

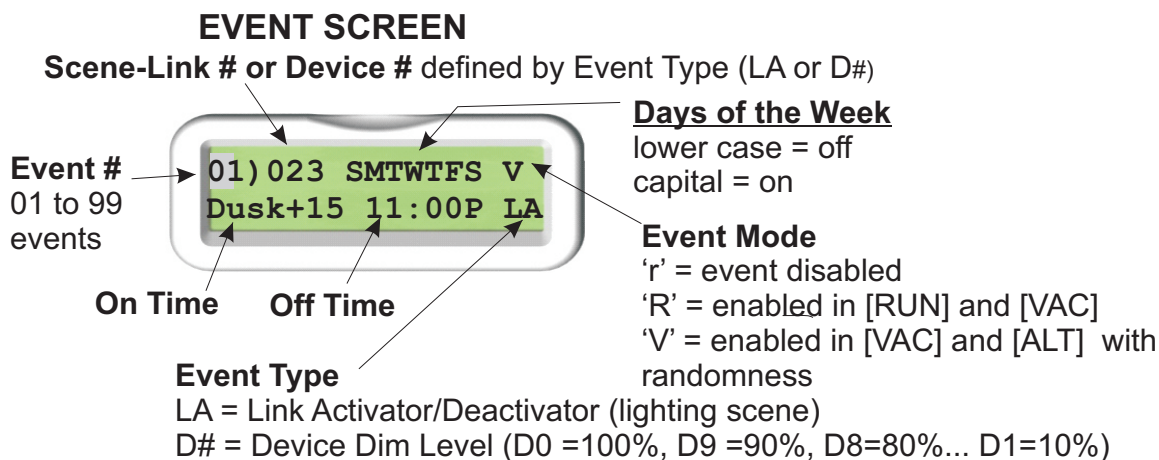
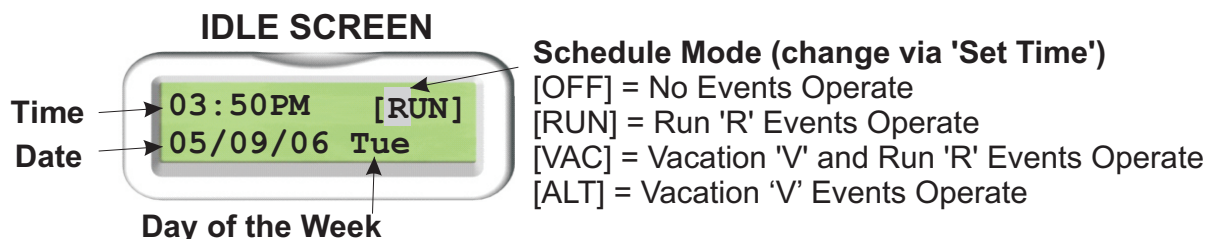


**Controller, Scheduler-Timer**  
**Model UCS-01**  
version 1.48+

**User Guide**



## QUICK REFERENCE GUIDE



***Hint:** ENTER button selects a menu item, saves settings, advances to the next editable field, and executes commands. The MENU button accesses the main menu and exits a screen without saving changed settings.*

### MAIN MENU

- |                  |                   |
|------------------|-------------------|
| 1) Set Event     | 6) Set Randomness |
| 2) Set Time      | 7) Link Mode      |
| 3) Set Location  | 8) Tools          |
| 4) Set Network   |                   |
| 5) Delete Events |                   |

### TOOLS SUB-MENU

- |                |                 |
|----------------|-----------------|
| A) CIM Mode    | F) Noise View   |
| B) Add Device  | G) Noise Log    |
| C) Add Link    | H) Clock Source |
| D) Delete Link | I) Set Contrast |
| E) Read Link   | J) Use Repeater |

### QUICK START

- Step 1)** Plug Scheduler in to power (fully charged in 24 hours).
- Step 2)** Press Menu button, select 'Set Time' and press enter; set time and mode data, then press enter to save and exit.
- Step 3)** Select 'Set Location' and press enter; input zip code and press enter (3 times as prompted) to save and return to main menu.
- Step 4)** Select 'Set Network' and press enter; input your network ID\* and press enter to save.
- Step 5)** Select 'Set Events' to begin editing schedule.

\* Note: for Pre-Configured Kits (e.g. DKIT-0x) and their Accessories, the network ID is 250 and each device is labeled with its ID number.

## DESCRIPTION

The UPB Controller, Scheduler-Timer (model UCS) provides control of UPB devices or UPB scene links according to a user defined event or schedule. It is designed to communicate with a UPB network when connected to a standard power receptacle; using the L-shaped power connector or the 6 foot power cord, both included.

The UCS is simple and flexible. It is often used in place of more complex whole home automation system schedulers because it is easier for the home owner to adjust. Up to 99 events can be configured once the time, location and Network ID# are set in the UCS. Location is set by entering zip code or latitude/longitude.

