

SMART HOME POWER
STARTER PACK

Model No. LW702

Lightwave RF Electric Smart home power



Fitting and Set-up
Instructions

LightwaveRF Smart Home devices

LightwaveRF allows you to remotely control your lighting, power and heating devices, using a handheld remote control, or over the internet using your Smartphone, Tablet or PC. That means you can control any device from your within home or wherever you are.

These beautifully designed products are controlled wirelessly, and can be 'retro-fitted'. The LightwaveRF system is completely modular; allowing you to add as much or as little as you like. Start with just one socket, one room, or an entire house and add more whenever you see fit.

LightwaveRF Electric Starter Kit

The following instructions refer to the 'Electric' Starter Pack (Model No. LW702). Once installed, this pack will allow you to remotely switch your electrical sockets using your smartphone or tablet. This kit contains:

1 x Lightwave Link (Model No. JSJSLW930)

2 x 2 Gang Sockets (Model No. JSJSW270)

It is important to install this product in accordance with the following instructions. Failure to do so may invalidate your warranty. It is fully legal to install LightwaveRF products in your own home; however, if in doubt, always consult a qualified electrician. For additional guidance please visit www.lightwaverf.house.

1) Install your LightwaveRF sockets



To install the sockets, please refer to the following installation instructions to guide you through the process. You can also scan the video link on the following page. Wiring a LightwaveRF Socket is usually straightforward, however, If unsure, always consult a qualified electrician.



2) Plug in the Lightwave Link

Power the Lightwave Link and connect it to your home WiFi router using the cable provided. The instructions and video link in this booklet will explain how. The Lightwave Link will then set itself up automatically.

3) Download and Install the App

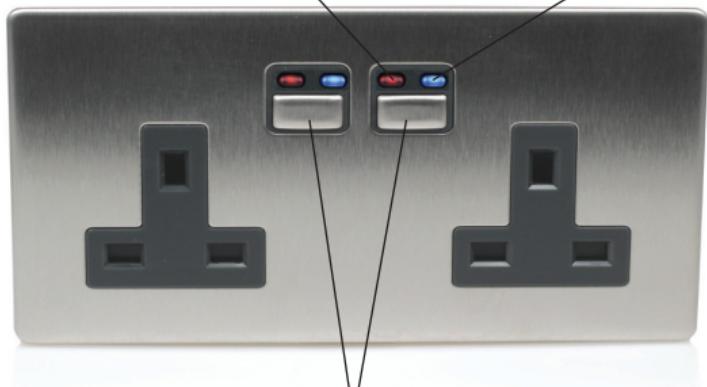


Search for and download the 'LightwaveRF' App from the App Store or Google Play. Alternatively, you can use the 'Web App' available at www.lightwaverf.house. Follow the in-app instructions to set up the App and begin using your new smart sockets!

Socket Installation

Amber LED. When illuminated power is off.

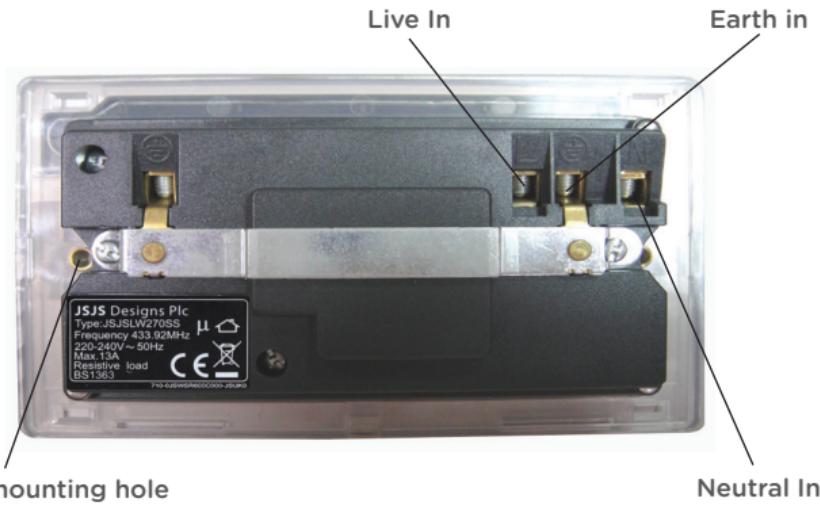
Blue LED. When illuminated power is on.



