

*This document contains information on using the eBookingonline.net windows application for controlling lighting and or heating. This application is supported on Windows 7, 8 and Windows 10 and is installed on a PC on your local site.*

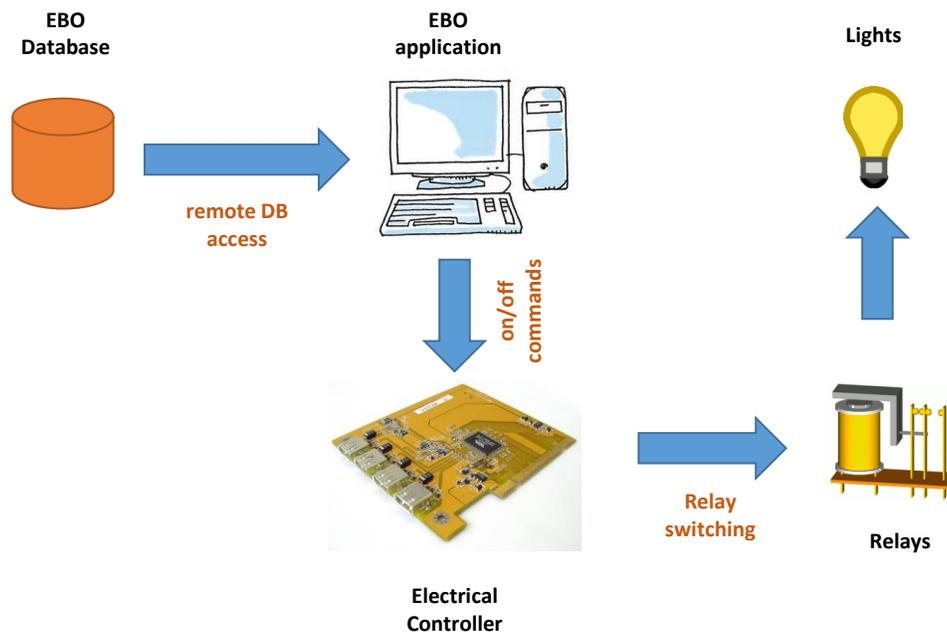
## Warning

Please consult a qualified Electrician for your region and building type. This document does not detail electrical specifications as these will be specific to your building and local electrical compliance laws and standards. This document details the communication of the system and not the electrical switching of the system. eBookingonline.net cannot be held responsible for any electrical faults resulting in any loss.

## About

Controlling lighting or any other electrical system is performed using electrical relays (switches) that are controlled by a central or distributed controller. A small windows based application, supplied by eBookingOnline.net, interfaces the eBookingOnline.net database containing your online bookings with these controllers sending the appropriate messages to either switch on or switch off the relays / switches.

The following diagram illustrates this basic concept.



## Prerequisites

In order to communicate with the EBO database remote access will need to be enabled. This allows communication from your club computer hosting the EBO application directly with the database. For security reasons the database is protected by a firewall, to allow communication a static IP address needs to be added to the firewall in order for this system to work. Remote database access is enabled through the main page of the Admin Panel and is detailed in the Administration Guide.

You will also need a Windows based computer to run the application. This computer must use the external IP Address supplied as part of the Remote Database Access request. It is recommended that this be the same computer used by members at your club, for example a Kiosk based system. The PC should not be configured to shut down or enter any sleep mode as the application runs in real-time it needs to be running constantly. Power plans that shutdown monitors or hard disks are fine. Currently the following versions of Windows are supported:

- Windows 7
- Windows 8.1
- Windows 10

## How does it Work?

Using your unique remote database username and password booking details for the next 24 hours are downloaded from the online system to the local application, the process is then repeated every 3 minutes. This allows the application to have an up to date image of the online bookings and in the event of local Internet failure a snapshot of bookings for the next 24 hours, this enables the local switching of lighting and is known as 'offline' mode. Any bookings made whilst the application is working in 'offline' mode will not be available and as such court lighting will not be switched. Once Internet connectivity is restored the application will resume as normal.

