



Base Station

Operating Manual & Installation Guide

MODELS: LS30900BSR
& LS30950WIFI (WiFi version)



Create A Scene Outdoors !

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Section 1

Installation

Installation

The Light Symphony base-station is a wireless device. This means it receives commands from the remote control and is able to send control 'messages' to the lighting modules in the garden using its antenna only. No electrical connection is required except the 9V power adapter.

Before installing the base-station, the antenna must be screwed in place on top of the unit, as shown here



Section 1

Installation

Location

Locating the base-station in the best position is important and the diagram below shows why. A key function of the base-station is to 'echo' commands received from the remote control(s) to the garden. This creates a very reliable system because the base-station and Lighting Control Modules don't move, which makes the signal-path constant and therefore consistent, meaning it will *always* work!



For the base-station's signal to reach the outdoor 'Lighting Control Modules', it should be located somewhere that gives good *radio* coverage of the garden. The base-station is not water-proof and so must be fitted indoors, but try to fit it where it has the best 'radio-view' to the garden i.e. with as few obstacles in the way as possible, such as buildings and walls.

Radio signals do pass through most non-metallic materials but the thicker they are the more signal is lost. As a rough guide, each standard cavity-wall will reduce the range by 50% (1000M to 500M). Radio signals do not pass easily through metallic obstacles such as reinforced concrete or garage doors, and significant range will be lost.

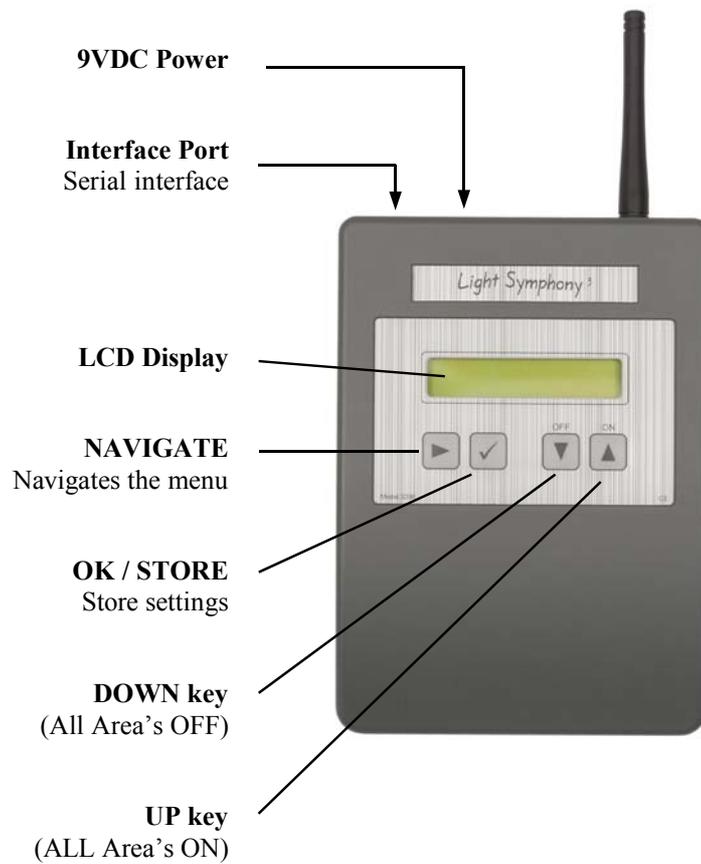
The base-station does not need day-to-day attention, so it can be fitted in a discrete location. An example is a loft-space, since the roof usually gives a good radio-view of the front and back garden.

If 'Repeater' units are included in the installation, please pay special attention to the radio link between the base-station and the repeaters, as detailed in the instructions for these units.

Section 2

Initial Setup

Front Panel



Section 2

Initial Setup

Navigating The Menu

The base-station has many functions but all are easily configured from the simple keypad. The list below shows all the configurable options in the order in which they are displayed;

- | | |
|----|--------------------|
| 1 | Set Time / Date |
| 2 | Set Location |
| 3 | Set Dusk / Dawn |
| 4 | Set Timer 1 |
| 5 | Set Timer 2 |
| 6 | Set Timer 3 |
| 7 | Set Timer 4 |
| 8 | Set Timer 5 |
| 9 | Set Timer 6 |
| 10 | Set External Input |
| 11 | Set Light Show |
| 12 | Set System Code |
| 13 | Set Role |
| 14 | Set Protocol |
| 15 | WiFi Status |
| 16 | Configure WiFi |
| 17 | Quit no changes. |

To enter the menu press the navigation key “▶” once. The display will change to show



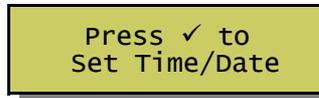
The display shows menu line 1 from the list above, use the UP and DOWN keys to move to other menu options and then press “✓” to select. After 30 seconds of no activity the display will return to the clock.

