DHC
with Intellisense™ Technology

DHC Toscana Lighting Appliance Deluxe Controller/Programmer

User Guide

LEVITON
Building A Connected World

INTELLISENSE®

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FEATURES

- IntelliSense enabled
- Create up to 64 whole house deluxe lighting scenes to create lighting moods
- Program scenes for all scene capable DHC devices. Includes ON/OF control for non-scene capable devices
- Remotely set addresses on all DHC 1-Way “GREEN LED” and 2-Way devices
- Monitors light levels on all 2-Way devices
- Access any of the 64 deluxe scenes from the from the Programmer front panel (8 at any one time)
- Access any 7 of the deluxe scenes remotely using Leviton Controller, Cat. No. HCCS7 (optional)
- Access any of the deluxe scenes using 16 learned Infra Red codes utilizing any standard IR Remote
- Automatically turn ON/OFF lights at dusk and/or dawn (celestial clock)
- Create up to 64 timed events or time clocks, which can reoccur year after year
- Each time clock can be part of up to 8 time schedules and that enable the home “personality”
- Real Time clock retains correct time, with accuracy of 15 seconds, in absence of power typically for 2 weeks
- Celestial Clock guaranteed 15 minute accuracy for any North American (US, Canada, Mexico) locality

For more information, refer Leviton’s website at www.leviton.com

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INTRODUCTION

The **DHC Toscana Lighting Appliance Deluxe Controller/Programmer, Cat. No. HCCPG,** adds a new level of Scene Lighting capability to the DHC network. The Programmer is a compact unit that operates on 120V AC, requiring Line and Neutral connections and mounts directly into a standard 4 gang electrical box. It allows One Touch access to whole house deluxe lighting scenes from anywhere in the house using additional DHC Controllers.

The unit normally displays the date and time on its Main Screen, and by simply pressing the applicable scene buttons, end-users can control their preprogrammed lighting. The Programmer can send commands to up to 256 individual lighting and appliance addresses.

The Programmer provides the capability to program up to 64 customized Deluxe Lighting Scenes across 256 different house codes. With Scene Lighting, selected lighting loads are programmed to turn ON at desired brightness levels or OFF when required, in either a single room or a group of rooms. Deluxe scenes can include non-scene capable devices for simple ON/OFF control. Lighting Scenes can be preset for home theater viewing, dining, entertaining and a wide range of other activities. Lighting Scenes can be easily changed at any time by pressing the applicable scene button.

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SPECIFICATIONS

Electrical

Input:	120VAC, 50/60Hz
Power Consumption:	3W
Testing/Code Compliance:	UL Listed, CSA Certified
FCC Statement:	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
Real Time Clock:	Accurate within 15 seconds per week, with or without power Leap year compensation Calculating of Sunrise and Sunset, given the correct latitude and longitude, to within 15 minutes.

Software

Programmer has been specified with sufficient permanent memory to hold:

- 64 Scenes
- 64 Time Clocks
- 3 Time schedules
- Each of the Scenes and Time Clocks will have a user-defined name of up to 16 alphanumeric characters that will display on the LCD screen.

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QUICK REFERENCE GUIDE

Use this section for a quick reference for an overview of the operational features of the HCCPG Controller after initial setup and programming has been completed. For more detailed features, please refer to the Programming and Operation section of the manual.

SCENE BUTTON: Used to choose which of the 64 programmed scenes are to be called or activated.

- Press a **SCENE** button **(refer to Figure 1)** to call or activate a programmed scene.
- Press and hold down a **SCENE** button for approximately 8 seconds to access program mode.

ADJUST ADDRESS LIGHT LEVEL: Used to increase or decrease the percentage of light level for selected zones.

- Using the **Address Page** button, select the **Address Page** on the LCD that contains the address for the device to be adjusted.
- Press the **Address Dim/Bright** buttons to increase or decrease the percentage of light level for individual address numbers displayed along the top of the Toscana front panel **(refer to Figure 1)**.
- Double tap the **Address Dim/Bright** button for maximum/minimum levels.

CHANGE SCENE PAGE: Use to choose which of the 64 programmed scenes can be accessed and which **SCENE** buttons will control those scenes (01-08, 09-16...25-32).

- Press the **Scene Page** button **(refer to Figure 4)** to scroll though the Scene Addresses (01-08, 09-16...57-64) and then press a **SCENE** button to activate a scene on that page.

PROGRAM DELUXE SCENE QUICK ACCESS: Use to program desired scenes.

NOTE: Name editing is not available in this mode.

- Press the **SCENE** button for approximately 8 seconds to access program mode.
- Press the **Address Dim/Bright** buttons to turn Address ON or OFF, and/or increase or decrease the percentage of light level for individual addresses.
- Press the **Address Page (refer to Figure 1)** buttons to scroll available addresses.
- Press the Select/Next button twice to store scene levels.
- Press the **Include/Exclude (refer to Figure 1)** buttons to include or exclude an address from a scene.
- Repeat steps for additional scenes.

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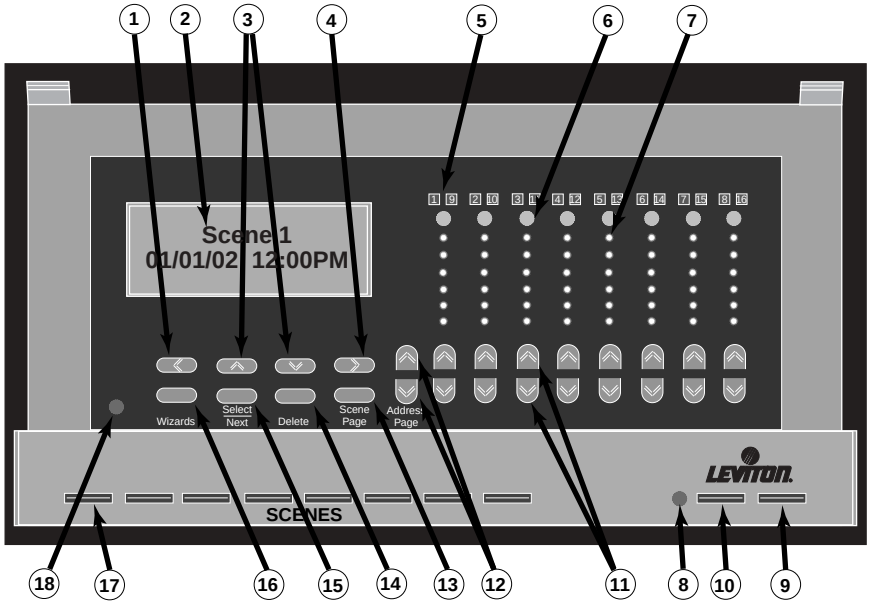
FIGURE 1



1) Function Previous Field button (programming) (Pg. 13).

2) 2 Line x 16 Character LCD with Main Screen shown.

3) Function Change Option button (programming) (Pg. 13).

4) Function Next Field button (programming) (Pg. 13).

5) Displays active devices 1-8 or 9-16 (Pg. 15).

6) Include/Exclude from Scene buttons (Pgs. 11 & 17).

7) Displays brightness level of load (Pg. 15).

8) IR receiver (Pgs. 19 & 22).

9) Last Sceen OFF button (Pgs. 11 & 23).

10) Personality/Hold button (Pgs. 11 & 23).

11) Dim/Brighten a device when held / Single touch, Device & Level ID buttons (Pgs. 11 & 22).

12) Address Page buttons (devices 1-8 or devices 9-16) (Pgs. 11 & 22).

13) Scene Page button (Pgs. 11 & 22).

14) Delete button (Pgs. 11 & 22).

15) Select/Next button (Pg. 11).

16) Wizards button (Pg. 11).

17) Scene Buttons (Pg. 11).

18) LCD Contrast Adjustment (under overlay).

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QUICK REFERENCE GUIDE

TIME CLOCK REVIEW: Use to review what Time Clocks have been programmed and activated.

- Press the **Wizard** button **(refer to Figure 1)** and then the **UP or Down Programming** buttons to select the Time Clocks screen. Press the Select/Next button to access the Time Clocks screen.
- Press **UP or Down Programming** buttons to scroll through the programmed Time Clocks.

  NOTE: Time Clocks that have been set will be marked with an asterik (*).
- Select desired Time Clock, then press the **Left or Right Programming** buttons to review the Time Clock settings.
- To continue to review other Time Clocks, press the **Up or Down Programming** buttons.
- To deactivate a selected Time Clock, press the **Delete** button **(refer to Figure 1)**. The asterik (*) will disappear.

TV REMOTE REVIEW: Use to review what TV Remote settings have been programmed and activated.

- Press the **Wizard** button and then the **UP or Down Programming** buttons to select the TV Remote screen. Press the **Select/Next** button to access the TV Remote screen.
- Press **Up or Down Programming** buttons to scroll through the programmed TV Remote settings.

  NOTE: TV Remote programs that have been set will be marked with an asterik (*).
- Select desired TV Remote setting, then press the **Left or Right Programming** buttons to review the TV Remote settings.
- To continue to review other TV Remote settings, press the **Up or Down Programming** buttons.
- To deactivate a selected TV Remote setting, press the **Delete** button. The asterik (*) will disappear.

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INSTALLATION INSTRUCTIONS

WARNING: TO BE INSTALLED AND/OR USED IN ACCORDANCE WITH APPROPRIATE ELECTRICAL CODES AND REGULATIONS.

WARNING: IF YOU ARE NOT SURE ABOUT ANY PART OF THESE INSTRUCTIONS, CONSULT A QUALIFIED ELECTRICIAN.

CAUTION: USE THIS DEVICE ONLY WITH COPPER OR COPPER CLAD WIRE. WITH ALUMINUM WIRE USE ONLY DEVICES MARKED CO/ALR OR CU/AL.

CAUTION: DISCONNECT POWER WHEN SERVICING FIXTURES OR CHANGING LAMPS.

TO INSTALL:

1. **WARNING:** TO AVOID FIRE, SHOCK, OR DEATH; **TURN OFF POWER** AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
2. Determine location for installation of Programmer.
3. Remove Front Door Frame assembly by gently lifting the bottom edge of the frame until it snaps off **(refer to Figure 2)**. Swing the bottom edge away until the upper section is released.
4. Remove 3/8" (0.95 cm) of insulation from each circuit conductor. Make sure that ends of conductors are straight.
5. Connect conductors per **WIRING DIAGRAM** as follows **(refer to Figure 3)**: Insert conductors under appropriate terminal clamp and tighten screws to 7 in.-lbs. of torque.
6. Mount Programmer at the desired location using a 4-gang electrical box using appropriate screws per **Figure 2.**
7. Restore power at circuit breaker or fuse.
8. Check for power to the Programmer by verifying that the GREEN LCD on the front of the unit is ON.
9. If necessary, increase or decrease the contrast of the display by first removing the overlay by gently lifting and releasing tabs. Then, use a small screwdriver to slightly turn the adjustment until preferred contrast is achieved. To replace overlay, carefully insert lower tabs into front slots of frame and then bow overlay so that top tab slips into top slot **(refer to Figure 2)**.
10. Reinstall the Front Door Frame assembly by aligning with unit. Carefully press the frame onto unit until it snaps into position. Press all edges to ensure that it is fully seated.
11. **INSTALLATION IS COMPLETE.**

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FIGURE 2
CONTROLLER MOUNTING

