CIRCONTROL
Mobility & eMobility

Raption 50 Series

User Manual

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User Manual

COPYRIGHT INFORMATION

Here is your guide to use and configure Raption 50 Series

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This manual contains all the necessary information for the proper use of the Charge Point and helps the user to perform charging with a high level of efficiency and safety.

The CIRCONTROL Charge Point provides the fastest way to charge electric vehicles nowadays. Its innovative and original design provides a quick and intuitive way for recharging the electric vehicles, according to the current regulations. It can carry out loads into alternating current (AC) and direct current (DC), either individually or simultaneously.

The unit integrates an intuitive user interface and easy to use, it is an 8" touch screen by which all necessary for recharging operations are performed. It has been designed vandal-proof in compliance with all requirements regarding IK indices. In addition, the Charge Point also has a communications system that allows monitoring and control remotely via OCPP and use XML parameters and information while the recharging is being performed. This feature provides an easy way to integrate the Charge Point into superior systems that allow to the owner or system manager monitor it.

- Compliant with IEC 61851; Electric vehicle conductive charging system (IEC 61851-1, IEC 61851-22 and IEC 61851-23).
- Compliant with IEC 62196; Plugs, sockets-outlets, vehicle connectors and vehicles inlets, Conductive charging of electric vehicles (IEC 62196-1, IEC 62196-2 and IEC 62196-3).
- Compliant with CHAdeMO certification.
- Meets the CCS specification, DIN SPEC 70121. ISO/IEC 15118 ready.
- Directives: 2014/53/UE, Radio and Telecommunication Terminal equipment; 2014/30/UE, Electromagnetic Compatibility (EMC); 2014/35/UE, Low Voltage directive.
- RFID complies with ISO 14443A/B

So, hello!

Read carefully all the instructions before using the Charge Point.

Important safety instructions

- Read all the instructions before using and configuring the Charge Point.
- Do not use the Charge Point for anything other than electric vehicle charging modes are expected in IEC 61851.
- Do not modify the Charge Point. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with electrical safety regulations according to your country.
- Do not make repairs or manipulations with the unit energized.
- Only trained and qualified personnel should have access to the electrical parts inside the Charge Point.
- Check the installation annually by qualified technician.
- Remove from service any item that has a fault that could be dangerous for users (broken connectors, caps that don't close...).
- Use only Circontrol supplied spare parts.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
- Adaptors or conversion adapters and cord extensions set are NOT allowed to be used.

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A Main features

• HMI: there is a TFT colour touch screen of 8 inches, is the interface between the Charge Point and the user. Provides detailed information for starting and stopping the charge, including information concerning the recharge that is in progress (charge state of the battery, charging time remaining, etc).

• RFID: there is a radio frequency reader that allows user authentication to proceed with the recharging of the electric vehicle. At the discretion of the facility operator, the user's recharge also can be allowed or denied.

• User Management: provides a database that associates users with one or more identification cards, you can also assign consumption and charging logs.

• Beacons light: by a LED beacons located above connectors, it is indicated the charging status of the socket/connector.

• Ethernet: the unit allows communicate using TCP / IP on an Ethernet network, giving flexibility to the system operator and management of the Charge Point.

• Remote monitoring and control in real-time 3G/4G: it can be done a remote device connection or make OCPP integrations thanks to the integrated modem. In addition, by using a standard Web browser, you can access to the Charge Point to monitor the status of recharge and even run a Start / Stop remote.

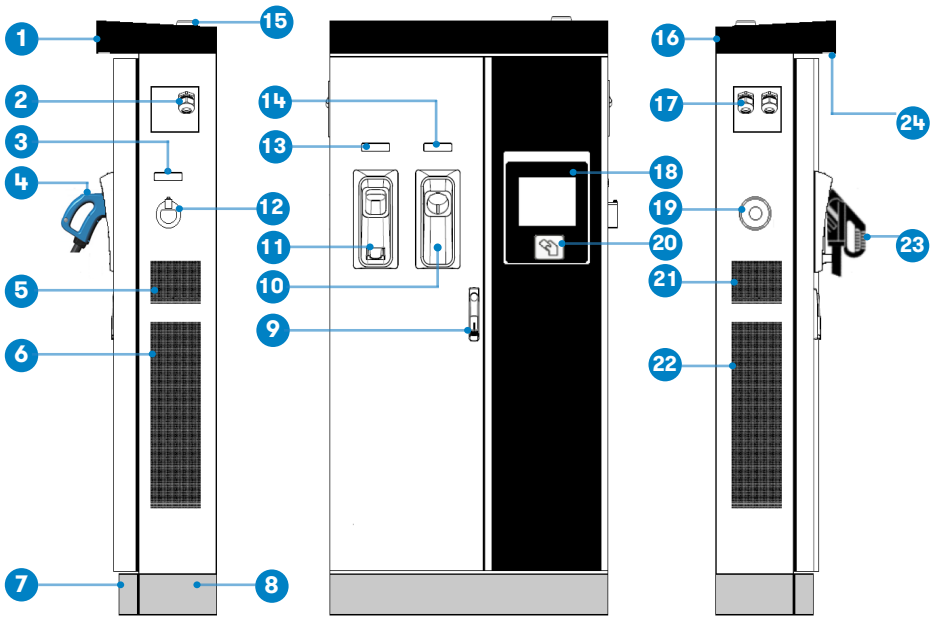
• Historic charge transactions: the system is able to generate charging process reports, according to the historical database of the Charge Point.

• Energy metering: Integrated meter, independent for AC and DC, is measuring power and energy consumed by the EV during a charge session.

• OCPP integration: OCPP is a communication protocol between the Charge Point and management platforms (BackOffice) for comprehensive management of charging. This integration allows, among other things, management and user authentication as well as a variety of parameters to monitor during a recharge.

Features

B Overview

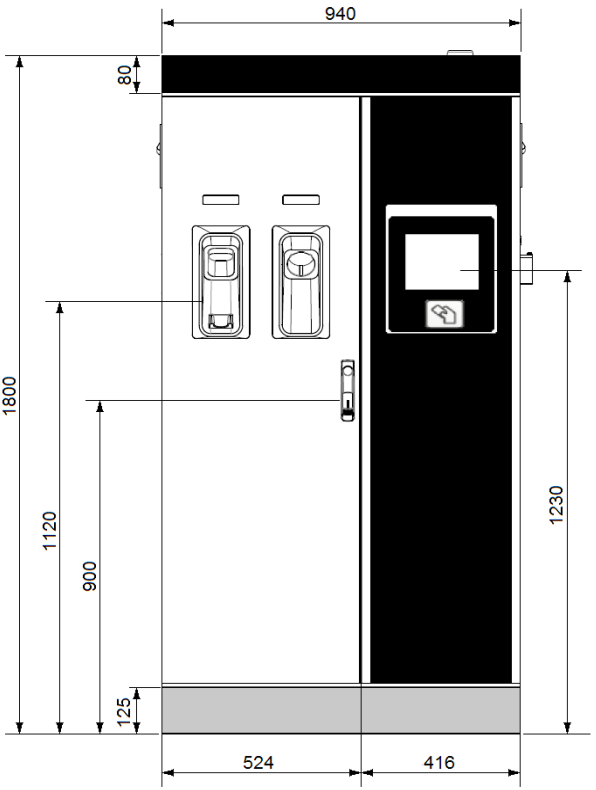


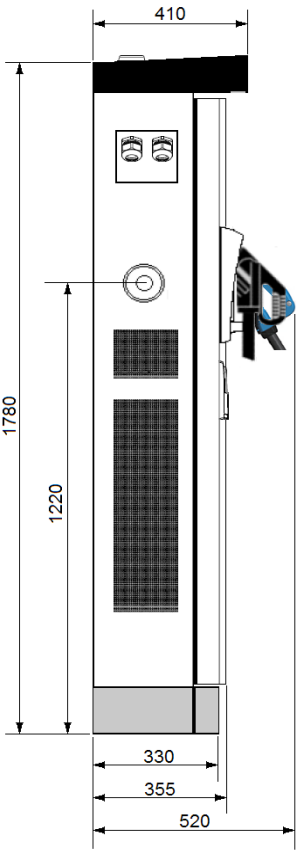
1- Cover	2- Exit AC cable	3- AC light beacon	4- CHAdeMO connector	5- Unit air inlet
6- Power Modules air outlet	7- Decorative front panel	8- Decorative rear panel	9- Handle	10- CHAdeMO holder
11- CCS holder	12- AC holder or socket 32A *	13- CCS light beacon	14- CHAdeMO light beacon	15- Antenna
16- Unit air outlet	17- Exit DC cable	18- Touch screen	19- Emergency button	20- RFID reader
21- Unit air inlet	22- Power Modules air inlet	23- CCS connector	24- Courtesy light	

(*) Depending of the model, the components can vary.

Dimensions

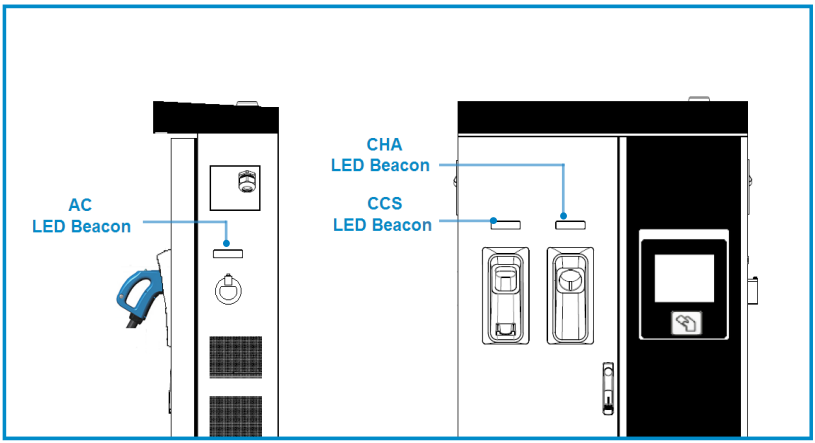
- Units specified in millimeters:





D Status Beacon lights

Over each connector there is a beacon light, it indicates the state of charge in which the socket/connector is located.



Colour	Status	Description
Green	Available	The connector or socket is available to start a charging session
Blue	Charging	The connector or socket is performing a charging session
Cyan	Booked (OCPP 1.5)	The connector or socket has been booked by system operator through OCPP
Red	Error	The Charging Station indicates that the emergency button has been activated or some error has occurred. Check the HMI Screen and follow the instructions

E Connectors

The Charge Point is equipped with three connectors of different load; these can recharge a large range of vehicles:

• AC (Mode 3): Type 2 tethered cable (63A/44kW) or Type 2 socket (32A/22kW)*

• DC (Mode 4): CHAdeMO, Tethered cable, 3m. Until 125 A / 50 kW

• DC (Mode 4): Combo 2 (CCS), Tethered cable, 3m. Until 125 A / 50 kW

(*) Depending of the model, the components can vary.

The following considerations, before using this Charge Point, must be considered.

Of the three types of charges that the Charge Point can perform, it can carry out:

• Only AC

• Only DC CHAdeMO

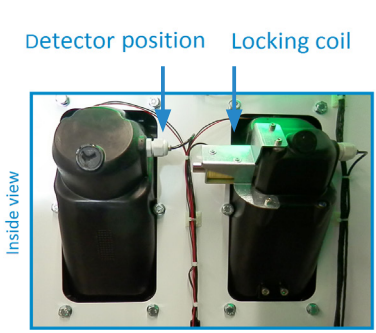
• Only DC CCS 2

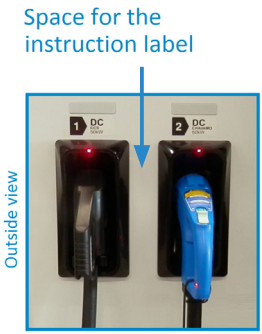
• Simultaneous, AC and one DC connector at the same time

Watch Out!!

If your Charge Point is equipped with the **'Mechanical connector locking'** accesory at DC holders, is not possible to pull back the connectors from holders without first unlocking it.

There are one label placed between the CHAdeMO and the CCS holders explaining about this function. Follow the instructions given in this label and the HMI screen.



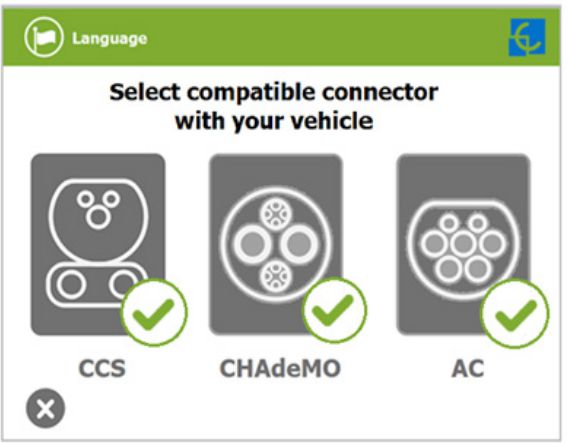


Also, there is one Led over each holder indicating the lock state:

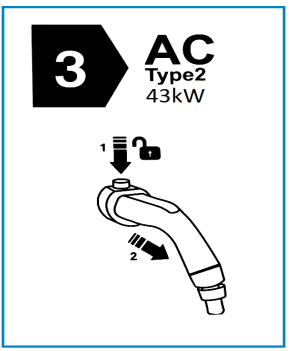
- **Red** → Connector locked

- **Off** → Connector unlocked

The connectors will be delivered right in the moment than the user push over the 'Connector touching button' when choose the option in the HMI screen:



At the AC side for every Charge Point (It is not an optional device) there is a manual lock for keeping the connector, follow the indications shown on the label in order to remove the AC connector.



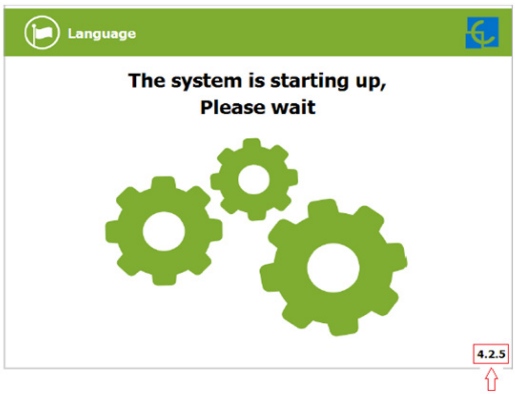
1- Push over the upper plastic button in order to release the connector.

2- Pull back the connector.

3

A General

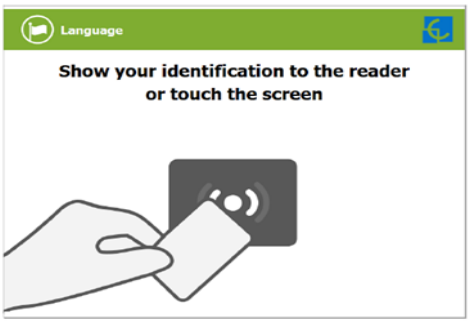
The first time the Charge Point is powered on, the system will take around 10 seconds for starting up, the screen will show next image:



In the lower right corner, it shows the firmware version. After that 10 seconds have passed, the first screen that appears is the screensaver,

Tap over this screen, and the HMI will skip to the next screen:

How to use it ?

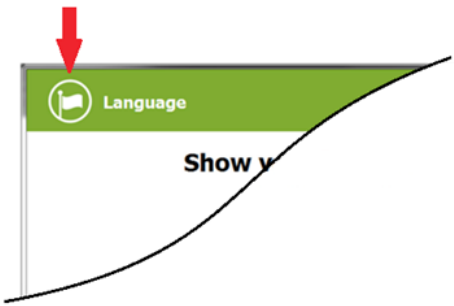


At this new screen, the Charge Point is asking for showing the identification card or touch the screen, as you can see there are two options.

The first option, showing the identification card, is the option that will let to initiate a 'Charging session' to the user that has been registered in advance or has the identification card.

The second option, touch the screen, is only to get information about the connectors status and the charging process so as to know the Charge Point availability but you cannot start or do any action over the currently charging session.

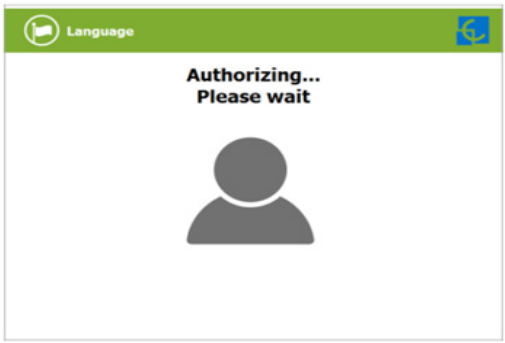
Also, at this screen and during all the process is possible to change language, pressing on the top of the screen over the **'Flag'** touch symbol:



Next screen will appear, press over your language's flag:

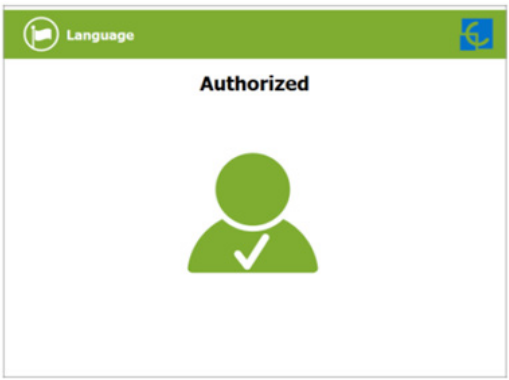
B Starting a charging session

- Once you have shown your identification card, the HMI will show next screen:

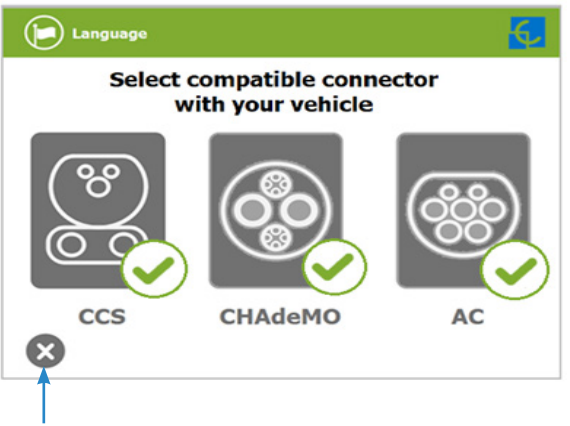


Wait while Charge Point performs identification

- If everything is correct and the user is authorized, the HMI will show next screen:



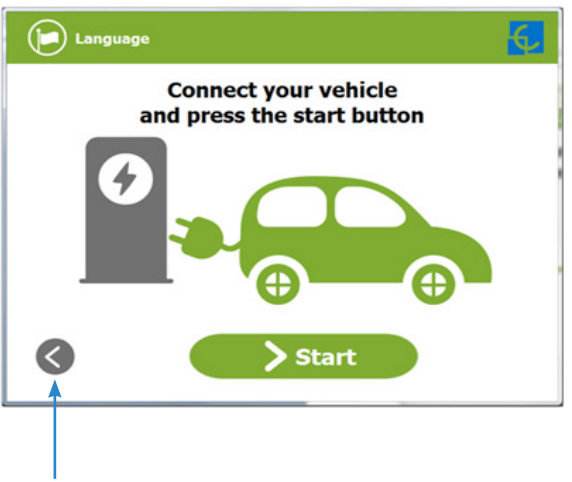
- Now, the user can choose the connector, always depending of the sort of vehicle that you have and if the connector status is available:



At any time is possible to press over this button in order to go back to the "identification screen".

- Once you have chosen your connector, instruction screens will appear successively, follow the instructions:

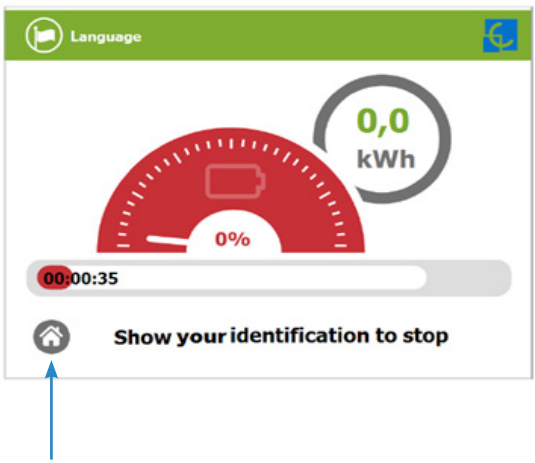
1- Connect your vehicle and press the 'Start' button



At any time is possible to press over this button in order to go back to the previous screen.

2- Checking vehicle connection... Please wait

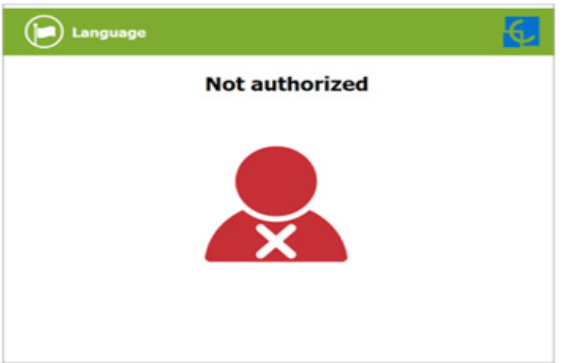
- In a few seconds, the charging session will start and the HMI will show the charging process.



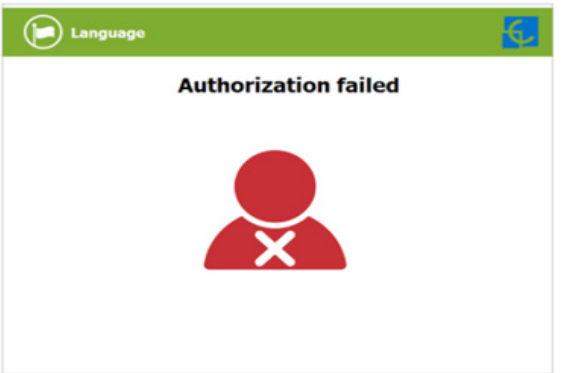
Pressing over this button, the screen will go back to the "identification screen".

Special events starting a charge

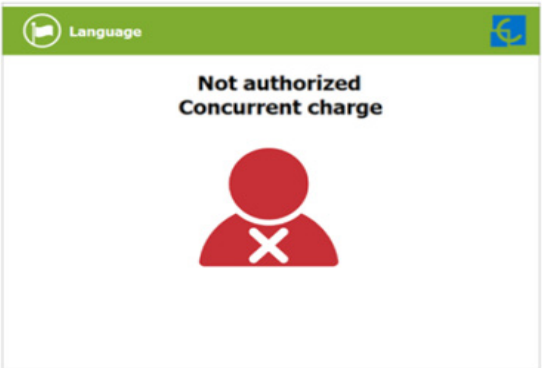
A - "Not authorized": some Charge Points could be working under the supervision of the main management system, called Back Office. It can generate a whitelist in order to register new users, manage charging sessions, etc. If the user is not authorized, the HMI will show the following message:



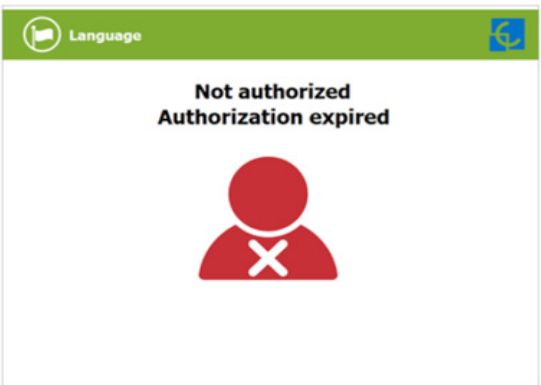
B - "Authorization failed": if there is some communication problem with the Back Office right at the connecting time:



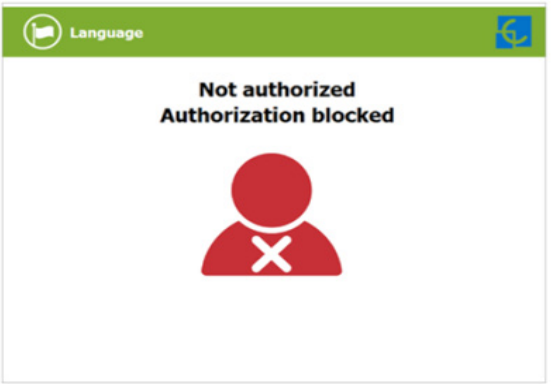
C - "Not authorized, Concurrent charge": in this case, the identifier is already involved in another charge transaction:



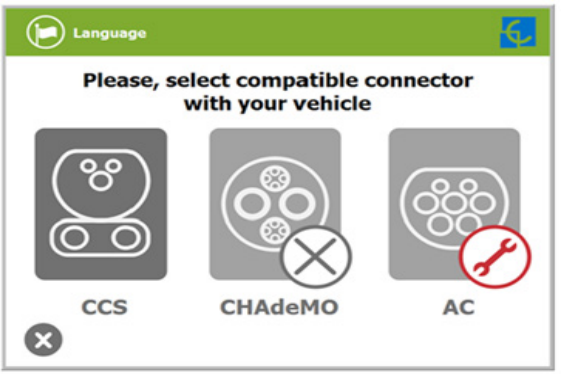
D - "Not authorized, Authorization expired": is possible that the back office has put deadline to your identification card and this date is already expired:



E - "Not authorized, Authorization blocked": is possible that the back office has blocked temporarily your identification card.

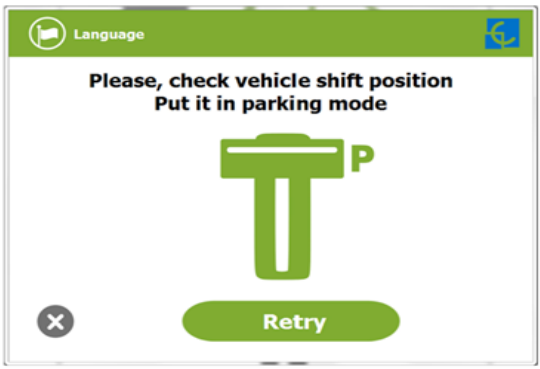


F – After the user has been properly authorized and just at the moment that has to choose the connector, the screen will show the connectors status, it could appear some problem. It is possible to use the connector painted in dark grey but it will be impossible to use any connector with another symbol or light grey, like next:

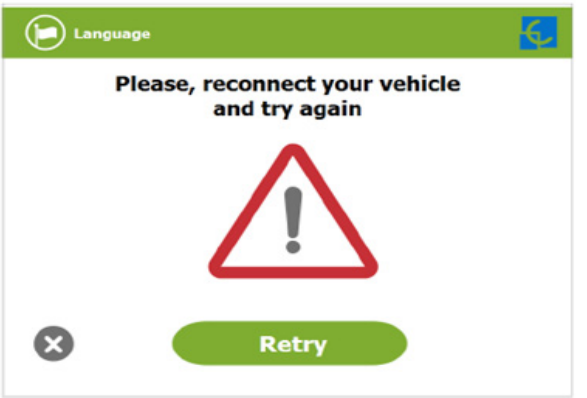


G - Another issue that can occur is **“Vehicle not detected”**, unlock the connector, connect again and press over **‘Retry’** button.

H – Almost all vehicles cannot charge if the shift lever is not in parking mode position. This situation can be detected for the Charge Point and it will be displayed by HMI as **“Please, check vehicle shift position, put in parking mode”**, after press over **‘Retry’** button.

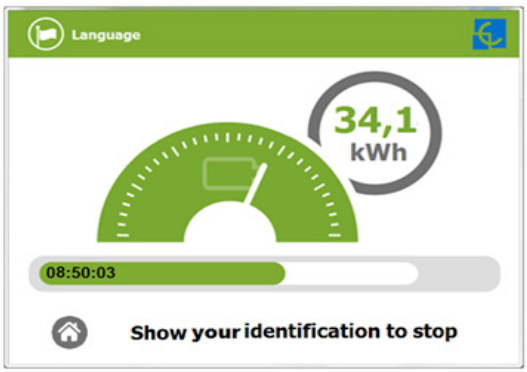


I – Is possible that the problem than appears is not a concrete one, the HMI will show next screen, press over **'Retry'** button.

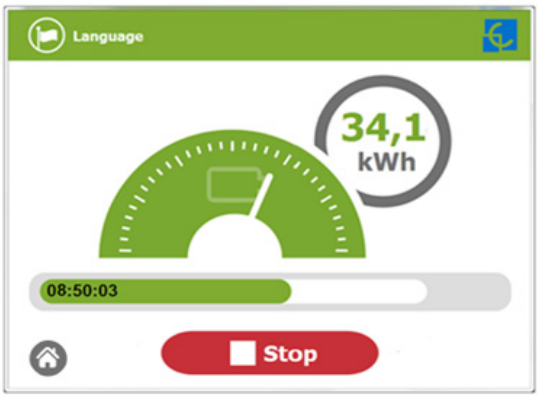


D Stopping a charging session

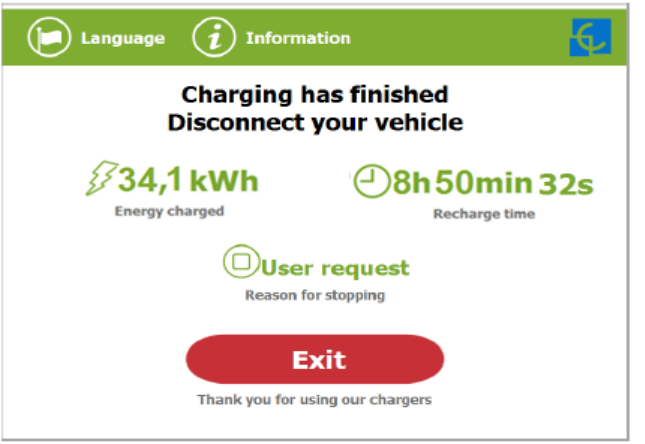
- The HMI is showing the charging process and next message **“Show your identification to stop”,** the session can be stopped by the same user that has started it.



- After showing your identification card, the Charge Point will allow you to stop the charging session, press over the **‘Stop’** touch button:



- Once you have stopped the charging session, the HMI will show the summary screen, press over the **'Exit'** touch button and disconnect your vehicle:

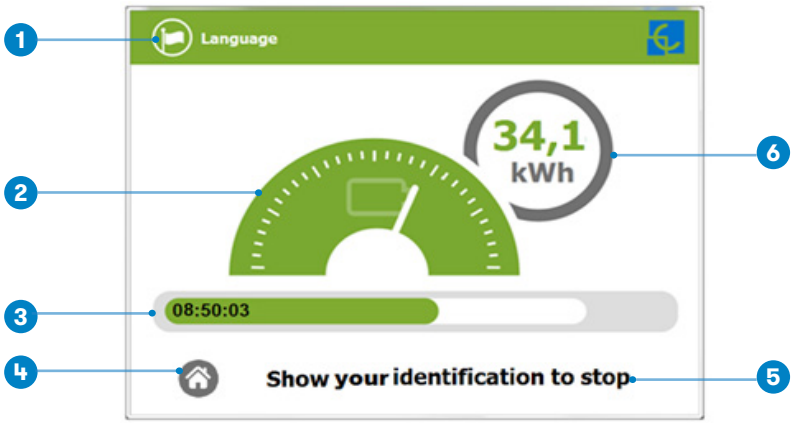


E Charging information

Depending of the kind of charging that it has been done either AC or DC, the HMI screen can show different process information.

There are different information for AC (mode 3), DC (CCS) and DC (CHAdeMO); the following images show the basic charging process information.

1 — CHARGING AC (MODE 3)



1- *Language button:* pressing over this button it is possible to change the HMI language.