Section 2

Initial Setup

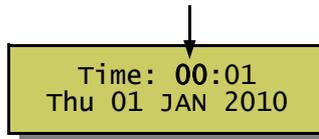
Setting the Time / Date

Navigate to the time/date menu by pressing the “▶” key once. The display will change to show ...



Press ✓ to
Set Time/Date

Press the “✓” key to enter the Time/Date menu. The display will change as shown below. The ‘hours’ will be blinking and may be adjusted to the correct time with the UP and DOWN keys



Time: 00:01
Thu 01 JAN 2010

Once set, press the “▶” key once and then adjust the minutes to the correct time, as show below.



Time: 16:01
Thu 01 JAN 2010

Step through each setting using the “▶” key until the time and date are set, then press the “✓” key to exit the set-up and return to the main display.

The base-station will automatically keep track of summer and winter daylight saving time. If fitted with good quality ‘AA’ batteries, the clock will be maintained during power-cuts for several years (see page 3).

Section 2

Initial Setup

Dusk / Dawn Time & Location

The base-station includes an astronomical clock which calculates Dusk and Dawn times throughout the year. This can be useful for setting timers; for example you may like the lighting to switch on (as it gets dark) at dusk, and switch off again at 11pm. In this case, the 'on' time will automatically adjust throughout the year to match seasonal daylight hours.

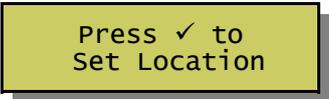
Dusk and Dawn times vary slightly depending on your location. For example, sunset (dusk), in the winter months, is a few minutes earlier in the north of the country than in the South. Therefore the base-station can be tailored to a specific location to ensure the dusk and dawn times are calculated as accurately as possible.

By default, the base-station assumes its location is Birmingham, which will give reasonably accurate results for the whole of the UK (+/-5 minutes).

However, if you wish to improve on this, then navigate to the "Location" menu and select a town nearest to you.

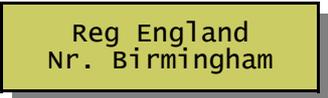
Setting Location

Navigate to the 'Location' menu by pressing the "▶" key once then pressing the DOWN key once. The display will change to show ...



Press ✓ to
Set Location

Press the "✓" key to enter the 'Location' menu. The display will change to show...



Reg England
Nr. Birmingham

Navigate by pressing the "▶" key to select and adjust the Region and town nearest you. Press the "✓" key when done to store and exit the menu.

Section 2

Initial Setup

Setting Dusk / Dawn Time

Although the base-station calculates the precise dusk and dawn times for your location, you may prefer your lighting to come on slightly before sunset (dusk) or slightly after. Similarly, you may prefer the lights to go off just after sunrise (dawn) or just before.

You can easily modify the Dusk and Dawn times to suit your preference using the Dusk/Dawn menu.

Navigate to the 'Set Dusk/Dawn' menu by pressing the “▶” key once then pressing the DOWN key twice.. The display will change to show ...



Press ✓ to
Set Dusk / Dawn

Press the “✓” key to enter the 'Dusk/Dawn' menu. The display will change to show...



DAWN: 07:59 +00min
DUSK: 16:21 +00min

Use the UP / DOWN keys to modify the DAWN time.

Use the “▶” key to select the DUSK time and adjust in the same way.

Press the “✓” key when done to store and exit the menu

Section 3

Timer Setup

Introduction

The base-station contains 6 powerful and independent timers. Each timer may be configured separately to control different aspects of your garden.

The timers can be used to control an individual ‘Area’ of your garden or the whole garden together (ALL).

It’s also possible for several timers to control the *same* lighting ‘Area’. For example Timer 1 can be set to switch all lights ON at Dusk and OFF at 11pm. Timer 2 can be set to switch all lights ON (again) at 4am and OFF at Dawn.

Each timer can be configured in one of three modes;

- ‘Every Day’ - Will operate 7 days a week
- ‘Weekends’ - Will only operate on Saturday and Sunday
- ‘Week Days’ - Will only operate Monday – Friday

Using this feature, different lighting effects can be programmed for different times of the week.

All 6 timers are set-up in the same way, so only Timer 1 is illustrated here.

Setting Timer 1 (to 6)

Navigate to the ‘Timer 1’ menu by pressing the “▶” key once and then press the DOWN key 3 times. The display will change to show ...



