VT Wireless Lights Control

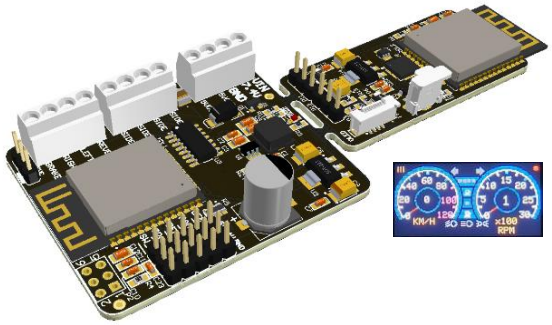
English

Instructions Manual V1.0

Wireless Lights Control System

Model: VT WLC

Version: V1.0



Introduction

The Wireless Lights Control System VT-SLC is an expansion for the VT SLC V1.0 module, developed for scale RC truck models, based on TheDIYGuy999 project https://github.com/TheDIYGuy999.

The light module can be used to control lights, servos and motors on a (truck) trailer or semitrailer. The signals are transmitted wirelessly via RF module. Connecting cables from the towing vehicle to the trailer are therefore not necessary. A separate battery is required in the trailer or semitrailer for the supply voltage of the light module.

The VT-WLC system is made up of two modules, the Truck Tx which takes the control signals from the VT-SLC module and sends them via RF to the Trailer Rx module. The system includes a color LCD screen, where an interactive dashboard is simulated. There are different dashboard designs, which you can load to the Tx module through our web software.

Through the WIFI WEB application embedded in each module, you can configure various parameters, such the Tx with which Rx module(s) can be linked (max. 3 simultaneously), simply configuring a MAC address on each module, light intensity, light modes, etc.

Safety notes:

- Please read this operating manual carefully and keep it for future use.
- Never connect or disconnect wires while the product is connected to a battery.
- The integrated circuits on the sound module are sensitive to electrostatic charge. Therefore, it is important that you don't touch these components.
- The sound module is not suitable for children under 14 years.

Technical data:

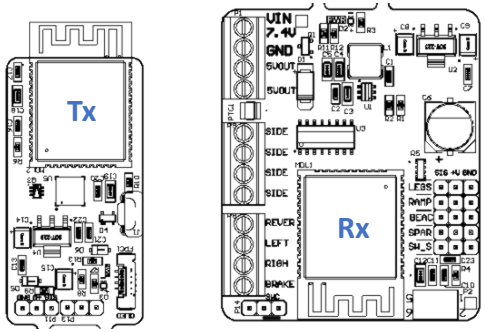
Tx Module:

Voltages:	
Voltage supply:	5 – 6.5 VDC (is powered from the VT-SLC)
Power consumption:	
Operation:	200 – 350 mA
Input signal types:	
Proportional:	PPM (1000 – 2000 ms) (Taken from the VT-SLC)
Supported protocols:	I-BUS, SBUS, SUMD (Taken from the VT-SLC)
Additional ports:	
Programming port:	Mini USB
Another features:	
Protections:	Reverse power in
Working temperature:	0 – 60° C
Relative air humidity:	Max. 85%
Dimensions:	47 x 24 x 15 mm
Weight:	15 g

Rx Module:

Voltages:	
Battery supply:	7 – 8.4 VDC (2S LiPo battery)
Output voltage:	5VDC for leds, **max. 1.5A total** 5VDC max 500mA for proportionals outputs
Power consumption:	
Standby current:	Approx: 100mA
Operation:	Depends on lights ON
Outputs and inputs:	
Servo outputs:	4 outputs (1000 – 2000 ms). Beacons, Legs and Ramps control.
Switching outputs:	8 outputs (negative switching with open collector system), current max. 300mA per output, total current of all outputs is not allowed to exceed 1.5A
Inputs:	Mechanical sensor Magnetic sensor
Another features:	
Protections:	Reverse power in Short circuit in 5VCD output Under voltage monitor
Working temperature:	0 – 60° C
Relative air humidity:	Max. 85%
Dimensions:	44 x 53 x 15 mm
Weight:	30 g

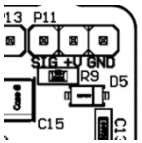
System Overview:



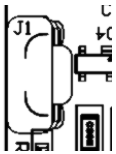
The VT-WLC is divided into different stages:

Truck Tx:

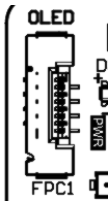
- Power and serial signal in. Here the module is energized and receives the signal from the VT-SLC module. Be careful with the polarity, otherwise the module will malfunction.



