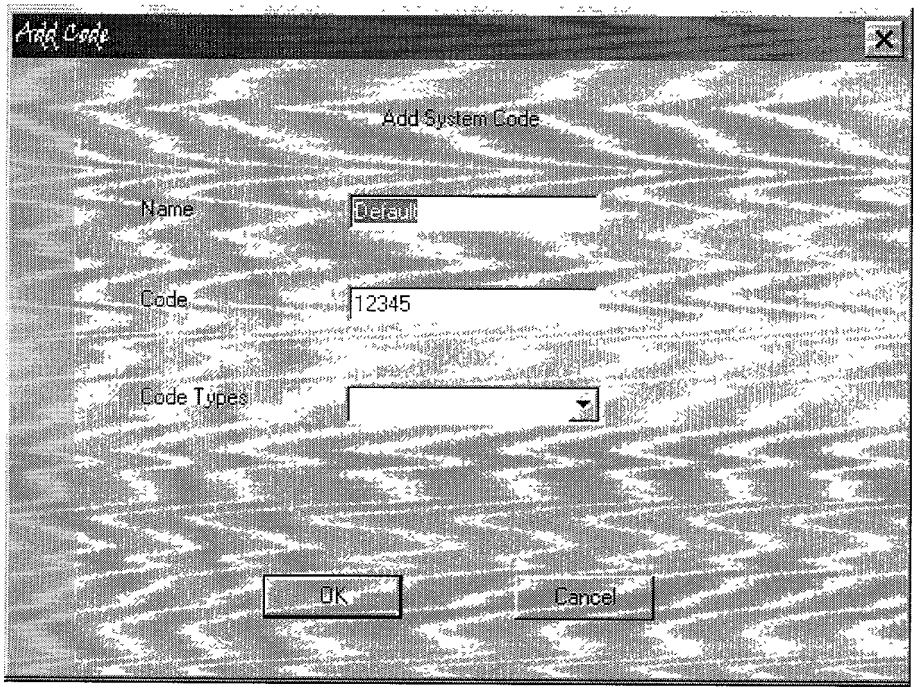


Figure 346



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Figure 347

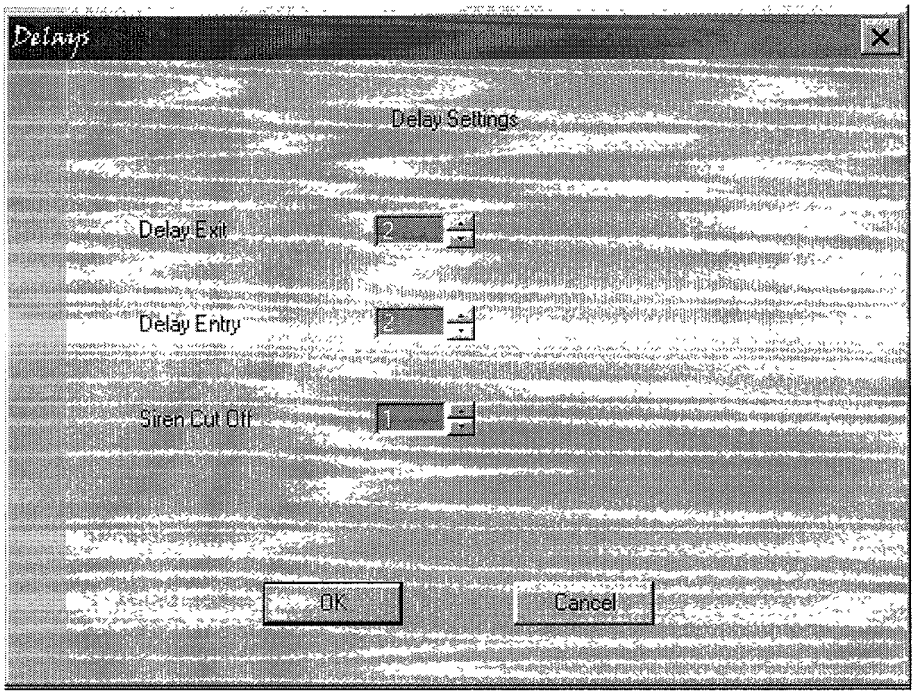


