

TC421 WiFi Auto Sunrise-Sunset Dimmer Manual



Specifications

Supply voltage:	12V/24V DC (MMLED systems are 24V)
Model:	TC421
Battery Backup:	CR1220 Button Battery (Included), If power goes out, the unit will remember it's settings and continue it's program when power is restored.
Output:	5 channels @ 4A (60W@12V 96W@24V Max per channel)
Programming:	From Windows PC/Laptop, Android and iOS devices
Capacity:	Can store 20 dimming programs (called modes in the app) and each can have 48 timers, each timer can set brightness independently for up to 5 channels.

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Connections



1. Reset button To restart the unit
 2. USB socket: For uploading timing patterns from Windows PC or to run simulations, also used to power the device for programming.
 3. Power **This 5.5/2.5 power jack is not used for MakeMyLed lighting systems**, power should be applied via the V+/V- terminals on the other side of the controller.
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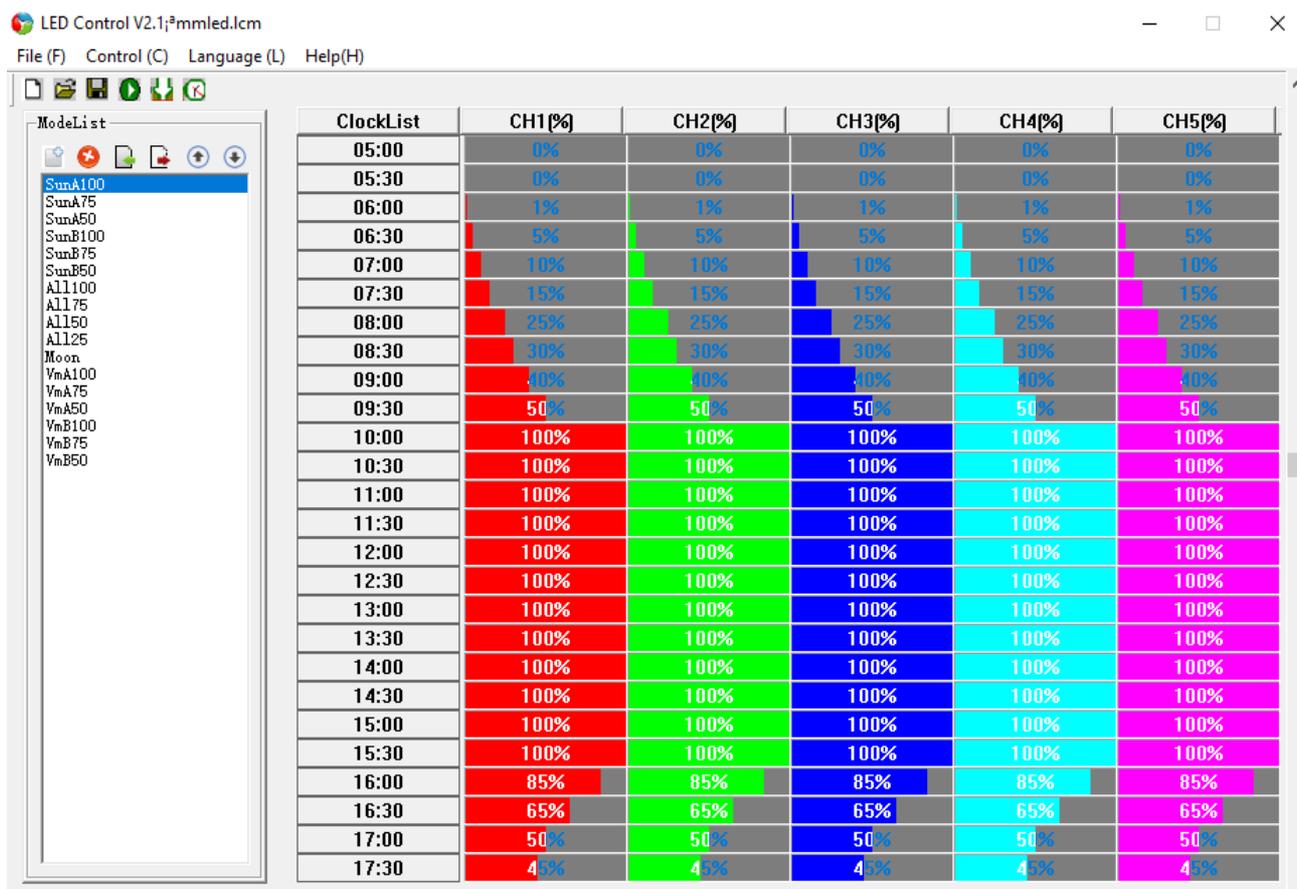
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General Information

