



CIRCONTROL
Mobility & eMobility

eVolve Smart Series

User Manual



Post & Wallbox eVolve Smart Series User 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 Start charging	08
	B Stop charging	09
4	How to configure it?	10
	A Introduction	10
	B What's needed	10
	C Connection	11

- 5 Setup Webpage 12**
 - A Dashboard 12
 - B Network 19
 - C Modem 21
 - D Security 23
 - E Locale 24
 - F Time 25
 - G Integrations 26
 - H Firmware 27
 - I Configuration Update 28

- 6 OCPP 1.5..... 30**
 - A Introduction 30
 - B Before starting 31
 - C Configuration..... 33
 - D Checkup..... 41



7 OCPP 1.6	42
A Introduction	42
B Before starting	43
C License activation	45
D Configuration.....	47
E Checkup	55
8 Monitoring	56
9 Technical Data	58
10 Need help?	61

1

This manual provides information about the usability and configuration of the Post and Wallbox eVolve Smart, 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.

 **INFORMATION** Informs about useful information to take on account

- Complies with IEC 61851, Electric vehicle conductive charging system (IEC 61851-1 and IEC 61851-21-2).
- 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/IEC 14443A/B
- Modem 4G complies with CE/RED

So, hello!

IMPORTANT SAFETY INFORMATION

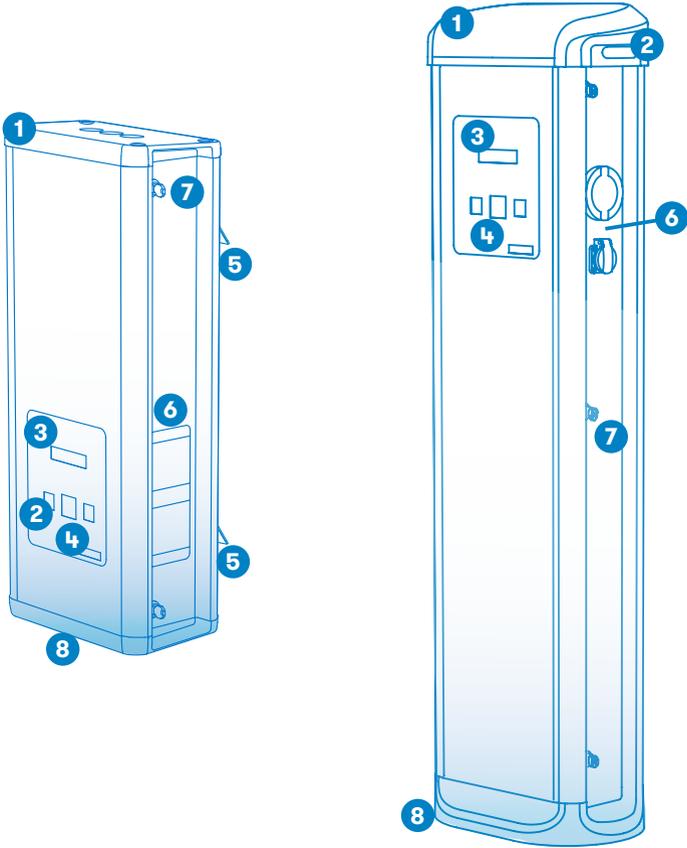


Read carefully all the instructions before manipulating the unit.

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.
- Adaptors or conversion adapters and cord extensions set are not allowed to be used.

2



1 – Hat

4 – RFID Reader

7 – Key lock access

2 – LED Beacons

5 – Wall support

8 – Base

3 – Display LCD

6 – Plugs*

[*] Plugs may vary depending on the model

Features

MAIN FEATURES OF THE UNIT

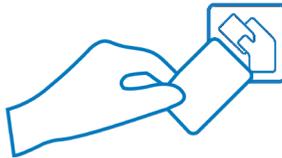
Charge Point may not include elements of electrical protection.

- **Display:** Information about the status of the connectors and detailed data as kWh and duration time.
- **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.
- **3G 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.

3

A Start Charging

1. The first step is to **show the proximity card** to the reader*



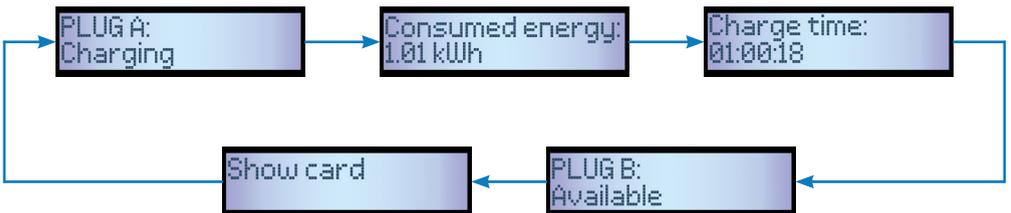
Once done, the Led Beacon turns **Blue** and the Display shows the following sequence of messages:



*If the proximity card reader is disabled, charge transaction starts automatically when a vehicle is detected.

2. Plug the **cable to the vehicle**, choose one available socket (in case there are more than one) and plug the **cable to the Charge Point**.

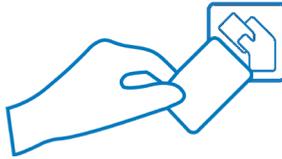
Once done, the Display shows the following sequence of messages:



How to use it?

B Stop Charging

1. The first step is to **show the proximity card** to the reader*



Once done, the Led Beacon turns **Green** and the Display shows the summary of the charge transaction:



*If the proximity card reader is disabled, charge transaction stops automatically when a cable is disconnected from the vehicle.

2. **Unplug** the cable from both sides.

Once done, the connector becomes available and the Display shows the following sequence of messages:



4

A Introduction

The Charge Point can be configured and monitored to establish preferences or specific setup using integrated Ethernet communication port allocated in the main controller device.

B What's needed

Before proceeding with the configuration, make sure all the following is ready:

	Computer running Microsoft Windows, at least Windows XP .
	UTP Cable
 IPSetup.exe	IPSetup.exe (Software provided by Circontrol)

How to configure it?

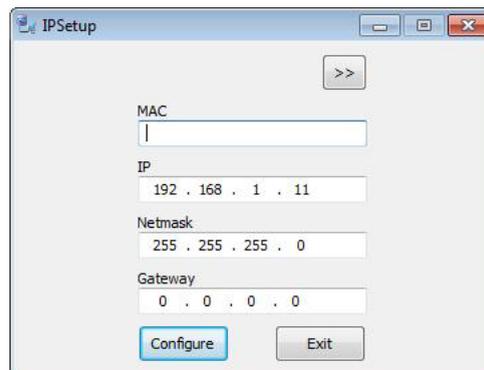
Connection

Charge Point is delivered with default network setting of “DHCP enabled”. It means that the charge station will try to obtain an IP address from a DHCP server available on the network.

Connecting a PC directly with the Charge Point needs to be done with static IP address. The PC and the Charge Point must be in the same network and in the same range.

In order to change the IP of the Charge Point, use “IP Setup”.

- Enter the MAC of the device
- Enter the desired IP Address
- Click on “Configure”



The screenshot 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 text input fields, each with a label to its left: "MAC" (empty), "IP" (containing "192 . 168 . 1 . 11"), "Netmask" (containing "255 . 255 . 255 . 0"), and "Gateway" (containing "0 . 0 . 0 . 0"). At the bottom of the window are two buttons: "Configure" (highlighted with a blue border) and "Exit".

Once done, the Setup Webpage is opened automatically on the default web browser.