The application maps individual courts with addresses in the controllers and checks for bookings every minute. If the court is booked then the application sends an 'ON' message for that court, if not then it sends an 'OFF' message. The controllers are then responsible for switching the associated relay, which in turn switches the electrical circuit for the lights.

The status of the court lights and all upcoming bookings can be viewed using the application but they cannot be switched on or off manually. It is recommended that your electrician installs a bypass system so that lights can be manually turned on and off, e.g. for maintenance.

## What Controllers can be used?

There are two types of controllers that eBookingOnline.net support.

1. **Marmitek X10 CM15Pro** – this is a USB device that plugs into the local PC using the provided drivers. This controller switches X10 relays based on an X10 code that is configured on each relay by sending X10 commands through the electrical system’s neutral wiring. Your local electrician should advise on the correct relay types to be used and any other considerations such as distance limitations, interference and phase coupling. This system is the original EBO solution and is no longer the preferred solution.
2. **USR Ethernet Controllers** – The USR devices are IP enabled devices and can be controlled either via Wifi or wired Ethernet depending on model. Typically these devices combine the controller and relay into one unit. As such there is no additional hardware required for the computer hosting the EBO application. In this configuration the application sends ON/OFF messages directly to the controllers over the Wifi or Ethernet. Typically in this configuration the controllers would be located near to the distribution panel for the electrical wiring system. Please note that the 8 channel device has a total limit of 10 amps @ 240vac, it is advised when using this model for multiple lighting circuits to use external relays that are rated at the appropriate level. In this way the USR controller is switching an external relay, which in turn switches the lighting circuit.

## Configuration of the Courts

Before installing any software configure each court with the correct lighting address in the Admin Panel. It is this address that makes the association with each court to the controller. The address you enter depends on the system chosen, this is either the X10 address of the relay or for the USR devices the IP address and channel number in the format ip\_address:channel. Note that for the single channel controller use channel one. For example 192.168.0.81:1 would be channel 1 of the controller 192.168.0.81, channel 7 for the same controller would be 192.168.0.81:7. For USR devices also enter the administration password. To enable lights for each court check the **enable lighting controls** check box.

**Main**  
Edit Club details & Manage Admins

**Sports**  
Manage available sports

**Courts**  
Manage the courts available to each sport

**Specials**  
Manage the special event types

**Events**  
Manage Group Events

**Manage Database**  
Create membership types, fields & Import / Export features

**Members**  
Manage Member account details & payments

**Sponsorship**  
Create or Edit your sponsor's details

Court Name: Court 1 - Glassback

Sport: Squash

Peak Court Cost (£): 3.00

Off Peak Court Cost (£): 2.00

Peak Guest Fee (£): 0.50

Off Peak Guest Fee (£): 0.50

Peak Coaching Fee (£): 0.20

Off Peak Coaching Fee (£): 0.15

Using Lighting Controls:

**Lighting Controls**

Lighting cost (£): 5.00

X10 Lighting Code: A1

WiFi Lighting IP Address: 192.168.0.81

WiFi Lighting Password: admin

WiFi Lighting Channel: 1

Light Offset (min): 3

Sunset Offset: 600

Night Use Only:

The lighting cost is optional, if supplied this will be used in addition to any other court costs to calculate the total cost of the booking.

There are a few configurable parameters that can be used when to enable the lights, varying the time against the booking time.

**Light Offset** This is the time in minutes that the lights will be switched on *before* the time of the booking. This may be useful for outdoor lighting when the lights need to warm up first, or for staggering lighting start up times to reduce power surges.

**Night Only** Check this box if lights are only to be used after sunset, typically this is required for outdoor lighting. This requires the longitude and latitude of your location to be configured in the global system configuration. Having these co-ordinates, the system is able to calculate the local sunset time and will offer the option for members at booking time to select whether or not to use the lights. Bookings that have an end time later than local sunset will be given this option. For special events the lights will be selected by default.

**Sunset Offset** This option is used in conjunction with night only. The default behaviour for night only is to allow the use of lights after sunset. This offset allows the selection of lights to be adjusted in minutes before sunset. The following is an example to explain this further.