2- *Analog process indicator:* at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.

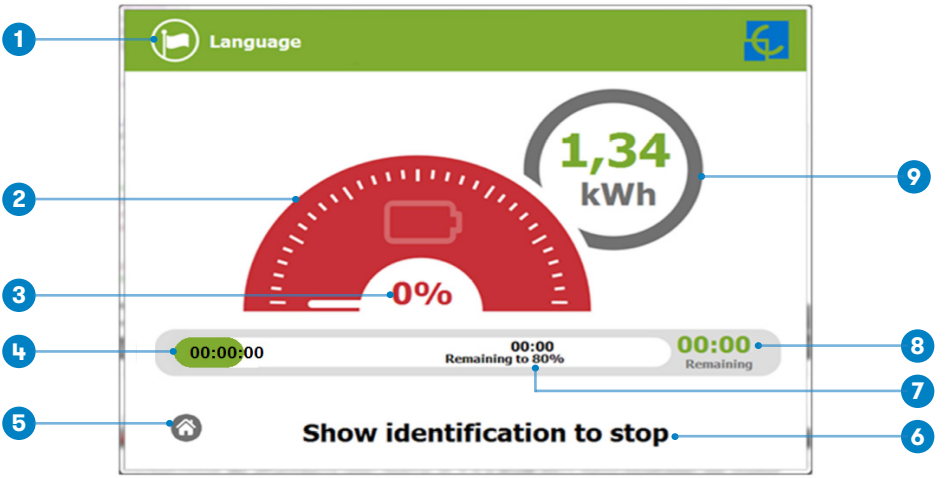
3- *Charge time with status bar:* charging time elapsed so far.

4- *House touch button*: it goes back to the "identification screen".

5- *Additional information:* current status, errors, battery status, etc.

6- *Energy charged:* energy supplied to the vehicle so far.

2 — CHARGING DC (CCS)



1- *Language button:* pressing over this button it is possible to change the HMI language.

2- *Analog process indicator:* at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.

3- *Battery SOC:* It indicates the current battery state of charge.

4- *Charge time with status bar:* charging time elapsed so far.

5- *House touch button:* it goes back to the "identification screen".

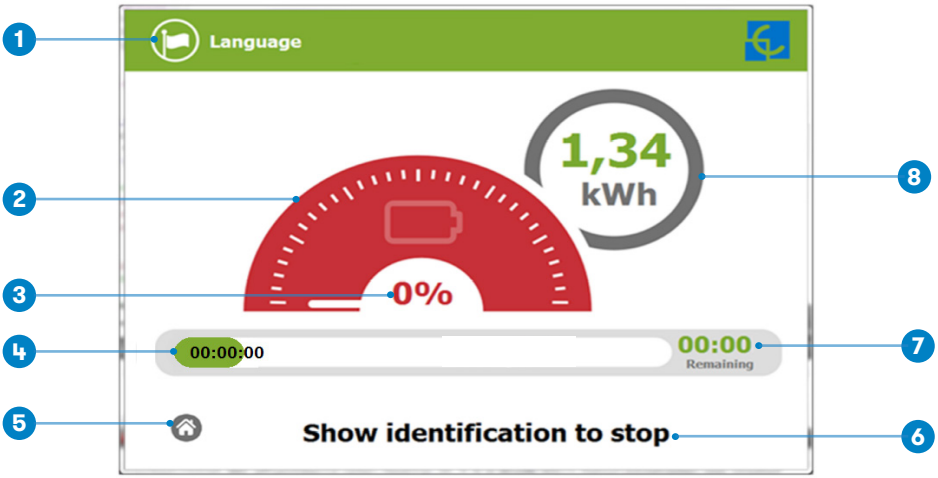
6- *Additional information:* current status, errors, battery status, etc.

7- *Remaining time until 80 %:* remaining time until getting 80 % of the SOC.

8- *Remaining time until 100 %:* remaining time until 100 % of the SOC.

9- *Energy charged:* energy supplied to the vehicle so far.

3 — CHARGING DC (CHADEMO)



1- *Language button:* pressing over this button it is possible to change the HMI language.

2- *Analog process indicator:* at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.

3- *Battery SOC*: It indicates the current battery state of charge.

4- *Charge time with status bar:* charging time elapsed so far.

5- *House touch button:* it goes back to the "identification screen".

6- *Additional information:* current status, errors, battery status, etc.

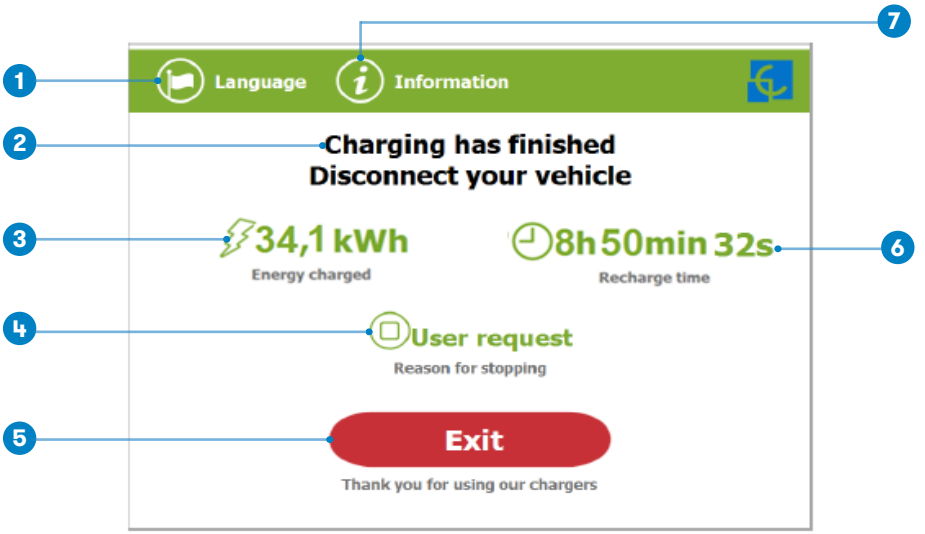
7- *Remaining time until 100 %:* remaining time until 100 % of the SOC.

8- *Energy charged:* energy supplied to the vehicle so far.

F Charging summary

The following image appears when EVs have finished charging or the session has been interrupted by the user. There are different summary screen, depending of you are charging on AC (mode 3) or DC (CCS / CHAdeMO).

1 — SUMMARY SCREEN FOR AC (MODE 3)



1- *Language button:* pressing over this button it is possible to change the HMI language.

2- *Process instructions:* different instructions can be displayed.

3- *Energy charged:* total energy charged at the end of the charging session.

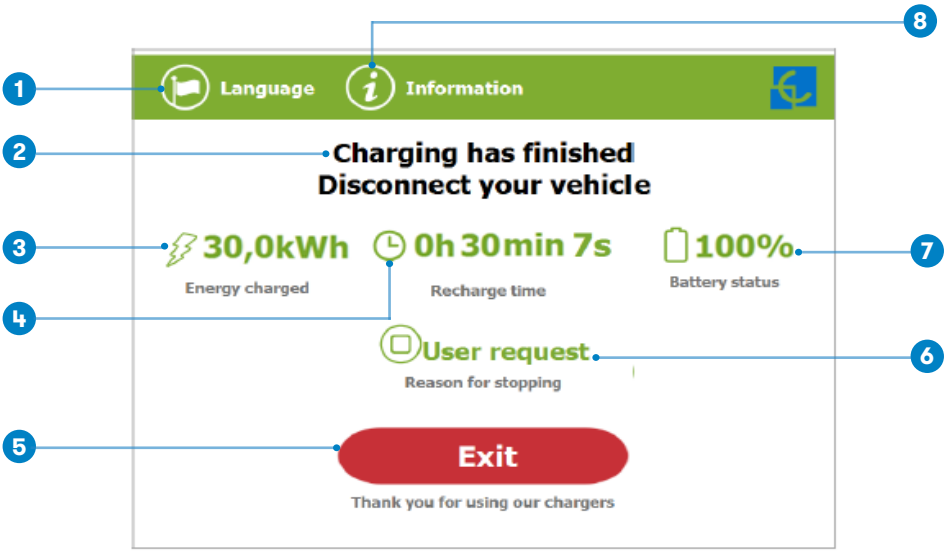
4- *Stop reason:* It shows why the charging session has been stopped.

5- *Exit button:* It has to be pressed in order to finish the charging session. After pressing, the HMI screen will go back to the "identification screen".

6- *Recharge time:* total recharging time at the end of the charging session.

7- *Information button:* pressing over this button you can get information about the charging session, per example the "reason for stopping" or another one.

2 — SUMMARY SCREEN FOR DC (CCS / CHADEMO)



1- *Language button:* pressing over this button it is possible to change the HMI language.

2- *Process instructions:* different instructions can be displayed.

3- *Energy charged:* total energy charged at the end of the charging session.

4- *Recharge time:* total recharging time at the end of the charging session.

5- *Exit button:* It has to be pressed in order to finish the charging session. After pressing, the HMI screen will go back to the "identification screen".

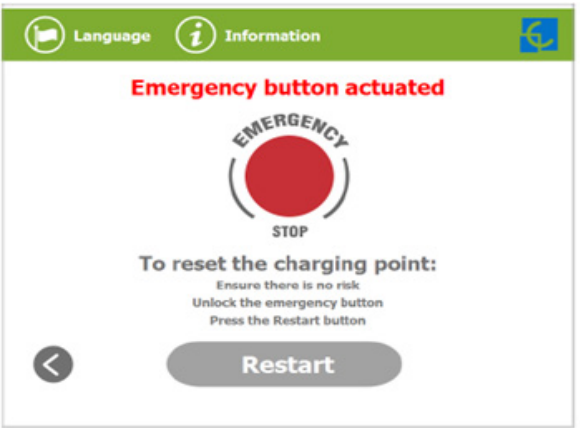
6- *Stop reason:* It shows why the charging session has been stopped.

7- *Battery SOC*: It indicates the final battery state of charge at the end of the charging session.

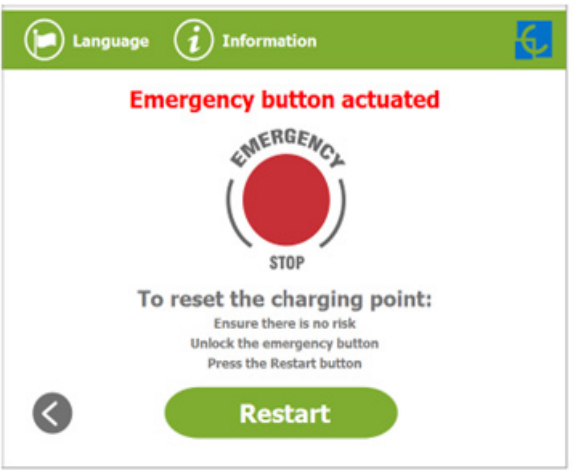
8- *Information button:* pressing over this button you can get information about the charging session, per example the "reason for stopping" or another one.

Emergency button

If for any reason the Emergency button has been pressed, the beacon lights are in red and it will not be possible to do any charge. All the power modules will shut down in order to protect the user and the own Charge Point. The HMI screen will remain power up in order to show the instructions.



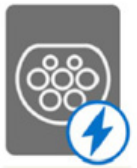
At first moment, the **'Restart'** touch button will be in light grey and it will not be able for pressing, once you have unlock the emergency button, the **'Restart'** touch button will be in green and able to use.



Connectors status

The HMI screen shows a different symbols over the connector pictures, as you can see below:

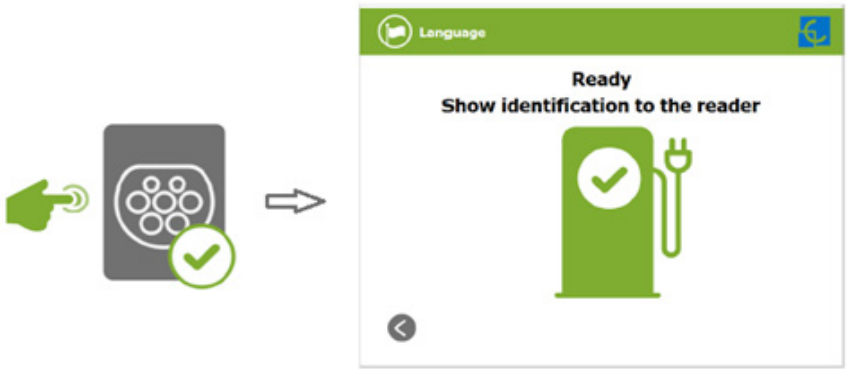
	- It means that there is not any problem in this connector and is ready for use.
	- This connector is out of service for any technical reason. Press over **'Information'** touch button in order to get more information about it.
	- The Charge Point is out of service because the emergency button has been pressed. This fact affects all the connectors at the same time.
	- The connector is disabled. The Charge Point is out of order due to some maintenance job or because the Back office has decided to stop it.

	- The user cannot use this connector because another user is already using it.
	- This connector has been reserved and only will be able to use per the user that has made the reserve. **NOTE:** if the user that has reserved the Charge Point is yourself the charging session will start normally, if not, the Charge Point will not be able to charge until the date and time displayed have expired.
	- Only for DC connectors. As the Charge Point only can performance one DC charging session at the same time, CCS or CHAdeMO, it could be possible to find one of these connectors with this symbol because the other is charging or has been reserved.

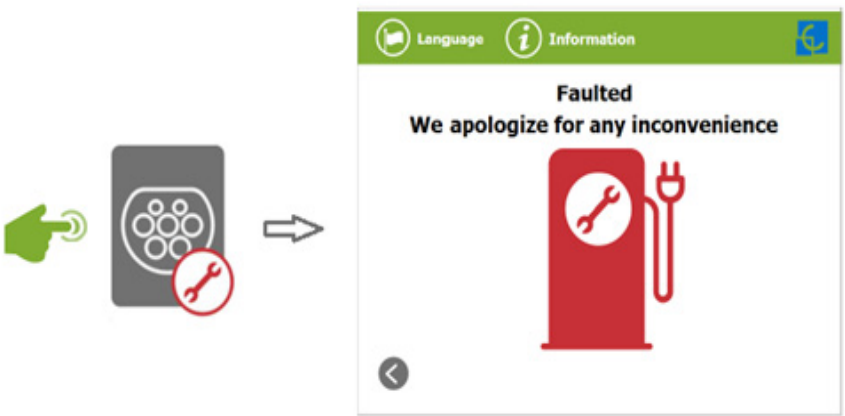
Consulting the connectors status

It is possible to press over each connector picture to get more information about the status:

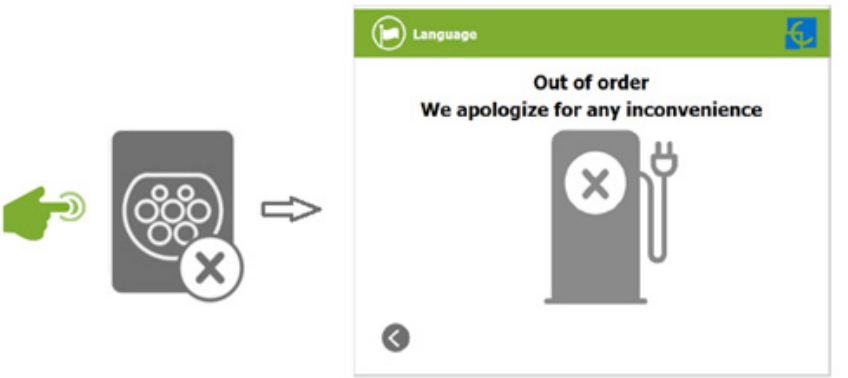
1 — CONNECTOR ABLE



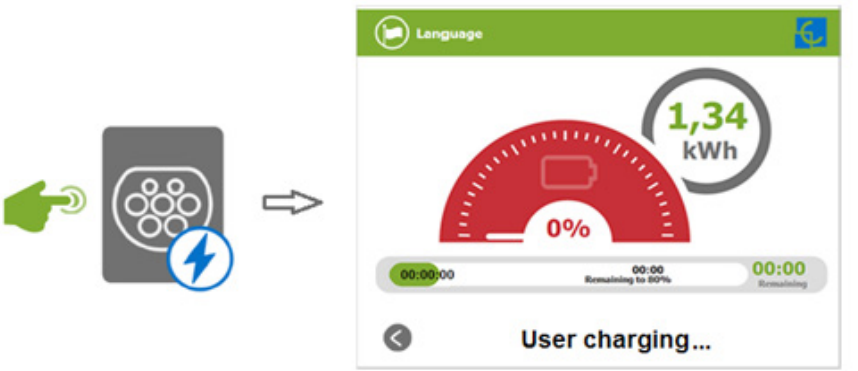
2 — ERROR CONNECTOR



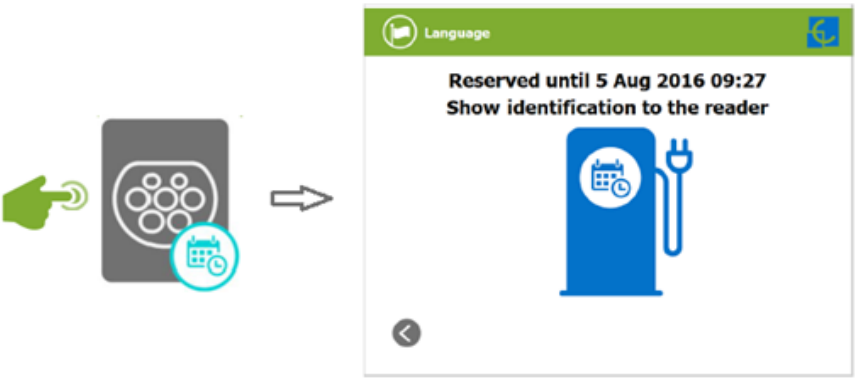
3 — CONNECTOR DISABLE



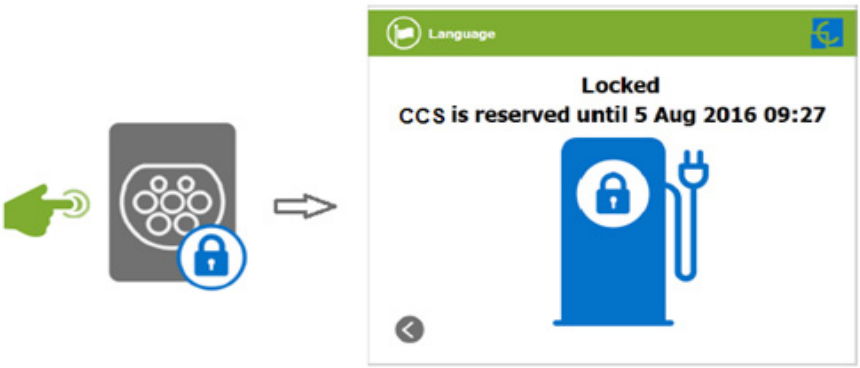
4 — CONNECTOR IN USE



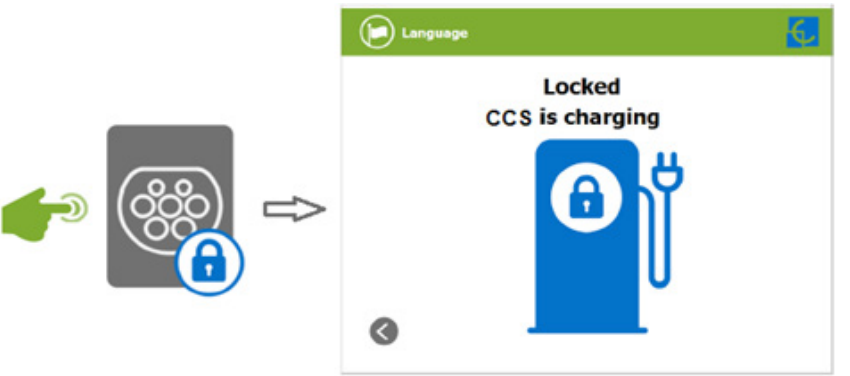
5 — CONNECTOR RESERVED



6 — CONNECTOR BLOCKED PER RESERVED



7 — CONNECTOR BLOCKED PER CHARGING



J Errors

The Charge Point can report about different sort of errors, it can be from different parts or devices from it.

When the **'Error screen'** appears, the **'Information'** touch button has to be pressed in order to see the error message, as you can see below:

4

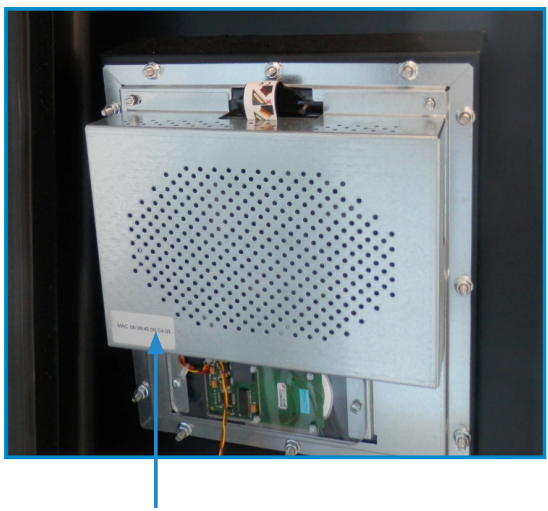
A Introduction

The Charge Point can be configured and monitored to establish owner preferences or specific setup using integrated Ethernet communication port allocated in HMI screen device (see below).

Once Service PC is configured as bellow procedure and connection established with the Charge Point, direct access to the main setup page will be showed.

The Charge Point is shipped from the factory with default network setting of "DHCP enabled". It means that the Charge Point will try to obtain an IP address from a DHCP server available on the network.

Step by step below guide detailed setup an IP address to the Charge Point in case there is no DHCP server available on the network.



The Ethernet port is located at the bottom left side of the rear part of the HMI screen.

How to configure it ?

B What is needed?

Below table shows, hardware and software needed to setup and IP address to the Charge Point.

	- Service PC running Microsoft Windows, at least Windows XP .
	- UTP Cable (Crossover recommended)
	- IPSetup.exe (*)
	- CirCarLife Scada Client (*)

(*) In order to get the software needed, you can download it from http://circontrol.com/downloads/ or contact with ps-support@circontrol.com

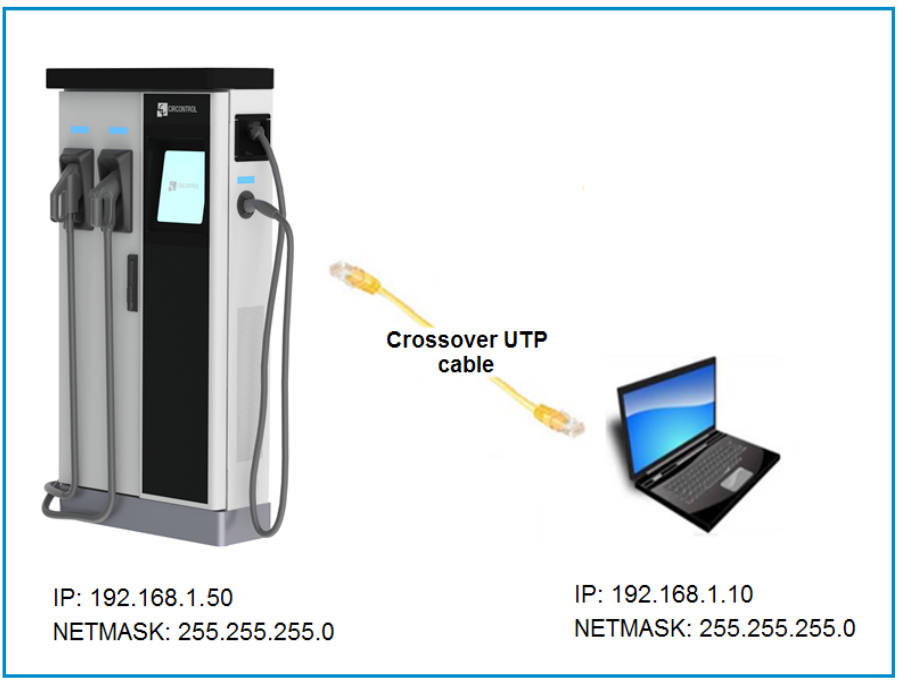
Network topology

Connecting the Service PC with Charge Point needs to be done with static IP address and TCP/IP v4 protocol.

Next section shows how to do this configuration. Below image shows Ethernet connection topology and the IP addresses used in this guide as example.

For Service PC → IP: 192.168.1.10 NETMASK: 255.255.255.0

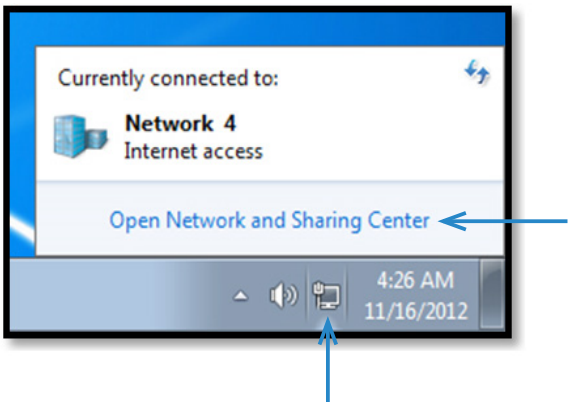
For Charge Point → IP: 192.168.1.50 NETMASK: 255.255.255.0



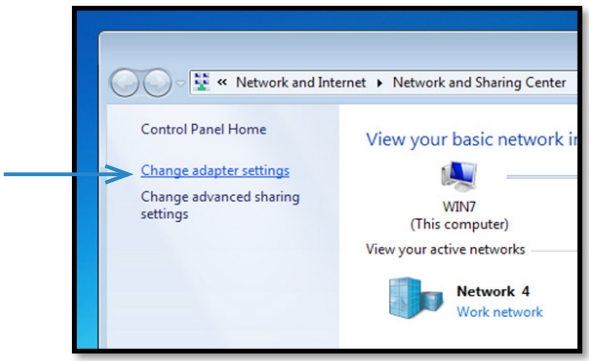
D LAN connection procedure

This section provides a step-by-step guide to connect the Service PC to the Charge Point in order to see real-time status.

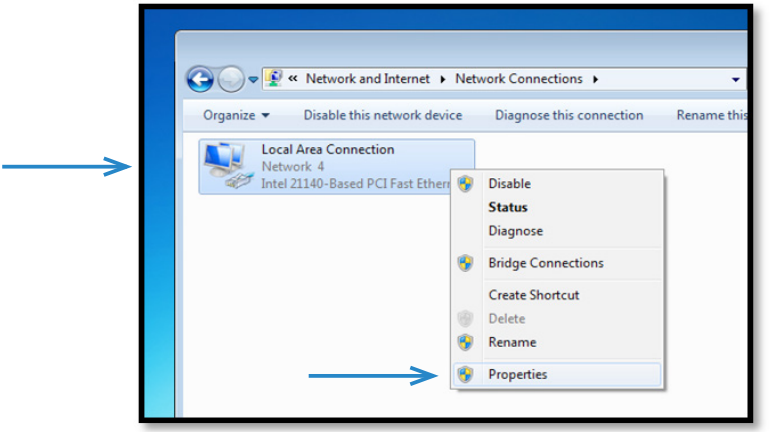
1- On the Service PC click over the **'Network icon'** next to the clock of the taskbar, and click on **'Open Network and Sharing Center'**



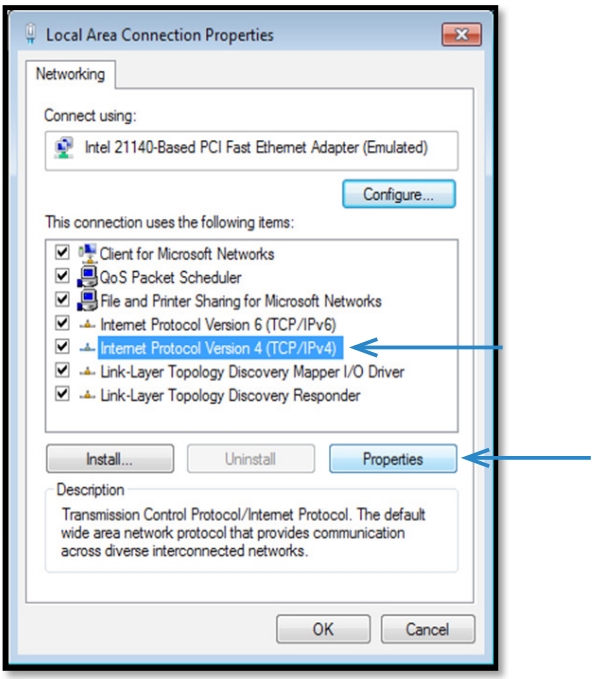
2- On the left pane, click on **'Change adapter settings'**



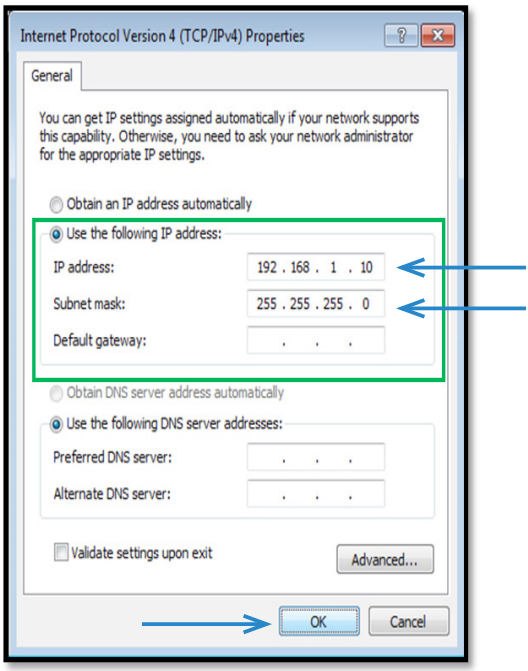
3- Make right click on **‘Local Area Connection’** and then click on **‘Properties’**



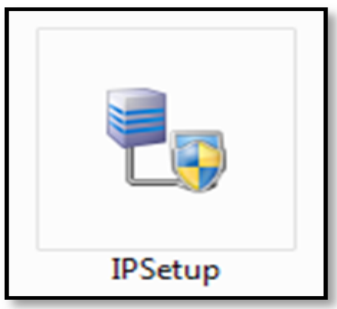
4- Select **‘Internet Protocol Version 4 (TCP/IP)’** option and click on **’Properties’**



5- Setup IP address and subnet mask like as shown here below and click **'OK'** twice to complete the assigning IP address process to the computer.

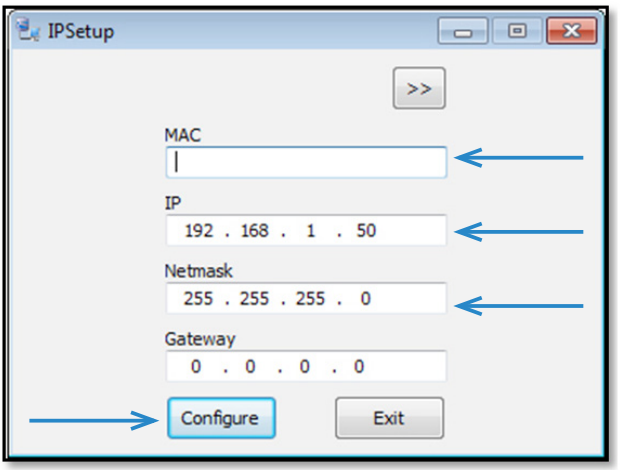


6- Now execute **IPSetup.exe** software provided on the Service PC



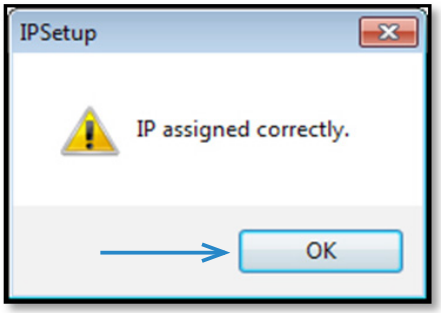
7- Enter the following parameters and click on **'Configure'**

- MAC of the Charge Point (see label on the cover's screen)
- IP address: i.e.(192.168.1.50)
- Netmask: i.e. (255.255.255.0)
- Gateway: leave default settings.