The WiFi Auto Sunrise Sunset dimmer is a versatile and programmable set and forget controller that can control up to 5 channels independently. Switch it on, select the auto dimming pattern you want and sit back and relax. Great for busy people or those that want simplicity in their lives.

The unit features battery backup so that it will automatically continue it's program after a power outage. Pre-programmed ready to go and re-programmable from a Windows PC/Laptop via USB cable (not supplied) or via WiFi from an Android or Apple phone or tablet.

Suna100 example



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The pre-programmed dimming patterns (modes)

sun100	Starts at 6am at 1%, progressively ramps up to 100% by 10am, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
sun75	Starts at 6am at 1%, progressively ramps up to 75% by 10am, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
sun50	Starts at 6am at 1%, progressively ramps up to 50% by 10am, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
sunb100	Starts at 6am at 1%, progressively ramps up to 100% by 12pm, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
sunb75	Starts at 6am at 1%, progressively ramps up to 75% by 12pm, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
sunb50	Starts at 6am at 1%, progressively ramps up to 50% by 12pm, at 3pm progressively ramps down to 1% by 9:30pm, off at 10pm
All100	Turn all channels on 100% intensity
All75	Turn all channels on 75% intensity
All50	Turn all channels on 50% intensity
All25	Turn all channels on 25% intensity
moon	Turn all channels on 1% intensity

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For example suna100 will ramp up to 100% and stay like that for 5 hours and ramp back down, suna75 will ramp up to 75% and stay like that for 5 hours and ramp back down. Sunb100 will ramp up to 100% and stay like that for 3 hours and ramp back down, sunb75 will ramp up to 75% and stay like that for 3 hours and ramp back down. All50 will turn all leds on the 50% intensity and stay like that.

If you are not sure which “sun” pattern to use on your tank, start with suna100 and if you get algae due to excessive light you can switch down to suna75 and further switch down if required. You can also switch to the sunb dimming patterns which have only 3 hours of peak lighting.

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Software Installation

The device pre-programmed ready to plug in and go with no software or intervention required but if you want to change the dimming patterns or add or remove them, you'll need to install software on your PC or Android or Apple device to do so.

You can download the PC/Laptop software and pre-programmed modes from <https://makemyled.com.au/downloads/wifi-auto-sunrise-sunset.zip>

You can download the app for Android by scanning this qrcode or by clicking [HERE](#)



You can download the app for Apple by scanning this qrcode or by clicking [HERE](#)



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Software Installation and operation for Windows

You can run the pre-programmed patterns without using a PC/Laptop but if you want to add or remove patterns you'll need to install software on your PC to do so.

Software for PC/Laptop and the pre-programmed modes are available for download from <https://makemyled.com.au/downloads/wifi-auto-sunrise-sunset.zip>

Unzip to your PC/Laptop and run the **led control** software.

This unit come pre-programmed, no need to use the software to program it unless you want to create your own dimming patterns.

Loading the factory pre-loaded dimming patterns to your PC/Laptop

The controller has factory pre-programmed dimming patterns on-board, if you want to change them you first need to get them onto your PC/Laptop.

1. On a Windows PC/Laptop download software from <https://makemyled.com.au/downloads/wifi-auto-sunrise-software.zip>
2. unzip the software. Run led control, click File then New Project
3. Change the path to the folder you unzipped the software to.
4. Make up a name for the project, keep it short 8 letters or less.
5. Click Input Mode and select the first .Imf file in the list, repeat for the other .Imf files.
6. Click File Save
7. Connect the controller to your Windows PC/Laptop using the USB cable.
8. Then use the Control/Download menu option to upload all modes in the package to the controller

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Using the Windows LedControl software to create, change lighting modes

NOTE: The channels are colour coded in the software but these colours are not related to the colours on your lighting system.