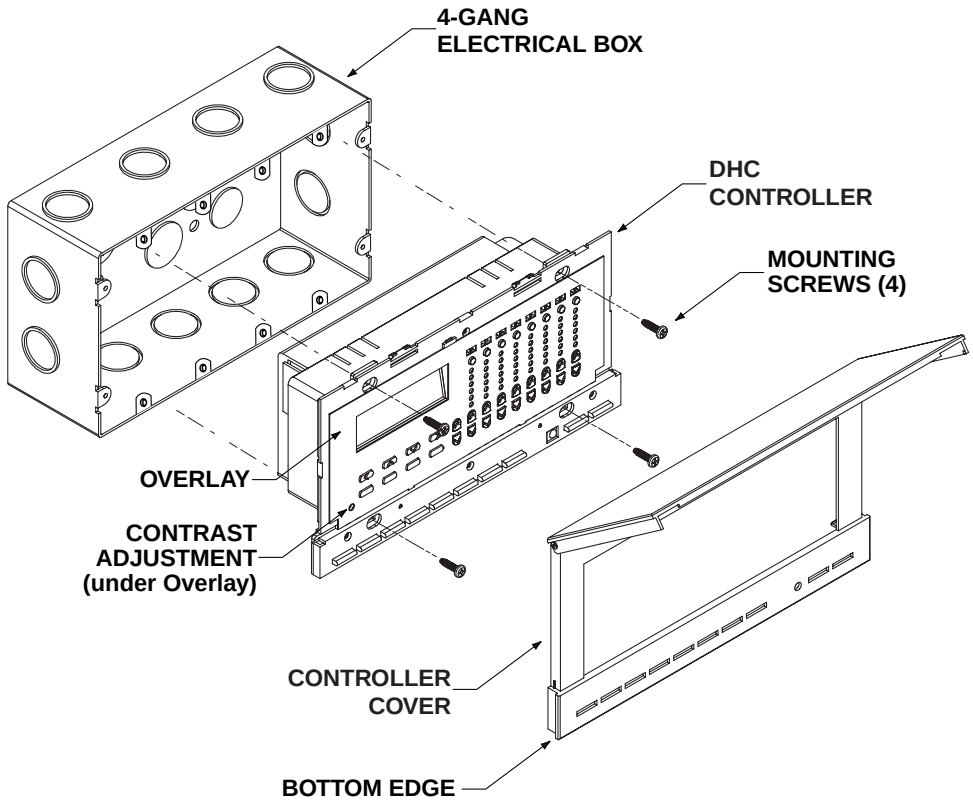

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FIGURE 3

Programmer Wiring Diagram

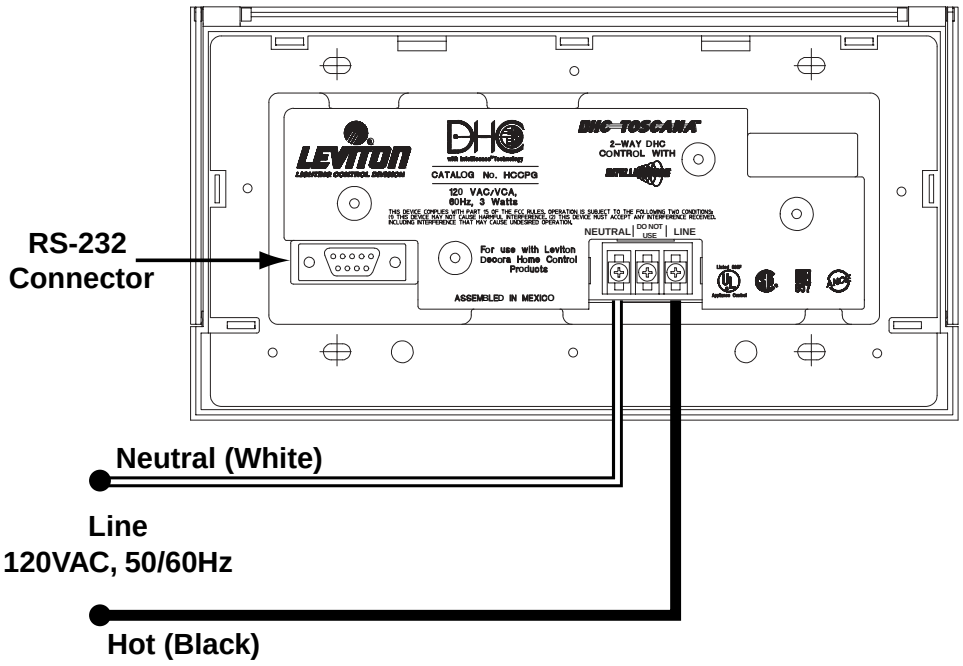
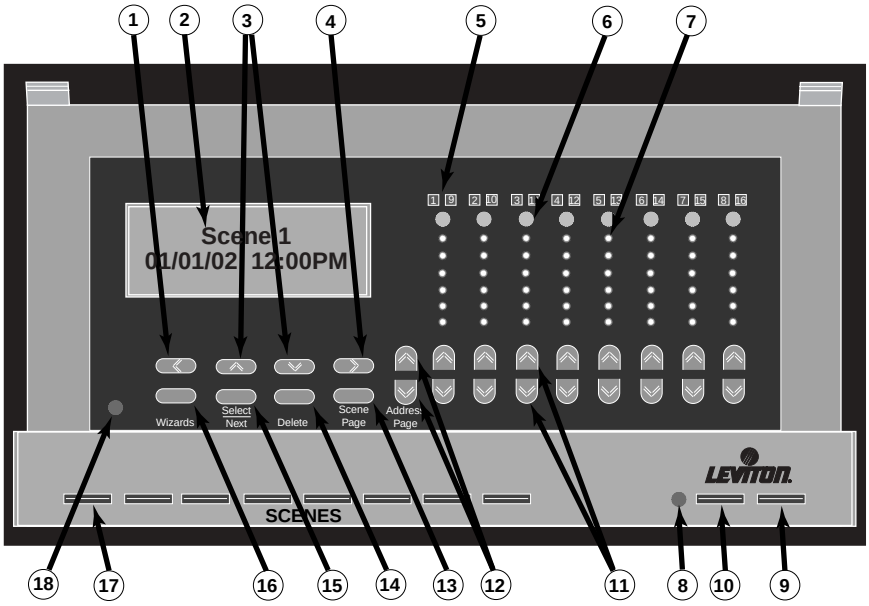


FIGURE 4



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11) Dim/Brighten a device when held / Single touch, Device & Level ID buttons (Pgs. 11 & 22).

12) Address Page buttons (devices 1-8 or devices 9-16) (Pgs. 11 & 22).

13) Scene Page button (Pgs. 11 & 22).

14) Delete button (Pgs. 11 & 22).

15) Select/Next button (Pg. 11).

16) Wizards button (Pg. 11).

17) Scene Buttons (Pg. 11).

18) LCD Contrast Adjustment (under overlay).

PROGRAMMING

The Programmer allows for user friendly programming of various Scene Lighting settings. The Programmer sends extended DHC code for scene capabilities to Leviton DHC devices, along with standard ON/OFF, dimming, and timed event programs.

NOTE: Pressing any button on the front panel at any time, will turn ON the LCD backlight.

Control Buttons (refer to Figure 4):

With the cover closed, you can access the **SCENE**, **PERSONALITY**, and **LAST SCENE OFF** buttons. With the cover open, you can access the **LCD Display**, the **Wizards**, **Select/Next**, **Delete**, **Scene Page**, **Address Page**, **Device Dim/Bright**, **Device Include/Exclude**, and **Programming** buttons.

SCENES (1-64):	Selects a new deluxe scene, and signals a preprogrammed set of lighting levels to fade ON while the previously selected scene fades OFF. Named scenes will appear in the LCD when the button is pressed (i.e., Breakfast, Lunch, or Dinner).
PERSONALITY/ ALL ON HOLD:	Gives user capability of grouping user defined time triggers and enabling any one group with One Touch control. Also allows all events to be put on HOLD.
LAST SCENE OFF:	Turns last selected scene ALL OFF.
Wizards:	Toggles between Home State screen on LCD and several programming screens (refer to Programming).
Select/Next:	Advances programming steps.
Delete :	Deletes highlighted character when editing names.
Scene Page:	Scrolls through deluxe scene pages 1-8, 9-16...57-64.
Address Page:	Scrolls through the various pages and housecodes.
Include/Exclude:	Adds and/or removes devices from a scene.
Dim/Bright:	Allows for manual control of setting percentage of light level for selected device.

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Applications

Things to know for basic and more advanced applications:

Basic Application - There are programming and operating procedures that will not be applicable for this type of configuration. For ease of use, the basic programming and operating steps will be flagged with a **B** icon.

NOTE: If there is not a **B** icon next to the section, press the Select/Next button to proceed.

Advanced Application - Using this type of installation will require more preparation and thought, as well as additional programming and operating steps. These steps will be flagged with an **A** icon.

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TO PROGRAM:

Pressing the **WIZARDS** button (**refer to Figure 4)** on the front panel of the Programmer will help run through the Setup and Programming necessary to set desired lighting levels and timed events.

NOTE: Use the **Programming Arrow** buttons to change characters (UP and DOWN) and move to the next or previous character (LEFT and RIGHT). Blank spaces can also be inserted to separate words when desired.

NOTE: Screen will time-out after 2 minutes of no activity and return to Main Screen.

BInitial Setup Wizard – Accessing and properly selecting the settings in this section is the first step in using this device. It provides basic settings that allow operational features to function properly. Press the **Wizards** button to access the **Initial Setup Wizard**.

```
Use^ , v or SEL
<Initial Setup>
```

1. **Adjust Date and Time:** Press the **Select/Next** button to access the Adjust Date-Time screen. Enter the date by pressing the **Up or Down and Left or Right Programming** buttons. Press the **Select/Next** button to save entry and proceed.

```
Adjust Date-Time
01/01/02  12:00PM
```

2. **Daylights Saving auto adjust:** Press the **Up or Down Programming** buttons to toggle between ON and OFF. Set to ON position if Daylight Savings is observed in your area. Set to the OFF position to disable setting. Press the **Select/Next** button to save entry and proceed.

```
Daylight Savings
auto adjust On
```

3. **Select Timezone:** Press the **Up or Down Programming** buttons to select the applicable Timezone. This will allow the celestial clock to calculate sunrise/set properly. Press the **Select/Next** button to save entry and proceed.

```
Select Timezone
Eastern Stndrd>
```

4. **Latitude/Longitude:** Press the **Up or Down and Left or Right Programming** buttons to set the applicable geographic location **(refer to the Longitude/Latitude Appendix to find appropriate settings for your location)**. This will allow accurate control through the Real Time Clock to programmed sunrise/sunset events within 15 minutes. Press the **Select/Next** button to save entry and proceed.

```
Latitude  =  041 N
Longitude= 074 E
```

5. **Select Housecodes:** Press the **Up or Down Programming** buttons to select Housecodes (A-P). This also allows the deselection of previously selected codes. Note that when a code is selected, it will be displayed as upper case. Unused codes will be displayed as lower case. Press the **Up or Down** buttons to toggle between selected and non-selected codes. Select all the Housecodes in use in the DHC system. Press the **Select/Next** button to save entry and proceed.

```
Select housecode
Abcdefghijklmnop
```

NOTE: Housecode “A” is the factory default ON.

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6. **Make this the Main unit?:** Press the **Up or Down Programming** buttons to select Yes or No (default setting) in selection of the two-way communication capability of multiple Programmer installations. In single Programmer installations, this option must be turned ON to allow transmission of scene commands to all setup housecodes.

   Make this the Main unit? <No>

   NOTE: In multiple Programmer installations, only one Programmer must have this option turned ON (Yes). **All additional Programmers must have this option turned OFF (No) for proper operation.**

7. **Setup Addresses:** Press the **Up or Down and Left or Right Programming** buttons to setup addresses.

   Setup Addresses? <YES> <NO>

   If **NO** is selected, press the **Select/Next** button to save entry and return to the Main Screen. The **Setup Wizard** is now finished.

   Setup Wizard Finished!

   If **YES** is selected, press the **Select/Next** button to save entry and proceed as follows (this section is for optional programming):

   7A. Pick Address: Press the **Up or Down Programming** buttons to select the desired address (i.e., A01-P16). Press the **Select/Next** button to save entry and proceed.

   Pick Address A01 Address A01

   7B. Edit name XXX: Press the **Up or Down and Left or Right Programming** buttons to name device (i.e., Wall Sconce, XXX being selected address). Press the **Select/Next** button to save entry and proceed.

   Edit name A01: Wall Sconce

   7C. Pick device type: Press the **Up or Down Programming** buttons to select the device type used (Scene Dimmer, Scene Switch, Generic Switch). This will allow communication between these other device types. Press the **Select/Next** button to save entry and proceed.

   Pick device type <Scene Dimmer>

   NOTE: Select the “Generic Switch” option when using any non-scene capable dimmers or switches.

   Repeat above procedure for setup of additional devices. When all devices are setup, press the **Wizards** button to complete programming and return to Main Screen.

   Setup Wizard Finished!

A Scene Wizard – The Scene Wizard allows for the programming of up to 64 deluxe lighting scenes. Naming of device and lighting scenes gives user-friendly control of lighting loads. Refer to the following examples of common scene settings:

Room ON or Room OFF scenes – These scenes would turn the lights ON in one particular room or OFF in another room.

Pathway scenes – These scenes would light a path of lighting from one room in a house to another room. For example, from the driveway to the bedroom.

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ALL On or ALL Off scenes – These scenes would turn ON all lights in a house or turn them all OFF. While DHC devices respond to the ALL ON/OFF command, these commands only control lights on one house code. Because the Programmer can cause scenes to span house codes, the ALL ON or ALL OFF Scene command is not limited to 16 devices.

Mood scenes – Use the scene control to set particular lighting for special events. For example a 'Party Scene' might set lights by the pool, barbecue, driveway, and to the bathroom(s).

Single Device Scenes – You can program a single device to turn ON or OFF. This would allow the appearance of mixing scene buttons with individual control buttons.

Press the **Wizards** button then the **Up or Down and Left or Right Programming** buttons to select the **Scene Wizard)**. Press the **Select/Next** button to access the **Scene Wizard**. Proceed as follows:

Use ^, v or SEL <Scene Wizard>

1. **Pick Scene 1-64:** Press the **Up or Down and Left or Right Programming** buttons to select the desired scene to modify (01-64). Press the **Select/Next** button to save entry and proceed.

Pick Scene 1-64: Scene 1

2. **Edit name:** Press the **Up or Down and Left or Right Programming** buttons to name desired scene (i.e., Living Room). Press the **Select/Next** button to save entry and proceed.

Edit name : Living Room

3. **Adjust address %:** The percentage level may be set with the individual **Up and Down Dim/Bright** buttons. Use the **Up or Down Address Page** buttons to scroll through addresses.