- The mini USB port, it for change the dashboard design of the LCD through our web software, for them you need a mini USB cable and a PC with internet.

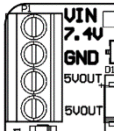


- LCD connector. Here you connect the dashboard LCD to the Tx module.

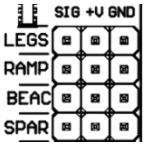


Trailer Rx:

- Power Stage. Includes the DC power input (7 – 8.4 VDC) and the 5VDC outputs for the LEDs. The total current of both 5VDC is max. **1.5A.**

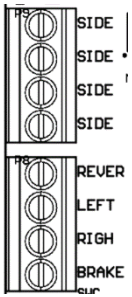


- Proportional and digital outputs. This stage includes the 1000 to 2000 ms proportional outputs for beacon lights, legs controller and ramps controller.

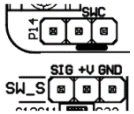


- Leds outputs. Here we have the PWM open collector leds outputs. Each output can drive until 300mA for a total of max.

  1.5A on all outputs. **Very important use a series resistor (220 Ω) with each led**. This means that per each output we can have 20 leds but not exceed a total of 100 leds in all outputs.



- Mechanical switch sensor SWC and magnetic sensor SW_S inputs. In these inputs you can connect a mechanical switch or a magnetic sensor to detect the presence of a trailer. They are optional, for this a jumper is left at the mechanical switch input.



Installation:

For a safe installation of the wireless system, we recommend using Velcro tape on the Tx and Rx bottom cover.
Be careful not to connect components and conductor tracks with any metal parts, this may cause a short circuit, which destroys the module.

For connections, please refer to **wiring diagram**. Whenever you are making connections, do so with the battery disconnected.

To connect the system, the following components are necessary:

- Male to male plug servo cable.
- 2S LiPo battery.
- Wiring Leds with 220Ω series resistor.
- 24 to 28 AWG cable for LEDs wiring.
- VT-SLC module with radio control configured.

VT-WLC Tx Module:

Connection to VT-SLC:
Use the male to male servo cable and connect it to Serial_Out in the VT-SLC (see VT-SLC electric diagram). The Truck Tx module is powered by this cable from the VT-SLC module, and in turn receives the serial control communication.

LCD interactive dashboard:
In the interior cabin, drill a hole with the necessary dimensions to accommodate the LCD. Position the LDC and paste it. Handle the LCD and flex cable with caution.

VT-WLC Rx Module:

Power Battery:

The first, is the main power supply **VIN - GND** terminals, where a DC voltage of 7 – 8.4VDC is connected (2S LiPo battery), we recommend using a 2S battery.

Proportional outputs connections
Connect to these outputs the legs controller, ramps controller and the RC controlled rotary beacons. This are powered by the internal DC/DC converter with 5VDC and max. 500mA.

Connection of leds outputs
Connect the truck leds to these outputs, depending on the function, each led or group of leds has its assigned output. The VT-WLC Rx module is always switching the negative pole to each output and thus to the connected load. The negative pole is always connected to the load (see wiring diagram). The positive pole of each led must be connected to one of the 5VDC outputs.

The switched voltage at the outputs (with 100% intensity) is always as high, 5VDC. For this reason, a resistor of 220Ω must be placed in series with each LED. The % of intensity of the leds can be changed through the WIFI WEB APP embedded in the module.

Mechanical switch or magnetic sensor:
A mechanical switch or magnetic sensor can optionally be connected to Rx module and activated by the WIFI embedded APP. In this case, the RF connection is only established if the mechanical switch is ON or there is a magnet near the magnet sensor.

