

INSTRUCTION MANUAL

MODELS: CCL-WB2M-SMART*
CCL-WB2M-SMART TRI*
CCL-WB MIX-SMART*
CCL-WB MIX-SMART TRI*



CirCarLife
SCADA



MODE 3
(IEC 61851)

Ocpp
Open Charge Point Protocol



CIRCONTROL
Mobility and Security

(*) 3G models also included

WALLBOX SMART Instruction manual

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CONTENTS

1	INTRODUCTION	3
1.1	IMPORTANT SAFETY INFORMATION	3
1.2	DESCRIPTION	3
2	FEATURES	4
3	INSTRUCTIONS FOR USE	5
3.1	START RECHARGING PROCEDURE.....	5
3.1.1	<i>DISPLAY INFORMATION WHILE CHARGING</i>	7
3.2	STOP RECHARGING PROCEDURE.....	8
3.2.1	<i>DISPLAY INFORMATION WHEN RECHARGING ENDS</i>	10
4	ETHERNET COMMUNICATIONS	11
4.1	PREREQUISITES	11
4.2	NETWORK TOPOLOGY	12
4.3	STEP BY STEP LAN CONNECTION PROCEDURE	13
4.4	SETUP WEB PAGE.....	17
4.4.1	<i>NETWORK SETUP</i>	18
4.4.2	<i>MODEM SETUP (only for 3G series)</i>	18
4.4.3	<i>PUBLIC ADDRESS MANAGER</i>	19
4.4.4	<i>LOCALE SETUP</i>	20
4.4.5	<i>TIME SETUP</i>	20
4.4.6	<i>DYNAMIC DNS SETUP</i>	21
4.4.7	<i>SECURITY SETUP</i>	22
4.4.8	<i>SYSTEM INFORMATION</i>	23
4.5	OTHER URL CONFIGURATION.....	25
4.5.1	<i>LOG WEB PAGE</i>	25
4.5.2	<i>MODEM STATUS (FOR 3G MODELS)</i>	26
5	3G COMMUNICATIONS (FOR 3G MODELS)	27
5.1	STEP BY STEP CONFIGURATION	27
6	CHARGE POINT OCPP INTEGRATION	30
6.1	INTEGRATION SETUP WEB PAGE	30
6.2	OCPP ENGINE SETUP WEB PAGE	31
6.2.1	<i>APPLICATION PARAMETERS</i>	32
6.2.2	<i>POWERSTUDIO ENGINE</i>	33
6.2.3	<i>CHARGE BOX (CB)</i>	34

6.2.4	OCPP SETTINGS	35
6.2.5	MANAGEMENT SYSTEM (CS)	36
6.2.6	SSL CERTIFICATES.....	37
6.2.7	ACTIONS.....	37
6.3	STEP BY STEP INTEGRATIONS PROCEDURE	38
7	URL SUMMARY TABLE	41
8	CHARGE STATION MONITORING.....	42
8.1	USING CIRCARLIFE CLIENT	42
8.2	USING WEB BROWSER.....	43
9	CIRCARLIFE SCADA CLIENT	44
9.1	MENU BAR.....	45
9.1.1	OPTIONS MENU.....	45
9.1.2	VIEWS MENU	46
9.1.3	GENERAL MENU.....	47
9.2	TOOLBAR	48
9.2.1	TOOLBAR SETUP MENU.....	48
9.3	STATUS BAR	49
9.4	SCADA GRAPHS	50
9.4.1	GRAPHS TOOLBAR	52
9.5	SCADA TABLES.....	53
9.5.1	TABLE PROPERTIES.....	54
9.6	NOTIFIED EVENTS.....	55
10	CCL1 ENGINE	56
10.1	BOLLARD STATE SECTION	57
10.2	PLUGS SECTION.....	58

1 INTRODUCTION

This manual contains all the information necessary for safe use of the electrical vehicle charger and will help you get the best performance results from it.

This equipment incorporates the latest technology and offers the most advanced service on the market in the area of EV chargers.

1.1 IMPORTANT SAFETY INFORMATION

- Read all the instructions before using and install this product.
- Do not use cables there are not in perfect conditions.
- 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 current safety regulations according to your country rules.
- Do not make repairs or manipulations with the unit energised.
- Only trained and qualified personnel should have access to low-voltage electrical parts inside the device.
- Check the installation annually by 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 original 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.

1.2 DESCRIPTION

Smart post charging solution is special designed to charge EV using standardized MODE 1 and MODE 3 according to European standard IEC_61851-1.

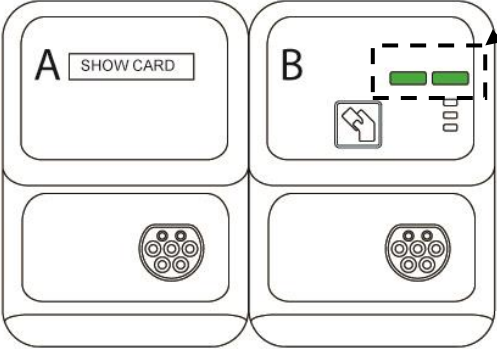
2 FEATURES

- **Display:** Two lines character display provide to user information of the charge 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 to user status of the wall mount unit.
- **RFID:** Authentication and Prepayment options.
- **Ethernet:** TCP/IP communication over an “Ethernet” compliant network between the Wall mount and customer network is available.
- **3G and GPRS (optional)** for remote control or OCPP integrations.
- **Energy metering:** Integrated meter built is measuring power and energy consumed by the EV during a charge.
- **Real time monitoring:** Using standard browser system allows access to the unit and monitoring charge status.
- **Remote control:** Remote actions as start/stop charge are available.
- **Charge data storage:** System is capable to generate graphics and reports according to data storage from recharging historic.
- **OCPP integration:** Standard communication protocol between charge points. Allows charging stations connecting with central system allowing centralized authentication, user authorization in real time and a wide variety of functions related to recharge.

3 INSTRUCTIONS FOR USE

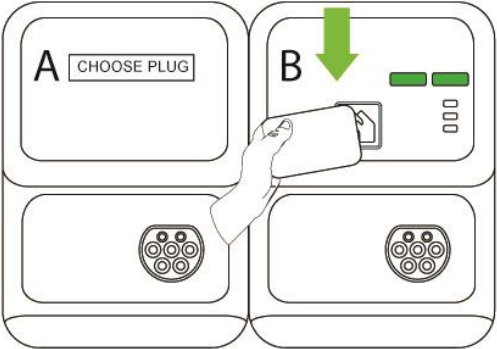
3.1 START RECHARGING PROCEDURE

1



Wallbox has two status led indicators for each outlet. Green light means there is at least one outlet available and ready to start a recharge.

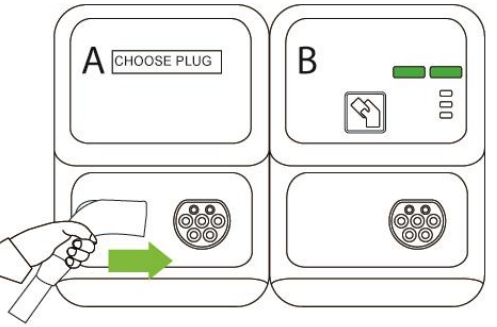
2



- Present a RFID card to the right side of the WallBox unit.
- Wait until the display shows the following message:

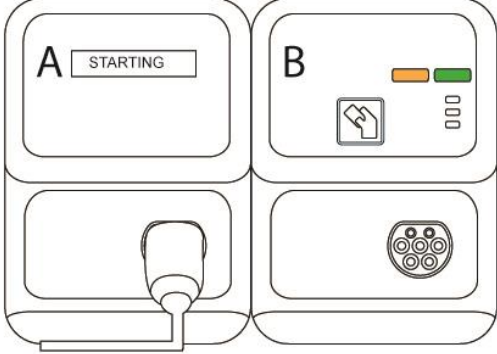
Choose your plug

3



- Plug the cable into your car.
- Choose one available socket in the WallBox mount unit
- Connect your cable to the unit.

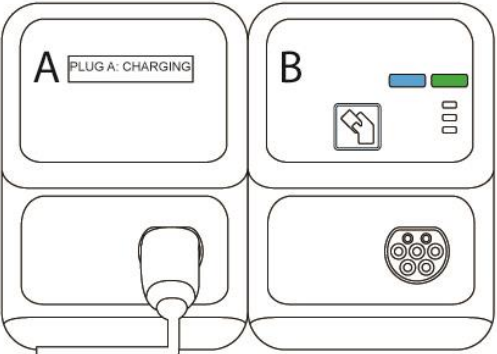
4



- Led Status indicator of the plug connected changes to yellow.
- Display shows the following message:

PLUG A: Starting
- System will lock the plug automatically.
- **If vehicle is not ready to charge, this status will be permanent.**