Changing the Intensity settings for the 5 output channels

The right hand side panel has 48 timers, one for every 30 minutes in 24 hours. You can adjust the intensity for a channel by clicking in the cell and left click/drag with the mouse.

You can also use the arrow keys to change the intensity setting



↑ +10% ↓ -10% ← -1% → +1%

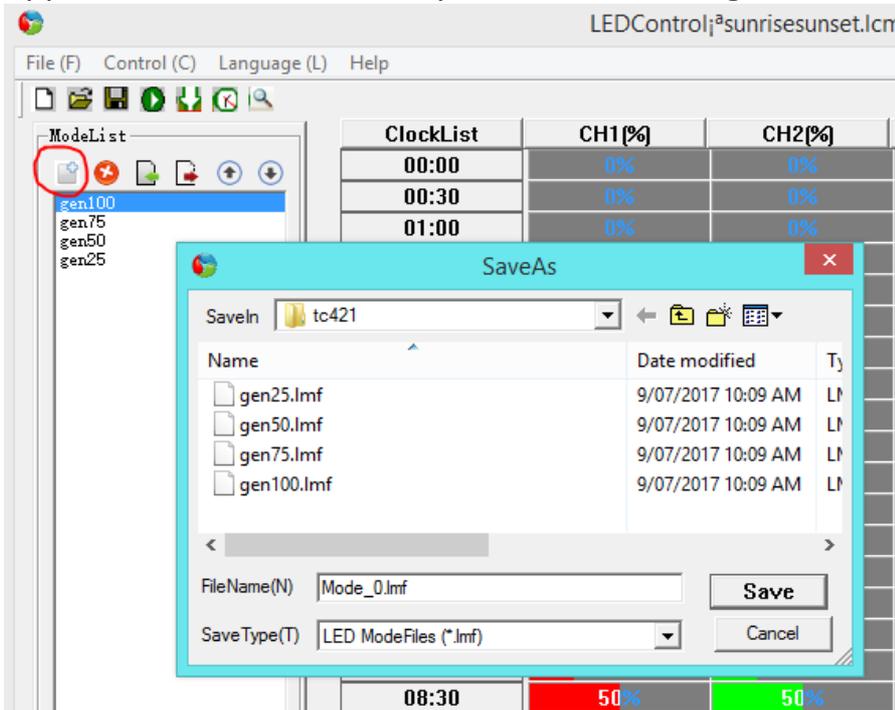
A note on how the intensity ramps from one timer to the next

Taking the gen100 dimming mode as an example, the 8am timer says 25% intensity at 8am, and the 8:30am timer says 50% intensity. The controller will gradually move from 25% to 50% over the 30 minute interval making for a natural and gentle intensity change.

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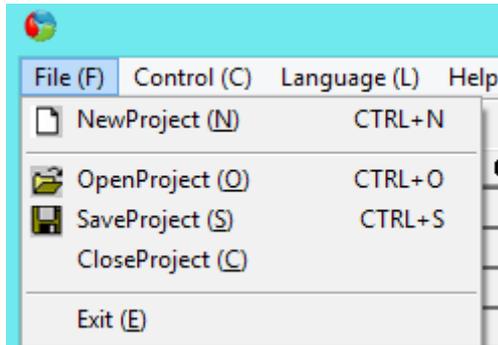
Creating a new pattern (mode)

Click the new mode icon and name the mode and click Save. The new mode will appear in the mode list and you can start setting the intensities for the 5 channels.



