



CIRCONTROL
Mobility & eMobility

Master-Slave

Instruction Manual



Master/Slave Instruction Manual

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Here's your guide to use and configure eVolve.

1	So, hello!	04
2	Features	06
3	How to use it?	08
	A General	08
	B Language	10
	C Start charging	11
	D Charge information	14
	E Special events start charging	15
	F Stop charging	17
	G Charge summary	18
	H Connector status	19
	I Errors	20

4	How to connect it?	22
	A Network topology	22
	B Introduction.....	23
	C IPSetup.....	24
5	Setup Webpage	26
	A Dashboard.....	26
	B Network.....	32
	C Security.....	34
	D Time.....	35
	E Integrations.....	36
	F Services	37
	G Firmware	38
	H Charge Point Configuration	39
	I Configuration Update	43
6	Teltonika RUT 240	44
	A Modem overview	44
	B Connection status LED	45
	C SIM card installation	46
	D Logging in.....	47
	E Configuration.....	48



7 OCPP 1.5	58
A Introduction	58
B Before starting	59
C Configuration.....	61
D Checkup.....	69
8 OCPP 1.6	70
A Introduction	70
B Before starting	71
C License activation	73
D Configuration.....	75
E Checkup	83
9 Monitoring	84
10 Technical Data	86
11 Need help?	88

1

This manual provides information about the usability and configuration of the Master/Slave, which has been designed and tested to allow electric vehicle charging, specified in IEC 61851.

It contains all the necessary information for safe use and help to get the best performance from it with step-by-step configuration instructions.

THE FOLLOWING SYMBOLS ARE USED FOR IMPORTANT SAFETY INFORMATION IN THIS DOCUMENT



ATTENTION!

Indicates that the damage to property can occur if appropriate precautions are not taken.

- Complies with IEC 61851, Electric vehicle conductive charging system (IEC 61851-1 and IEC 61851-22)
- Complies with IEC 62196, Plugs, socket-outlets, vehicle couplers and vehicle inlets (IEC 62196-1 and IEC 62196-2).
- Standards: 2014/35/UE, LVD;2014/30/UE, EMC.
- RFID complies with ISO 14443A/B

So, hello!

IMPORTANT SAFETY INFORMATION



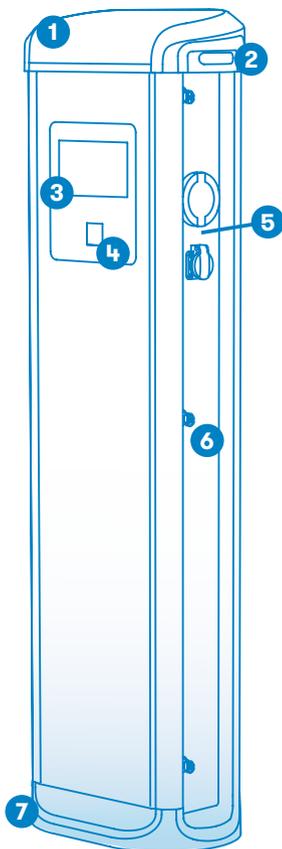
Read carefully all the instructions before manipulating the unit.

The Charge Point may not include elements of electrical protection.

- Read all the instructions before using and configuring this product.
- Do not use this unit for anything other than electric vehicle charging.
- Do not modify this unit. 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 energised.
- Only trained and qualified personnel should have access to electrical parts inside the device.
- Check the installation annually by a qualified technician.
- Remove from service any item that has a fault that could be dangerous for users (broken plugs, 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.

2

Master



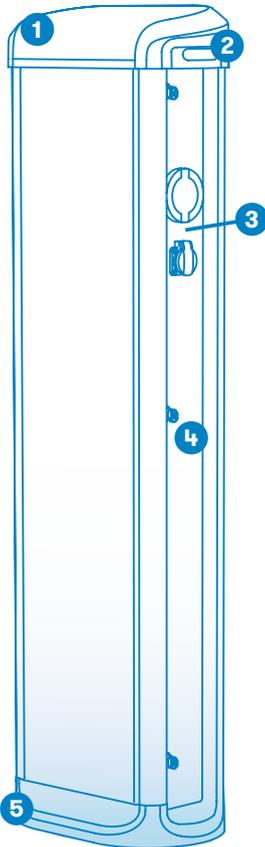
- | | |
|-------------------------|------------------------|
| 1 - Hat | 2 - LED Beacons |
| 3 - Touch screen | 4 - RFID Reader |
| 5 - Plugs* | 6 - Key lock |
| 7 - Base | |

(*) Plugs may vary depending on the model

- **HMI:** 8" colour touch screen as the interface between the Charge Point and the user. Provides detailed information about ongoing charge transactions and the instructions of how to interact with the Charge Point.
- **Connector Lock:** Type 2 connector has a lock system to avoid disconnection of EV meanwhile is charging.
- **Light beacon:** Three colour led indicates the status of the connectors.
- **RFID:** User authentication.
- **Ethernet:** TCP/IP communication for remote supervision and configuration.
- **4G Modem (optional):** For those places where wired communications are not sufficient.
- **Energy metering:** Integrated meter built is measuring power and energy consumed by the EV during a charge transaction.
- **Remote access:** For supervision and control from everywhere.
- **Charge transaction historics:** Charge Point is capable of storing information about the charge transactions.
- **OCPP:** Open standard communication protocol, allows communication between the Charge Point and the Central System.

Features

Slave



- **Connector Lock:** Type 2 connector has a lock system to avoid disconnection of EV meanwhile is charging.
- **Light beacon:** Three colour led indicates the status of the connectors.
- **Energy metering:** Integrated meter built is measuring power and energy consumed by the EV during a charge transaction.
- **Remote access:** For supervision and control from everywhere.
- **Charge transaction historics:** Charge Point is capable of storing information about the charge transactions.

1 - Hat

3 - Plugs*

5 - Base

2 - LED Beacons

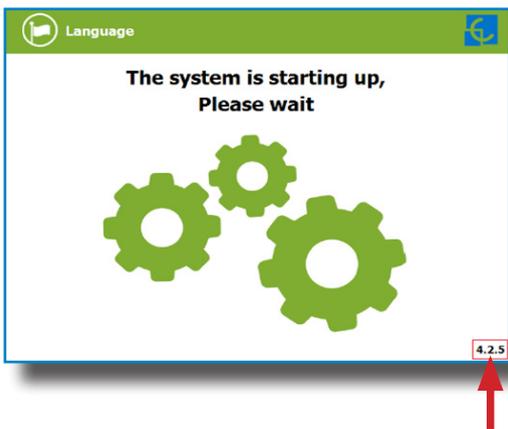
4 - Key lock

[*] Plugs may vary depending on the model

3

A General

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

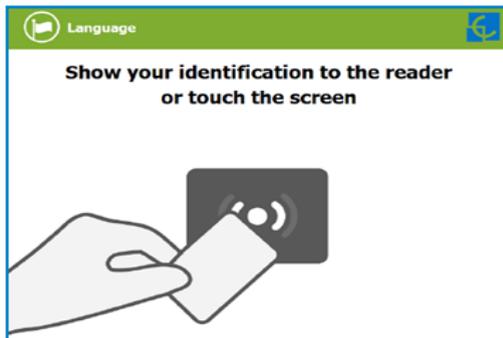


In the lower right corner, the firmware version is shown. After 10 seconds, the first screen that appears is the screensaver.



How to use it?

When tapping on the screen, the HMI will skip to the next one:



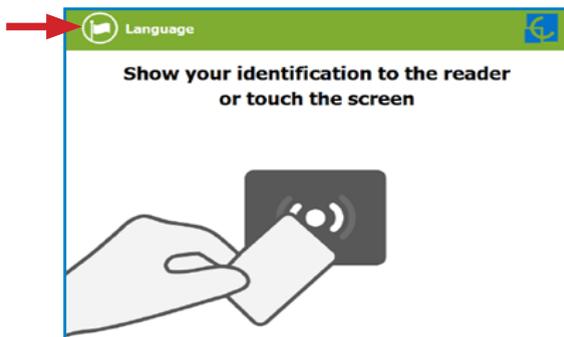
Here the Charge Point is asking to show the identification card or touch the screen.

The first option, show the identification card, is the option that will allow to start a 'Charging session' or to stop an ongoing 'Charging session'.

The second option, touch the screen, is meant to get information about the connectors status and the charging process so as to know the Charge Point availability. However, a 'Charging session' cannot be started or do any action over the currently charging session unless an authorised identification card is shown.

B Language

During all the process is possible to change language, pressing on the top of the screen over the **'Flag'** touch symbol:



The language can be chosen by tapping on the corresponding flag.

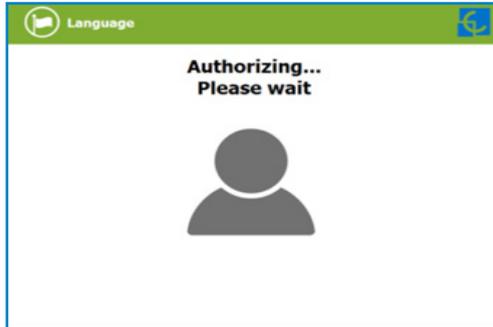


The availability of the different languages is subject to the firmware version.

In case of doubt, please consult your local supplier.

Start charging

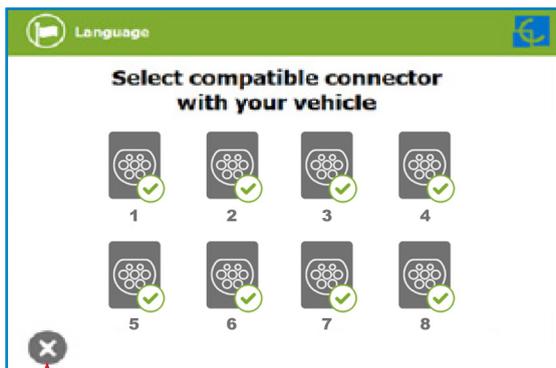
Once the identification card is shown, it may take a few seconds to authorise the access.



The HMI informs if the access is granted or not.



If the user is authorised, the connector can be chosen.



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

Once the connector is chosen, instruction screens will appear successively.

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

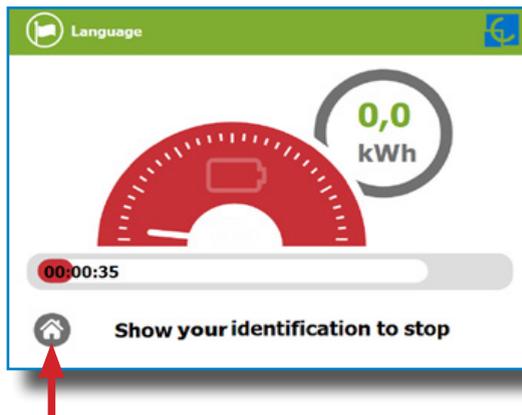


At any time it is possible to tap this button in order to go back to the previous screen.

2- Checking vehicle connection... Please wait

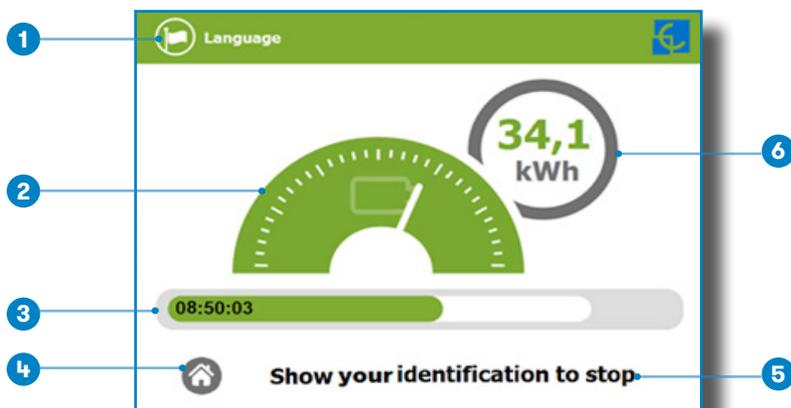


In a few seconds, the charging session will start and the HMI will show the charging process.



Tap this button in order to go back to the "identification screen".

D Charge information



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: instructions, current status, etc.

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

E Special events start charging

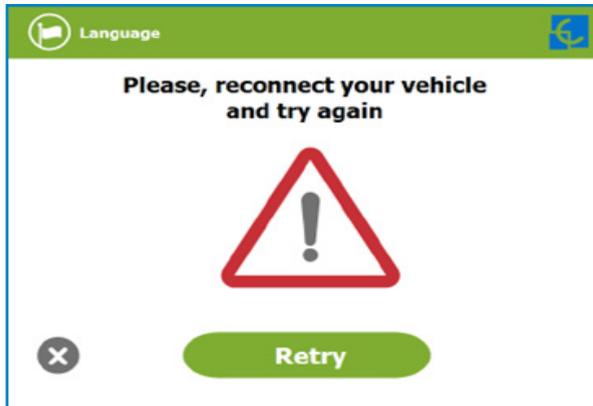
“Not authorized”: some Charge Points could be working under the supervision of a main management system. If the user is not authorized, the HMI will show the following message:



“Authorization failed”: the authorization could not be completed due to some communication problem with the Back Office.



It is possible that the Charge Session could not be started due to some unexpected reason. The HMI will show next screen, press **'Retry'** button and try again.