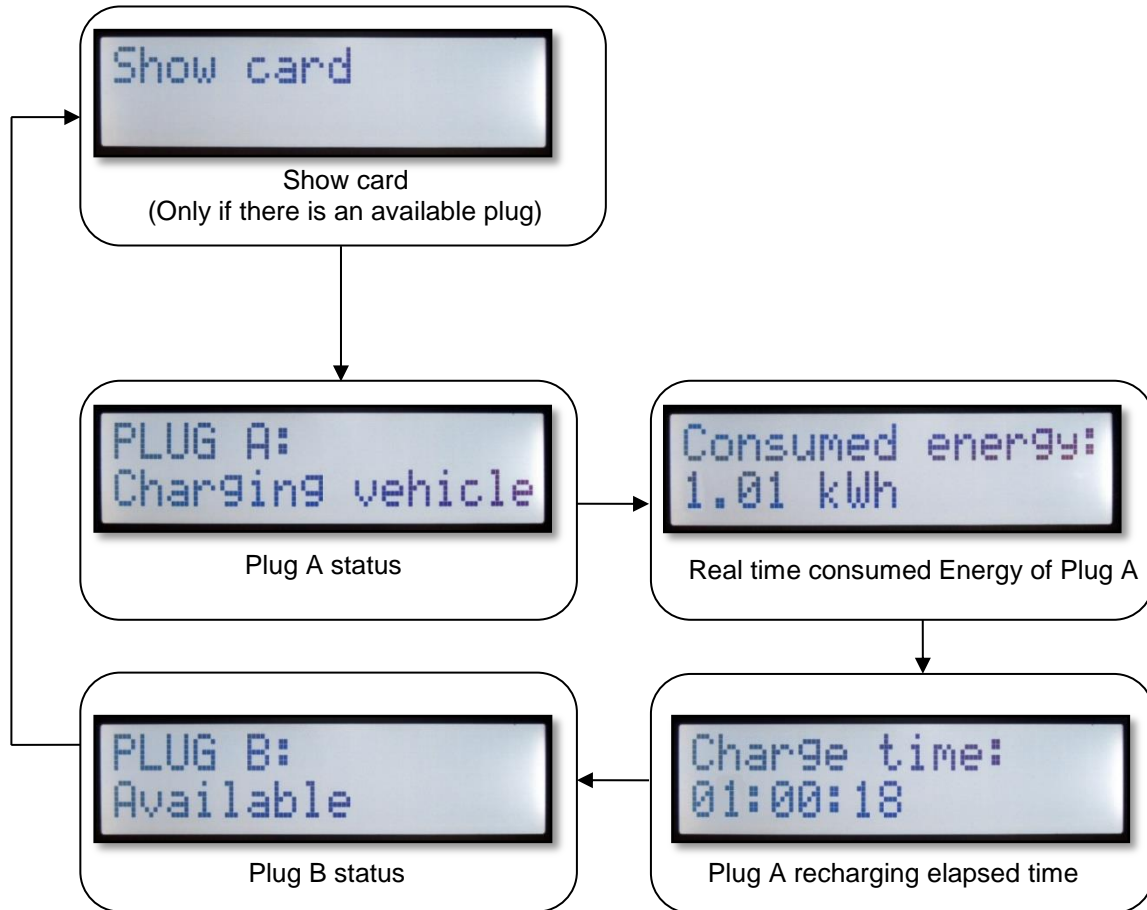
5



- When vehicle is ready to charge led status indicator of the plug connected will change from yellow to blue.
- WallBox starts recharging.
- On display shows the following information:
 - Charge time
 - Real time consumed energy

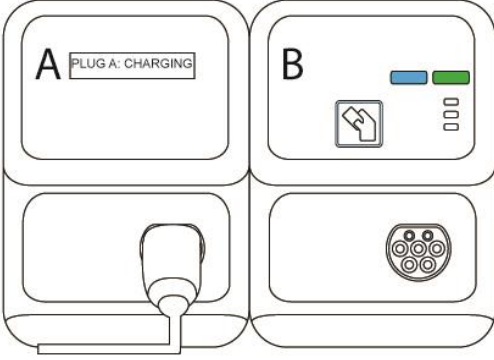
3.1.1 DISPLAY INFORMATION WHILE CHARGING

The display shows in scroll mode following messages when an EV is charging:



3.2 STOP RECHARGING PROCEDURE

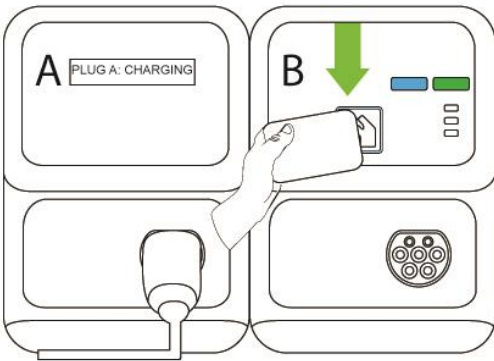
1



Wallbox has two status led indicators for each outlet:

- Blue light means there is one outlet busy and recharging an electric vehicle.
- Green light means there is at least one outlet available and ready to start a recharge.

2

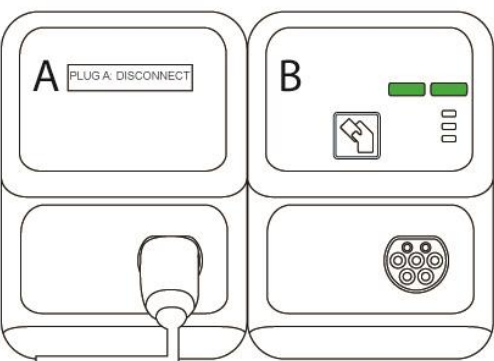


IMPORTANT

For STOP recharging present same card that was used for start recharge.

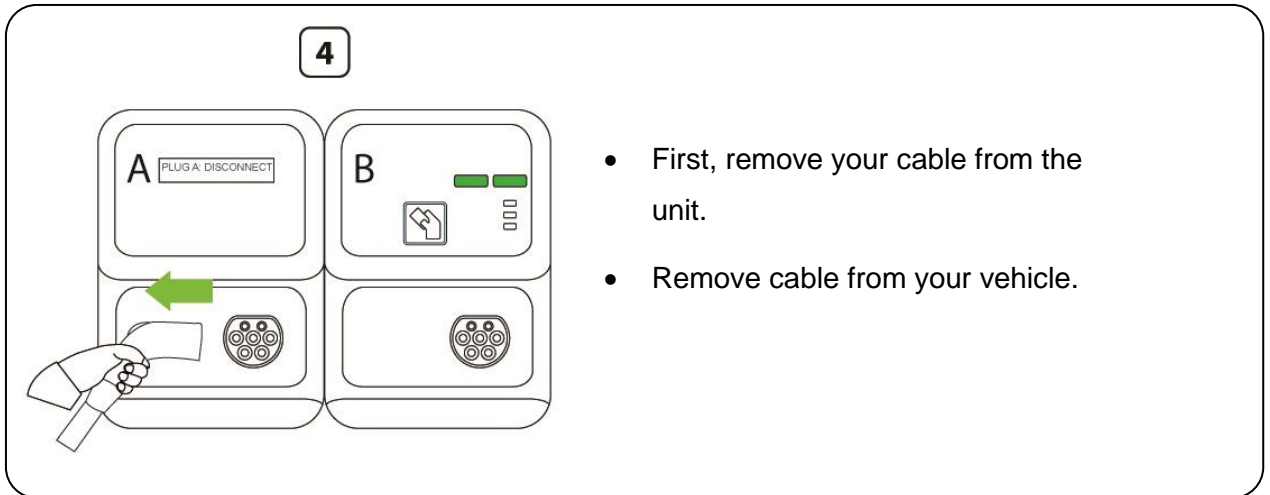
- Present a RFID card to the right side of the WallBox unit for 3 seconds.

3



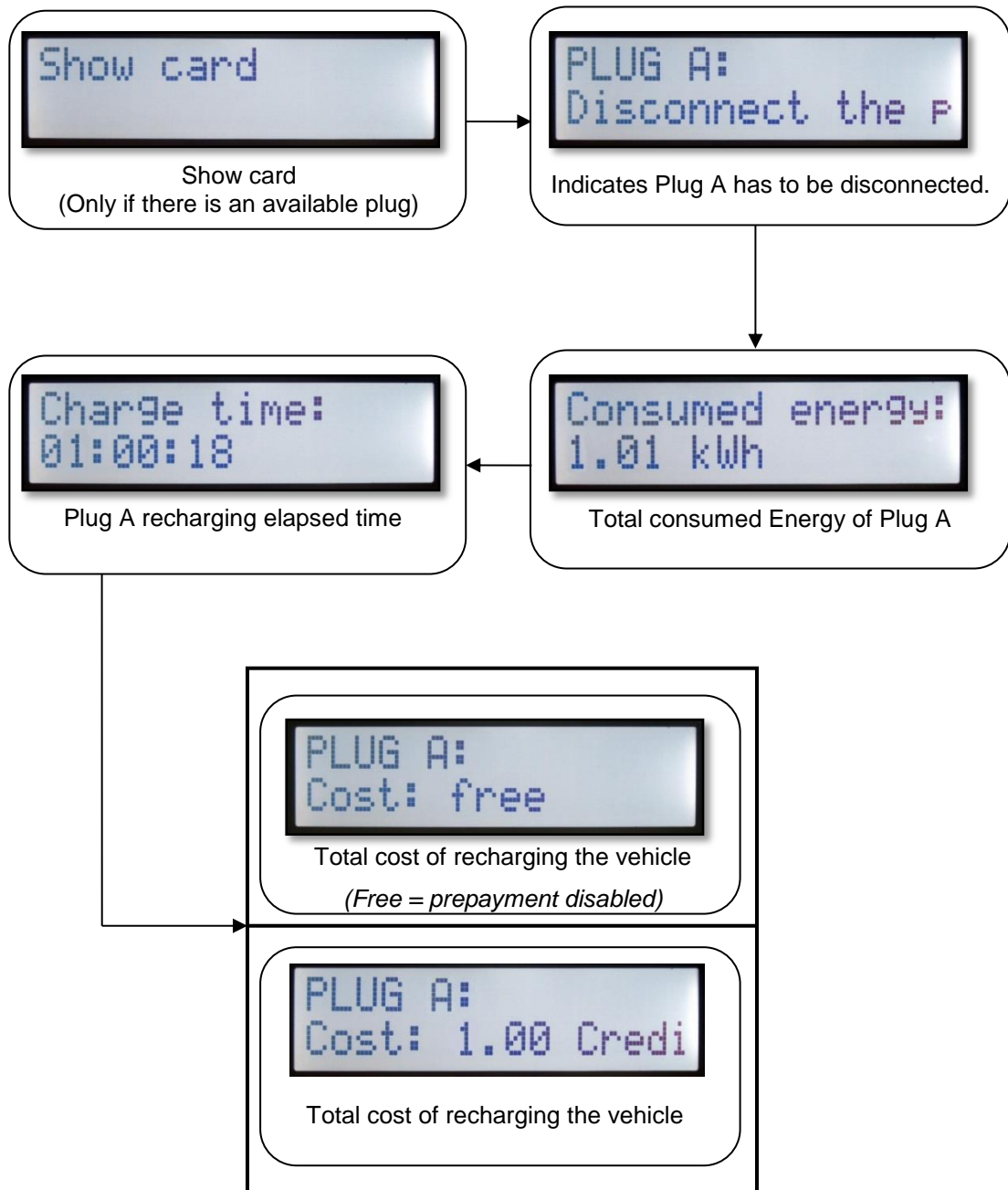
- Led status indicator of the plug connected change from blue to green.
- On display shows the following information:

PLUG A: Disconnect the



3.2.1 DISPLAY INFORMATION WHEN RECHARGING ENDS

The display shows in scroll mode following messages as a data summary when charge ending.



4 ETHERNET COMMUNICATIONS

Charge station can be configured and monitorized to establish owner preferences or specific setup using integrated Ethernet communication port allocated in main controller CCL1 device.




Once service PC is configured as bellow procedure and connection established with the charge station, direct access to the device main setup page will be showed.

Charge station is shipped from the factory 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.