Press ✓ to
Set Timer 1

Section 3

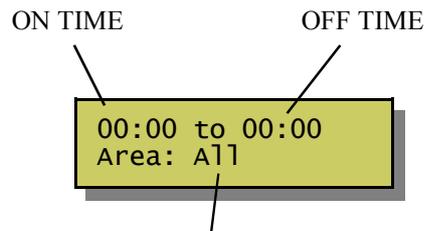
Timer Setup

Setting Timer 1 (to 6) ...continued

Press the “✓” key to enter the ‘Timer 1 (to 6)’ menu. The display will change to show...



Use the UP / DOWN keys to choose the timer ‘type’ you prefer from the list on page 10 and then press the “✓” key to see the Timer’s settings shown below;



‘AREA’ to be controlled

Use the UP/DOWN keys to adjust the ‘On-Time’ hours. You will notice as you adjust past 00 the time changes to show ‘DUSK’. Using the Dusk setting will automatically adjust the on-time each day to suit the calculated sunset time.

Next, use the navigation key “▶” to select the ‘Off-Time’ and set to your preference. Again, you will notice as you adjust the hours past 00 the off-time changes to show “DAWN”. Using the Dusk setting will automatically adjust the off-time each day to suit the calculated sunrise time.

Lastly, use the navigation key “▶” to select the ‘Area’. The default is “ALL”, which means the timer will control the *whole* garden together. You can use the UP / DOWN keys to change this to a specific ‘Area’ from 1 to 9, which correspond to the same area’s programmed on the remote control.

Press the “✓” key when done to store and exit the menu.

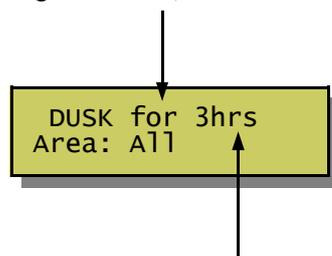
Section 3

Timer Setup

Setting Timer 1 (to 6) ...continued

It is also possible to configure the timer for a specific length of time. For example, to switch on at sunset (Dusk) *for 3 hours*. In this example, since the on-time changes throughout the year, the off-time will track these changes ensuring the lights are only on for 3 hours.

To use the timer in this way, simply navigate to the 'to' part of the display and use the Up/Down keys to change it to 'for', as shown below



Next, use the navigation key “▶” to select the ‘on-hours’, which can be adjusted using the Up / Down keys in 0.5hr steps from 0.5 to 6 hours.

Press the “✓” key when done to store and exit the menu.

Section 4

Colour Light Show

Colour Light Show

The base-station is the control hub for Light Symphony's Colour Light Show.

The Light Show is for controlling colour RGB (red/green/blue) lights and can wirelessly synchronise the speed, timing and colour of any number of LEDs. To set-up a 'Light Show' the RGB controller(s) must be included in a lighting Area (zone).

For example: to include a RGB lighting controller in say 'Area 8', simply double-tap the RGB controller to switch it on, then press the 'Area 8' key on the remote control to store it. The RGB controller will beep and, if the LEDs were ON at the time, they will now be stored in that Area. (to remove a controller from an Area, double-tap until the LEDs are off then press the Area key).

Next, set the Base-Station's Light Show to the same Area. e.g. no. 8 (see page 14).

The Light Show will run whenever Area 8 (or your chosen Area) is switched on. The light show will also be started by the remote control's 'Garden On' button or any timer set to control the same Area.

The light show will gently fade between the range of colours selected, including ALL (16 key colours), WARM (red, orange, yellow etc), COOL (blue, violet, white etc), RGB (red, green and blue only) or PASTEL.

The 'speed' of the light show can be controlled from 3 to 60 second intervals. For example, if the show is set to step every 60 seconds, the colour will change very gently over a 60 second period. Like the slow moving minute-hand on a clock, this is barely perceivable and therefore creates a very subtle and pleasing effect.

Any non-RGB lighting controllers included in the Light Show Area will not be effected by the show but will still switch on and off with the Area.

Section 4

Light Show

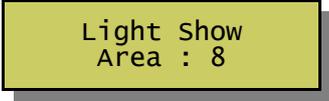
Colour Light Show set up

To configure the Light Show to your preference, navigate to the 'Set Light Show' menu by pressing the "▶" key then pressing the DOWN key ten times. The display will change to show;



Press ✓ to
Set Light Show

Press the "✓" key to enter the Light Show set-up;



Light Show
Area : 8

Use the Up/Down keys to select the Area to be controlled by the Light Show. Next press the "✓", the display will briefly show "STORED" and then display;



Speed : 5 sec
Colour : None

Use the "▶" navigation key to select the time and colour options and use the Up/Down keys to adjust them.