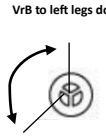
Radio configuration:

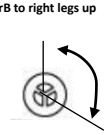
The VT-WLC system use the same serial control signal of the VT-SLC module. So, the radio setup is the same. For more detail see the VT-SLC user manual.

Function sequences:

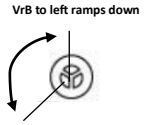
Lights sequences:
The light sequence for indicators, sides, stop and reverse lights, and RC controlled beacon lights is the same as in the VT-SLC module, for more detail see the VT-SLC user manual.

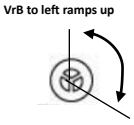
Legs control:
With the 5th wheel unloked (see the VT-SLC user manual), you can up or down the legs with de knob VrB. The right or left direction to raise and lower may vary from this manual, since this may depend on the controller you use.





Ramps control:
With the hazards activated (see the VT-SLC user manual), you can up or down the ramps with de knob VrB. The right or left direction to raise and lower may vary from this manual, since this may depend on the controller you use.



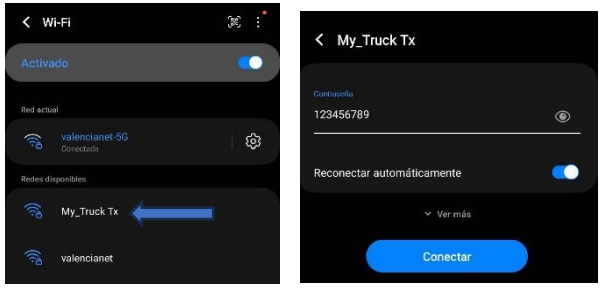


WiFi configuration via 192.168.4.1:

The VT-WLC modules allows you to configure various parameters through an embedded web application. This is possible since the VT-WLC opens a WIFI network that you can access and when you are in it, through your browser, enter http://192.162.4.1 and you will access the application to configure your module.

Network access:
You can access the WIFI network form a Cell, Tablet or PC. Look for the My_Truck Tx (Tx Module) or My_Trailer (Rx module) WIFI network and access it with the password 123456789.

VT-WLC Tx Module:
For the Tx module enter as follows:



Then access your web browser and type the url http://192.162.4.1.

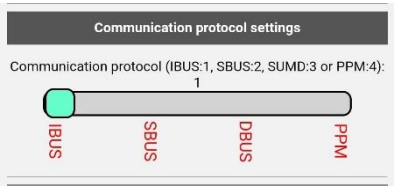
Now you can config your VT-SLC module.

WIFI settings:

Here you can change the SSID name and password of the WIFI network of the module. We recommend changing the SSID name, because by default all our modules have the same name. For example, “Vics_Hauler Tx”.

Communications protocol settings:

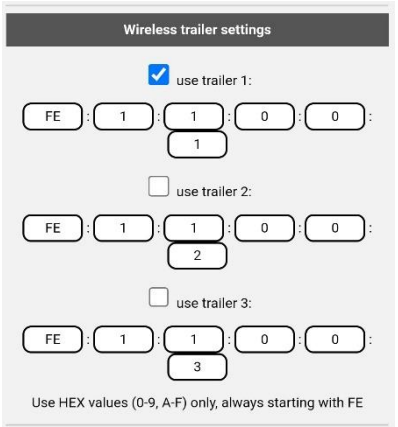
Select here the protocol (i-BUS, SBUS, SUMD or PPM) that you are going to use in your Rx radio receiver using the slider. If you have selected a different protocol than the Rx, the module will not work.



MAC settings:

In MAC settings you can add until 3 MAC’s trailers and select which trailer use. You can use until 3 trailers or semitrailers simultaneously.

It is very important to change these default numbers with your own numbers, always leaving the one in the first “FE” box. For the system to work, the selected MAC number(s) must exactly match the MAC of the Rx modules used.