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

4.1 PREREQUISITES

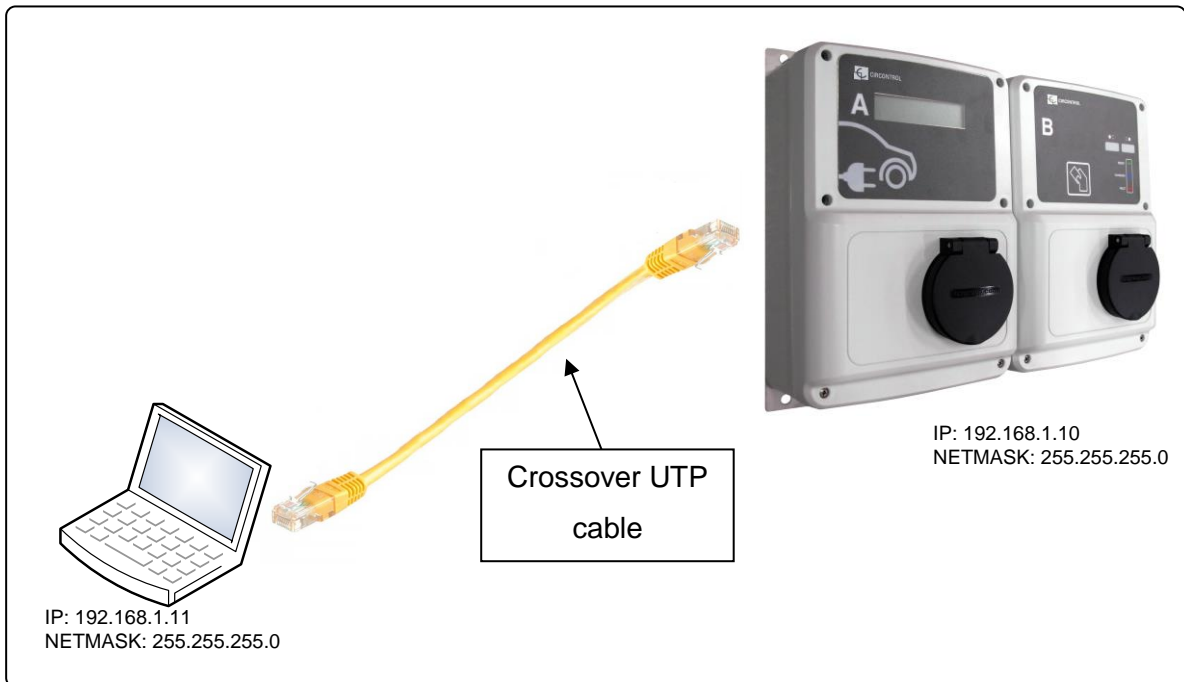
Below table shows, hardware and software needed to setup and IP address to the charge station.

	<p>Computer running one of the following operating systems</p> <ul style="list-style-type: none"> - Windows XP (x86) - Windows Vista (x86/x64) - Windows 7 (x86/x64) - Windows 8 (x86/x64)
	<p>Crossover Cable UTP Cat.5e or Cat6</p>
	<p>Software needed: IPSetup.exe.</p> <p><i>(Supplied by Circontrol)</i></p>

4.2 NETWORK TOPOLOGY

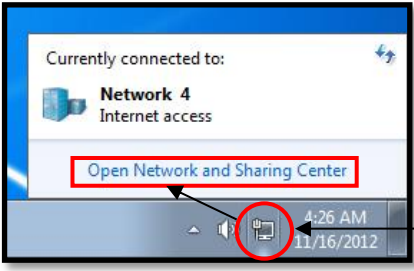
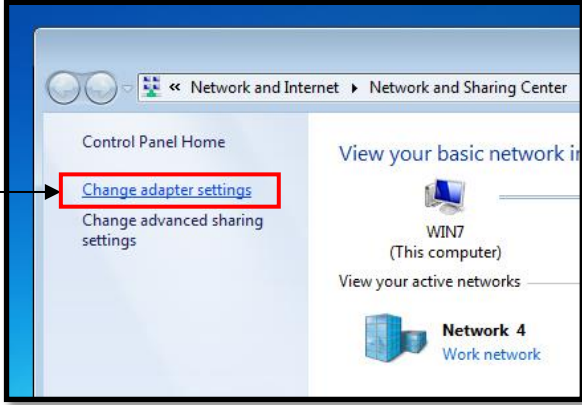
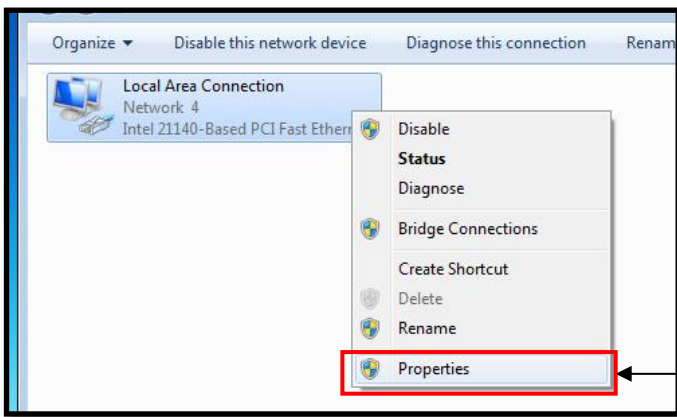
Connecting pc with charge station needs to be done with static IP address and TCP/IP v4 protocol. Next section shows how to do this configuration.

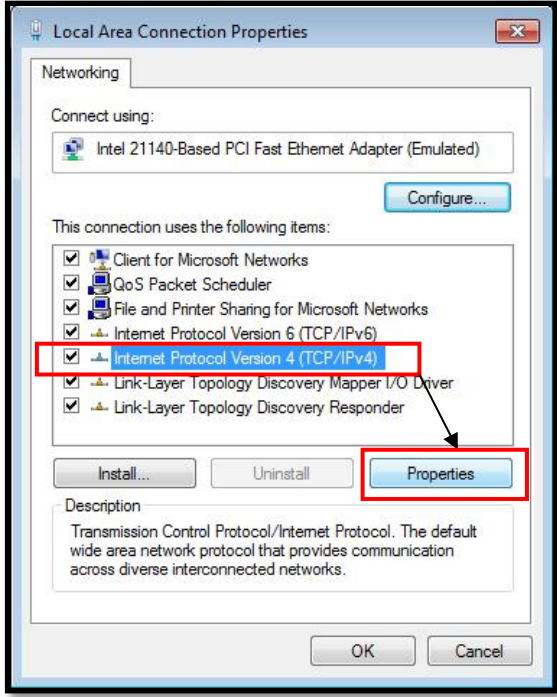
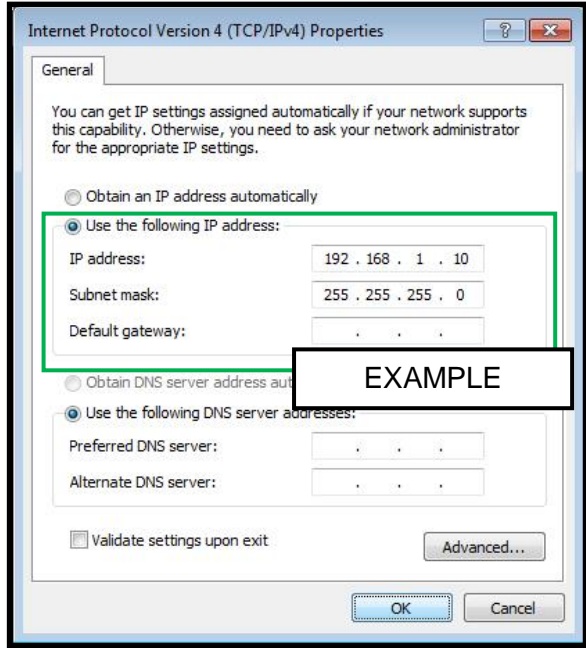
Below figure shows Ethernet connection topology and the IP addresses used in this guide as **example**.

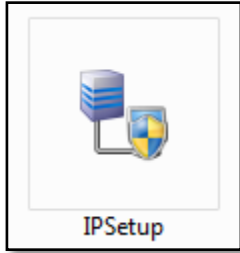
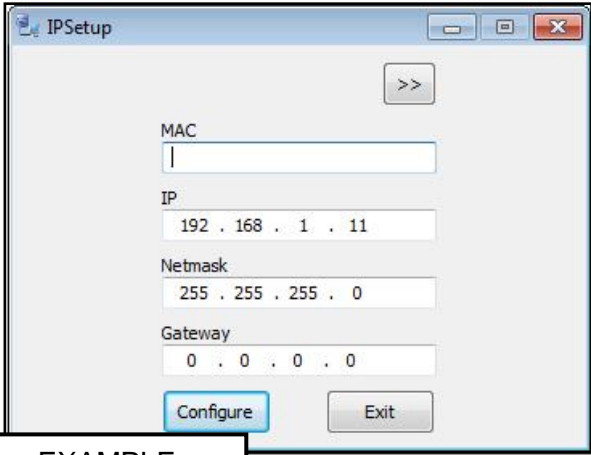
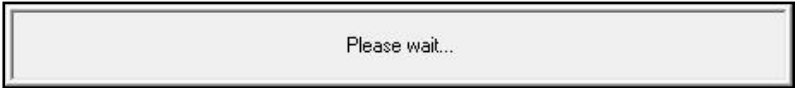


4.3 STEP BY STEP LAN CONNECTION PROCEDURE

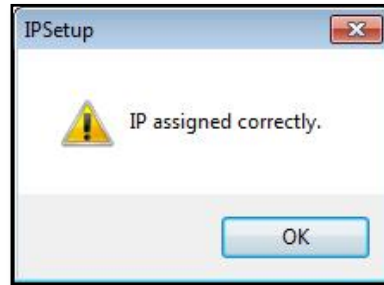
This section provides a step-by-step guide to be able to connect a laptop to the charge station in order to see real-time status.