Each of the 99 available events can control a device or a scene link with respect to time, sunrise (dawn), sunset (dusk) or a combination of a time  $\pm$  minutes from sunrise or sunset. Each event has one of three Event Mode settings that defines how the event is enabled by the Schedule Mode. Specifically an event with Event Mode 'R' is enabled for normal Run [RUN] and Vacation [VAC] Schedule Modes. An event with Event Mode 'r' is disabled for all Schedule Modes. And, an event with Event Mode 'V' is enabled for [VAC] and Alternate Vacation [ALT] Schedule Modes, with randomized event time settings. The Schedule Modes allow the user to quickly change the operation of the Scheduler-Timer so the corresponding Event Modes occur: [RUN] where all 'R' enabled events are ON, [OFF] where all events are OFF, [VAC] where vacation 'V' and 'R' events are ON, and [ALT] where only vacation 'V' events are ON. For example when the Schedule Mode is set for normal [RUN] operation only events set for Event Mode 'R' operate. However when vacation Schedule Mode [VAC] is selected, normal run 'R' events operate and vacation 'V' events operate with randomness. The Schedule Mode can be changed from the Set Time screen, or via scene-links once Link Mode is set.

The easy to navigate menus allow configuration without the use of a PC or software. The Scheduler-Timer is intended for use by an installer or homeowner who knows the Network ID#, Device # and scene link numbers.

The Tools sub-menu offers a variety of useful functions:

- CIM Mode allows the Scheduler-Timer to operate as a serial (RS-232) computer interface module. And, with the included DB9 serial cable, it can connect a PC with UPStart configuration software to UPB devices on a powerline network. Note, if the PC does not have a DB9 serial port a USB to serial adapter will be needed (not included).
- Add Device feature allows the user to add a device to the UPB network (ID#) for which the Scheduler-Timer is set.
- Add Link feature allows the user to add a UPB scene link (link ID#) to receiving devices.
- Delete Link feature allows the user to delete a UPB scene link (link ID#) from receiving devices.
- Read Link feature allows the user to view the network ID# and a link sent from a transmitting device (e.g. button, rocker or other source).
- Noise View feature indicates the signal and noise level at the power line connection point. And if powerline noise is present, it will log noise level and time. 3
- Noise Log feature allows the user to view (up to 10) recorded noise events measured in Noise View.
- Clock Source enables the Scheduler-Timer to synchronize time from the power utility's regulated 60Hz frequency.
- Set Contrast feature adjust viewing angle of the display.
- Use (with) Repeater feature allows operation with three-phase UPB repeater networks.

## IMPORTANT SAFETY INSTRUCTIONS

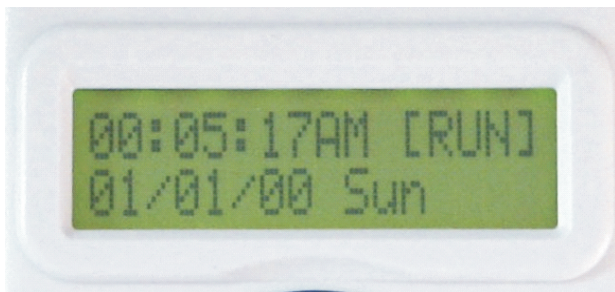
When using electrical products, basic safety precautions should always be followed, including the following:

1. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2. Keep away from water. If product comes into contact with water or other liquid, unplug immediately.
3. Never use products that have been dropped or damaged.
4. Do not use this product outdoors.
5. Do not use this product for other than its intended use.
6. To avoid risk of fire, burns, personal injury and electric shock, install this product out of reach of small children.
7. Do not cover the product with cloth, paper or any material when in use.
8. This product uses polarized plugs and sockets (one blade is wider than the other) as a feature to reduce the risk of electric shock. These plugs and sockets fit only one way. If they do not fit, contact a qualified technician. Do not use with an extension cord unless plugs can be fully inserted. Do not alter or replace plugs.
9. SAVE THESE INSTRUCTIONS.

## INSTALLATION

The Scheduler-Timer is designed for indoor use. It requires 120VAC power to operate. Simply plug the appropriate end of the power cord or L-shaped connector into the top of the UCS, and the other end into any standard 120 VAC outlet. For convenience the L-shaped power connector is designed to hang the unit from a high (mid-wall) receptacle, typically found in the kitchen or garage. The 6 foot power cord can be used when programming events, or when mounting the unit in some other location (e.g. table top).

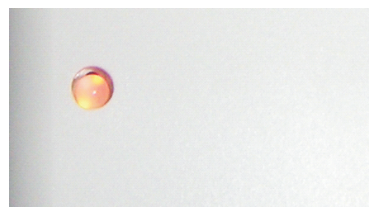
When the Scheduler-Timer's super-capacitor is fully charged (24 hours of powered / charging time required to achieve a full charge) the device can be unplugged or un-powered for up to one week without losing time. Programmed events are stored in non-volatile memory until manually deleted regardless of the clock's super-capacitor charge. This feature also makes programming and testing of room lighting easy; since the user can power and program the unit in one location, then unplug the device to move it to another 'plug-in' location within the house without losing the time or programmed events.