Select between time intervals of 3, 5, 10, 20, 30 and 60 seconds.

Select between; None (white light), All (any colour), Primes (primary colours only), Warm (reds, oranges etc), Cool (blues, violets etc) or Pastel colours.

Press "✓" to STORE the settings and exit the menu. Note; these settings can be adjusted via the smart phone app but the changes will not be stored.

Section 5

Interfacing – Advanced Setup

Introduction

The base-station provides several interface options allowing connection to third party equipment.

1. Digital Trigger Input
2. Serial Port*
3. WiFi Network*

***NOTE**

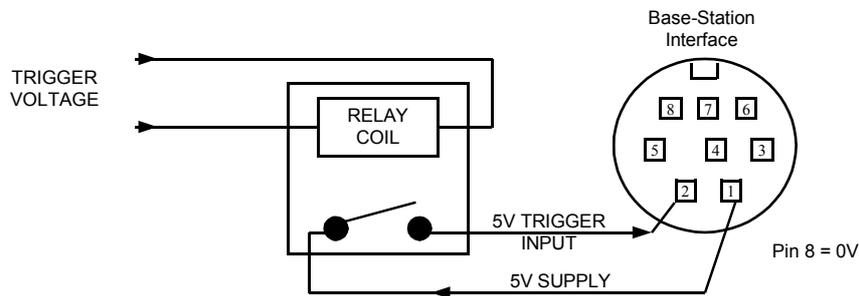
The serial port and Wifi interfaces are only available on the WiFi version of the base-station



Digital Trigger Input

The base-station includes a low-voltage trigger input which may be used to trigger the lighting. It can be useful for interfacing to an external sensor such as a light beam across a drive-way, PIR motion sensor or even an alarm panel so the lighting is triggered with the alarm.

The trigger input is rated maximum 5Volts, so a relay is usually required as shown below;



Section 5

Interfacing – Advanced Setup

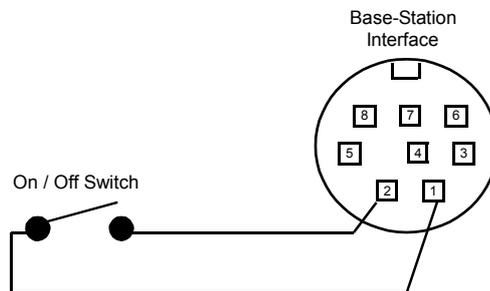
Digital Trigger Input

The digital input may be configured in a number of modes;

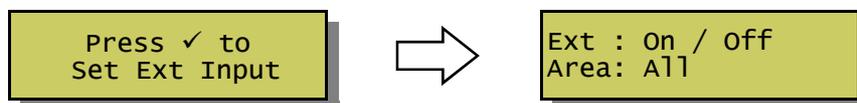
- 1 On / Off
- 2 Trigger
- 3 If Timer 1-5
- 4 If Dusk

On / Off Mode

In this mode, the lighting will be switched ON when the trigger input is activated and switched OFF when the trigger input is de-activated. This allows interfacing to a simple, external on/off type switch.



To configure the external input in on/off mode configure the menu like this;



Section 5

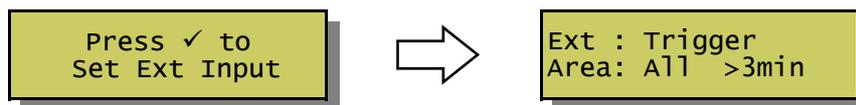
Interfacing – Advanced Setup

Digital Trigger Input ...continued

Trigger Mode

In trigger mode, the lighting is switched ON for a pre-set time when the trigger input is activated. This allows interfacing to a sensor or bell-push type switch, where the lighting must be triggered for a pre-set time and then automatically switched off again.

To configure the input to respond to a trigger, set the menu like this;

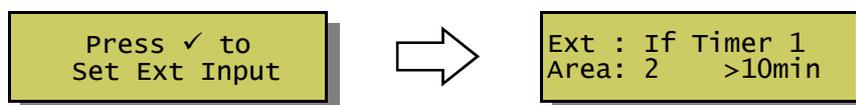


'If Timer' Mode

In 'If Timer' mode, the lighting will over-ride the setting of a Timer, but only if the timer is active. For example, if Timer 1 is set to switch on Area 1 from Dusk to 11pm, the digital input will be ignored outside these times.

This feature can be useful in a gate or drive-way application, where the lights are timed to be on but kept at a low level (e.g. Area 1's setting). When triggered by a car, the lights can fade to full brightness (e.g. Area 2's setting) for a pre-set time. At the end of the triggered time interval, the lights will not switch off, but revert back to the Timer's setting (Area 1's setting).