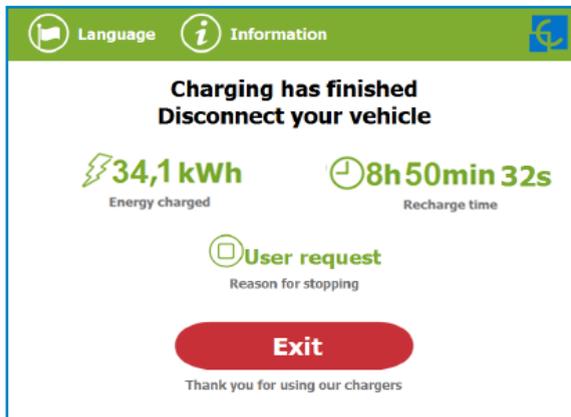


F Stop charging

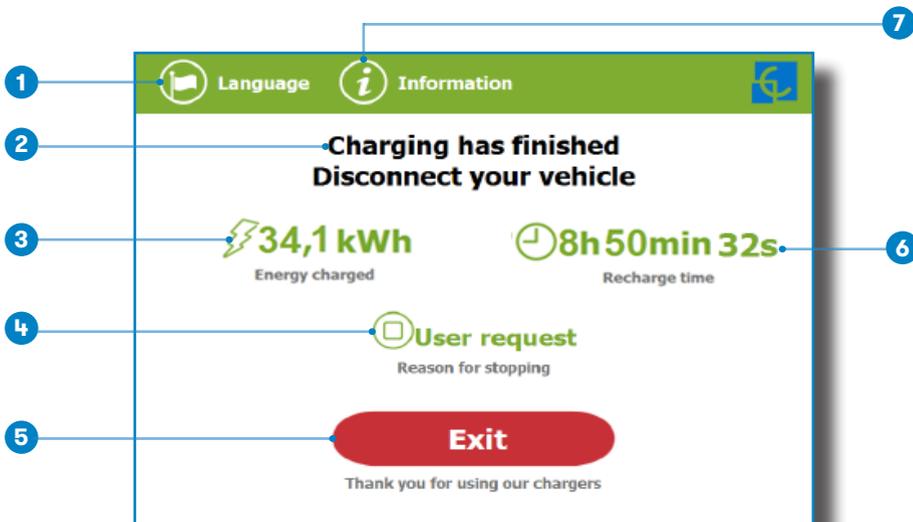
After showing the same identification card that started the Charging Session, the Charge Point will automatically allow to stop the charging



Once the charging session is stopped, the HMI shows the summary screen. Press over the 'Exit' touch button and disconnect the vehicle:



Charge summary



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.

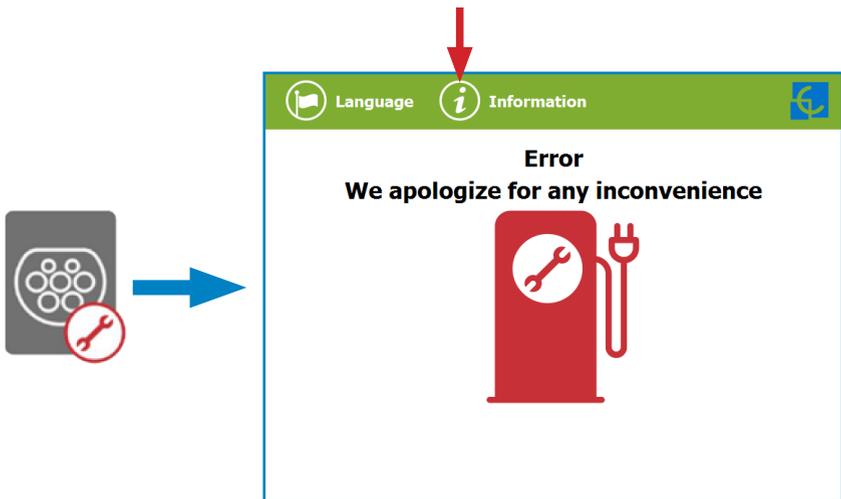
Connector status

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

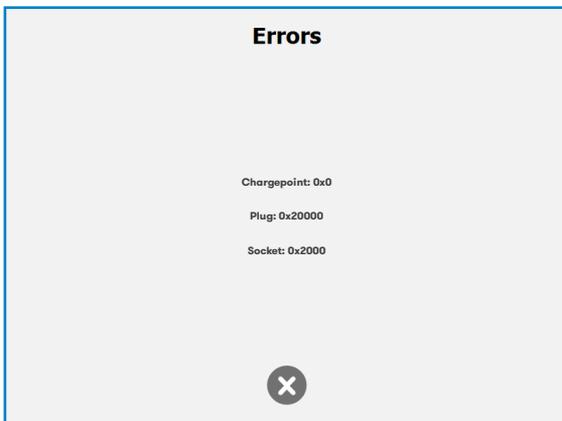
	Connector available, a Charging Session can be started.
	Connector charging, a Charging Session cannot be started because it is already in use.
	Connector disabled, a Charging Session cannot be started because it is under maintenance or because the Back office has decided to stop it.
	Connector out of service, a Charging Session cannot be started due to some error. Tap on the 'Information' button in order to get more information about it.
	Connector reserved, a Charging Session can only be started using the IdTag assigned to the reservation.

Errors

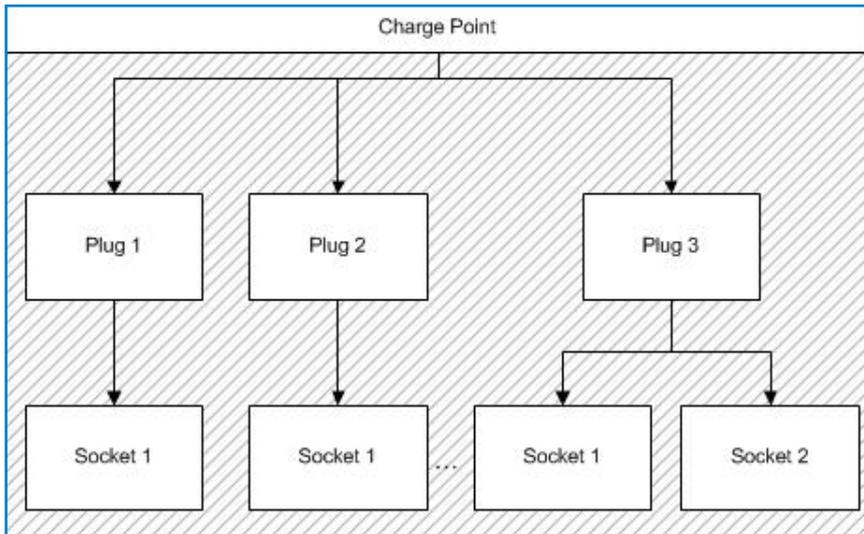
The Charge Point can report about different sort of errors, it can be from different parts or devices from it.



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:



Logical levels:



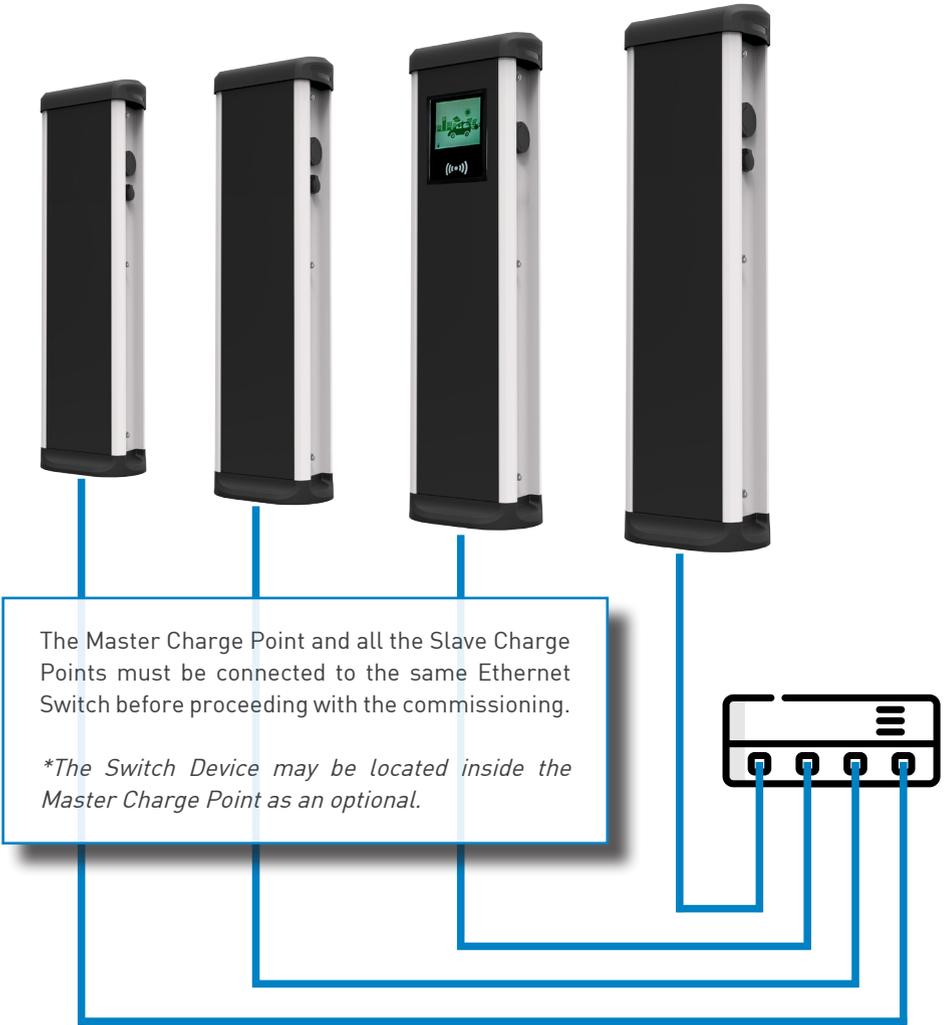
Chargepoint: General errors affecting the whole charge Point (E.g.: RFID error).

Plug: Error affecting one plug. All sockets are in error state. Plug is inoperative.

Socket: One plug may have more than one socket. Error can affect one socket and plug still being available.

4

A Network topology



How to connect it?

B Introduction



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



There is only one Ethernet port on the Slave Charge Point and it is located on the TCP1RS. The location of this device may vary depending on the model, for more information please contact Circontrol Post-Sales Department.

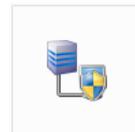
Before proceeding , make sure all the following is ready:



Computer running at least Microsoft Windows XP.



UTP Cable (at least one for each Charge Point)



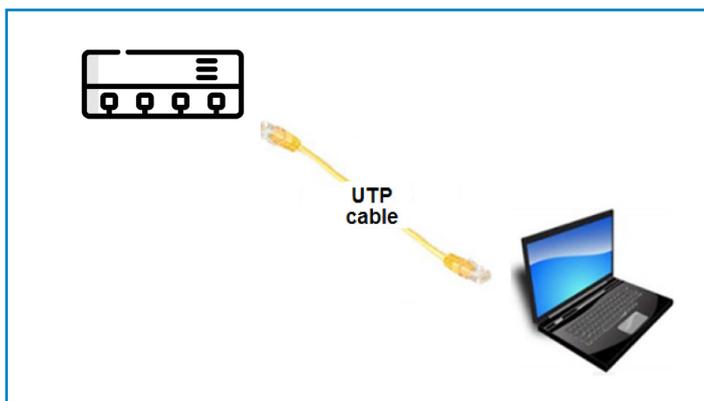
IPSetup.exe

IPSetup.exe (Can be downloaded for free from Circontrol Expert Area)

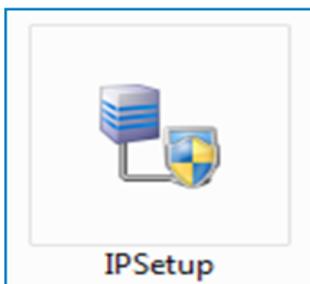
IPSetup

1 - Connect the UTP Cable to the Computer (running Microsoft Windows, at least Windows XP) and the Ethernet Switch.

The Computer and the Charge Point must be in the same network and in the same range.

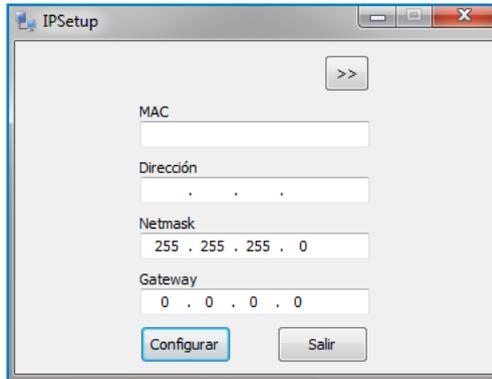


2 - Execute **IPSetup.exe** on the Computer.



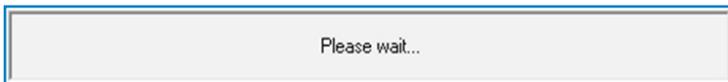
3 - Enter the following parameters and click on **'Configure'**

- MAC of the Charge Point (see label on the side of the Charge Point)
- IP address
- Netmask
- Gateway: leave default settings

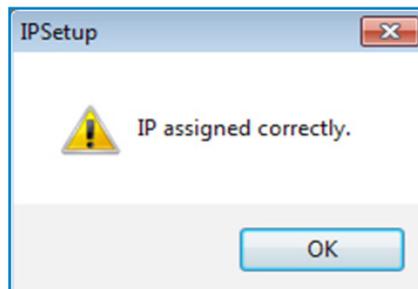


The image shows a window titled "IPSetup" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there is a right-pointing arrow button (>>) at the top right. Below it are four input fields: "MAC" (empty), "Dirección" (empty), "Netmask" (containing "255 . 255 . 255 . 0"), and "Gateway" (containing "0 . 0 . 0 . 0"). At the bottom of the window are two buttons: "Configurar" (highlighted in blue) and "Salir".