Figure 348

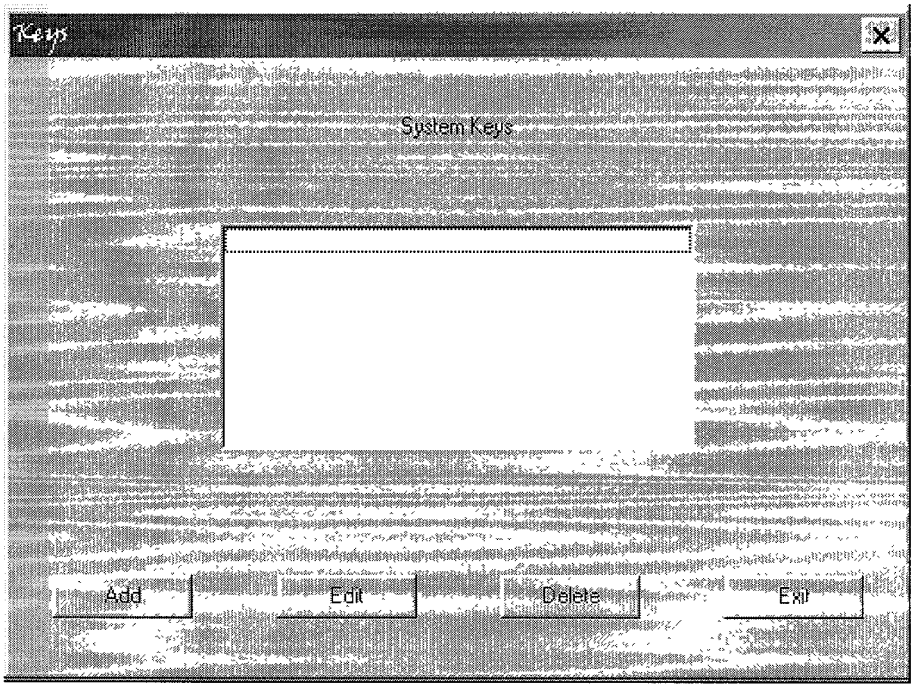


Figure 349

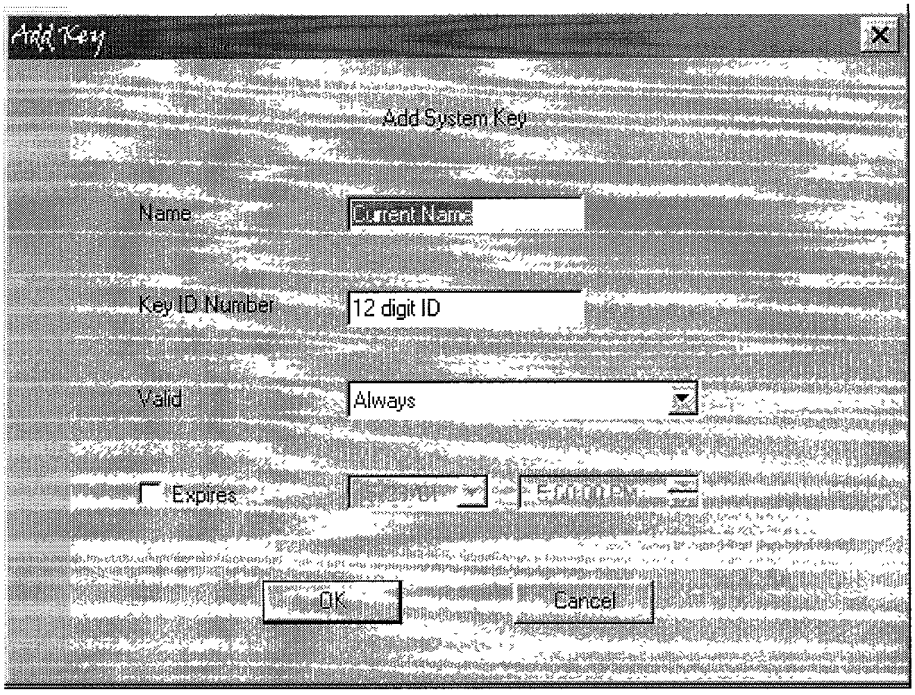
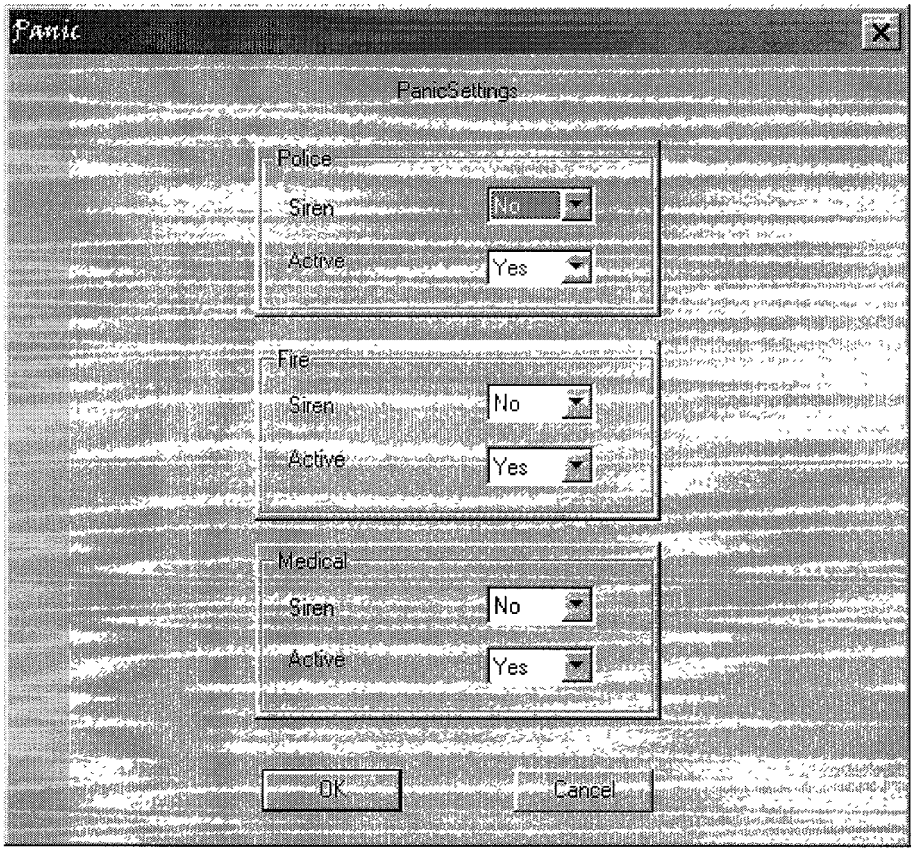