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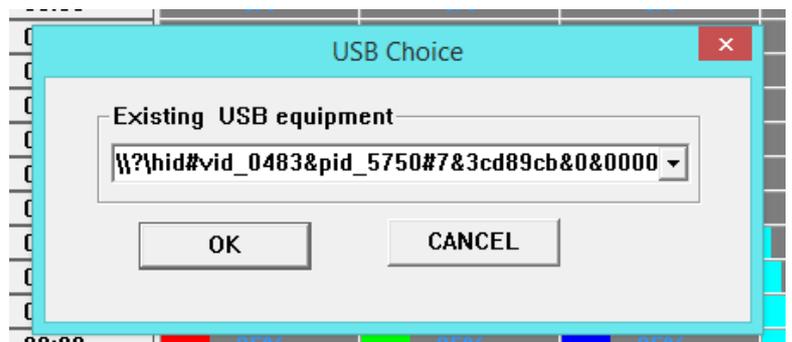
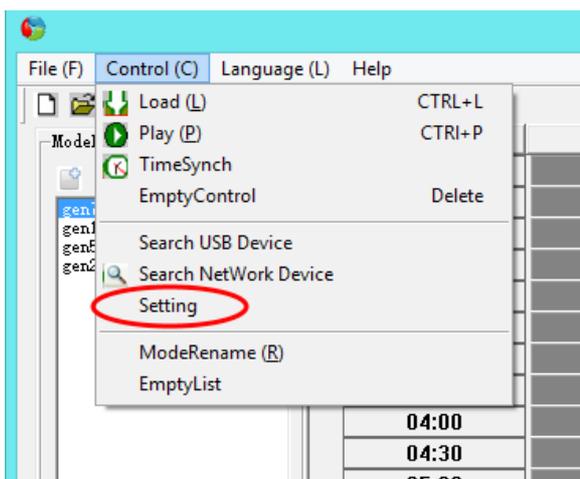
Modes are organised inside projects similar to files inside a folder. You can create a new project any time by clicking File/New Project. You can also Open, Save and Close projects here.



Connecting a Windows PC to the controller

Use the supplied USB cable to connect the controller to your PC. The USB cable will deliver sufficient power to the control box for programming.

NOTE: For first time use, click Control/Setting and then Ok to link your PC to the controller USB port. Test the connection using Control/TimeSynch. If this works ok then no need to repeat this step next time because the software will remember your setting. If it doesn't work try Control/Setting and choose a different USB port.



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The Control (C) menu options

Load	Downloads all modes in your project to the controller, we did this for the sunrise/sunset modes and they are pre-loaded on the controller.
Play	Plays a simulation of the currently selected mode in fast forward. The controller will go through the entire 24hr dimming pattern in around 5 minutes and If your lighting system is connected they will dim and brighten according to the mode settings. This is a good way to test a mode before you download it to the Controller.
Timesync	Copy the time and date from your PC to the controller. You can also change the Date and time using the buttons on the controller but the synchronise method is easier.
EmptyControl	Delete all patterns/modes in the controller.
EmptyList	Reset all the channel & to 0% for the selected pattern/mode
ModeRename	Rename the selected mode

The Help menu option

Contains help info, a little hard to understand and written by the Chinese manufacturer but you'll get the gist of what's in there.

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Software Installation and operation Android and Apple devices

You can download the app for Android by scanning this qrcode or by clicking [HERE](#)



You can download the app for Apple by scanning this qrcode or by clicking [HERE](#)

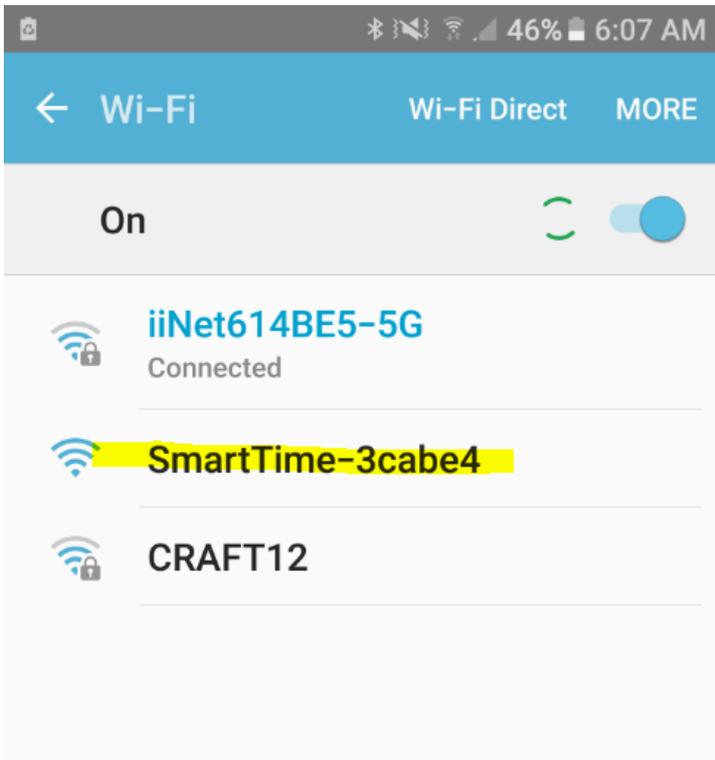


The Android and iOS Smart Time Control app allows you to create and edit dimming modes and then upload them to the controller via the controllers Wifi hotspot.