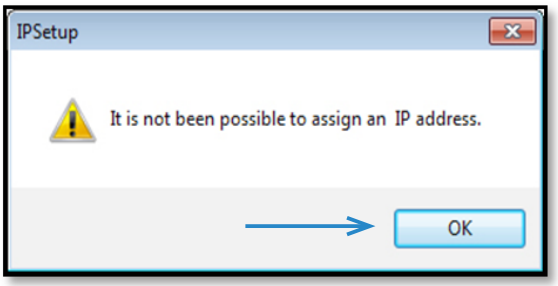


8- Wait 30 seconds approximately until the process is complete.

9- The process will complete when the following message appears, click on **'OK'**



10- If the message shown is the next one, check the following parameters and click on **'OK'**



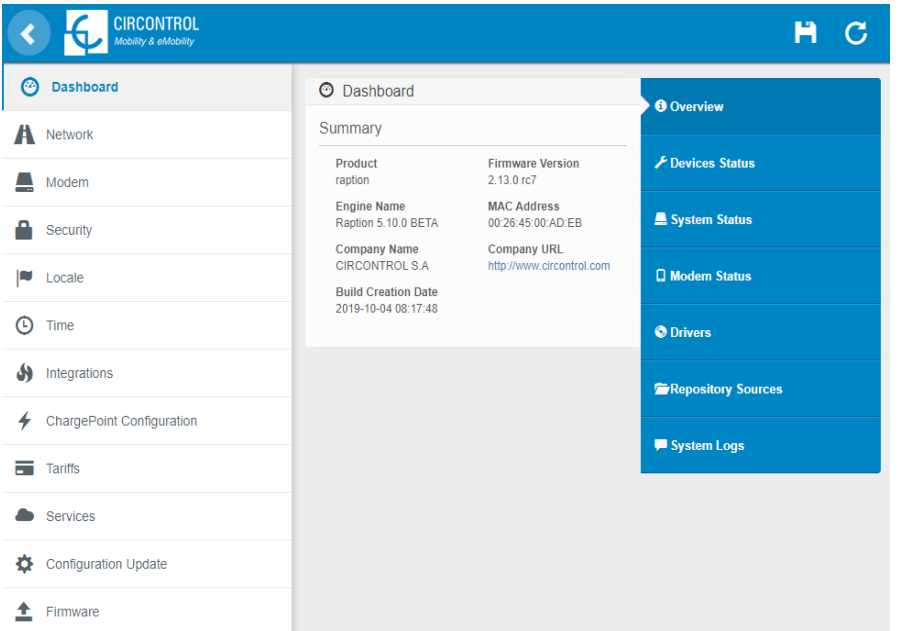
- Check IP address entered.
- Check the MAC of the device entered.
- Try with another UTP CAT5e cable.

E Setup Webpage

Setup webpage allows managing network setup, upgrading devices and other options.

Once the Service PC is already connected to Charge Point, it is possible to open Setup Webpage throug the IP entered. In the example shown in the previous section, it has been set 192.168.1.50

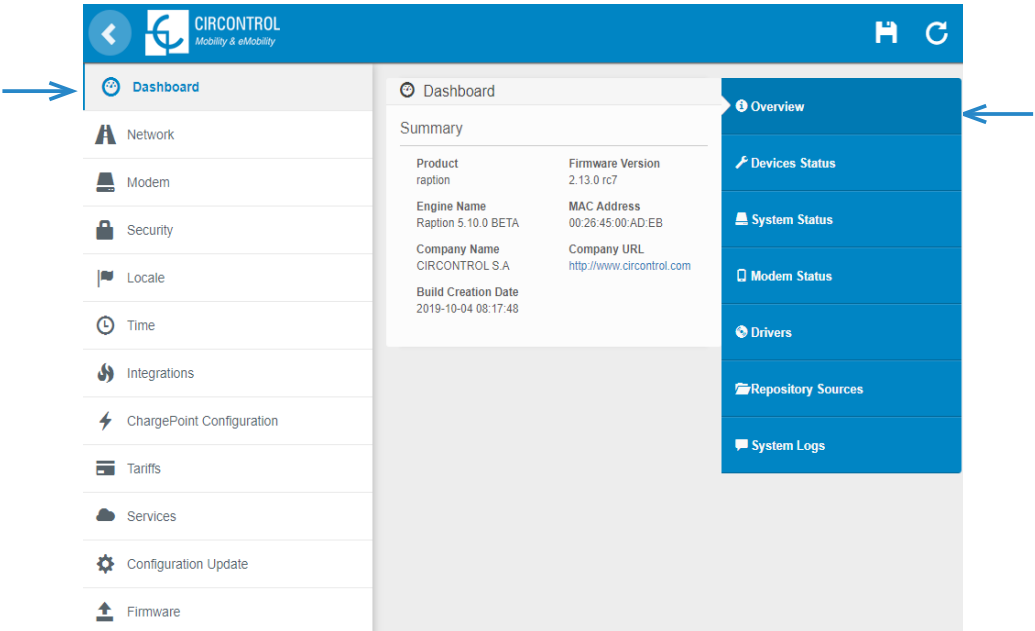
Open a web browser on the service PC and enter this IP, next image will appear.



The webpage opened shows the **'Dashboard' Overview'** as a main screen, but there are many more options. In the next points, they will be explained.

A) Dashboard

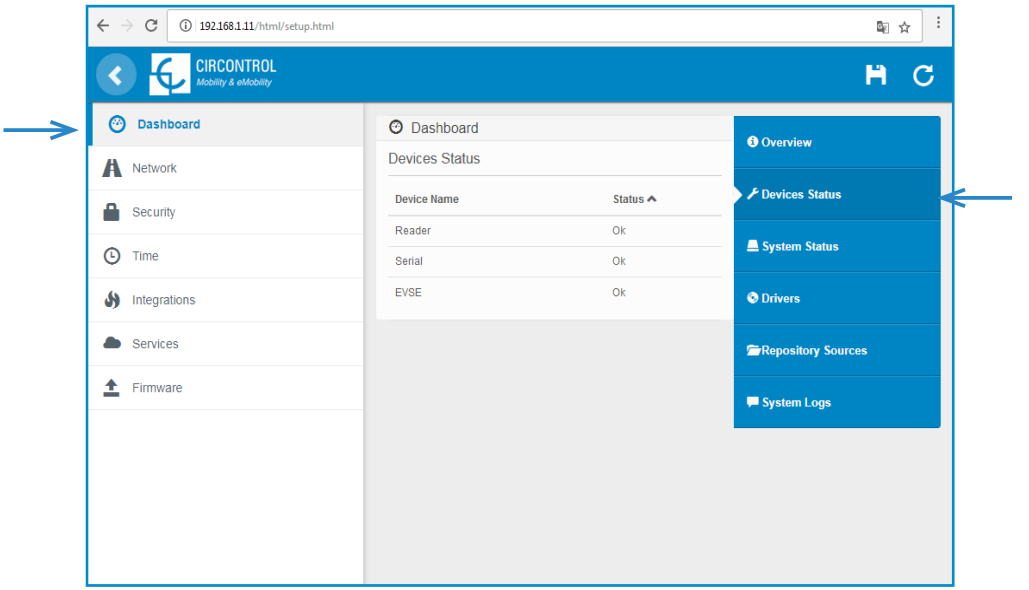
OVERVIEW



As a relevant information, the **'Summary'** shows:

Value	Description
Firmware version	Version of the firmware currently installed in the Charge Point
MAC Address	Identifier of the network card of the Charge Point

DEVICES STATUS

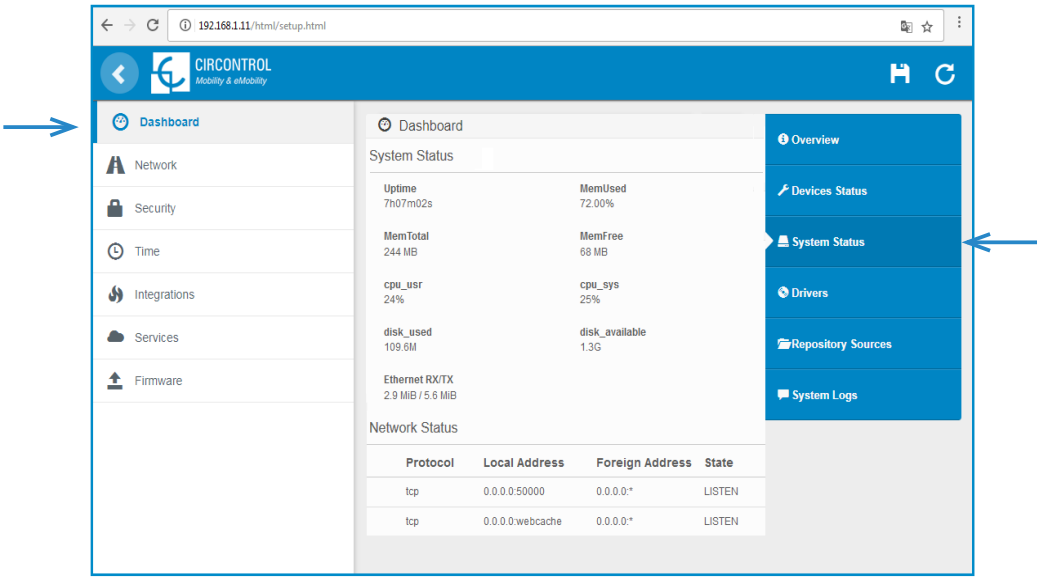


In this section, it can be consulted the status of the devices which are communicating via RS-485.

As a relevant information, the **'Devices Status'** shows:

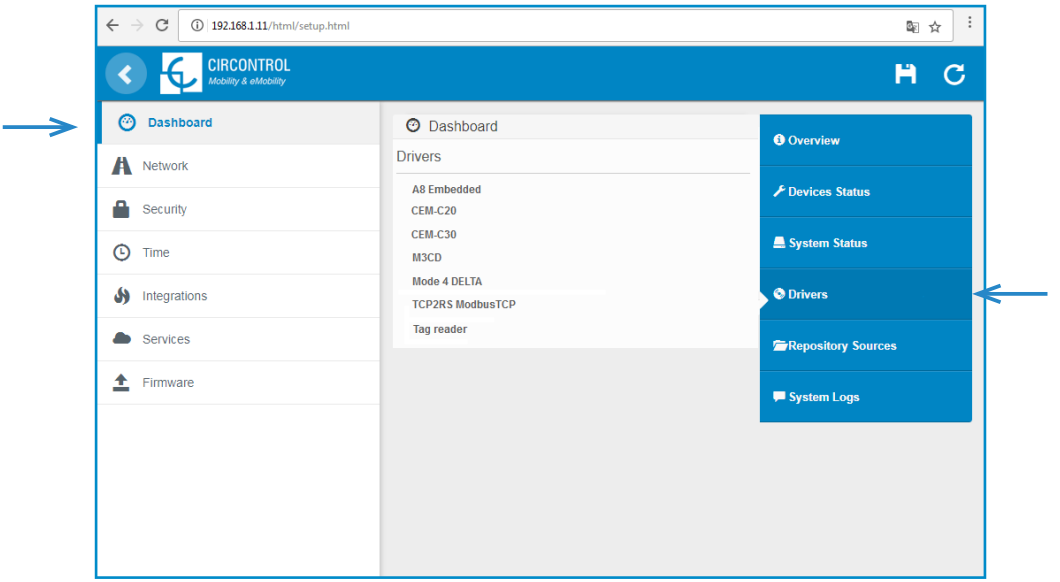
Value	Description
Device name	Name of the devices inside the Charge Point
Status	**OK:** online **NOT OK:** offline

SYSTEM STATUS



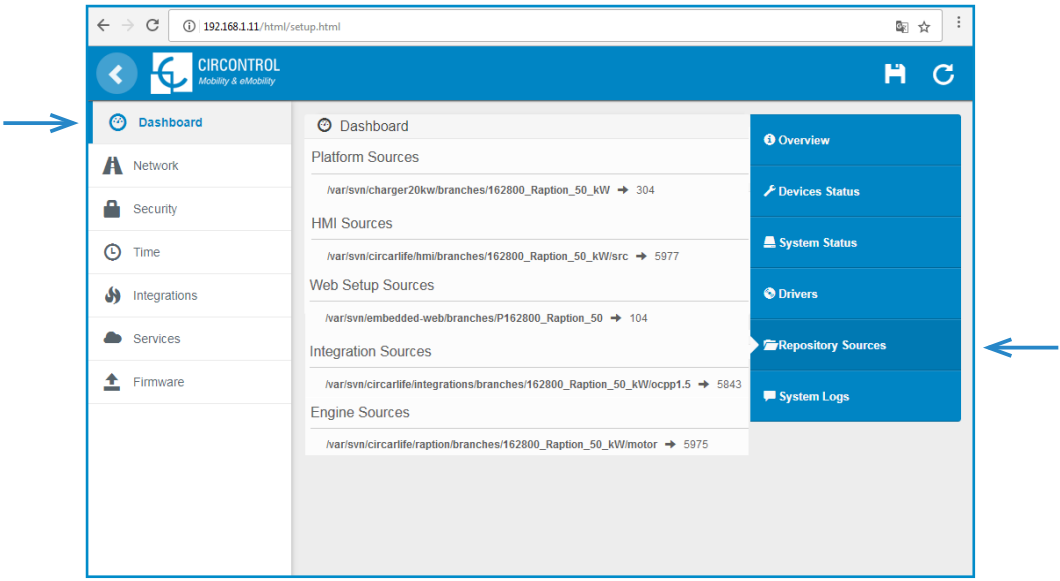
The information shown in this section is basically relative to the state of the PC of the Charge Point. It is necessary for the technical service staff but does not show any information regarding to the external connection of the Charge Point or to the charging session.

DRIVERS



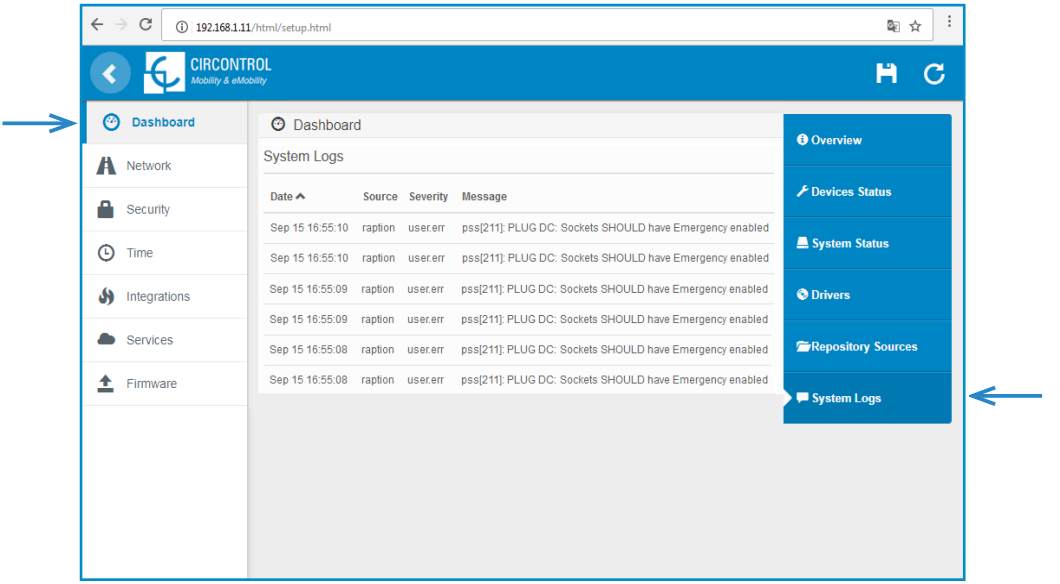
The information shown in this section refers to the drivers that the Charge Point needs in order to recognize the different devices inside the Charge Point, such as the meters, the mode 3, the RFID reader, etc.

REPOSITORY SOURCES



The information shown in this section is basically related to the internal behavior of the Charge Point.

SYSTEM LOGS



The logs shown in this section are automatically produced by the Charge Point. It is a detailed list of the charging sessions, system performance or user activities.

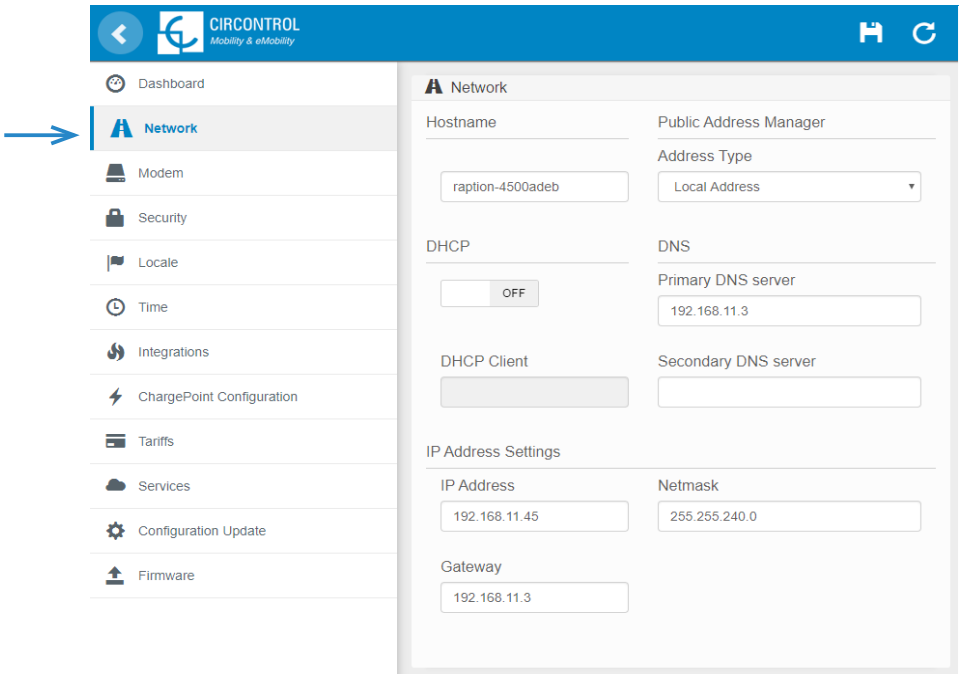
When Charge Point is powered ON, system begins to register log files. If the Charge Point is restarted these logs are lost and immediately are created new ones.

However, it is highly recommended to check log files in the next URL:

http://IPADDRESS/services/cpi/log

B) Network

This section provides basic configuration of the network parameters.



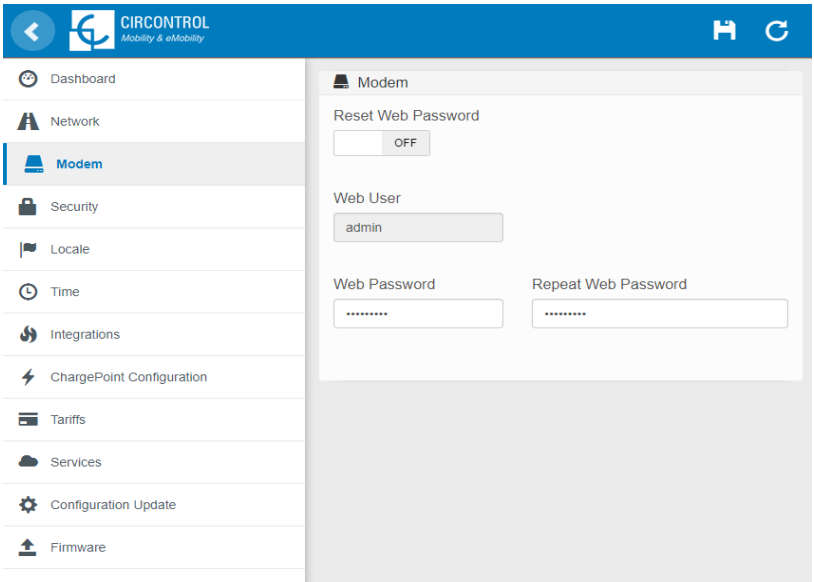
In the table below there are explained the different sections of **'Network'**

Value	Description
Hostname	Name of the Charge Point on the network.
DHCP	Enable or disable the IP address assignment by a DHCP server (router). To be enabled when working with the integrated modems.

Value	Description
Address Type	Select the source of the public IP to be used in OCPP 1.5: • **Local address:** select this option if the OCPP central system is connected to the same private local network than the Charge Point. • **Static address:** select this option if the external modem/router is different than the ones listed below. It shall have static public IP address. Check it with your SIM provider. **NOTE:** public IP address must be entered manually in the "Public IP" text box. • **SIERRA Wireless Raven XE H2295EW:** select this option only when SIERRA Wireless RAVEN XE cellular router is connected to the Charge Point. • **SIERRA Wireless AirLink LS300:** select this option only when SIERRA Wireless AirLink LS300 cellular router is connected to the Charge Point. • **Circutor SGE-3G/GPRS:** select this option only when Circutor SGE-3G/GPRS cellular router is connected to the Charge Point. • **Teltonika RUT240 LTE:** select this option only when Teltonika RUT240 LTE cellular router is connected to the Charge Point.
DHCP Client ID	Client ID associated to the DHCP server (if available).
Public IP	Displayed when 'Static Addess' option is selected in 'Public Address Manager' section. Introduce the static public IP from the external modem.
IP Address	IP Address assigned to the Charge Point.
Netmask	Netmask of the network.
Gateway	Gateway of the network.
DNS Servers	DNS servers of the network.

C) Modem

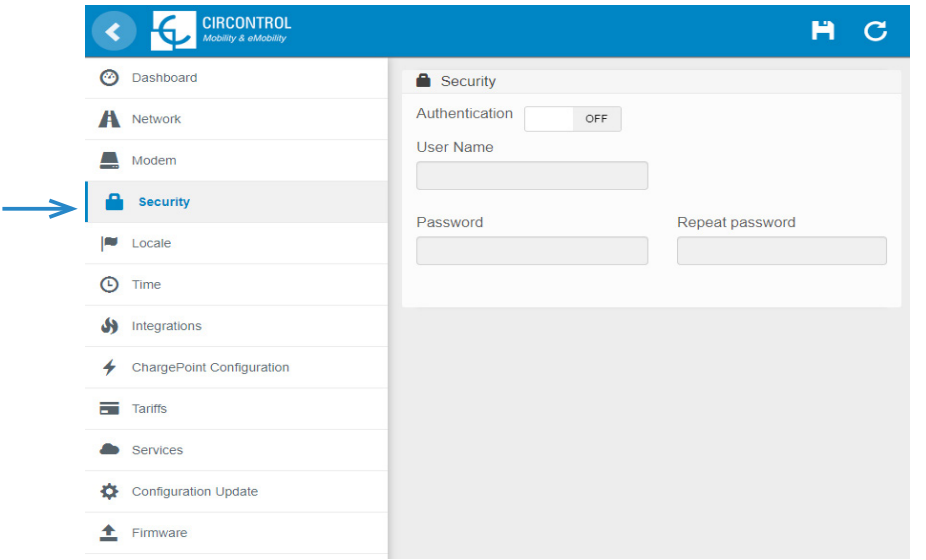
If password is changed in the modem, it needs to be adjusted in the Charge Point too. Otherwise communication between modem and Charge Point will be lost.



Value	Description
Reset Web Password	Charge Point will use default modem password after saving settings when selecting "ON".
Web Password	Introduce the new password that will be used on the modem side.

D) Security

This section provides basic configuration of the security parameters. Once configured, user and password will be required to enter in the Setup Webpage, avoiding unauthorised access.All parameters are disabled from factory settings.

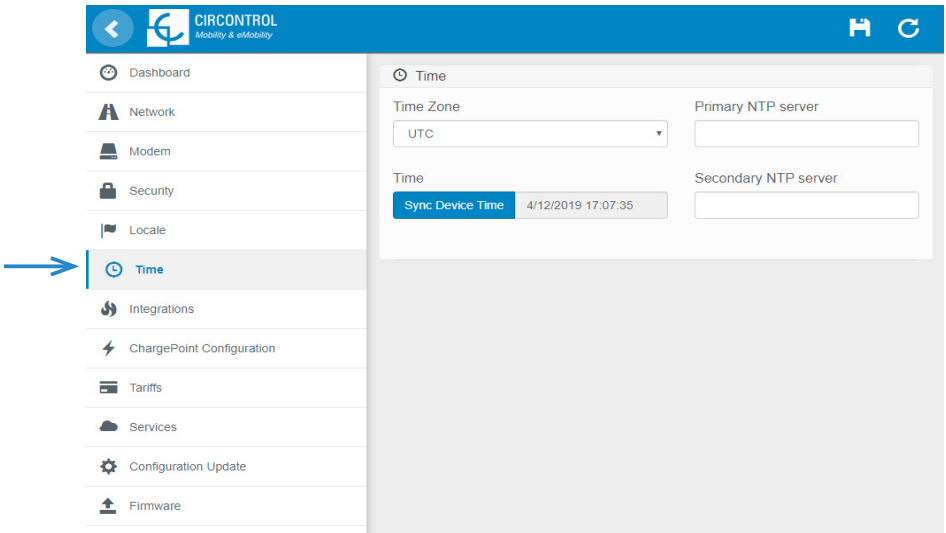


Value	Description
Authentication	**ON:** authentication enabled **OFF:** authentication disabled
User Name	Username and Password authentication for Setup web page
Password	
Repeat password	

NOTE: Do not forget the credentials. There is no way to restart the Charge Point to default factory settings.

E) Time

This section allows setting the time and region time for the Charge Point.

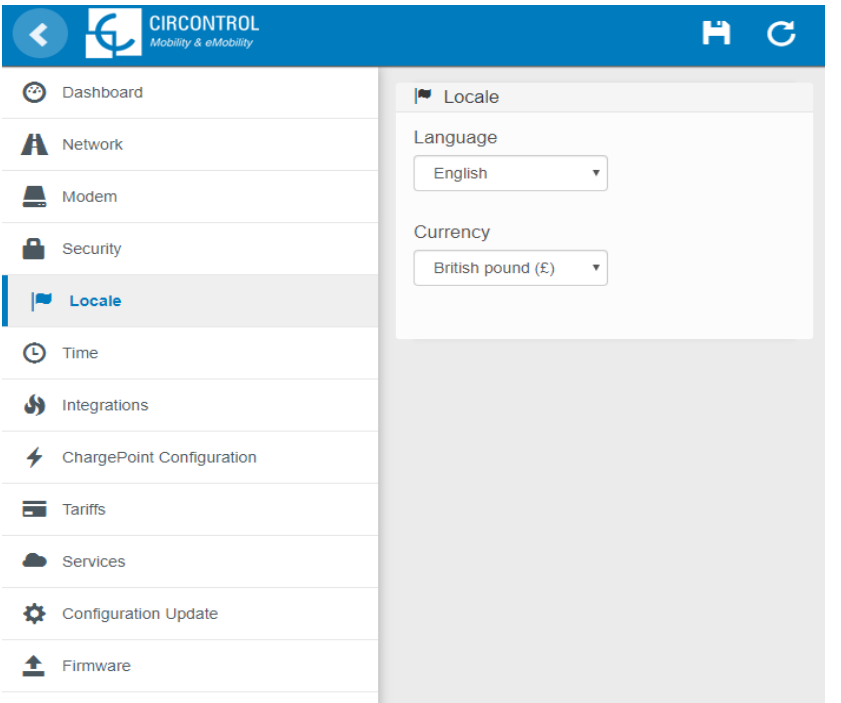


Next, we will explain the different sections of the **'Time'**

Value	Description
Time Zone	Select the regional time for the Charge Point according to the location
Time	Current date and time of the Charge Point
Primary NTP Server	Synchronize the time through internet automatically
Secondary NTP Server	

F) Locale

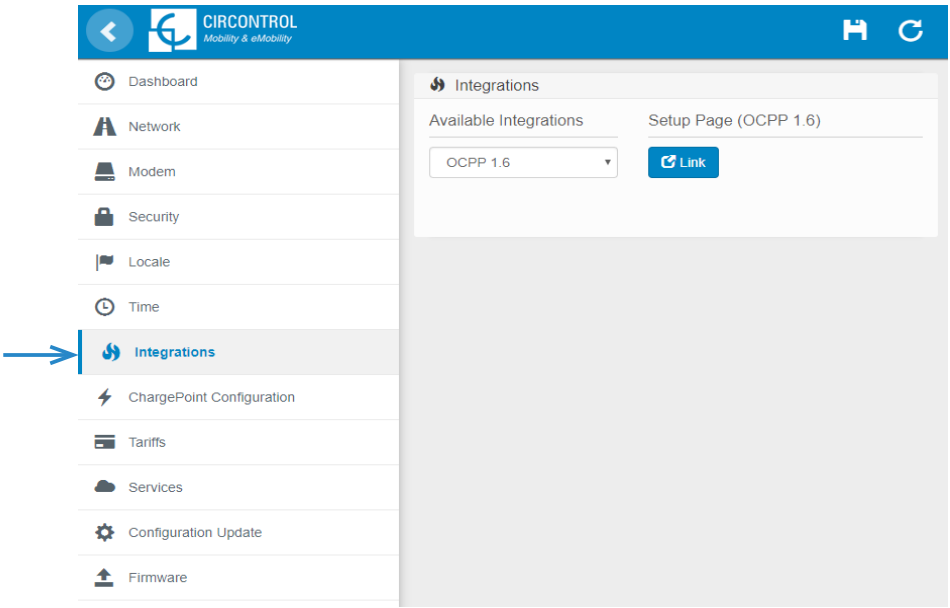
In **'Locale'** section there are two parameters that can be adjusted.



Value	Description
Locale	Language can be selected here. However, it is prefered to use the section available in the **'Services'** section.
Currency	Select the currency from your country.

G) Integrations

Clicking over the **'Integrations'** tab, user will be able to activate OCPP integrations.

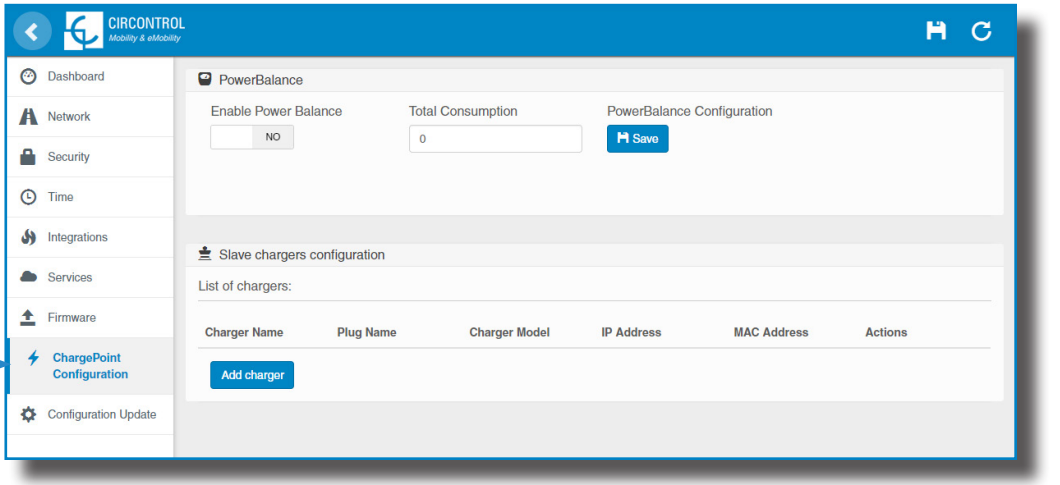


NOTE: the integration of the Charge Point needs a separate chapter. In the next chapter number 6 it is explained how to integrate OCPP.