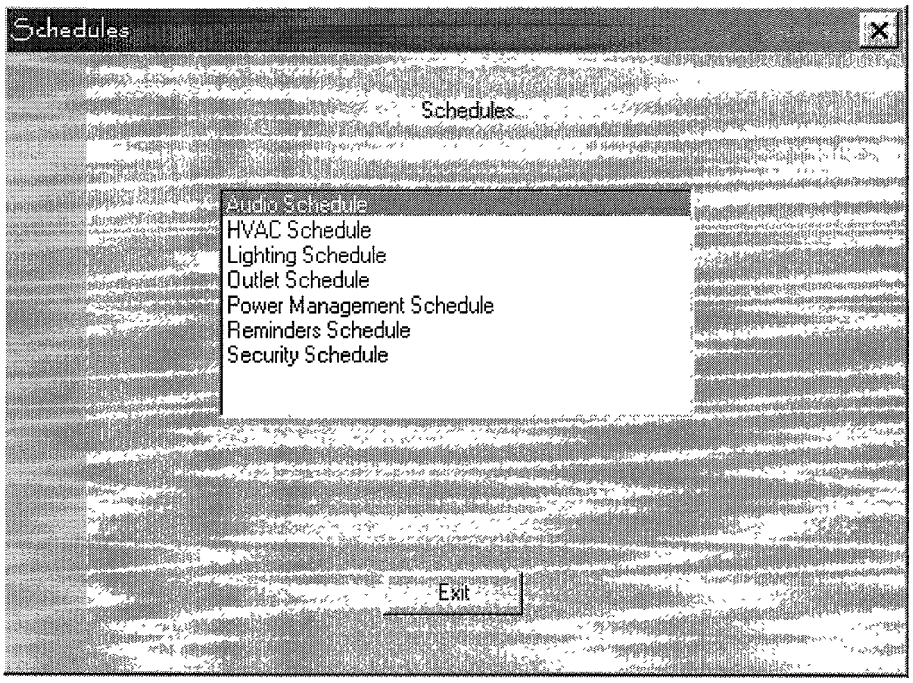
Figure 350



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Selecting the Schedules option from Figure 337 allows the user to set specific scheduling for Audio functions, HVAC functions, Lighting and Outlets, Power management functions, set Reminders and Security functions. These options are shown in Figure 351.