The Diagnostic LED should be lit with an AMBER color indicating the Scheduler-Timer is ready for use.

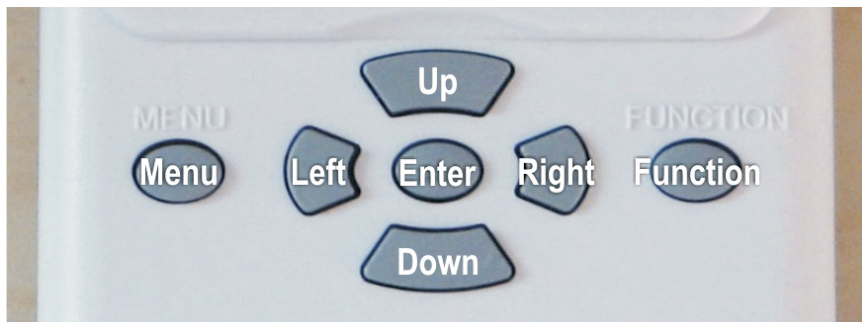
When power is provided to the Scheduler-Timer the unit runs a start-up routine, and then displays the 'Idle Screen'.

Idle Screen showing: time Schedule 'RUN' Mode, date and day of the week.



## FUNCTION / NAVIGATION

The Scheduler-Timer has an LCD display with 2 lines of 16 characters, a diagnostic LED, 7 buttons, a polarized power connector and a DB-9 serial port. The 7 buttons provide easy navigation through the menus on the LCD display and are described as follows:



**MENU:** Provides access to the main menu from the Idle Screen. It will also return the display to the previous menu or Idle Screen from any sub-menu by exiting the selection without saving the configuration data.

**ENTER:** Enters a menu item or saves a selected setting. It provides movement through a selected menu item's editable fields and executes commands.

**UP and DOWN:** Provide movement through the menus and toggles through characters when editing a selection.

**RIGHT and LEFT:** Provide movement across the display.

**FUNCTION:** Toggles the backlight on the LCD display.

**Diagnostic LED:** The diagnostic LED operates just like the LED of a Computer Interface Module (CIM). In CIM Mode the Scheduler-Timer exchanges UPB messages between the powerline and connected computer or controller via the RS-232 / DB9 cable included. The indicator on the UCS will glow AMBER when powered, flash RED when UPB messages are seen on the power line and flash GREEN when a UPB message is transmitted from the Scheduler-Timer.

**DB9 Port:** To use the Scheduler-Timer as a Computer Interface Module connect the provided serial cable (standard DB9, male to female) between the UCS and a computer's RS-232 port. The DB9 port may also be used to upgrade the firmware in the UCS, if needed (see "Updating the Controller Scheduler-Timer" section at the end of this User Guide). Note, if the computer does not have a RS-232 port, a USB to serial adapter will be needed.



## INITIAL CONFIGURATION

**NOTE:** In order to completely configure the Scheduler-Timer it is necessary to know the Network ID, Device ID(s) and Scene-Link ID(s) to be controlled. Writing down the Device ID or Scene-Link ID for each UPB device to be scheduled is recommended. The ID information is found in the UPStart network file. Or, if Pre-Configured Kits are being used (e.g. DKIT-01) the network ID is 250 and each device is labeled with its ID number (e.g. 001, 002, 003, etc...).

With the UCS plugged into power on a configured UPB network, press **MENU** from the Idle Screen. The following menu selections are available:

### MAIN MENU

- |                  |                   |
|------------------|-------------------|
| 1) Set Event     | 6) Set Randomness |
| 2) Set Time      | 7) Link Mode      |
| 3) Set Location  | 8) Tools          |
| 4) Set Network   |                   |
| 5) Delete Events |                   |

### TOOLS SUB-MENU

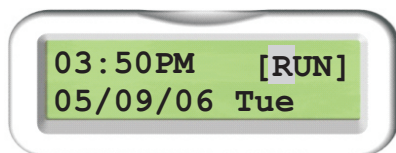
- |                |                 |
|----------------|-----------------|
| A) CIM Mode    | F) Noise View   |
| B) Add Device  | G) Noise Log    |
| C) Add Link    | H) Clock Source |
| D) Delete Link | I) Set Contrast |
| E) Read Link   | J) Use Repeater |

### Step A: Set Time

Press the Down button to select Set Time.



Press **ENTER** ↵ button to view the Set Time screen.



Move cursor with Right and Left buttons to select character to change.

Use Up and Down buttons to change character.

Adjust time by hours and minutes, Up or Down from character on the display.