To configure the input to respond to a trigger with a Timer, set the menu like this;



'If Dusk' Mode – Works as 'Trigger' mode but only active between Dusk & Dawn

Section 5

Interfacing – Advanced Setup

Serial Port

The serial port can support a number of different protocols to simplify interfacing to third party equipment.

The port is bi-directional for handshaking purposes, but only allows control 'input', i.e. Light Symphony can not be used to transmit its status back to a host controller.

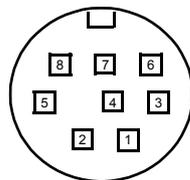
The following RS232 protocols are supported at this time;

- 1 Ascii Baud rate; 300, 1200, 4800, 9600 19200
- 2 Lutron Baud rate; 300, 1200, 4800, 9600 19200

In both cases the format is 8 bits, with 1 start, 1 stop bit (no parity)

Commands received over the serial port over-ride any user or internal (timed) events.

Serial Pin-Out



Base-Station
Interface

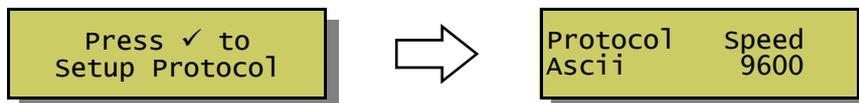
RS232

Pin 3 – Tx
Pin 5 – Rx
Pin 7 – Gnd

RS485/422

Pin 3 – Tx-
Pin 4 – Tx+
Pin 5 – Rx-
Pin 6 – Rx+

To configure the serial port select the protocol menu shown below;



Section 5

Interfacing – Advanced Setup

Serial Port ... continued

ASCII Interface

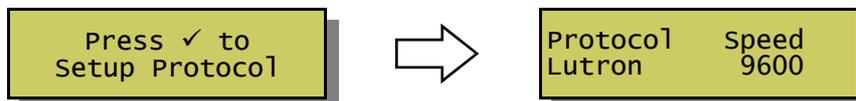
The port expects simple lower-case ASCII messages in the format below;

Message	Action
all_on	Switch ON all areas
all_off	Switch OFF all areas
area_on x	Switch ON area 'x', where x = "0" to "9"
area_off x	Switch OFF area 'x', where x = "0" to "9"
start-show	Start light-show running
stop_show	STOP light show
inten_x	Set intensity of last selected area to 'x' where x = "0" to "9"

Lutron® Interface

The serial port can be configured to support Lutron's ® GrafikEye serial protocol.

To select the Lutron protocol, configure the protocol screen like this;



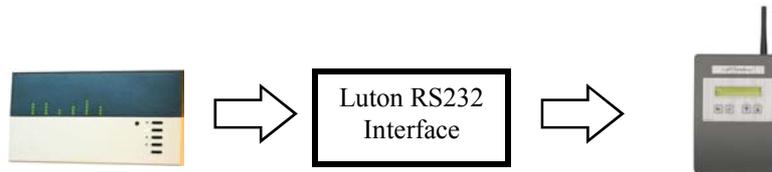
Section 5

Interfacing – Advanced Setup

Serial Port ... continued

Lutron® Interface

To interface a Lutron GrafikEye® to the base-station an RS232 interface is required for the GrafikEye system. Lutron's RS232 interface unit must be used as shown;

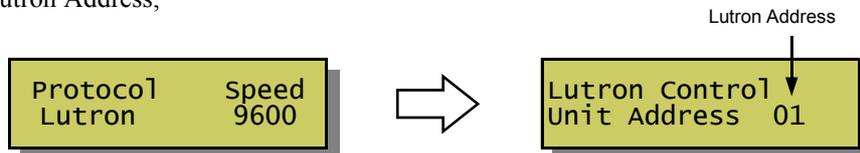


The GrafikEye is a 'Scene' controller. When a Scene is selected it will set all the lighting to a pre-stored level. For ease of use, it is recommended that Light Symphony is also configured as a Scene controller (as opposed to Area/Zone switching) when interfacing with Lutron.

Normally only Lutron 4 Scenes are available although this will depend on the design and configuration of the Lutron system.

Each GrafikEye has a unique communication 'Address' in the range 1-8. The Light Symphony base-station must be configured to the address of the GrafikEye unit that will control it, normally "01".