Local Sunset time 19:23

Light Offset is 8 minutes

Sunset Offset is 30 mins

Each court is configured for 30 min slots on the hour and half hour

Court Booking Time	Time Lights will be allowed	Lights Offered	Lights switched on at
18:00 – 18:30	19:23 – 30 mins = 18:53	✘	
18:30 – 19:00	19:23 – 30 mins = 18:53	✓	18:30 – 8 = 18:22
19:00 – 19:30	19:23 – 30 mins = 18:53	✓	19:00 – 8 = 18:52

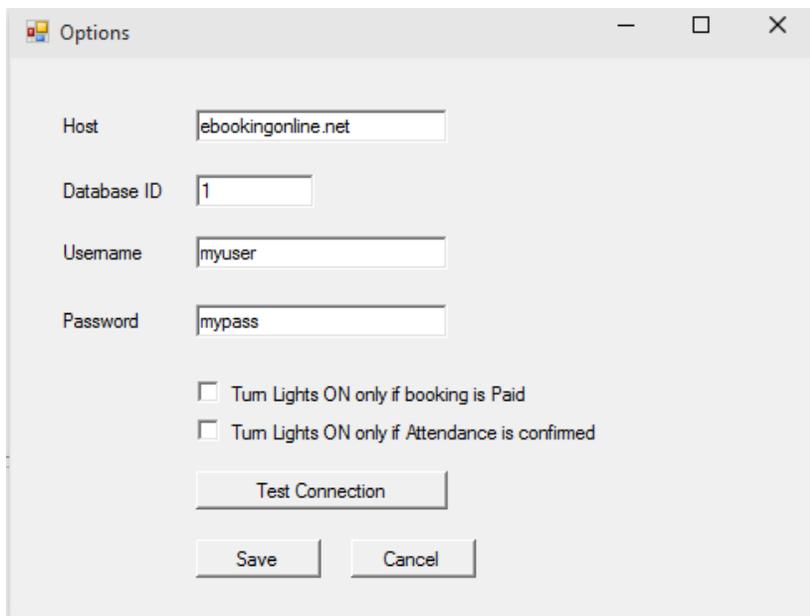
## X10 CM15Pro Installation

Before installing the EBO X10 package we recommend installing the 'Active Home' application that is shipped with the CM15 Pro, specifically versions 3.316 or 3.318 as these have the correct drivers. Following the installation instructions supplied with the unit, powering on the CM15 Pro when asked for by the installation process. Once complete the application can be used to test switching of your relays in isolation. This ensures that the X10 system is functioning correctly over the building power cables.

Once the X10 system has been verified the EBO package can be installed; leave the CM15 Pro connected for the installation of the EBO application. Unzip the contents of the package supplied by EBO and double-click on the **setup.exe** icon.

When prompted 'Are you sure you want to install this application?' click on **Install** to continue. Note that if the CM15 Pro is not connected or cannot be found a message box will appear indicating this, if so click on yes to confirm, the application can still be installed but will not work until the CM15 Pro is visible.

The EBO application will now be running in the background. Open the system tray in the bottom left-hand corner and a small EB icon will be present, right-click this selecting **options**, the following dialogue box will appear.



- In the host field fill in ebookingonline.net
- For the Database ID enter your club ID
- For the Username and Password enter your remote Database access credentials.

There are two check options to only allow light to be turned on if:

- The court has been paid
- Attendance has been confirmed on the club system

These options can be used in any combination to ensure that lights are only turned on when needed.

Once complete click on the test connection button; this will test these credentials and your connection to the EBO database. Once successful click save to continue. The application will be minimized back to the system tray.

Open the application once more from the system tray, selecting the **open** option. The application has two windows, the top window showing the configured courts from the database along with their X10 code and a second window showing any upcoming bookings for the next 24 hours. The use of the refresh buttons can be used at any time to refresh these windows. If the status of the application is

'Offline' then access to the Database cannot be established, in such a case select tools and options from the menu to check and test connection parameters.

The application is now set up and the X10 relays will be switched in and out based on whether a court has been booked.