Step	Actions
1	<p>Click on the network icon next to the clock of the taskbar.</p>  <p>The screenshot shows the Windows taskbar with the network icon circled in red. A red box highlights the text "Open Network and Sharing Center" in the network status window. An arrow points from the text above to the network icon.</p> <p><u>Click on "Open Network and Sharing Center"</u></p>
2	<p>On the left pane, <u>click the option: "Change adapter settings"</u>.</p>  <p>The screenshot shows the Windows Network and Sharing Center. The "Change adapter settings" link in the left-hand navigation pane is highlighted with a red box. An arrow points from the text above to this link.</p>
3	<p><u>Right click on "Local Area Connection"</u> and then click on <u>"Properties"</u></p>  <p>The screenshot shows the context menu for the "Local Area Connection" in the Network Connections window. The "Properties" option at the bottom of the menu is highlighted with a red box. An arrow points from the text above to this option.</p>

<p>4</p>	<p>Select “Internet Protocol Version 4 (TCP/IP)” option and click “Properties”.</p> 
<p>5</p>	<p>Setup IP address and subnet mask like as shown below:</p>  <p>Click <i>OK</i> twice to complete the process to assigning IP address to the computer.</p>

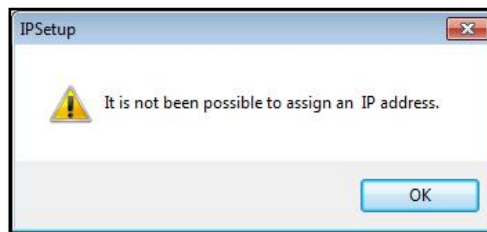
7	<p>Execute <u>IPSetup.exe</u> utility.</p> <div data-bbox="730 311 970 562" data-label="Image"></div>
8	<p>Enter the following parameters:</p> <ul style="list-style-type: none">• MAC of the CCL1 device (see lateral label in the device)• IP address: i.e.(192.168.1.11)• Netmask: i.e. (255.255.255.0)• Gateway: leave default settings. <div data-bbox="555 916 1147 1368" data-label="Image"></div> <div data-bbox="517 1346 799 1406" data-label="Text"><p>EXAMPLE</p></div>
10	<p>Wait 30 seconds approximately until the process is complete.</p> <div data-bbox="453 1617 1251 1704" data-label="Image"></div>

The process will complete when the following message appears.



11

If the message shown is the next one, check the following parameters.



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

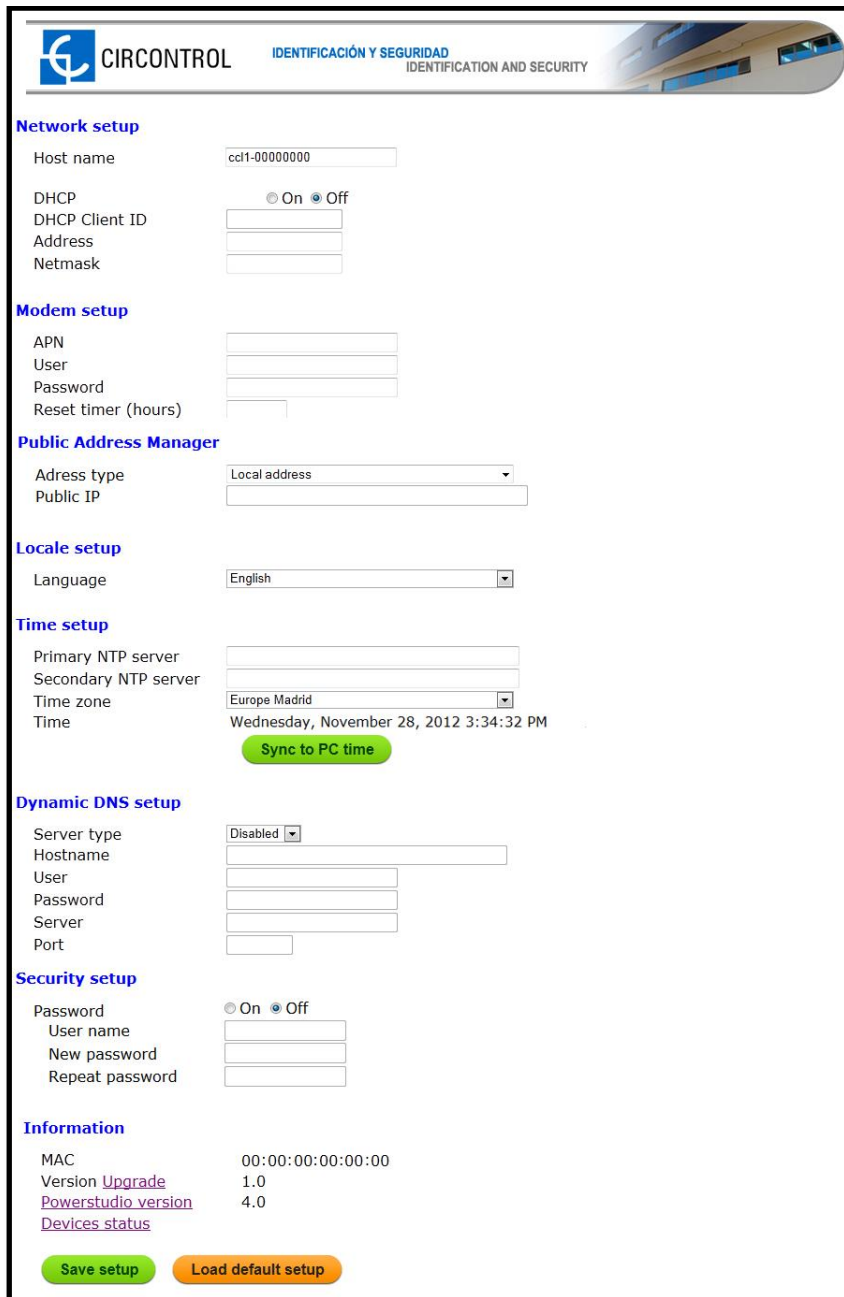
4.4 SETUP WEB PAGE

Setup web page allows managing networking setup, modem 3G setup, upgrading the device and other options.

To access to the setup web page, open a web browser and enter the following address:

Direct link: http://IP_ADDRESS/html/setup.html

NOTE: Remember to remove the quotes when entering an address into the web browser.



The screenshot shows the CIRCONTROL setup web page with the following sections and fields:

- Network setup**
 - Host name:
 - DHCP: On Off
 - DHCP Client ID:
 - Address:
 - Netmask:
- Modem setup**
 - APN:
 - User:
 - Password:
 - Reset timer (hours):
- Public Address Manager**
 - Address type:
 - Public IP:
- Locale setup**
 - Language:
- Time setup**
 - Primary NTP server:
 - Secondary NTP server:
 - Time zone:
 - Time: Wednesday, November 28, 2012 3:34:32 PM
 -
- Dynamic DNS setup**
 - Server type:
 - Hostname:
 - User:
 - Password:
 - Server:
 - Port:
- Security setup**
 - Password: On Off
 - User name:
 - New password:
 - Repeat password:
- Information**
 - MAC: 00:00:00:00:00:00
 - Version [Upgrade](#): 1.0
 - [Powerstudio version](#): 4.0
 - [Devices status](#)
 -

4.4.1 NETWORK SETUP

This section provides basic configuration of the network parameters.

<div style="border: 1px solid black; padding: 5px;"> <p>Network setup</p> <p>Host name <input type="text" value="ccl1-00000000"/></p> <p>DHCP <input type="radio"/> On <input checked="" type="radio"/> Off</p> <p>DHCP Client ID <input type="text"/></p> <p>Address <input type="text" value="192.168.100.45"/></p> <p>Netmask <input type="text" value="255.255.255.0"/></p> </div>	
Value	Description
Host name	Name of the device on the network
DHCP	Enable or disable the IP address assignment by a DHCP server.
DHCP Client ID	Client ID associated to the DHCP Server (If available)
Address	IP address assigned to the charge point
Netmask	Netmask of the network

4.4.2 MODEM SETUP (only for 3G series)

Devices with 3G modem integrated on the unit can enter on this section the parameters of the modem provided by the mobile network operator.

<div style="border: 1px solid black; padding: 5px;"> <p>Modem setup</p> <p>APN <input type="text"/></p> <p>User <input type="text"/></p> <p>Password <input type="text"/></p> <p>Reset timer (hours) <input type="text"/></p> </div>	
Value	Description
APN	Access point name for mobile communications
User	Parameters assigned to the APN.
Password	
Reset timer (hours)	Timer to reset the modem and mobile communications

4.4.3 PUBLIC ADDRESS MANAGER

This section is only for OCPP integrations and allows setting the IP address to establish connection between charge point and OCPP central system.

Value	Description
Address type	<div data-bbox="405 483 1171 642" style="border: 2px solid black; padding: 5px; margin-bottom: 10px;"> <p>Public Address Manager</p> <p>Address type <input type="text" value="Local address"/> ▼</p> <p>Public IP <input type="text"/></p> </div> <ul style="list-style-type: none"> • Local address: When selected, private IP address will be sent to OCPP central system. This option is valid if the OCPP central system is connected to the same private network of the charge point. • Static address: When selected, enter a value on <i>Public IP</i> textbox (IP address or a domain name). • SIERRA Wireless Raven XE H2295EW: Select this option only when SIERRA Wireless RAVEN XE router 3G is connected on the network. • TELIT HE863: Select this option only on 3G charge points models where modem is integrated on the CCL1 device.

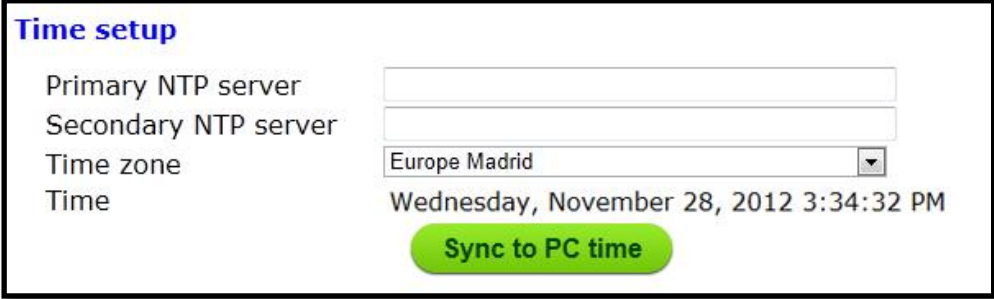

4.4.4 LOCALE SETUP

This section allows changing the language on the LCD screen.

	
Value	Description
Language	Allows selecting the unit language using a dropdown.

4.4.5 TIME SETUP

This section allows setting the time and region unit time.

	
Value	Description
Primary NTP Server	Allows to synchronize the time through internet automatically
Secondary NTP Server	
Time zone	Allows selecting the regional unit time using a dropdown.
Time	Actual date and time of the unit.
	Time and date synchronization of the charge point from computer connected.

4.4.6 DYNAMIC DNS SETUP

Dynamic DNS is a system that updates in real-time the public IP address assigned to a domain name server.