After selecting the Lutron protocol (see below) , press the "✓" key to configure the Lutron Address;



Section 5

Interfacing – Advanced Setup

Serial Port ... continued

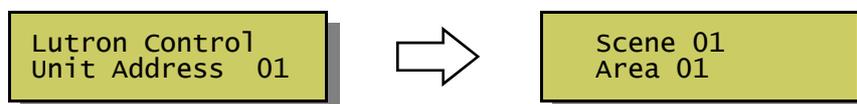
Lutron® Interface

The base-station allows Lutron Scene's to be 'linked' to Light Symphony's 'Areas', which can be used as scenes memories too. For example, activating Lutron Scene 1 will cause Light Symphony Area (scene) 1 to also be activated. Similarly, a Lutron 'Off' command will generate a garden-Off command.

By default, the base-station is set-up to link Lutron's scenes 1-4 to Light Symphony's Areas 1-4;

Lutron Scene		Light Symphony 'Area' (Scene)
1	LINK / TRIGGER ⇒	1
2	⇒	2
3	⇒	3
4	⇒	4

After setting the Lutron 'Address' (see previous page), press the "✓" key to configure the 'links' between the Lutron Scenes and Light Symphony Area's, see table above. By adjusting these settings, any of Light Symphony's 9 Area's (Scenes) can be triggered by any of Lutron's Scenes.



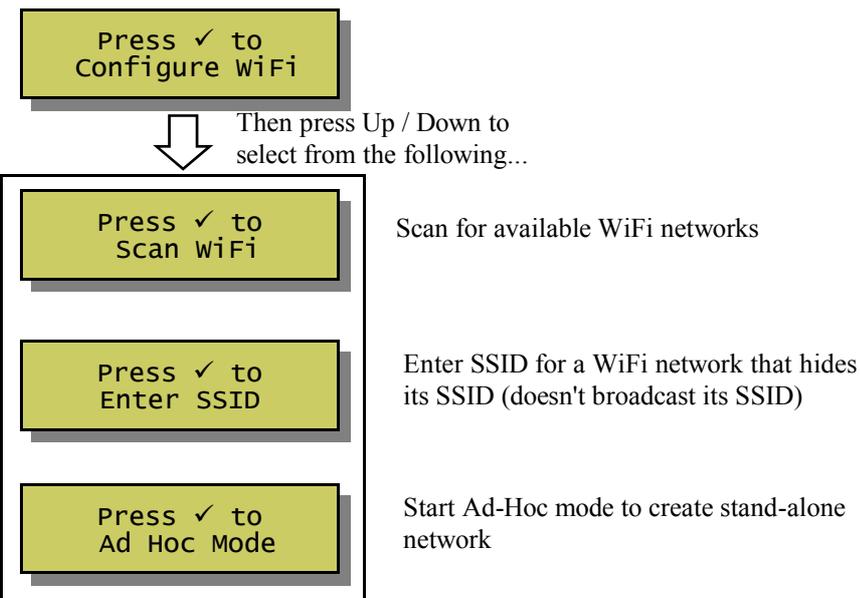
Section 5

Interfacing – Advanced Setup

WiFi Interface

The WiFi version of the base-station includes a 802.11b/g standard interface that is able to connect to an existing wireless network or operate stand-alone in ‘Ad-hoc’ mode. This interface is designed for use with Apple’s iPhone® or iTouch® and the free ‘iSymphony’ application for these devices can be downloaded from Apple’s iTunes web store.

To configure the WiFi interface press “✓” at this menu;



Join an Existing WiFi Network

The base station can join an existing WiFi network either by searching for it or entering its SSID using the menu options above.

Once a network has been found, the security password must be entered.

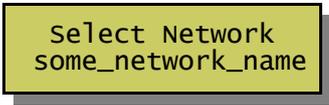
Section 5

Interfacing – Advanced Setup

WiFi Interface ... continued

Join an Existing WiFi Network

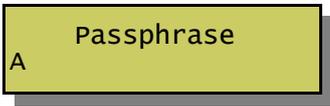
After a scan, the base-station will show a list of available networks, press the “✓” key to join one;



```
Select Network
some_network_name
```

Next the security password must be entered or passphrase. Use the Up/Down keys to select a character (take care to enter upper and lower case characters correctly) then move to the next character using the “▶” key.

If you key a wrong character by mistake, use the Up/Down keys to select the backspace character “←” and click the “▶” key to erase it.



```
Passphrase
A
```

Once the last character is keyed, press the “✓” key. The base-station will attempt to join the network. This may take up to 60 seconds, and the display will show “Connecting...” and then will change to either show;



```
WiFi Status
Connected OK
```

Successfully joined WiFi network and ready to be used

OR



```
WiFi Status
Auth Fault
```

Unable to join WiFi network
Please try again.

NOTE: The base-station will request an IP address from the network’s DHCP server. If no DHCP server can be found the unit can not work. It is not possible set a manual IP.