Adjust Address % Address A01

HC=A Lv1=70% Address A01

NOTES:

- Only devices that were set to "Scene Dimmer" types will have a percentage adjustment.
- The Scene buttons will flash on the bottom of the Controller during this step.
- When programming a scene, use the **Exclude** button on all DHC addresses that are unused.

Press the **Include/Exclude** buttons to Add or Remove devices from a scene while programming that scene.

NOTES:

- When the device is Included in the scene, the device number will be illuminated above the selected button **(refer to Figure 4)**. Only devices included in a scene will respond to the scene commands.
- When the device is Excluded from the scene, the device number will be extinguished above the selected button **(refer to Figure 4)**.

Press the **Select/Next** button to save entry and proceed.

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4. **Store Scene Now?:** Press the **Up or Down and Left or Right Programming** buttons to select YES or NO.

   Scene Wizard Finished

   If **NO** is selected, press the **Select/Next** button to return to the Adjust Device screen to modify Lighting Levels and included Addresses. When information is entered accordingly, press the **Select/Next** button and select YES to program scene and return to the Main Screen. The **Scene Wizard** is now finished.

   If **YES** is selected, press the **Select/Next** button and select YES to program scene and return to the Main Scene. The **Scene Wizard** is now finished.

   NOTE: It may take several minutes to program a scene if many housecodes are enabled.

Repeat previous steps to program up to 63 additional Deluxe Scenes.

ATime Clocks Wizard - The Time Clock Wizard allows for the programming of up to 64 timed events. Each one of the time clocks can be programmed to set a device/scene to an ON time and an optional OFF time. A recurrence can also be specified. The recurrence selects what days of the week or month the time clock can run on. The ON and OFF times can specify a particular time of the day, or a value relative to the calculated sunrise or sunset times. A time randomizer provides for some daily variations so that it does not appear to an outsider that the lights are controlled by a mechanical system.

Finally, the time clocks support “Personalities”. There are three personalities. Each time clock can be assigned to a personality. When that “Personality” is selected, then all the timers assigned to that personality will run. This allows the user to easily select a set of Time Clocks to run when on vacation or at home.

The default programmed state of the timers is that they are DISABLED. Completion of the Wizard will enable preferred events to be activated.

Press the **Wizards** button then the **Up or Down Programming** buttons to select the **Time Clock Wizard**. Press the **Select/Next** button to access the **Time Clocks Wizard**. Proceed as follows:

Use ^, v or SELECT <Time Clocks>

1. **Pick TClk 1-64:** Press the **Up or Down Programming** buttons to select the desired Time Clock (i.e., 01-64). Press the **Select/Next** button to save entry and proceed.`

   Pick TClk 1-64: TimeClock 01

   NOTE: An asterik (*) will be displayed when the timer has been activated and defined.

2. **Edit name:** Press the **Up or Down and Left or Right Programming** buttons to name the desired Time Clock one character at a time (i.e., Porch Light). Press the **Select/Next** button to save entry and proceed.

   Edit name: Porch Light

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3. **TClk 'ON' type:** Press the **Up or Down and Left or Right Programming** buttons to select the desired timing preference (i.e., Time of Day, Dawn +/- delay, Dusk +/- delay, Timer Disabled). The 'ON' time type, and the value entered in the subsequent screen, will determine the time the 'Turn ON' command is sent to the lights. Press the **Select/Next** button to save entry and proceed.

   TClk 'ON' type: <TimeDisabled>

   NOTE: The Trigger time must be set for at least 2 minutes after the current time. If the Trigger time is within 2 minutes of the current time, then the Time Clock will not be set OFF until the following day (or as determined by the recurrence).

   NOTE: If the Timer Disabled option is chosen the **Time Clock Wizard** immediately ends.

   Create Timeclock Wizard Finished!

   If either of the Dawn/Dusk +/- Delay options are chosen, proceed with the following steps. The next series of screens will allow the user to enter the delay before or after Sunrise or Sunset. On any of the screens you can enter a value of 0. Please note that the Dawn and Dusk times are calculated on a daily basis from information you entered in the **Initial Setup Wizard**. Current date/time, time zone, longitude, latitude, and daylight savings time adjustment setting must be correct.

4. **What time 'ON' =:** Press the **Up or Down and Left or Right Programming** buttons to set the desired time of day (i.e., 02:00, 12:00). Press the **Select/Next** button to save entry and proceed.

   What time 'ON'= 12:00am

5. **Add add'l random minutes:** Press the **Up or Down and Left or Right Programming** buttons to add random minutes to set trigger time. Press the **Select/Next** button to save entry and proceed.

   Add add'l random minutes = 30

   For example, if the user had chosen to set the time clock to 8:00am, and 30 additional random minutes are chosen, the unit will vary the actual triggering time between 8:00am and 8:30am, with a seemingly random pattern on a day to day basis.

6. **Pick recurrence:** Press the **Up or Down Programming** buttons to select the desired sequence of events (Once per Week, Once per Month, Weekdays, Weekends, Odd Days, Even Days, Daily). Press the **Select/Next** button to save entry and proceed.

   Pick recurrence <Once per Week>

   NOTE: If you select Once per Week or Once per Month, you must also select the desired day of the week/month and proceed to **Step 7**. All other selections, proceed to **Step 8**.

   NOTE:

Once per Week	= Time clock only runs on a particular day of the week
Once per Month	= Time clock only runs one day per month
Weekdays	= Time clock only occurs Monday-Friday

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Weekends = Time clock occurs Saturday & Sunday

Odd Days = Time clock occurs on the 1,3,5,7..31 of the month

Even Days = Time clock occurs on the 2,4,6,…30 of the month

Daily = Time clock occurs everyday

7. **Pick Day of Week:** Press the **Up or Down and Left or Right Programming** buttons to select the desired day of the week for event (Sunday-Saturday). Press the **Select/Next** button to save entry and proceed.

Pick Day of Week <Sunday>

8. **Action to take:** Press the **Up or Down and Left or Right Programming** buttons to select the desired device or scene to turn ON or OFF (Scene On&Off, Address On&Off). Press the **Select/Next** button to save entry and proceed.

Action to take : <Scene On&Off>

Device ON&OFF = Select this option to turn a particular device ON at the just entered ON time, and OFF at a time you will enter in next.

Scene ON&OFF = Select this option to turn a scene ON at the just entered ON time, and OFF at a time you will enter in next.

9. **Pick Scene 1-64:** Press the **Up or Down and Left or Right Programming** buttons to select the desired Scene to trigger (1-64). Press the **Select/Next** button to save entry and proceed.

Pick Scene 1-64: Scene 1

10. **TClk 'OFF' type:** Press the **Up or Down and Left or Right Programming** buttons to select the optional OFF time (i.e., Time of Day, Dawn +/- delay, Dusk +/- delay, Timer Disabled). These options are the same as with the 'ON' time type. The difference is that if 'Timer Disabled' is chosen, then only the OFF Timer in this time clock is disabled. Press the **Select/Next** button to save entry and proceed to **Step 13**.

TClk 'OFF' type: <TimeDisabled>

NOTE: If Time of day is selected, proceed to **Step 11**.

NOTE: If Dawn +/- delay or Dusk delay is selected, proceed to **Step 12**.

NOTE: If Timer Disabled is selected, proceed to **Step 13**.

11. **What time 'OFF':** Press the **Up or Down and Left or Right Programming** buttons to select the desired OFF time ((i.e., 01:00AM, 12:00PM). Press the **Select/Next** button to save entry and proceed.

What time 'OFF'= 12:00am

12. **'OFF' timedelay:** Press the **Up or Down and Left or Right Programming** buttons to select the desired OFF time delay (i.e., 01:00, 12:00). Press the **Select/Next** button to save entry and proceed.

'OFF' timedelay= 00:00am

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13. **Add to Personality:** Press the **Up or Down and Left or Right Programming** buttons to select the desired Personality (Include in All, Special, Away, Home). This option allows the user to select the personality to include this Time Clock in. The Time Clock will not run unless its personality matches that selected with the personality button on the front of the unit.

    Add to Personlty <Include in All>

    NOTE: If the “Include in All” option is chosen, it will not matter what personality is selected on the front of the unit. If the All on Hold” option is chosen, all Time Clocks will be stopped.

    Press the **Select/Next** button to save entry and return to the Main Screen. The **Time Clock Wizard** is now finished.

    Create Timeclock Wizard Finished!

Time Clock Review: Use to review what Time Clocks have been programmed and activated.

- Press the **Wizard** button and then the **Up or Down Programming** buttons to select the Time Clocks screen. Press the Select/Next button to access the Time Clocks screen.
- Press **Up or Down Programming** buttons to scroll through the programmed Time Clocks.

  NOTE: Time Clocks that have been set will be marked with an asterik (*).
- Select desired Time Clock, then press the **Left or Right Programming** buttons to review the Time Clock settings.
- To continue to review other Time Clocks, press the **Up or Down Programming** buttons.
- To deactivate a selected Time Clock, press the **Delete** button. The asterik (*) will disappear.

ATV remote Wiz – The **TV Remote Wizard** allows for the programming and remote control of up to 16 lighting scenes. The learned infrared codes can be taught using any standard IR remote.

Press the **Wizards** button then the **Up or Down and Left or Right Programming** buttons to select the **TV remote Wiz)**. Press the **Select/Next** button to access the **TV remote Wiz**. Proceed as follows:

Use ^, v or SELECT <TV remote Wiz>

1. **Pick butn 1-16:** Press the **Up or Down and Left or Right Programming** buttons to select up to 16 infrared triggers. Press the **Select/Next** button to save entry and proceed.

   Pick butn 1-16: TV Remote Trig 1

2. **Edit name:** Press the **Up or Down and Left or Right Programming** buttons to name desired infrared trigger (i.e., Upstairs Lights ON). Press the **Select/Next** button to save entry and proceed.

   Edit name: TV remote Trig 1

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3. **Press TV Remote button to teach:** Point the TV IR Remote at the Programmer at a distance of approximately 2 feet and press the button you wish to teach the command (i.e., 1).

Press TV Remote button to teach

4. **Action to take:** Once the desired button is selected, press the Up or Down and Left or Right PROGRAMMING buttons to select desired action to take (Scene On, Scene Off, Address On, Address Off).

Action to take : <Scene On&Off>

NOTE: If Scene is selected, proceed to **Step 5A**.

NOTE: If Address is selected, proceed to **Step 5B**.

5A. **Pick Scene 1-64:** Press the **Up or Down and Left or Right Programming** buttons to select the desired scene (1-64). Press the **Select/Next** button to save entry and proceed.

Pick Scene 1-64: Scene 1

5B. **Pick Address A01:** Press the **Up or Down and Left or Right Programming** buttons to select the desired address (A01-A16). Press the **Select/Next** button to save entry and proceed. The **TV Remote Trigger Wizard** is now finished.

Pick Address A01 Address A01

TV Remote Triggr Wizard Finshed!

TV Remote Review: Use to review what TV Remote settings have been programmed and activated.

- Press the **Wizard** button and then the **Up or Down Programming** buttons to select the TV Remote screen. Press the **Select/Next** button to access the TV Remote screen.
- Press **Up or Down Programming** buttons to scroll through the programmed TV Remote settings.

  NOTE: TV Remote programs that have been set will be marked with an asterik (*).
- Select desired TV Remote setting, then press the Left or Right Programming buttons to review the TV Remote settings.
- To continue to review other TV Remote settings, press the **Up or Down Programming** buttons.
- To deactivate a selected TV Remote setting, press the **Delete** button. The asterik (*) will disappear.

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OPERATION:

The Programmer can execute any of 64 deluxe scenes. The scene is a set of presets across the maximum 256 DHC addresses (16 housecodes multiplied by 16 device codes). At any one time a page of 8 scenes is assigned to the scene buttons across the bottom of the Programmer **(refer to Figure 4)**. When scene page one is active, the buttons execute the programming sequence of scenes one through eight. Scene Pages two through eight will assign the buttons to scenes nine through sixty-four **(refer to following chart)**:

Scene Page Selected	Scenes Accessible
1	1-8
2	9-16
3	17-24
4	25-32
5	33-40
6	41-48
7	49-56
8	57-64

TO OPERATE:

Scene Buttons: Press any of the Scene Buttons located on the bottom of the Programmer to access the preprogrammed scenes **(refer to Figure 4)**.

Living Room
01/01/02 12:00PM

Press and Hold any of the **Scene Buttons** for quick access to Scene Programming (name editing is not available in this mode) **(refer to Figure 4)**. The Scene buttons will flash while in this mode.

HC=A Lvl=050%
Living Room

Include/Exclude buttons: Press any of the **Include/Exclude** buttons to include or exclude address codes from the scene **(refer to Figure 4)**. The lighting level may also be adjusted by pressing **Up or Down Dim/Bright** buttons.

NOTE: As a general rule, exclude as many unused housecodes and devices from the scene as possible. This allows scenes to be stored quicker in programming.

HCCS7 Option – Each of the deluxe scenes can also be accessed from a HCCS7 DHC Scene Controller (optional). The HCCS7 becomes a remote keypad to the Programmer.