Dynamic DNS setup

Server type

Hostname

User

Password

Server

Port

Value	Description
Server	Allows selecting the type of Dynamic DNS Server using a dropdown.
Hostname	Parameters provided by dynamic DNS server.
User	
Password	
Server	
Port	

4.4.7 SECURITY SETUP

All of these parameters are disabled by default. When enabled, it denies unauthorized access to the web page configuration (setup.html) of the device and also prevents the export or import of a new configuration of PowerStudio engine from an unauthorized user.

Security setup


Password On Off

User name

New password

Repeat password

Value	Description
Password	ON: authentication enabled OFF: authentication disabled
Username	Username and password authentication for setup.html web page.
New password	
Password	



Do not forget the credentials of the device. There is no way to reset the device to default factory settings.

It will require returning the unit to the service centre.

4.4.8 SYSTEM INFORMATION

This section provides basically information about the unit.

Information	
MAC	00:00:00:00:00:00
Version Upgrade	1.0
Powerstudio version	4.0
Devices status	

Value	Description
MAC	Identifier of the network card of the unit
Version Upgrade	Version of the firmware currently installed and link to the upgrade web page
Powerstudio version	Engine version of PowerStudio
Devices status	Link that allows viewing the status of the configured devices.

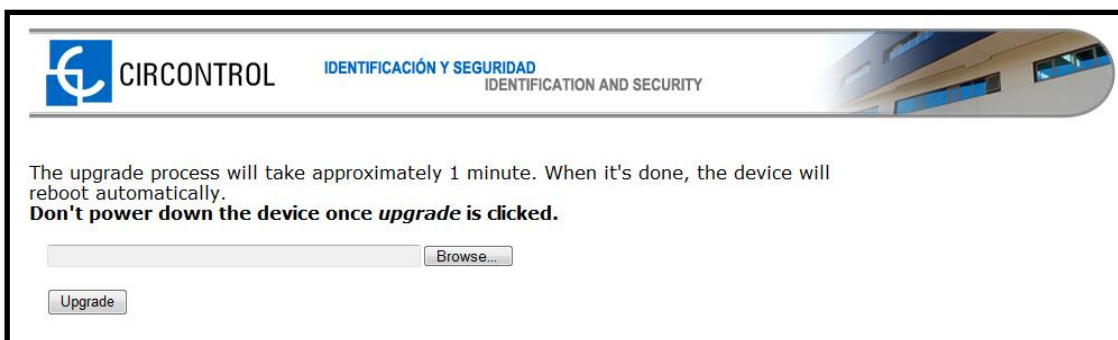
4.4.8.1 SYSTEM UPGRADE

Upgrade web page allows to upgrade the firmware of the unit through a file with *.upgrade extension.

This file is provided by your installer or manufacturer of the unit.

Direct link: http://IP_ADDRESS/html/upgrade.html

NOTE: Remember to remove the quotes when entering an address into the web browser.



The screenshot shows the upgrade web page interface. At the top, there is a header with the CIRCONTROL logo and the text "IDENTIFICACIÓN Y SEGURIDAD IDENTIFICATION AND SECURITY". Below the header, there is a message: "The upgrade process will take approximately 1 minute. When it's done, the device will reboot automatically. Don't power down the device once upgrade is clicked." Below the message, there is a text input field with a "Browse..." button next to it. At the bottom, there is an "Upgrade" button.



Firmware file transfer must not be interrupted. Failure of the file transfer involves irreversible damage to CCL1 master controller and the correct functionality of the equipment. It will require returning the unit to the service centre.

Ensure that the unit will not be affected or powered off while updating.

4.4.8.2 POWERSTUDIO VERSION WEB PAGE

Powerstudio version web page allows viewing the following information:

- Current firmware version installed.
- Scada Platform version
- Available languages
- List of available driver devices that can communicate with the charge point.

Direct link: http://IP_ADDRESS/services/system/info.html

NOTE: Remember to remove the quotes when entering an address into the web browser.

```
Platform version: 1.0
Server: PowerStudio Scada 4.0
Options: Events
Languages: en es
Drivers:


- CBS-4
- CBS-8
- CCL
- CCL1
- CCL1Engine
- CVM-1D
- CVM-MINI
- CVM-NET
- CVM-NRG96
- Display CCL1
- EDMk
- LM-24
- LM50-TCP+
- MODO 3
- MR4
- RGU-10
- RRM-C
- TCP2RS-Plus
- Tag reader
- X2
- X2s

```

NOTE: *it is reserved the right to change without notice the drivers on future firmware versions of the charge point.*

4.4.8.3 DEVICES STATUS WEB PAGE

Devices status web page allows checking if all devices configured with CirCarLife Scada Editor 4.0 Software are available and working properly.

Direct link: [http://\"IP_ADDRESS\"/html/devstat.html](http://\)

NOTE: Remember to remove the quotes when entering an address into the web browser.

Identifier	Status
CCL1Engine	Ok
CCL1	Ok
EDMk A	Ok
EDMk B	Ok
Display	Ok
MODE 3 A	Ok
CBS-4	Ok
Reader	Ok

4.5 OTHER URL CONFIGURATION

There are more useful web pages installed on the master device. This section shows the purpose of these web pages and how to access them.

4.5.1 LOG WEB PAGE

Log web page is a log that is created since charge point is powered ON. If charge point is restarted this log is erased and immediately is created a new one.

These logs are not recorded and no way to consult older logs if the charge point has shutdown before.

Direct link: [http://\"IP_ADDRESS\"/html/log](http://\)


NOTE: Remember to remove the quotes when entering an address into the web browser.

4.5.2 MODEM STATUS (FOR 3G MODELS)

This website allows seeing real-time status of 3G connection.

Direct link: [http://\"IP_ADDRESS\"/html/modem-status.html](http://\)

NOTE: Remember to remove the quotes when entering an address into the web browser.



Value	Description
Connection	<ul style="list-style-type: none"> • 3G communications status. • Data access protocol used. • Cell phone signal and coverage.
IP address	Public IP assigned to the charge point.

4.5.2.1 SIGNAL LEVEL TABLE

Following table shows some possible values of the integrated modem on the charge point.

SIGNAL	DESCRIPTION
More than -80dBm	Good signal
Between -80dBm and -90dBm	Moderate signal
Less than -90dBm	Poor signal

5 3G COMMUNICATIONS (FOR 3G MODELS)

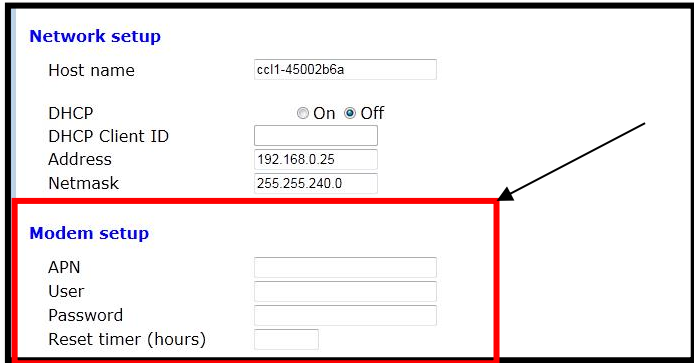

Once SIM card is inserted on CCL1 device, following parameters must be known in order to set up 3G communications and Internet access:

- **APN (Access Point Name)**
- **User**
- **Password**

These parameters have to be provided by your mobile network operator of the SIM card inserted.

5.1 STEP BY STEP CONFIGURATION

Step by step bellow shows how to configure the 3G communications service.

Step	Action
1	Open web browser and go to: http://IP_ADDRESS/html/setup.html
2	<p>Locate Modem Setup section</p> 
3	<p>Enter following parameters (Provided by your mobile network operator)</p> <ul style="list-style-type: none"> • APN • User • Password
4	<p>Click on Save Setup</p> 

<p>5</p>	<p>Go to following address: http://\"IP_ADDRESS\"/html/modem-status.html</p> <p>It is required to enter PIN number the first time that SIM card is inserted into CCL1 device.</p> <div data-bbox="443 501 1238 775" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Status</p> <p>Connection SIM PIN required</p> <p>SIM PIN <input type="text"/></p> <p style="text-align: center;">Confirm</p> </div> <p>Enter SIM PIN and click on <i>Confirm</i> button.</p> <div data-bbox="333 954 1362 1077" style="border: 1px solid black; background-color: #e0e0e0; padding: 5px; margin: 10px 0;"> <p>PIN number will not be required anymore after entering for the first time and the device will start 3G communications automatically.</p> </div>
<p>6</p>	<p>After entering pin number, it shows following message:</p> <div data-bbox="443 1323 1238 1547" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Status</p> <p>Connection New SIM PIN saved</p> <p style="text-align: center;">Setup</p> </div> <p>Wait a few seconds until modem is connected on the network.</p>
<p>7</p>	<p>When the 3G connection is successful, following message will appear on the web page of modem status.</p>

	<div data-bbox="443 250 1238 479" style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p>Status</p> <p>Connection: Connected HSUPA/HSDPA -79dBm</p> <p>IP address: 77.255.46.137</p> <p style="text-align: center;">Setup</p> </div> <ul style="list-style-type: none"> • Connection: Indicates the connection status and the type of connection established. • IP address: Public IP assigned by your mobile network operator
8	<p>OPTIONAL STEP</p> <p>Finally, it is recommendable to setup parameters of Dynamic DNS for update in real-time the public IP address assigned to a domain name.</p> <p>Dynamic DNS parameters can be introduced in setup web page.</p>

6 CHARGE POINT OCPP INTEGRATION

6.1 INTEGRATION SETUP WEB PAGE

Integrations setup web page allows managing and enables the integrations available on the dropdown list.

To access to the setup web page, open a web browser and enter the following address:

Direct link: [http://\"IP ADDRESS\":65432](http://\)

NOTE: Remember to remove the quotes when entering an address into the web browser.



The selected default option is: **none**.

When this option is set to *none*, there is no integration enabled on the charge point. In this way, all RFID showed can start a rechargement.

Available options:

- **OCPP 1.2:** Open Charge Point Protocol (OCPP) is an open protocol between charging stations and managing central system.