The screenshot displays the 'eBooking Online Lighting Management Control' web application. It features two main data tables and a 'Refresh' button. The 'Lighting Status' table shows the current state of X10 relays for different courts. The 'Upcoming Bookings' table lists scheduled court sessions and their associated X10 relays. A cartoon character holding a lightbulb is positioned to the right of the tables. The application footer includes the version number 'X10 Controller Module version 1.01' and the copyright notice 'Copyright eBookingonline.net 2009-2015'.

Court	Duration	X10	Status
Court 1 - Glassba...	2400	A1	On
Court 2	2400	B10	Off

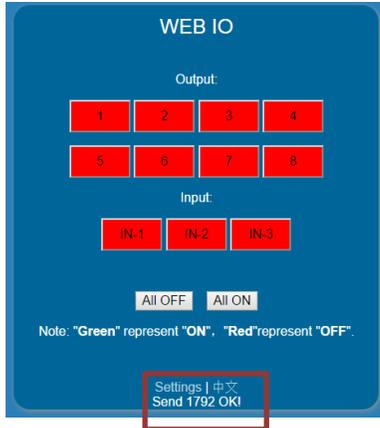
Court	Time	X10
Court 1 - Glassback	7/6/2015 8:40 PM	A1
Court 1 - Glassback	7/6/2015 10:00 PM	A1
Court 1 - Glassback	7/6/2015 10:40 PM	A1

## USR WiFi Relay

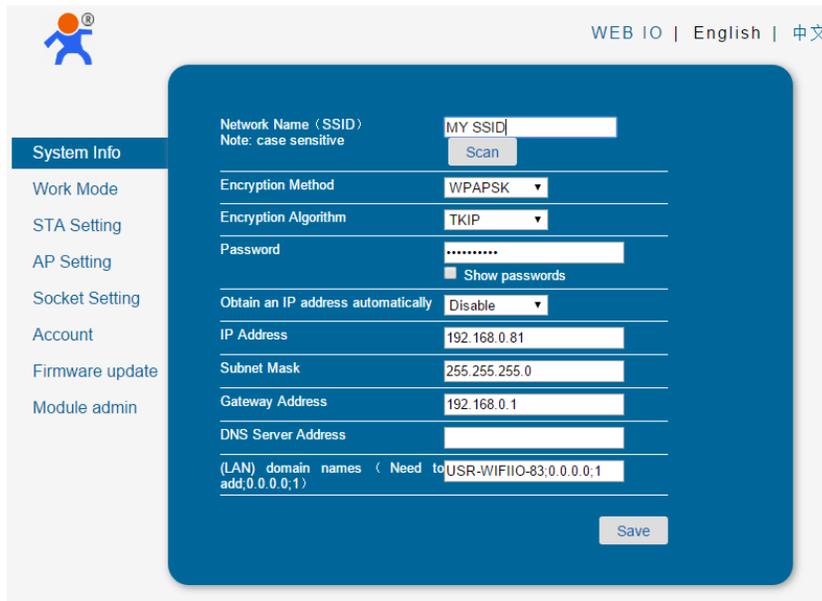
The USR Wifi controller requires a static IP address, this can either be manually configured or allocated statically by a DHCP server. The address given to the controller needs to be unique and not be part of the local DHCP scope. For the purposes of this example the address of 192.168.0.81 will be used with a subnet mask of 255.255.255.0. You will need to determine the best IP Address to use by referencing your existing network configurations, typically the broadband router.

The USR devices are configured through a Web GUI. When first powered on they act as a Wifi Access Port with a SSID of USR-WIFI0-83. The first task is to connect to this wireless network and reconfigure the USR device with the correct IP address and mode of STA.

1. Power on the USR device and connect a wireless device to the wifi network USR-WIFI0-83.
2. Once connected point the device's browser to <http://10.10.100.254>. The default username and password are both **admin** (lowercase).
3. Click on settings.