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



5 - The process will complete when the following message appears, by clicking on **'OK'** the setup webpage will open.



5

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

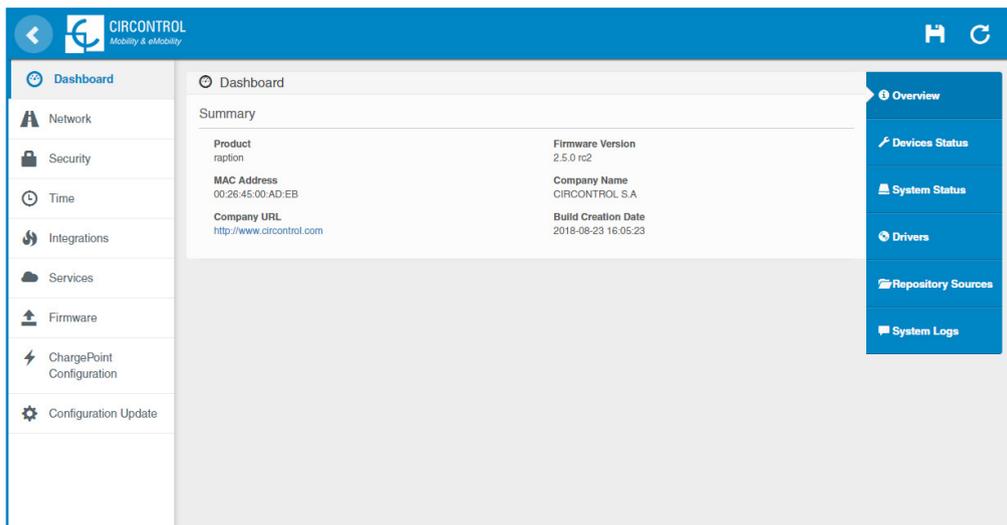
To access the setup web page, open a web browser and enter the IP address previously configured.

A Dashboard

Overview

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

- Firmware version: Version of the firmware currently working in the Charge Point
- MAC Address: Identifier of the network card of the Charge Point



The screenshot displays the CIRCONTROL web interface. The top navigation bar includes the CIRCONTROL logo and navigation icons. A left sidebar lists menu items: Dashboard, Network, Security, Time, Integrations, Services, Firmware, ChargePoint Configuration, and Configuration Update. The main content area shows the 'Dashboard' page with a 'Summary' table. A right sidebar contains links to Overview, Devices Status, System Status, Drivers, Repository Sources, and System Logs.

Summary	
Product raption	Firmware Version 2.5.0 rc2
MAC Address 00:26:45:00:AD:EB	Company Name CIRCONTROL S.A
Company URL http://www.circontrol.com	Build Creation Date 2018-08-23 16:05:23

Setup Webpage

Devices Status

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

- Device name: Name of the devices inside the Charge Point
- Status: **OK** (online) / **NOT OK** (offline)

The screenshot shows the CIRCONTROL web interface. The top navigation bar includes the CIRCONTROL logo and the tagline 'Mobility & efficiency'. The left sidebar contains navigation options: Dashboard, Network, Security, Time, Integrations, Services, Firmware, ChargePoint Configuration, and Configuration Update. The main content area displays the 'Devices Status' page, which features a table with the following data:

Device Name	Status ^
ChargeDemo_AC3	Ok
ChargeDemo_AC2	Ok
ChargeDemo_AC1	Ok
TCP1	Ok
A8	Ok
Reader	Ok
Serial 2	Ok
EVSE	Ok

The right-hand sidebar contains a vertical menu with the following items: Overview, Devices Status (selected), System Status, Drivers, Repository Sources, and System Logs.

System Status

The information shown in this section is basically relative to the state of the Control Board of the Charge Point

This is necessary for the technical service staff but does not show any information regarding the external connection of the Charge Point or the charging session.

The screenshot shows the CIRCONTROL web interface. The top navigation bar includes a back arrow, the CIRCONTROL logo with the tagline 'Mobility & eMobility', and a home icon with a refresh button. The left sidebar contains menu items: Dashboard, Network, Security, Time, Integrations, Services, Firmware, ChargePoint Configuration, and Configuration Update. The main content area is titled 'Dashboard' and displays 'System Status' with the following data:

Uptime 3d, 19h50m45s	MemUsed 71.99%
MemTotal 244 MB	MemFree 68 MB
cpu_usr 67%	cpu_sys 32%
disk_used 111.8M	disk_available 1.3G
Ethernet RX/TX 591.1 MB / 374.4 MB	

Below this is the 'Network Status' section, which contains a table with the following columns: Protocol, Local Address, Foreign Address, and State.

Protocol	Local Address	Foreign Address	State
tcp	0.0.0.0:webcache	0.0.0.0*	LISTEN
tcp	0.0.0.0:www	0.0.0.0*	LISTEN
tcp	0.0.0.0:ssh	0.0.0.0*	LISTEN
tcp	localhost:1500	0.0.0.0*	LISTEN
tcp	localhost:2812	0.0.0.0*	LISTEN

The right sidebar contains a vertical menu with the following items: Overview, Devices Status, System Status (highlighted), Drivers, Repository Sources, and System Logs.



Drivers

The information shown in this section is regard 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 controller, the RFID reader,

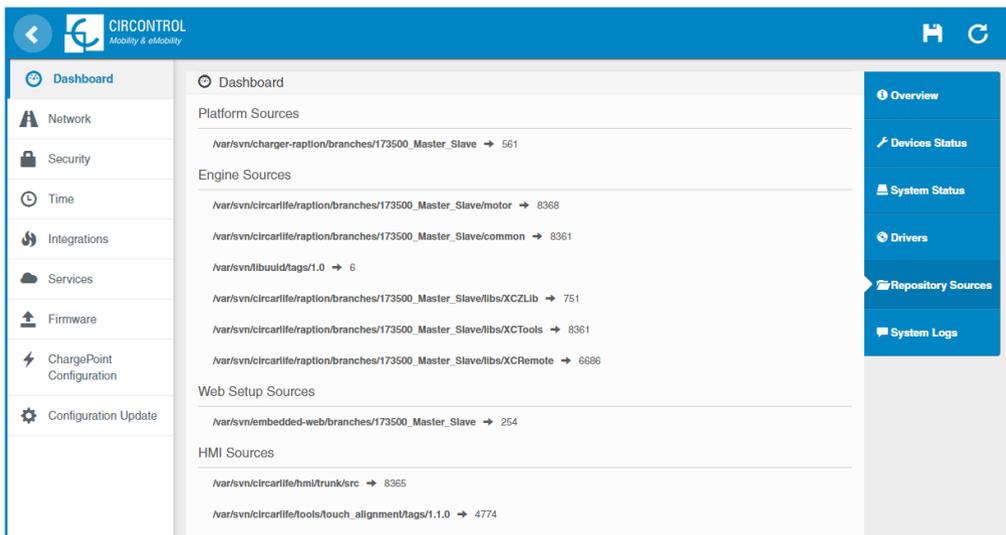
The screenshot displays the CIRCONTROL web interface. The top navigation bar is blue and contains the logo, the text "CIRCONTROL Mobility & eMobility", and icons for home and refresh. A left sidebar menu lists various system components: Dashboard, Network, Security, Time, Integrations, Services, Firmware, ChargePoint Configuration, and Configuration Update. The main content area is titled "Dashboard" and "Drivers", showing a list of driver models. A right sidebar menu includes Overview, Devices Status, System Status, Drivers (which is highlighted), Repository Sources, and System Logs.

Drivers
A8 Embedded
CBS-4
CBS-8
CCL1 Engine
CEM-C10
CEM-C20
CEM-C30
CHARGEDEMO
CVM-1D
CVM-MINI
CVM-NRG96
EDMK
M3CD
Mode 4 DELTA
Mode 4 PRE
RS232/485
SMARTMETER
TCP1RS-Plus
TCP2BS

Repository Sources

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

This is necessary for the technical service staff but does not show any information regarding the external connection of the Charge Point or the charging session.





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.

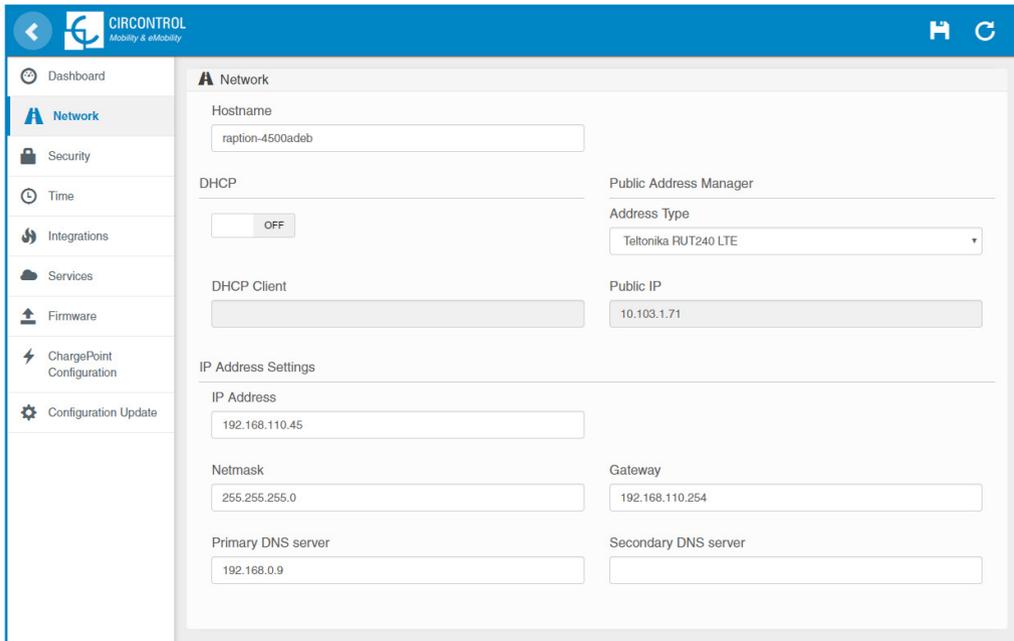
This logs are created since Charge Point is powered On. Even if Charge Point is restarted the logs are saved.

The screenshot displays the CIRCONTROL web interface. The main content area shows the 'System Logs' section with a table of log entries. The table has columns for Date, Source, Severity, and Message. The logs show multiple entries for 'Sep 18 09:55:19' from source 'rapton' with severity 'user.err'. The message for each entry is: 'ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788'.

Date	Source	Severity	Message
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788
Sep 18 09:55:19	rapton	user.err	ocpp1.6: OcppCsClientJsonWS.cpp:135 - Cannot connect to: wss://ocpp-spp.ze-watt.com:9000/ocppj/ZW99994 - Error code: -1285552788

Network

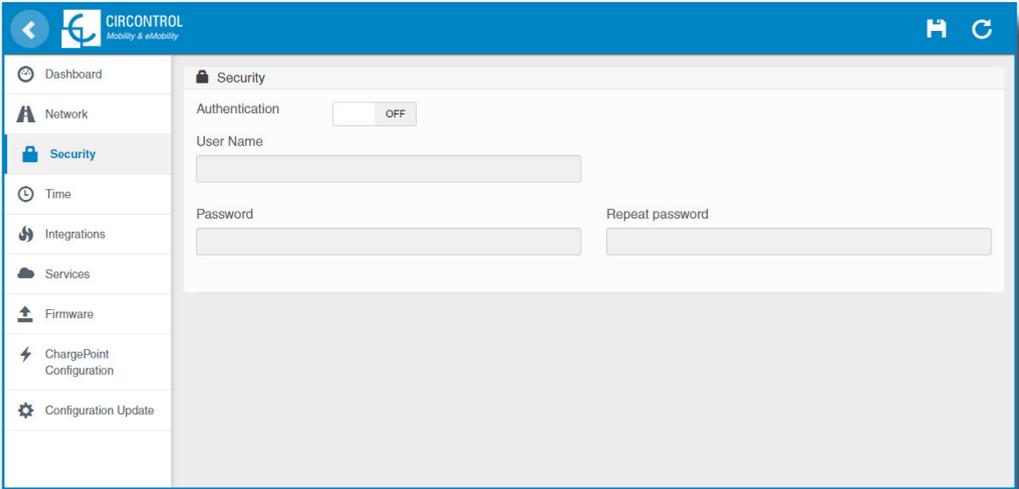
This section provides basic configuration of the network parameters. Clicking over the **'Network'** tab, next image will appear.



Value	Description
Hostname	Name of the Charge Point on the network
Address Type	<ul style="list-style-type: none"> •Local address: select this option if the OCPP central system is connected to the same private network than the Charge Point is already connected. It is assigned to the Ethernet Port. •Static address: select this option if the external modem/router is different than listed below. It must have static public IP address, check it with your SIM provider. <p>NOTE: Public IP address must be entered manually in the “Public IP” text box.</p> <ul style="list-style-type: none"> •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	Static public IP address to write if provided by the SIM provider
IP Address	IP Address assigned to the Charge Point
Netmask	Netmask of the network
Gateway	Gateway of the network

Security

This section provides basic configuration of the security parameters. Avoiding unauthorised access to the Setup Webpage. All parameters are disabled from factory settings.