Use the Right button to select the Schedule Mode field, then use Up or Down buttons to select [OFF], [RUN], [VAC] or [ALT]. The Scheduler-Timer will be turned ON by selecting either run [RUN], vacation [VAC] or alternate [ALT] vacation mode. Choose [RUN] for normal Schedule Mode operation. See page 8 for a description of Schedule Mode operation.

Adjust month / day / year and day of the week, similarly.

When the time, mode, date and day of the week have been set, press the **ENTER** ↵ button to save the settings.

**NOTE:** Pressing the MENU button instead of the ENTER ↵ button will exit the screen without saving the settings.

## Step B: Set Location

Press **MENU** from the Idle Screen.  
Press the **Down** button to select **Set Location**.



Press **ENTER** ↵ button to view the Set Location sub-menu



Select Zip Code and press **ENTER** ↵.

- Zip Code – Enter Zip by using Up / Down and Right / Left.
- Press **ENTER** ↵ to save.
- Screen will toggle to Longitude & Latitude screen.
- Make adjustments if necessary and known, otherwise do not change.
- Press **ENTER** ↵.
- UCS will calculate and display Dawn (sunrise) and Dusk (sunset)

Press **ENTER** ↵ button to save.

## Step C: Set Network

Press **MENU** from the Idle Screen.  
Press the **Down** button to select **Set Network**



Press **ENTER** ↵ button .  
Enter the UPB Network ID.  
Press **ENTER** ↵ button to save

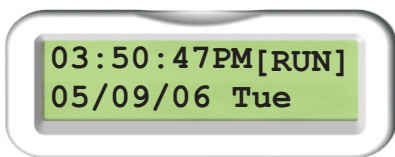
***Hint:** if the Network ID is unknown it will be necessary to use the Read Link function of the UCS (see page 13) or run the UPStart configuration software. To find the Network ID in UPStart, from the top menu select Network, then Network Properties.*

## Step D: Set Events

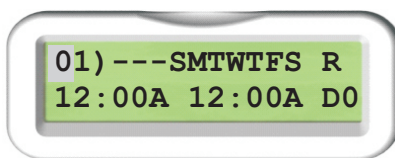
Press **MENU** from the IDLE Screen



Select Set Events and press **ENTER** ↵ button.



Or, from the IDLE Screen press the Up or Down button and scroll to an available event.



*Hint: Each Event in the Scheduler-Timer requires the Device ID of the UPB device or the Scene-Link ID of the UPB scene-link to be controlled. Before setting up events, it is highly recommended that the user creates a list of Device ID and Scene-Link ID numbers correlating to the UPB devices to be controlled. This will prove useful when entering events since the list can be quickly referenced.*

Use the Right / Left buttons to move the cursor across the screen and the Up / Down buttons to change the character at the cursor.

The first two-digit number on the screen is the Event ID number. There are 99 Event ID numbers from which to choose, 01 to 99. We recommend selecting 01 as the first event, 02 as the second and so on, so that you can easily see how many events are used and know how many remain unused.

The three-digit number following the “)” represents the Device ID of the device being controlled or the Link ID of a scene-link being controlled. Enter the Device ID or Link ID for the event using the Up / Down buttons.

The next characters represent the days of the week. A capital letter turns the event ON for that day and lower case turns the event OFF for that day. Using the Up / Down buttons, enter the days of the week in which the event should be ON (capital) or OFF (lower case).

The next character represents the Event Mode which can be R, V or r.

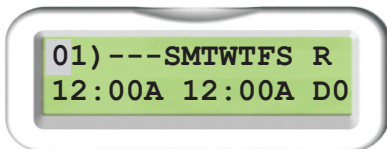
- R = Event is enabled in Schedule Modes [Run] and [VAC] without random time settings.
- V = Event is enabled in the Schedule Mode [VAC] and [ALT] only; with random time settings applied (see page 10 for adjusting randomness).
- r = Event is disabled. The event will not occur in either [RUN], [VAC] or [ALT] Schedule Modes. This 'r' setting is used to temporarily turn off an event. For example if the user does not want an event to run when going on vacation, or to avoid deleting an event that may be used later (seasonally).

Select the desired Event Mode using the Up / Down buttons.

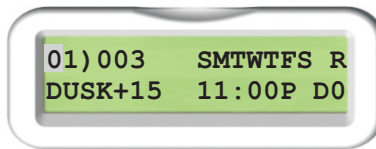
The following table details the Schedule Mode and Event Mode operation. Schedule Mode is displayed on the Idle Screen and adjusted from the Set Time screen or via scene-links (as described in Link Mode on page 10) . Event Mode is displayed and adjusted in the specific Set Event screen.