'On/Off' Buttons.
Press to turn sockets on/off

Help Video

For additional guidance, and to watch a video that will help guide you through the installation process, please visit www.lightwaverf.house.



Screw mounting hole

NOTE: It is important to install this product in accordance with the following instructions. Failure to do so may void your warranty.

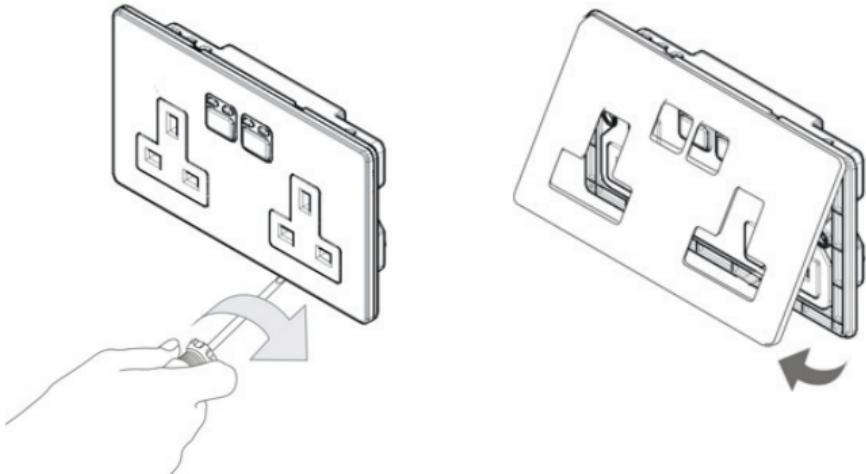
It is fully legal to install LightwaveRF in your own home. However, if in doubt, always consult a qualified electrician.

IMPORTANT: If conducting an insulation resistance test, all LightwaveRF products **must** be disconnected from the mains, or damage will occur.

INSTALLING THE SOCKETS

Lightw^{ave} RF

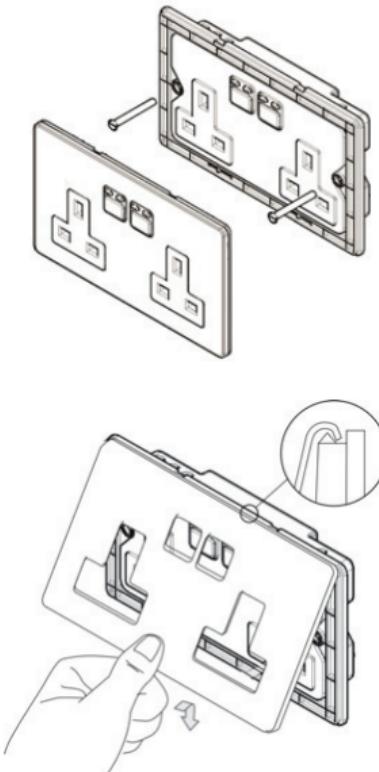
- 1. IMPORTANT:** Turn off the mains electrical supply.
2. Ensure that the wall (back) box has a minimum depth of 35mm.
3. Remove and disconnect the existing power socket (if applicable). It may be useful at this point to mark or take a photograph of the existing connections so that the correct wires can easily be transferred to the new socket. Some existing wiring configurations can be complex so take care.
4. Gently remove the socket faceplate by inserting a screwdriver into one of the bottom slots and lifting away from the unit as shown.



5. Connect the wiring as per the diagram on the following page. Ensure that the terminals are properly tightened and that no bare wire is visible. Be aware that existing wiring circuits are not always correctly coloured, and that there may be other wired connections present in the back box. If in doubt, always seek the advice of a qualified electrician.

6. Screw the socket to the back box and ensure that the screws are sufficiently tight enough to support the product. Do not over tighten as this may cause the chassis to bend. Ensure that the plastic spacer is correctly aligned and that no wires are trapped between the socket and the back box.