Section 5

Interfacing – Advanced Setup

WiFi Interface ... continued

Create an Ad Hoc WiFi Network

If an existing WiFi network does not exist then the Ad Hoc mode can be used to allow devices to connect directly to the base-station.

To start the ad-hoc mode press the “✓” key at this menu;



Press ✓ to
Ad Hoc Mode

The base-station will then show...



Connecting...



WiFi Status
Starting Ad Hoc..



WiFi Status
Connected OK

This procedure can take 60 seconds to complete.

The base-station's Ad Hoc network has the SSID "LightSymphony"

A WiFi enabled device can now connect to the LightSymphony network.

Once a connection has been established the WiFi signal level (SL) and signal quality (SQ) can be viewed using the menu below. Please note, the base-station will not process WiFi commands while this menu is displayed!



Press ✓ to
WiFi Status



Connected OK
SL/SQ 75% / 90%

Section 6

Security

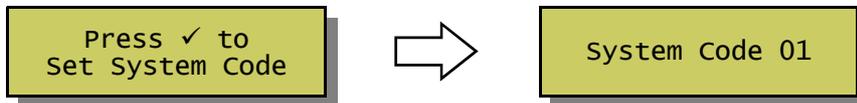
System Code

The Light Symphony system has a potential wireless range of several Kilometres (using repeater units) so it is important to avoid interference with neighbouring systems. For this reason a 'System Code' is employed which can be set from 1 to 32. Systems set with different codes will not interfere with each other.

The Lighting Control Modules adopt the System-Code from the remote control that is used to program them. By default the Remote control System-Code is set to 1, but can be changed by following the instructions that came with it.

If the Remote-Control and therefore Lighting Control Module's System-Code has been changed then the base-station must be configured to match.

Press the "✓" key to enter the 'Set System code' menu. The display will change;



Adjust the System Code with the Up / Down keys and press the "✓" key to store and exit.

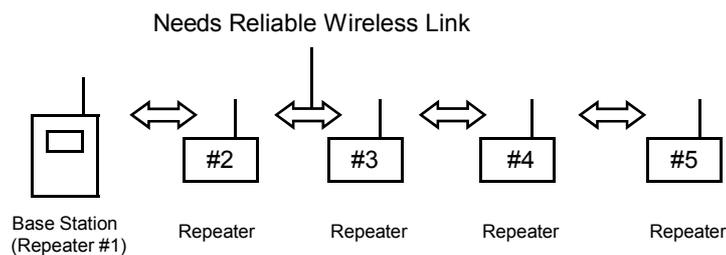
Section 6

Security

Wireless Repeaters

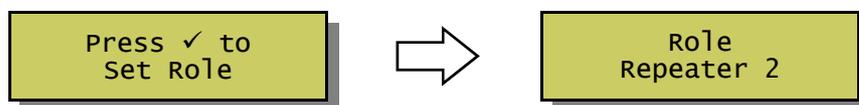
Light Symphony allows up to 5 ‘repeaters’ to be used together to greatly increase the wireless range and reliability of the system. Each repeater will ‘echo’ wireless commands sent from any of the transmitter units such as the Remote Control, Touch-Screen or Wall Switch. This ensures commands reliably reach all the Lighting Control Modules.

The base-station includes a repeater and is always the first repeater in the system (repeater #1). Where more repeaters are added, each must be assigned its own unique number (2 to 5). For guaranteed reliability, each repeater (including the base-station) must be within radio range of the adjacent numbered repeater.



Failure to build a system with this wireless connectivity may prevent the repeaters from reliably relaying commands.

Extra base-stations may be installed on a system and used as repeaters, but each must be assigned a unique repeater number. The menu “Set Role” provides this option. If a base-station is configured as a Repeater, then all other functions are disabled;



Section 7

How it works

How it works

Sometimes an understanding of how a system works can greatly assist in learning its abilities.

Light Symphony is a radio (wireless) lighting system. The remote control transmits a wireless signal when a button is pressed, which the outdoor Lighting Control Module receives and in turn switches the lighting circuit.

The remote control sends on/off command-codes from 0 to 9, which are referred to as Areas. Area code 0 is a special case and used as a master on/off for the whole garden. Each Lighting Control Module (receiver) can be configured to respond to Area codes 0 to 9 or to ignore them. This allows groups or zones of circuits to be assigned to each Area key on the remote control. By default, *all* Lighting Control Modules will respond to master on/off commands (Area 0), although this too can be changed.

The Lighting Control Modules allow two different types of system to be created. In a small garden, it makes sense to simply assign each lighting circuit to an Area key on the remote, thereby offering the client full control of each circuit. The 9 (+all) area codes provide up to 9 individual channels of control.