Figure 351



The following Figures (Figures 352-363) show the individual scheduling options for Audio, HVAC, Lighting, Outlets, Power Management, Reminders and Security. The scheduling screens following the same procedure for setting the schedule regardless of the function. The user selects the function to schedule (audio, HVAC, etc.), then selects "Add" to toggle to the actual scheduling screen. Once the day and time are set for the function, selecting the "Go Set - - >" icon will take the user through the appropriate screens to set individual preferences. (Note: Please refer to audio section for description on setting functions, HVAC section for description on setting functions, etc).

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Figure 352

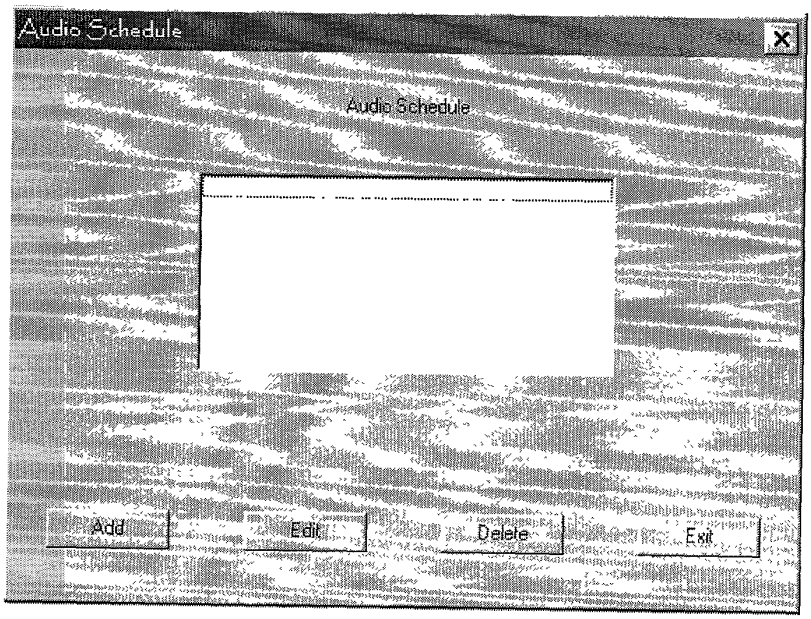
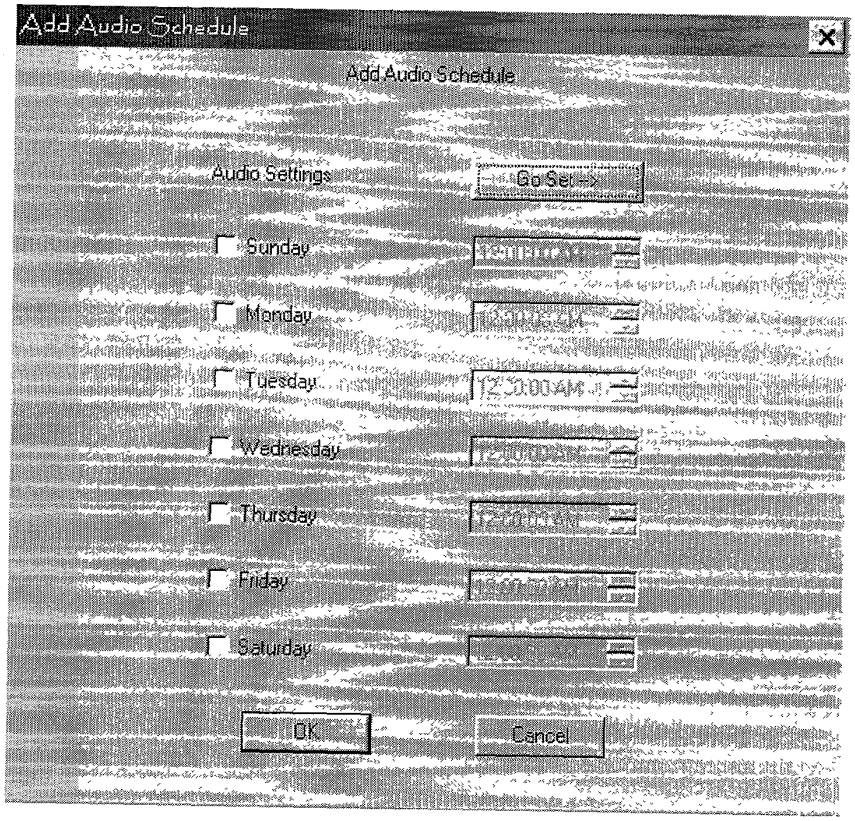