<b>Schedule Mode:</b> (as viewed on Idle Screen)	<b>Event Mode:</b> <b>Off</b> mode = 'r'	<b>Event Mode:</b> <b>Run</b> mode = 'R'	<b>Event Mode:</b> <b>Vacation mode</b> = 'V'
[OFF]	Off	Off	Off
[RUN]	Off	Run	Off
[VAC]	Off	Run	Run with vacation randomness
[ALT]	Off	Off	Run with vacation randomness

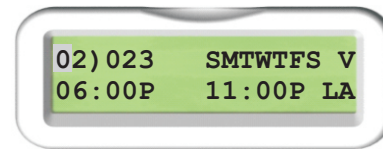




Event 01), factory default



Event 01), Device 003, all days of the week, a RUN Event Type, activates at Dusk+15 minutes and deactivates at 11PM, with 100% dim level (D0).



Event 02), Link 023, all days of the week, a Vacation Event Type, activates at 6PM and deactivates at 11PM, via Link Activator (LA).

### Set On Time / Off Time:

- The Up / Down buttons scroll through the hours:minutes, AM / PM and deviations from Dusk and Dawn selections.
- Examples:
  - 06:00P 11:00P, where the event turns on at 6PM and turns off at 11PM.
  - Dusk+15 Dawn-30, where the event turns on at Dusk plus 15 minutes and turns off at Dawn minus 30 minutes.
  - 11:00P, where the event (only) turns off at 11PM. This function can be used to make sure one or more devices are turned off at a specific time (e.g. all off command). Conversely, an event could be set to only turn ON by entering an ON time and then entering "-----" for the OFF time.
- A = AM, P = PM.

### Set Event Type:

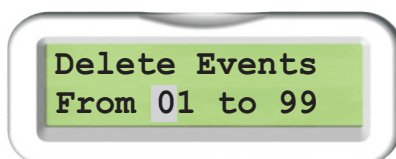
- Defines if the three digit number after the event number is a Device ID# or Link ID#. The Up / Down buttons scroll through the dim levels D0 through D9 (controlling an individual device / Device ID#), and LA for Link Activator/Deactivator (controlling an scene-link ID#).
  - Dim levels: D0 = 100%, D9 = 90%, D8 = 80%... D1 = 10%.
  - LA is Link Activator, where the device(s) receiving the Link control(s) how they respond for dim Level and Rate.

Press **ENTER** ↵ button to save Event.

Once the event is saved, press **ENTER** ↵ button to test Event On function and press **ENTER** button another time to test Event Off. The event must be displayed on the Scheduler-Timer screen with the cursor on the event number (e.g. '01') to run the tests, and a Device or Link ID must be valid and stored for the specific event.

## OTHER MAIN MENU SELECTIONS

### Delete Events



A range of events can be deleted (i.e. cleared) by entering the event range. For example entering a range from 5 to 10, then pressing **ENTER** ↵ would clear events 5 through 10. A single event may be cleared by specifying the range to be the same number (e.g. from 5 to 5, would clear event 5).

Input the desired events to be deleted then press the **ENTER** ↵ button to clear the range of events.

## Set Randomness

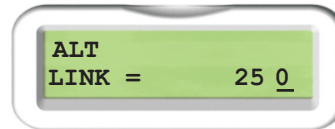
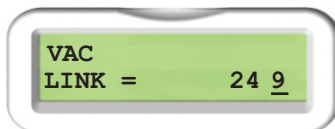
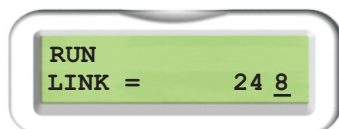


Vacation Events are designed so that the ON and OFF time can be random, from plus or minus 1 to 60 minutes, giving the home a 'lived in' look. As an example, if Vacation random limit is set to +/-10 minutes, and the Schedule Mode is set for [VAC] Vacation or Alternate [ALT] vacation, then all events set for Event Mode 'V' will turn ON and/or OFF within plus or minus 10 minutes of the scheduled ON or OFF time. A new random number, within the limit, is applied to each of the Vacation Events every day and is the same random number for both ON and OFF time.

Select the number of minutes then press **ENTER** ↵ button to save.

## Link Mode

The Link Mode function allows the Schedule Modes (RUN, VAC, ALT and OFF) to be changed by scene-links from other devices (e.g. a button on a UPB switch). For example, a button on a switch could be set to turn on the Vacation Mode. Another button could send a scene-link to activate the RUN mode. In the example below, the UCS was configured so activating link #248 sets the UCS for RUN mode, activating link #249 changes the UCS to Vacation (VAC) mode and activating link #250 for the Alternate vacation (ALT) mode. De-activating any of these the links results in turning the UCS to the OFF mode.