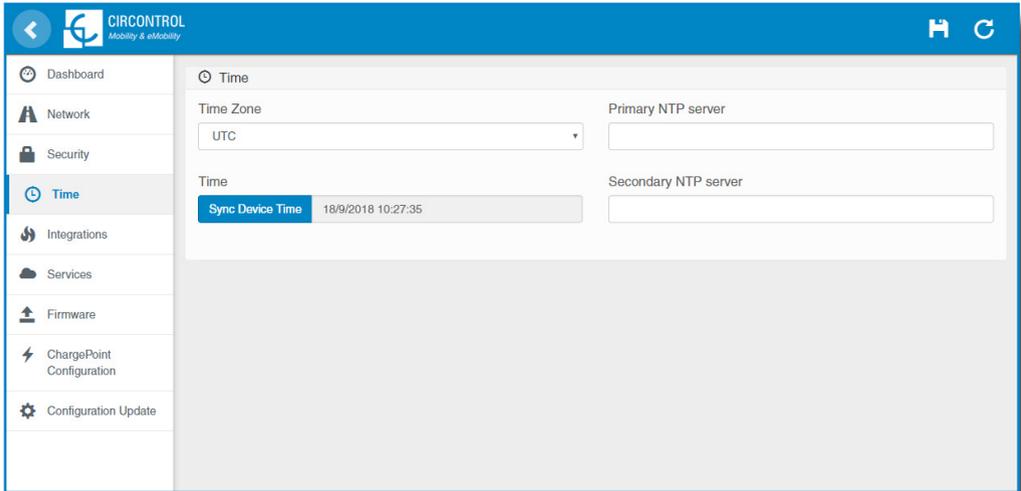
Value	Description
Authentication	ON: authentication enable / OFF: authentication disabled
User Name	Username and Password authentication for Setup web page
Password	
Repeat password	



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

Time

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

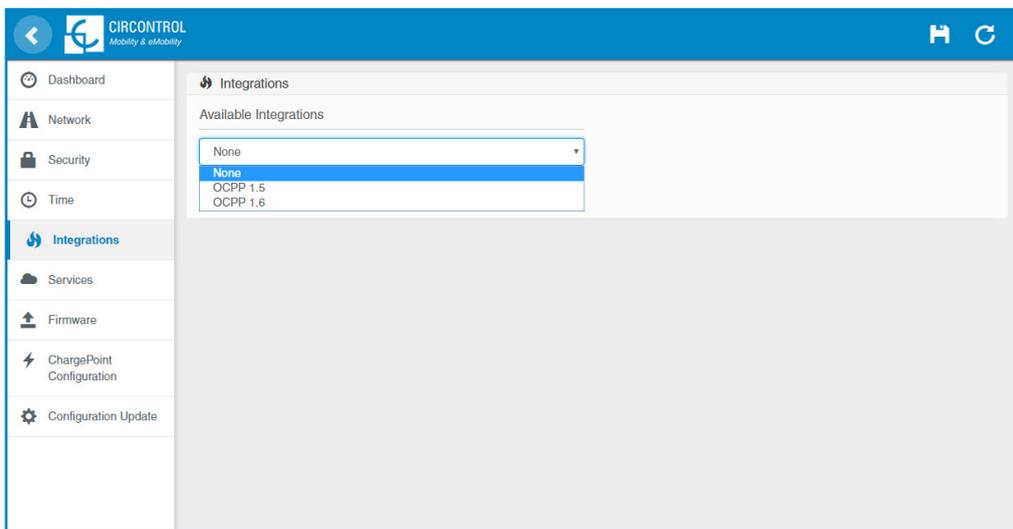


Value	Description
Time Zone	Select the regional time for the Charge Point according to the location
Time	Current date and time of the Charge Point
Primary NTP Server	Synchronize the time through internet automatically
Secondary NTP Server	

Integrations

This section allows to enable and disable OCPP service of the Charge Point.

Both OCPP 1.5 and OCPP 1.6 are available on the last firmware version.



For more information about the parameters and configuration, please refer to '**OCPP 1.5**' or '**OCPP 1.6**' chapters of this manual.

F Services

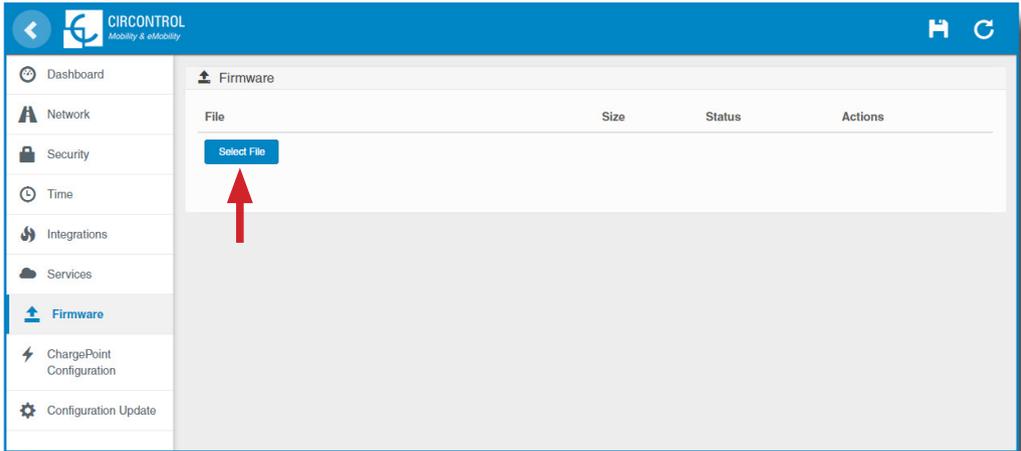
This section allows to change the HMI language, make a Grid test as well as setting a password.

The screenshot shows the 'Services' configuration page in the CIRCONTROL interface. The left sidebar lists various system settings, with 'Services' currently selected. The main panel is divided into three sections: 'Grid Test' (toggled OFF), 'Charge Point HMI Configuration' (Default Language set to 'Català'), and 'Authentication' (toggled ON, User: 'admin', Password: masked). A 'Save' button is located at the bottom of the configuration area.

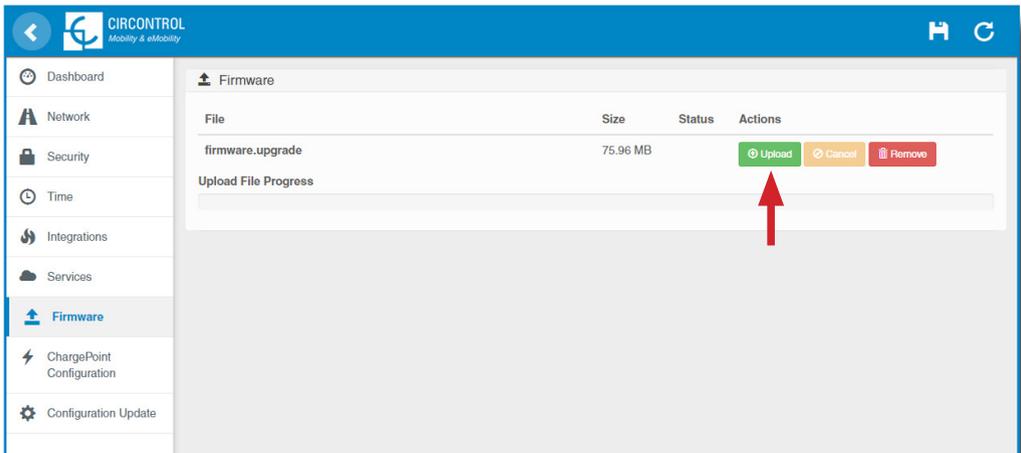
Value	Description
Grid Test	The Charge Point makes a calibration test on the HMI screen
Default language	It is possible to choose the default language for the HMI screen
Authentication	It can be set an authentication to avoid changes in this page

Firmware

The Charge Point firmware can be upgraded remotely by clicking on the **'Select File'** button.



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



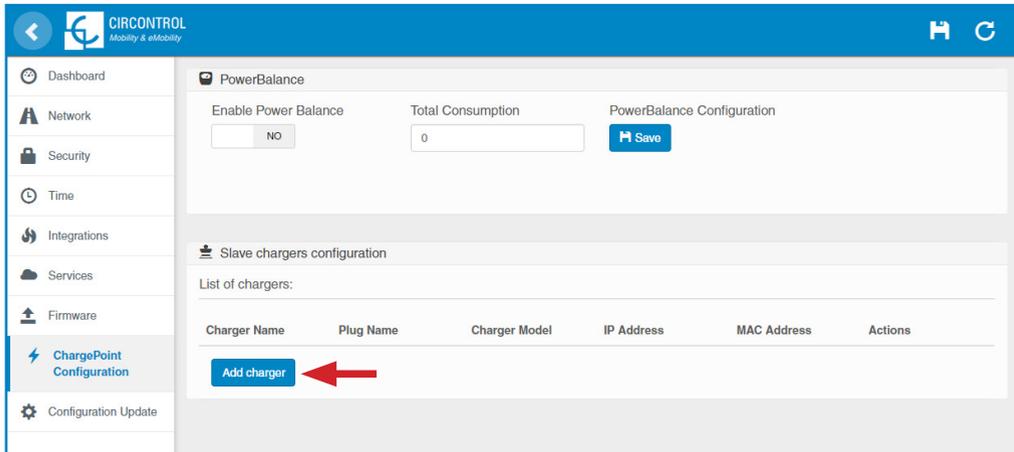
To obtain the latest firmware version please contact CIRCONTROL Post Sales Department. More information in **'Need help?'** chapter.

Charge Point Configuration

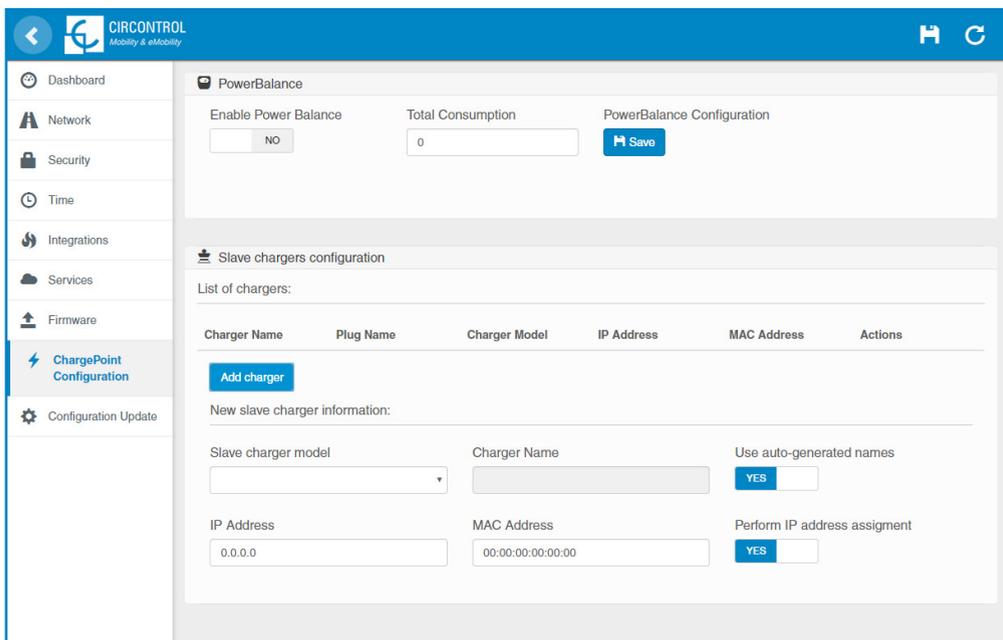
The Charge Point is capable of balancing the available power based on the number of outlets in use.

Value	Description
Enable Power Balance	<p>YES: the Charge Point shares equally the power delivered to each ongoing Charge Transaction without exceeding the limit configured.</p> <p>NO: the Charge Point does not take in consideration any limit, giving the maximum power for each connector.</p>
Total Consumption	<p>Maximum current value offered by the Charge Point that shares between the ongoing Charge Transactions.</p> <p>*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.</p>

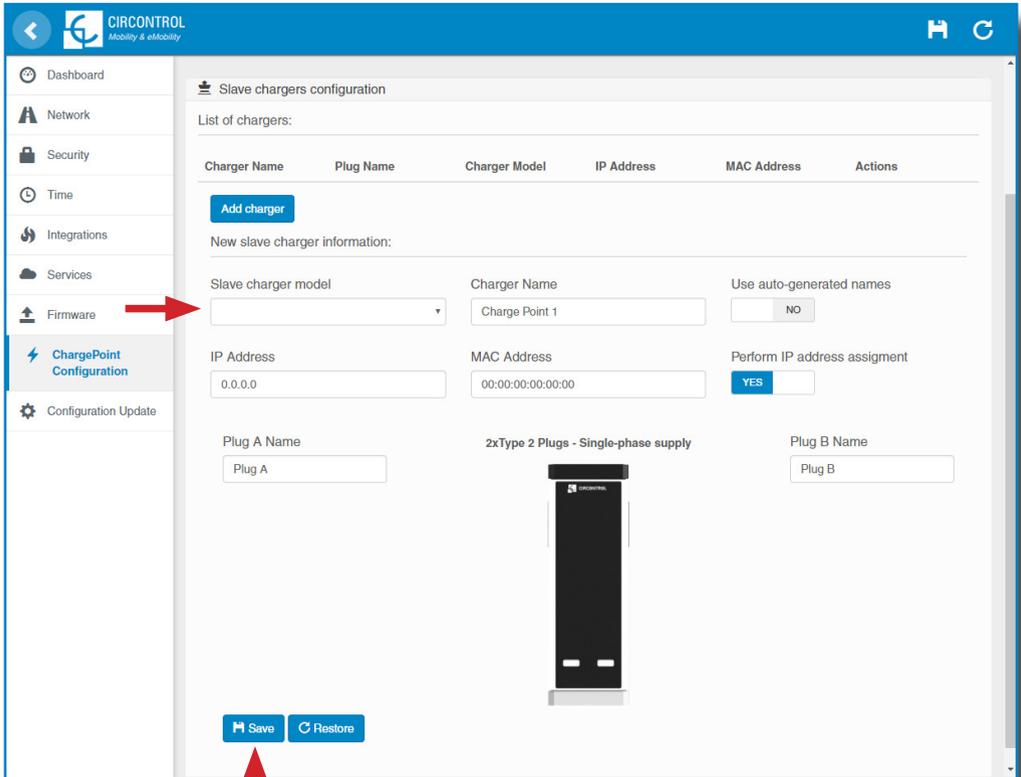
The Master Charge Point is able to manage numerous Slave Charge Points, in order to add them click on **'Add charger'**.