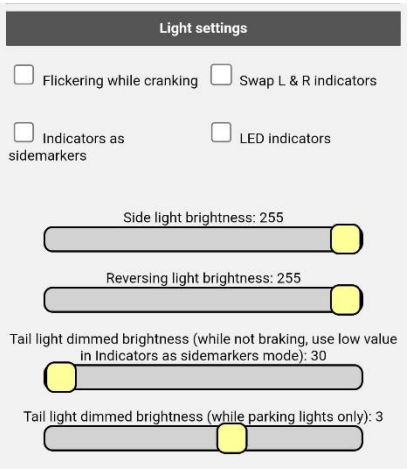


Light settings:

Here you can setup different light modes and change the brightness of the lights.

- Flickering while cranking, the lights will flicker a bit during engine cranking, otherwise they are just a bit dimmed.
- Swap L & R indicators, select ff you want to swap L & R indicators.
- Indicators as sidemarkets, the indicators are used as side markers as well. This is commonly used in US trucks.
- Led indicators, indicators are switching "hard" (without fading like an incandescent bulb), if it selected (was LED_INDICATORS).

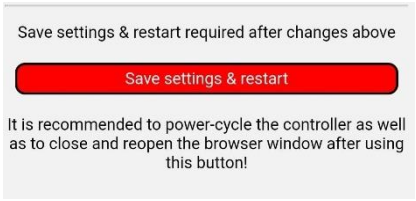
You can also adjust the brightness of the lights.

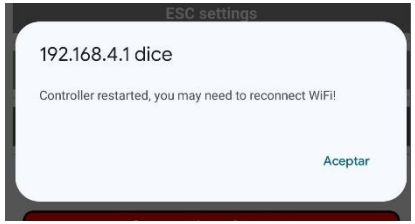


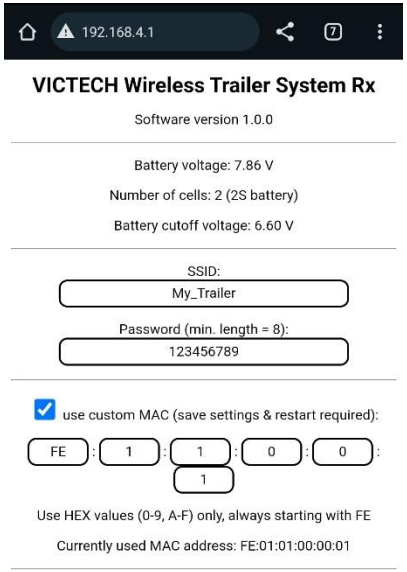
Save settings and restart:

All changes except WIFI and communications protocols settings will be made immediately when you make them, but if you want to save them in the module you must press the save settings and restart.

When you do, the module will restart, and your changes will be saved.



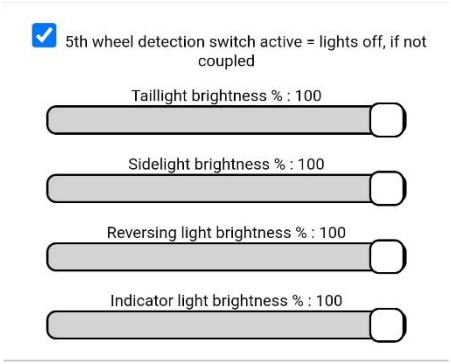




Light settings:

Here you can change the brightness of the lights.

You can also activate the dependence of a mechanical switch or magnetic sensor so that when the trailer is uncoupled, its lights are off.



VT-WLC Rx Module:

For the Rx module enter as follows:

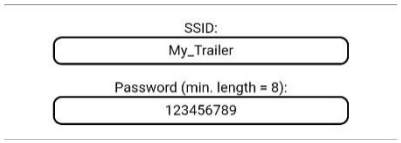
Then access your web browser and type the url http://192.162.4.1.

The module has battery protection. When the voltage battery
When the battery voltage is lower than 6.6V DC, the module will turn off automatically.

Now you can config your VT-SLC module.