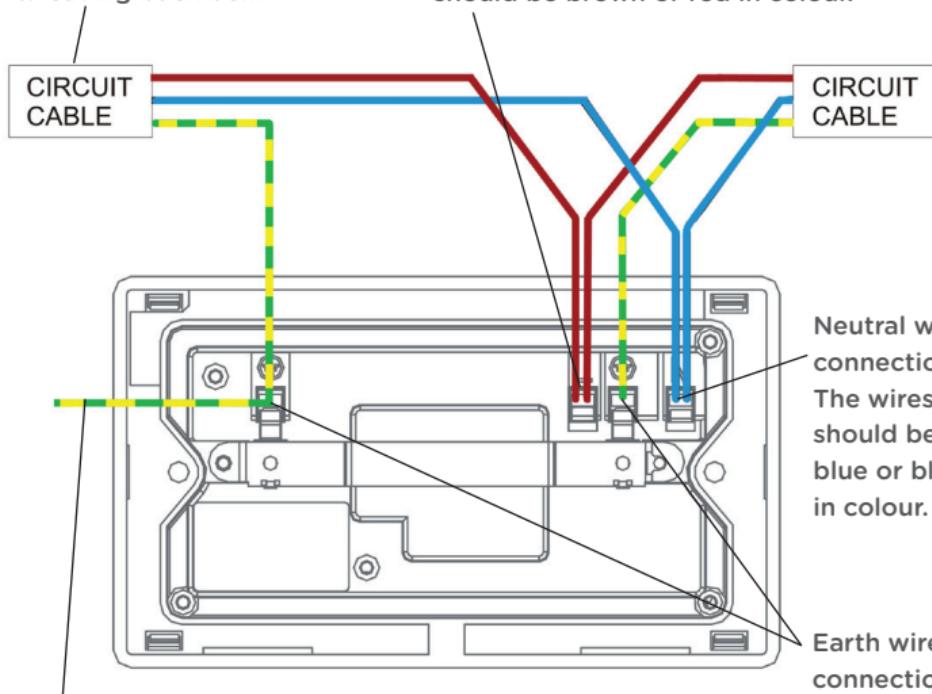
7. Replace the plate - a 'click' sound should be heard to signify that the plate has been correctly replaced.



INSTALLING THE SOCKETS

Main circuit cable entering & leaving back box.

Live wire connection. The wires should be brown or red in colour.



Earth wire can also be connected to earth terminal in back box if present (not essential).

Manual Operation

Manual Operation

- Press the left or right hand 'on/off' button once to switch the corresponding socket on (blue LED indicator will illuminate).



- Press the left or right hand 'on/off' button once to switch the corresponding socket off (amber LED indicator will illuminate).



Lightwave Link Installation

Indicator LED

Main button



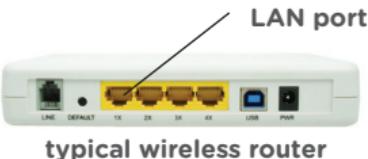
Help video

For additional guidance, and to watch a video that will help guide you through the installation process, please visit www.lightwaverf.house.

The Lightwave Link requires a wireless router with a permanent internet connection in order to operate. You will also require a WiFi enabled smartphone, tablet or PC.

1. Take the ethernet connector cable (supplied) and connect it to any spare available LAN port on your wireless router. Connect the other end of the cable to the Lightwave Link's single port.

2. Plug in the power supply, and push the jack plug into the AC connection on the back of the Lightwave Link. Turn on the power supply. The green LED on the Lightwave Link will illuminate to indicate that the Link has power and is ready to be set up from the LightwaveRF smartphone or Web App.



LED Indicator lights

The LED indicators are used to indicate the status of the Link and to indicate if there is a problem. If there is a problem reported, it will usually refer to an insecure cable connection or a server connection problem. If it has been setup correctly, the App will display details of any specific problem. See www.lightwaverf.house for support. There are three states: green, amber and red.