## TOOLS SUB-MENU SELECTIONS

The Tools sub-menu allows the user to add and configure UPB devices, and test or troubleshoot communications. Using the Tools menu functions, the UCS can create UPB networks by adding devices. It can read scene-links and add or delete scene-links in each device's receive component table. However the UCS cannot be used to add or modify the transmitting scene-links of buttons or rockers on switches. The Scheduler-Timer can be used as a computer interface module (CIM Mode), allowing a PC with UPStart configuration software to connect to the powerline and configure devices (e.g. add or modify transmitting scene-links). The Noise View function will provide signal strength and noise readings, as well as enabling the Noise Log function. These functions provide all that is needed to have the UCS configure and control 1 to 250 UPB devices.

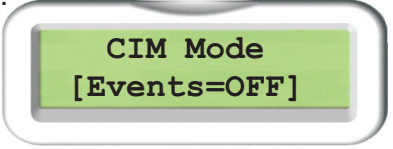
## CIM Mode

To configure the Scheduler-Timer to operate as a Computer Interface Module (CIM), allowing a PC with UPStart to access a UPB network, select the CIM mode from the menu and press **ENTER** ↵ button to initiate CIM mode operation. Note the unit will not run scheduled events when in the CIM mode. During CIM mode operation pressing any button will end the CIM mode function. There is no time-out period for CIM mode.



7) Set Contrast  
8) CIM Mode

The UCS may now be used via the RS-232 port as a Computer Interface Module. The default communication mode is Message Mode. UPStart will put the UCS into Pulse Mode when selecting 'connect' to UPB Device Interface within UPStart. It may be necessary to exit and re-enter CIM mode to put the UCS back into Message Mode for third party controller interface.



CIM Mode  
[Events=OFF]

## Add Device

The Add Device function will add a device to the network that the Scheduler-Timer is set to control. In other words, the network ID# to which the device will be added is that number set in the Set Network function of the UCS's main menu. For pre-configured kits the network ID# is 250 and password is FFFF.

To add a device:

- Check the Network ID setting of the UCS with the Set Network menu item. From the idle screen, press the Menu button, then press the Down button 3 times to select Set Network. Press the Enter ↵ button to view the network ID#. If correct, then press the Menu button to exit back to the main menu. If necessary change the Network ID# using the Up/Down buttons, then press Enter ↵ to save the setting.
- Next, in the main menu, press the down button to select Tools, then press Enter ↵. Press the Down button one time to select Add Device, then press Enter ↵.
- You will be prompted to put the device to be added in setup mode; press the module's program switch (or any button or rocker on a switch) five times quickly. The device's indicator should flash continuously, indicating it is in the setup mode.
- When the device is in the setup mode press Enter ↵, as prompted by the UCS, to begin adding the device. You will then need to select a unit ID#. The ID# should be a number other than those already on the network.

*Helpful Hint: If you are adding a device to a factory-pre-configured network (e.g. Network 250), we recommend you choose a device number in the 100 to 200 range (e.g. device ID# 100, 101, etc.), so there will be no chance of having duplicate ID numbers on the network. This avoids issues if other factory pre-configured units are added in the future.*

- The UCS will check to see if the selected ID# is in use. If the selected ID# is not in use the UCS will add the device to the network, giving it the selected ID#.

*Helpful Hint: It is a good practice to label the unit with the ID# or take notes of each unit's ID# (e.g. location, connected load, Unit ID#) so you can reference it when configuring events in the Scheduler-Timer.*

## Add Link

The Add Link function will add a scene-link # to the receive component table of one or more devices at the same time. A scene-link # will need to be selected when adding the link to devices. If the scene-link is an existing link from a button or rocker you can determine (read) the link # by using the Read Link function in the Tools menu (see Read Link section, page 13).

To add a scene-link # to one or more devices:

- If the scene-link to be added is an existing link used by other devices, first activate the scene-link so all the devices in the scene are on at their desired level. You may adjust the levels of these 'activated' devices now, if you want them to be saved at new, adjusted levels.

*Helpful Hint: You can activate an existing scene by pressing the button or rocker that controls the scene. If the scene is controlled by an Link Activator 'LA' event in the scheduler (i.e. no button or rocker is available to activate the scene), then choose the scheduled event that controls that scene and press Enter ↵ to activate the scene (when the cursor is on the event number).*

- If the scene-link is a new scene (not yet used by any installed devices) then choose a scene-link number between 100 and 200. We recommend a number between 100 and 200 to avoid interference/duplication of link numbers used by the Pre-Configured Series products.
- Go to the UCS and press the Menu button to view the main menu. Press the down button 7 times to select Tools, then press Enter ↵. Press the Down button two times to select Add Link, then press the Enter ↵ button.
- Use the Up or Down buttons to select the link number to be used (new links should be a number between 100 and 200), then press Enter ↵. If the scene-link to be used is an existing link make sure you know and use the correct scene-link number. To read and confirm a scene-link number, see Read Link section (page 13).
- Go to the new unit(s) that will be added to the scene and adjust their light level. Then press each new unit's program button (or any button or rocker on each switch to be added) 5 times quickly to place unit(s) in the setup mode. Modules that are already in the scene do not need to be put in setup.