6.2 OCPP ENGINE SETUP WEB PAGE

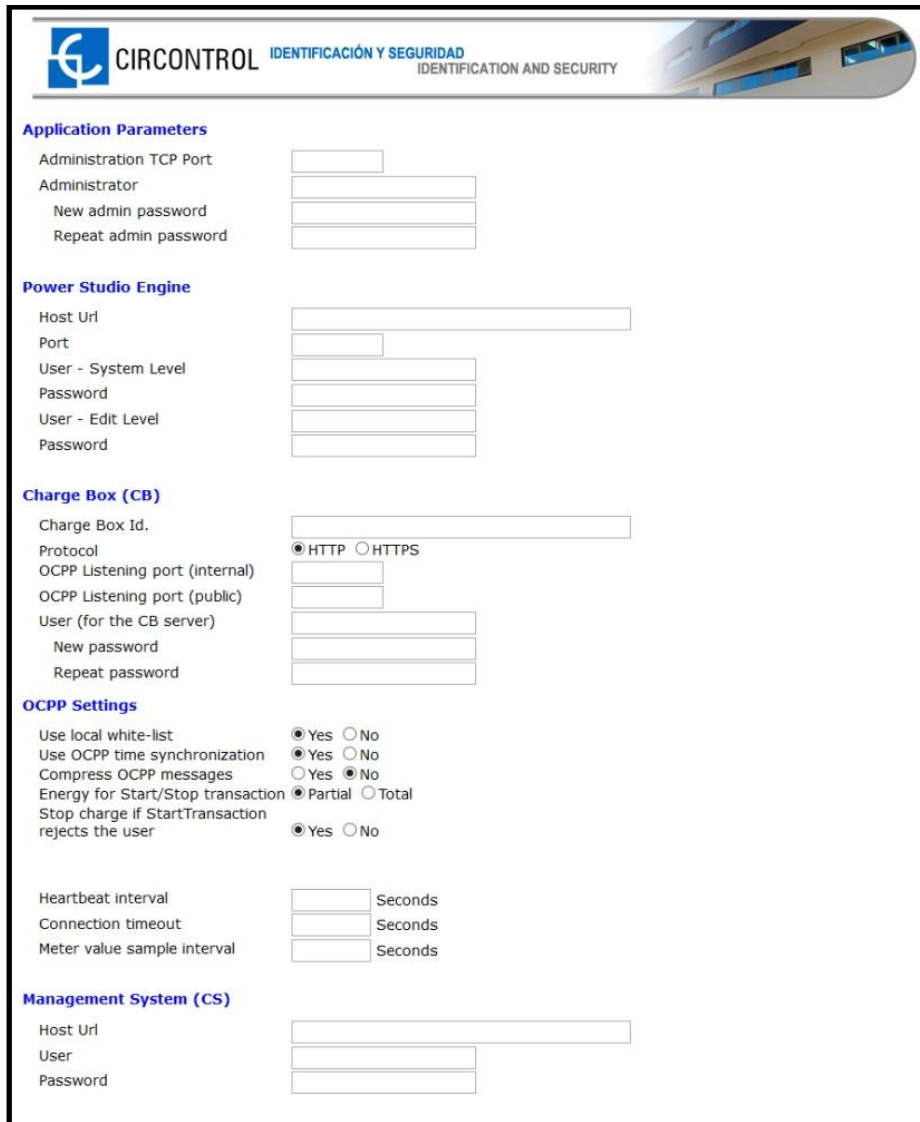
This website allows to setup parameters of the integration selected on the previous section.

First time is running OSCP engine on the charge point, it starts as configuration mode and all fields are empty. The data is always saved even when the charge point is powered off or even the OSCP engine is stopped.

To access to the OSCP engine setup web page, open a web browser and enter the following address:

Direct link: [http://\"IP ADDRESS\":8080](http://\)

NOTE: Remember to remove the quotes when entering an address into the web browser.



The screenshot shows the web interface for configuring the OSCP engine. The page header includes the CIRCONTROL logo and the text 'IDENTIFICACIÓN Y SEGURIDAD IDENTIFICATION AND SECURITY'. The main content is organized into several sections:

- Application Parameters:** Includes input fields for Administration TCP Port, Administrator, New admin password, and Repeat admin password.
- Power Studio Engine:** Includes input fields for Host Url, Port, User - System Level, Password, User - Edit Level, and Password.
- Charge Box (CB):** Includes input fields for Charge Box Id., Protocol (radio buttons for HTTP and HTTPS), OCPP Listening port (internal), OCPP Listening port (public), User (for the CB server), New password, and Repeat password.
- OCPP Settings:** Includes radio button options for Use local white-list, Use OSCP time synchronization, Compress OSCP messages, Energy for Start/Stop transaction, Stop charge if StartTransaction rejects the user, and input fields for Heartbeat interval, Connection timeout, and Meter value sample interval (all in Seconds).
- Management System (CS):** Includes input fields for Host Url, User, and Password.

6.2.1 APPLICATION PARAMETERS

This section is for configuring the OCPP engine website. It is recommended leaving the default settings.

Value	Description
<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p>Application Parameters</p> <p>Administration TCP Port <input style="width: 100px;" type="text" value="8080"/></p> <p>Administrator <input style="width: 200px;" type="text" value="admin"/></p> <p>New admin password <input style="width: 200px;" type="text"/></p> <p>Repeat admin password <input style="width: 200px;" type="text"/></p> </div>	
Administration TCP port	Port number where the OCPP engine website is hosted. By default: 8080
Administrator	Administrator username. By default: admin
New admin password	Password for administrator user. By default: 1234 If a new password is entered, it will be applied after saving new configuration.
Repeat admin password	

6.2.2 POWERSTUDIO ENGINE

OCPP Engine is a service running in parallel with PowerStudio and it is required to add these parameters on this section.

Value	Description
Host URL	URL where PowerStudio is hosted. By default: http://127.0.0.1
Port	PowerStudio port. By default: 80
User – System level	Username and password authentication configured on PowerStudio. Default factory parameters: Username: admin Password: 1234
Password	
User – Edit level	Username and password configured in the security section of setup.html website. Default factory parameters: Username: anonymous Password: anonymous
Password	

6.2.3 CHARGE BOX (CB)

All of the parameters shown below must be assigned by OCPP central system administrator.

Please contact to your OCPP central system administrator to get the configuration parameters.

Charge Box (CB)

Charge Box Id.

Protocol HTTP HTTPS

OCPP Listening port (internal)

OCPP Listening port (public)

User (for the CB server)

New password

Repeat password

Value	Description
Charge Box ID	Charge point identifier
Protocol	Protocol type. If HTTPS is selected, make sure to have CS Server CA certificate.
OCPP Listening port (internal)	Listening port from charge point. Make sure the ports configured are opened on the gateway.
OCPP Listening port (public)	
User (for the CB server)	Authentication parameters.
New password	
Repeat password	

6.2.4 OCPP SETTINGS

Select properly values according to OCPP central system parameters. Please contact to your administrator to select the correct values.

Value	Description
Use local white-list	<p>Yes: store a list of authorised users on the charge point.</p> <p>No: Authorization is consulted for each RFID card shown.</p>
Use OCPP time synchronization	Time synchronization between charge point and OCPP central system.
Compress OCPP messages	<p>Sending compressed messages between charge point and central system.</p> <p>NOTE: Before enabling this option consult to your OCPP administrator if central system allows this function.</p>
Energy for Start/Stop transaction	<p>Partial: Send partial energy consumption while vehicle is charging.</p> <p>Total: Send total energy values of energy meter.</p>

OCPP Settings

Use local white-list Yes No

Use OCPP time synchronization Yes No

Compress OCPP messages Yes No

Energy for Start/Stop transaction Partial Total

Stop charge if StartTransaction rejects the user Yes No

Heartbeat interval Seconds

Connection timeout Seconds

Meter value sample interval Seconds

Stop charge if <i>StartTransaction</i> rejects the user	Set this option according to your central system.
Heartbeat interval	Heartbeat send interval (in seconds) for the back-end system.
Connection timeout	Timeout (in seconds) before connecting to the central system.
Meter value sample interval	Meter value sample send interval (in seconds) for the back-end system. NOTE: Put 0 seconds to send meter values only when charge point starts or stops charging a vehicle.

6.2.5 MANAGEMENT SYSTEM (CS)

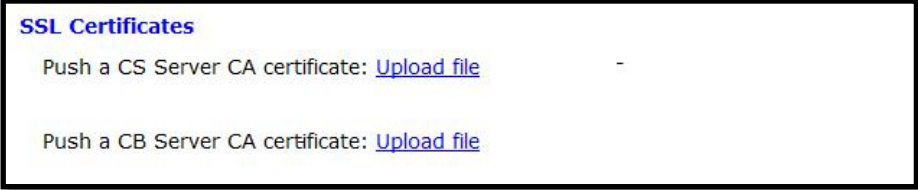
This section provides to the charge point where OCPP central system is located and if it requires authentication.

Please contact to your OCPP central system administrator to get the configuration parameters.

<div style="border: 2px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p>Management System (CS)</p> <p>Host Url <input style="width: 150px;" type="text"/></p> <p>User <input style="width: 60px;" type="text"/></p> <p>Password <input style="width: 60px;" type="text"/></p> </div>	
Value	Description
Host URL	Address where OCPP central system is located
User	Authentication for central system.
Password	





6.2.6 SSL CERTIFICATES

Secure Sockets Layer (SSL) provides authentication and privacy of information between charge point and central system on Internet. Consult your OCCP central system administrator for the CS Server certificate.

 <p>SSL Certificates Push a CS Server CA certificate: Upload file Push a CB Server CA certificate: Upload file</p>	
Value	Description
CS Server CA certificate	Central System file certificate supplied by your central system administrator.
CB Server CA certificate	Upload charge box file certificate supplied with charge point unit.

6.2.7 ACTIONS

Final options to complete the OCCP engine configuration.

 <p>Actions Save Setup Read Setup Configuration: Upload from file</p>	
Value	Description
	Save settings and apply.
	Restore data entered.
	Import using a configuration XML file.