A new menu will show up in order to add new Slave Charge Points.



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

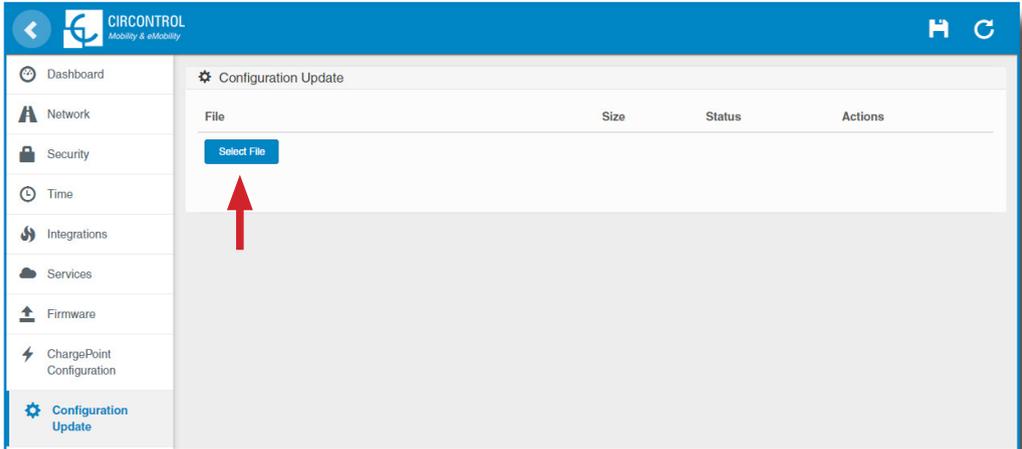


By clicking the 'Save' button, all the configuration inside the 'Slave chargers configuration' is applied. Before doing so, make sure all fields are properly filled.

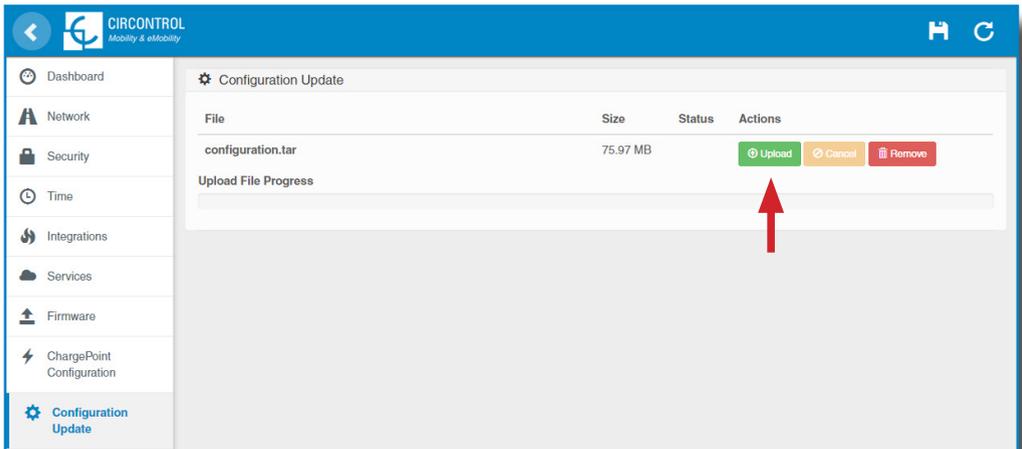
Value	Description
Slave charger model	<p>List of Slave Charge Point models.</p> <p>*NOTE: Select it carefully according to the model described on the label.</p>
Charger Name	<p>Allows to specify the name of the charger.</p> <p>*NOTE: this name only serves as a label, it does not affect the correct operation of the equipment.</p>
Use auto-generated names	<p>YES: 'Charger Name' assigned by default.</p> <p>NO: 'Charger Name' can be edited manually.</p>
IP Address	IP address of the Slave Charge Point
MAC Address	MAC address of the Slave Charge Point
Perform IP address assignment	<p>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.</p> <p>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.</p>
Plug A Name	<p>Plug A name can be edited manually.</p> <p>*NOTE: this name is shown on the Master Charge Point screen</p>
Plug B Name	<p>Plug B name can be edited manually.</p> <p>*NOTE: this name is shown on the Master Charge Point screen</p>

Configuration Update

The Charge Point configuration can be updated remotely by clicking on the **'Select File'** button. Intended ONLY for Service Staff to restore the Charge Point to default factory settings.



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. More information in **'Need help?'** chapter.

6

A Modem overview

The 4G modem installed by default is:

Teltonika RUT240



This device allows to the Charge Point connect 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.



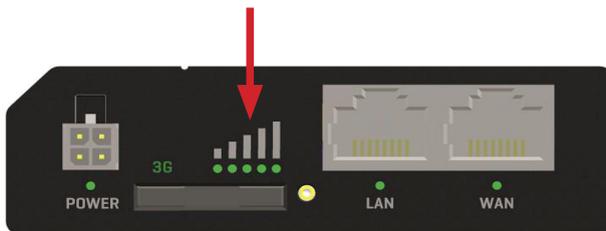
1	LAN Ethernet port	7	Signal strength indication LEDs
2	WAN Ethernet port	8	SIM card holder
3	LAN Led indicator	9	WiFi antenna connector
4	WAN Led indicator	10	Reset button
5	Power connector	11	LTE antenna connectors
6	Power LED		

Teltonika RUT 240

B 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.



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.



SIM card NOT provided by CIRCONTROL.

Logging in

When the set up is done as described in the previous section, the modem is accessible via WiFi or Ethernet.

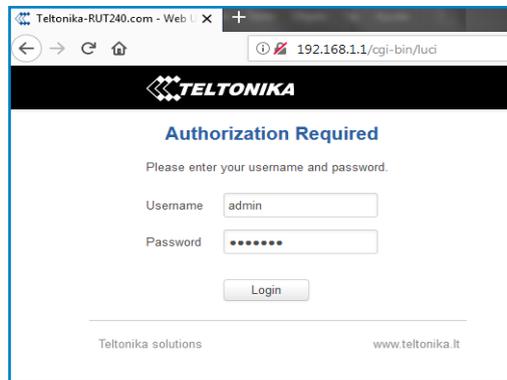
1. Using a Computer look for a WiFi access point named RUT240_XXXXXXXXXX and connect on it, no password needed. If connecting via Ethernet, skip this step.

2. Open a web browser and type **http://192.168.1.1**

3. Use the following parameters when prompted for authentication:

User name: **admim**

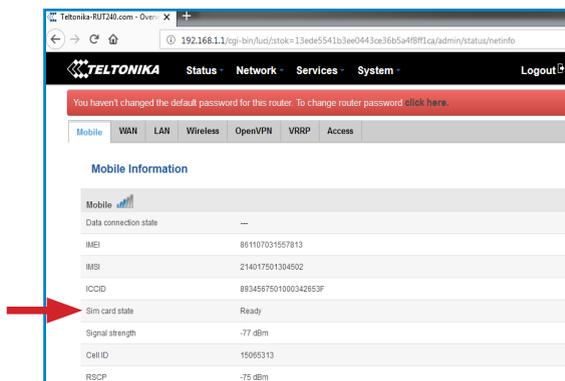
Password: **admin01**



E Configuration

The **Configuration Wizard** will start after logging in. It is necessary to complete Configuration Wizard to setup the modem correctly.

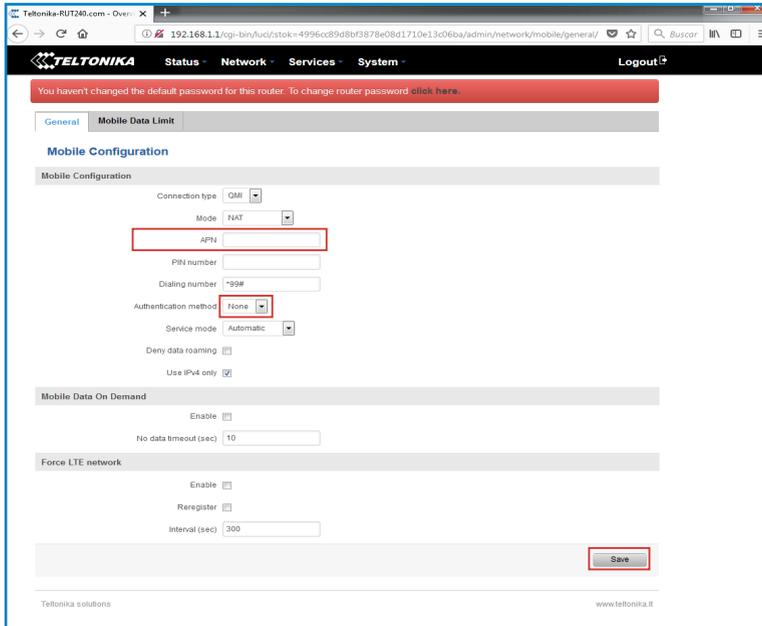
Go to **Status** → **Network** → **Mobile** and pay attention to 'Sim card state' field, it has to be '*Ready*'.



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

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

Type the APN from your SIM provider and click on the **'Save'** button.

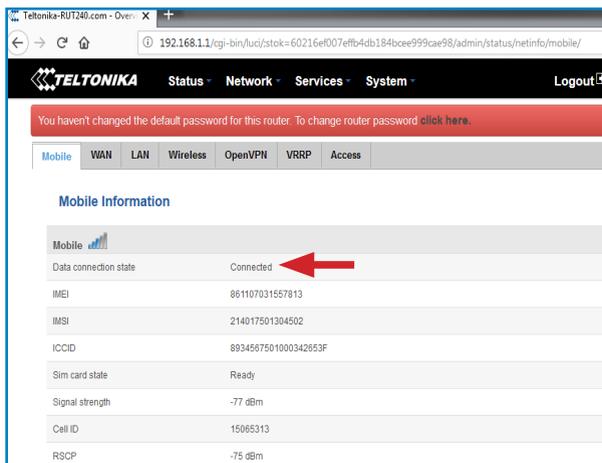


If the SIM provider requires any authentication, PAP or CHAP, select it on 'Authentication method' field and introduce a password and username.

Before doing any customisation over the modem configuration, ask Circontrol Post Sales Department in order to get the Teltonika modem manual.

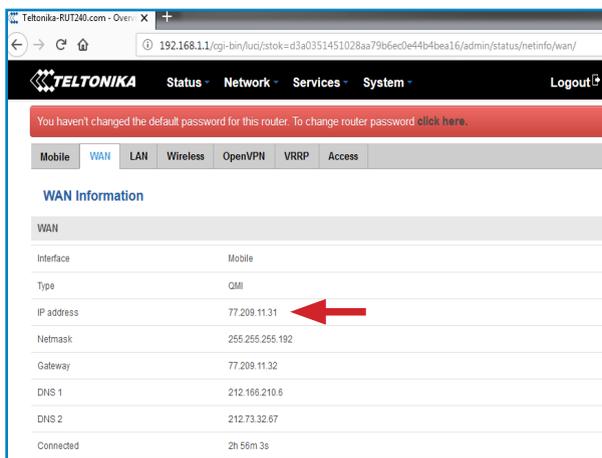
Go to **Status** → **Network** → **Mobile**.

If the connection has been done properly 'Data connection state' has to be 'Connected'.



Go to **Status** → **Network** → **WAN**.

The modem must have found a public IP address.



Go to **Status** → **Network** → **LAN** → **DHCP Leases**

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

The screenshot shows the Teltonika RUT240 web interface. The 'LAN' tab is selected, and the 'DHCP Leases' section is visible. The DHCP Leases table contains the following data:

Hostname	IP address	LAN name	MAC address	Lease time remaining
Service PC	192.168.1.206	Lan	A0:88:69:27:D4:88	11h 56m 3s
raplion-4500c402	192.168.1.240	Lan	00:29:45:00:C4:02	11h 55m 23s

If the modem has not detected the automatic IP address, switch off the Charge Point, wait for 10 seconds and switch it on again. Connect the Computer to the access point named RUT240_XXXXXXXXXXXX and try again.