5

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

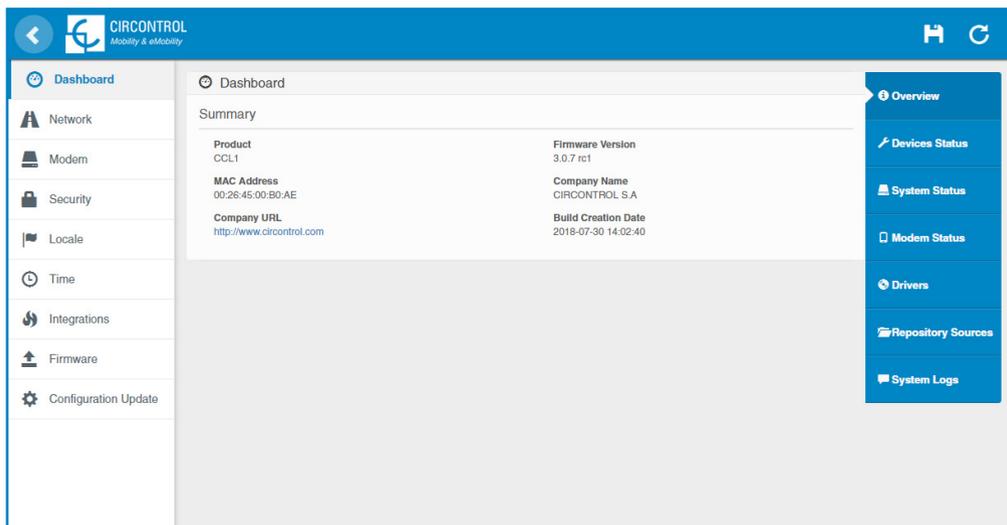
To access the setup web page, open a web browser and enter the IP address previously configured.

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



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 displays the CIRCONTROL web interface. The top navigation bar is blue with the CIRCONTROL logo and the tagline 'Mobility & efficiency'. The main content area is divided into a left sidebar, a central main area, and a right-hand navigation menu. The sidebar contains menu items: Dashboard, Network, Modem, Security, Locale, Time, Integrations, Firmware, and Configuration Update. The main area shows the 'Dashboard' page with a 'Devices Status' section. This section contains a table with two columns: 'Device Name' and 'Status'. The table lists two devices: 'CCL1' with status 'Ok' and 'EVSE' with status 'Error'. The right-hand navigation menu includes: Overview, Devices Status, System Status, Modem Status, Drivers, Repository Sources, and System Logs.

Device Name	Status ^
CCL1	Ok
EVSE	Error

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.

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Dashboard

System Status

Uptime 3d, 3h03m21s	MemUsed 97.91%
MemTotal 61 MB	MemFree 1 MB
cpu_usr 49%	cpu_sys 50%
disk_used 1.3M	disk_available 46.7M

Ethernet RX/TX
15.1 MB / 2.5 MB

Network Status

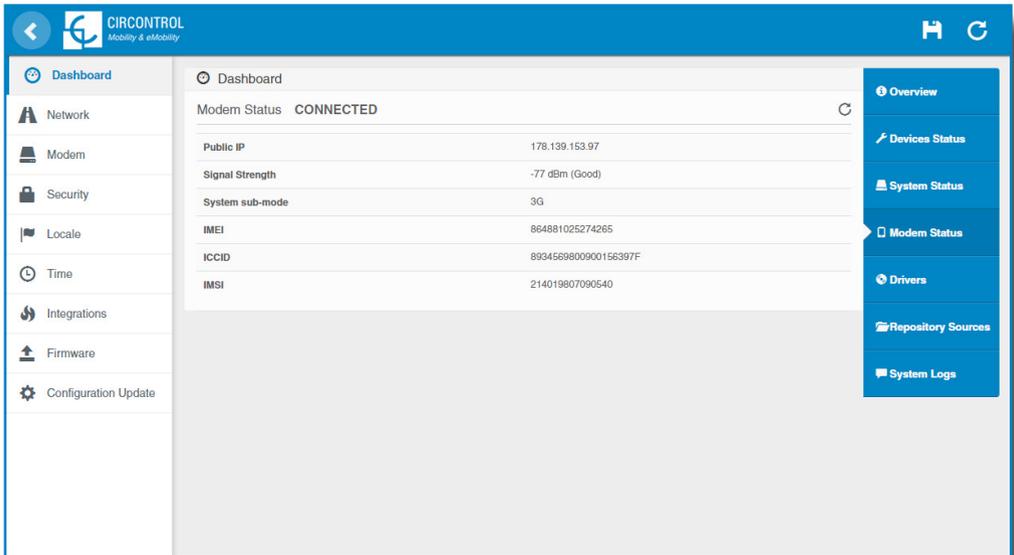
Protocol	Local Address	Foreign Address	State
tcp	0.0.0.0:www	0.0.0.0:*	LISTEN
tcp	0.0.0.0:www	0.0.0.0:*	LISTEN
tcp	0.0.0.0:www	0.0.0.0:*	LISTEN

Overview

- Devices Status
- System Status**
- Modem Status
- Drivers
- Repository Sources
- System Logs

Modem Status

When the cellular connection is successful, this section shows the public IP, the signal strength and other information related to the SIM Card.

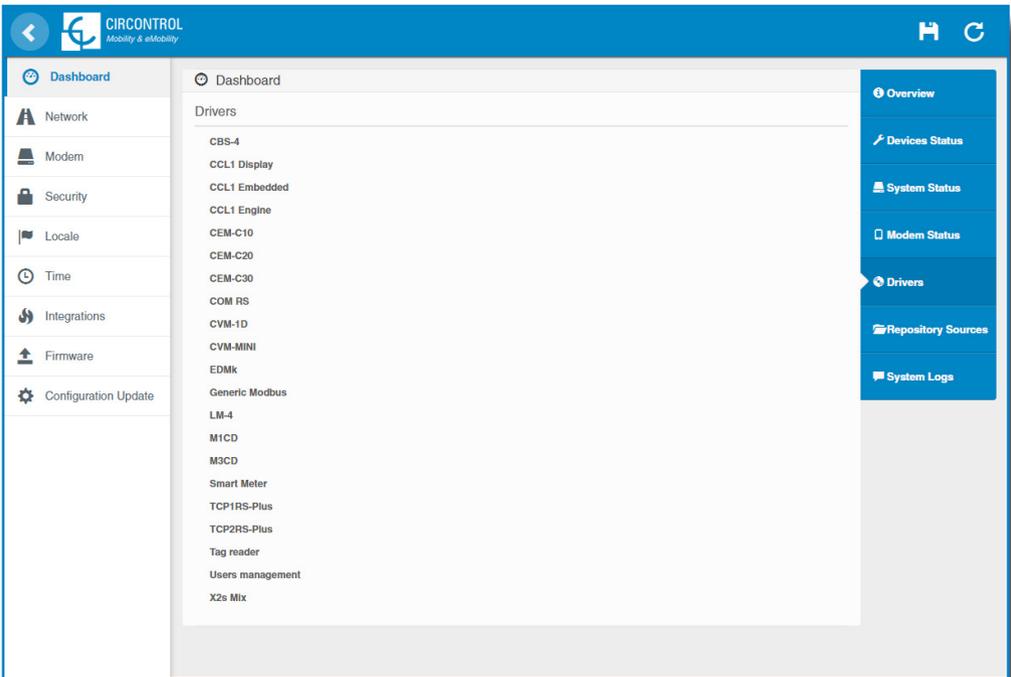


The following diagram shows an approximated range of signal strength that can be obtained depending on the location of the Charge Point:



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, etc.



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.