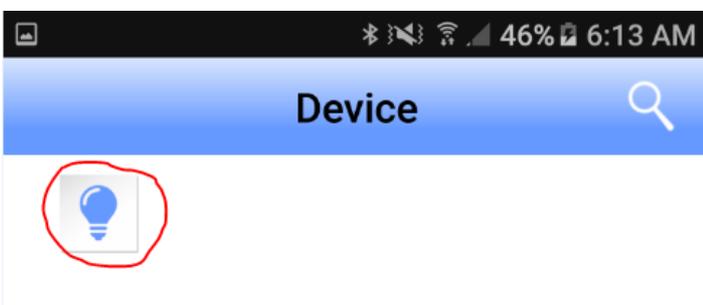
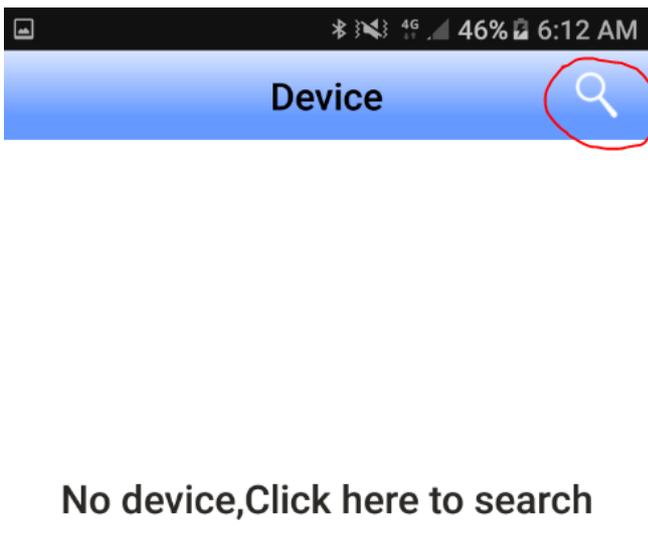
NOTE: Unlike the Windows PC version of the software, you can't download the pre-programmed modes, for Android and Apple you have to create the dimming patterns from scratch. Once you've done that you can edit/change them any time.

After installing Timecontroller.apk on your Android device, and after applying power to the controller, go to your wifi settings and connect to “**SmartTime.....**”, some models have a wifi hotspot “**AI-THINKER....**” instead of “**SmartTime.....**”

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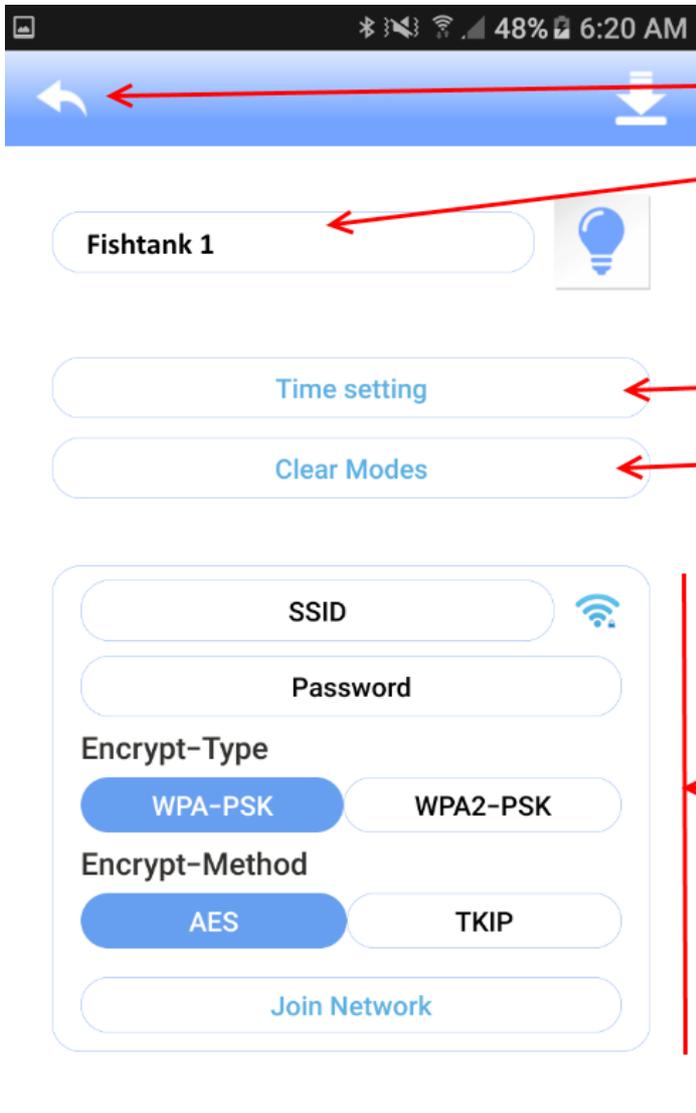