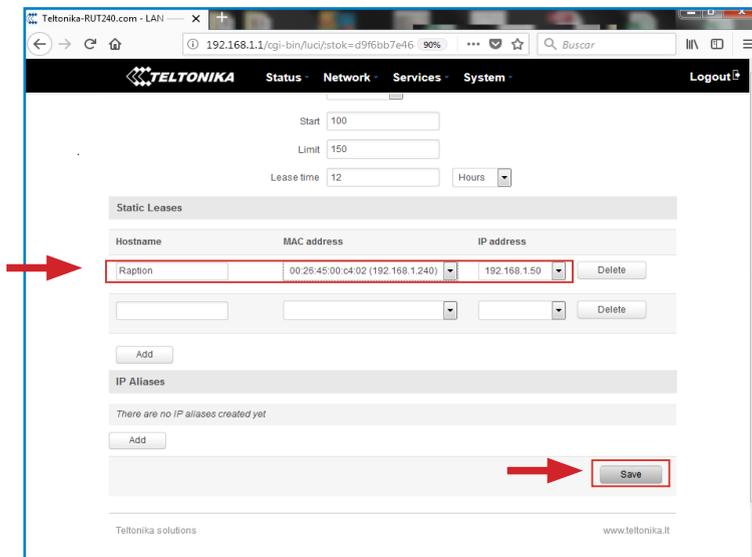
Go to **Network** → **LAN** > **Static Leases**

Complete the fields with the following information:

Hostname - It can be written the name wanted for the Charge Point

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

IP address - **192.168.1.50**



After filling the fields, click on the **'Save'** button.

Switch off the Charge Point, wait for 10 seconds and switch it on again.

Go to **Status** → **Network** → **LAN** → **DHCP Leases**

Confirm that the information previously entered has been successfully saved:

Hostname - the name given to Charge Point

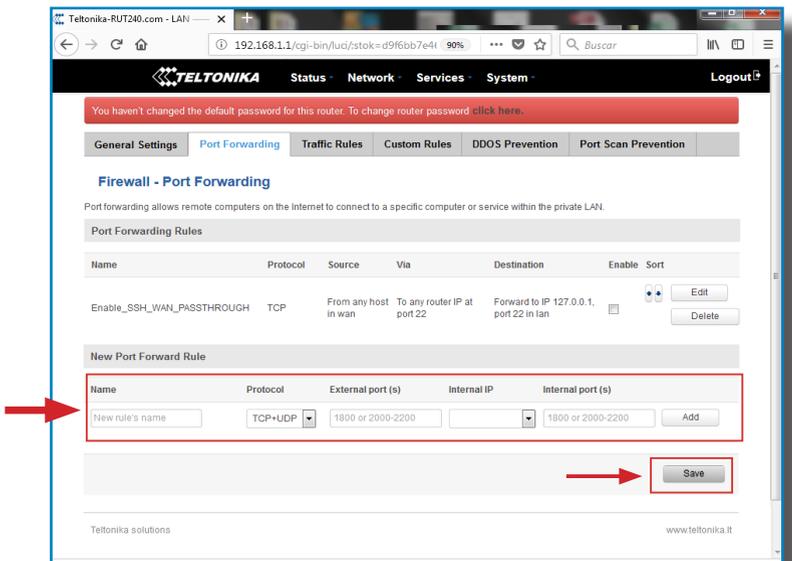
MAC address - the MAC of the Charge Point

IP address - **192.168.1.50**

The screenshot shows the Teltonika RUT240 web interface. The browser address bar shows the URL `192.168.1.1/cgi-bin/luci/stok=d9f6bb7e41`. The navigation menu includes **Status**, **Network**, **Services**, and **System**. The **LAN** tab is selected. A red notification bar at the top states: "You haven't changed the default password for this router. To change router password click here." Below the navigation tabs, the **LAN Information** section is visible, showing a table with columns: Name, IP address, Netmask, Ethernet MAC address, and Connected for. The table contains one entry: "Lan" with IP address 192.168.1.1, Netmask 255.255.255.0, Ethernet MAC address 00:1E:42:19:01:DB, and Connected for 0h 5m 13s. Below this is the **DHCP Leases** section, which contains a table with columns: Hostname, IP address, LAN name, MAC address, and Lease time remaining. The table contains two entries: "Service PC" and "raplion-4500c402". The "raplion-4500c402" entry is highlighted with a red box, and a red arrow points to it from the left. Below the DHCP Leases table is the **Ports** section, which shows a diagram of the router's ports (POWER, LAN, WAN) with a red 'X' over the WAN port. A **Refresh** button is located at the bottom right of the interface.

Hostname	IP address	LAN name	MAC address	Lease time remaining
Service PC	192.168.1.206	Lan	A0:88:69:27:D4:B8	11h 56m 3s
raplion-4500c402	192.168.1.240	Lan	00:28:45:00:C4:02	11h 55m 23s

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

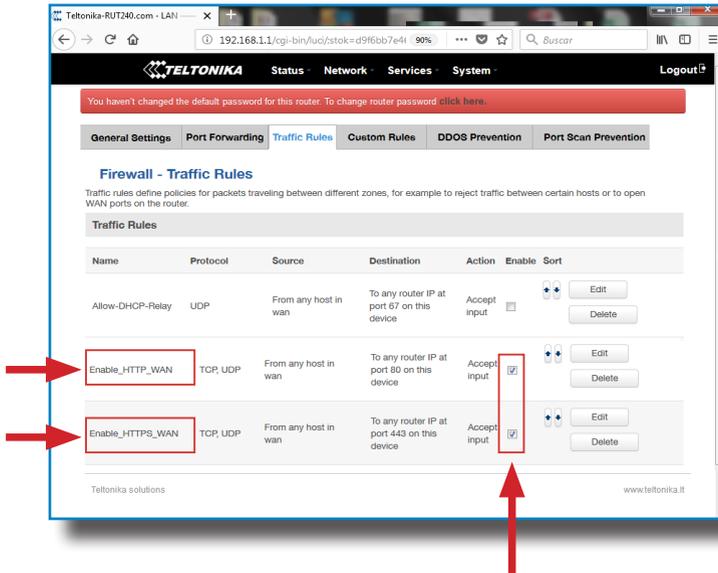


Introduce the ports as in the table below:

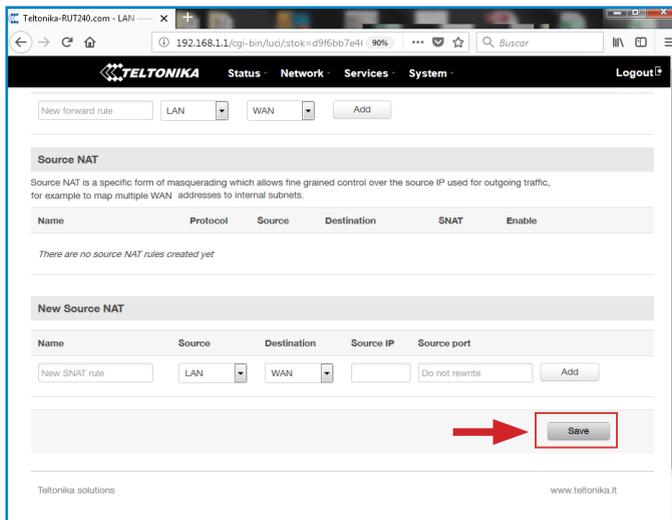
Name	Protocol	External port (S)	Internal IP	Internal port (S)
80	TCP	80	192.168.1.50	80
8080	TCP	8080	192.168.1.50	8080
50000	TCP	50000	192.168.1.50	50000
9191	TCP	9191	192.168.1.1	80

After noting down the ports, click on **'Save'** button and check that all of them have been successfully introduced.

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



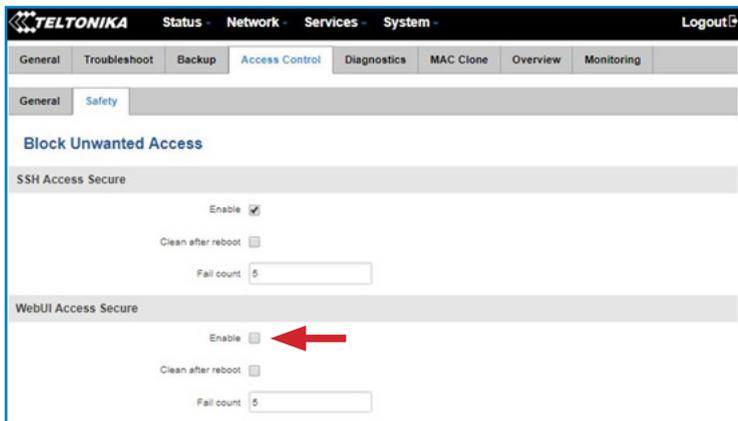
Look for 'Enable_HTTP_WAN' and 'Enable_HTTPS_WAN' fields and enable them.



Click on 'Save' button.

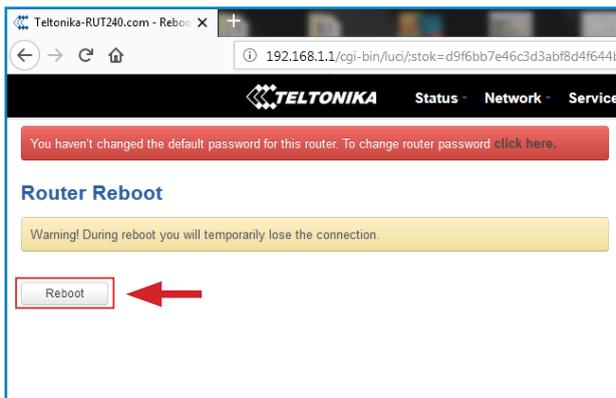
Go to **System** → **Access Control** → **Safety**

Uncheck 'WebUI Access Secure' as shown on the



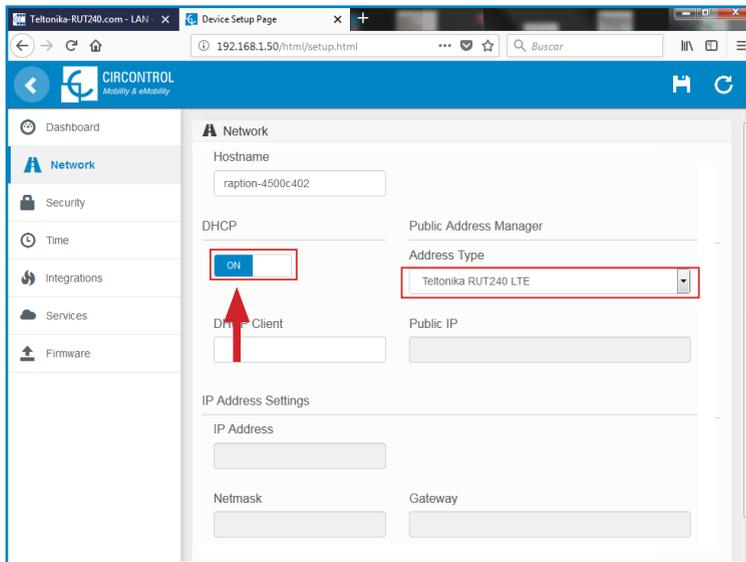
To end the modem configuration it is necessary to reboot it.

Go to **System** → **Reboot** and click on the '**Reboot**' button.



Finally, 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 the Computer is still connected to the Charge point via WiFi, open a web browser and type 192.168.1.50, next screen will appear:



DHCP: ON

Address Type: Teltonika RUT240 LTE

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

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 1.5 in the Circontrol Charge Points.

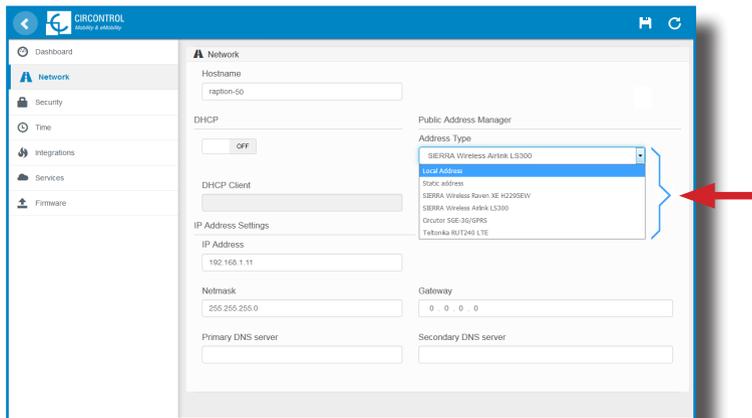
OCPP 1.5

B Before starting

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

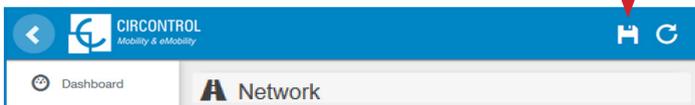
Go to the **Setup Webpage** → **'Network'** tab

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.