The screenshot displays the CIRCONTROL web interface. The top navigation bar includes a back arrow, the CIRCONTROL logo with the tagline 'Mobility & eMobility', and icons for home and refresh. A left sidebar contains menu items: Dashboard, Network, Modem, Security, Locale, Time, Integrations, Firmware, and Configuration Update. The main content area is titled 'Dashboard' and lists various source categories with their respective paths and counts:

- Platform Sources**
 - `/var/svn/ccf1/tags/3.0.7` → 793
- Engine Sources**
 - `/var/svn/circarlife/raption/tags/5.1.6/motor` → 8130
 - `/var/svn/circarlife/raption/tags/5.1.6/common` → 8115
 - `/var/svn/libuild/tags/1.0` → 6
 - `/var/svn/circarlife/raption/tags/5.1.6/libs/XCZLib` → 751
 - `/var/svn/circarlife/raption/tags/5.1.6/libs/XCTools` → 7404
 - `/var/svn/circarlife/raption/tags/5.1.6/libs/XCRemote` → 6686
- Web Setup Sources**
 - `/var/svn/embedded-web/tags/1.2.2` → 239
- Integration Sources**
 - `/var/svn/circarlife/integrations/tags/1.6.2/bcpp1.5` → 7810
 - `/var/svn/circarlife/integrations/tags/1.6.2/bcpp1.6` → 7810
 - `/var/svn/circarlife/integrations/tags/1.6.5/bcpp-web` → 8218

A right sidebar contains additional menu items: Overview, Devices Status, System Status, Modem Status, Drivers, Repository Sources (highlighted), and System Logs.

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 shows the CIRCONTROL web interface. The main content area displays the 'System Logs' section with a table of log entries. The table has the following columns: Date, Source, Severity, and Message.

Date	Source	Severity	Message
Sep 18 22:40:53	(none)	user.err	kernel: [260580.030000] eth0: TX underrun, resetting buffers
Sep 18 22:40:52	(none)	user.err	kernel: [260579.080000] eth0: TX underrun, resetting buffers
Sep 15 20:20:01	(none)	user.info	pss[1064]: OFFLINE MODE: Event triggered
Sep 15 20:20:01	(none)	user.info	pss[1064]: HEARTBEAT - START UP: Event disabled
Sep 15 20:20:01	(none)	user.info	pss[1064]: HEARTBEAT - OFFLINE MODE: Event disabled
Sep 15 20:19:59	(none)	user.info	pss[1064]: HEARTBEAT - OFFLINE MODE: Event triggered
Sep 15 20:18:58	(none)	user.info	pss[1064]: XCDeviceEventServer.sendEvent: There is no listener
Sep 15 20:18:58	(none)	user.debug	pss[1064]: EVSE: PLUG B: State transition 0 -> -1 (internal coding 0 -> 12)
Sep 15 20:18:57	(none)	user.info	pss[1064]: XCDeviceEventServer.sendEvent: There is no listener
Sep 15 20:18:57	(none)	user.debug	pss[1064]: EVSE: PLUG A: State transition 0 -> -1 (internal coding 0 -> 12)
Sep 15 20:18:57	(none)	user.debug	pss[1064]: PLUG B.SOCKET: Charge relay opened
Sep 15 20:18:57	(none)	user.info	pss[1064]: PLUG B.SOCKET: MCB reset
Sep 15 20:18:57	(none)	user.info	pss[1064]: XCDeviceEventServer.sendEvent: There is no listener
Sep 15 20:18:57	(none)	user.debug	pss[1064]: Loading main document /: succesfull
Sep 15 20:18:57	(none)	user.debug	pss[1064]: PLUG A.SOCKET: Charge relay opened
Sep 15 20:18:57	(none)	user.info	pss[1064]: PLUG A.SOCKET: MCB reset
Sep 15 20:18:57	(none)	user.info	pss[1064]: XCDeviceEventServer.sendEvent: There is no listener
Sep 15 20:18:57	(none)	user.info	pss[1064]: PLUG B: Save state
Sep 15 20:18:57	(none)	user.debug	pss[1064]: PLUG B: Set beacon (R255, G0, B0)
Sep 15 20:18:57	(none)	user.info	pss[1064]: PLUG B: (OnStateChanged) Error
Sep 15 20:18:57	(none)	user.notice	pss[1064]: EVSE: Status 2
Sep 15 20:18:57	(none)	user.info	pss[1064]: XCDeviceEventServer.sendEvent: There is no listener

B Network

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

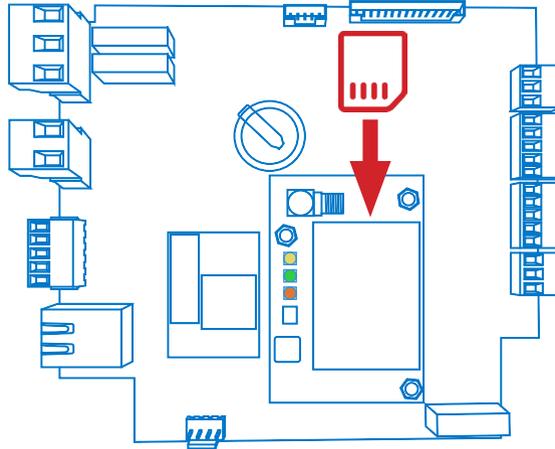
The screenshot displays the 'Network' configuration page in the CIRCONTROL interface. The page is organized into several sections:

- Hostname:** A text input field containing 'ccl1-4500b0ae'.
- DHCP:** A section with a toggle switch set to 'OFF'.
- DHCP Client:** A text input field.
- Public Address Manager:** A section with a dropdown menu for 'Address Type' set to 'Local Address'.
- Public IP:** A text input field.
- IP Address Settings:** A section containing:
 - IP Address:** A text input field with '192.168.110.15'.
 - Netmask:** A text input field with '255.255.255.0'.
 - Gateway:** A text input field with '192.168.110.254'.
 - Primary DNS server:** A text input field with '192.168.0.9'.
 - Secondary DNS server:** An empty text input field.

Value	Description
Hostname	Name of the Charge Point on the network
Address Type	<p>•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.</p> <p>•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> <p>NOTE: Public IP address must be entered manually in the “Public IP” text box.</p> <p>•SIERRA Wireless Raven XE H2295EW: select this option only when SIERRA Wireless RAVEN XE cellular router is connected to the charge point.</p> <p>•SIERRA Wireless AirLink LS300: select this option only when SIERRA Wireless AirLink LS300 cellular router is connected to the charge point.</p> <p>•Embedded modem: Select this option only when the modem is integrated on the control board of the ChargePoint.</p> <p>•Teltonika RUT240 LTE: Select this option only when Teltonika RUT240 LTE cellular router is connected to the charge point.</p>
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

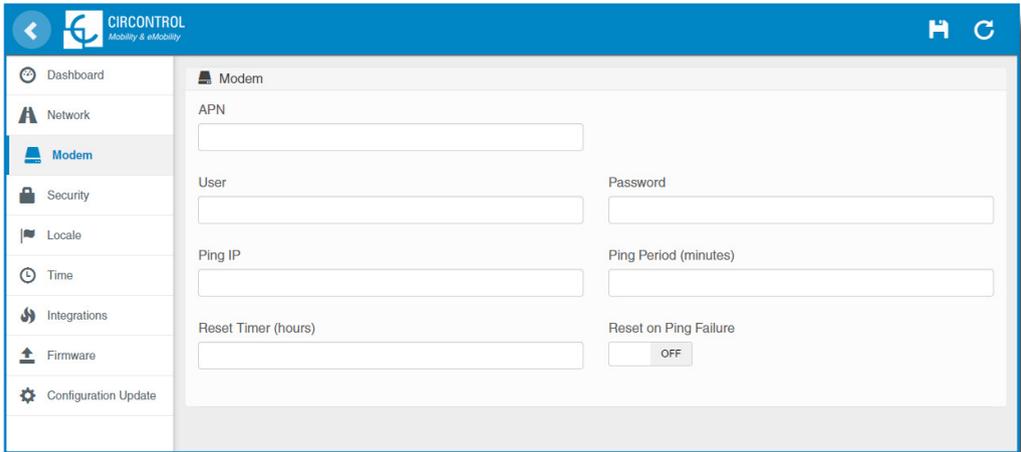
Modem

Before configuring the cellular communications, insert the SIM Card on the modem as shown:



If the three LEDs are not on after inserting the SIM card, check the modem configuraton.