H) Charge Point Configuration

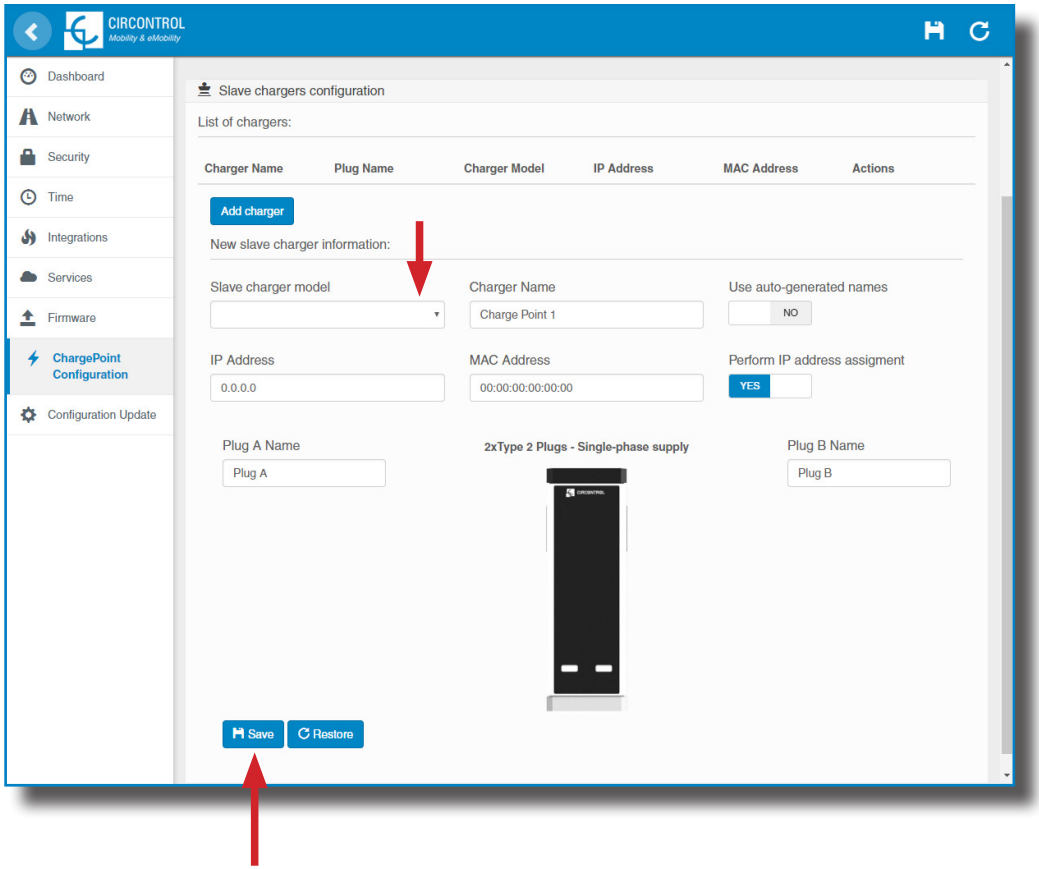
> This section applies ONLY when the Raption is working as a Master, as a part of our Master-Slave solution. Please, if that is not the case, skip this section.

The Charge Point is capable of balancing the available power based on the number of outlets in use.



Value	Description
Enable Power Balance	**YES:** the Charge Point shares equally the power delivered to each ongoing Charge Transaction without exceeding the limit configured. **NO:** the Charge Point does not take in consideration any limit, giving the maximum power for each connector.
Total Consumption	Maximum current value offered by the Charge Point that shares between the ongoing Charge Transactions. ***NOTE:** This value must be equal or higher than 6A multiplied by the number of outlets. Meaning that it must be equal or higher than the sum of current delivered when all outlets are charging at the minimum.

More fields are shown when selecting a 'Slave charger model'.



By clicking the **'Save'** button, all the configuration inside **'Slave chargers configuration'** is applied. Before doing so, make sure all fields are properly filled.

Consider that Master Charge Point reboots after clicking **'Save'** button.

Do not perform these actions meanwhile a Charge Transaction is active.

Value	Description
Slave charger model	List of Slave Charge Point models. ***NOTE:** Select it carefully according to the model described on the label.
Charger Name	Allows to specify the name of the charger. ***NOTE:** this name only serves as a label, it does not affect the correct operation of the equipment.
Use auto-generated names	**YES:** 'Charger Name' assigned by default. **NO:** 'Charger Name' can be edited manually.
IP Address	IP address of the Slave Charge Point
MAC Address	MAC address of the Slave Charge Point
Perform IP address assigment	**YES:** when clicking the **'Save'** button on the bottom of the web-page, the desired IP address is assigned to the Slave Charge Point with the MAC address specified. **NO:** when clicking the **'Save'** button on the bottom of the web-page, the Slave Charge Point with the IP address specified is added to the list ignoring the MAC address field.
Plug A Name	Plug A name can be edited manually. ***NOTE:** this name is shown on the Master Charge Point screen
Plug B Name	Plug B name can be edited manually. ***NOTE:** this name is shown on the Master Charge Point screen

I) Tariffs

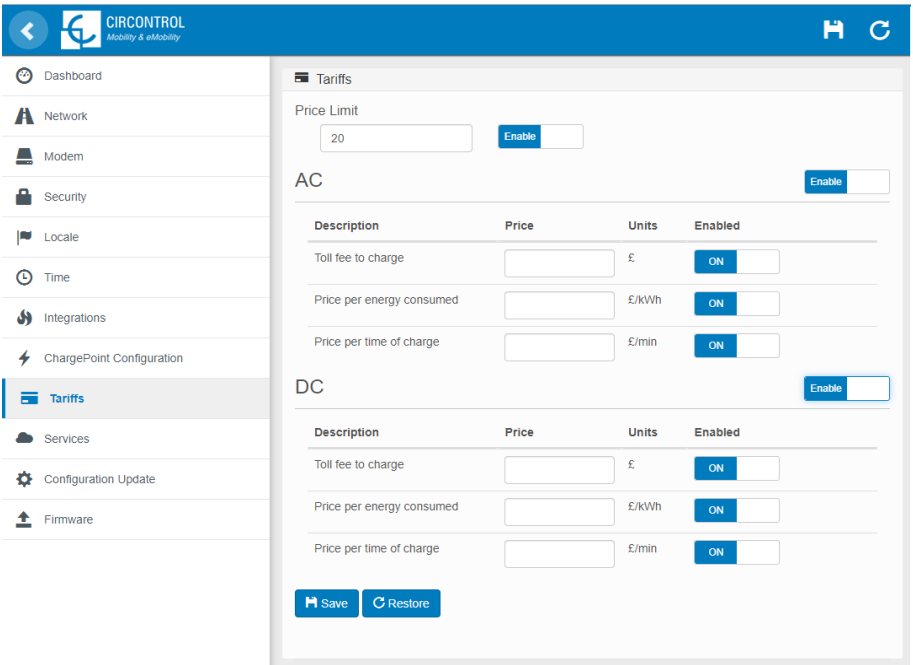
In this section, it can be adjusted the cost of a charge transaction in the Raption station. These settings are just displayed to inform the customer.

It is necessary to work with an integrated system for the payment, such as Kit VISA or OCPP Integrations. The payment will be done through one of these platforms.

As explained in the previous paragraphs, this is just information for the final user. When adjusting these settings, they will be displayed in the charger screen even if there is not a platform in charge of the receipt.

Make sure that values are set according to the final price from these platforms.

Remember to press 'Save button to apply the settings.



There are few parameters that can be adjusted:

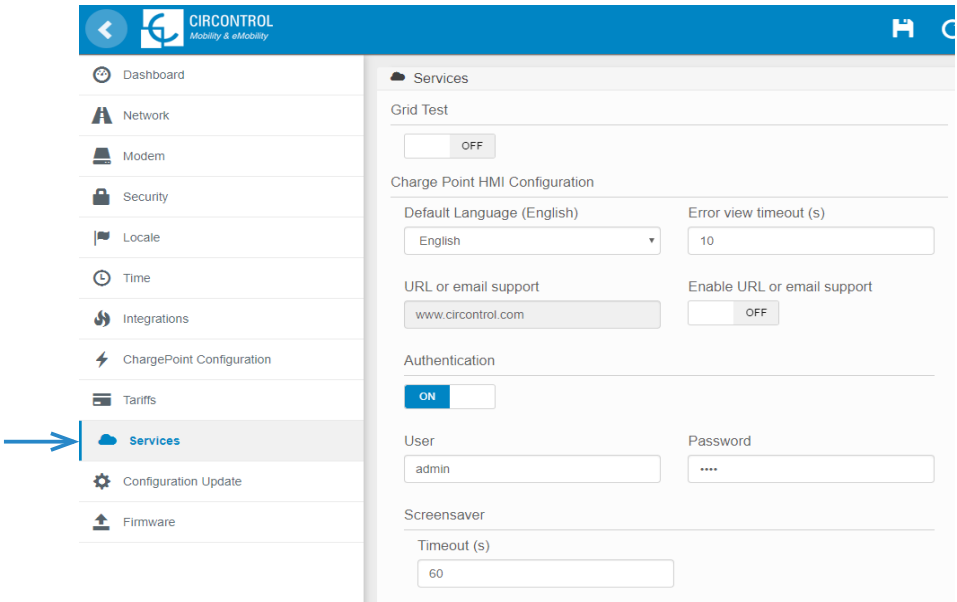
Value	Description
Price Limit	Maximum cost of the charge transaction
Toll fee to charge	Price of a new charge transaction.
Price per energy consumed	Amount of money to be payed based on the energy delivered to the EV
Price per time of charge	Amount of money to be payed based on the duration of the charge transaction

All these settings can be combined according to the customer preferences.

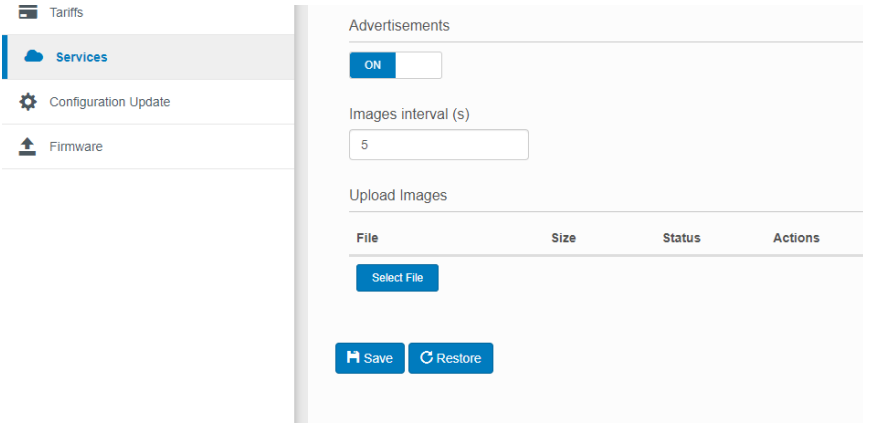
J) Services

In this section, there can be adjusted many settings related with the Display..

Clicking over the **‘Services’** tab, next image will appear.



Value	Description
Grid Test	HMI shows a test screen to check that touch function works properly.
Default language	It is possible to choose the default language for the HMI screen
Screensaver	Timeout for screensaver can be adjusted



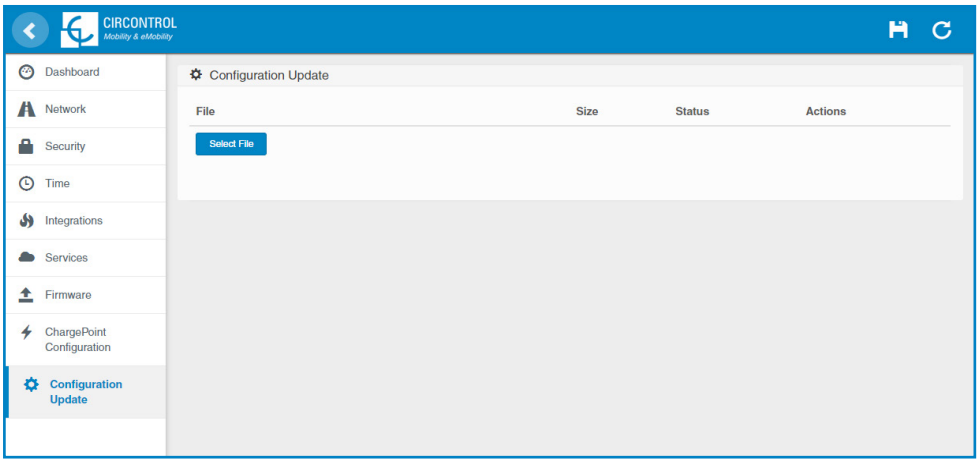
Value	Description
Advertisements	*It is possible to customize the Screensaver image by uploading a .zip file.
Images interval (s)	Period of time before each image swaps to the next.

There are a few restrictions regarding to the file that can be uploaded:

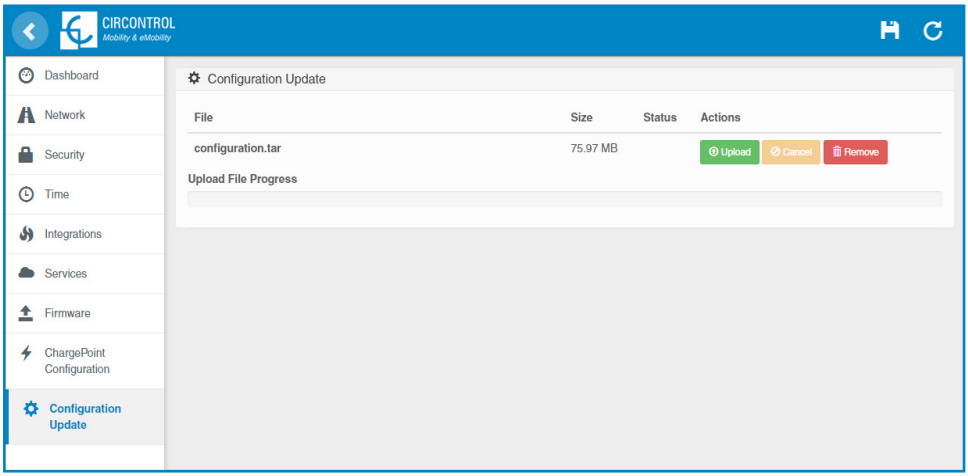
- File must be ZIP format, otherwise won't be accepted.
- If a new ZIP file is uploaded, previous images will be replaced by the new ones.
- ZIP file up to 20 megas. Every image up to 3 megas.
- If image weight is higher than 3 megas, it will be discarded.
- Up to 25 different pictures.
- Pictures are displayed in alphabetic order.
- Accepted formats: BMP, GIF, JPG, JPEG, PNG, PBM, PGM, PPM, XBM, XPM.
- Higher resolution than 800x600, will be cut according to the display size,

K) Configuration Update

Configuration Update refers to the internal application of the Charge Point. With this file, HMI knows which drivers has to expect and which components should be communicating. Those vary depending on the model of the charger.



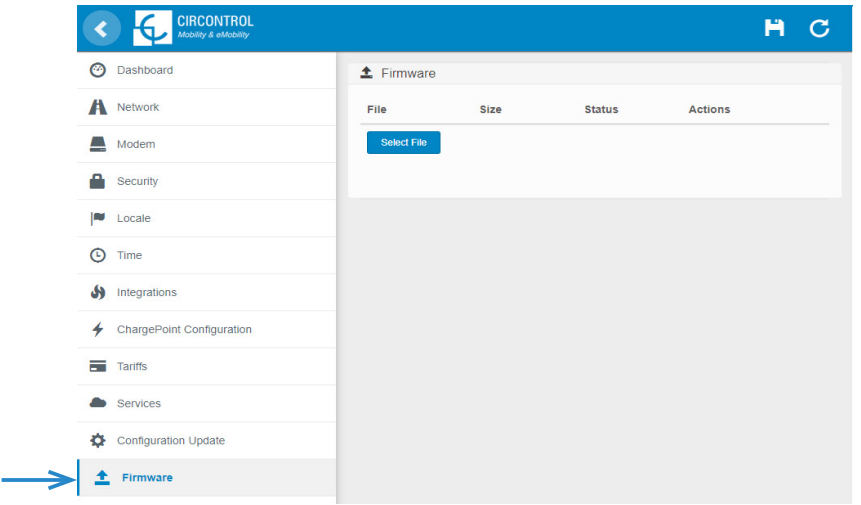
A window will pop up in order to choose the file, then click on '**upload'.**



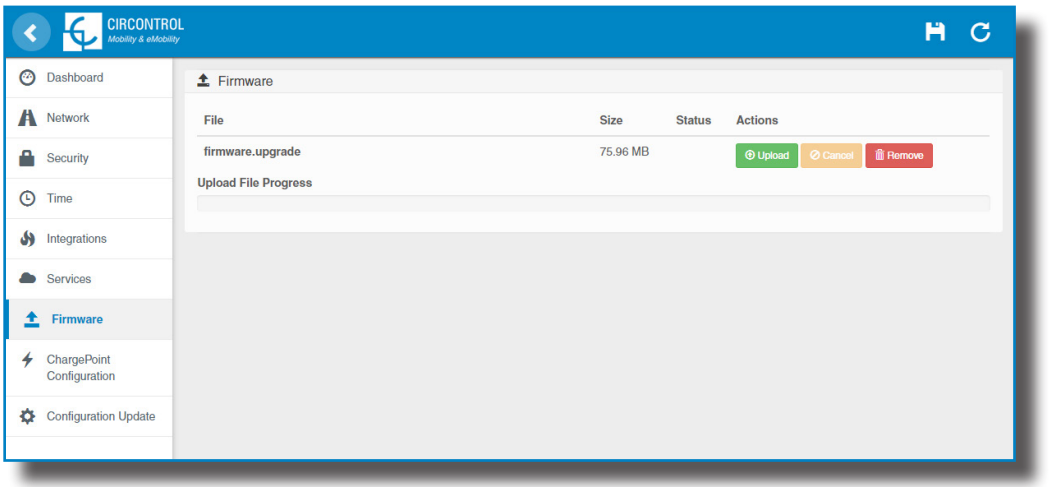
To obtain the appropriate configuration file, please contact CIRCONTROL Post Sales Department.

L) Firmware

Through **'Firmware'** tab, the Charge Point firmware can be upgraded remotely.



A window will pop up in order to choose the file, then click on '**upload'.**



To obtain the latest firmware version, please contact CIRCONTROL Post Sales Department.

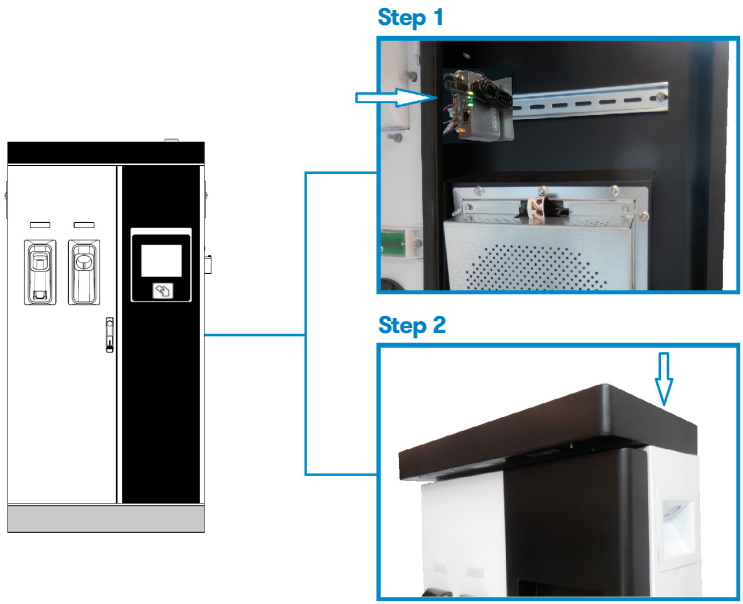
5

A Introduction

This section describes how to install the SIM card and setting up the modem. The modem that has been installed in Raption series can be two models, Teltonika RUT 240 or Sierra Wireless AirLink LS300.

Modem location

The modem is installed inside the unit and the antenna is fixed outside, right on the Charge Point's roof.



Steps:

1- Open the right door of the Charge Point and locate the modem, right on the rear side.

2- Check that the Charge Point is provided with the antenna on the cover top.

Teltonika RUT 240

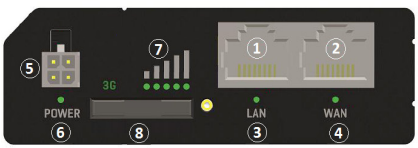
B Teltonika RUT 240 configuration

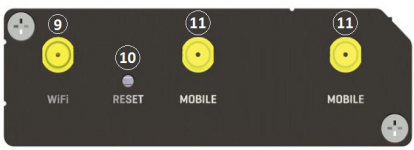
1 — MODEM OVERVIEW

The 4G modem installed from factory in the Charge Point is:

Teltonika RUT240

This device allows to the Charge Point connects over 4G networks to remotely view or manage the Charge Point status. RUT240 is part of the RUT2xx series of compact mobile routers with high speed wireless and Ethernet connections.





1	LAN Ethernet port	7	Signal strength indication LEDs
2	WAN Ethernet port	8	SIM card holder
3	LAN Led indicator	9	WiFi antenna connector
4	WAN Led indicator	10	Reset button
5	Power connector	11	LTE antenna connectors
6	Power LED		

2 — CONNECTION STATUS LED

Explanation of connection status LED indication:

1. Signal strength status LED's turned on: router is turning on

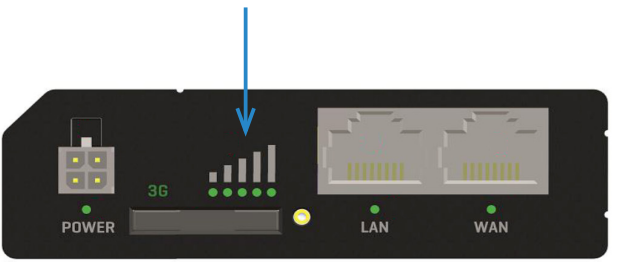
2. 2G and 3G LED's constant blinking every 1 sec: no SIM or bad PIN

3. 2G/3G LED's blinking every 1 sec: connected 2G/3G, but no data session established

4. Blinking from 2G LED to 3G LED repeatedly: SIM holder not inserted

5. 2G/3G LED turned on: connected 2G/3G with data session

6. 2G/3G LED blinking rapidly: connected 2G/3G with data session and data is being transferred.



3 — SIM CARD INSTALLATION

Explanation of SIM card installation:

Insert SIM card which was given by your ISP (Internet Service Provider). Correct SIM card orientation is shown in the picture.

1. Push the SIM holder extract button

2. Pull out the SIM holder

3. Insert the SIM card

4. Push in the SIM holder

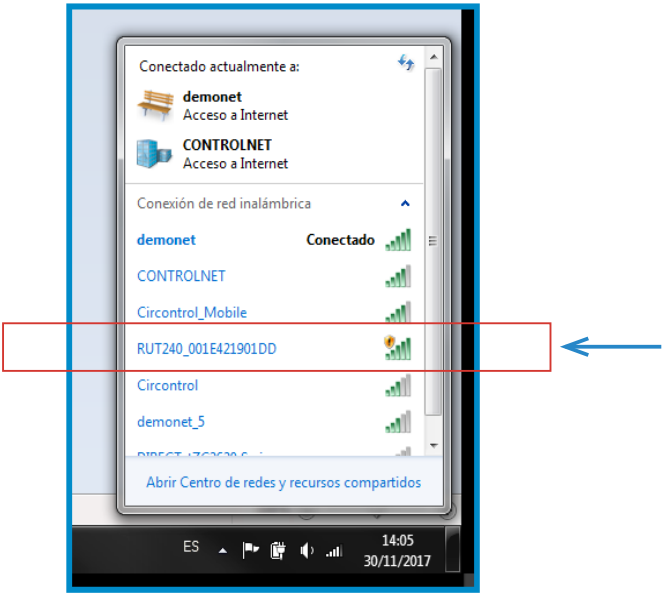
After installing the SIM card, check out that the 4G antenna (mobile), WiFi antenna and the power connector are properly attached.

NOTE: SIM card is not provided with equipment.

4 — LOGGING IN

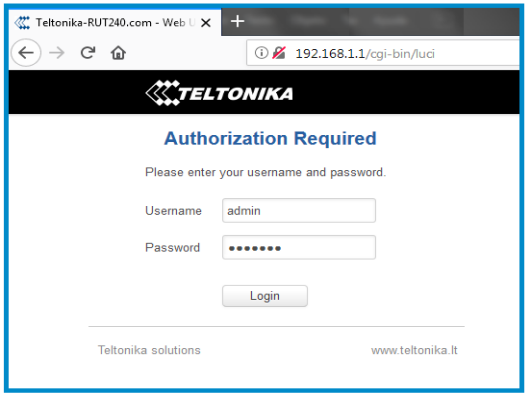
After you're complete with the setting up as described in the section above, you are ready to start logging into your router and start configuring it. This example shows how to connect through WiFi:

4.1 At your service computer, look for access point named RUT240_xxxxxxxxxxx, and connect on it.



4.2 Open a web browser and type ***http://192.168.1.1*** . Use the following parameters when prompted for authentication, and then either click Login with your mouse or press the Enter key.

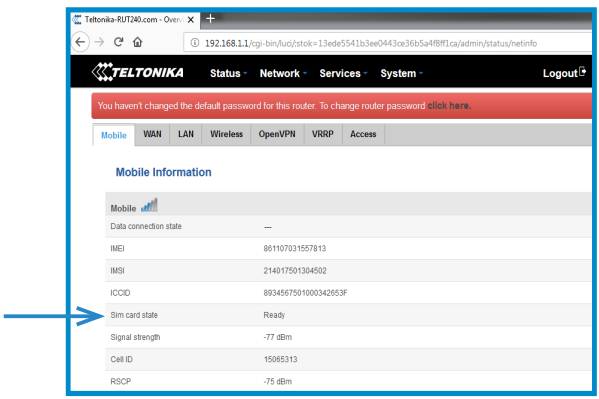
User name: **admim**
Password: **admin01**



You have now successfully logged into the RUT240!, from here on out you can configure almost any aspect of your router.

4.3 **Configuration Wizard** will start after logging in. It is necessary to complete Configuration Wizard to setup modem to the correct mode.

Go to **Status** → **Network** → **Mobile** and pay attention to 'Sim card state' field, it has to be *Ready*.

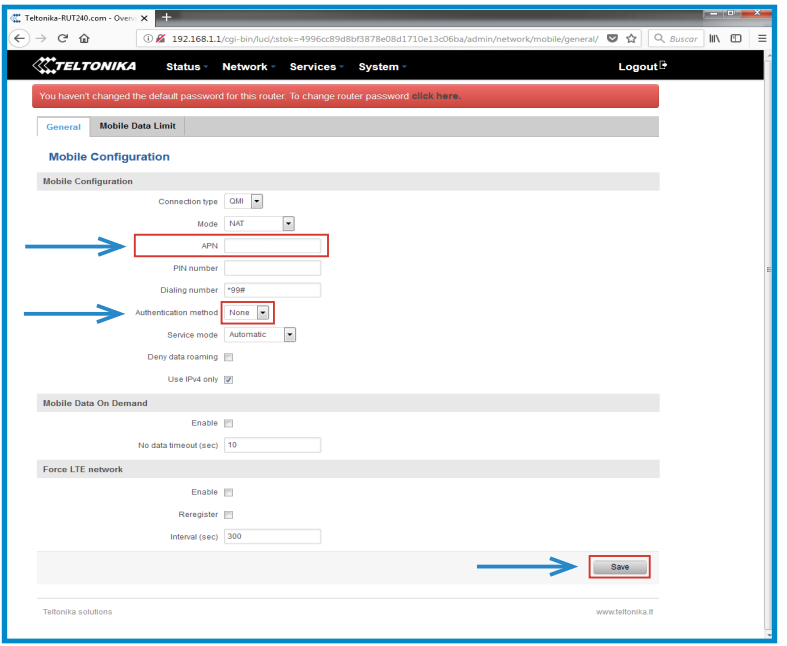


See note in next page

When using OCPP 1.5, do not change the default password for modem. Charge Point needs to obtain a public IP address

4.4 **Network Mobile configuration.** Here you can configure mobile settings which are used when connecting to your local network.

Go to **Network** → **Mobile** → **General >** *Mobile Configuration*



Type the APN from your SIM provider and push over **'Save'** tab.

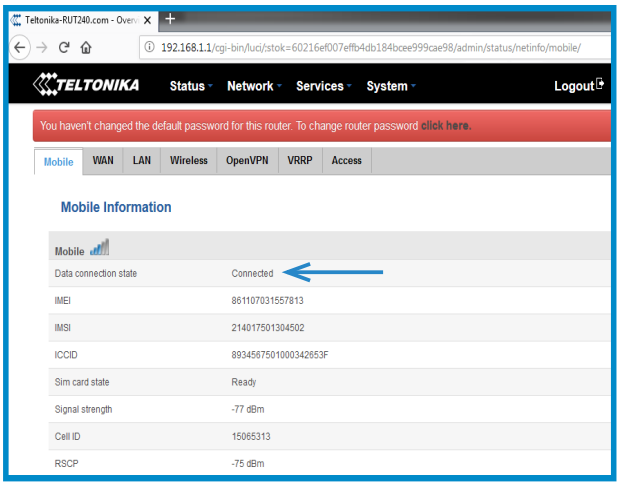
NOTES:

1. If your SIM provider require any authentication ask them about what type, PAP or CHAP, select it on 'Authentication method' field and introduce a password and username.

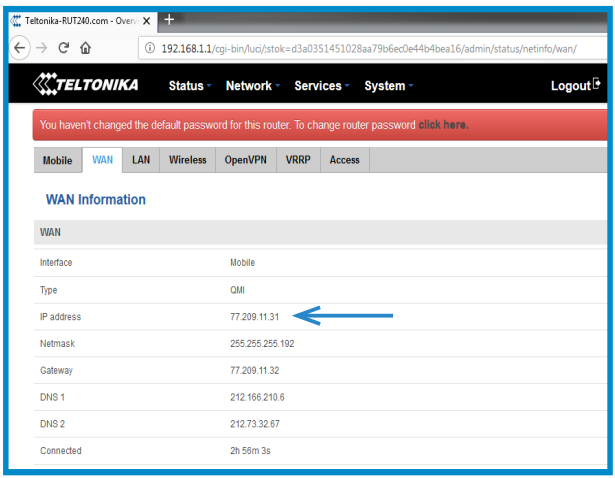
2. If you need to do some custom over the modem configuration, ask the Circontrol PS-Support staff in order to get the Teltonika modem manual.