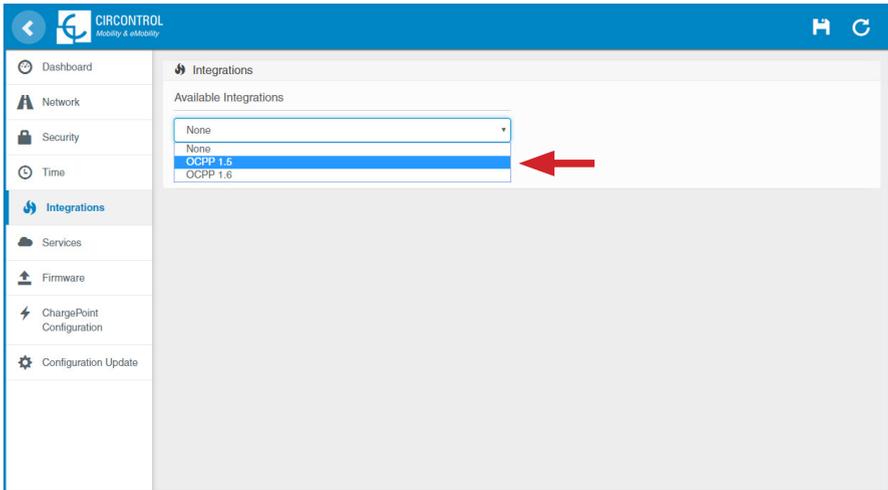
When done, please do not forget to save changes using **'Save'** button in the upper right bar:



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:



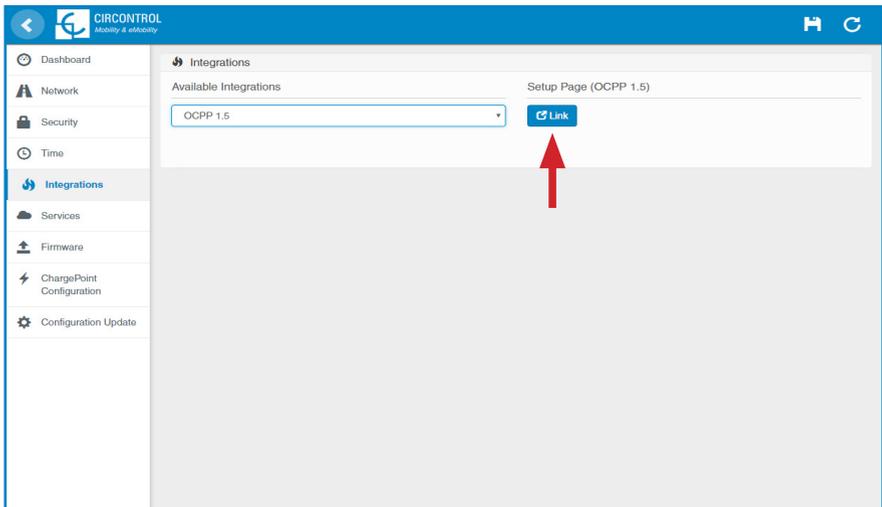
NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.

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:



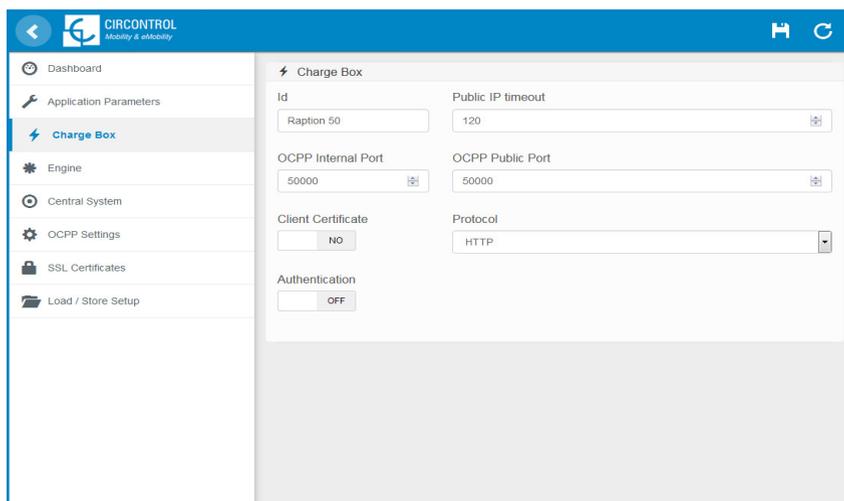
New webpage is opened to show OCPP Settings. It can also be accessed directly typing: `http://<IP>:8080/html/setup.html`

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:

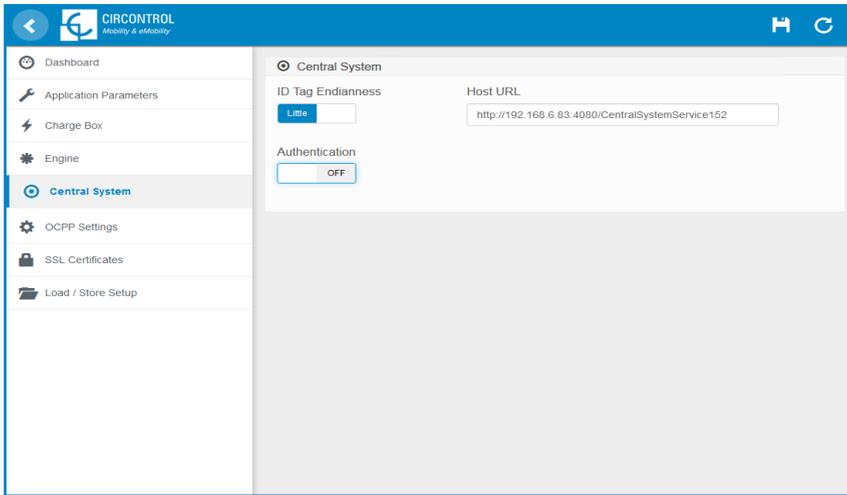


Value	Description
ID	Charge Point identifier
Public IP timeout	Maximum waiting time to obtain the public IP address of the 3G modem
OCPP Internal port	Incoming listening port for remote request (internal)
OCPP Public port	Incoming listening port for remote request (public)
Client Certificate	Provided 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.

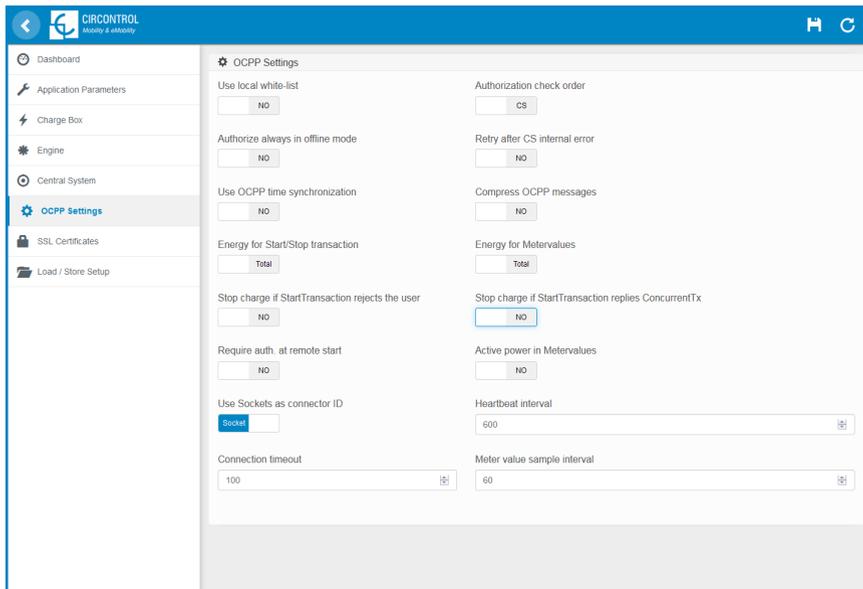
Check Central System URL according to the backend policies, please contact to the Central System to get the configuration parameters:



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 avoiding 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:



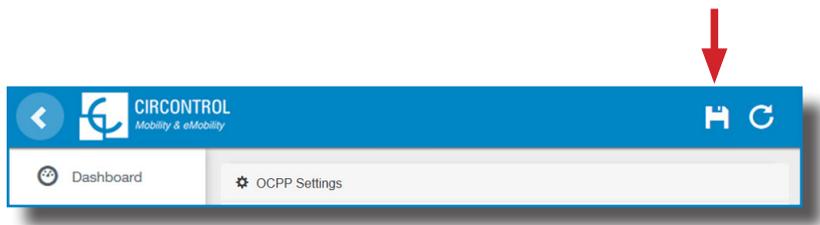
Before making any changes read following table and set each option according to your backend provider.

Value	Description
Use local white-list	<p>Yes: local list of authorized users --> Enabled</p> <p>No: local list of authorized users --> Disabled</p>
Authorization check order	<p>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.</p> <p>CS: ID authorization is always asked to the backend.</p> <p>NOTE: This setting only applies when Charge Point is online; otherwise the authorization is only locally.</p>
Authorize always in offline mode	<p>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.</p> <p>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.</p>
Retry after CS internal error	<p>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.</p> <p>No: Disabled.</p> <p>NOTE: Special development must be done in backend in order to retry the messages by charge point.</p>

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

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

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



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



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:

```
Jan 10 14:55:49 raption user.debug ocpp1.5: Registering CB after boot
Jan 10 14:55:49 raption user.info ocpp1.5: Setting heartbeat interval to 300 s
Jan 10 14:55:49 raption user.info ocpp1.5: Heart-beat interval changed to 300
Jan 10 14:56:09 raption user.debug ocpp1.5: Synchro date: Done
Jan 10 14:56:09 raption user.info ocpp1.5: OCPP time synchronization
Jan 10 14:56:09 raption user.info ocpp1.5: CB boot notification: success
```

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.

8

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.

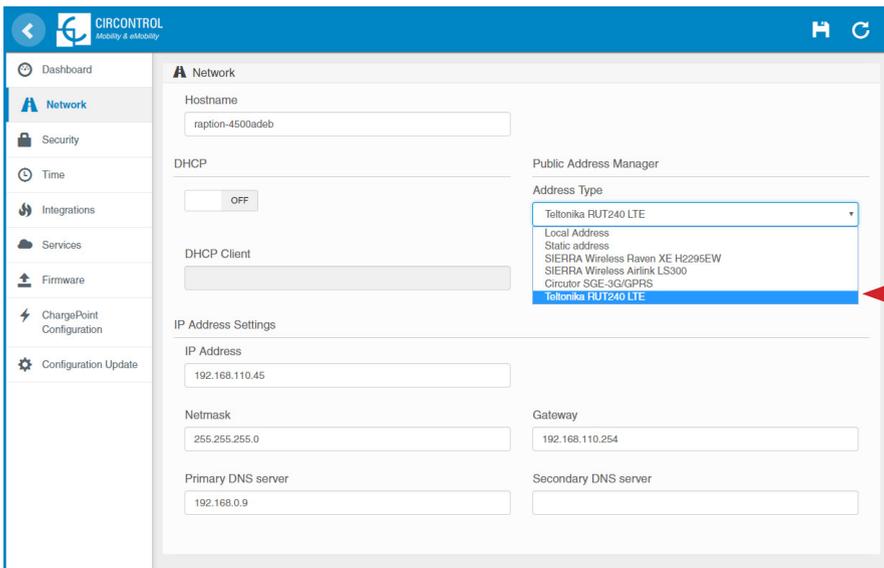
OCPP 1.6

B Before starting

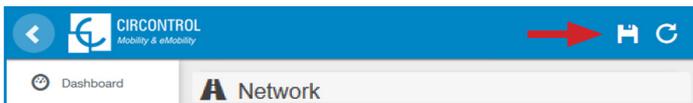
Check following steps in order to ensure the correct function of OCPP 1.6:

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:



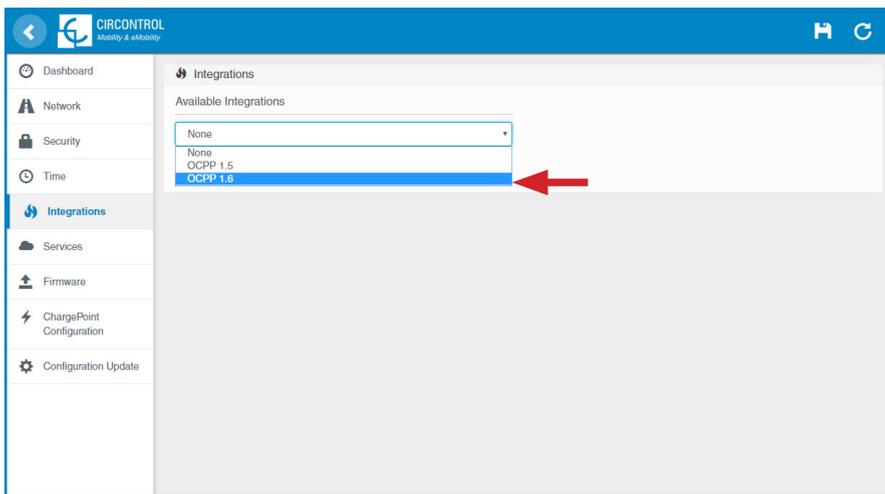
Choose the option selected under **'Address Type'** according to your network topology. When done, please do not forget to save changes using **'Save'** button in the upper right bar:



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:



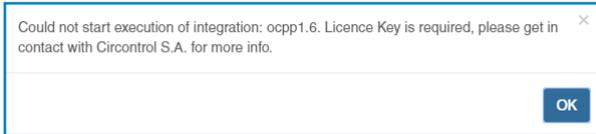
NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.