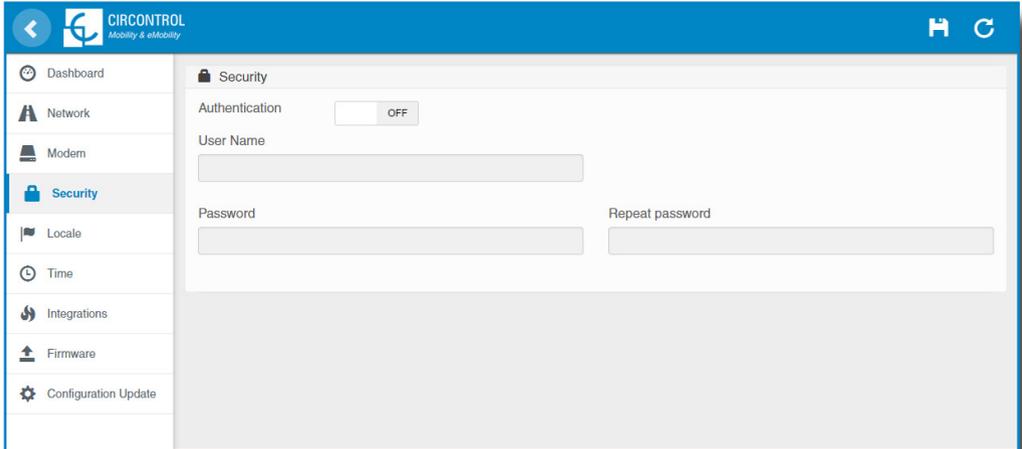
To configure the integrated modem, check this section to set the parameters provided by the SIM Card network operator.



Value	Description
APN	Access point name (Consult SIM Card network operator)
User	Credentials assigned to the APN
Password	NOTE: If credentials are not needed, insert "1234" on both fields
Ping IP	IP address where the Charge Point pings
Ping period (minutes)	Period between pings
Reset timer (hours)	Timer to reset the modem and communications
Reset on ping failure	<ul style="list-style-type: none"> •ON: enabled •OFF: disabled

Security

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



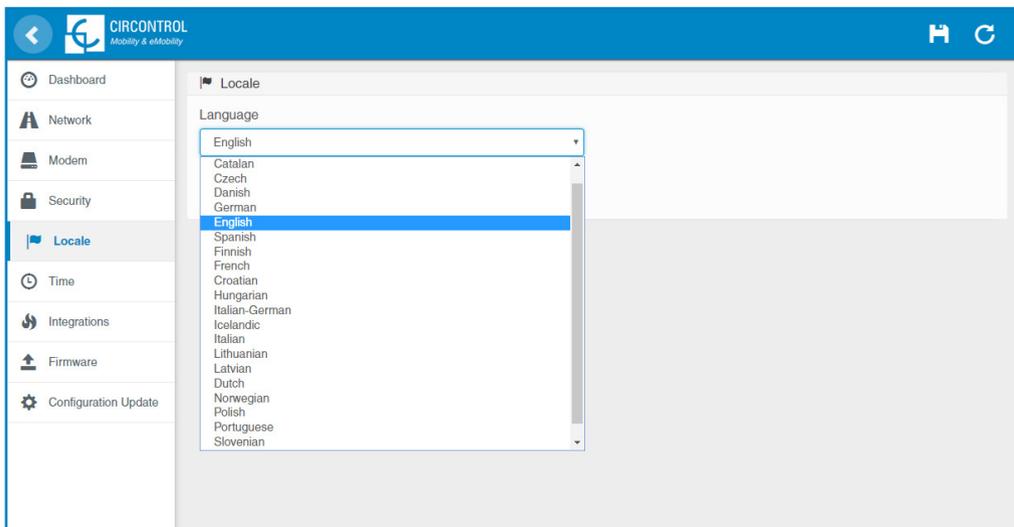
Value	Description
Authentication	ON: authentication enableb / OFF: authentication disabled
User Name	Username and Password authentication for Setup web page
Password	
Repeat password	



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

Locale

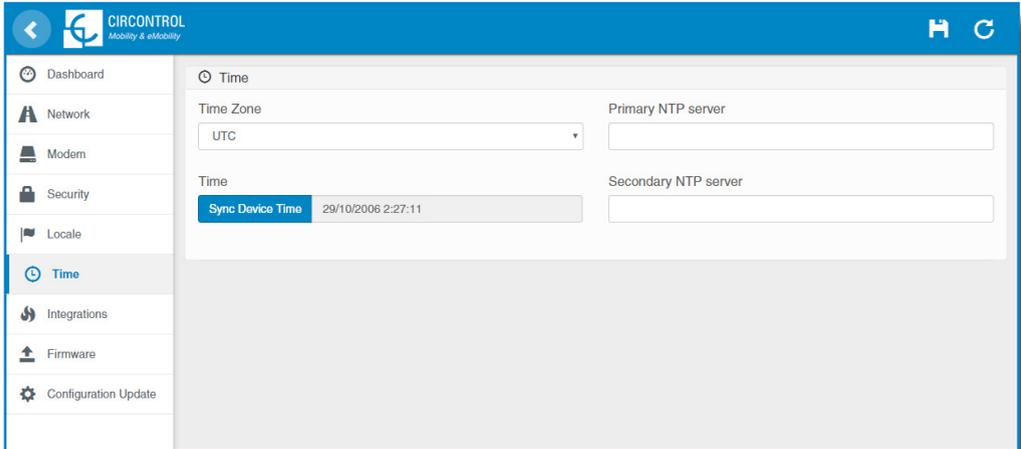
This section allows to change the language of the Charge Point, choosing among several options.



For availability of languages, please consult your local supplier.

F Time

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

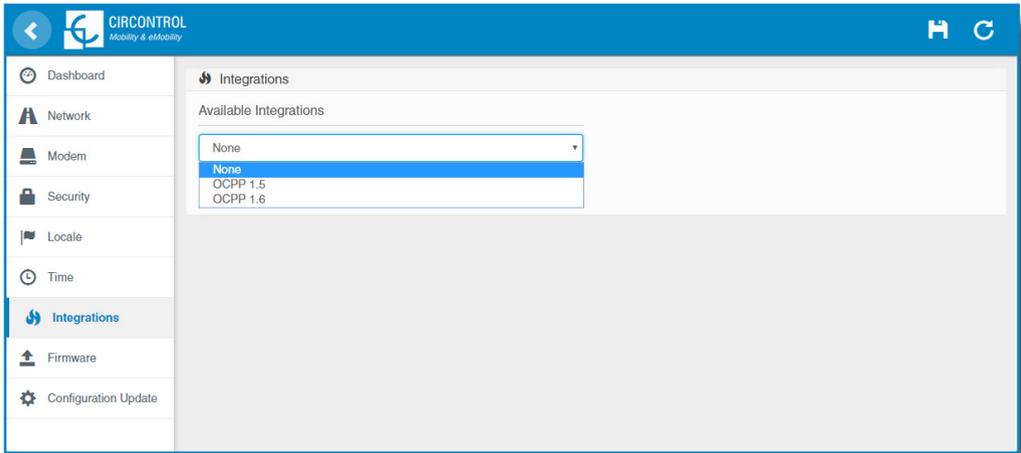


Value	Description
Time Zone	Select the regional time for the Charge Point according to the location
Time	Current date and time of the Charge Point
Primary NTP Server	Synchronize the time through internet automatically
Secondary NTP Server	

Integrations

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

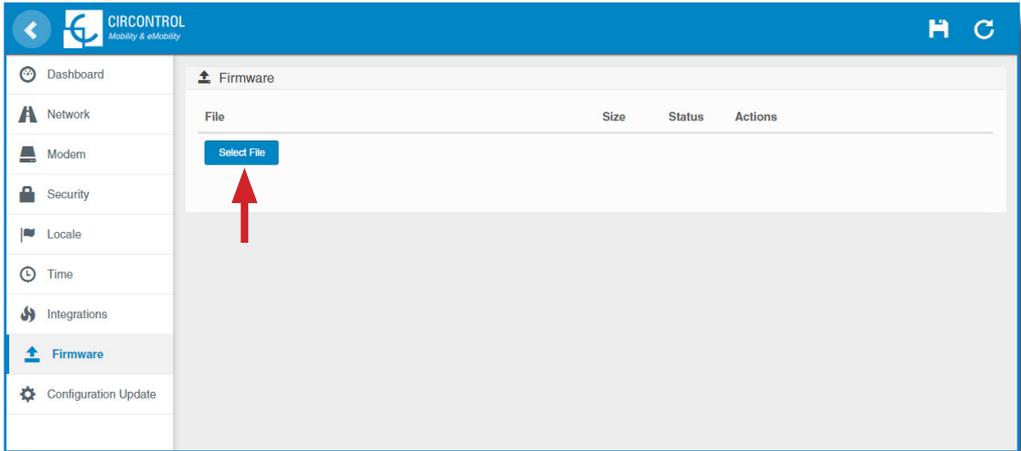
Both OCPP 1.5 and OCPP 1.6 are available on the last firmware version.