4.5 In order to know if the connection has been done properly, check next steps:

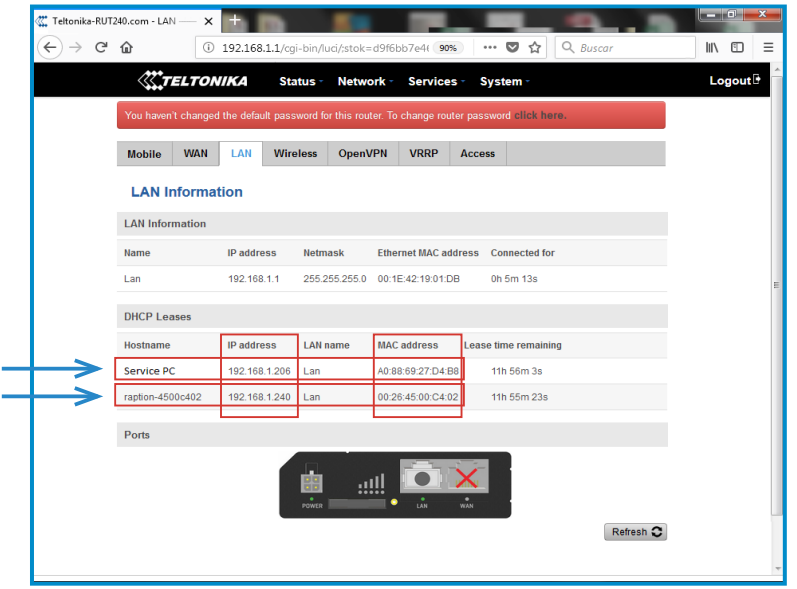
Go to **Status** → **Network** → **Mobile** and pay attention to *Data connection state*, it has to be *Connected*



Go to **Status** → **Network** → **WAN** and pay attention to *IP address, the modem* must has found a public IP address



Go to **Status** → **Network** → **LAN** → *DHCP Leases* and pay attention to *IP addresses*

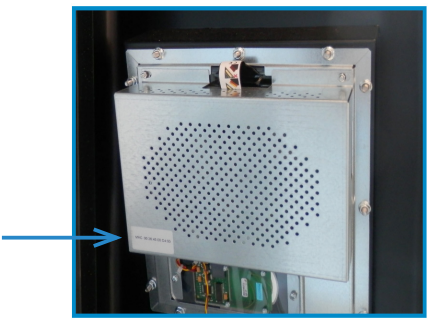


At **'DHCP Leases'** check that the modem has detected the automatic IP address and MAC number for both, your Service PC and the Charge Point.

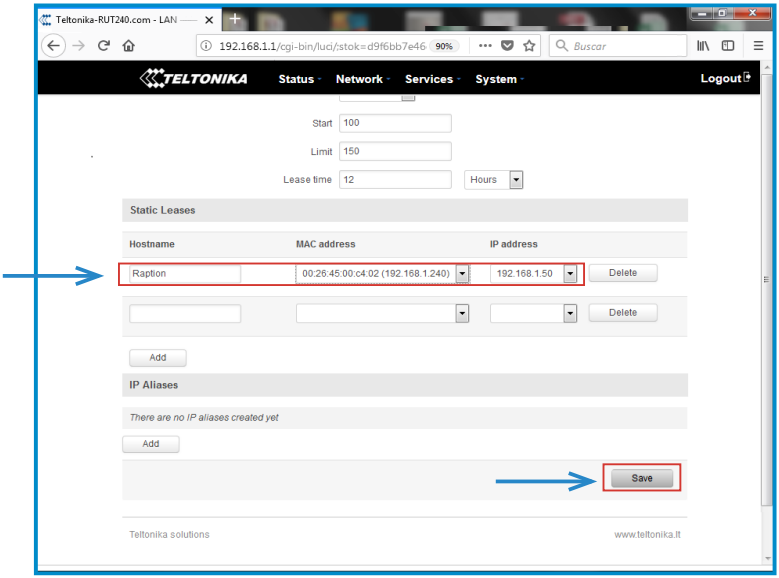
NOTES:

1. If the modem has not detected the automatic IP address, switch off the Q10.1 circuit breaker, wait for 10 seconds and switch on again. Connect again your Service PC to the access point named RUT240_xxxxxxxxxxx, and repeat the steps 4.2 y 4.5

2. To make sure that the Charge Point' s MAC number is correct, it can be seen in one label behind the HMI screen.



4.6 Go to **Network** → **LAN >** *Static Leases*



Complete the fields with next information:

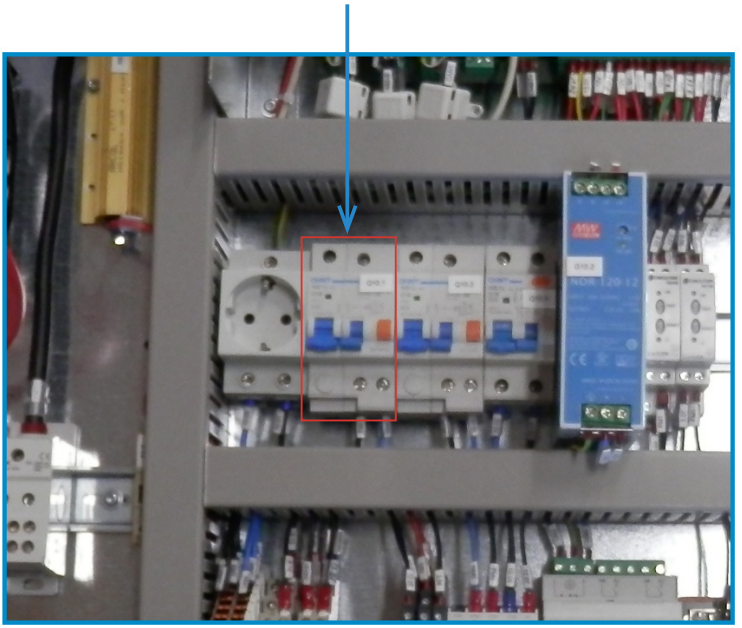
Hostname - It can be written the name that you want for your Charge Point

MAC address - It will be the MAC number found behind the HMI screen, on the label

IP address - **192.168.1.50**

After filling the fields, push over **'Save'** button.

4.7 Disconnect the MCB Q10.1 inside the Charge Point in order to do a hard reset over the modem and the HMI screen, after 10 seconds switch ON again the MCB.



4.8 Repeat again the points 4.1 and 4.2 explained above:

4.1 - look for modem access point and connect on it.

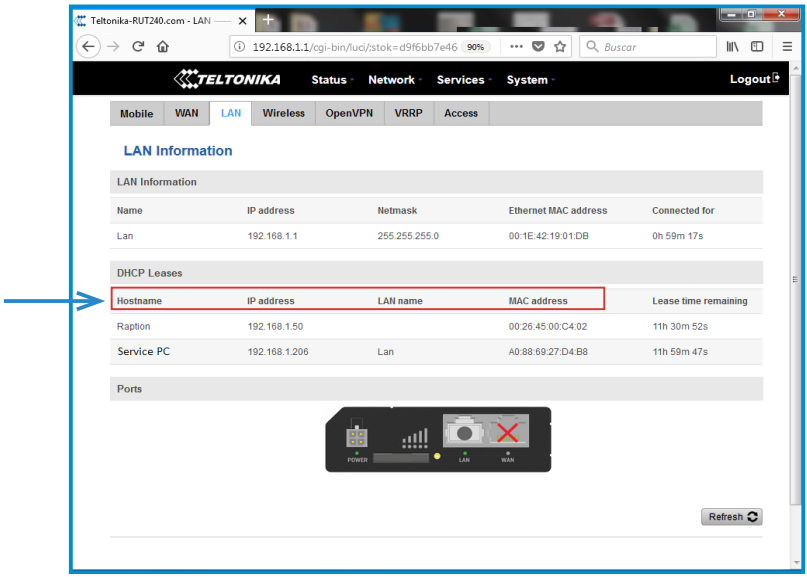
4.2 - log on modem webpage with authentication.

4.9 Now, go again to **Status** → **Network** → **LAN** → *DHCP Leases* and confirm that the information written at the point 4.6 has been successfully recorded:

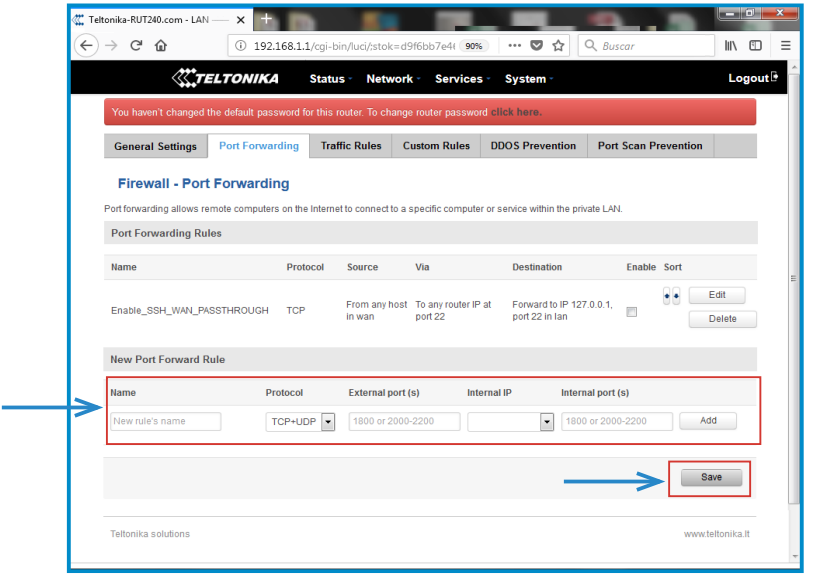
Hostname - the name given for Charge Point

MAC address - the MAC of the Charge Point

IP address - **192.168.1.50**



4.10 Go to **Network > Firewall > Port Forwarding >** *New Port Forward Rule*

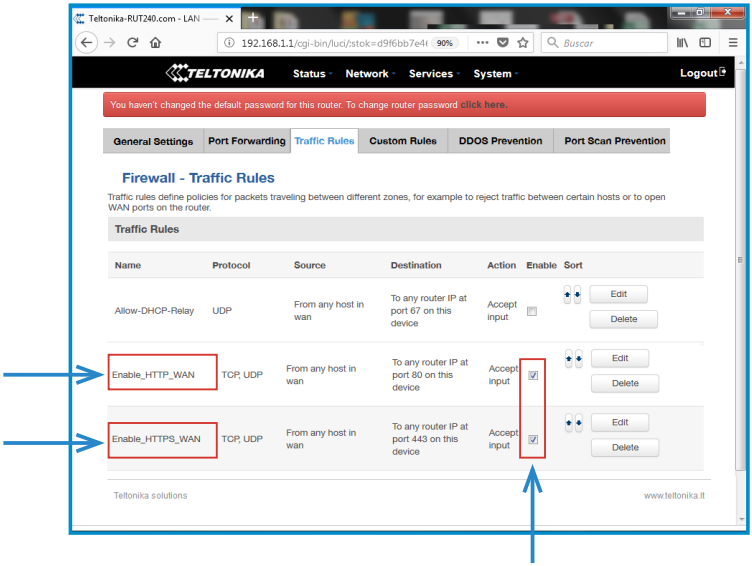


Introduce the ports that you can see in the table below:

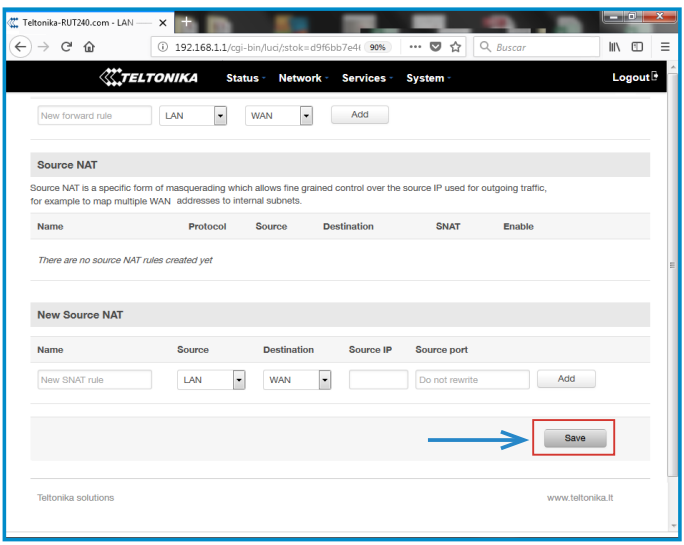
Name	Protocol	External port (S)	Internal IP	Internal port (S)
80	TCP	80	192.168.1.50	80
8080	TCP	8080	192.168.1.50	8080
50000	TCP	50000	192.168.1.50	50000
9191	TCP	9191	192.168.1.1	80

After noting down the ports, push over **'Save'** button and check that all of them has been successfully introduced.

4.11 Go to **Network > Firewall > Traffic Rules**



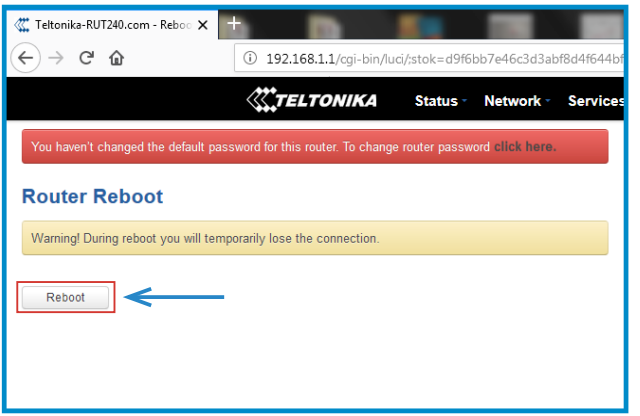
Roll down and look for *'Enable_HTTP_WAN'* and *'Enable_HTTPS_WAN'* fields and enable these.



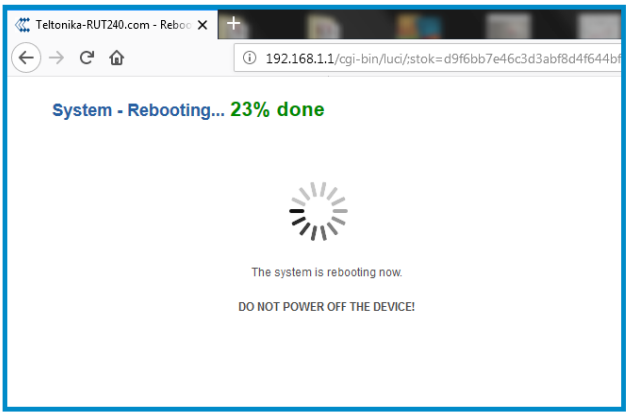
Roll down again and push over **'Save'** button.

4.12 For ending with the modem logging is necessary to do a reboot:

Go to **System** → **Reboot** and push over the **'Reboot'** tab



During the process, the system will show the progress, do not switch off the modem.



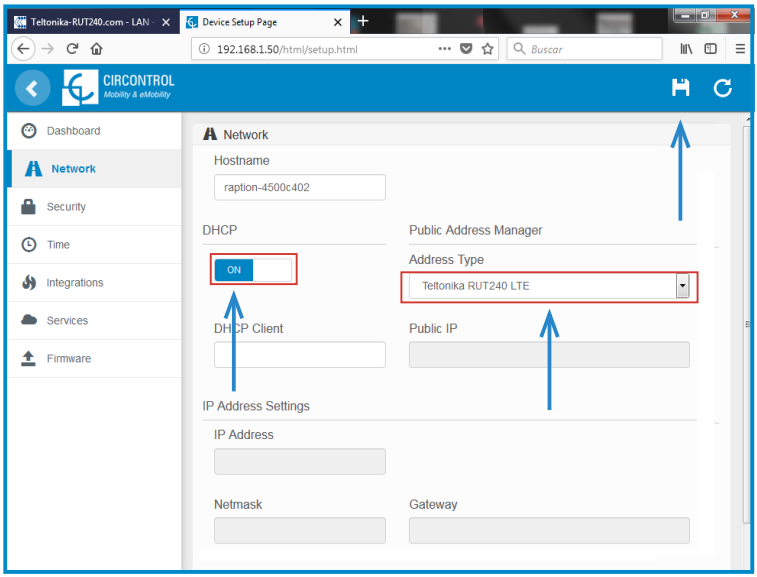
4.13 Repeat again the points 4.1 and 4.2 explained above:

4.1 - look for modem access point and connect on it.

4.2 - log on modem webpage with authentication.

4.14 It is necessary to check that the Teltonika RUT240 LTE modem option is chosen and DHCP is ON at Charge Point's setup webpage:

Make sure that your Service PC is still connected with the Charge point through wifi, open a web browser and type 192.168.1.50, next screen will appear:



DCHP: ON

Address Type: Teltonika RUT240 LTE

Click over the **'Disk' symbol** tab in order to save.

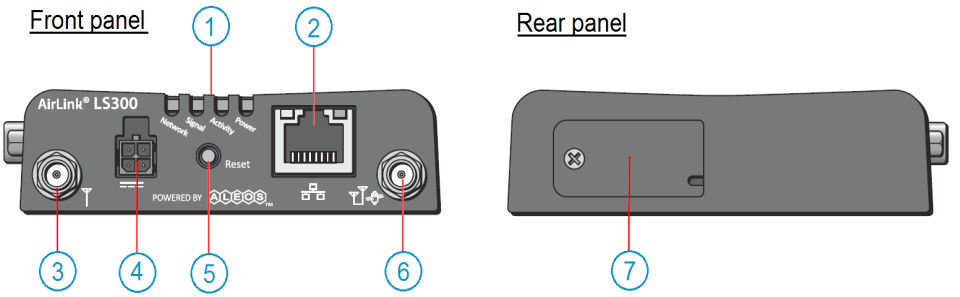
Sierra Wireless AirLink LS300

1 — MODEM OVERVIEW

The 3G modem installed from factory in the Charge Point is:

Sierra Wireless AirLink LS300

This device allows to the Charge Point connects over 3G networks to remotely view or manage the Charge Point status.



1	Status LEDs	5	Reset button
2	Ethernet connector	6	GPS/Diversity antenna connector
3	Antenna connector	7	SIM card port
4	Power connector		

2 — CONNECTION STATUS LED

Explanation of connection status LED indication:

These show the device's operating status. Each LED can be red, green, yellow or off. They are:

· **Power:** when green, the device is connected to power.

· **Activity:** when green, the radio link is active.

· **Signal:** when green it is receiving a cellular signal.

· **Network:** when green the device is connected to a cellular network with an IP address assigned and a channel acquired.

LED Colors

The four front panel LEDs show the status of various items and can be used as a troubleshooting aid. They are multi-colored:

• **Off:** No activity

• **Red:** Not functional

• **Yellow:** Limited functionality

• **Green:** Fully functional

• **Blinking:** Shows altered or reduced functionality

NOTE: When the LEDs are cycling yellow, the reset button has been pushed and the device is restarting.

Power LED

This monitors the input power or shows if the device sees a GPS signal.

- **Off:** No power or input voltage ↗ 36VDC or ↖ 7.5VDC.
- **Red:** The device is not operational (failure or in low power mode)
- **Yellow:** The device is entering low power mode or system low level boot.
- **Green:** The device is connected to nominal power and is operating normally.
- **Green with a momentary yellow flash:** The device has a GPS fix.

Activity LED

This shows the radio's activity.

- **Off:** The LED's normal appearance.
- **Flashing green:** The radio is transmitting or receiving.

Signal LED

This shows the cellular network's signal level.

- **Flashing red:** No signal is present. (RSSI → -110 dBm)
- **Red:** A bad signal is present. (RSSI → -100 dBm or ↖ -110 dBm)
- **Yellow:** A marginal signal is present. (RSSI → -85 dBm or ↖ -100 dBm)
- **Green:** A good signal is present. (RSSI ↖ -85 dBm)

Network LED

This monitors the cellular network.

• **Red:** No cellular network is present or the device is in radio passthru mode. (There is no network coverage at the location.)

• **Flashing red:** The device is attempting to connect to the cellular network.

• **Yellow:** The cellular network is found and the device is connecting.

• **Flashing yellow:** The cellular network is unavailable. (The device was unable to authenticate on the network.)

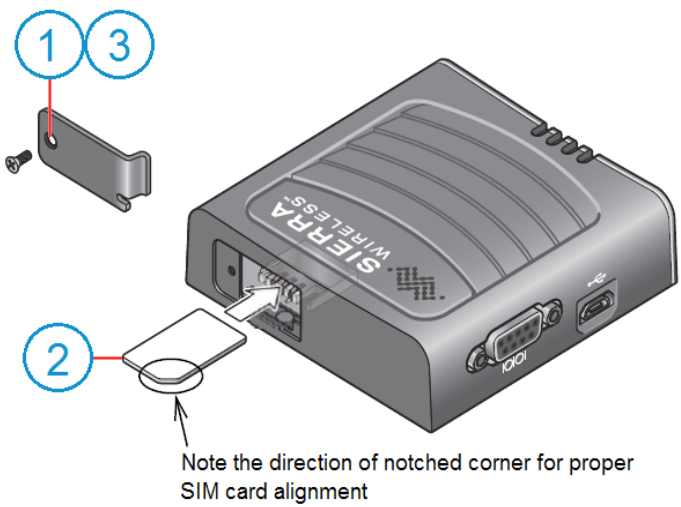
• **Green:** Connected to the cellular network.

• **Flashing Green:** The device is roaming.

3 — SIM CARD INSTALLATION

Explanation of SIM card installation:

Disconnect the power supply for modem and insert the SIM card which was given by your ISP (Internet Service Provider).



1. Remove the SIM card cover.

2. Gently slide the card into the slot in the connector until it stops.

3. Replace the SIM card cover.

After installing the SIM card, check out that the 3G antenna (mobile) and the power connector are properly attached.

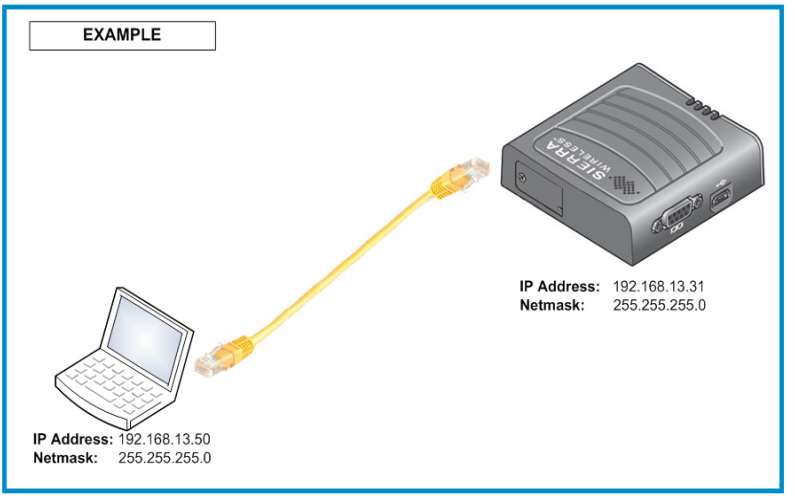
NOTE: SIM card is not provided with equipment.

4 — LOGGING IN

Plug again the power supply for the modem.

NOTE: After plugging back the modem, it can take until 5 minutes to respond.

3G modem configuration is performed using the Ethernet interface. Connect your Service PC using an Ethernet cable as shown in the following image:

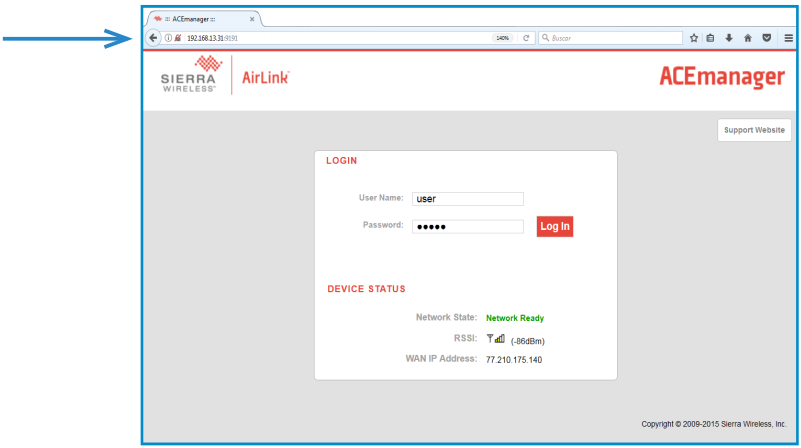


Set the IP number **192.168.13.50** on your laptop, following the previous Chapter **'4-D'** --->

-LAN Connection procedure -

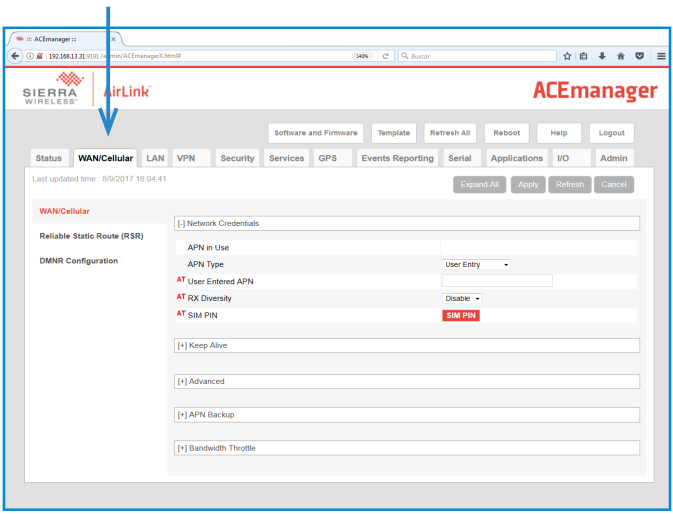
Steps:

4.1 Open a web browser in the computer and enter **http://192.168.13.31:9191**. Wait until ACE manager login screen appears.

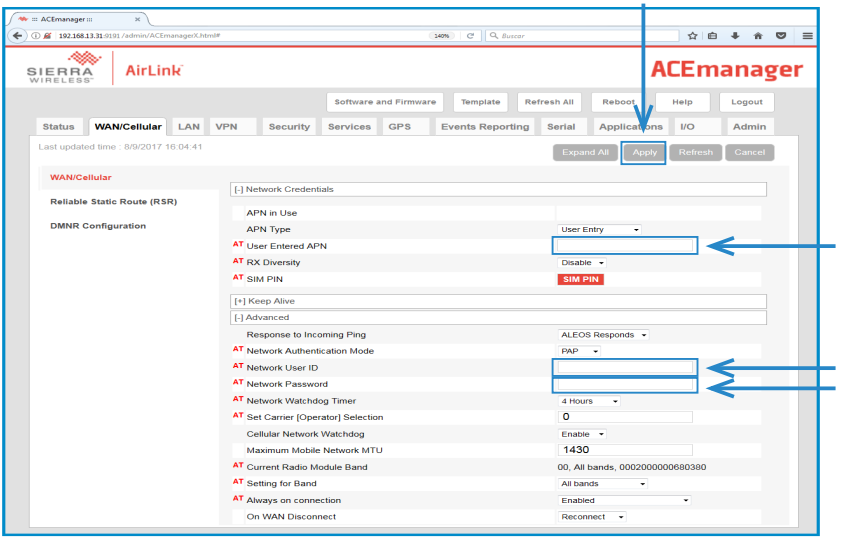


Default user name is **'user'** and default password is **'12345'**. Do not change the default credentials; the Charge Point requires consulting information from the 3G modem.

4.2 The ACE manager homepage appears. You can now configure each device with ACE manager. Make click over **'WAN/Cellular'** tab.



4.3 Once clicking over **'WAN/Cellular'** tab, introduce the 'APN' provided by the SIM's company. In case of 'User ID' and 'Password' are required too, it has to be added in the 'Advanced' section.



Make click over **'Apply'** tab in order to save.

4.4 In the **'Security'** tab, the **'DMZ Enabled'** must be 'Disable', while the **'Port Forwarding'** must be 'Enable'. Then, you will need to add the ports used by the charger. These ports are next:

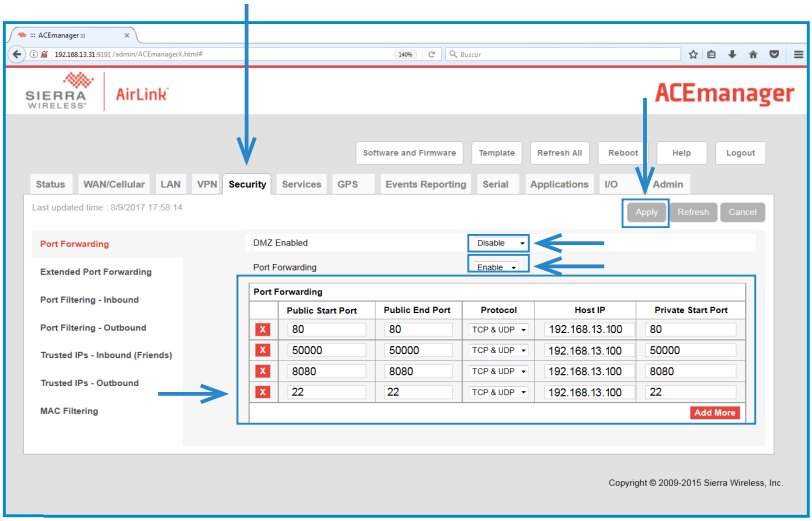
*The OCPP Listening port is 50000 by default. If your Central System works with a different port, add this one instead in OCPP web settings (http://"IP_ADDRESS":8080) and into the Security tab of Sierra modem. Fill each field according to the next picture:

Setup Webpage	OCPP Incoming listening ports *	OCPP Settings	SCP Remote Access
80	50000	8080	22

NOTE:

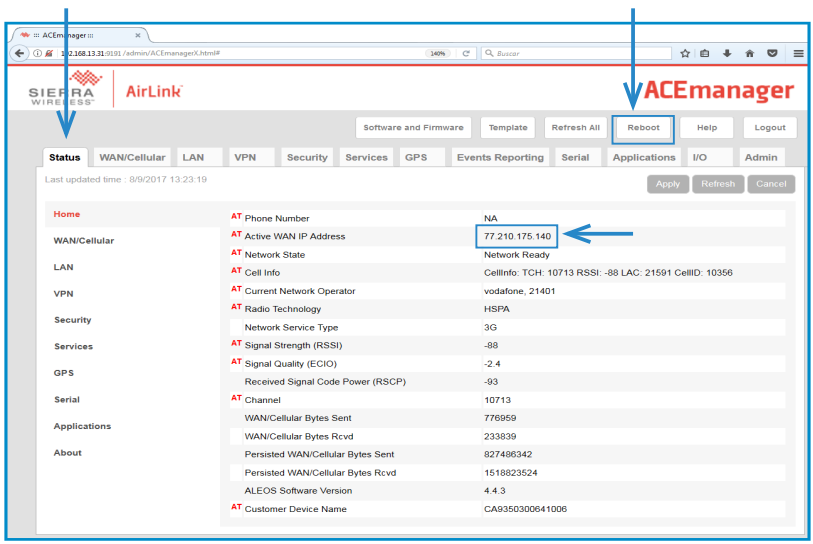
The OCPP Listening port is 50000 by default. If your Central System works with a different port, add it instead. You will need to configure it afterwards in the OCPP web settings (http://"IP_ADDRESS":8080). **See chapter 6.**

Fill each field according to next picture:



Remember to **'Apply'** the changes when finish.