Figure 353



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Figure 354

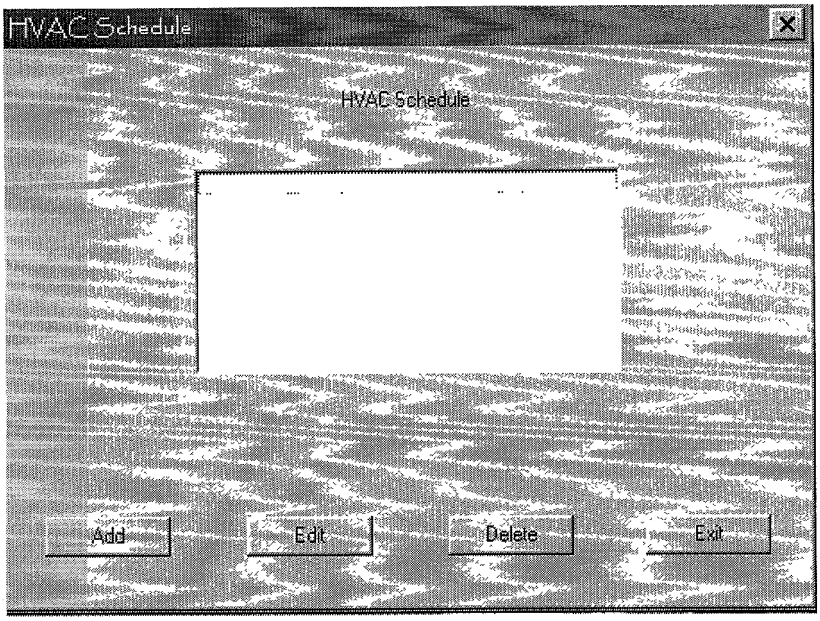


Figure 355