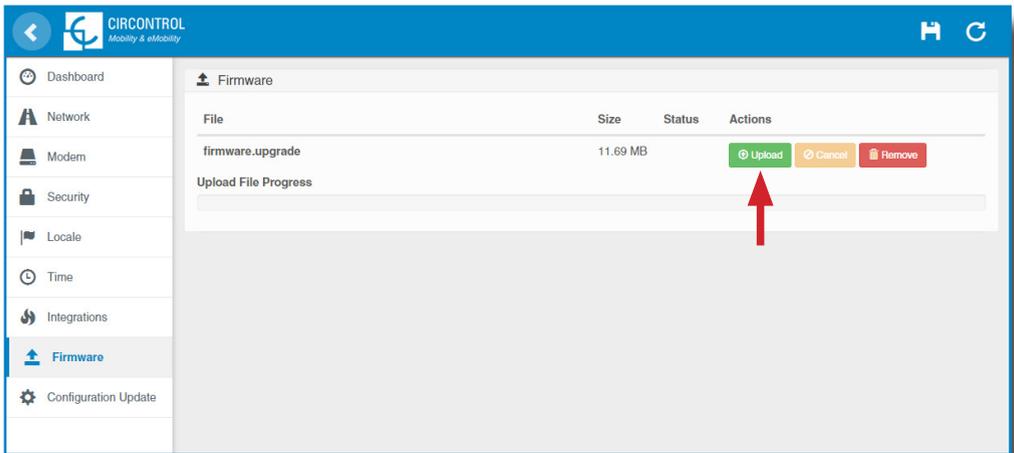
For more information about the parameters and configuration, please refer to '**OCPP 1.5**' or '**OCPP 1.6**' chapters of this manual.

Firmware

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



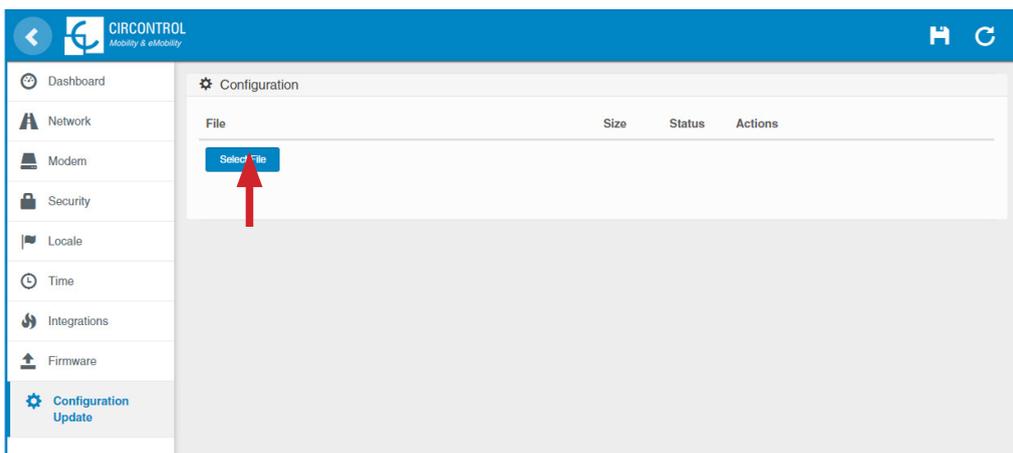
A window will pop up in order to choose the file, then click on **'upload'**.



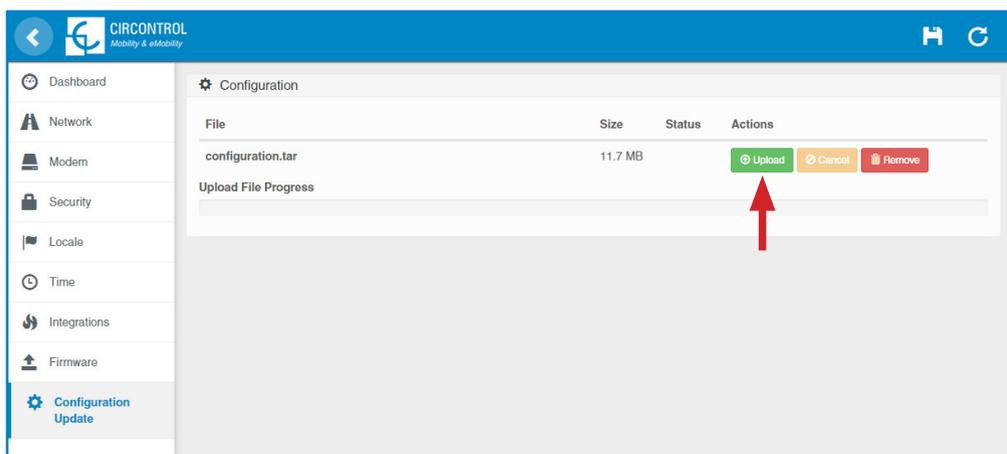
To obtain the latest firmware version please contact CIRCONTROL Post Sales Department. More information in **'Need help?'** chapter.

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.





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.

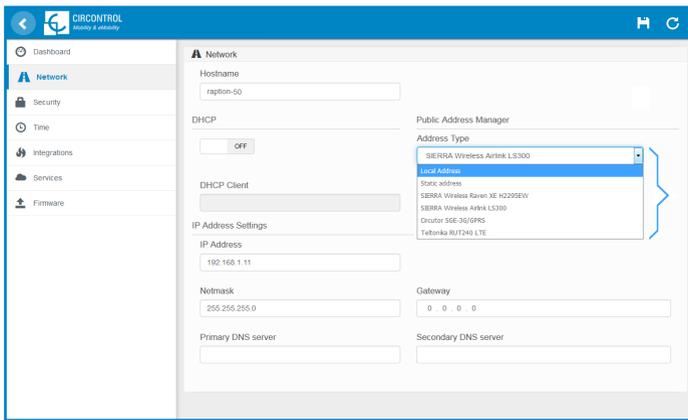
OCPP 1.5

B Before starting

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

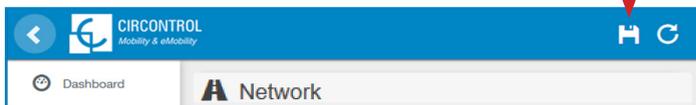
Go to the **Setup Webpage** → **'Network'** tab

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.