To use the HCCS7 as a remote access keypad for scenes, the housecode and device code must be set up correctly first. The housecode on the HCCS7 must be set to **any one** of the housecodes that are set in the **Initial Setup Wizard** of the Programmer. In the Programmer **Initial Setup Wizard** the user specifies all the housecodes being used in the system. The Programmer will ignore all housecodes not set.

The device code on the HCCS7 must be set according to the following table to access each of the corresponding scene pages on the Programmer.

NOTE: Refer to the HCCS7 Instruction Sheet for setting device code.

NOTE: The HCCS7 is limited in controlling only the first seven scenes programmed on each of the eight scene pages.

Scene Page Selected	Scenes Accessible	HCCS7 Device Code
1	1-7	1
2	9-15	3
3	17-23	5
4	25-31	7
5	33-39	9
6	41-47	11
7	49-55	13
8	57-63	15

Scene Pages: Pressing the **Scene Page** button **(refer to Figure 4)** while the LCD is in the MAIN SCREEN will change the Scene Page accessible.

Scene Page 1
Selects 01-08

Addresses: Pressing the **Address Page** buttons **(refer to Figure 4)** while the LCD is in the MAIN SCREEN will change addresses accessible via the **Dim/Bright** buttons.

Address Page
A1-A8

NOTE: The lighting level is not retained in memory once another scene is enabled. The last programmed light level will be restored.

Dim/Bright Buttons:

- Pressing the **Up or Down Dim/Bright** buttons **(refer to Figure 4)** once while the LCD is in the MAIN SCREEN will display device information.

HC=A Lvl=050%
Living Room

- Press and hold the **Up or Down Dim/Bright** buttons **(refer to Figure 4)** while the LCD is in the MAIN SCREEN to incrementally adjust Dim/Bright levels of the devices defined in the scene.

  NOTE: The light level will adjust to setting when button is released.

HC=A Lvl=025%
Living Room

- Double tap the **Up or Down Dim/Bright** buttons **(refer to Figure 4)** to adjust lighting level to minimum or maximum.

HC=A Lvl=100%
Living Room

NOTES:

- DO NOT use the HCCS7 to program the deluxe scene. The HCCPG must be used. The HCCS7 will incompletely program the HCCPG deluxe scene.
- For 1-Way devices, the LED's may not accurately depict light set level due to the fact that the device may have been adjusted locally.
- For 2-Way devices, the LED's will match or indicate the actual light level set.

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PERSONALITY Button/ALL ON HOLD: Press the **PERSONALITY** button **(refer to Figure 4)** to select the desired timed program or put all events on HOLD (i.e., At Home, Away, Special, ALL ON HOLD).

NOTE: The LCD screen and the **PERSONALITY** button will flash indicating the ALL ON HOLD command is enabled. Selecting one of the other events will remove timer HOLD.

Home Personality <Away>

Home Personality <ALL ON HOLD>

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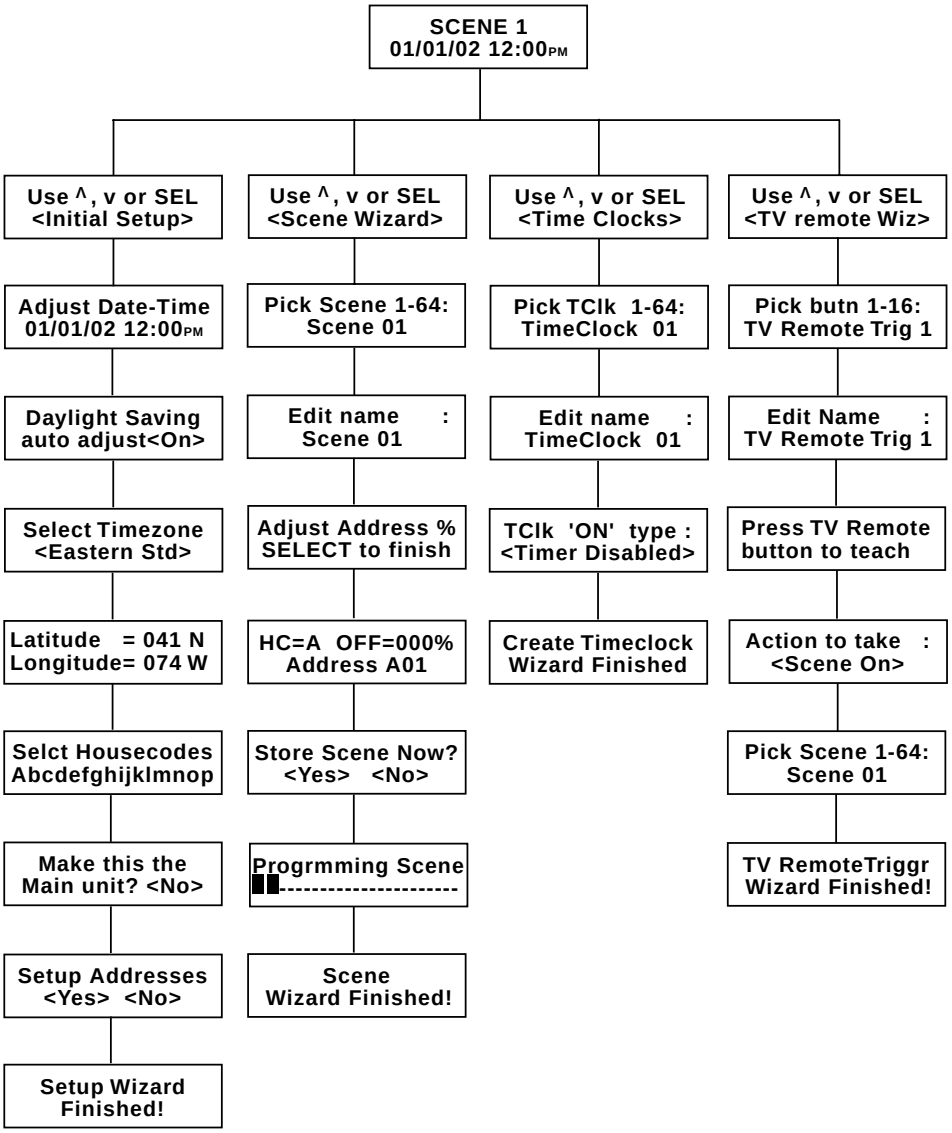
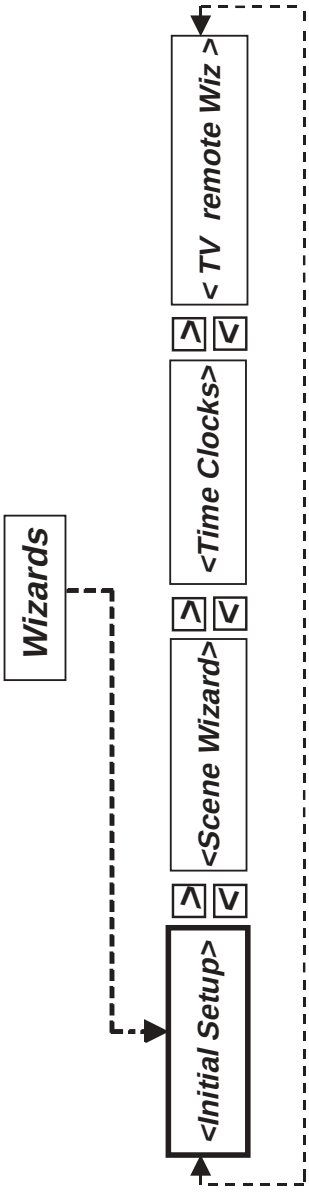
HIGH LEVEL MENU TREE

NOTE: This sequence shows the order in which each menu will appear when scrolling through the menus using the Down Function Button.



DETAIL LEVEL MENU TREE

NOTE: This sequence shows the order in which each menu will appear when scrolling through the menus using the Down Function Button.



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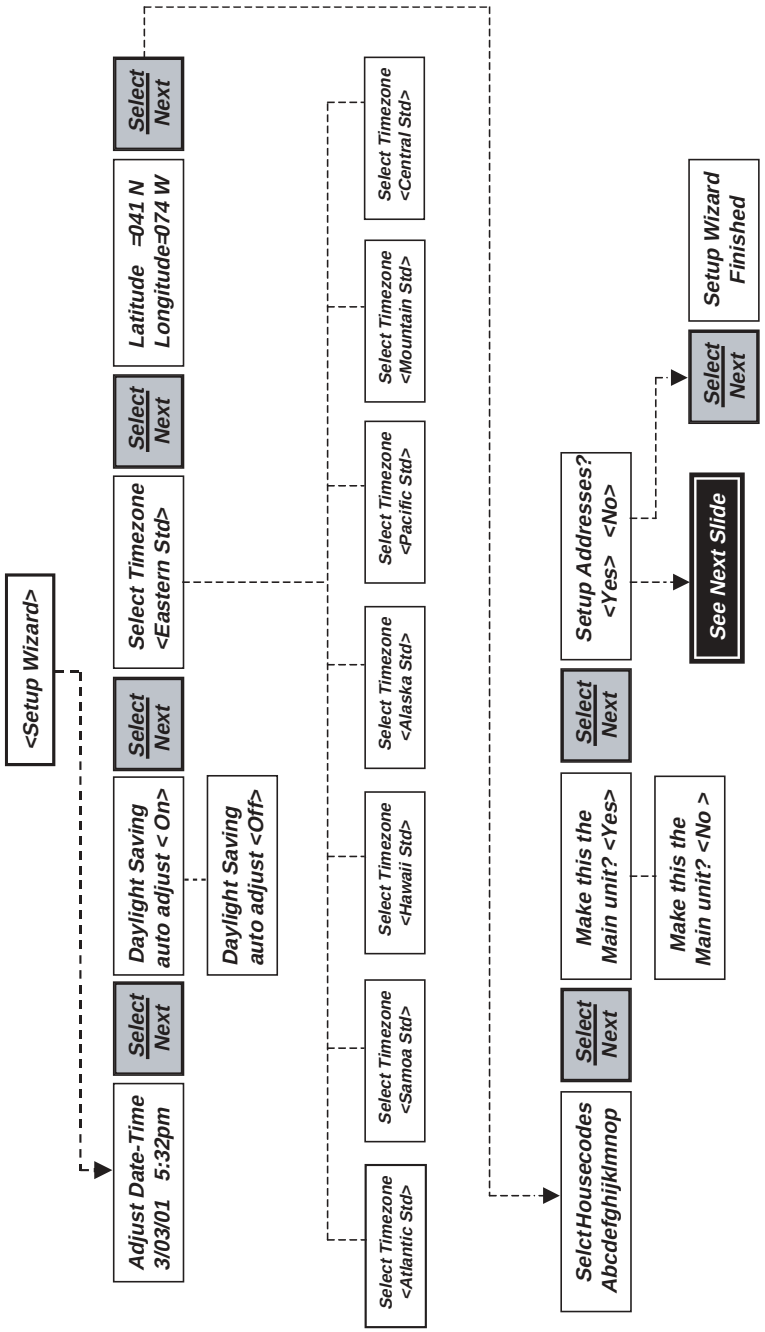
DETAIL LEVEL MENU TREE

Initial Setup Wizard



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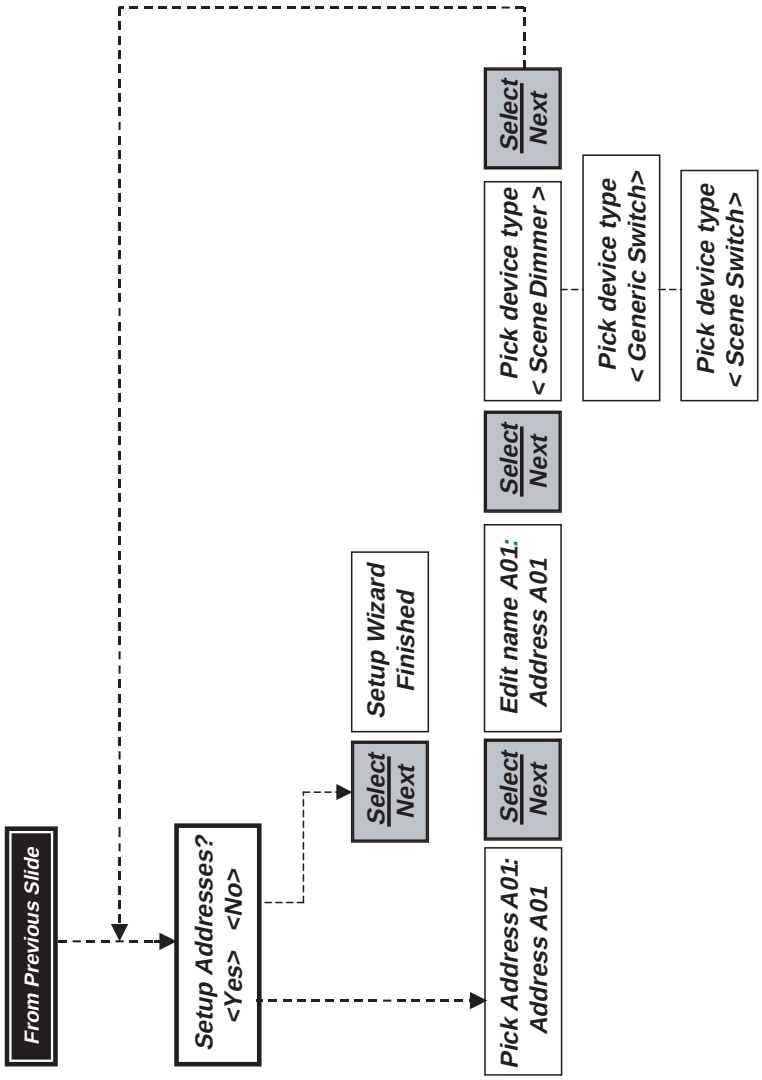
DETAIL LEVEL MENU TREE