*Helpful Hint: Modules and dimmers will stay in the setup mode for approximately 5 minutes. You can always confirm if the module/dimmer is in the setup mode by checking for a blinking green indicator. If the indicator is not blinking green, to place in the setup mode, quickly tap the dimmer's top rocker or modules program switch five times. To exit the setup mode, quickly tap the rocker or program switch two times.*

- Next press the Enter ↵ button on the UCS to write the link to all units in the setup mode; and to reset adjusted levels of any modules that were already in the scene.
- Test the scene-link by activating/deactivating it from a transmitter (e.g. button, rocker or Link Activator 'LA' event in the scheduler).

## Delete Link

The Delete Link function will delete a scene-link # from the receive component table of one or more devices at the same time. The scene-link # to be deleted will need to be selected when deleting the link from the device(s). If the scene-link is an existing link from a button or rocker you can determine (read) the link # by using the Read Link function in the Tools menu (see Read Link section, page 13).

To delete a scene-link # from one or more devices:

Go to the UCS and press the Menu button to view the main menu. Press the down button 7 times to select Tools, then press Enter ↵. Press the Down button three times to select Delete Link, then press the Enter ↵ button.

- Use the Up or Down buttons to select the link number to be deleted, then press Enter ↵. If you are not sure of the scene-link #, see Read Link section below.
- Go to the unit(s) that will have the desired scene-link # deleted and press each modules' program button (or any button or rocker on each switch to be deleted) 5 times quickly to place unit(s) in the setup mode.

*Helpful Hint: Modules and dimmers will stay in the setup mode for approximately 5 minutes. You can always confirm if the module/dimmer is in the setup mode by checking for a blinking green indicator. If the indicator is not flashing green, to place in the setup mode, quickly tap the dimmer's top rocker or modules program switch five times. To exit the setup mode, quickly tap the rocker or program switch two times.*

- Next press the Enter ↵ button on the UCS to delete the link from all units in the setup mode.

## Read Link

The Read Link function will sense a scene-link transmitted over the power line and display the scene-link ID#, as well as the Network ID#. This function is helpful when trying to determine the scene-link number sent from a device, or the Network ID# when adding a new device.

To read the Network ID# and a scene-link ID# transmitted from a device:

- Go to the UCS and press the Menu button to view the main menu. Press the down button 7 times to select Tools, then press Enter ↵. Press the Down button four times to select Read Link, then press the Enter ↵ button.
- The UCS screen will display <Monitoring UPB> until a scene-link is sensed. Press a button or rocker that transmits the scene-link. When a scene-link is received, the UCS will display the Network ID#, Link # and type (e.g. activate or deactivate).
- Repeat as needed, the last link sensed will be displayed until the Enter ↵ or Menu button is pressed.

## Noise (and Signal) View

The Noise View function senses and displays powerline noise and UPB signal levels. When the UCS is in the Noise View mode it will not run scheduled events. When powerline noise is present the display shows the level, from 1 to 5 bars (5 being highest). If a signal is sensed, the signal measurement is displayed as a number between 1 and 120. Signals should be 13 or higher, with no noise present, for 100% reliable communication. These functions are useful when diagnosing communication issues. If the slightest noise is present on the power line the UCS displays the level and writes the measurement to the Noise Log (see Noise Log section, below). If the UCS is left in the Noise View mode for an extended period of time (e.g. overnight, or for a few days), the Noise Log will record the time, day and level of the noise measured.

If no noise is measured and a receiving device is not turning on/off, communication can be checked by plugging in the UCS at a receiving device (or on the circuit of a receiving device) to read the signal level received from the transmitter. This can help with troubleshooting, determining if the signal is too low or if the receiving unit has a configuration or hardware issue (e.g. the signal is strong enough – 13 or higher - to be received, but the device is not responding).



## Noise Log

The Noise Log lists up to 10 measurements of noise, as measured in the Noise View mode. To log noise, select Noise View from the Tools menu and let it run for some extended period of time (e.g. hours to days). When powerline noise is present the log will measure and record the noise, at a rate of one log per minute. The first reading listed is the last minute the noise was present. The 10th or highest numbered noise event listed is the first noise event recorded (i.e. when the noise was first observed). For example, if noise is present for 1 hour the first reading was the last time noise was measured, and the other 10 readings are the previous noise events. This allows the user to determine when the noise started and how long it lasted.

## Trouble Shooting Noise and Low Signal Issues

UPB is a robust and reliable powerline communication technology. It will operate in the presence of powerline noise more reliably than most powerline technologies. However we do not recommend programming devices (e.g. adding or changing device settings) when noise is present on the powerline as it may adversely affect the unit's programming.