Steady Green: Status normal

Flashing Green: Transmitting

Flashing Green/Amber: Linking mode

Steady Red: Cannot contact server

Flashing Red: Cable / Router problem



Registering devices

Once the App is downloaded and set up you will be able to register multiple smartphones / tablets to work with the Lightwave Link (see in-App instructions).

De-registering / Factory reset

To de-register all linked smartphones / tablets devices, and to return the Lightwave Link to factory settings, press and hold the Reset button on the rear of the device for 10 seconds. When the LEDs flash red / green, press the Link button. The LED will flash red ten times to confirm the reset.

App Setup

1. Download the LightwaveRF App from the Apple App Store or Google Play Store (Android). It should automatically install onto your device.
2. Select the App icon and enter the App.
3. Please follow the in-App instructions which will take you through the setup procedure. The following 'socket setup' section in this booklet will show you how to link the socket to the App.
4. If you need extra help with setup, please refer to the **Help section** in the App (you can find this by entering the App, pressing the 'more' tab on the menu bar and selecting 'Help').



Web App

You can also control the Lightwave Link from the LightwaveRF Web App. This is a more extensive platform very suited to setting up and viewing large installs. It also allows you to access the Heating Planner, which provides more detailed and convenient scheduling, and 'Trigger' device setup. This can be accessed at www.lightwaverf.com.

Basic App features

Rooms

The LightwaveRF Apps organise your linked LightwaveRF power and lighting devices into rooms which you can name. These rooms could be, most commonly, the rooms of your house, such as 'lounge' or 'kitchen', but you can personalise them to represent whatever you like.

Within these rooms you can setup and access LightwaveRF devices. You can name these devices as anything that you choose, so, a dimmer could be labelled 'bedside light' or a socket 'kettle', for instance.

The LightwaveRF Web App will also allow rooms to be grouped together to form 'zones'.



Choosing device type & Moods

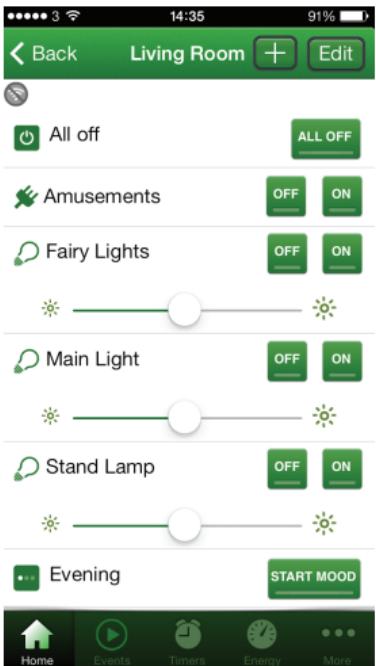
Once you have set up a room, you can begin to populate it with LightwaveRF devices. You need to define the device type as this allows the correct command buttons to be displayed when you control that device from the App. The sockets should be set to 'On/Off'.

Other options for other devices include

Dimming (e.g. dimmers & plug-in dimmers)

Open/close (e.g. in-line relay)

When setting up a room, you can also select a 'Mood'. A 'Mood' allows you to group together several LightwaveRF devices and control them from one button. You can also set the dim level or on/off status you want the devices to come on at.



Additional App features

Events

An Event is simply a list of LightwaveRF devices that you want to control at the same time. When you activate the Event, all the devices in the list will do whatever you have preset them to do. You could, for instance, set an Event called 'cinema' which, when activated, will drop the projector screen, dim the lights, and close the curtains, all at the touch of one button.

Timers

You can add a Timer to any single LightwaveRF device to control it automatically at a set time. However, being able to control events is what really makes Timers such a useful feature. You can set up an Event and trigger it automatically at the same time everyday, at dusk, three times a day, every Wednesday, or whatever combination you desire. This can be used to, say, automatically turn on outdoor lights at dusk every day, turn on lights in a random pattern when you are out for security, or to turn on the radio and slowly bring up bedroom lights on a weekday.

Heating devices

The Lightwave Link can also be used to coordinate and schedule LightwaveRF heating devices. Each heating device, such as Thermostats, Radiator Valves and Boiler Switches, can be linked to the LightwaveRF App in the same way as other LightwaveRF devices using the Heating Page. These devices can be setup and controlled on the LightwaveRF App. You can also use the LightwaveRF Web App (accessed from www.lightwaverf.house) to operate and schedule heating devices. This is ideal for use on a tablet.