Initial Setup Wizard (con't)



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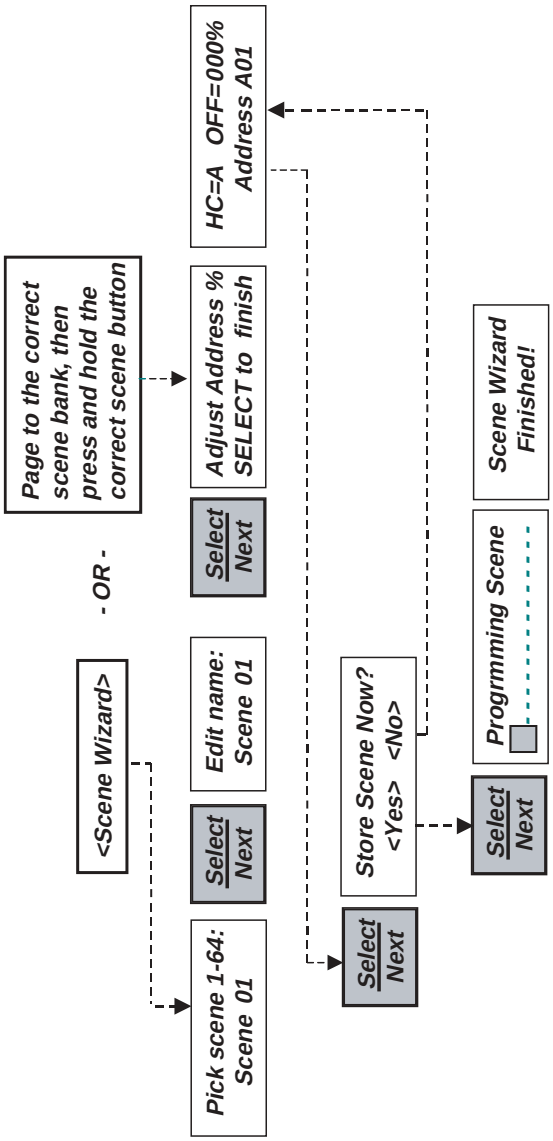
DETAIL LEVEL MENU TREE

Scene Wizard



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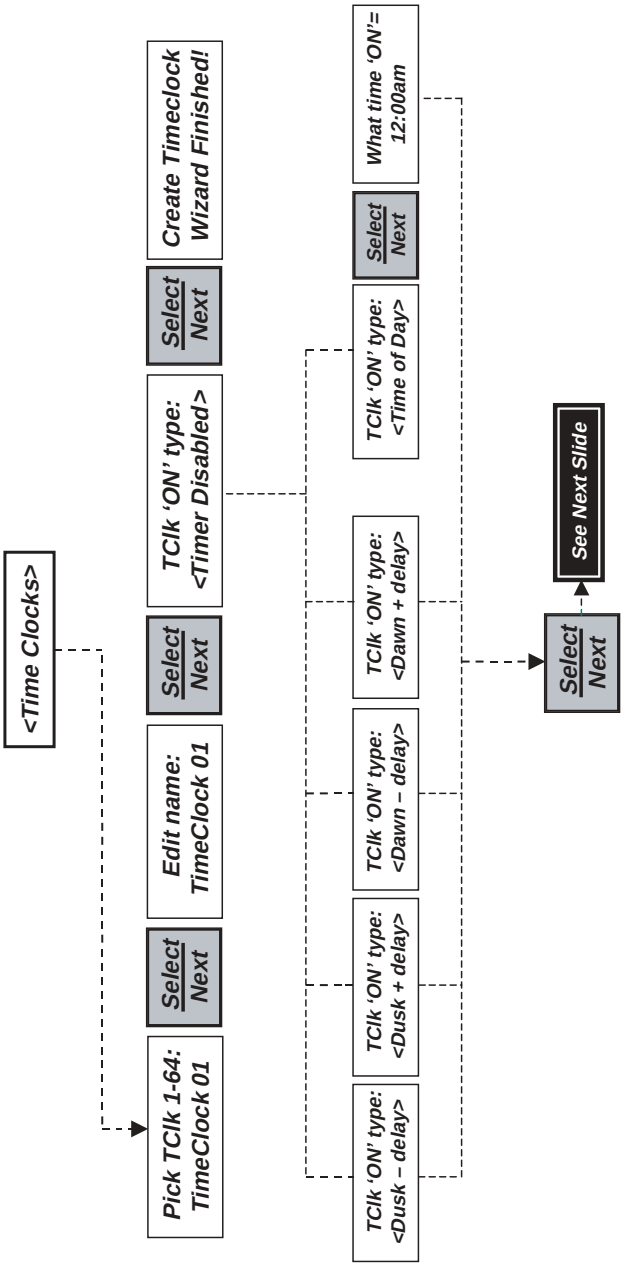
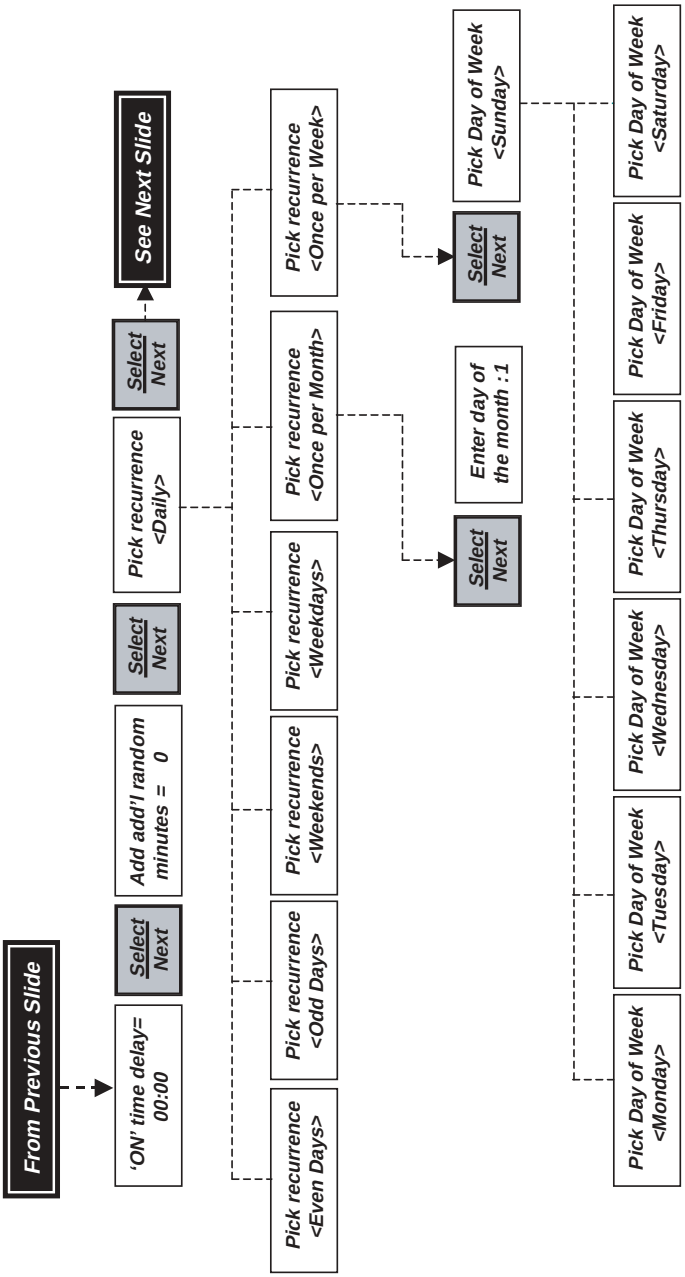
DETAIL LEVEL MENU TREE

Time Clock Wizard



DETAIL LEVEL MENU TREE

Time Clock Wizard (con't)



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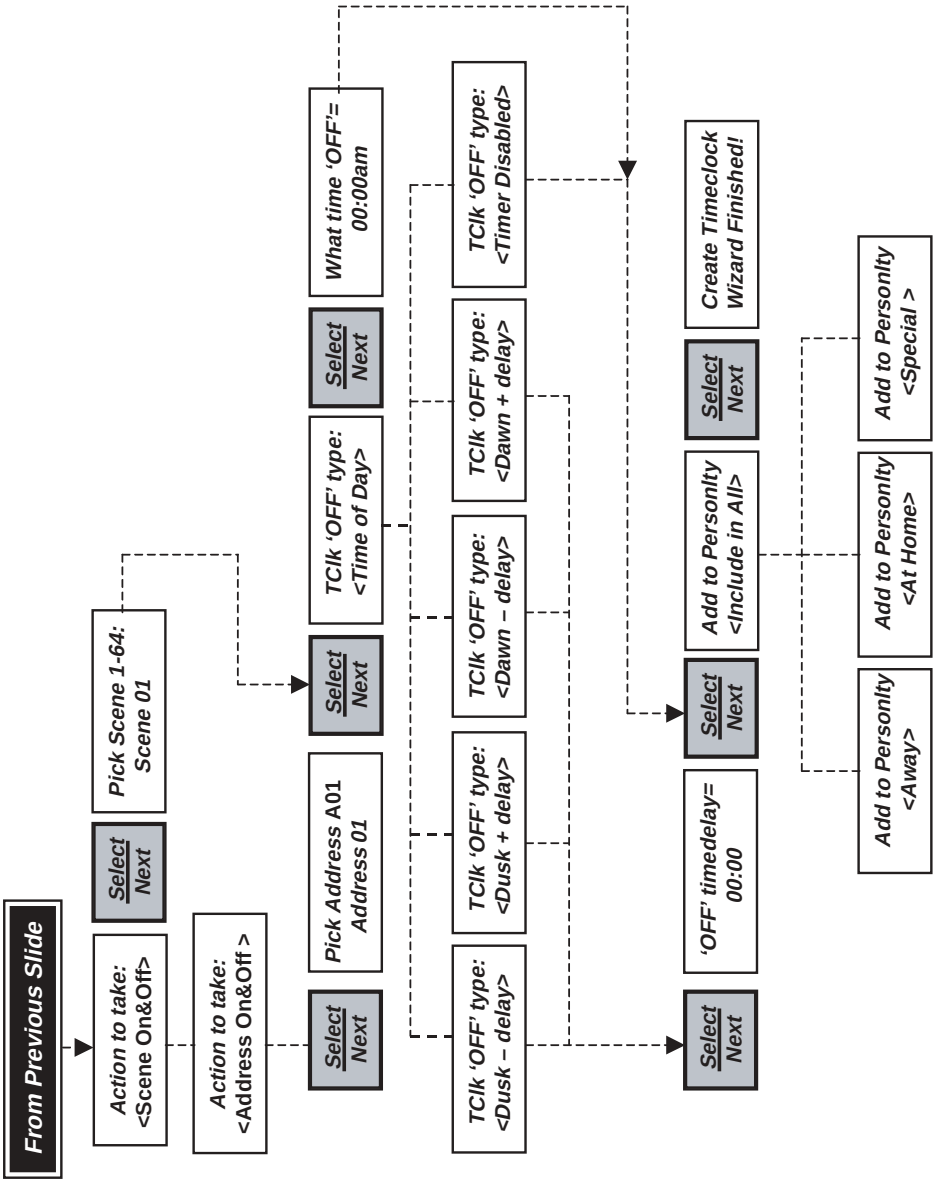
DETAIL LEVEL MENU TREE

Time Clock Wizard (con't)