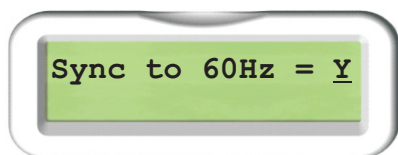
If noise is measured it may be possible to find the source by turning off or unplugging various loads/lights/appliances in the home. If the noise comes and goes at different times, or if you just want to check the home for noise sources, turn on as many loads (e.g. lights, appliances, TVs, pumps, motors, etc...) in the home as possible. This increases the chance of finding noise sources quickly. If the noise source was not apparent when turning on/off various loads, then use the Noise View and Noise Log functions to try and determine the times noise is present. This may help determine what was turned on at specific time and the source of the noise.

For fastest identification of noise sources, once the noise is sensed and is constant, go to the home's main breaker panel; turn off the circuit breakers one at a time (leaving them off) while watching the noise meter - until the circuit breaker with noise is found (i.e. when the breaker is turned off/on/off, the noise reading disappears/re-appears/disappears). Once the circuit with noise is identified, then it becomes a process of elimination, turning off or unplugging those loads powered by the circuit until the noise source is found.

For low signal levels, when phase couplers have been installed (see model ZPCI data sheet and user guide), identifying attenuating (signal reducing), capacitive loads can be accomplished just like finding noise sources (e.g. turn off breaker one breaker at a time and test signal level each time). The most common capacitive loads include: rack-mount AV surge-suppressors, uninterruptible power supplies (or battery chargers) and large (>40 inch) flat screen TVs. Each of these sources may knock a signal down 2-5%, which is usually not significant. However, if the home is large with multiple breaker panels and multiple capacitive loads, the cumulative affect can be significant and inhibit communication.

To isolate and resolve issues due to noisy or attenuating loads, see the Noise/Attenuation Isolator solution (model ZNF10A). Also note, using the Network Comm. test in UPStart (configuration software) is usually a quicker and more effective way to identify noise or attenuation when there are UPB devices spread throughout the home. For assistance with noise or attenuation issues, please call Simply Automated Technical Support at 800-630-9234x138, or write [Support@SimplyAutomated.com](mailto:Support@SimplyAutomated.com).

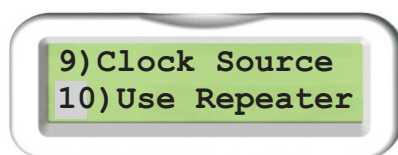
### Clock Source



The Scheduler-Timer is synchronized by the 60hz power signal for maximum accuracy. Selecting N for NO synchronization sets the Scheduler-Timer to operate using the internal clock, which has a maximum error of  $\pm 1.7$  seconds per day. For maximum accuracy select Y for YES to synchronize the Scheduler-Timer to the 60hz power source. Press Up / Down to select Y(es) or N(o).

Press **ENTER** ↵ button to save.

### Use Repeater



The UCS may be used in applications where a sequential, three-phase repeater is installed (e.g. model UTR). The UCS is not a repeater nor is it capable of repeating a UPB message.

For typical residential operation set: "Use Repeater = N".

When using with a sequential repeater (i.e. three-phase power) set: "Use Repeater =Y".



### Using the UCS, Controller Scheduler-Timer

The Scheduler-Timer is designed for accuracy and maximum flexibility. Once the UCS is set for time, date, day of the week, location and Network ID, then all that is needed is setting each event for the desired ON and OFF time. Upon completion of configuring the Scheduler-Timer, switching from ON [RUN] to vacation [VAC] or alternate [ALT] vacation mode should be all that is needed for years of reliable use.

### Updating the Controller Scheduler-Timer

From time to time minor firmware updates may be released for the UCS. To check and if necessary update your UCS to the latest firmware revision, please visit [www.Simple-Automated.com/UCS-UPDATE/](http://www.Simple-Automated.com/UCS-UPDATE/) and follow the instructions. A personal computer with a connection or adapter for a DB9 serial cable is required.

**SCHEDULE NOTES**

Hint: complete the notes before programming the events.

Event # Example	Device / Link ID; Description (days of the week - SMTWTFS)	Event Mode	On Time	Off Time	LA/D#
01)	Link 001; welcome home (all)	R	Dusk	10:00PM	LA
02)	Link 002; all on/off (all)	R	-----	11:30PM	LA
03)	Link 002; all on/off (all)	R	-----	9:00AM	LA
04)	Device 23; laundry room cans (all)	R	-----	9:30PM	D0
05)	Link 005; front yard lights (all)	R	Dusk+15	11:00PM	LA
06)	Link 010; pool patio (SmtwtFS)	R	Dusk+15	10:00PM	LA
07)	Link 008; Master BR all on/off (all)	V	8:30PM	11:00PM	LA
08)	Device 12; 1st BR cans (all)	V	7:00PM	8:00PM	D0
09)	Device 13; 2nd BR cans (all)	V	7:00PM	8:00PM	D0
10)	Link 009; Family Rm: all on/off (all)	V	Dusk	9:00PM	LA

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