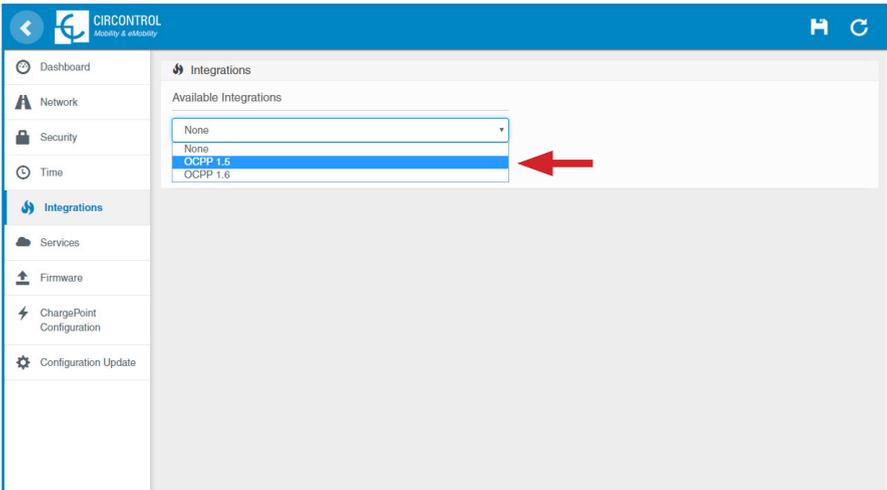
When done, please do not forget to save changes using **'Save'** button in the upper right bar:



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:



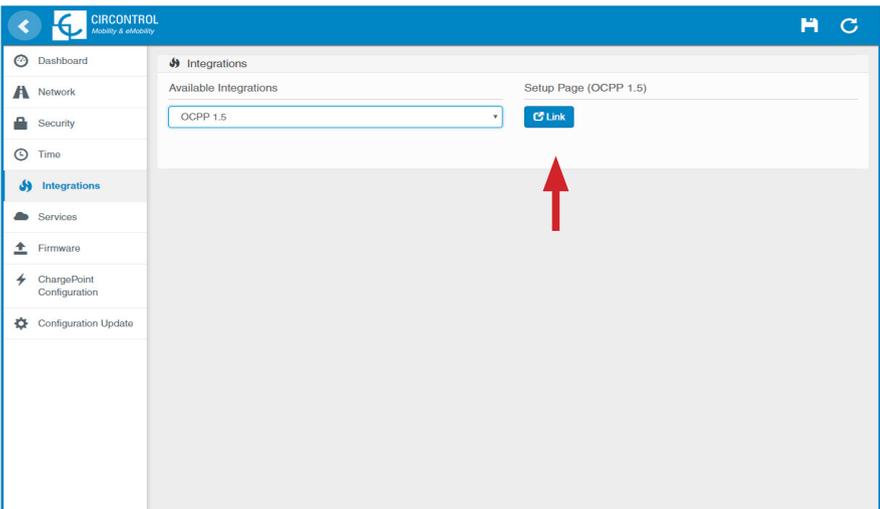
NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.

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

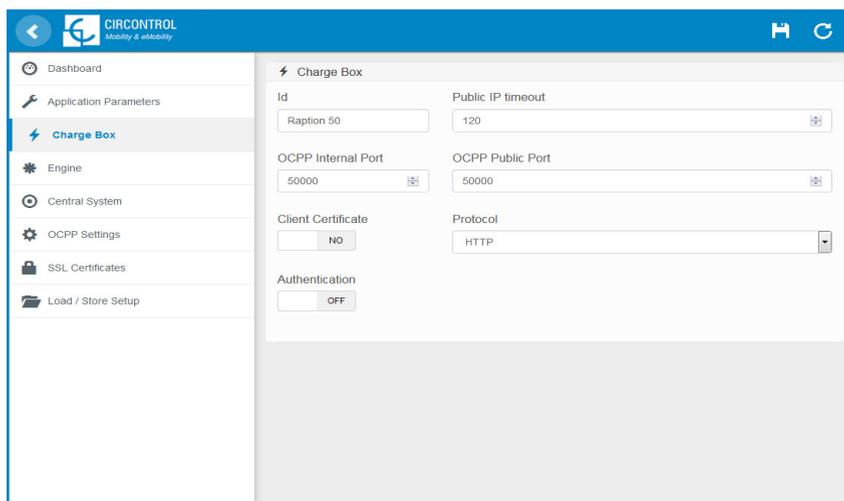
Password: 1234

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:

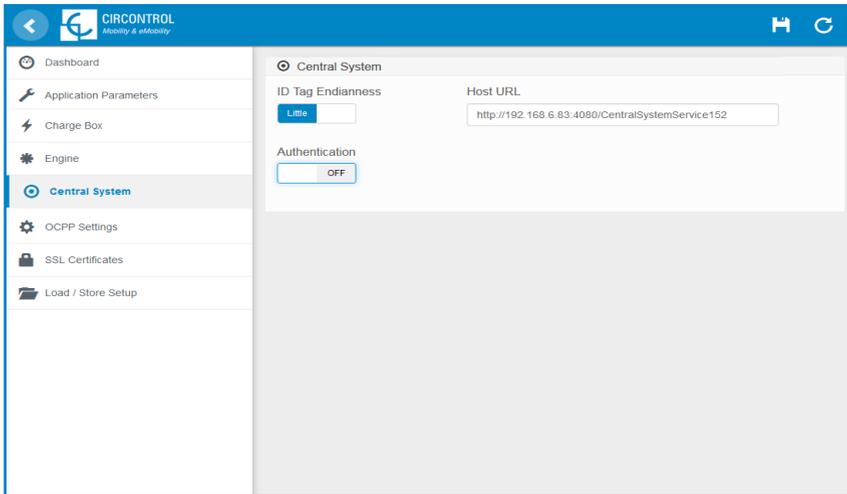


Value	Description
ID	Charge Point identifier
Public IP timeout	Maximum waiting time to obtain the public IP address of the 3G modem
OCPP Internal port	Incoming listening port for remote request (internal)
OCPP Public port	Incoming listening port for remote request (public)
Client Certificate	Provided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

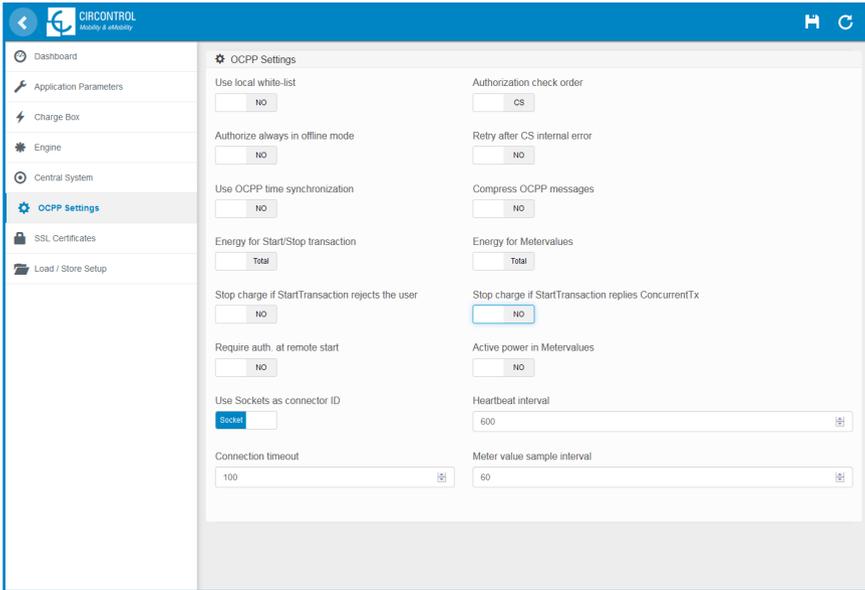
Check Central System URL according to the backend policies, please contact to the Central System to get the configuration parameters:



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 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:





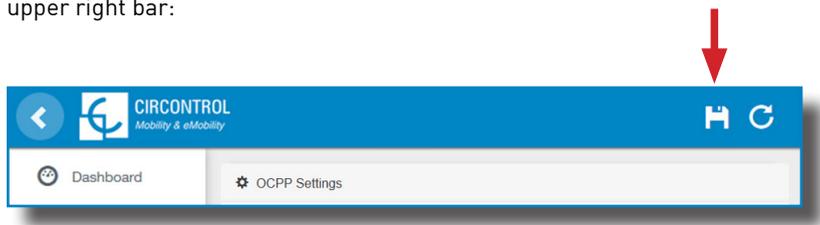
Before making any changes read following table and set each option according to your backend provider.