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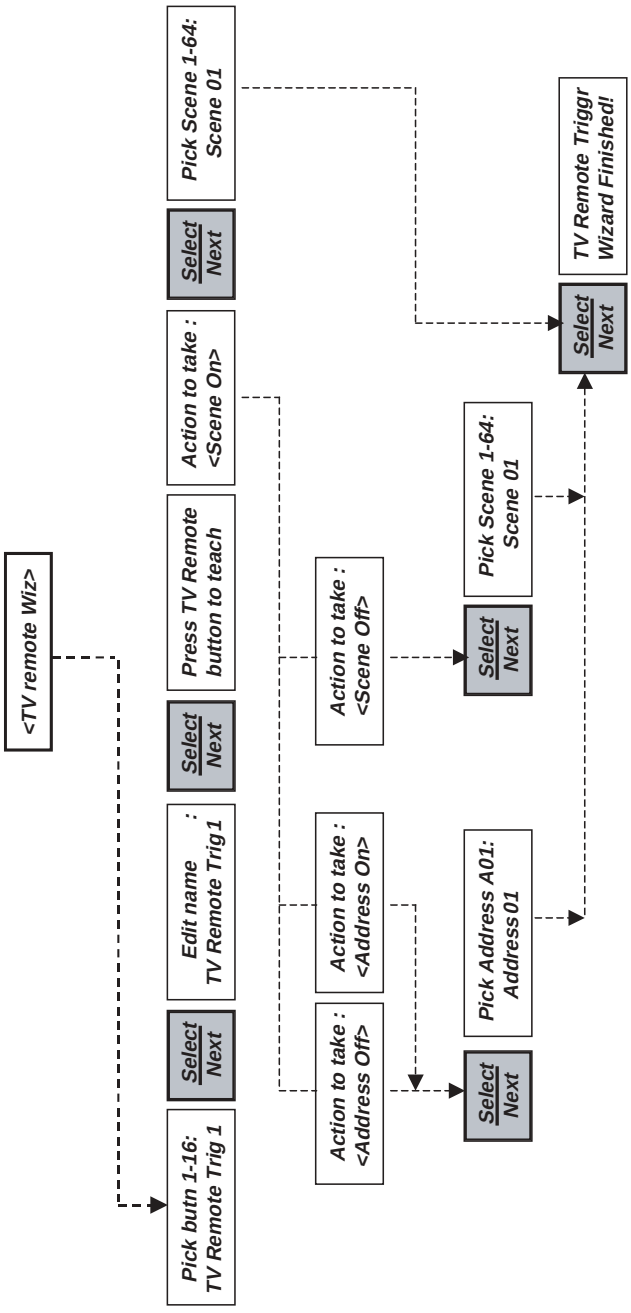
DETAIL LEVEL MENU TREE

TV Remote Wizard



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TROUBLESHOOTING

If the DHC Programmer appears to be functioning improperly, proceed with the following check list:

1. **Programmer does not turn ON**
   - Ensure that circuit breaker or fuse is turned ON.
   - Confirm that the Programmer is wired exactly as shown in the Wiring Diagram. Ensure that the center lug is not connected.
2. **Timer is set up and nothing is happening or acting erratic**
   - Verify that you have reliable communications between the Programmer and the device you want to turn ON or OFF first by trying to actuate the device from the front panel.
   - Check to see if the timer is in a “Home Personality”. Check which “Home Personality” is acvtive. These commands must match.
   - Check that the address type is properly set. Scene dimmers and scene switch types should be set for Leviton Scene Capable devices only.
   - Operation of the Dusk/Dawn feature requires Latitude/Longitude and time zone to be set accurately.
3. **Light will not turn ON or OFF from the front panel**
   - Run Setup Wizard and set ALL the housecodes used by your devices.
   - Use the Address Page buttons to page to the house code the device is on. Double tap the appropriate device to turn it full ON or OFF.
   - Ensure that the device you are trying to actuate is functioning properly. Check bulb or lamp.
   - Try actuating the device from another transmitter.
   - Check that the device type is properly set. Scene dimmers and scene switch types should be set for Leviton Scene Capable devices only.
   - Leviton recommends an HCA02-10E repeater in every electrical panel and sub-panel in all DHC installations for adequate signal strength.
   - The Cat. Nos. 6227, 6280, 6296, and 6298 need a device type of “Generic Switch” for proper operation.
4. **Timer is set with a recurrence of WEEKDAY, WEEKEND, ONCE/WEEK, …(any except Daily) and the Timer does not turn OFF on the last day of the recurrence pattern**
   - You may have set a turn OFF time after 12:00 am. This setting would actually fall on the next day and would not turn OFF the address on the last day of the recurrence pattern. You must set the turn OFF time before 11:59 pm for it to turn OFF on the last day indicated.
5. **Lights are turning ON and OFF by themselves**
   - One of the 64 Timers may be enabled. Check all timers to determine if you inadvertently enabled one of the timers.
   - The housecode may be in use in a neihbors residence. Change housecodes.

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6. Backlight on LCD is blinking ON/OFF

- The Personalities button is in the HOLD mode. Press the Personalities button until it cycles to the desired event.

7. Programmer functions erratically in multiple Programmer installations

- "Make this the main unit" is set to the ON position in more than one Programmer applications. Only one Programmer must have this option turned ON at any one time.

8. Programmed deluxe scenes take a long time to turn ON or OFF

There are a couple of steps to take to speed up the scenes:

- Consolidate dimmers/switches onto as few housecodes as possible. Readjust setting in Initial Setup Wizard.
- Use only Leviton Scene Capable switches and dimmers, or include as few generic switches as possible in the scene.
- The scene should span as few housecodes as possible. You may be able to readdress dimmers/switches to consolidate the scene dimmer/switches onto one or two housecodes. Do not 'include' devices in other housecodes in the scene. Use the Exclude button to remove unused addresses.
- If using an HCCS7 as a keypad, and the scene spans multiple housecodes, set its housecode to the those of the lights in the room. This allows those lights to turn ON first.
- If some generic switches are included in a scene, the Toscana will try to turn them ON using the ALL ON/ALL OFF commands (this could potentially be very quick!). It can do this only if all devices on a housecode are included in a scene (either Scene/Generic/Mixed), and all the devices are to turn ON or are to turn OFF.

9. The display (LCD) shows blinking dashes

- You need to reset the time. Use the Initial Setup Wizard.

10. When trying to teach a TV remote, a remote button is pressed but nothing happens; or I do not get enough range from my TV remote

- You may need fresh batteries in your remote control to get maximum range.
- Your remote may be using a non-standard frequency. Try using a different remote control to see if the range or performance improves.

11. The LED display lights are working but the LCD is blank, or the LCD is All BLACK, or the LCD text is too light or too dark

- Refer to Step 9 in the "INSTALLATION" section.

12. I can program a scene, but when I press the scene button to execute it I get strange results from my lights

- The Toscana unit must be used to teach the scene. DO NOT use the HCCS7. This device can access the scenes but cannot be used to program them. It will not fully program the scene to all housecodes, only the first 12 addresses.

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Controller/Transmitter – A 2-Way device with no integral dimming or switching element. Controllers send the signal to a dimmer or switch. The dimmer or switch will actuate the light.

Deluxe Scenes – Are scenes that can span multiple housecodes and can include “Non-scene Capable” devices (as ON/OFF loads only) in them. There are up to 64 deluxe scenes that can be programmed into a DHC system.

DHC – Acronym for Leviton’s Decora Home Controls. Decora is a styling of Leviton switches and receptacles, most closely associated with the large rocker type switches patented and made popular by Leviton. Decora Home Controls (DHC) is the name given to Leviton’s popular power line carrier remote control line of switches for residential use.

DHC Addresses – Each dimmer and switch has a settable address so that it can be controlled remotely. Each address consists of a pair of letters and numbers. The first part of the address is the House Code which is a letter between A and P inclusive. The second part of the address is the device Number or Unit Code, which can vary between 1 and 16 inclusive. More than one DHC switch or dimmer can share the same address.

Generic Device – A “Generic Device” is a switch or dimmer that does not have scene capable functions.

Personality – The Time Clocks can be enabled in groups. There are three groups, “At Home, Away, and Special”. One button on the HCCPG DHC Toscana can be used to change the enabled group of Time clocks thus enabling a home “Personality”.

Power Line Carrier Communications – A method of communication between enabled equipment over the power line. No extra communication wiring is required.

Scenes – Are a set of preset lighting levels and ON/Off states for several DHC Addresses. A scene can only include addresses that are on the same housecode. Each housecode can have as many as 64 different scenes. Only DHC dimmers and switches that are specified as “Scene Capable” will respond to the scene commands.

Time Clocks – Up to 64 Time Clocks are available. Each Time Clock can specify an ON and an OFF time (as well as some additional options). Each Time Clock can turn a scene, deluxe scene, or address ON and OFF at those times. The Time Clocks are “astronomical”. This means that they can calculate sunrise and sunset given the locations latitude, longitude and time zone.

1-Way – A DHC dimmer or switch that is capable of only receiving the Power Line signal.

2-Way – A DHC dimmer or switch that is capable of transmitting and receiving the Power Line signal. When the button a 2-Way device is pressed and it turns the Load ON or OFF, the status is then transmitted to other devices in the system so they can properly indicate the current status of the light.

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APPENDIX B – LATITUDE AND LONGITUDE

STATE/CITY	LAT	LONG
ALABAMA		
Alexander City	33° N	86° W
Anniston AP	34° N	86° W
Auburn	33° N	85° W
Birmingham AP	34° N	87° W
Decatur	35° N	87° W
Dothan AP	31° N	85° W
Florence AP	35° N	88° W
Gadsden	34° N	86° W
Huntsville AP	35° N	87° W
Mobile AP	31° N	88° W
Mobile Co	31° N	88° W
Montgomery AP	32° N	86° W
Selma-Craig AFB	32° N	88° W
Talladega	33° N	86° W
Tuscaloosa AP	33° N	88° W
ALASKA		
Anchorage AP	61° N	150° W
Barrow (S)	71° N	157° W
Fairbanks AP (S)	65° N	148° W
Juneau AP	58° N	135° W
Kodiak	58° N	152° W
Nome AP	64° N	165° W
ARIZONA		
Douglas AP	31° N	110° W
Flagstaff AP	35° N	112° W
Fort Huachuca AP (S)	32° N	110° W
Kingman AP	35° N	114° W
Nogales	31° N	111° W
Phoenix AP (S)	33° N	112° W
Prescott AP	35° N	112° W
Tucson AP (S)	32° N	111° W
Winslow AP	35° N	111° W
Yuma AP	33° N	115° W
ARKANSAS		
Blytheville AFB	36° N	90° W
Camden	34° N	93° W
El Dorado AP	33° N	93° W
Fayetteville AP	36° N	94° W
Fort Smith AP	35° N	94° W
Hot Springs	34° N	93° W
Jonesboro	36° N	91° W
Little Rock AP (S)	35° N	92° W
Pine Bluff AP	34° N	92° W
Texarkana AP	33° N	94° W
CALIFORNIA		
Bakersfield AP	35° N	119° W
Barstow AP	35° N	117° W
Blythe AP	34° N	115° W
Burbank AP	34° N	118° W
Chico	40° N	122° W
Concord	38° N	122° W
Covina	34° N	118° W
Crescent City AP	42° N	125° W

STATE/CITY	LAT	LONG
Downey	34° N	118° W
El Cajon	33° N	117° W
El Cerrito AP (S)	33° N	116° W
Escondido	33° N	117° W
Eureka/Arcata AP	41° N	124° W
Fairfield-Trafis AFB	38° N	122° W
Fresno AP (S)	37° N	120° W
Hamilton AFB	38° N	122° W
Laguna Beach	34° N	118° W
Livermore	38° N	122° W
Lompoc, Vandenberg AFB	35° N	121° W
Long Beach AP	34° N	118° W
Los Angeles AP (S)	34° N	118° W
Los Angeles CO (S)	34° N	118° W
Merced-Castle AFB	37° N	121° W
Modesto	38° N	121° W
Monterey	37° N	122° W
Napa	38° N	122° W
Needles AP	35° N	115° W
Oakland AP	38° N	122° W
Oceanside	33° N	117° W
Ontario	34° N	118° W
Oxnard	34° N	119° W
Palmdale AP	35° N	118° W
Palm Springs	34° N	117° W
Pasadena	34° N	118° W
Petaluma	38° N	123° W
Pomona Co	34° N	118° W
Redding AP	41° N	122° W
Redlands	34° N	117° W
Richmond	38° N	122° W
Riverside-March AFB (S)	34° N	117° W
Sacramento AP	39° N	121° W
Salinas AP	37° N	122° W
San Bernadino, Norton AFB	34° N	117° W
San Diego AP	33° N	117° W
San Fernando	34° N	118° W
San Francisco AP	38° N	122° W
San Francisco Co	38° N	122° W
San Jose AP	37° N	122° W
San Louis Obispo	35° N	121° W
Santa Ana AP	34° N	118° W
Santa Barbara MAP	34° N	120° W
Santa Cruz	37° N	122° W
Santa Maria AP (S)	35° N	120° W
Santa Monica CIC	34° N	118° W
Santa Paula	34° N	119° W
Santa Rosa	39° N	123° W
Stockton AP	38° N	121° W
Ukiah	39° N	123° W
Visalia	36° N	119° W
Yreka	42° N	123° W
Yuba City	39° N	122° W
COLORADO		
Alamosa AP	37° N	106° W
Boulder	40° N	105° W
Colorado Springs AP	39° N	105° W
Denver AP	40° N	105° W
Durango	37° N	108° W
Fort Collins	41° N	105° W