4. From the left hand menu select work mode and set the Mode to **STA mode**. IF the RJ45 port is to be used ensured that this is selected in **LAN mode**. Click **Save** but do not restart the system.
5. From the left hand menu select STA Setting and click the SCAN button to find your local Wifi network that the USR device is to connect to. Select the Wifi network and enter any password required to connect with the appropriate Encryption settings for you wireless network. Set **Obtain an IP address automatically to disable** and enter your manual IP Address, Subnet mask and default gateway IP addresses. Click **Save** but do not restart the system. The configuration should look similar to the following:



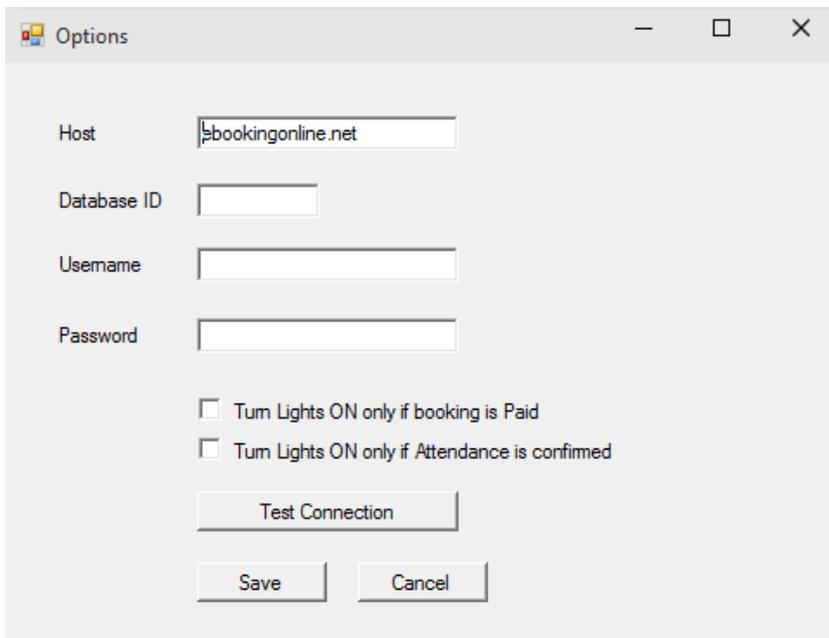
6. From the left hand menu select Account. Here it is strongly advisable to change the admin password. Failure to do this will leave the device open for anyone to switch the lights on/off. Click **Save** and then click **Restart** to restart the system with the new settings.
7. Verify that the link light of the USR device lights, this confirms that the Wifi settings are correct and that the device is connected to the Wifi network.
8. Using a browser connect to the USR IP Address. This interface can be used as a test interface to switch on / off channels of the USR device.

Please DO NOT use the mobile app for switching the USR device in conjunction with the EBO application. This can cause the system to fail.

Once the USR system has been verified by testing it using the Controller's Web Page the EBO package can be installed; leave the USR controller connected for the installation of the EBO application. Ensure that the courts have been configured with the correct IP address information for your controllers, failure to do so may cause errors and the application to run slowly trying to find devices that are not connected. Unzip the contents of the package supplied by EBO and double-click on the **setup.exe** icon.

When prompted 'Are you sure you want to install this application?' click on **Install** to continue. Note that if the USR is not connected or cannot be found a message box will appear indicating this, if so click on yes to confirm, the application can still be installed but will not work until the USR Controller is visible.

The EBO application will now be running in the background. Open the system tray in the bottom left-hand corner and a small EB icon will be present, right-click this selecting **options**, the following dialogue box will appear.



- In the host field fill in ebookingonline.net
- For the Database ID enter your club ID
- For the Username and Password enter your remote Database access credentials.

Once complete click on the test connection button; this will test these credentials and your connection to the EBO database. Once successful click save to continue. The application will be minimized back to the system tray.

Open the application once more from the system tray, selecting the **open** option. The application has two windows, the top window showing the configured courts from the database along with their X10 code and a second window showing any upcoming bookings for the next 24 hours. The use of the refresh buttons can be used at any time to refresh these windows. Please note that each lighting circuit takes approximately 5 seconds to poll, so a USR with 8 channels can take up to 40 seconds to respond. If the status of the application is 'Offline' then access to the Database cannot be established, in such a case select tools and options from the menu to check and test connection parameters.

The application is now set up and the USR relays will be switched in and out based on whether a court has been booked.