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 upper right bar:



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.



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:

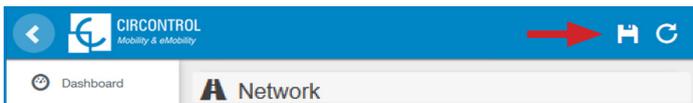
Go to the **Setup Webpage** → **'Network'** tab

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:

The screenshot shows the 'Network' configuration page in the CIRCONTROL interface. The left sidebar contains navigation options: Dashboard, Network (selected), Security, Time, Integrations, Services, Firmware, ChargePoint Configuration, and Configuration Update. The main content area is titled 'Network' and includes the following sections:

- Hostname:** raption-4500adeb
- DHCP:** OFF
- DHCP Client:** (empty field)
- IP Address Settings:**
 - IP Address:** 192.168.110.45
 - Netmask:** 255.255.255.0
 - Gateway:** 192.168.110.254
 - Primary DNS server:** 192.168.0.9
 - Secondary DNS server:** (empty field)
- Public Address Manager:**
 - Address Type:** Teltonika RUT240 LTE (selected)
 - Local Address:** Static address
 - Static address:** SIERRA Wireless Raven XE H2295EW, SIERRA Wireless Airlink LS300, Circutor SGE-3G/GPRS, Teltonika RUT240 LTE

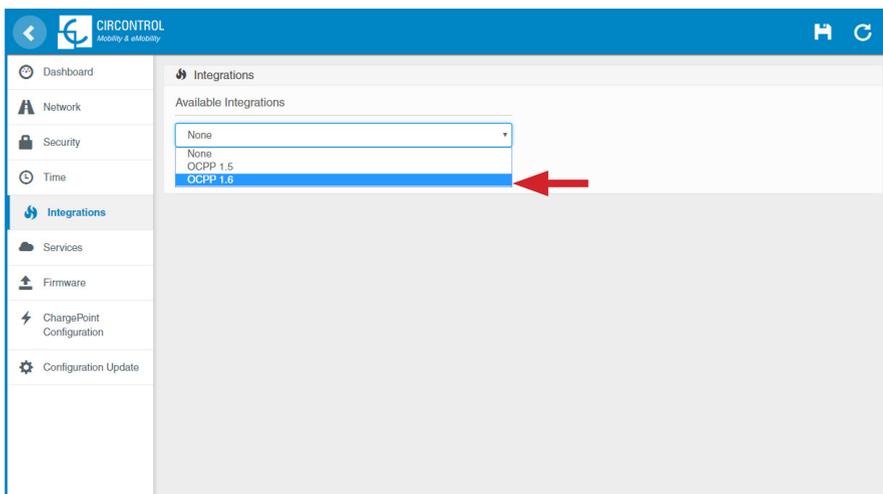
Choose the option selected under **'Address Type'** according to your network topology. When done, please do not forget to save changes using **'Save'** button in the upper right bar:



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:



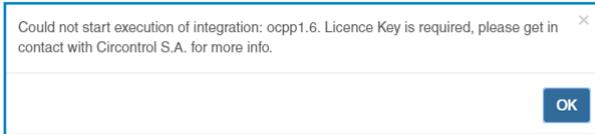
NOTE: Charge Point is working as stand-alone if **'none'** option is selected. All ID cards are authorized to start/stop a new charge transaction and no requests are sent to the backend.



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

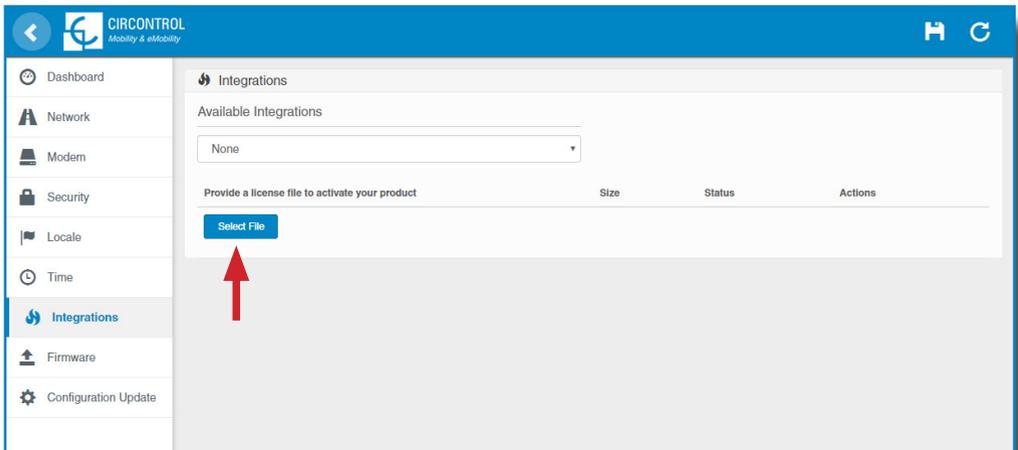
License activation

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

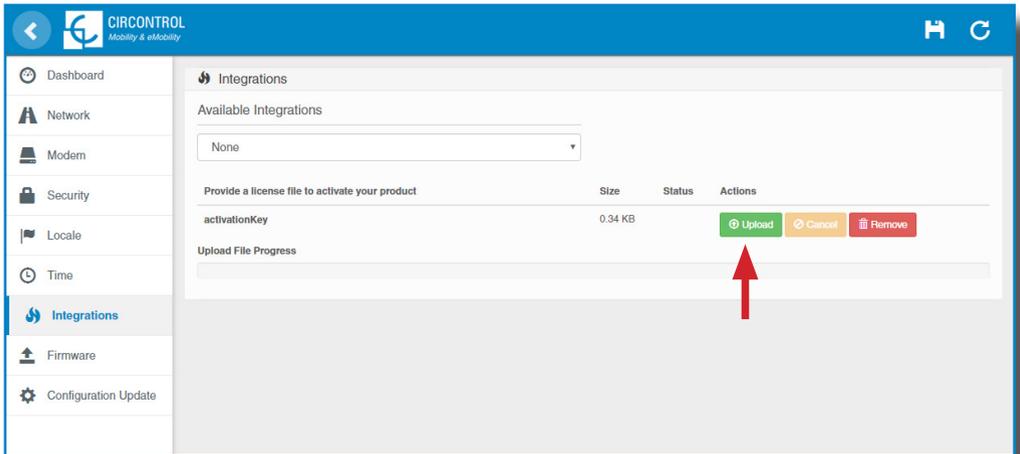


To obtain the license file please contact CIRCONTROL Post Sales Department. More information in **'Need help?'** chapter.

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'**.