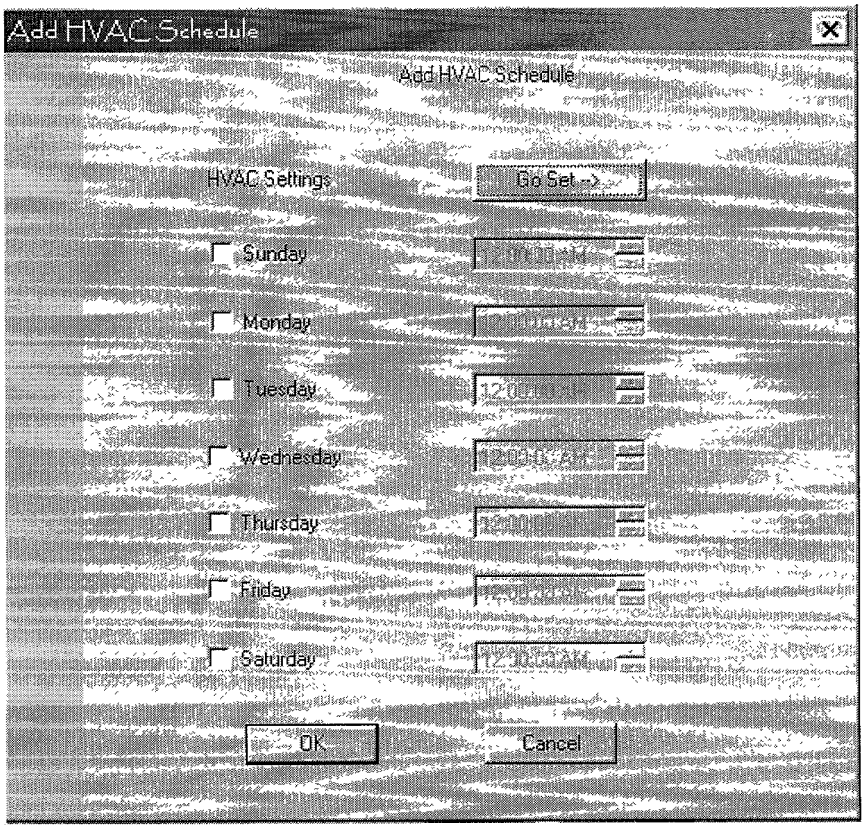


Figure 356

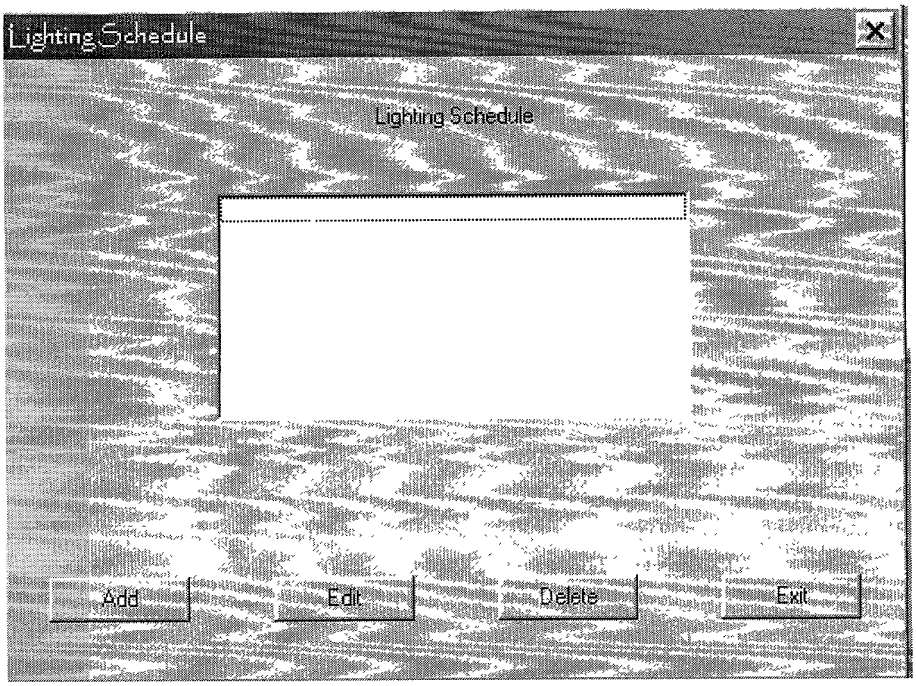
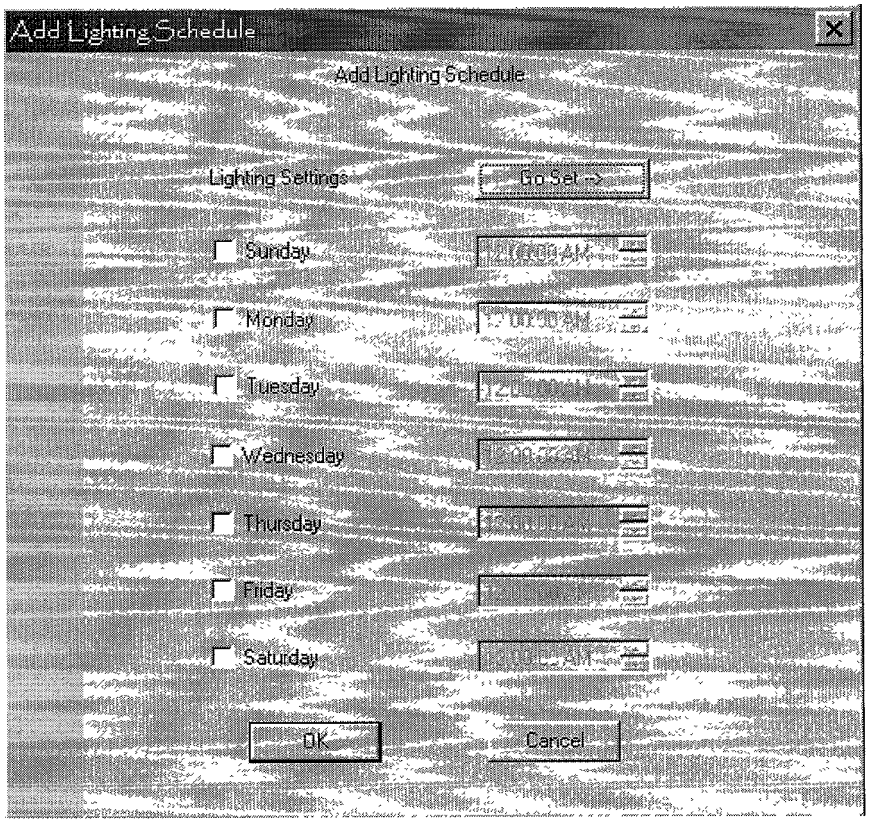