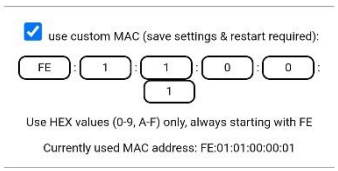
WIFI settings:

Here you can change the SSID name and password of the WIFI network of the module. We recommend changing the SSID name, because by default all our modules have the same name. For example, “Vics_Trailer Rx”.



MAC settings:

In MAC settings you can change the MAC’s trailer number.

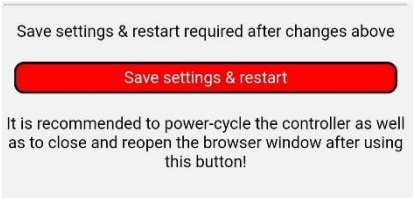


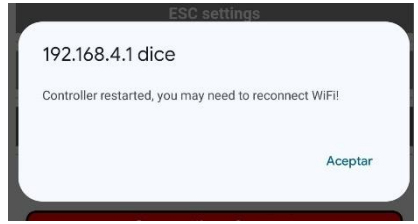
It is very important to change these default number with your own number, always leaving the one in the first “FE” box. For the system to work, the MAC number must exactly match with the MAC selected in the Tx module.

Save settings and restart:

All changes except WIFI and communications protocols settings will be made immediately when you make them, but if you want to save them in the module you must press the save settings and restart.

When you do, the module will restart, and your changes will be saved.

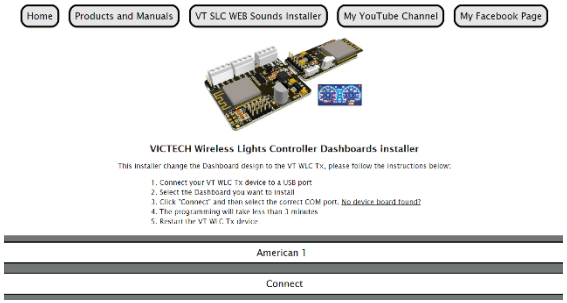




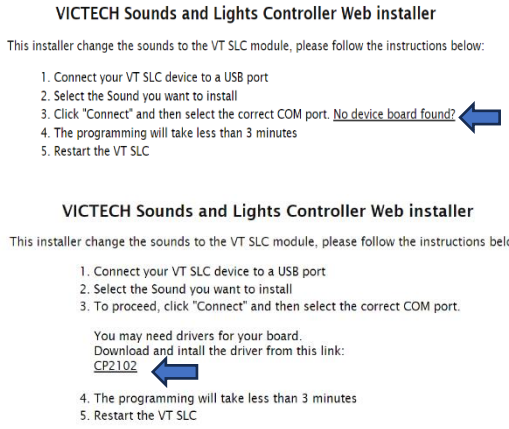
Upload interactive dashboard to the VT-WLC Tx module:
Changing the interactive dashboard is done through our WEB software, which you will find in one of the tabs on our VIC TECH website. For them you must have a mini USB cable and a PC with internet.

First, connect the module to the PC with the cable, it is not necessary to power the VT-WLC module, since it is powered by USB. The USB only powers the part of the module necessary to carry out the update.

Select VT WLC WEB Dashboard installer:



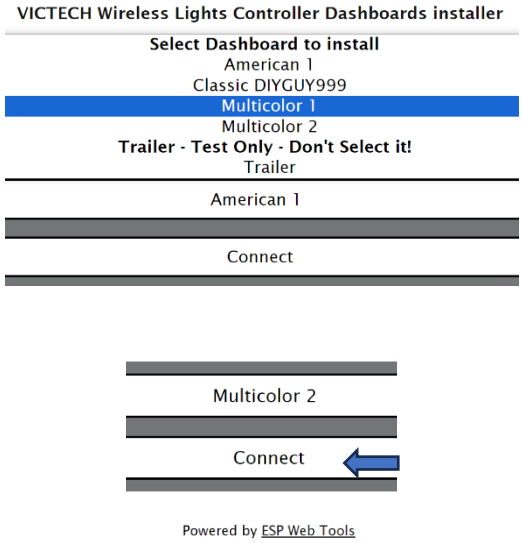
If is your first time, you need install the USB module drives.