STATE/CITY	LAT	LONG
Grand Junction AP (S)	39° N	109° W
Greeley	40° N	105° W
Lajunta AP	38° N	103° W
Leadville	39° N	106° W
Pueblo AP	38° N	104° W
Sterling	48° N	103° W
Trinidad	37° N	104° W
CONNECTICUT		
Bridgeport AP	41° N	73° W
Hartford, Brainard Field	42° N	73° W
New Haven AP	41° N	74° W
New London	41° N	72° W
Norwalk	41° N	73° W
Norwick	42° N	72° W
Waterbury	42° N	73° W
Widsor Locks, Bradley Fld	42° N	73° W
DELAWARE		
Dover AFB	39° N	75° W
Wilmington AP	40° N	76° W
DISTRICT OF COLUMBIA		
Andrews AFB	38° N	76° W
Washington, National AP	39° N	77° W
FLORIDA		
Belle Glade	27° N	81° W
Cape Kennedy AP	28° N	81° W
Daytona Beach AP	29° N	81° W
E Fort Lauderdale	26° N	80° W
Fort Myers AP	27° N	82° W
Fort Pierce	27° N	80° W
Gainsville AP (S)	30° N	82° W
Jacksonville AP	30° N	82° W
Key West AP	25° N	82° W
Lakeland Co (S)	28° N	82° W
Miami AP (S)	26° N	80° W
Miami Beach Co	26° N	80° W
Ocala	29° N	82° W
Orlando AP	29° N	81° W
Panama City, Tyndall AFB	30° N	86° W
Pensacola Co	30° N	87° W
St. Augustine	30° N	81° W
St. Petersburg	28° N	83° W
Stanford	29° N	81° W
Sarasota	27° N	83° W
Tallahassee AP (S)	30° N	84° W
Tampa AP (S)	28° N	83° W
West Palm Beach AP	27° N	80° W
GEORGIA		
Albany, Turner AFB	32° N	84° W
Americus	32° N	84° W
Athens	33° N	83° W
Atlanta AP (S)	34° N	84° W
Augusta AP	33° N	82° W

STATE/CITY	LAT	LONG
Brunswick	31° N	81° W
Columbus, Lawson AFB	33° N	85° W
Dalton	35° N	85° W
Dublin	32° N	83° W
Gainsville	34° N	84° W
Griffin	33° N	84° W
LaGrange	33° N	85° W
Macon AP	33° N	84° W
Marietta, Dobbins AFB	34° N	85° W
Savannah	32° N	81° W
Valdosta-Moody AFB	31° N	83° W
Waycross	31° N	82° W
HAWAII		
Hilo AP (S)	20° N	155° W
Honolulu AP	21° N	158° W
Kaneohe Bay MCAS	21° N	158° W
Wahiawa	21° N	158° W
IDAHO		
Boise AP (S)	44° N	116° W
Burley	43° N	114° W
Coeur D'Alene AP	48° N	117° W
Idaho Falls AP	44° N	112° W
Lewiston AP	46° N	117° W
Moscow	47° N	117° W
Mountain Home AFB	43° N	116° W
Pocatello AP	43° N	113° W
Twin Falls AP (S)	42° N	114° W
ILLINOIS		
Aurora	42° N	88° W
Belleville, Scott AFB	39° N	90° W
Bloomington	40° N	89° W
Carbondale	38° N	89° W
Champaign/Urbana	40° N	88° W
Chicago, Midway AP	42° N	88° W
Chicago, O'Hare AP	42° N	88° W
Chicago Co	42° N	88° W
Danville	40° N	88° W
Decatur	40° N	89° W
Dixon	42° N	89° W
Elgin	42° N	88° W
Freeport	42° N	90° W
Galesburg	41° N	90° W
Greenville	39° N	89° W
Joliet	42° N	88° W
Kankakee	41° N	88° W
La Salle/Peru	41° N	89° W
Macomb	40° N	91° W
Moline AP	41° N	91° W
Mt Vernon	38° N	89° W
Peoria AP	41° N	90° W
Quincy AP	40° N	91° W
Rantoul, Chanute AFB	40° N	88° W
Rockford	42° N	89° W
Springfield AP	40° N	90° W
Waukegan	42° N	88° W

APPENDIX B – LATITUDE AND LONGITUDE

STATE/CITY	LAT	LONG
INDIANA		
Anderson	40° N	86° W
Bedford	39° N	86° W
Bloomington	39° N	87° W
Columbus, Bakalar AFB	39° N	86° W
Crawfordsville	40° N	87° W
Evansville AP	38° N	88° W
Fort Wayne AP	41° N	85° W
Goshen AP	42° N	86° W
Hobart	42° N	87° W
Huntington	41° N	85° W
Indianapolis AP	40° N	86° W
Jeffersonville	38° N	86° W
Kokomo	40° N	86° W
Lafayette	40° N	86° W
La Porte	42° N	87° W
Marion	40° N	86° W
Muncie	40° N	85° W
Peru, Grissom AFB	41° N	86° W
Richmond AP	40° N	85° W
Shelbyville	40° N	86° W
South Bend AP	42° N	86° W
Terre Haute AP	39° N	87° W
Valparaiso	42° N	87° W
Vincennes	39° N	88° W
IOWA		
Ames (S)	42° N	94° W
Burlington AP	41° N	91° W
Cedar Rapids AP	42° N	92° W
Clinton	42° N	90° W
Council Bluffs	41° N	96° W
Des Moines AP	42° N	94° W
Dubuque	42° N	91° W
Fort Dodge	43° N	95° W
Iowa City	42° N	92° W
Keokuk	40° N	91° W
Marshalltown	42° N	93° W
Mason City AP	43° N	93° W
Newton	42° N	93° W
Ottumwa AP	41° N	92° W
Sioux City AP	42° N	96° W
Waterloo	43° N	92° W
KANSAS		
Atchison	40° N	95° W
Chanute AP	38° N	95° W
Dodge City AP (S)	38° N	100° W
El Dorado	38° N	97° W
Emporia	38° N	96° W
Garden City AP	38° N	101° W
Goodland AP	39° N	102° W
Great Bend	38° N	99° W
Hutchinson AP	38° N	98° W
Liberal	37° N	101° W
Manhattan, Ft Riley (S)	39° N	97° W
Parsons	37° N	96° W
Russell AP	39° N	99° W
Salina	39° N	98° W
Topeka AP	39° N	96° W
Wichita AP	38° N	97° W

STATE/CITY	LAT	LONG
KENTUCKY		
Ashland	39° N	83° W
Bowling Green AP	36° N	86° W
Corbin AP	37° N	84° W
Covington AP	39° N	85° W
Hopkinsville, Ft Campbell	37° N	88° W
Lexington AP (S)	38° N	85° W
Louisville AP	38° N	86° W
Madisonville	37° N	87° W
Owensboro	38° N	87° W
Paducah AP	37° N	89° W
LOUISIANA		
Alexandria AP	31° N	92° W
Baton Rouge AP	31° N	91° W
Bogalusa	31° N	90° W
Houma	30° N	91° W
Lafayette AP	30° N	92° W
Lake Charles AP (S)	30° N	93° W
Minden	33° N	93° W
Monroe AP	33° N	92° W
Natchitoches	32° N	93° W
New Orleans AP	30° N	90° W
Shreveport AP (S)	32° N	94° W
MAINE		
Augusta AP	44° N	70° W
Bangor, Dow AFB	45° N	69° W
Caribou AP (S)	47° N	68° W
Lewiston	44° N	70° W
Millinocket AP	46° N	69° W
Portland (S)	44° N	70° W
Waterville	45° N	70° W
MARYLAND		
Baltimore AP	39° N	77° W
Baltimore Co	39° N	76° W
Cumberland	40° N	79° W
Frederick AP	40° N	78° W
Hagerstown	40° N	78° W
Salisbury (S)	38° N	75° W
MASSACHUSETTS		
Boston AP	42° N	71° W
Clinton	42° N	72° W
Fall River	42° N	71° W
Framingham	42° N	71° W
Gloucester	43° N	71° W
Greenfield	42° N	72° W
Lawrence	43° N	71° W
Lowell	43° N	71° W
New Bedford	42° N	71° W
Pittsfield AP	42° N	73° W
Springfield, Westover AFB	42° N	73° W
Taunton	42° N	71° W
Worcester AP	42° N	72° W

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STATE/CITY	LAT	LONG
MICHIGAN		
Adrian	42° N	84° W
Alpena AP	45° N	83° W
Battle Creek AP	42° N	85° W
Benton Harbor AP	42° N	86° W
Detroit	42° N	83° W
Escanaba	46° N	87° W
Flint AP	43° N	84° W
Grand Rapids AP	43° N	86° W
Holland	43° N	86° W
Jackson AP	42° N	84° W
Kalamazoo	42° N	86° W
Lansing AP	43° N	85° W
Marquette Co	47° N	87° W
Mt Pleasant	44° N	85° W
Muskegon AP	43° N	86° W
Pontiac	43° N	83° W
Port Huron	43° N	82° W
Saginaw AP	44° N	84° W
Sault Ste. Marie AP (S)	46° N	84° W
Traverse City AP	45° N	86° W
Ypsilanti	42° N	84° W
MINNESOTA		
Albert Lea	44° N	93° W
Alexandria AP	46° N	95° W
Bemidji AP	48° N	95° W
Brainerd	47° N	94° W
Duluth AP	47° N	92° W
Fairbault	44° N	93° W
Fergus Falls	46° N	96° W
International Falls AP	49° N	93° W
Mankato	44° N	93° W
Minneapolis/St. Paul AP	45° N	94° W
Rochester AP	44° N	92° W
St. Cloud AP (S)	46° N	94° W
Virginia	47° N	92° W
Willmar	45° N	93° W
Winona	44° N	92° W
MISSISSIPPI		
Biloxi—Keesler AFB	30° N	89° W
Clarksdale	34° N	91° W
Columbus AFB	33° N	88° W
Greenville AFB	34° N	91° W
Greenwood	33° N	90° W
Hattiesburg	31° N	89° W
Jackson AP	32° N	90° W
Laurel	31° N	89° W
Mccomb AP	32° N	90° W
Meridian AP	32° N	89° W
Natchez	32° N	91° W
Tupelo	34° N	89° W
Vicksburg Co	32° N	91° W
MISSOURI		
Cape Girardeau	37° N	90° W
Columbia AP (S)	39° N	92° W
Farmington AP	38° N	90° W
Hannibal	40° N	91° W
Jefferson City	39° N	92° W
Joplin AP	37° N	94° W
Kansas City AP	39° N	95° W
Kirksville AP	40° N	93° W
Mexico	39° N	92° W
Moberly	39° N	92° W
Poplar Bluff	37° N	90° W
Rolla	38° N	92° W
St. Joseph AP	40° N	95° W
St. Louis AP	39° N	90° W
St. Louis CO	39° N	91° W
Sikeston	37° N	90° W
Sedalia—Whiteman AFB	39° N	94° W
Sikeston	37° N	90° W
Springfield AP	37° N	93° W
MONTANA		
Billings AP	46° N	109° W
Bozeman	46° N	111° W
Butte AP	46° N	112° W
Cut Bank AP	49° N	112° W
Glasgow AP (S)	48° N	107° W
Glendive	47° N	105° W
Great Falls AP (S)	47° N	111° W
Havre	49° N	110° W
Helena AP	47° N	112° W
Kalispell AP	48° N	114° W
Lewiston AP	47° N	109° W
Livingstown AP	46° N	110° W
Miles City AP	46° N	106° W
Missoula AP	47° N	114° W
NEBRASKA		
Beatrice	40° N	97° W
Chadron AP	43° N	103° W
Columbus	41° N	97° W
Fremont	41° N	96° W
Grand Island AP	41° N	98° W
Hastings	41° N	98° W
Kearney	41° N	99° W
Lincoln Co (S)	41° N	97° W
McCook	40° N	101° W
Norfolk	42° N	97° W
North Platte AP (S)	41° N	101° W
Omaha AP	41° N	96° W
Scottsbluff AP	42° N	104° W
Sidney AP	41° N	103° W
NEVADA		
Carson City	39° N	120° W
Elko AP	41° N	116° W
Ely AP (S)	39° N	115° W
Las Vegas AP (S)	36° N	115° W
Lovelock AP	40° N	119° W
Reno AP (S)	39° N	120° W
Reno Co	39° N	120° W
Tonopah AP	38° N	117° W
Winnemucca AP	41° N	118° W