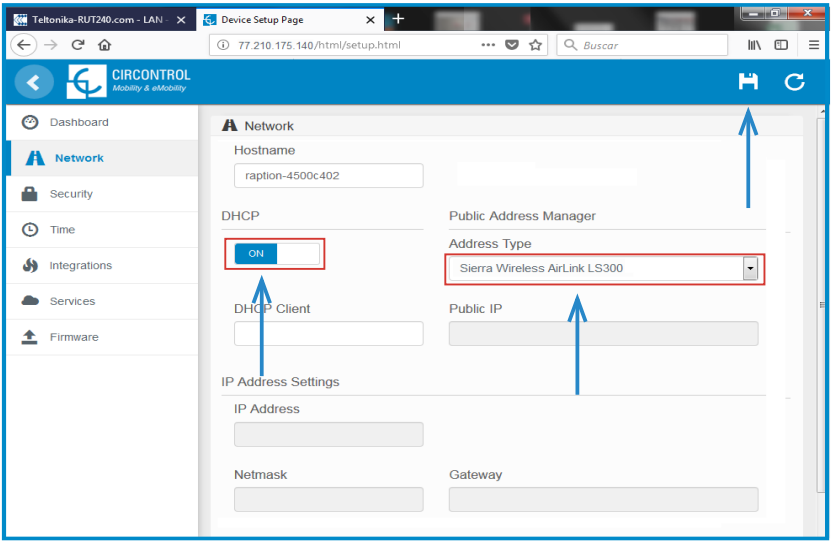
4.5 Click over **'Reboot'** button and wait for 3-4 minutes. After that, the modem should has found a public IP. Check it in the **'Status'** tab.



- Connect the modem to the unit again. If the process has been done properly, we should have remote access to the Charge Point using the public IP from the step before.

4.6 It is necessary to check that the Sierra Wireless AirLink LS300 modem option is chosen and DHCP is ON at Charge Point's setup webpage:

Using the public IP from the step before, open a web browser and type it, next screen will appear:



DCHP: ON

Address Type: Sierra Wireless AirLink LS300

Click over the **'Disk' symbol** tab in order to save.

6

A Introduction

The goal of the Open Charge Point Protocol (OCPP) is to offer a uniform solution for the communication between Charge Point and a Central System. With this open protocol it is possible to connect any Central System with any Charge Point, regardless of the vendor.

Follow next steps in order to configure OCPP 1.5 in the Circontrol Charge Points.

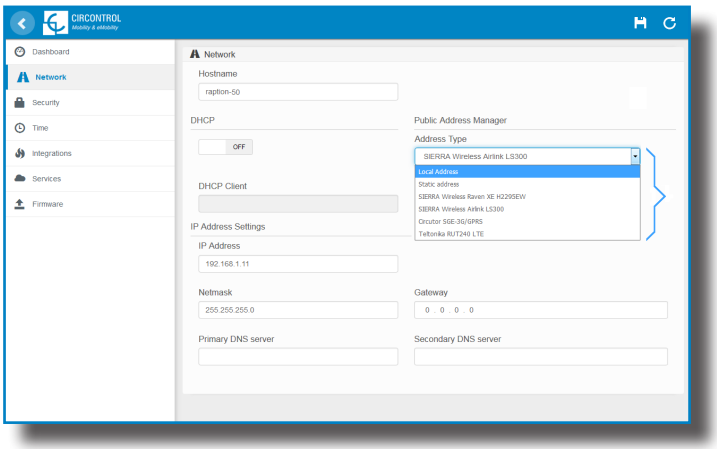
OCPP 1.5

B Before starting

Check following steps in order to ensure the correct function of OCPP 1.5:

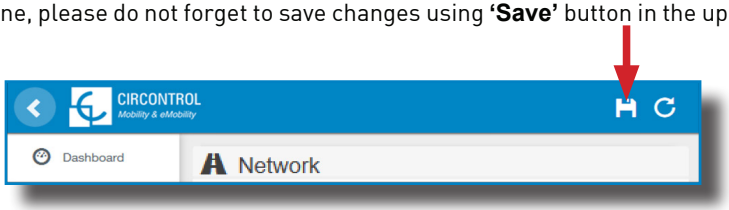
Go to the **Setup Webpage** → **'Network'** tab

Public Address Manager establishes where the Charge Point must obtain the public IP address in order to send it later to the backend. Different values can be selected in the **'Address Type'** section:



Choose the option selected under **'Address Type'** according to your network topology.

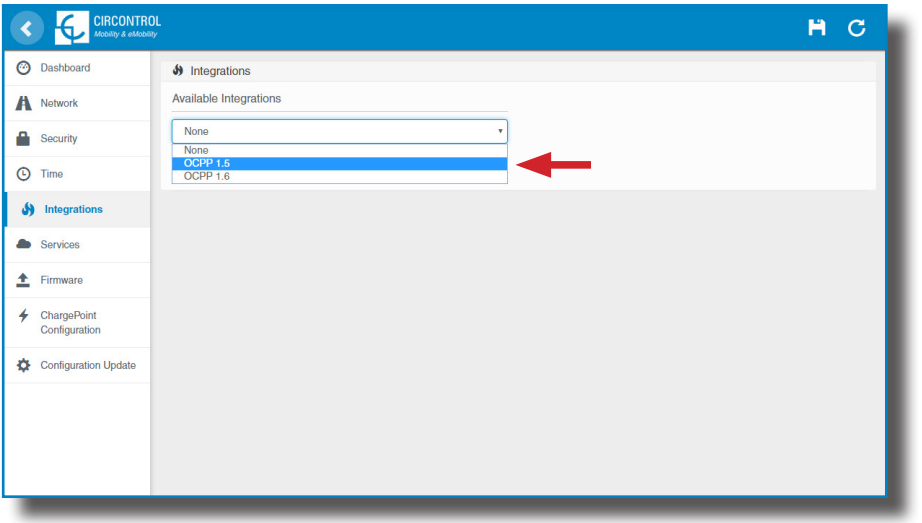
When done, please do not forget to save changes using **'Save'** button in the upper right bar.



Go to the **Setup Webpage** → **'Integrations'** tab

Charge Point supports different versions of OCPP but only one can be enabled at the same time.

Go back to setup web page and click on the **'Integrations'** tab, choose the option selected under **'Available integrations'** according to your backend policies as shown in the picture:



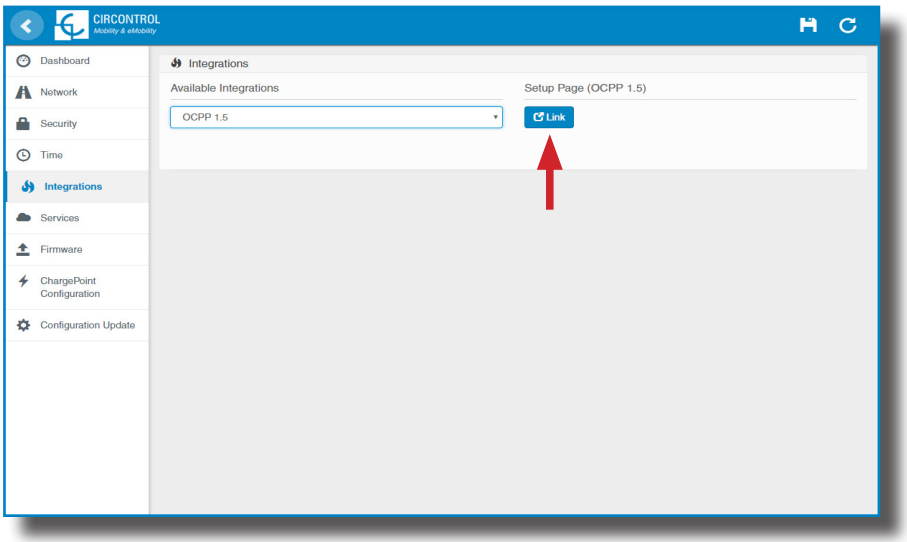
NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.

Configuration

Go to the **Setup Webpage** → **'Integrations'** tab

Once OCPP 1.5 option is selected, a link appears allowing access to the OCPP configuration.

Please, click on the link button as shown in the picture:



New tabs are opened to show OCPP Settings. It can also be accessed directly typing: http://<IP>:8080/html/setup.html

These tabs require a user identification:

User: admin

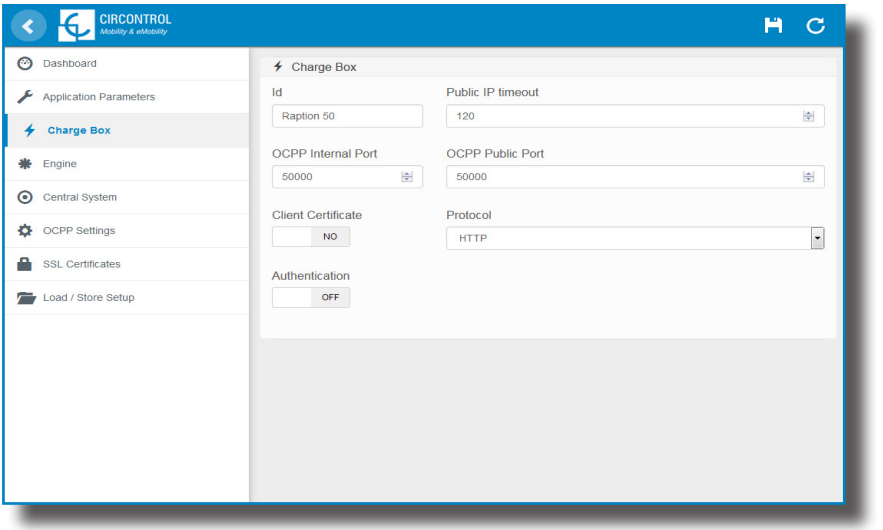
Password: 1234

First time is running the integration selected on the Charge Point, it starts as configuration mode and all fields are empty.

Settings are always stored even when the Charge Point is powered off or even the integration is disabled/stopped.

On the OCPP webpage, go to **'Charge Box'** tab

Check Charge Box Identity and the incoming ports according to the backend policies, please contact to the Central System to get the configuration parameters:

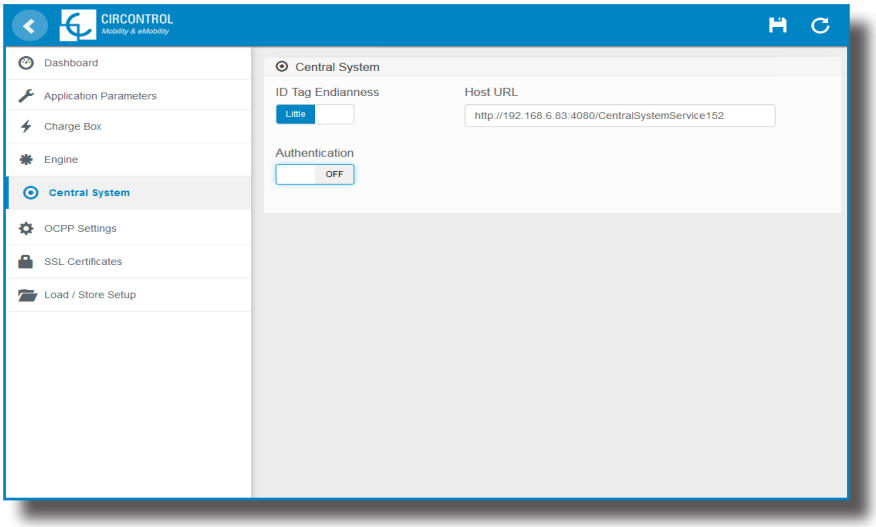


Value	Description
ID	Charge Point identifier
Public IP timeout	Maximum waiting time to obtain the public IP address of the 3G modem
OCPP Internal port	Incoming listening port for remote request (internal)
OCPP Public port	Incoming listening port for remote request (public)
Client Certificate	Provided by the Central System
Protocol	If HTTPS is selected, make sure to have CS Server CA certificate
Authentication	Set an authentication if is required

Go to **‘Central system’** tab

Allows the Charge Point to know where the central system is hosted to notify all the requests.

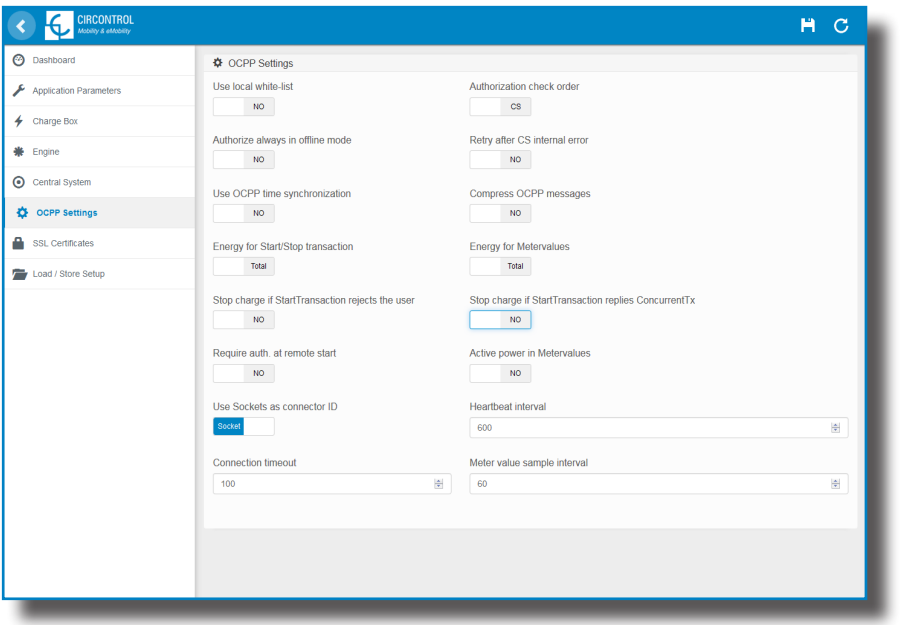
Check Central System URL according to the backend policies, please contact to the Central System to get the configuration parameters:



Value	Description
ID Tag Endianness	Storage type for system data
Host URL	URL address of the central system
Authentication	It can be set an authentication for avoinding changes in this page

Go to **'OCPP Settings'** tab

Check OCPP Settings according to the backend policies, please contact to the Central System to get the configuration parameters:



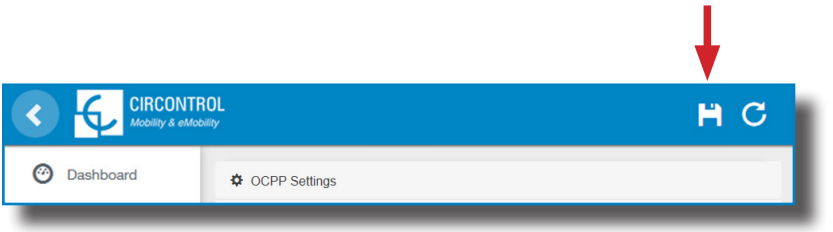
Before making any changes read following table and set each option according to your backend provider.

Value	Description
Use local white-list	**YES:** local list of authorized users --> Enabled **NO:** local list of authorized users --> Disabled
Authorization check order	**LOCAL:** ID authorization has first place on the local white-list. If the user does not exist locally, then in second place backend is asked to obtain the authorization. **CS:** ID authorization is always asked to the backend. **NOTE:** This setting only applies when Charge Point is online; otherwise the authorization is only locally.
Authorize always in offline mode	**YES:** If user is not present locally in the local white-list and charge point cannot ask to the backend, user is allowed to start a new charge transaction. **NO:** If user is not present locally in the local white-list and charge point cannot ask to the backend, the user is not allowed to start a new charge transaction.
Retry after CS internal error	**YES:** Enabled. If StatusNotification, StartNotification or StopNotification are not received correctly by the backend, charge point retries again to send those requests until it is received correctly. **NO:** Disabled. **NOTE:** Special development must be done in backend in order to retry the messages by charge point.

Value	Description
Use OCPP time synchronization	**YES:** Synchronization of date and time -–> Enabled. **NO:** Synchronization of date and time -–> Disabled. ***NOTE:** Date and Time is sent from backend on each heartbeat response.
Compress OCPP messages	**YES:** Compress messages between Charge point and backend -–> Enabled. **NO:** Compress messages between Charge point and backend -–> Disabled. ***NOTE:** Before enabling this option consult to your backend administrator if central system allows this function.
Energy for Start/Stop transaction	**PARTIAL:** Consumed value of energy by the vehicle sent between start and stop. **TOTAL:** actual count of the total accumulated energy meter sent between start and stop.
Energy for MeterValues	**PARTIAL:** Sends partial energy consumption while vehicle is charging. **TOTAL:** sends the actual count of the total accumulated energy meter.
Stop charge if StartTransaction rejects the user	**YES:** Stop existing charge transaction after response from backend (StartTransaction.conf) when user is blocked, expired or Invalid. **NO**: Charge transaction does not stops even if backend rejects the user. (StartTransaction.conf) ***NOTE:** Set this option according to your backend system.

Value	Description
Stop charge if StartTransaction replies ConcurrentTx	**YES:** Stop existing charge transaction after response from backend (StartTransaction.conf) when user has already involved in another transaction. **NO:** Charge transaction does not stops even if backend rejects the user. (StartTransaction.conf) ***NOTE:** Set this option according to your backend system.
Require auth. At remote Start	**YES:** Charge point sends an authorization request before starting a new remote charge transaction request. **NO:** Charge point starts a new remote charge transaction without authorization request.
Active Power in MeterValues	**YES:** Send power (Power.Active.Import) and energy (Energy.Active.Import.Register) consumed by the vehicle within meter values requests. **NO:** Only energy consumed is sent within meter values request.
Heartbeat interval	Heartbeat send interval (in seconds) for the back-end system.
Connection timeout	Timeout (in seconds) before connecting to the central system.
Meter value sample interval	Meter value sample send interval (in seconds) during charge transaction. ***NOTE:** Meter values are disabled if 0 seconds is set

Once done, please do not forget to save changes using **'Save'** button in the upper right bar:



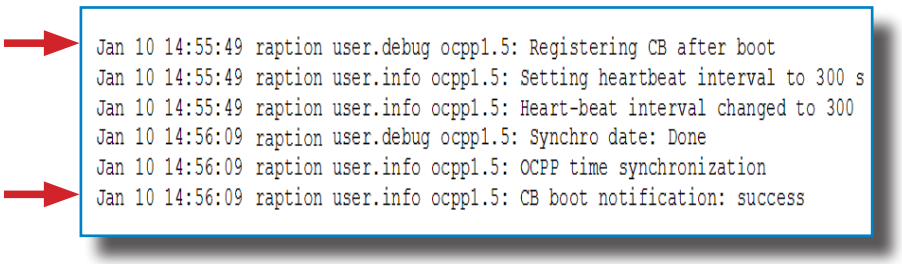
Please, wait until the new configuration is being applied to the Charge Point. A message is displayed informing the progress:

D Checkup

After applying new settings, please go to next URL from Charge Point in order to check properly connection from the integration chosen:

http://<IP>/services/cpi/log?app=ocpp1.5

Look especially for the following messages:



If **'CB boot notification: success'** appears then Charge Point is properly connected to the back-end.

Otherwise, if the message shown is **'Registering CB in the CS: failed'** then check following items:

- Backend URL. Case sensitive. Check all the URL is correct.

- Charge Point ID. Case sensitive. Check if the name entered is same as backend expects to receive.

- Connectivity. Check if modem is power up and connected to the HMI screen. Ask to the backend provider if any request has been received from the charge point (BootNotification, StatusNotification or HeartBeat) after upgrading.

7

A Introduction

The goal of the Open Charge Point Protocol (OCPP) is to offer a uniform solution for the communication between Charge Point and a Central System. With this open protocol it is possible to connect any Central System with any Charge Point, regardless of the vendor.

Follow next steps in order to configure OCPP 1.6 in the Circontrol Charge Points.

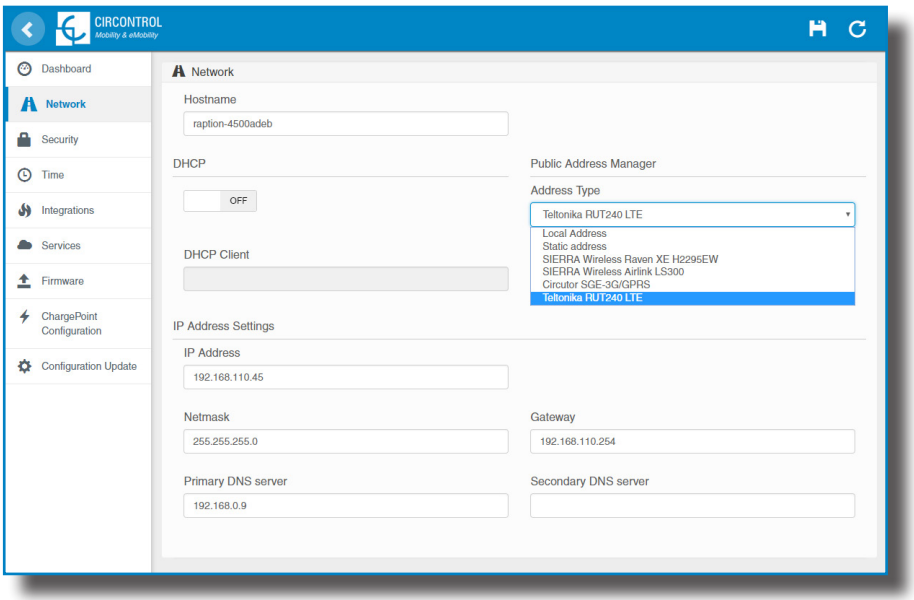
OCPP 1.6

B Before starting

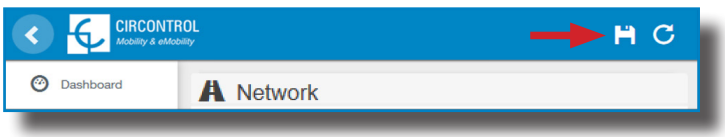
Check following steps in order to ensure the correct function of OCPP 1.6:

Go to the **Setup Webpage** → **'Network'** tab

Public Address Manager establishes where the Charge Point must obtain the public IP address in order to send it later to the backend. Different values can be selected in the **'Address Type'** section:



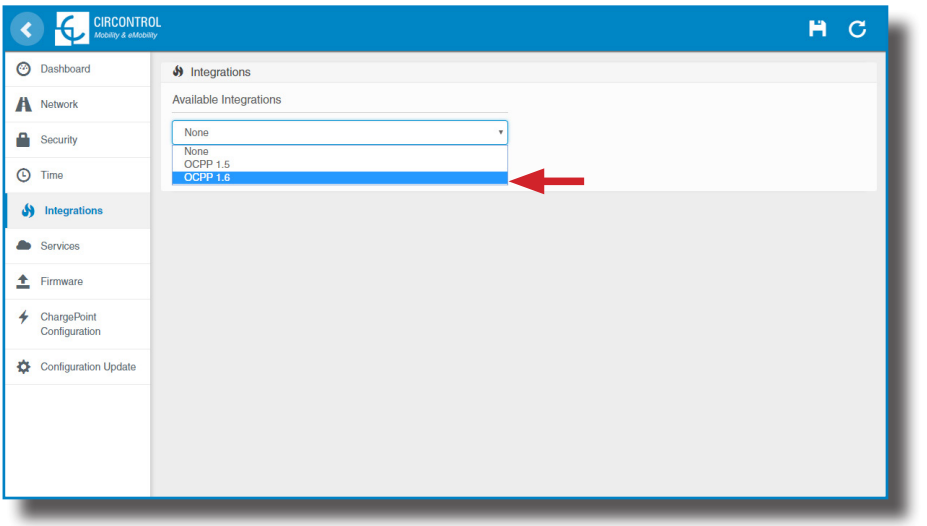
Choose the option selected under **'Address Type'** according to your network topology. When done, do not forget to save changes using **'Save'** button in the upper right bar:



Go to the **Setup Webpage** → **'Integrations'** tab

Charge Point supports different versions of OCPP but only one can be enabled at the same time.

Go back to setup web page and click on the **'Integrations'** tab, choose the option selected under **'Available integrations'** according to your backend policies as shown in the picture:

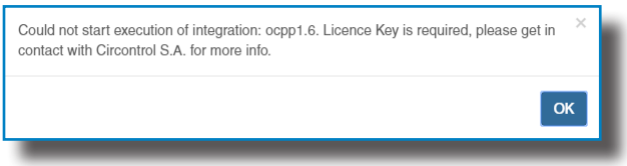


NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.

License required, refer to the next chapter for more information about the activation.

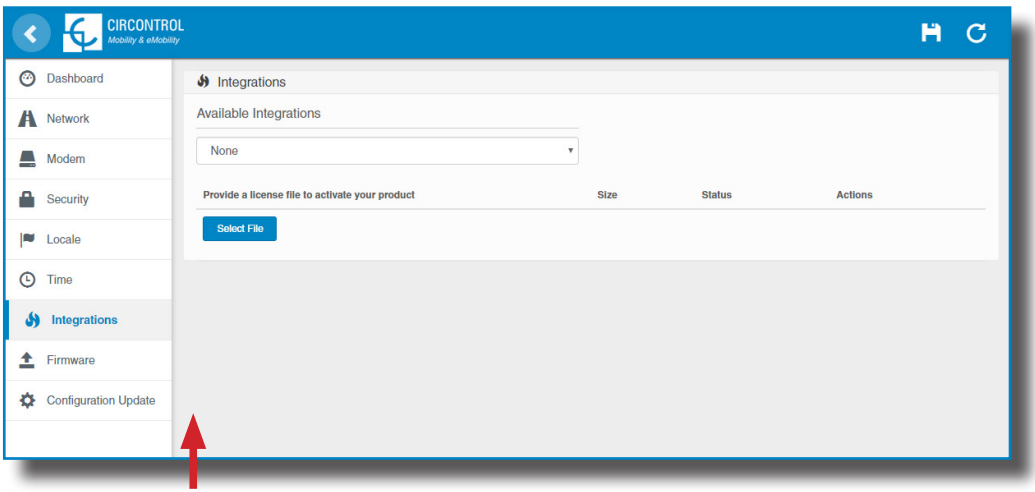
License activation

If the Charge Point does not have the license applied, the following message pops up:

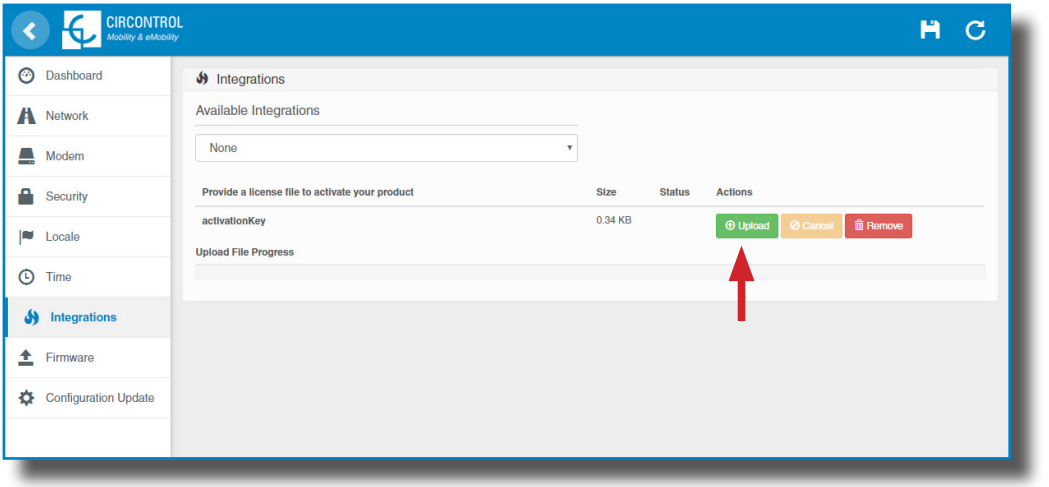


To obtain the license file please contact CIRCONTROL Post Sales Department. More information in **'Need help?'** chapter.

The license can be applied by clicking on the **'Select File'** button.



A window will pop up in order to choose the file, then click on '**upload'.**

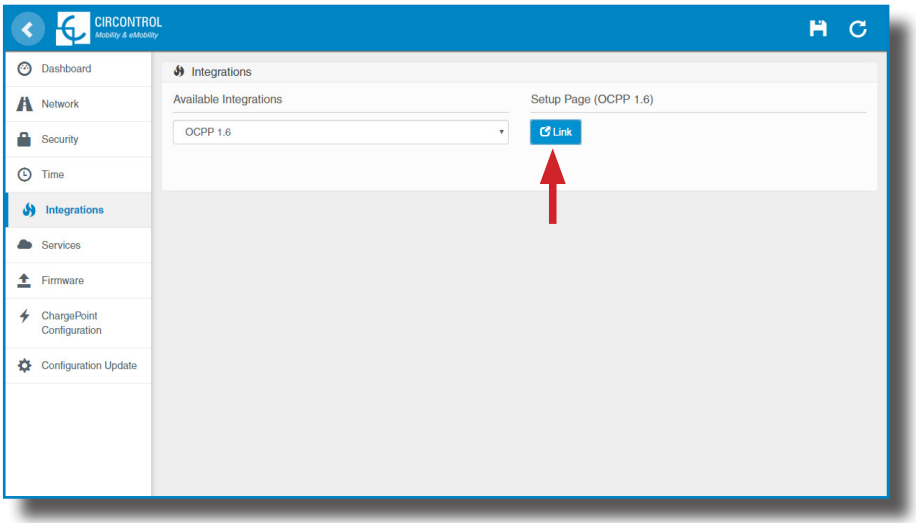


D Configuration

Go to the **Setup Webpage** → **'Integrations'** tab

Once OCPP 1.6 option is selected, a link appears allowing access to the OCPP configuration.

Please, click on the link button as shown in the picture:



New tabs are opened to show OCPP Settings. It can also be accessed directly typing: http://<IP>:8080/html/setup.html

These tabs require a user identification:

User: admin

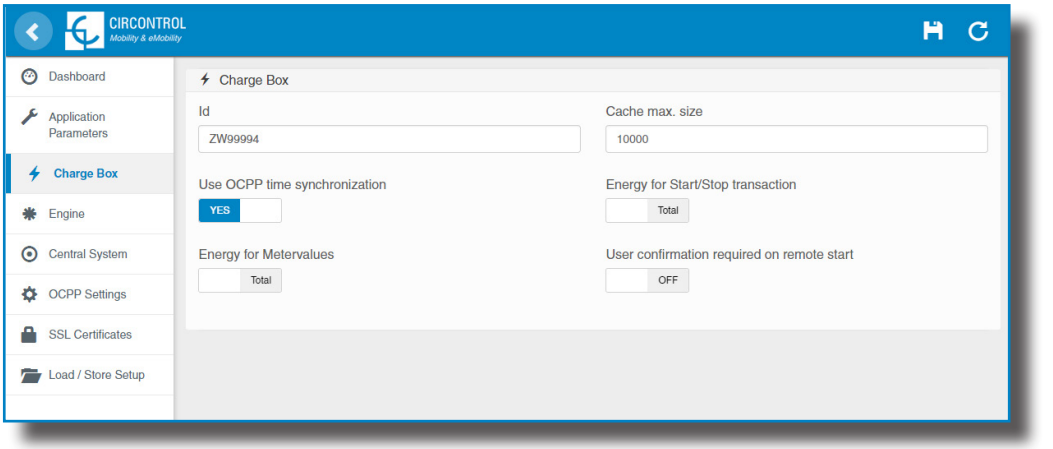
Password: 1234

First time is running the integration selected on the Charge Point, it starts as configuration mode and all fields are empty.