Figure 357



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Figure 358

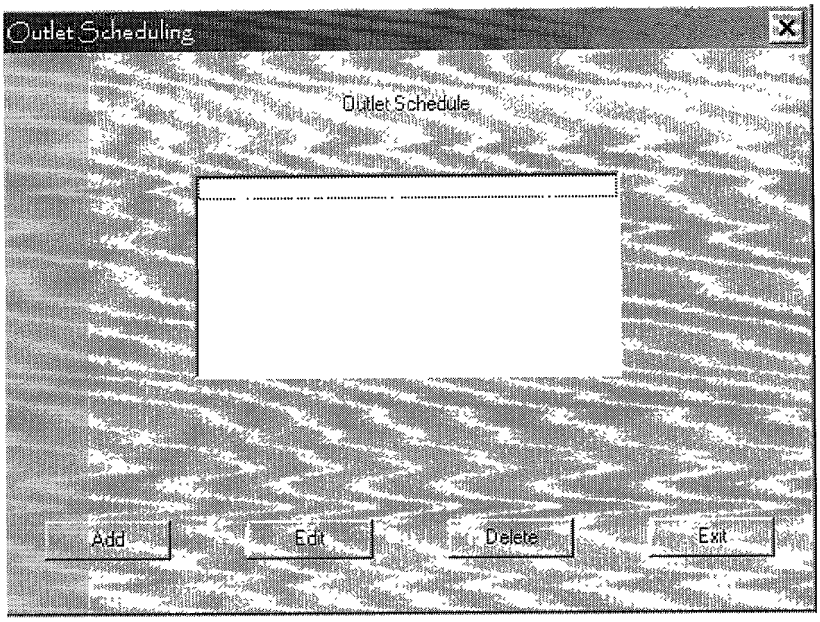
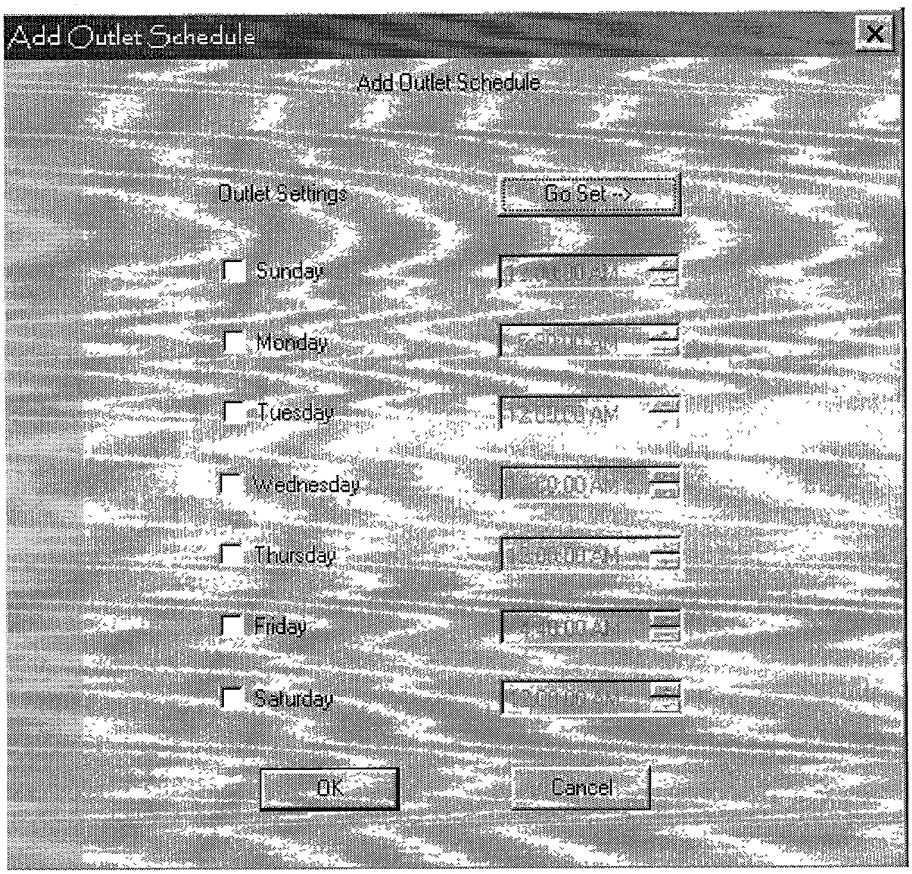