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

License activation

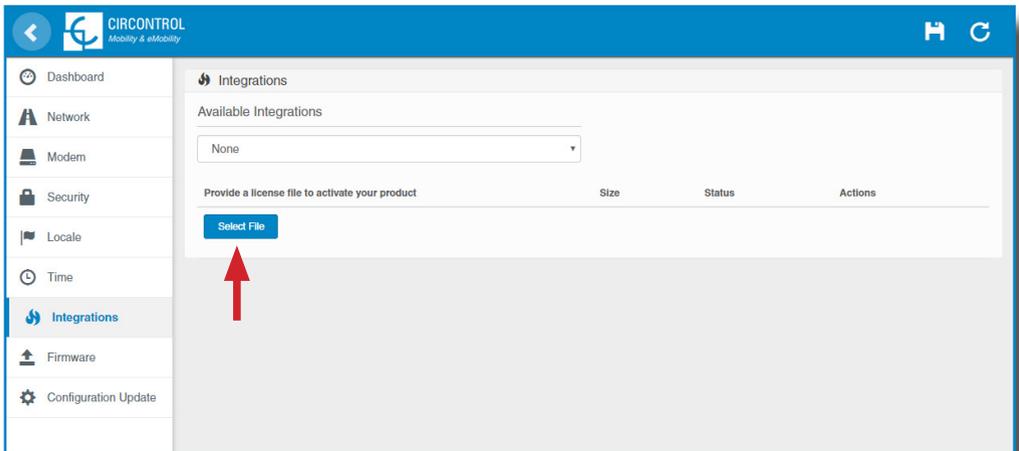
If the Charge Point does not have the license applied, the following message pops up:



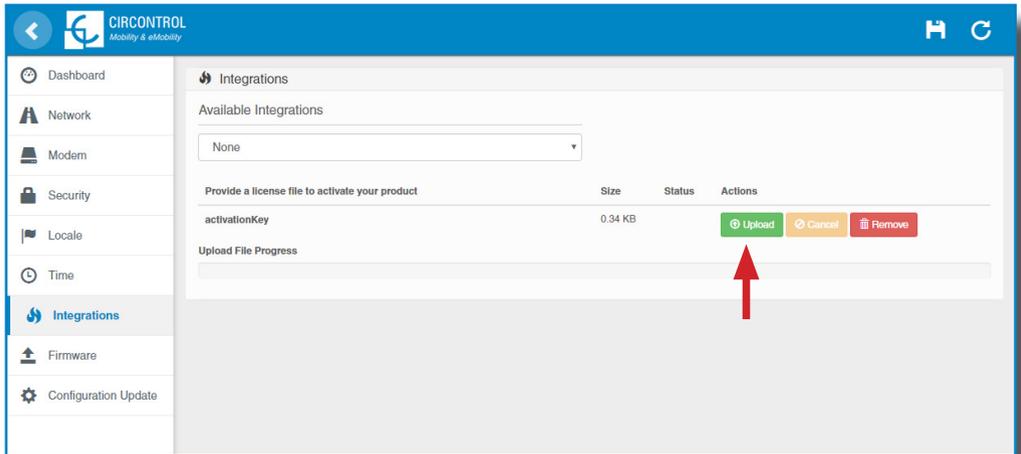


To obtain the license file please contact CIRCONTROL Post Sales Department. More information in **'Need help?'** chapter.

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'**.

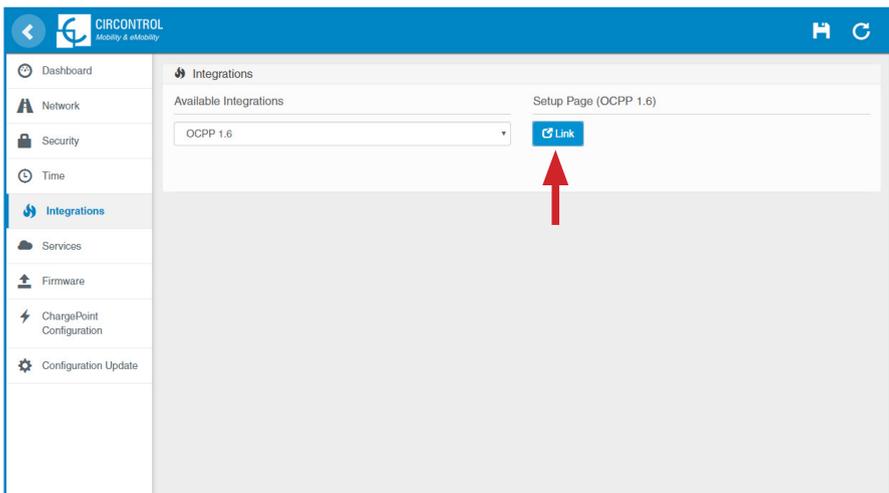


Configuration

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:



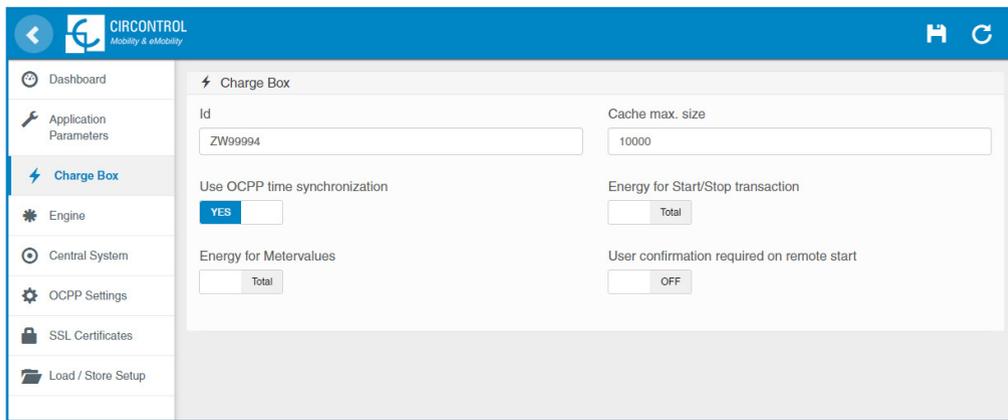
New tabs are opened to show OCPP Settings. It can also be accessed directly typing: `http://←IP→:8080/html/setup.html`

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:

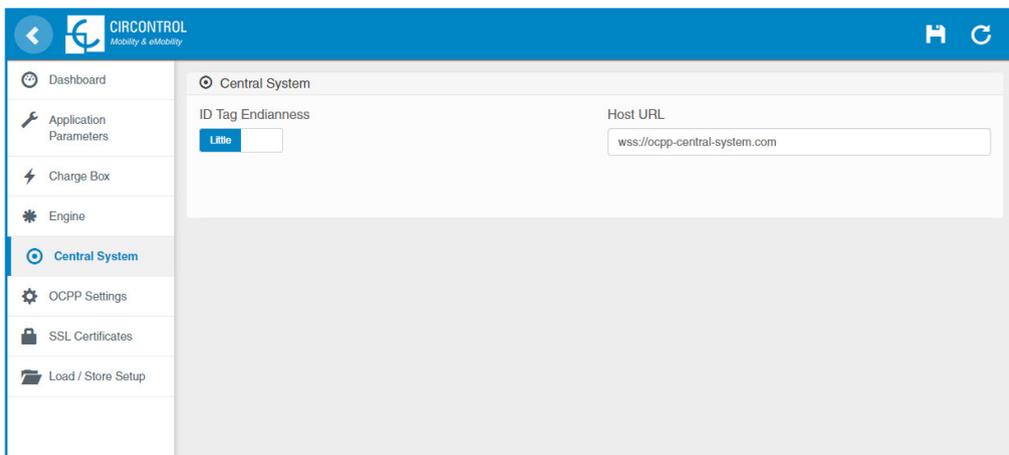


Value	Description
ID	Charge Point identifier
Cache max. size	<p>Maximum size of the <i>Authorization Cache</i>, that autonomously maintains a record of previously presented identifiers that have been successfully authorized by the Central System.</p> <p>It can be viewed accessing to the following URL: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

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:

CIRCONTROL
Mobility & eMobility

OCPP Settings

Core Profile

Authorization cache enabled
 YES

Local pre-authorize
 NO

Local authorize off-line
 YES

Stop transaction when EV unplugged
 YES

Supported profiles
Core, FirmwareManagement, LocalAuthListManagement, RemoteTriggr

Heartbeat interval
900

Metervalue (select one or more)
Current.Import
Energy.Active.Import.Register
Energy.Reactive.Import.Register
Frequency
Power.Active.Import
Power.Factor
Power.Reactive.Import

Transaction message retry interval
60

Authorize remote Tx requests
 NO

Allow offline Tx for unknown Id
 NO

Stop transaction on invalid Id
 YES

Unlock CP side when EV unplugged
 YES

Maximum number of configuration Keys
20

WebSocket ping interval
30

Transaction message attempts
1

Metervalue sample interval
15

Charging cable connection timeout
65

Local Authorization List Management Profile

Local authList enabled
 YES

Local auth list max. length
100000

Send local list max. length
5000

Reservation Profile

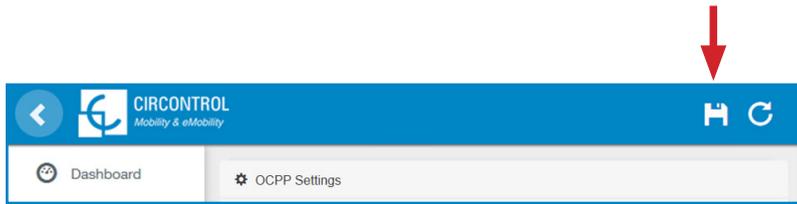
Reserve connector zero supported
 YES

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

Value	Description
Stop transaction when EV unplugged	<p>YES: Charge Transaction stops when the cable is disconnected from the EV</p> <p>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.</p>
Unlock CP side when EV unplugged	<p>YES: Charge Point unlocks the connector when the cable is disconnected from the EV</p> <p>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</p>
Supported profiles	<p>List of supported profiles on the Charge Point</p> <p>*NOTE: this field is for information purposes, it cannot be modified.</p>
Maximum number of configuration Keys	<p>Maximum number of requested configuration keys that can be requested by the Central System.</p> <p>*NOTE: this field is for information purposes, it cannot be modified.</p>
Heartbeat interval	<p>Number of seconds between Heartbeats.</p> <p>*NOTE: setting this value to 0 disables the Heartbeat.</p>
WebSocket ping interval	<p>Number of seconds between Pings.</p> <p>*NOTE: setting this value to 0 disables the WebSocket Ping/Pong.</p>
Metervalue (select one or more)	<p>List of supported values used in the MeterValue.</p> <p>*NOTE: hold 'Ctrl' key in order to select more than one Measurand.</p>
Transaction message attempts	<p>How many times the Charge Point should try to send a request to the Central System.</p>

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

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



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.



SCADA Client

The IP address assigned previously, is 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 it from Circontrol Expert Area Webpage.

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.

Monitoring

CCL1Engine - PowerStudio Scada

Options Views General

Previous Next Devices Graph Table Events Properties Print

CCL1Engine 4/8/13 1:44:22 PM

Bollard state

Leakage	✓	Reset	OFF
Tamper	✓		
Tilt	✓		

PLUG A

Status		Available	Charge relay	
Car connected			Active energy (kWh)	535,440
Connector lock		Lock	Partial active energy (kWh)	0,000
Reserved	0	Reserve	Charge request date	
Charge	Remote start	Remote stop	Charge begin date	
Enable		Enable	Charge end date	
Leakage	✓	Reset	Charge time	
		OFF	Last charge stop	Stopped by user

PLUG B

Status		Available	Charge relay	
Car connected			Active energy (kWh)	45,440
Connector lock		Lock	Partial active energy (kWh)	0,000
Reserved	0	Reserve	Charge request date	
Charge	Remote start	Remote stop	Charge begin date	
Enable		Enable	Charge end date	
Leakage	✓	Reset	Charge time	
		OFF	Last charge stop	Stopped by user

10

DATA	GENERAL SPECIFICATIONS	
MECHANICAL	Light beacon	RGB Colour indicator
	Enclosure rating	IP54 / IK10
	Enclosure material	Aluminium & ABS
	Enclosure door	Frontal key locked door
	Net weight	Post: 55 kg
		Wallbox Small: 25 kg
		Wallbox Larger: 30 kg
	Dimensions (W x H x D)	Post: 450 x 1550 x 290 mm
		Wallbox Small: 450 x 600 x 290 mm
		Wallbox Larger: 450 x 850 x 290 mm
Connectors (optional)	Shutter Type 2 Socket	
	Type 1 Cable	
	Type 2 Cable	
ELECTRICAL	Power supply	1P+N+PE / 3P+N+PE
	Input voltage	230VAC+/-10% / 400VAC+/-10%
	Frequency	50Hz / 60Hz
	Meter	MID Class 1 - EN50470-3
ENVIRONMENTAL CONDITIONS	Operating temperature	-5°C to +45°C
	Operating temperature with Low Temperature Kit (optional)	-30°C to +45°C
	Storage temperature	-20°C to +60°C
	Operating humidity	5% to 95% Non-condensing
PROTECTIONS	Safety protection	RCD Type A (30mA) / Type B (optional)
	Overcurrent protection	MCB (curve C)
	Overvoltage protection (optional)	Transient surge protector IEC 61643-1 (Class II)

Technical Data

MASTER SPECIFICATIONS	
Display	Touch screen 8"
RFID reader	ISO / IEC 14443A/B MIFARE Classic/Desfire EV1 ISO 18092 / ECMA-340 NFC 13.56MHz
Ethernet	10/100BaseTX (TCP-IP)
Cellular (optional)	Modem 4G LTE/WiFi Hotspot/GRPS/GSM
Interface protocol	OCPP

MODEL*	CONNECTORS*	OUTPUT CURRENT	OUTPUT POWER	MINIMUM CABLE CROSS-SECTION**	SERIES
S	Type 2 Socket Type 2 Socket	32A 32A	7,4kW 7,4kW	25mm ²	M L
T	Type 2 Socket Type 2 Socket	32A 32A	22kW 22kW	25mm ²	M L
T-one	Type 2 Socket	32A	22kW	10mm ²	M L
C63	Type 2 Cable	63A	43kW	25mm ²	M L

M Master

L Slave

(*) Please consult the availability to your local supplier

(**) This is the minimum cable section recommended for the maximum AC input current, the final section must be calculated by a qualified technician taking into account the specific conditions of installation



Need help?

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



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**CIRCONTROL
MASTER/SLAVE
INSTRUCTION MANUAL**

A comprehensive guide on
how to use and configure
your Master/Slave.

V1.0, September edition 2018