Planning Heating Schedules

Each heating device can be independently scheduled. This allows you to plan when your heating comes on in each room every day. You can access and save schedules by selecting the relevant device from the Heating Page. This way, you can easily customise your routine as your daily activities change. Plan the schedule for the boiler by selecting and scheduling the main LightwaveRF Home Thermostat.

Energy Monitor

The Energy Display screen shows energy usage information gathered from a LightwaveRF Energy Monitor linked to the Lightwave Link. This data is live and updated every 15-30 seconds.

Triggers

Triggers can be displayed and accessed using the LightwaveRF Smartphone App. They are most conveniently set up using the Web App on a tablet. Trigger devices are designed to send an RF signal to the Lightwave Link whenever they are activated. This could be by pressing a button on a Heating Remote, by the opening of a Magnetic Trigger, or by the detection of movement on a PIR. The Lightwave Link will automatically take an action that has been preset using the App; it can turn on/off a number of devices, trigger a mood, or even send an 'alert' to your smartphone.



Linking the Sockets to the App

NOTE: This procedure also applies to other LightwaveRF Controllers (e.g. Handheld Remote or Mood Controller) which can be linked to the sockets.

LightwaveRF Sockets each have **6 unique memory slots** which means they can link with up to 6 LightwaveRF Controllers in total. If you are using a smartphone/tablet/PC to control the Socket via the Lightwave Link, this will always count as **ONE** controller and take up one memory slot even if you are using multiple smartphones/tablets.

1. On either socket gang, press and hold down the 'on/off' button until the blue and amber LEDs flash alternately then release them. The socket is now in **linking mode**.



2. Using the LightwaveRF Smartphone App, press the linking button (the App instructions will guide you through this). If using another controller press the button that you intend to link. The blue light on the socket will flash to confirm that the App/controller is now linked.



NOTE: Linking Mode lasts for 12 seconds; if no signal is received from a controller during this time then the socket will automatically exit linking mode without linking the device.

If, when expecting a quick flashing blue LED to confirm pairing, a slow amber flash is received instead, then the Socket memory is FULL and no further remotes may be linked with it unless one of the existing remotes is unpaired first (see below).

Unlinking controllers and clearing the Socket memory

Removing a single device:

1. On the socket gang that is to be unlinked, press and hold down the 'on/off' button until the blue and amber LEDs flash alternately, and then release it. That socket is now in **linking mode**.



2. Using a LightwaveRF controller, Smartphone or Web App, press the button intended to be unlinked; the amber light on the socket will flash to confirm that the App/controller is now unlinked.



Clearing the memory (will remove any linked App or Controllers):

1. On the socket gang that is to be cleared, press and hold down the 'on/off' button until the blue and amber LEDs flash alternately, and then release it. That Socket is now in **linking mode**.
2. Press and hold down the 'on/off' button again until the blue and amber LEDs flash simultaneously, then tap (don't hold) the 'on/off' button a further time; the amber LED will flash quickly to confirm that the memory has been cleared.



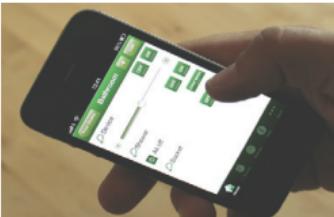
NOTE: Reliable range of remote operation is around 15 metres indoors and up to 100m outdoors using the Lightwave Link. This figure may vary depending upon the environment; very thick walls, bodies of water or large metal objects may interfere with radio range.

If the distance between the transmitter and receiver is too great to achieve reliable operation, the LightwaveRF Signal Booster may be used in conjunction with this product to increase the range.

Remote Operation

Control with the LightwaveRF App or a LightwaveRF Controller

- Press the 'on' button on the smartphone App (or LightwaveRF controller) once to switch the socket on (blue LED indicator will illuminate).



- Press the 'off' button on the smartphone App (or LightwaveRF controller) to switch the socket off (amber LED indicator will illuminate).