Figure 359



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Figure 360

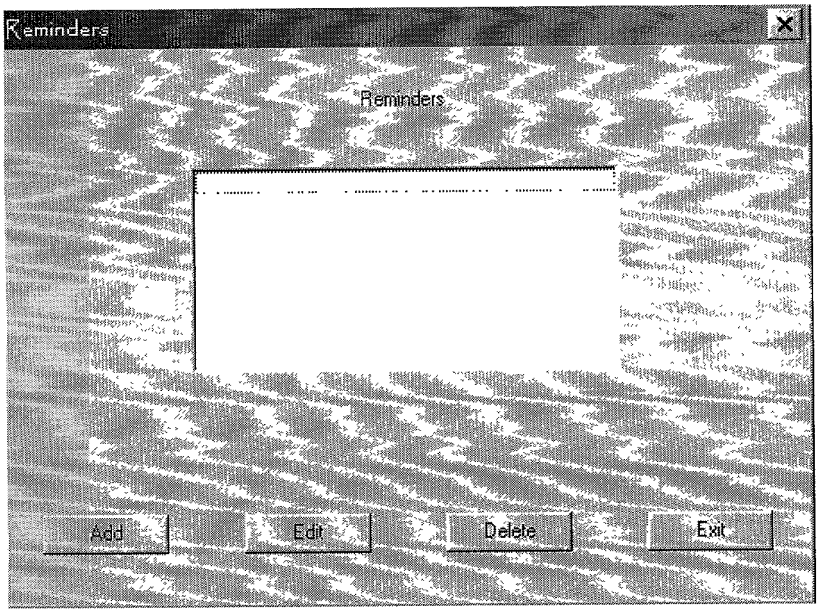


Figure 361

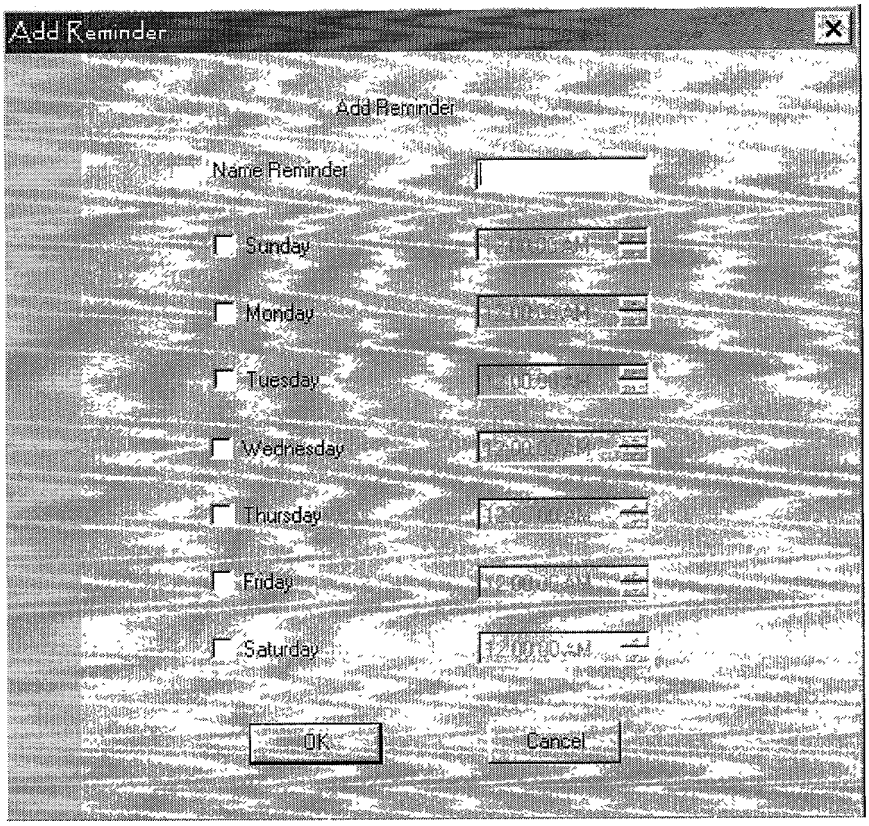


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