APPENDIX B – LATITUDE AND LONGITUDE

STATE/CITY	LAT	LONG
NEW HAMPSHIRE		
Berlin	44° N	71° W
Claremont	43° N	72° W
Concord AP	43° N	71° W
Keene	43° N	72° W
Laconia	43° N	71° W
Manchester, Grenier AFB	43° N	71° W
Portsmouth, Pease AFB	43° N	71° W
NEW JERSEY		
Atlantic City CO	39° N	74° W
Long Branch	40° N	74° W
Newark AP	41° N	74° W
New Brunswick	40° N	74° W
Paterson	41° N	74° W
Phillipsburg	41° N	75° W
Trenton Co	40° N	75° W
Vineland	39° N	75° W
NEW MEXICO		
Holloman AFB	33° N	106° W
Albuquerque AP (S)	35° N	107° W
Artesia	33° N	104° W
Carlsbad AP	32° N	104° W
Clovis AP	34° N	103° W
Farmington AP	37° N	108° W
Gallup	36° N	109° W
Grants	35° N	108° W
Hobbs AP	33° N	103° W
Las Cruces	32° N	107° W
Los Alamos	36° N	106° W
Raton AP	37° N	104° W
Roswell, Walker AFB	33° N	105° W
Santa Fe CO	36° N	106° W
Silver City AP	33° N	108° W
Socorro AP	34° N	107° W
Tucumcari AP	35° N	104° W
NEW YORK		
Albany AP (S)	43° N	74° W
Albany Co	43° N	74° W
Auburn	43° N	77° W
Batavia	43° N	78° W
Binghamton AP	42° N	76° W
Buffalo AP	43° N	79° W
Cortland	43° N	76° W
Dunkirk	42° N	79° W
Elmira AP	42° N	77° W
Geneva (S)	43° N	77° W
Glens Falls	43° N	74° W
Gloversville	43° N	74° W
Hornell	42° N	78° W
Ithaca (S)	42° N	76° W
Jamestown	42° N	79° W
Kingston	42° N	74° W
Lockport	43° N	79° W
Massena AP	45° N	75° W
Newburgh, Stewart AFB	41° N	74° W
NYC-Central Park (S)	41° N	74° W
NYC-Kennedy AP	41° N	74° W
NYC-La Guardia AP	41° N	74° W
Niagara Falls AP	43° N	80° W
Olean	42° N	79° W
Oneonta	43° N	75° W
Oswego Co	43° N	77° W
Plattsburg AFB	45° N	73° W
Poughkeepsie	42° N	74° W
Rochester AP	43° N	78° W
Rome, Griffiss AFB	43° N	75° W
Schenectady (S)	43° N	74° W
Suffolk County AFB	41° N	73° W
Syracuse AP	43° N	76° W
Utica	43° N	75° W
Watertown	44° N	76° W
NORTH CAROLINA		
Asheville AP	35° N	83° W
Charlotte AP	35° N	81° W
Durham	36° N	79° W
Elizabeth City AP	36° N	76° W
Fayetteville, Pope AFB	35° N	79° W
Goldsboro,Seymour-Johnson	35° N	78° W
Greensboro AP (S)	36° N	80° W
Greenville	36° N	77° W
Henderson	36° N	78° W
Hickory	36° N	81° W
Jacksonville	35° N	78° W
Lumberton	35° N	79° W
New Bern AP	35° N	77° W
Raleigh/Durham AP (S)	36° N	79° W
Rocky Mount	36° N	78° W
Wilmington AP	34° N	78° W
Winston-Salem AP	36° N	80° W
NORTH DAKOTA		
Bismarck AP (S)	47° N	101° W
Devils Lake	48° N	99° W
Dickinson AP	47° N	103° W
Fargo AP	47° N	97° W
Grand Forks AP	48° N	97° W
Jamestown AP	47° N	99° W
Minot AP	48° N	101° W
Williston	48° N	104° W
OHIO		
Akron-Canton AP	41° N	81° W
Ashtabula	42° N	81° W
Athens	39° N	82° W
Bowling Green	41° N	84° W
Cambridge	40° N	82° W
Chillicothe	39° N	83° W
Cincinnati Co	39° N	85° W
Cleveland AP (S)	41° N	82° W
Columbus AP (S)	40° N	83° W
Dayton AP	40° N	84° W
Defiance	41° N	84° W
Findlay AP	41° N	84° W
Fremont	41° N	83° W
Hamilton	39° N	85° W
Lancaster	40° N	83° W

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STATE/CITY	LAT	LONG
Lima	41° N	84° W
Mansfield AP	41° N	83° W
Marion	41° N	83° W
Middletown	40° N	84° W
Newark	40° N	82° W
Norwalk	41° N	83° W
Portsmouth	39° N	83° W
Sandusky Co	41° N	83° W
Springfield	40° N	84° W
Steubenville	40° N	81° W
Toledo AP	42° N	84° W
Warren	41° N	81° W
Wooster	41° N	82° W
Youngstown AP	41° N	81° W
Zanesville AP	40° N	82° W
OKLAHOMA		
Ada	35° N	97° W
Altus AFB	35° N	99° W
Ardmore	34° N	97° W
Bartlesville	37° N	96° W
Chickasha	35° N	98° W
Enid, Vance AFB	36° N	98° W
Lawton AP	35° N	98° W
McAlester	35° N	96° W
Muskogee AP	36° N	95° W
Norman	35° N	97° W
Oklahoma City AP (S)	35° N	98° W
Ponca City	37° N	97° W
Seminole	35° N	97° W
Stillwater (S)	36° N	97° W
Tulsa AP	36° N	96° W
Woodward	37° N	100° W
OREGON		
Albany	45° N	123° W
Astoria AP (S)	46° N	124° W
Baker AP	45° N	118° W
Bend	44° N	121° W
Corvallis (S)	44° N	123° W
Eugene AP	44° N	123° W
Grants Pass	42° N	123° W
Klamath Falls AP	42° N	122° W
Medford AP (S)	42° N	123° W
Pendleton AP	46° N	119° W
Portland AP	46° N	123° W
Portland Co	46° N	123° W
Roseburg AP	43° N	123° W
Salem AP	45° N	123° W
The Dalles	46° N	121° W
PENNSYLVANIA		
Allentown AP	41° N	75° W
Altoona Co	40° N	78° W
Butler	41° N	80° W
Chambersburg	40° N	78° W
Erie AP	42° N	80° W
Harrisburg AP	40° N	77° W
Johnstown	40° N	79° W
Lancaster	40° N	76° W

STATE/CITY	LAT	LONG
Meadville	42° N	80° W
New Castle	41° N	80° W
Philadelphia AP	40° N	75° W
Pittsburgh AP	40° N	80° W
Pittsburgh Co	40° N	80° W
Reading Co	40° N	76° W
Scranton/Wilkes-Barre	41° N	76° W
State College (S)	41° N	78° W
Sunbury	41° N	77° W
Uniontown	40° N	80° W
Warren	42° N	79° W
West Chester	40° N	76° W
Williamsport AP	41° N	77° W
York	40° N	77° W
RHODE ISLAND		
Newport (S)	41° N	71° W
Providence AP	42° N	71° W
SOUTH CAROLINA		
Anderson	34° N	83° W
Charleston AFB (S)	33° N	80° W
Charleston Co	33° N	80° W
Columbia AP	34° N	81° W
Florence AP	35° N	80° W
Georgetown	33° N	79° W
Greenville AP	35° N	82° W
Greenwood	35° N	82° W
Orangeburg	33° N	81° W
Rock Hill	35° N	81° W
Spartanburg AP	35° N	82° W
Sumter, Shaw AFB	34° N	80° W
SOUTH DAKOTA		
Aberdeen AP	45° N	98° W
Brookings	44° N	97° W
Huron AP	44° N	98° W
Mitchell	44° N	98° W
Pierre AP	44° N	100° W
Rapid City AP (S)	44° N	103° W
Sioux Falls AP	44° N	97° W
Watertown AP	45° N	97° W
Yankton	43° N	97° W
TENNESSEE		
Athens	35° N	85° W
Bristol-Tri City AP	36° N	82° W
Chattanooga AP	35° N	85° W
Clarksville	37° N	87° W
Columbia	36° N	87° W
Dyersburg	36° N	89° W
Greenville	36° N	83° W
Jackson AP	36° N	89° W
Knoxville AP	36° N	84° W
Memphis AP	35° N	90° W
Murfreesboro	35° N	86° W
Nashville AP (S)	36° N	87° W
Tullahoma	35° N	86° W

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APPENDIX B – LATITUDE AND LONGITUDE

STATE/CITY	LAT	LONG
TEXAS		
Abilene AP	32° N	100° W
Alice AP	28° N	98° W
Amarillo AP	35° N	101° W
Austin AP	30° N	98° W
Bay City	29° N	96° W
Beaumont	30° N	94° W
Beeville	28° N	98° W
Big Spring AP (S)	32° N	101° W
Brownsville AP (S)	26° N	97° W
Brownwood	32° N	99° W
Bryan AP	31° N	97° W
Corpus Christi AP	28° N	97° W
Corsicana	32° N	96° W
Dallas AP	33° N	97° W
Del Rio, Laughlin AFB	29° N	101° W
Denton	33° N	97° W
Eagle Pass	29° N	101° W
El Paso AP (S)	32° N	106° W
Fort Worth AP (S)	33° N	97° W
Galveston AP	29° N	95° W
Greenville	33° N	96° W
Harlingen	26° N	98° W
Houston AP	30° N	95° W
Houston Co	30° N	95° W
Huntsville	31° N	96° W
Killeen, Robert Gray AAF	31° N	98° W
Lamesa	33° N	102° W
Laredo AFB	28° N	99° W
Longview	32° N	95° W
Lubbock AP	34° N	102° W
Lufkin AP	31° N	95° W
Mcallen	26° N	98° W
Midland AP (S)	32° N	102° W
Mineral Wells AP	33° N	98° W
Palestine Co	32° N	96° W
Pampa	36° N	101° W
Pecos	31° N	103° W
Plainview	34° N	102° W
Port Arthur AP	30° N	94° W
Goodfellow AFB	31° N	100° W
San Antonio AP (S)	30° N	98° W
Sherman, Perrin AFB	34° N	97° W
Snyder	33° N	101° W
Temple	31° N	97° W
Tyler AP	32° N	95° W
Vernon	34° N	99° W
Victoria AP	29° N	97° W
Waco AP	32° N	97° W
Wichita Falls AP	34° N	98° W
UTAH		
Cedar City AP	38° N	113° W
Logan	42° N	112° W
Moab	39° N	110° W
Ogden AP	41° N	112° W
Price	40° N	111° W
Provo	40° N	112° W
Richfield	39° N	112° W
St George Co	37° N	114° W
Salt Lake City AP (S)	41° N	112° W
Vernal AP	40° N	110° W

STATE/CITY	LAT	LONG
VERMONT		
Barre	44° N	73° W
Burlington AP (S)	44° N	73° W
Rutland	44° N	73° W
VIRGINIA		
Charlottesville	38° N	79° W
Danville AP	37° N	79° W
Fredericksburg	38° N	77° W
Harrisonburg	38° N	79° W
Lynchburg AP	37° N	79° W
Norfolk AP	37° N	76° W
Petersburg	37° N	78° W
Richmond AP	37° N	77° W
Roanoke AP	37° N	80° W
Staunton	38° N	79° W
Winchester	39° N	78° W
WASHINGTON		
Aberdeen	47° N	124° W
Bellingham AP	49° N	123° W
Bremerton	48° N	123° W
Ellensburg AP	47° N	121° W
Everett, Paine AFB	48° N	122° W
Kennewick	46° N	119° W
Longview	46° N	123° W
Moses Lake, Larson AFB	47° N	119° W
Olympia AP	47° N	123° W
Port Angeles	48° N	123° W
Seattle-Boeing Field	48° N	122° W
Seattle Co (S)	48° N	122° W
Seattle-Tacoma AP (S)	47° N	122° W
Spokane AP (S)	48° N	118° W
Tacoma, McChord AFB	47° N	122° W
Walla Walla AP	46° N	118° W
Wenatchee	47° N	120° W
Yakima AP	47° N	121° W
WEST VIRGINIA		
Beckley	38° N	81° W
Bluefield AP	37° N	81° W
Charleston AP	38° N	82° W
Clarksburg	39° N	80° W
Elkins AP	39° N	80° W
Huntington Co	38° N	82° W
Martinsburg AP	39° N	78° W
Morgantown AP	40° N	80° W
Parkersburg Co	39° N	82° W
Wheeling	40° N	81° W
WISCONSIN		
Appleton	44° N	88° W
Ashland	47° N	91° W
Beloit	42° N	89° W
Eau Claire AP	45° N	91° W
Fond Du Lac	44° N	88° W
Green Bay AP	44° N	88° W
La Crosse AP	44° N	91° W

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STATE/CITY	LAT	LONG
Madison AP (S)	43° N	89° W
Manitowoc	44° N	87° W
Marinette	45° N	88° W
Milwaukee AP	43° N	88° W
Racine	43° N	88° W
Sheboygan	44° N	88° W
Stevens Point	44° N	90° W
Waukesha	43° N	88° W
Wausau AP	45° N	90° W
WYOMING		
Casper AP	43° N	106° W
Cheyenne	41° N	105° W
Cody AP	45° N	109° W
Evanston	41° N	111° W
Lander AP (S)	43° N	109° W
Laramie AP (S)	41° N	106° W
Newcastle	44° N	104° W
Rawlins	42° N	107° W
Rock Springs AP	42° N	109° W
Sheridan AP	45° N	107° W
Torrington	42° N	104° W

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LIMITED 2 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for two years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option, if within such two year period the product is returned prepaid, with proof of purchase date, and a description of the problem to **Leviton Manufacturing Co., Inc., Att: Quality Assurance Department, 59-25 Little Neck Parkway, Little Neck, New York 11362-2591.** This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to two years. Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

For Technical Assistance Call:
1-800-824-3005 (U.S.A. Only)
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