6.3 STEP BY STEP INTEGRATIONS PROCEDURE

Step	Action
1	<p>Open web browser and enter following address:</p> <div style="border: 1px solid gray; padding: 5px; text-align: center; margin: 10px 0;"> Direct link: <a "="" address\":65432="" href="http://\" ip="">http://\"IP ADDRESS\":65432/ </div> <p>This page allows selecting and enabling the integration type on the CCL1 device.</p>
2	<p>By default, there is no integration configured on the CCL1.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Information</p> <p>MAC: [REDACTED]</p> <p>Active integration</p> <p>Integration: <input type="text" value="none"/></p> <p>Activation code: <input type="text"/></p> <p style="text-align: center;">Save setup</p> </div> <p>Select desired integration and click on Save setup button.</p>
4	<p>Enter a new address on the web browser:</p> <div style="border: 1px solid gray; padding: 5px; text-align: center; margin: 10px 0;"> Direct link: <a "="" address\":8080="" href="http://\" ip="">http://\"IP ADDRESS\":8080/ </div> <p>This page allows setup the integration enabled in previous steps.</p>
5	<p>Fill the blank fields following parameters as your central system administrator.</p> <p>Click on Save setup to confirm.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Actions</p> <p style="text-align: center;"> Save Setup Read Setup </p> </div>

7	<p>Enter a new address on the web browser:</p> <p style="text-align: center;">Direct link: http://IP_ADDRESS/html/setup.html</p> <p>Locate Public address Manager section shown as below:</p> <div data-bbox="384 474 1302 660" style="border: 1px solid black; padding: 5px;"><p>Public Address Manager</p><p>Address type <input type="text" value="Local address"/></p><p>Public IP <input type="text"/></p></div> <p>The selected default option is: Local address</p> <ul style="list-style-type: none">• To configure CCL1 3G series go to next step.• To configure CCL1 without 3G connectivity go to step number 9.
8	<p><u>This step is only for CCL1 3G series.</u></p> <p>Change address type from “Local address” to “TELIT HE863” on Public address Manager section inside Setup web page.</p> <div data-bbox="352 1491 1334 1682" style="border: 1px solid black; padding: 5px;"><p>Public Address Manager</p><p>Address type <input type="text" value="TELIT HE863"/></p><p>Public IP <input type="text"/></p></div> <p><u>To finish go to step 10.</u></p>

9	<p><u>This step is only for CCL1 or other devices without 3G connectivity.</u></p> <ol style="list-style-type: none">1. Change address type from “Local address” to “Static address” on Public address Manager section inside Setup web page.2. Enter Public IP address or a domain name. <div data-bbox="354 680 1337 882" style="border: 1px solid black; padding: 10px;"><p>Public Address Manager</p><p>Address type <input type="text" value="Local address"/></p><p>Public IP <input type="text"/></p></div> <p><u>To finish go to next step.</u></p>
10	<p>Click on Save setup to confirm.</p> <div data-bbox="542 1211 1152 1301" style="border: 1px solid black; padding: 5px;"><p><input type="button" value="Save setup"/> <input type="button" value="Load default setup"/></p></div> <p>Wait a few seconds until CCL1 restarts.</p>

7 URL SUMMARY TABLE

Following table shows a summary of the entire URL available as described in previous sections.

DESCRIPTION	URL
Setup	http://\"IP_ADDRESS\"/html/setup.html
Upgrade	http://\"IP_ADDRESS\"/html/upgrade.html
PowerStudio version	http://\"IP_ADDRESS\"/services/system/info.html
Devices status	<a devstat.html"="" href="http://\" html="" ip_address\"="">http://\"IP_ADDRESS\"/html/devstat.html
Log	http://\"IP_ADDRESS\"/html/log
Modem status	http://\"IP_ADDRESS\"/html/modem-status.html
Integration enable/disable	http://\"IP_ADDRESS\":65432
Integration engine configuration	http://\"IP_ADDRESS\":8080


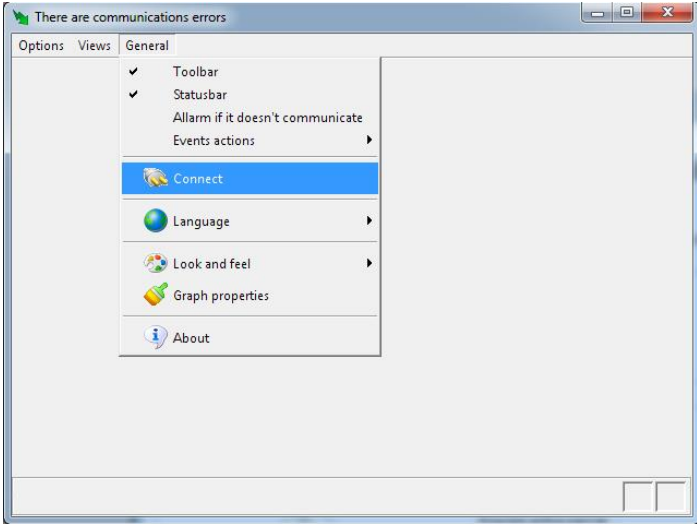
8 CHARGE STATION MONITORING

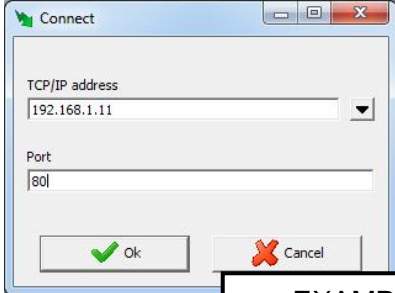
The IP address assigned in last section it will be useful to connect to the charge station to monitor the real-time status.

Exist two ways to connect to the charge station:

- CirCarLife client software. *(Supplied by Circontrol)*
- Internet web browser.

8.1 USING CIRCARLIFE CLIENT

Step	Action
1	Execute CirCarLife Client software. 
2	Go to: General -> Connect 

3	<p>Enter IP address and port shown in the last example.</p> <ul style="list-style-type: none"> - IP address: - Port: 80 <div style="text-align: center; margin: 10px 0;">  </div> <div style="text-align: center; margin: 0 auto; border: 1px solid black; padding: 5px;">EXAMPLE</div> <p>Click OK to connect to the charge point.</p>
---	--

8.2 USING WEB BROWSER

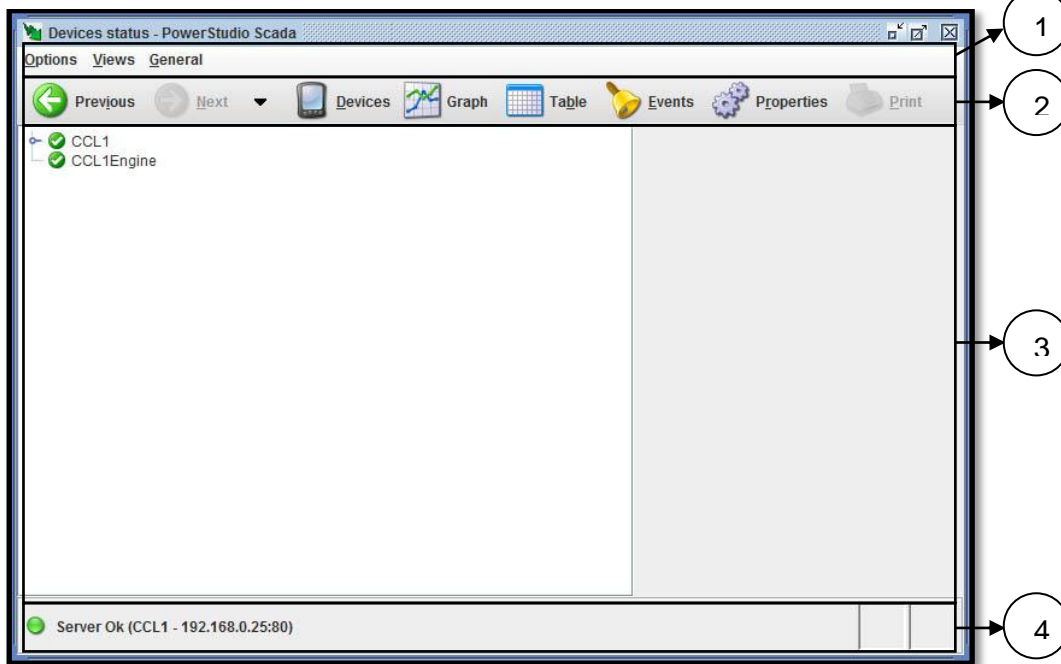
It is needed to have installed the latest version of java to access to the monitoring page. Download it from: www.java.com

Step	Action
1	Execute your web browser and enter the following address: i.e. (http://IP_ADDRESS) (<i>monitor page will open automatically</i>)
2	Wait while the client software is starting.

9 CIRCARLIFE SCADA CLIENT

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

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



Devices connected to the charge point may vary depending on model purchased.

CirCarLife Scada client is divided on 4 sections:

1. Menu bar
2. Toolbar
3. Screen information
4. Status bar

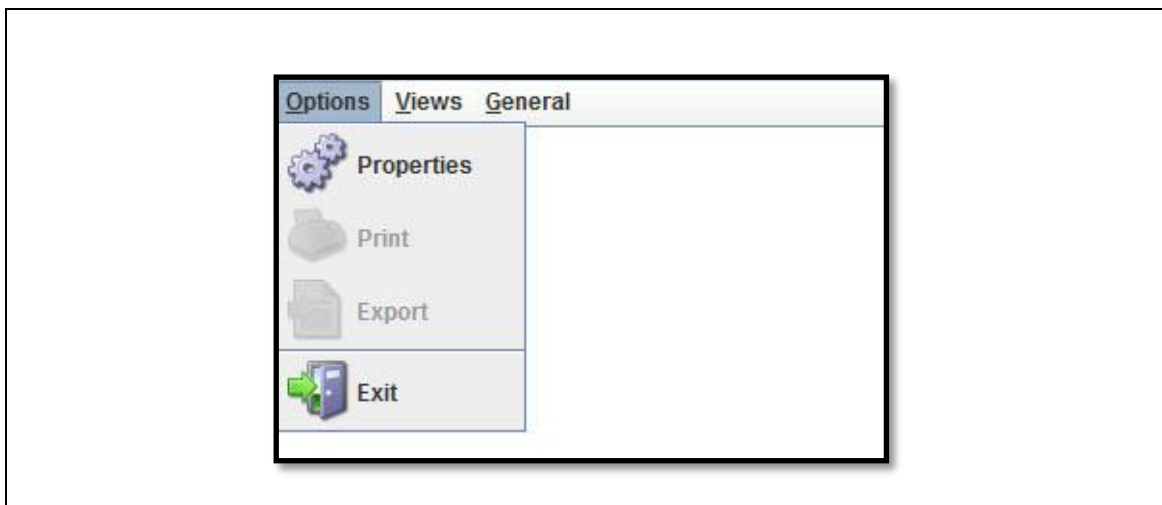
Following section describes in detail each of the points mentioned above.