Launch the SmartTimeControl app you installed and click the search icon to locate the “SmartTime.....” or “AI-THINKER....” wifi hotspot.



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Click on the lightbulb to open the configuration screen



The screenshot shows the configuration interface for the TC421 WiFi Auto Sunrise-Sunset Dimmer. At the top, there is a status bar with icons for Bluetooth, signal strength, Wi-Fi, and battery level (48%) at 6:20 AM. Below the status bar is a blue navigation bar with a white back arrow on the left and a white home icon on the right. A red arrow points from the home icon to the text "Exit Configuration screen".

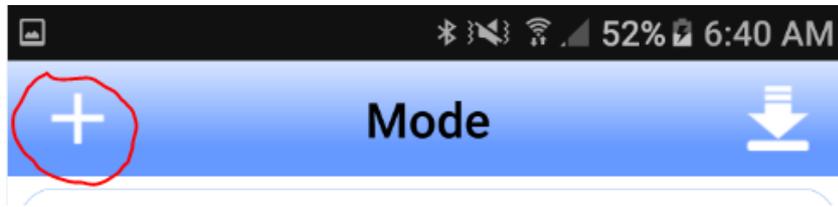
The main content area includes a text input field containing "Fishtank 1" with a lightbulb icon to its right. A red arrow points from the text "Name your controller" to this input field. Below this are two buttons: "Time setting" and "Clear Modes". Red arrows point from the text "Copy Date/Time to controller" to the "Time setting" button and from "Clear all modes on the controller" to the "Clear Modes" button.

At the bottom, there is a Wi-Fi configuration section with fields for "SSID" and "Password", and options for "Encrypt-Type" (WPA-PSK and WPA2-PSK) and "Encrypt-Method" (AES and TKIP). A "Join Network" button is at the bottom of this section. A red vertical line is drawn to the right of this section, with a red arrow pointing from the text "You can connect the controller to your home WiFi network here." and "Once you've done that the SmartTime WiFi entry on your WiFi list will disappear because you won't need it anymore" to the line. Below this, another red arrow points from the text "You'll be able to connect to the controller using your normal home WiFi" to the same line.