Settings are always stored even when the Charge Point is powered off or even the integration is disabled/stopped.

On the OCPP webpage, go to **‘Charge Box’** tab

Check Charge Box Identity and the incoming ports according to the backend policies, please contact to the Central System to get the configuration parameters:

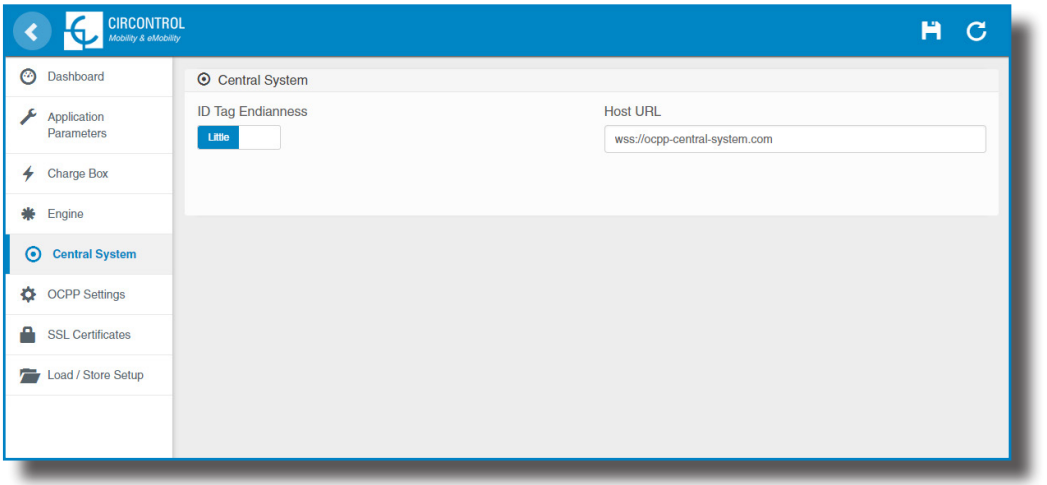


Value	Description
ID	Charge Point identifier
Cache max. size	Maximum size of the *Authorization Cache*, that autonomously maintains a record of previously presented identifiers that have been successfully authorized by the Central System. It can be viewed accessing to the following URL: http://←IP→:8080/services/cmd/dump_cache.xml
Use OCPP time synchronization	**YES:** Synchronization of date and time -→ Enabled. **NO:** Synchronization of date and time -→ Disabled. ***NOTE:** Date and Time is sent from backend on each heartbeat response.
Energy for Start/ Stop transaction	**PARTIAL:** Consumed value of energy by the vehicle sent between start and stop. **TOTAL:** actual count of the total accumulated energy meter sent between start and stop.
Energy for MeterValues	**PARTIAL:** Sends partial energy consumption while vehicle is charging. **TOTAL:** sends the actual count of the total accumulated energy meter.
User confirmation required on remote start	**ON:** user confirmation needed to proceed with a remote start (i.e. touch the screen) **OFF:** user confirmation NOT needed to proceed with a remote start

Go to **'Central system'** tab

Allows the Charge Point to know where the central system is hosted to notify all the requests.

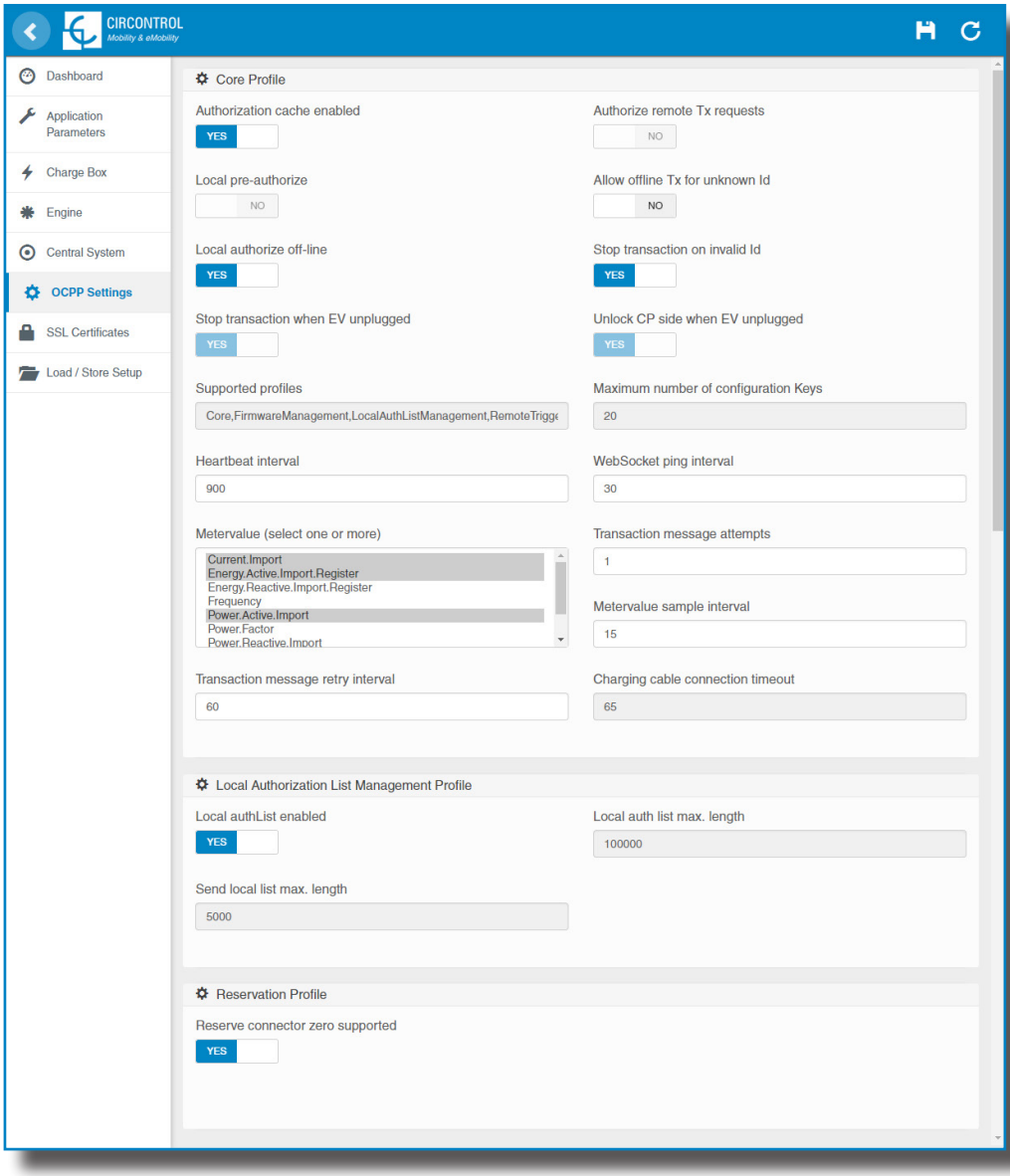
Check Central System URL according to the backend policies, please contact to the Central System to get the configuration parameters:



Value	Description
ID Tag Endianness	Storage type for system data
Host URL	URL address of the central system

Go to **‘OCPP Settings’** tab

Check OCPP Settings according to the backend policies, please contact to the Central System to get the configuration parameters:

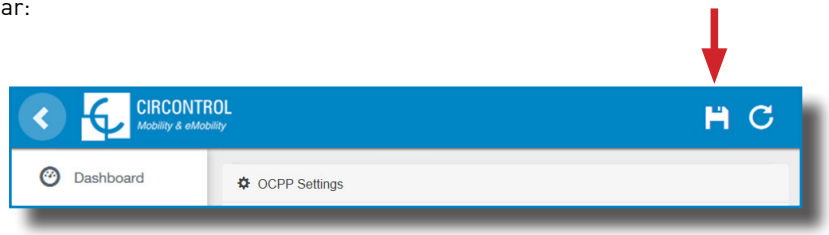


Value	Description
Authorization cache enabled	**YES:** maintain a local list of all presented identifiers that have been successfully authorized by the Central System. **NO:** authorization for presented identifiers is requested directly to the Central System
Authorize remote Tx requests	**YES:** the Charge Point asks for authorization when the Central System sends a remote start **NO:** the Charge Point starts the Charge Transaction when the Central System sends a remote start
Local pre-authorize	**YES:** Charge Point looks for locally-authorized identifiers without waiting for the Central System authorization. **NO:** Charge Point requests authorization for presented identifiers to the Central System.
Allow offline Tx for unknown Id	**YES:** during offline period unknown identifiers are allowed to start charging **NO:** during offline period unknown identifiers are NOT allowed to start charging
Local authorize off-line	**YES:** during offline period locally-authorized identifiers are allowed to start charging **NO:** during offline period locally-authorized identifiers are NOT allowed to start charging
Stop transaction on invalid Id	**YES:** stop existing Charge Transaction after response from Central System when user is blocked, expired or invalid. **NO**: Charge Transaction does not stop even if backend rejects the user.

Value	Description
Stop transaction when EV unplugged	**YES:** Charge Transaction stops when the cable is disconnected from the EV **NO:** Charge Transaction does not stop when the cable is disconnected from the EV; furthermore, if it is reconnected energy transfer is allowed again. It is required for the user to present the identifier in order to stop the Charge Transaction.
Unlock CP side when EV unplugged	**YES:** Charge Point unlocks the connector when the cable is disconnected from the EV **NO:** Charge Point keeps the connector locked when the cable is disconnected from the EV, it is required for the user to present the identifier in order to unlock the connector
Supported profiles	List of supported profiles on the Charge Point ***NOTE:** this field is for information purposes, it cannot be modified.
Maximum number of configuration Keys	Maximum number of requested configuration keys that can be requested by the Central System. ***NOTE:** this field is for information purposes, it cannot be modified.
Heartbeat interval	Number of seconds between Heartbeats. ***NOTE:** setting this value to 0 disables the Heartbeat.
WebSocket ping interval	Number of seconds between Pings. ***NOTE:** setting this value to 0 disables the Websocket Ping/Pong.
Metervalue (select one or more)	List of supported values used in the MeterValue. ***NOTE:** hold 'Ctrl' key in order to select more than one Measurand.
Transaction message attempts	How many times the Charge Point should try to send a request to the Central System.

Value	Description
Metervalue sample interval	Number of seconds between MeterValue during an ongoing Charge Transaction. ***NOTE:** setting this value to 0 disables the MeterValue.
Transaction message retry interval	Number of seconds between transaction message attempts. ***NOTE:** setting this value to 0 disables the attempts.
Charging cable connection timeout	Number of seconds the Charge Point must wait for the user to plug/unplug the cable. ***NOTE:** this field is for information purposes, it cannot be modified.
Local authList enabled	**YES:** Local Authorization List enabled **NO**: Local Authorization List disabled
Local auth list max. length	Maximum size of the *Local Authorization List*, a list of identifiers that can be synchronized with the Central System. It can be viewed accessing to the following URL: http://←IP→:8080/services/cmd/dump_localList.xml ***NOTE:** this field is for information purposes, it cannot be modified.
Send local list max. length	Maximum number of identifications that can be send in a single request from the Central System. ***NOTE:** this field is for information purposes, it cannot be modified.
Reserve connector zero supported	**Yes:** Charge Point supports reservations on connector 0. That reservation is not done on a specific connector, one connector remains available for the reserved idTag. **NO**: Charge Point does NOT support reservations on connector 0.

Once done, please do not forget to save changes using **'Save'** button in the upper right bar:



E Checkup

After applying new settings, please go to next URL from Charge Point in order to check properly connection from the integration chosen:

http://<IP>/services/cpi/log?app=ocpp1.6

If **'CB boot notification: success'** appears then Charge Point is properly connected to the back-end.

Otherwise, if the message shown is **'Registering CB in the CS: failed'** then check following items:

- Backend URL. Case sensitive. Check all the URL is correct.

- Charge Point ID. Case sensitive. Check if the name entered is same as backend expects to receive.

- Connectivity. Check if modem is power up and connected to the HMI screen. Ask to the backend provider if any request has been received from the charge point (BootNotification, StatusNotification or HeartBeat) after upgrading.

7

A Introduction

The IP address assigned in the chapter 5, will be useful to connect with the Charge Point in order to monitor the real-time status.

The main way to connect is using the **CirCarLife client software** (Supplied by Circontrol PS-Support staff) or you can download from:

http://circarlife.com/en/downloads/

NOTE: Java software needs to be installed on your computer in order to run the client software, please, download last version from: www.java.com

In remote connections, where is required communicate via 3G/4G data with the Charge point in order to monitor its parameters, it should be noted that there will be a HIGH consumption of data.

In the case of doing the Charge point monitoring, it is reccommended to use Ethernet communications via internet (see chapter 4-D).

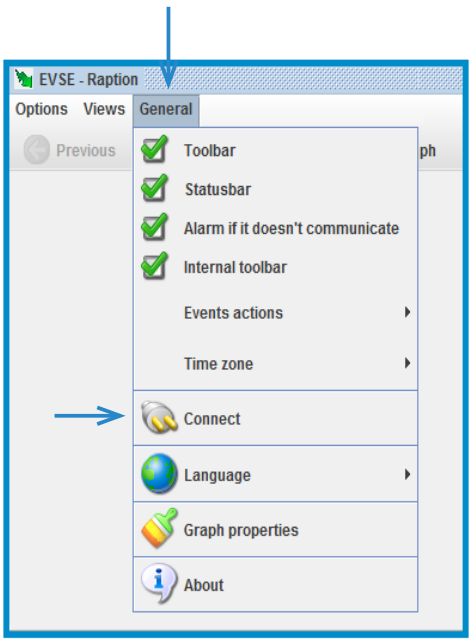
Monitoring

B CirCarLife client - Connection

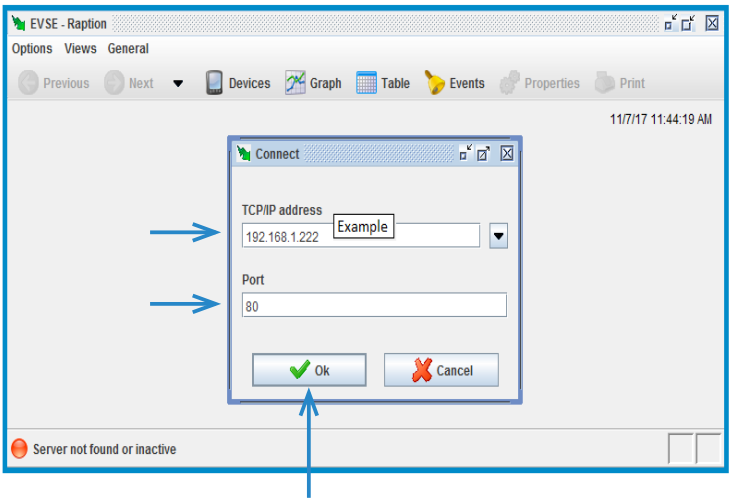
Steps:

1- Execute CirCarLife Client software at your computer

2- Push on **'General'** tab and after on **'Connect'** tab



3- Enter the IP address given to the Charge Point and port number **80**, after, press over **'Ok'**

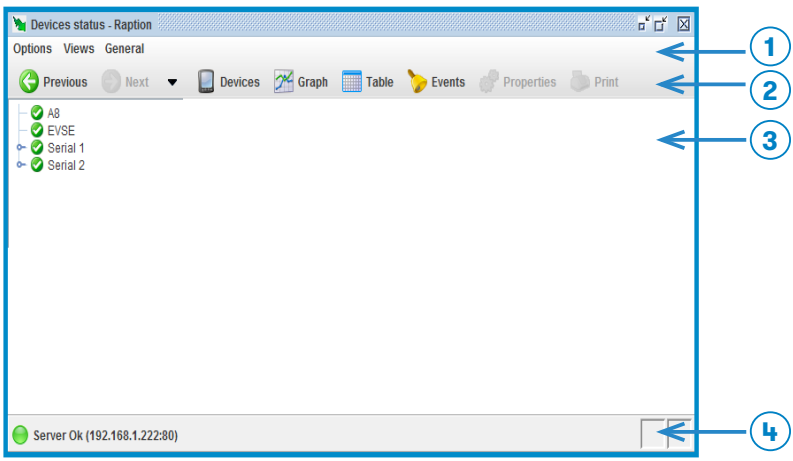


Once you have done the previous steps it is possible to monitor the Charge Point.

CirCarLife client - Overview

CirCarLife Scada client software allows displaying and reporting all parameters generated by devices connected to the engine of the Charge Point.

Client platform is implemented in Java and can be executed on many devices.



NOTE: devices connected to the Charge Point may vary depending on model purchased.

CirCarLife Scada client is divided on 4 sections:

1. Menu bar

2. Toolbar

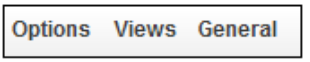
3. Screen information

4. Status bar

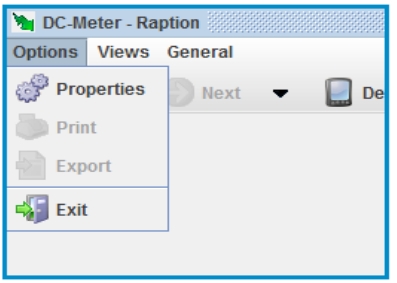
Following section describes in detail each of the points mentioned above.

1 — MENU BAR

Menu bar is located at the top and provides access to all available client features. There are three main menus, **'Options'**, **'Views'** and **'General'**



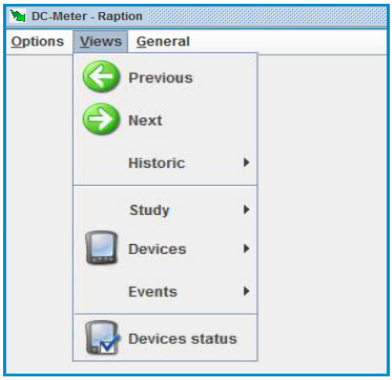
Options:



Option		Description
	Properties	Displays properties of the currently active view. *
	Print	Print currently active view. *
	Export	Exports currently active view. *
	Exit	Close the CirCarLife client software.

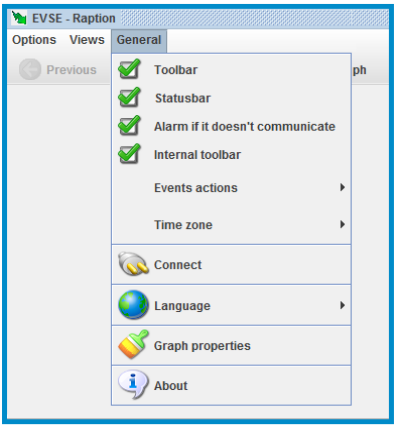
Note (*): this option can be active or not, depending on the view in progress.

Views:



Option		Description
	Previous	Displays the previous view.
	Next	Displays the next view (If available).
	Historic	Displays any view previously consulted.
	Study	Displays graph and tables views.
	Devices	Display the general status of all connected devices.
	Events	Displays the events log or the active events window.
	Devices status	Display the general status of all connected devices.

General:



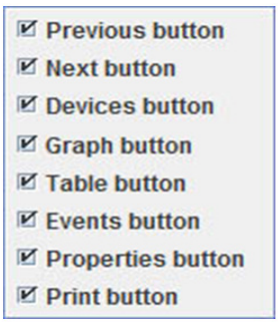
Option		Description
	Toolbar	Displays or hides the toolbar.
	Statusbar	Displays or hides the status bar.
	Alarm ...	Visual and audible alarm if communication is lost between Charge Point and computer connected.
	Internal toolbar	Not available tab.
	Event actions	List of actions enabled in the CirCarLife software.
	Time zone	It lets to change the time over GMT.
	Connect	Connects with the Charge Point monitored.
	Language	Changes the CirCarLife client software language.
	Graphs properties	Changes graph appearance.
	About	Displays client application version information.

2 — TOOLBAR

Toolbar contains the most frequent options used in the CirCarLife client software.

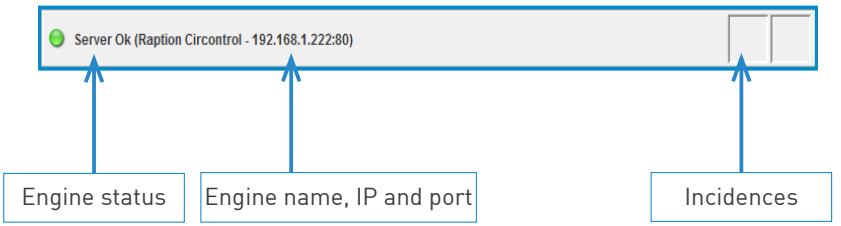
Option		Description
	Previous	Displays the previous view.
	Next	Displays the next view (If available).
	Devices	Device list shortcut.
	Graph	Creates a graph about the charging session.
	Table	Creates a table about the charging session.
	Events	Displays event history.
	Properties	Displays the properties window of the current view.
	Print	Allows us to print the current view.

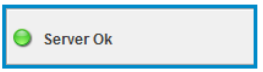
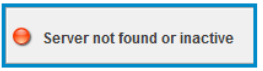
It is possible to hide or display buttons for the toolbar. Doing right-click on the toolbar and following setup menu will appear:



3 — STATUSBAR

Status bar is located at the bottom of the CirCarLife client software and it contains general information about status of the connection.



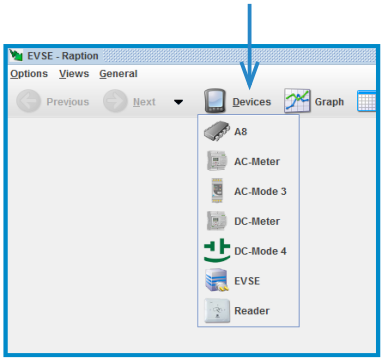
Status	Description
	Online CirCarLife Scada engine and working properly.
	Offline CirCarLife Scada engine.

Incidences	Description
	One or more devices are not communicating. See device status section to find witch device is not communicating.
	One or more devices are not reporting.
	One or more events are active.

NOTE: Double-click over each icon will show the details.

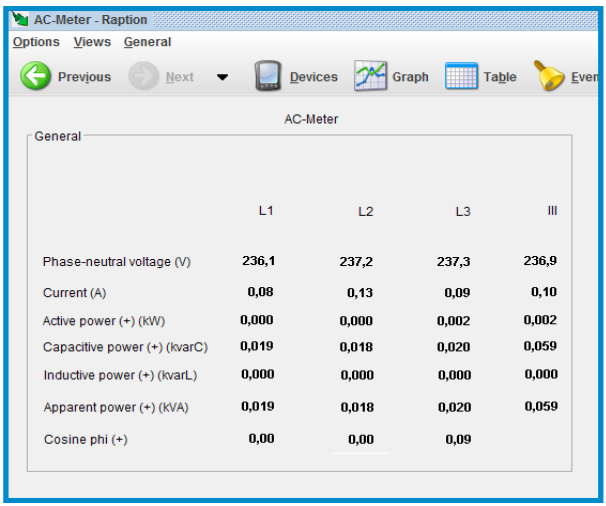
D CirCarLife client - Devices

Toolbar contains the most frequent options used in the CirCarLife client software. In this case we are going to explain about Devices icon.



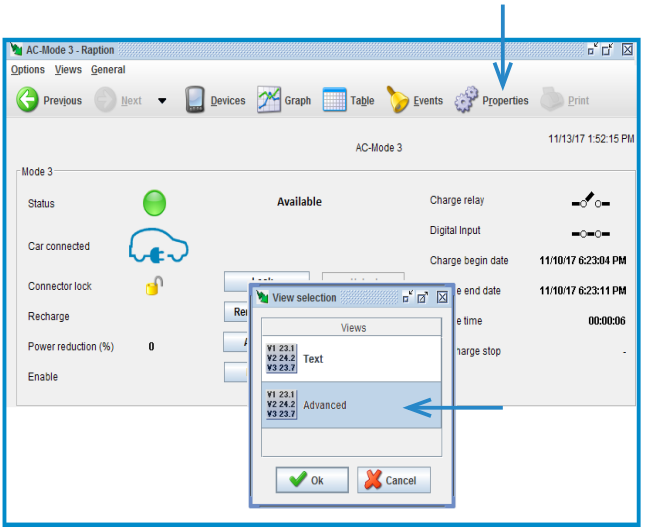
The A8 device refers to the HMI screen, it is reserved to the factory, no change has to be made in this tab.

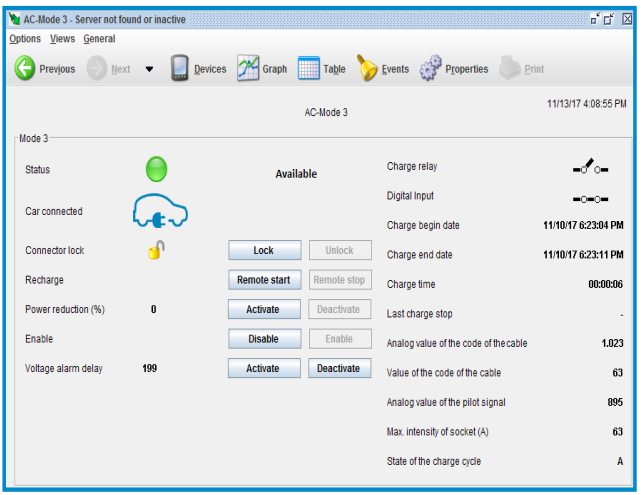
The AC- Meter refers to all the electrics parameters that can be read regarding the AC charge session.



	L1	L2	L3	III
Phase-neutral voltage (V)	236,1	237,2	237,3	236,9
Current (A)	0,08	0,13	0,09	0,10
Active power (+) (kW)	0,000	0,000	0,002	0,002
Capacitive power (+) (kvarC)	0,019	0,018	0,020	0,059
Inductive power (+) (kvarL)	0,000	0,000	0,000	0,000
Apparent power (+) (kVA)	0,019	0,018	0,020	0,059
Cosine phi (+)	0,00	0,00	0,09	

The **'AC-Mode 3'** tab refers to the Mode 3 device, after pressing on this tab, press on **'Properties'** tab and on 'Advanced' in order to see more details about Mode 3 device.

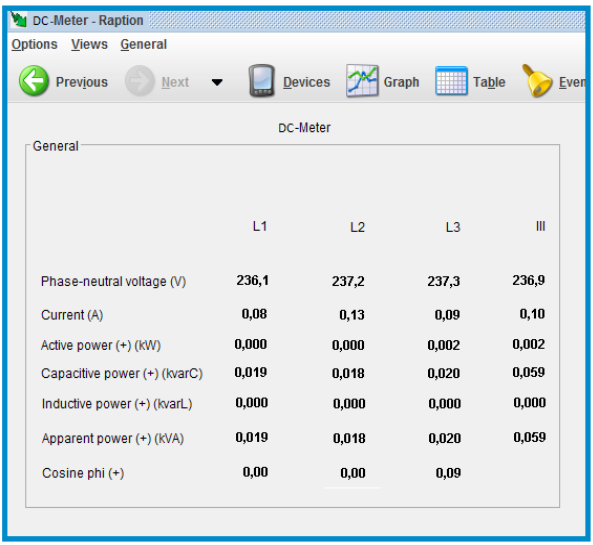




	Description		
Status	Plug Status		
			
	Available	Charging	Fault
Car connected	Vehicle connection status		
			
	Car connected	Car not connected	
Connector lock	Connector lock status (only socket models)		
			
	Locked plug	Unlocked plug	
Recharge	Recharge status		
	Remote start	Remote stop	
	Starts a charge from remotely point	Stop charging in progress	
Power reduction (%)	Power reduction (%) Status		
	Activate	Deactivate	
	It activates the power reduction, it is based on a percentage going down from the total AC power	This tab deactivates the power reduction and the charger is bound to give the total AC power	

Enabled	Enabled status	
	Disable	Enable
	The plug can be disabled, as an example, for any maintenance job	The plug is enabled again and ready to use.
Voltage alarm delay	Voltage alarm delay status	
	Activate	Deactivate
	It activates the option of having a voltage alarm by the case of under-level voltage	It deactivates the option
Charge relay	Charge relay status	
		
	Voltage is being supplied to the vehicle.	No voltage is being supplied to the vehicle
Charge begin date		Starting date of the last charge session
Charge end date		Ending date of the last charge session
Charge time		Duration of the last charge session
Last charge stop		Reason for the last charge session stop
Analog value code cable		Reserved value for factory
Value code cable (A)		Max. current capacity for tethered cable
Analog value pilot signal		Reserved value for factory
Max. Intensity of socket (A)		Max. current capacity for Socket
State of the charge cycle		Vehicle' s charge state

The DC- Meter refers to all the electrical parameters that can be read regarding the DC charge session, but, upstream of the power modules, reading AC consumption.



At this tab, **'DC-Mode 4'**, it can be seen a lot of parameters regard to the DC charging sessions, for both kind of charges, CHAdeMO and CCS. The most important, how to setup the output power, will be explained in the next points in this document.

The **'EVSE'** tab is useful so as to see a quickly view of the currently charging session, for both kind of charges started in that moment, DC and AC.

Almost all the information appeared here, **'EVSE'** tab, has been already explained in the previous **'AC-Mode 3'** tab. Next, we are going to explain the different options, as susch as :

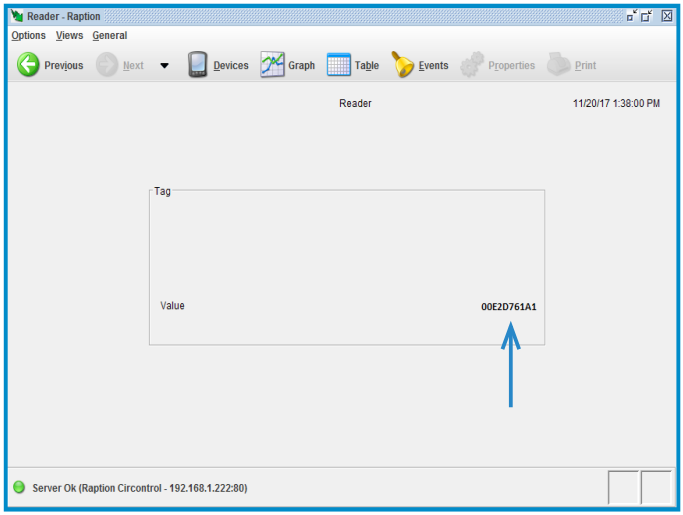
Lights;Reserved;Leakage;Emergency;Activeenergy;Partialactiveenergy;Activepower; Voltage; Current; Charge request date.