For larger projects, with more than 9 circuits, individual control becomes confusing, so Light Symphony allows circuits to be grouped into zones or scenes. The remote control's area keys can now be used to select sections of the garden (zones) or recall a complete lighting mood (scene). The number of controllable lighting circuits is limited only by the number of Lighting Control Modules in the system.

The system's wireless range is improved by the use of repeaters, which echo any commands received from any of the transmitters. Up to 5 repeaters may be installed each with a range of 1 Kilometre. The repeaters are assigned number codes and will echo received commands in sequence based on this code. To avoid repeaters interfering with each other and to ensure the commands are echoed by all repeaters, it's important that repeaters are each assigned a unique number and are within reliable wireless range of their adjacent numbered unit. For example, repeater #3 must be in good range of #2 and #4. Provided the repeaters are uniquely numbered they cannot interfere with each other, even if all 5 are in very close proximity.

Section 8

Trouble Shooting

<u>Symptom</u>	<u>Cause</u>	<u>Action / Remedy</u>
No lights working	No 'On' command	Lights stay off when power applied until an ON command is sent. Press Garden On using the remote control
	No Power to lights	Check 230V supply to light circuit
	No Power to Indoor Control Unit	Check Indoor Unit, LCD display is on and buttons operate as expected.
	Remote out of 'range'	Test lights without the remote control using the ON button at the base-station.
Lights changing by themselves	'Light Show' is running Press ALL ON or ALL OFF to stop the show.	
Remote Control Handset 'Dead'	Battery low/missing/wrong	Check the red LED blinks strongly on the remote control when any button is pressed. If not check batteries are good and fitted correctly.
	Out of 'range'*	Maximum range can be under 100m indoors. To check remote, stand next to a Lighting Control Module outside.
	Radio Interference*	Other wireless equipment causing interference such car/house alarm, police radio, mobile phone.
iPhone not working	Wifi Status or Config menu is displayed	Press "✓" key to exit menu and return to clock display

***NOTE**

The remote control can be tested by watching the base-station display while any button is pressed on the remote control. If the remote 'command' is received, the base-station will display a message briefly. With two people, the remote's 'range' can be determined using this test.

Section 9

Safety

Safety Warnings

- The Light Symphony system is a 230 Volt system and should be installed by a qualified electrician with up-to-date knowledge of current electrical safety legislation and safe working practices.
- Installation work must be carried out to national electrical wiring regulations.
- The whole system must be powered through a suitably rated earth leakage circuit breaker and fuse / MCB, based on the total lighting load.
- The system operates with a continuous supply to all the lighting control modules and may appear 'dead' even when the supply is 'LIVE', BE CAREFUL and always isolate the supply before working on the system.
- Always isolate the power before replacing blown lamps and ensure the end-user is trained to do the same.
- Read the safety instructions that are supplied with each light fitting or any other product being installed to the system.
- All external cabling must be of 'Concentric' type if above ground.
- Buried cables must be 'Steel Wire Armoured' and at least 450mm (18") below ground.
- BURN HAZARD: Some lamps / light fittings get very hot during normal use. Be careful not to touch hot parts and keep children away.

The installation should be carried out by a qualified electrician and basic electrical knowledge is assumed. If you are not in this category or are unsure about any aspect of the installation work seek the help of a qualified installer – do not take chances, electricity can kill.

Section 10

Specifications

All Models (LS30900BSR & LS30950WIFI)

Supply Voltage	9VDC (regulated) 250mA via adaptor
Power Consumption	2W (250mA)
Individual Control	Unlimited lights, power permitting
Control Method	RF Low-power FM radio
Radio	434.075MHz, 25mW, Narrow Band FM
Protocol	Light Symphony
RF Range	1000Meters, line-of-sight
Battery Back-up	2x 'AA' size, non-rechargeable battery
Digital Trigger Input	5VDC Level with 2K input impedance.
Weight	0.7Kg with PSU
Size	120mm x 240mm x 50mm
Electrical Safety	Low-voltage, isolated device requiring no special electrical precautions or earth
EMC emission/immunity	EN 50081 - 1/ To EN 50082 – 1
Electrical safety	EN 60950 en 60065
Radio	EN 300-220
Ambient temperature	0°C to +40°C (operation)
Compliance	CE

WiFi Model Only (LS30950WIFI)

Serial Port	RS232 / RS485 compatible (s/w selectable)
Serial Protocols	Light Symphony ASCII & Lutron
Serial Format	Baud adjustable 300-19200, 8 bit, 1 start, 1 stop bit.
WiFi	802.11/b/g with internal antenna
Control Protocol	Socket UDP, requiring external DHCP
Modes	WiFi Client or Ad-Hoc



Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

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