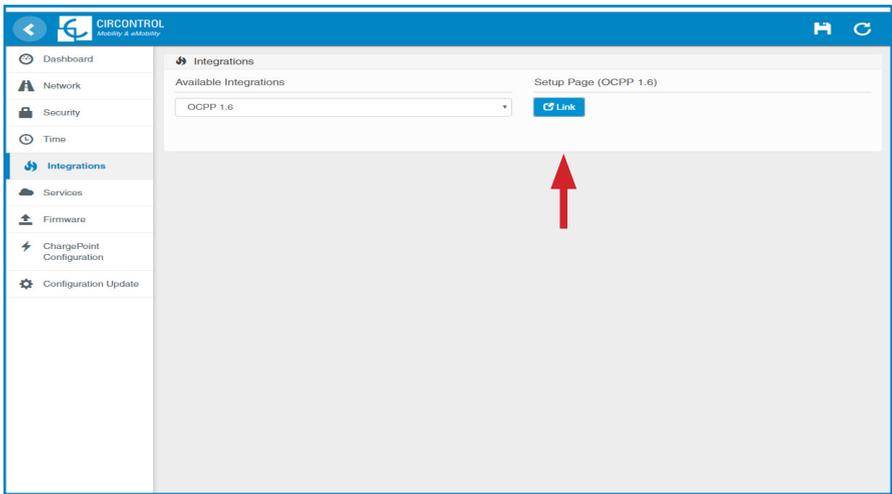


Configuration

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`

These tabs require a user identification:

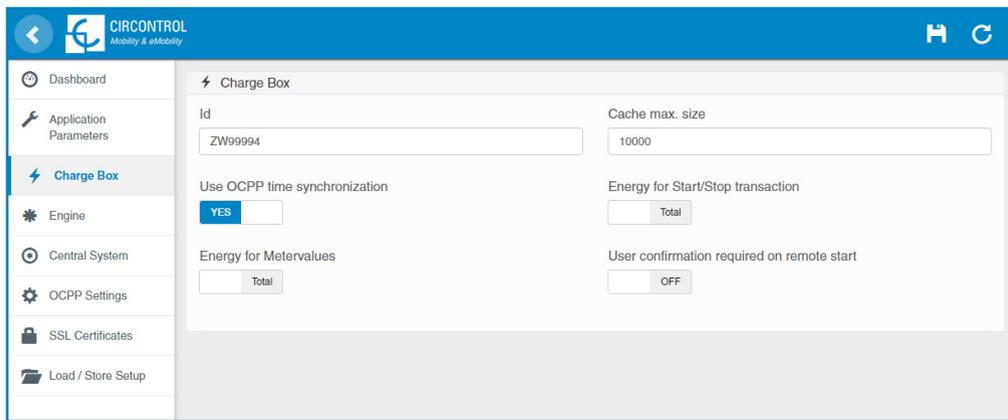
User: admin
Password: 1234

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:



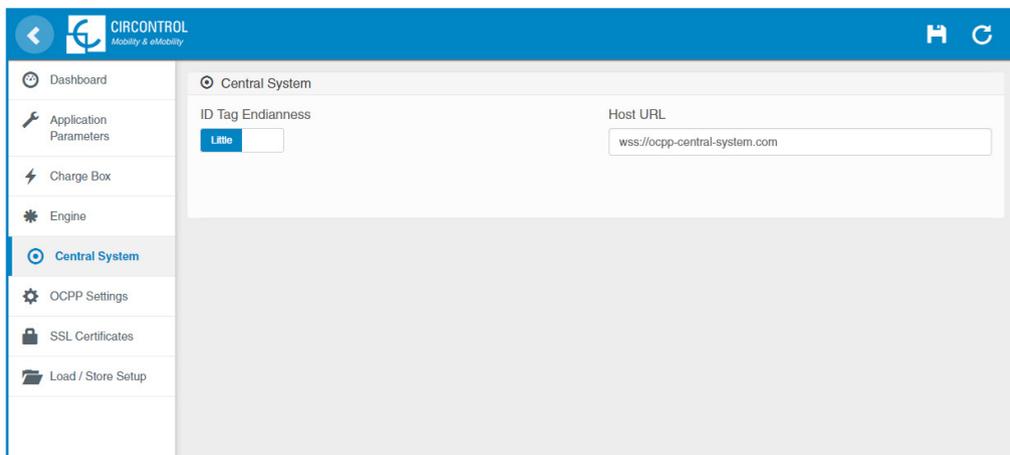


Value	Description
ID	Charge Point identifier
Cache max. size	<p>Maximum size of the <i>Authorization Cache</i>, that autonomously maintains a record of previously presented identifiers that have been successfully authorized by the Central System.</p> <p>It can be viewed accessing to the following URL: <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

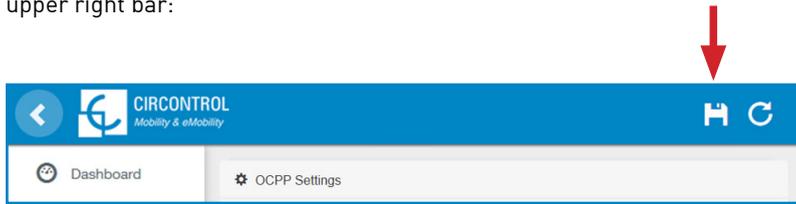
Check OCPP Settings according to the backend policies, please contact to the Central System to get the configuration parameters:

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 upper right bar:



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.

8

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 the computer in order to run the client software, please, download last version from: www.java.com



In remote connections, where communicating with the Charge Point via 3G/4G data is required 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 Unlock	Partial active energy (kWh)	0,000
Reserved	0 Reserve Release	Charge request date	
Charge	Remote start Remote stop Paused	Charge begin date	
Enable	Enable Disable	Charge end date	
Leakage	✓ Reset OFF	Charge time	
		Last charge stop	Stopped by user

PLUG B

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

Server OK (CCL1 - 192.168.0.25:80)



DATA	SPECIFICATIONS	
MECHANICAL	Light beacon	RGB Colour indicator
	Enclosure rating	IP44 / IK8
	Enclosure material	Aluminium & ABS
	Enclosure door	Frontal key locked door
	Net weight	55Kg
	Dimensions (W x H x D)	450 x 1550 x 290 mm
ELECTRICAL	Power supply	1P+N+PE / 3P+N+PE
	Input voltage	230VAC+/-10% / 400VAC+/-10%
	Frequency	50Hz / 60Hz
ENVIRONMENTAL CONDITIONS	Operating temperature	-5°C to +40°C
	Operating temperature with Low Temperature Kit (optional)	-25°C to +40°C
	Storage temperature	-5°C to +40°C
	Operating humidity	5% to 95% Non-condensing
PROTECTIONS	Safety protection	RCD Type A (30mA) / Type B (optional)
	Overcurrent protection	Miniature Circuit Breaker (MCB) IEC 60898-1 (Curve C)
	Overvoltage protection (optional)	Transient surge protector IEC 61643-11 (Class II)

Technical Data

GENERAL DATA	
Display	Touch screen 8"
	LCD Multi-language
RFID reader	ISO/IEC 14443 A
Legic RFID reader (optional)	ISO/IEC 14443 A+B ISO/IEC 18092 ECMA-340 ISO/IEC 15693 Legic Prime
Meter	MID Class 1 - EN50470-1/3
Ethernet	10/100BaseTX (TCP-IP)
Cellular (optional)	Embedded modem 4G LTE/3G/GPRS
	Modem 4G LTE/WiFi Hotspot/3G/GPRS
Interface protocol	OCPP 1.5 / 1.6J (optional)

MODEL*	CONNECTORS	OUTPUT CURRENT	OUTPUT POWER
S	Type 2 Socket Type 2 Socket	32A 32A	7,4kW 7,4kW
SS	CEE 7/3 CEE 7/3	16A 16A	3,6kW 3,6kW
S One	Type 2 Socket	32A	7,4kW
T	Type 2 Socket Type 2 Socket	32A 32A	22kW 22kW
TM	Type 2 Socket CEE 7/3	32A 16A	22kW 3,6kW
T One	Type 2 Socket	32A	22kW
TM4	Type 2 Socket / CEE 7/3 Type 2 Socket / CEE 7/3	32A / 16A 32A / 16A	22kW / 3,6kW 22kW / 3,6kW
C63	Type 2 Cable	63A	43kW

[*] Please check availability with your local supplier.

[**] This is the minimum cable cross section recommended for the maximum AC input current. The final cross section must be calculated by a qualified technician taking into account the specific conditions of installation.



Need help?

In case of any query or if further information is required, please contact our **Post-Sales Department**.



ps-support@circontrol.com



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(+34) 937 362 941



CIRCONTROL

Mobility & eMobility

**CIRCONTROL EVOLVE
SMART SERIES
USER MANUAL**

A comprehensive guide on
how to use and configure your
Post and Wallbox eVolve.

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