Lights	Ligths status	
	ON	OFF
	Courtesy lights can be switched on from here without touching the screen	It switches off the courtesy lights
Reserved	Reserved status	
	Reserve	Release
	It lets to activate the charging session for one specific identifier tag	It deactivates the option
Leakage/Shortcircuit	RCD/MCB status	
		
	Normal operation	The device has tripped
	OFF	Reset
	If for any reason, such as maintenance work, and the RCD or MCB has remote control, it is possible to switch off	If the charge point is equipped with RCD or MCB with remote control, it is possible to reconnect pressing over 'Reset'

Emergency	Emergency status	
	✔	✘
	Normal operation	The emergency button has been pressed or the charge point's door is opened
		Reset
		After pulling back the emergency button or/and closing the charge point's door it is possible to 'Reset' the unit

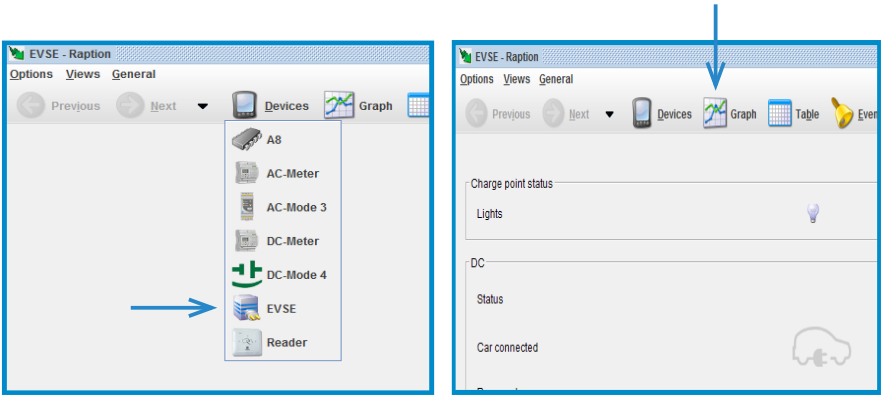
Active energy (kWh)	Total charge point's measured energy since installed
Partial active energy (kWh)	Partial energy meter of the last charging session
Active power (kW)	Active power for the active charging session
Voltage (V)	Present voltage of the active charging session
Current (A)	Present amps of the active charging session
Charge request date	Date of the last charge request

Clicking over **'Reader'** tab, it can be checked if the reader is working properly, reading the RFID identifier. The identifier number will appear for a short time meantime the RFID card is shown to the reader.



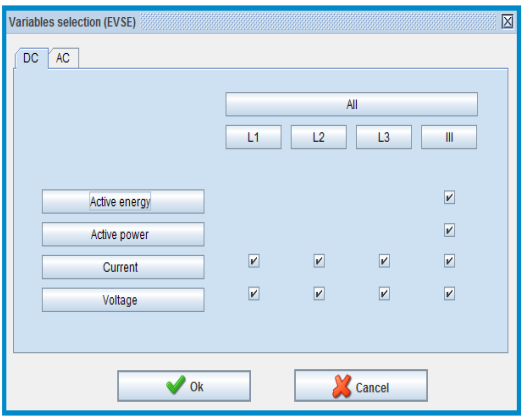
E CirCarLifeclientsoftware-Graphs

One of the most powerful tools of CirCarLife client software is graphs tools, it shows, in real time, the charging session progress for the device choosen in advance, it means, if it choosen a device on the **'Device'** tab and after the **'Graph'** icon is pressed at the TOOLBAR, the graph shown will make reference to this device.

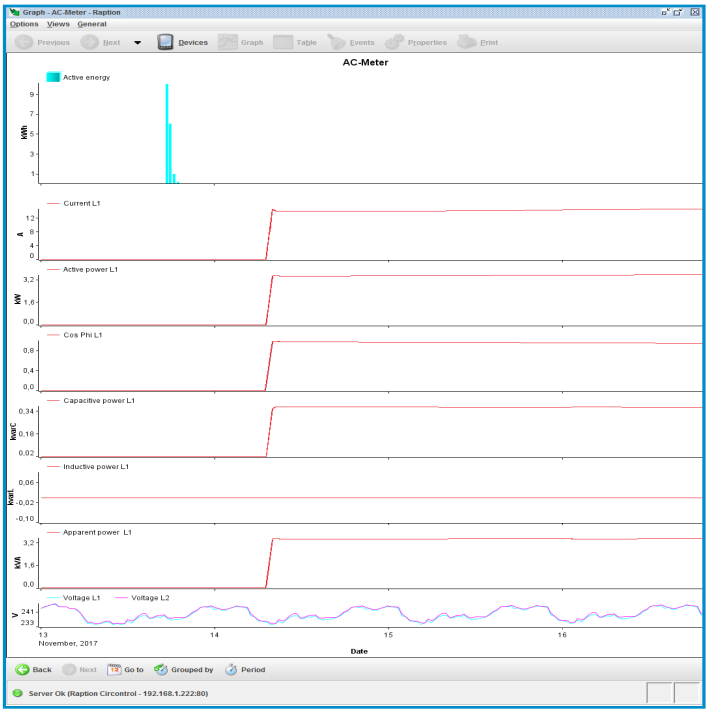


As an example, we are going to show the graph for **EVSE device:**

Following image, shows the variables selection that can be done in order to show after in the graphs, for both, DC and AC charging session:



Once you have chosen the different variables to show, it will appear next image:



Graph tool has following sections:

- Title: situated on the upper area. It is a text describing the represented variables

- Representation areas: data represented by bars for energy or by lines for the other magnitudes, such as power, current, voltage, etc. Each area contains some common characteristics:

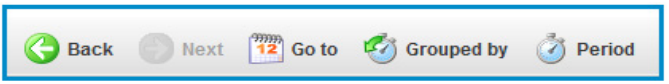
- **Key:** provides general information about the variables represented in the area.

- **Y Axis:** provides information on the units of the variables that are represented in this axis and the range of values that are being displayed.

- **X Axis:** typically, this is the time axis and is located at the bottom of the representation area. Here the time interval being represented may be seen. Usually predefined time intervals are represented (day, month, etc.). But the user can choose the most suitable as can be seen later.

- **Drawing area:** it contains the actual figures, representing the variables of the area in question. There is a drawing area for each area of representation.

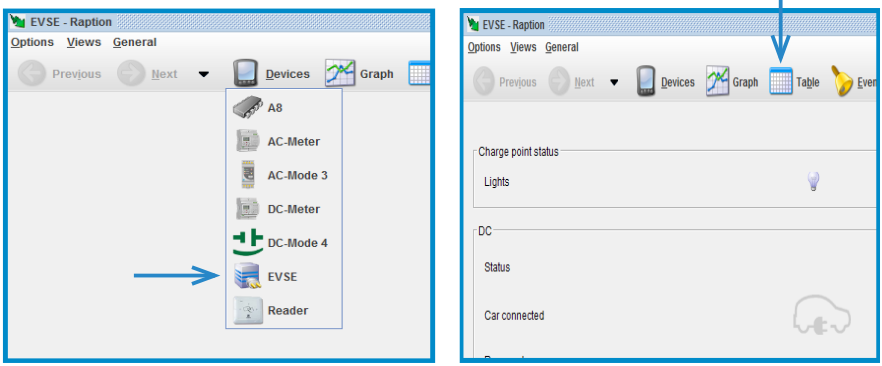
- Graph toolbar: contains a series of actions that can be performed on the graph. Depending on the type of graph it will contain more or fewer options:



Option	Description
Back	Displays the previous interval of data
Next	Displays the next interval of data
Go to	Allows choosing a closed graph interval
Grouped by	Allows choosing standard graph interval, by day, week, month or year
Period	Sampling period variables

F CirCarLife client - Tables

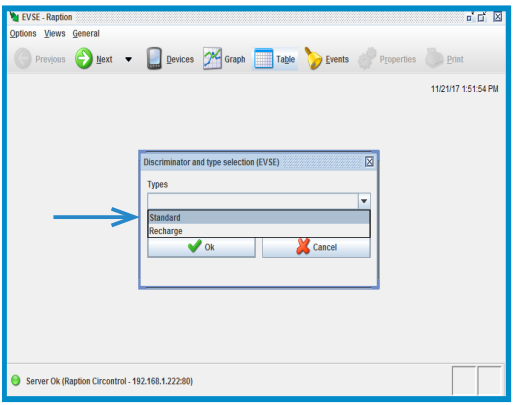
Another important tool of CirCarLife client software is Table tool, it shows the charging sessions data for every device choosen in advance, it means, if it choosen a device on the **'Device'** tab and after the **'Table'** icon is pressed at the TOOLBAR, the table shown will make reference to this device.



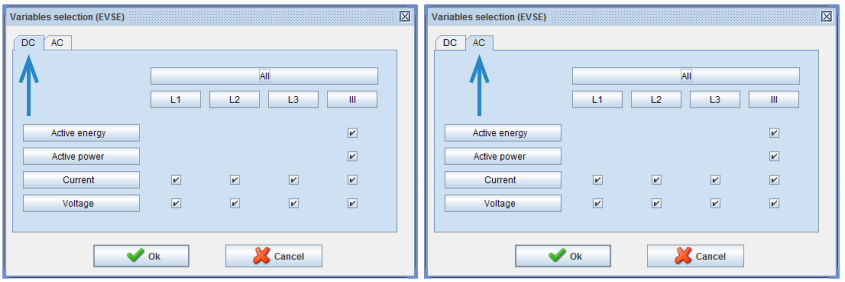
As an example, we are going to show the table for **EVSE device:**

Once the **'Table'** button is pressed, a discriminator window appears, there are two types of tables:

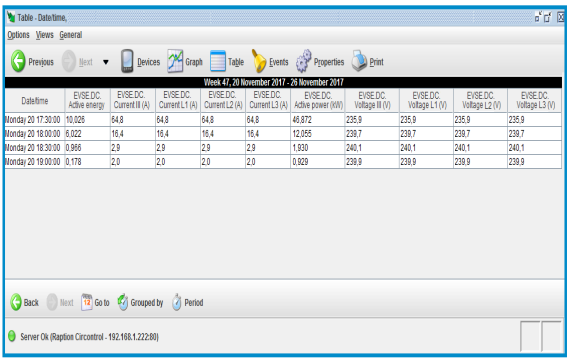
- **Standard:** sampling variable (energy, power, voltage) depending on the meter installed on the charge point. Choose **'Standard'** and after press over **'OK'**



Now, another pop-up window appears, you can choose either, DC or AC, and after choose the variables to be shown, such as, Active energy, Active power, Current and voltage :

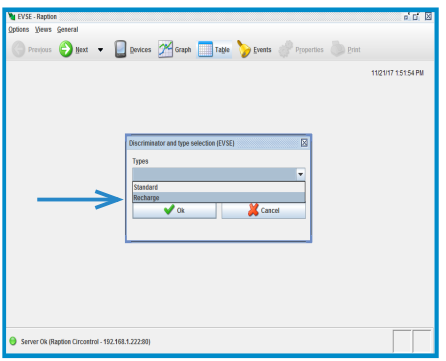


Following image shows the appearance of Standard table:

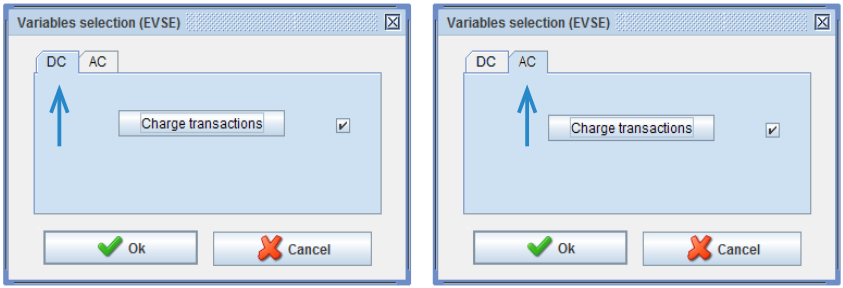


The other type of table is:

- **Recharge:** summary of recharges on the charge point. Choose **'Recharge'** and after press over **'OK'**



Now, another pop-up window appears, you can choose either, DC or AC, after press over **'Charge transaction'** tab and over **'Ok'**



Following image shows the appearance of Standard table:

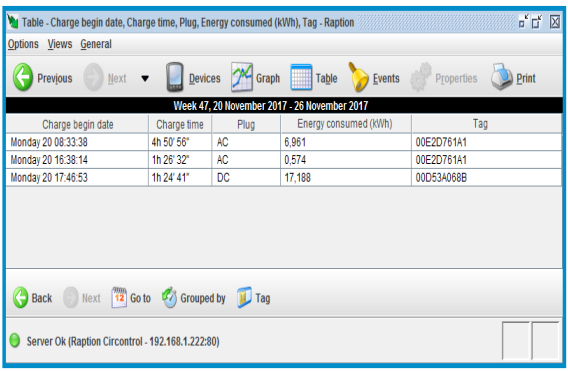


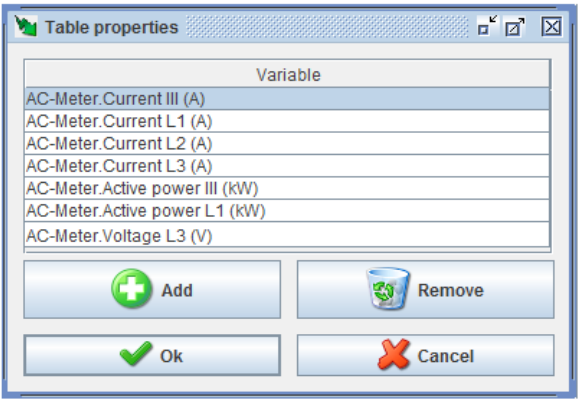
Table tool has following sections:

- **Title:** data period displayed.
- **Body:** it contains a series of columns with the values registered.
- **Toolbar:** personalization data showed in the table.*

*Table toolbar has same options and functionality as explained on toolbar graphs section.

TABLE PROPERTIES

It is possible to configure some aspects for the tables pressing over **'Properties'** icon at the TOOLBAR, such as it can been seen next:

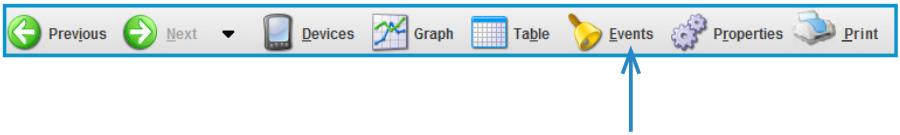


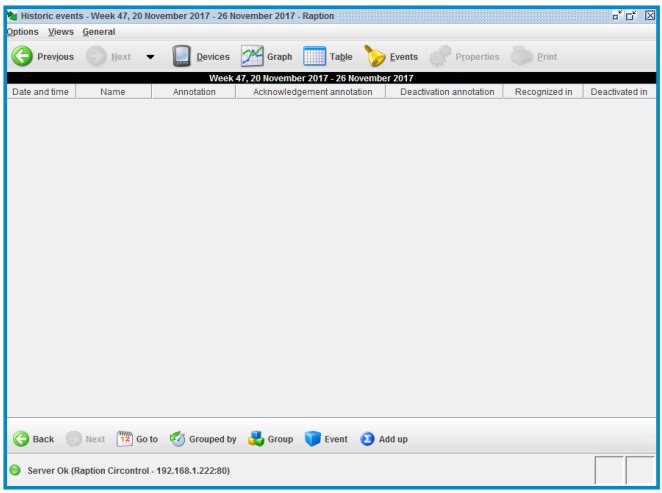
Using this option it is possible to add new variables to the table in the same way as they are added to the graph, by clicking on **'Add'**.

It is also possible to delete variables from the table selecting the desired variables and clicking on the **'Remove'** button.

User can print or export the current table displayed using **'Print'** or **'Export'** option on the **'Options'** menu of the Menu bar.

CirCarLife client - Events





CirCarLife Scada client enables current events to be viewed in real time, both the simple events that are active and those that must also be acknowledged by the user.

NOTE: this option is not able for Raption's Series because all this functions can be done by OCPP.

8

A Introduction

This section shows how to manage the output power delivered by the Charge Point for DC and AC. To do this action you have to keep connected through the program CirCarLife Client software.

Limiting the output power will be useful if the input power supply for the Charging Point is not enough powerful to feed and keep a good level of charge for electric vehicles.

The power reduction can be done for both, DC and AC outlet

- DC output power can be limited in watts.

- AC output power can be limited in amps.

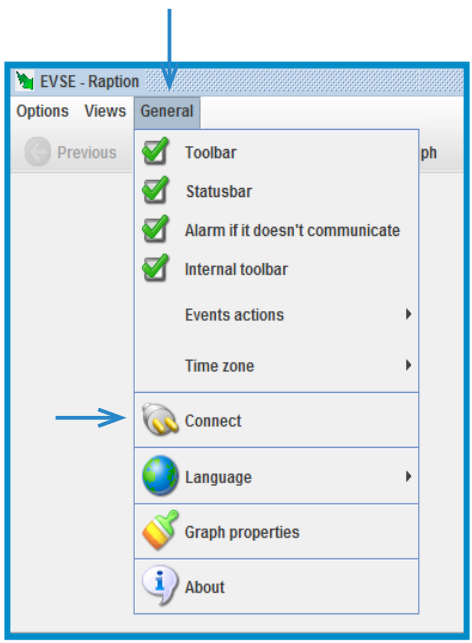
Output power setup

B Maximum output power for DC

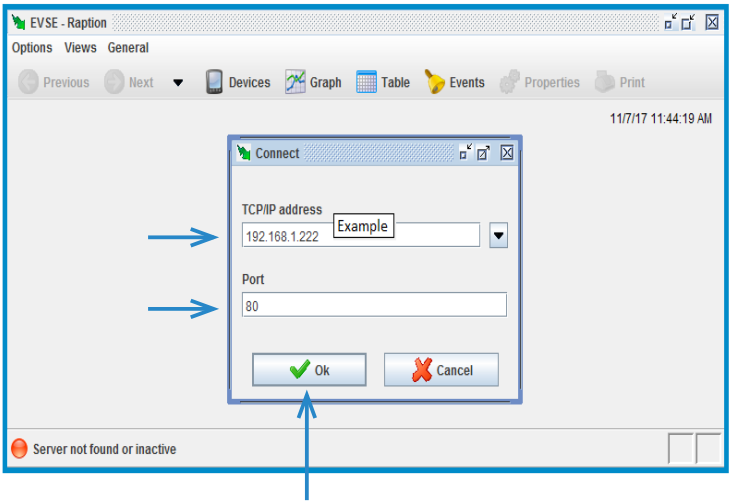
Steps:

1- Execute CirCarLife Client software

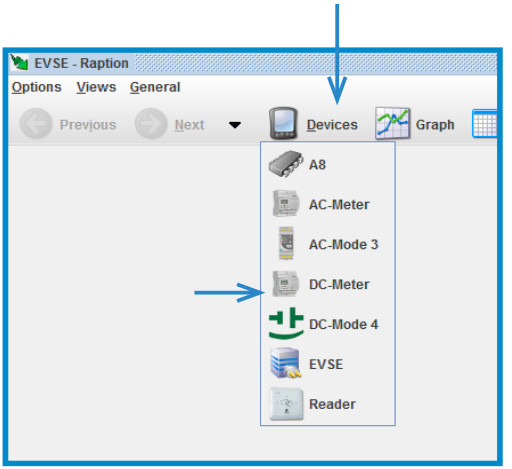
2- Push on **'General'** tab and after on **'Connect'** tab



3- Enter the IP address given to the Charge Point and port number **80**, after, press over **'Ok'**

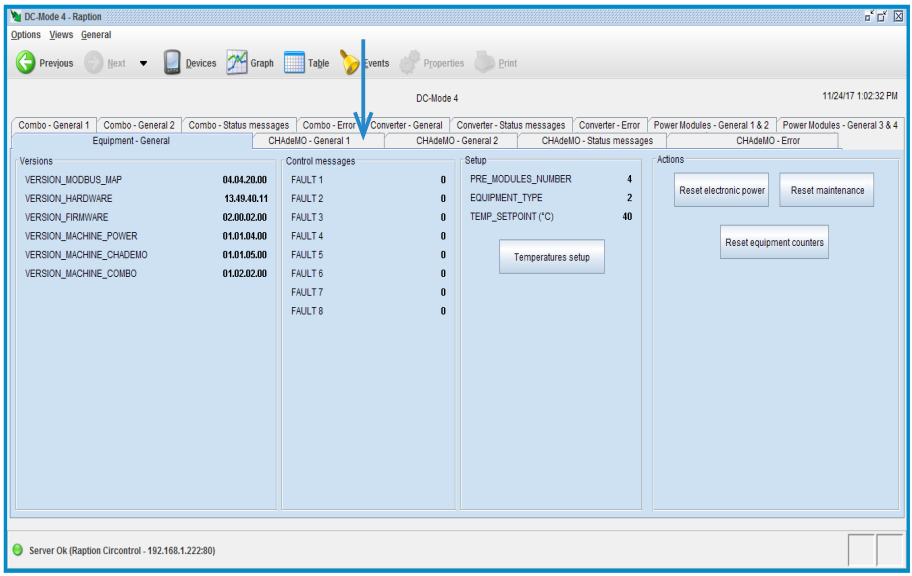


4- Press on the **'Device'** tab icon at the TOOLBAR and after click on **'DC-Mode 4'**:

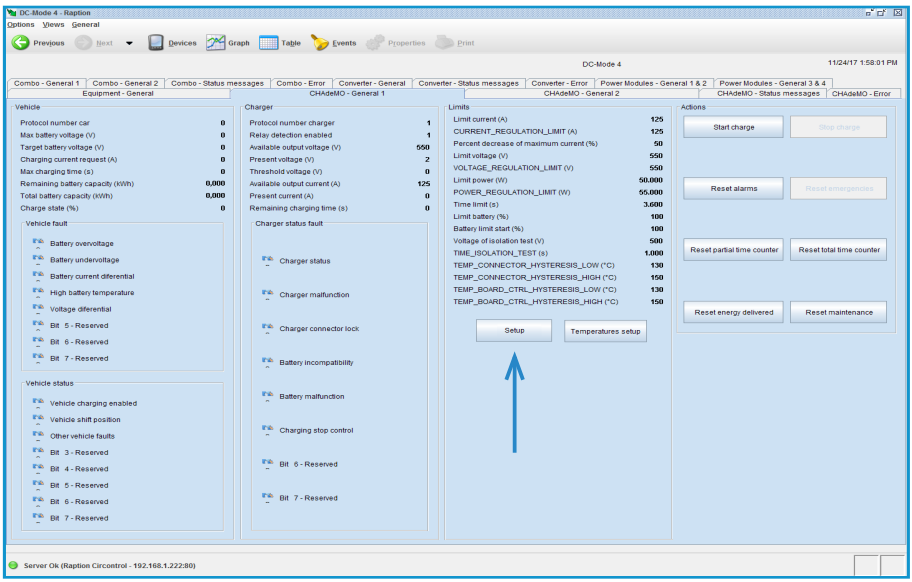


NOTE: inside DC-mode 4 is necessary to modify the output power for both DC charges type, CHAdeMO and Combo (CCS)

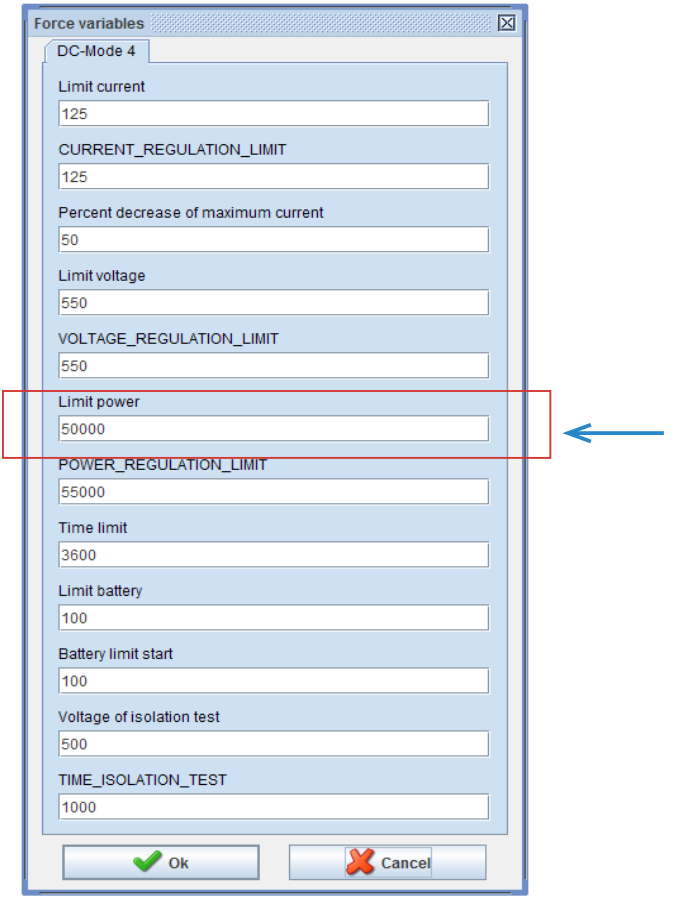
5- Once the **'DC-Mode4' device** is already opened, press over the **'CHAdeMO-General 1' tab:**



6- Once the **'CHAdeMO-General 1'** is already opened, press over **'Setup' tab:**



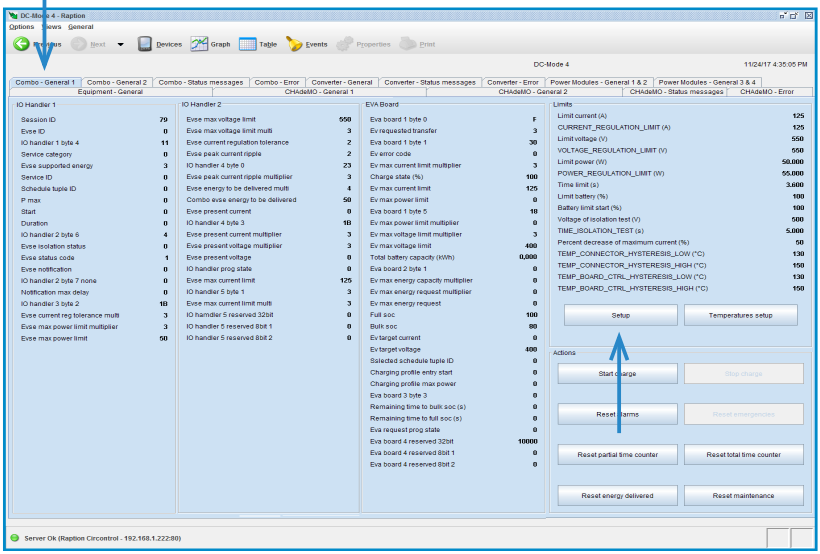
7- The pop-up window below appears, at **'Limit Power'** tab it is possible to set the maximum DC power output, it can be selected from 10000 W til 50000 W.



Click **'OK'** to confirm changes.

NOTE: It is mandatory write the same variables for CHAdeMo as for Combo (CCS). Do not change any other vaiable.

8- After changing the CHAdeMO output power, we are going to change the CSS output power, press over **'Combo - General 1'** tab and then over **'Setup'** tab:



9- Force the **'Limit power'** variable between 10000 W til 50000 W as has been shown in the previous step 7 **for CHAdeMO.**

Click **'OK'** to confirm changes.

NOTE: It is mandatory write the same variables for CHAdeMo as for Combo (CCS). Do not change any other vaiable.

Maximum output power for AC

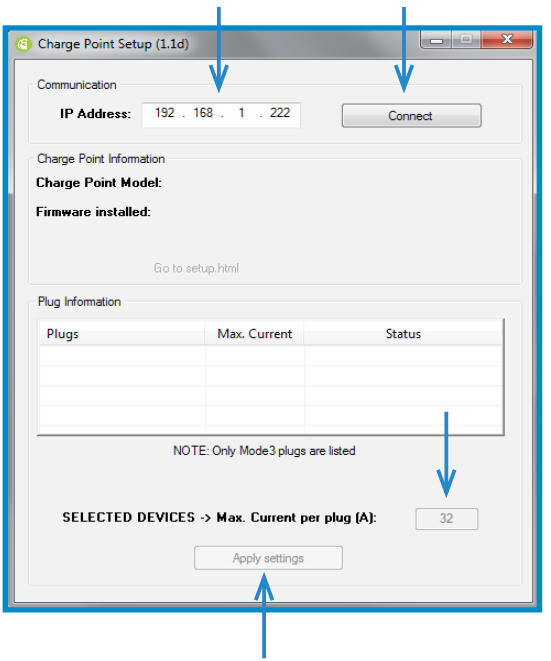
For setting the maximum output power for AC is necessary to use de software **'Charge Point Setup'**, ask for it to the CIRCONTROL technical support staff.

Steps:

1- Execute Charge Point Setup

2- Introduce the Charge Point's IP and push over **'Connect' tab.**

3- Write down the **'Max. Current per plug (A)'**and push over **'Apply settings' tab.**



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GENERAL DATA	
Display	TFT 8". Multi-language touch screen
Light beacon	RGB Colour indicator
RFID reader	ISO / IEC 14443A/B MIFARE Classic/Desfire EV1 ISO 18092 / ECMA-340 NFC 13.56MHz
Compliance	IEC-61851; IEC-62196; CE; CHAdeMO Certified; CCS (DIN 70121)
Rated diversity factor	0,8

MECHANICAL DATA			
Enclosure rating	IP54 / IK10		
Enclosure material	Stainless steel		
Enclosure access	Frontal key locked door		
Connector type	AC	DC	
	Type 2 tethered cable / socket	JEVS G105	CCS 2/ CCS 1*
Cable length	3 meters / ---	3 meters	3 meters
Net weight	235 Kg		
Dimensions (D x W x H)	410** x 940 x 1800 mm		

ENVIRONMENTAL CONDITIONS	
Operating temperature	-30ºC to +45ºC
Storage temperature	-20ºC to +60ºC
Operating humidity	5% to 95% Non-condensing
Sound level in operation	< 55 dB

Technical Data

CONNECTIVITY	
Ethernet	10/100BaseTX (TCP-IP)
Cellular	Modem 4G / GPRS / GSM *
Interface protocol	OCPP

ELECTRICAL DATA	
Power supply	3P+N+PE
Voltage range	400 VAC +/- 10%
Power factor	> 0.98
Efficiency	95 % at nominal output power
Standby consumption	38 W
THDi	< 5%
Frequency	50/60 Hz
Electrical protections	Overcurrent protection, RCD and Overvoltage protection *
AC electrical meter	Complies with the EN 50470 (MID European standards)

(*) Depending on the model, these components are optionals.

(**) 520 mm with the cables hanged.

MODEL SPECIFICATIONS				
	MODELS			
	CCS CHA T2C63	CCS CHA T2S32	CCS CHA	CCS T2S32
Maximum AC input current	138 A	108 A	76 A	108 A
Required power supply capacity	96 KVA	75 KVA	53 KVA	75 KVA
Maximum output power	DC: 50 kW AC: 44 kW	DC: 50 kW AC: 22 kW	DC: 50 kW	DC: 50 kW AC: 22 kW
Output voltage range	DC: 50-500 VDC AC: 400 VAC	DC: 50-500 VDC AC: 400 VAC	DC:50-500 VDC	DC: 50-500 VDC AC: 400 VAC
Maximum output current	DC: 0-125 A AC: 63 A	DC: 0-125 A AC: 32 A	DC: 0-125 A	DC: 0-125 A AC: 32 A
Number of connectors	3	3	2	2
Connector type	CCS2; JEVS G105; Type 2 tethered cable	CCS2; JEVS G105; Type 2 socket	CCS2; JEVS G105;	CCS2; Type 2 socket

MODEL SPECIFICATIONS			
	MODELS		
	CHA T2S32	CCS	CHA
Maximum AC input current	108 A	76 A	76 A
Required power supply capacity	75 KVA	53 KVA	53 KVA
Maximum output power	DC: 50 kW AC: 22 kW	DC: 50 kW	DC: 50 kW
Output voltage range	DC: 50-500 VDC AC: 400 VAC	DC: 50-500 VDC	DC:50-500 VDC
Maximum output current	DC: 0-125 A AC: 32 A	DC: 0-125 A	DC: 0-125 A
Number of connectors	2	1	1
Connector type	JEVS G105; Type 2 socket	CCS2	JEVS G105

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Need help?

In case of any query or need further information, please contact our **Post-Sales Department**

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CIRCONTROL
Mobility & eMobility

CIRCONTROL Raption 50 Series USER MANUAL

A comprehensive guide on how to use and configure your Raption 50 Charge Point.

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