Locking the Socket

- LightwaveRF sockets can be 'locked' so that the manual buttons will not operate them. This can be achieved from the LightwaveRF App or using a 'Socket Locker' Remote. If locked on, the socket will not turn off manually: if locked off, then the socket will not turn on manually. A locked socket is signified by a slow flashing amber LED or simultaneously flashing blue & amber LEDs.
- To lock/unlock the socket, press the 'Unlock' button on the Smartphone App or Socket Locker. If the Socket locker is misplaced, the Sockets can be reset by turning of mains power to the circuit for a period of 30 seconds.

Understanding flashing LED Sequences on the socket



Flashing blue & amber alternately: socket in Linking Mode



Quickly flashing blue: socket successfully linked



Quickly flashing amber: socket unlinked / memory cleared



Slowly flashing amber: socket memory full / socket locked



Blue & flashing amber: socket successfully locked / unlocked

Problem: *The socket won't turn on/off and the LEDs do not light up.*

Solution: First, check that there is power to the socket. If so, turn off the power and check that the wiring is correct; it is important that the live and neutral wires are attached to the correct terminals. If these measures fail contact technical support via www.lightwaverf.house.

Problem: *The socket is powered (amber or blue LEDs on), but it will not link to a LightwaveRF handset or controller.*

Solution: Check the controller battery strength: if the battery strength is low, it will not produce enough power to drive the RF radio signal. Tap any 'on' button on the controller to transmit a signal. A strong battery signal is indicated by the LED light on the controller remaining lit for 1-2 seconds after releasing the button. A low battery is indicated if the LED light turns off immediately. If this happens, please replace the battery.

Problem: *The socket is stuck on/off and will not operate manually.*

Solution: On rare occasions, a high powered inductive load such as a drill or high powered vacuum cleaner can cause a socket to become frozen in its current state (hence it is not recommended to use them without a surge protector). If this happens, turn off the power to the socket for 30 seconds and then switch the power back on. This will reset the software and resolve the issue in the majority of cases. If this measure fails, please contact technical support via www.lightwaverf.house.

Problem: *The socket will not consistently operate remotely.*

Solution: The controller/Lightwave Link may be encountering interference or may be at the edge of its reliable range of operation. First, ensure that there are no large pieces of metal or bodies of water in the path of the transmission. If the problem persists, try moving the controller/Link closer to the socket, or consider using a LightwaveRF Signal Booster to extend the range by relaying the signal between controller and socket.

Problem: *The socket wont turn on/off and displays a flashing amber light / flashing amber & blue lights.*

Solution: The socket is **locked**. This may have been done using a Socket Locker or from the LightwaveRF App. If it is locked on, then the socket will not turn off manually. If it is locked off, the socket will not turn on manually. To unlock the socket, press the unlock button on the Socket Locker or smartphone App. If this is not possible, the sockets can be reset by turning off mains power to the circuit for a period of 30 seconds.

Problem: *The indicator LED on the Lightwave Link constantly flashes red*

Solution: There may be a connection problem between your network and the LightwaveRF server. First, check the Ethernet cable connection. If this is properly connected, try plugging the cable into another port on your WiFi router. If possible, try using an alternative Ethernet cable to ensure that there is not a cable fault. Also, make sure that there are no non-standard firewall/port forwarding rules on your network (the Lightwave Link operates on ports 69 & 2011 on UDP for remote connectivity and 9760 & 9761 for local connectivity).

Problem: *On the restoration of power after a power cut, my LightwaveRF devices remain in the 'off' state even if they were previously 'on'.*

Solution: After a power cut LightwaveRF devices will default to the 'off' position as a safety measure. The exception to this are the LightwaveRF CFR bulbs which default to 'on'. If you would like a device to default to on after a power cut instead, a fridge for example, you can set the Lightwave Link to automatically send an on command on startup (resumption of power). To link your devices to this on command, put your devices into linking mode, then cut power to the Lightwave Link and immediately restore it. If successful, the LED indicator light(s) on the device will flash to indicate that they have stored the new command from the Lightwave Link.