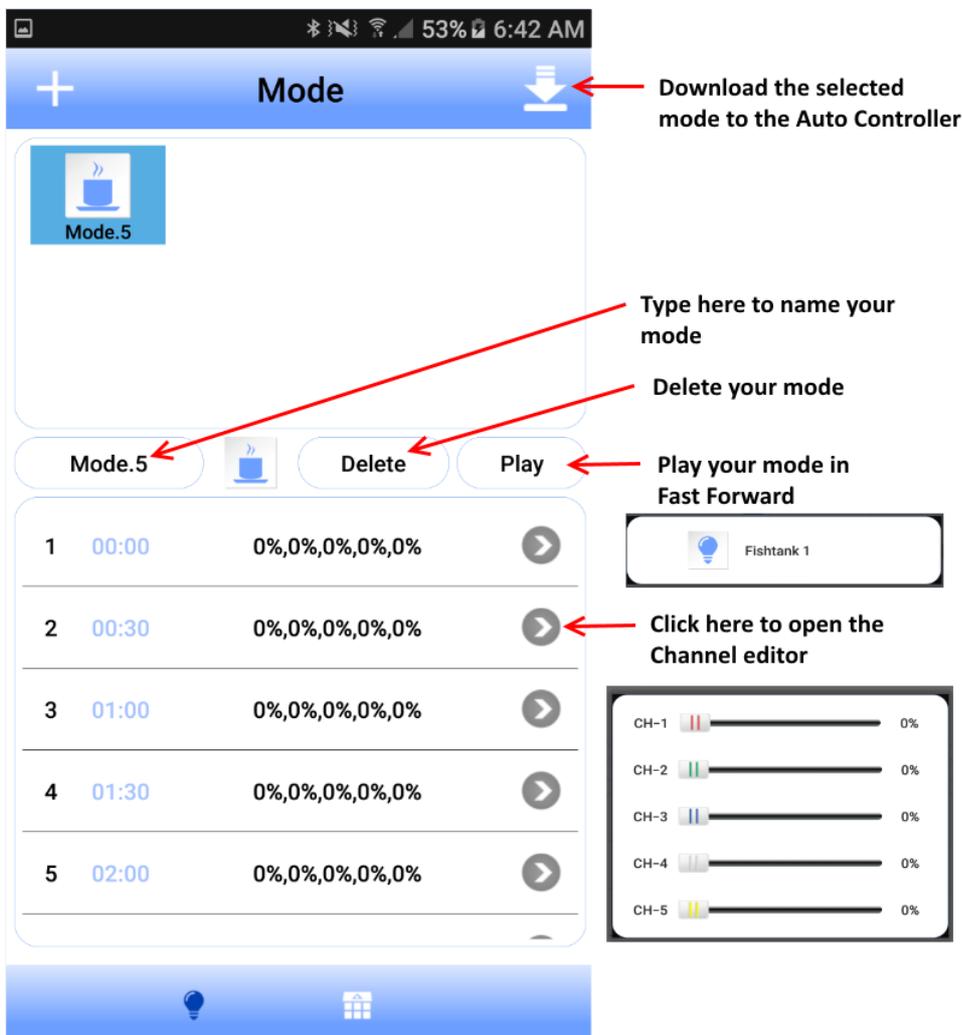
Click on the Exit Configuration screen icon and click on the mode/pattern input screen icon down the bottom.



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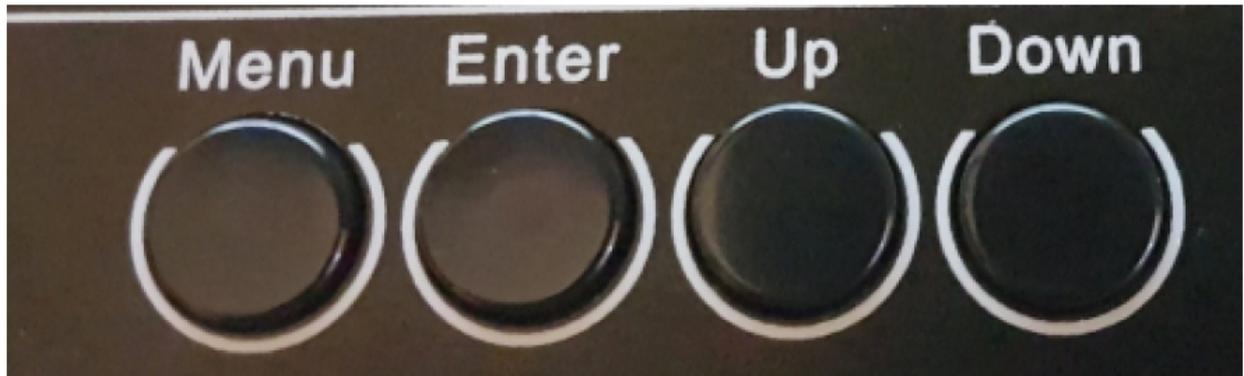


Click the + create mode icon, set the timers and channel intensities, play to simulate, download to the controller when finished.



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Using the buttons on the controller



1. Menu button – Return the smart controller back to the main menu
2. Enter - Select the currently displayed menu option
3. Up/Down – move up and down the options in the menu

Mode menu option

Select which mode (lighting pattern/mode) you want to run

Setup Menu option

Options available here are for setting the time, date and enable/disable sound on the controller.

Run menu option

Options are On or Off. Use the Up/Down buttons to toggle. On means run the selected mode, Off means turn the lights off.