This link will take you to the manufacturer's download section. Download and install CP210x VCP windows drivers.

Now you can install the sounds to your module.

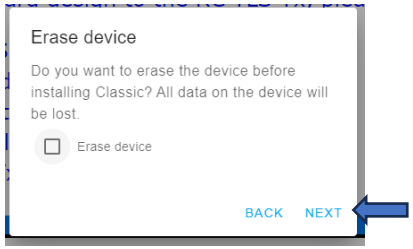
Select the dashboard you want to install and then click connect.



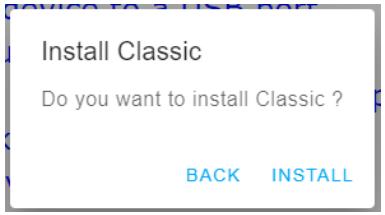
A window should be displayed where the COM port where the module is located appears. Select the port and click connect. If for some reason the port does not appear or an error window appears, verify that the USB cable is properly connected, the drivers installed and restart the browser.

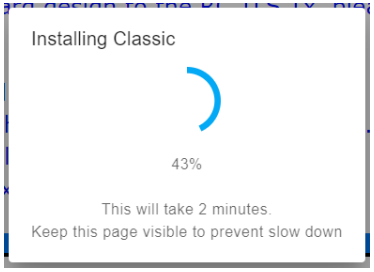
Now click on install the sound you chose.

If you want to erase all the parameters of the module, select Erase device (this is useful if you lost, for example, the WIFI network password or if you want to put all the parameters that come by default), otherwise do not choose it, click next.

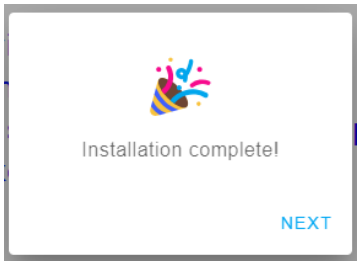


Now click on "Install" and it will begin to install the module. Do not refresh or close the browser at this point. If at any time it gets stuck or an error appears, check the USB cable and restart the browser.





Wait until the installation complete pop-up window appears. Now your module is updated.



Troubleshooting:

VT-WLC Tx:

Trouble(s):	Possible Causes	Solution
The module does not respond to any radio command and PWR led is OFF.	No power was supplied from VT-SLC module.	Check cable connections and the VT-SLC is ON.
	Polarity cable inverted.	Turn ON the ESC.
	Problem with the radio system.	Check the radio system.
The module does not respond to any radio command and PWR led is ON.	Radio receiver Rx is not binding.	Binding the RC Rx with the radio system.
	RC Rx receiver connected incorrectly in the VT-SLC module.	Check the connections between the RC Rx and module.
	Different protocol between the RC Rx receiver and the one configured in the module.	In the module, through the WIFI configuration application, select the correct protocol between i-BUS, SBUS, SUMD or PPM.
Trailer Rx doesn't work.	MAC address different between Tx and Rx modules.	Check the MAC address. These must be the same.
	VT-WLC Rx battery low.	Check the Rx battery voltage, must be higher than 6.6VDC.

VT-WLC Rx:

Trouble(s):	Possible Causes	Solution
The module does not respond to any radio command and PWR led is OFF.	Low battery level.	Check the voltage battery level.
	Bad connection at the power input. .	Check the Power In connections.
The module does not respond to any radio command and PWR led is ON.	Battery voltage level is low.	Check the Rx battery voltage, it must be higher than 6.6VDC.
	Problem with the mechanical switch or magnetic sensor, if the 5th wheel detection switch is activated in the WIFI APP.	Check the mechanical switch or magnetic sensor are working fine. Or if you are not using them, verify that you have disabled the 5th wheel detection switch functionality in the WIFI APP.

Thank you very much for trusting Vic Tech and purchasing our products. For more information visit our WEB page as well as our social networks.

VIC TECH
2023