Problem: *My Lightwave Link will not connect (the red indicator LED constantly flashes). I have a BT HomeHub 4.*

Solution: If you have a BT HomeHub 4 and are now experiencing connectivity issues with your Lightwave Link, it is likely that it will be related to the 'Smart Setup' feature of the HomeHub router. Disabling this fixes the connectivity issues on most setups. To do this, you will need to use your internet browser to adjust the Home Hub settings by going to <http://bthub.home> and then clicking 'Advanced Settings'. In this section, select 'Home Network' and choose to disable the 'Smart Setup' feature. The Lightwave Link should be able to connect and behave as expected once this has been done.

Problem: *My Lightwave Link will not connect (the red indicator LED constantly flashes). I have a BT HomeHub 5.*

Solution: Plug the Lightwave Link ethernet cable into port number 4 on the Homehub Router. This should solve the connection problem.

Q. Does the socket work manually as a standalone unit?

A. Yes the socket will operate like any standard wall socket.

Q. Does the socket have a 'standby' power consumption?

A. The socket has a standby power consumption of approx. 0.5W. This is because the in-built radio receiver requires power in order to receive commands. This rate is well within government energy guidelines.

Q. How do I know that the socket will fit?

A. A LightwaveRF Socket has the same height and width as a standard socket - it will fit all back boxes (standard socket housing) over 35mm deep.

Q. Is it legal for me to install a LightwaveRF Socket myself?

A. Yes. It is fully legal to install LightwaveRF products in your own home.

Q. Is it possible to overload the socket?

A. 13A max. loading (3000W) applies as with other standard power sockets.

Q. How many devices can I have on the LightwaveRF system?

A. Each device has 6 memory slots for up to 6 controllers. Note: The Lightwave Link allows a number of different smartphones to control the socket independently, however it only uses one memory slot.

Q. *Can I incorporate a socket into a mood?*

A. Yes: sockets can be incorporated into a mood.

Q. *Can I turn off the LED status lights?*

A. No it is not possible to turn off the LEDs as they are necessary to signify the socket's status.

Q. *Can I lock the socket?*

A. Yes the sockets can be locked on or off.

Q. How do I know if I have the latest firmware?

A. The Lightwave Link will automatically check for firmware updates several times a day and on boot up. There is no need to manually update this.

Q. Does the Lightwave Link require a static IP address?

A. Our system uses the MAC address of the Lightwave Link for remote commands and as such does not require you to have a static IP. The system will work with or without a static IP address.

Q. How much power does the Lightwave Link use?

A. 3W (approximately).

Q. Can I set the time manually?

A. No. This is set by checking with an internet NTP Server.

Q. How many devices can I have on the Lightwave system?

A. Each device has 6 memory slots for up to 6 controllers (one of these can be the Lightwave Link allowing multiple smartphones to control up to 240 devices).

Q. Which ports does the Lightwave Link use?

A. The Lightwave Link operates on ports 69 & 2011 on UDP for remote connectivity and 9760 & 9761 for local connectivity.

Q. *How do I use a Signal Booster with the Lightwave Link?*

A. The Signal Booster can extend the range of 6 unique commands from the Lightwave Link. Each of these commands needs to be transmitted using the LightwaveRF App whilst the Signal Booster is in linking mode for it to be saved and stored. It will then automatically repeat the signal when ever that command is sent using the App.

Q. *Do I need a permanent internet connection?*

A. On startup the Lightwave Link always needs an internet connection to acquire the time and its location. It is possible to use the Link without this connection later, however remote commands will not function.

Socket Specification

RF frequency: 433.92 MHz

Input rating: 220-240V

Output rating: 3000W max. (per gang)

Back Box Depth: 35mm min

Standby Energy Use: Less than 1W

Dimensions: Width 150mm, Height 88mm, Depth 27mm

Earthing Requirement: Earth terminals included

Warranty: 2 year standard warranty

Certification: BS 1363 Approved

Lightwave Link Specification

RF frequency: 433.92 MHz & 868 MHz

Input rating: 12V

Energy usage: 3W approx.

Warranty: 2 year standard warranty

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Lightwave^{RF}

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