9.1 MENU BAR

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

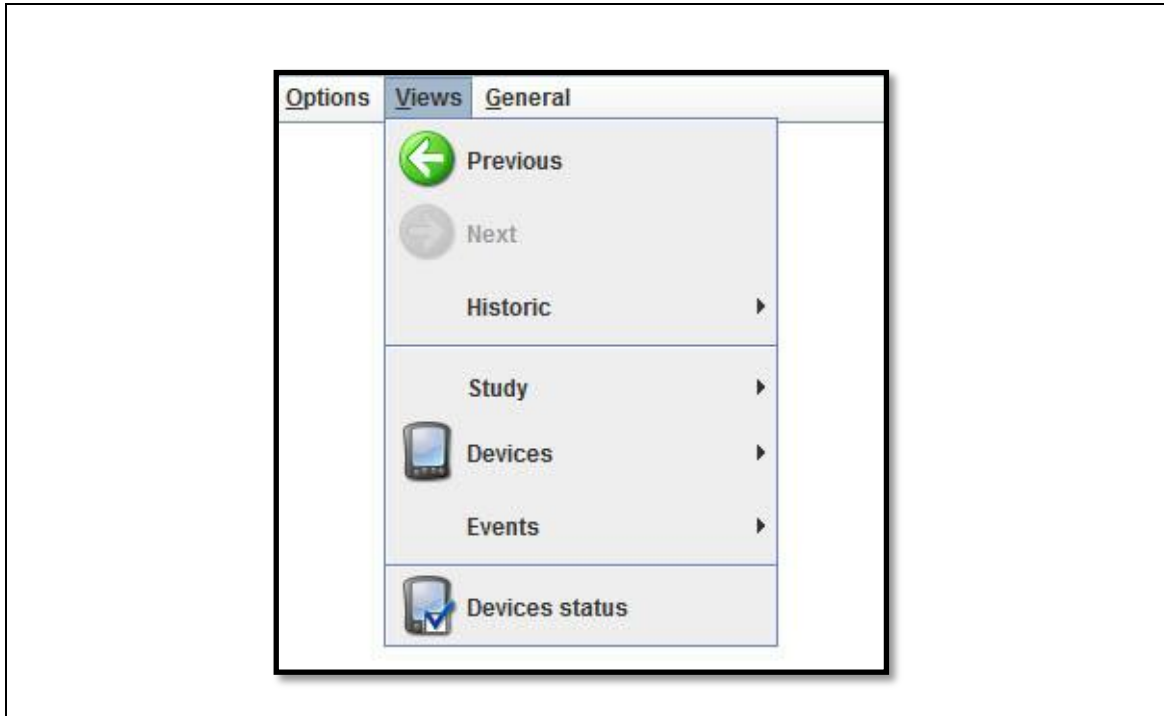


9.1.1 OPTIONS MENU



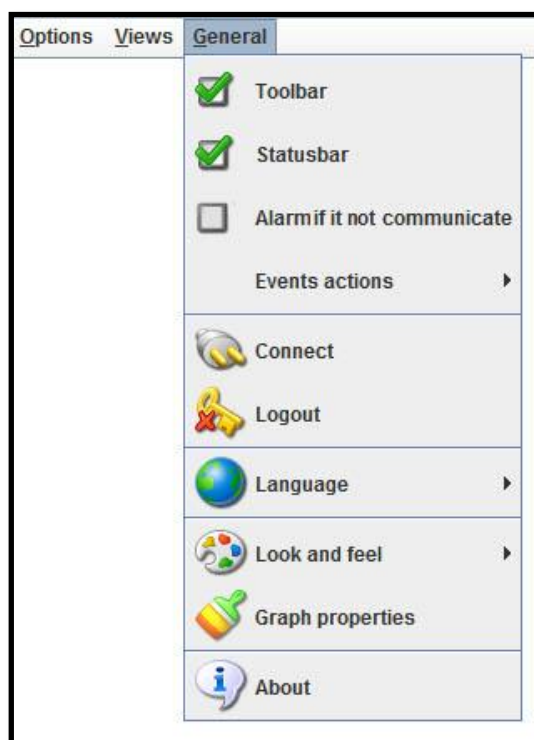
Option	Description
Properties	Displays properties of the currently active view. This option can be active or not depending on the view in progress.
Print	Print currently active view. This option can be active or not depending on the view in progress.
Export	Exports currently active view. This option can be active or not depending on the view in progress.
Exit	Close the client software.

9.1.2 VIEWS MENU



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

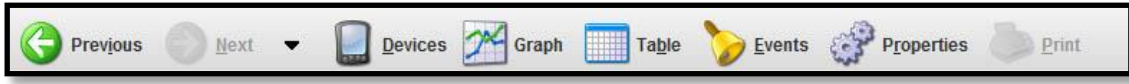
9.1.3 GENERAL MENU



Option	Description
Toolbar	Displays or hides the toolbar.
Statusbar	Displays or hides the status bar.
Alarm if it not communicate	Audible alarm if communication is lost between charge point and computer connected.
Events actions	List of actions enabled in the client software.
Connect	Connects with another CirCarLife Engine.
Logout	Closes the current session. Only available when the user has connected to engine that requires authentication.
Language	Changes the client application language.
Look and feel	Changes the appearance of the client application (Skin).
Graphs properties	Changes graph appearance.
About	Displays client application information.

9.2 TOOLBAR

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



Option	Description
Previous	Displays the previous view.
Next	Displays the next view. If available.
Down arrow	Displays any view previously consulted.
Devices	Device list shortcut.
Graph	Creates a graph.
Table	Creates a table.
Events	Displays event history
Properties	Displays the properties window of the current view.
Print	Allows us to print the current view.

9.2.1 TOOLBAR SETUP MENU

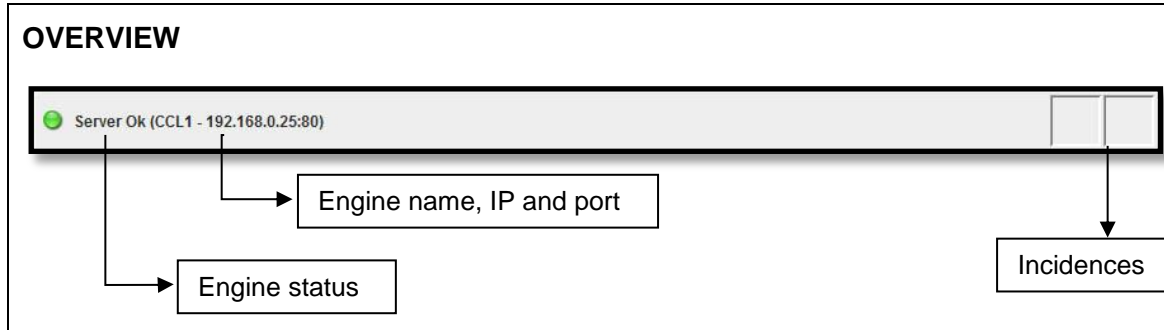
It is possible to hide or display buttons for the toolbar. Right-click on the toolbar and following setup menu appears:








NOTE: *The toolbar may be hidden using the “General” menu. The menu bar may be hidden using the “Enable menu and toolbar” option in the editor “Preferences”. Using this latter method it will not be possible to make it appear again from the client application.*

9.3 STATUS BAR

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



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

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

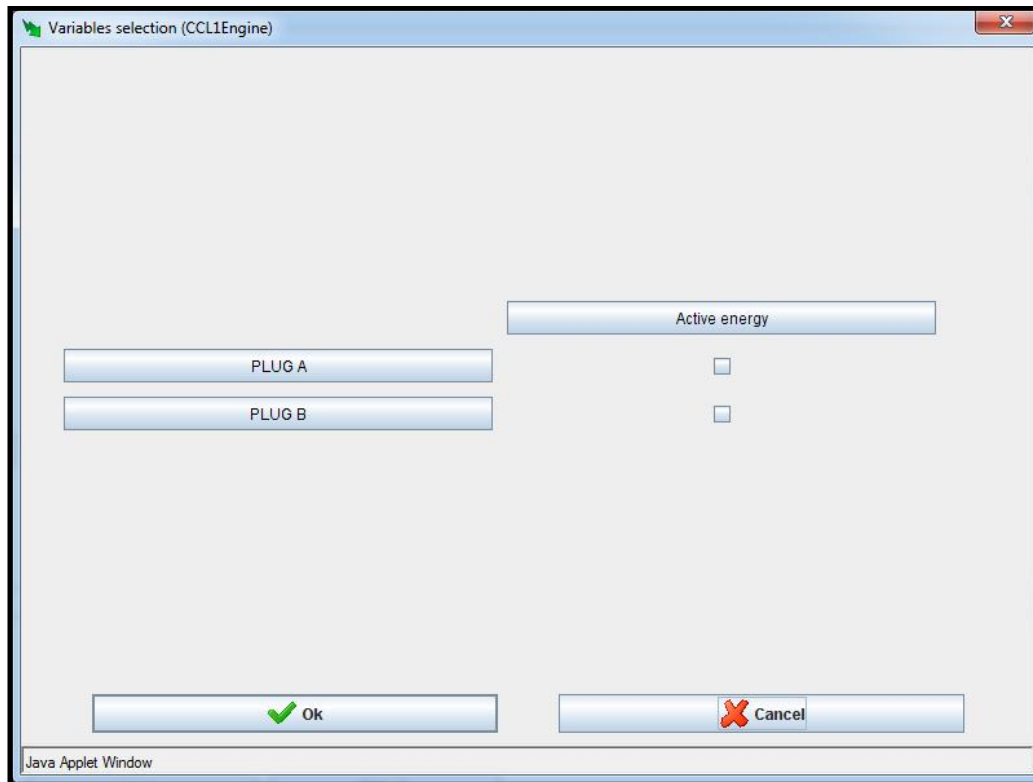
➤ Double-click over icon showed to see details.

NOTE: Status bar can be hidden using the "General" option in the client application menu. It may also be hidden using the "Enable menu and toolbar" option in editor "Preferences". In the latter case it will not be possible to make it appear again from the client application.

9.4 SCADA GRAPHS

One of the most powerful tools of client software is graphs tools of the devices.

Following image shows variables selection window under CCL1Engine where it is possible to select Plug A and Plug B on the charge point.



At first it appears the available plugs from the charge station. Select the desired plug to proceed with the creation of the graph.

The system automatically chooses the representation period and the grouping of data, which can obviously be changed later.

Default parameters should be displayed as a week and the time period is typically 30 minutes.

Picture below shows the aspect of the graph generated by the client software.



Graph tool has following sections:

- **Title:** Situated on the upper area. It is a text describing the represented variables.
- **Representation areas:** Data represented by bars for energy or by lines for power. Each area contains some common characteristics:
 - **Key:** Provides general information about the variables that are represented in the area.
 - **Y-Axis:** Provides information on the units of the variables that are represented in this axis and the range of values that are being displayed.
 - **X-axis:** Typically, this is the time axis and is located at the bottom of the representation area. Here the time interval being represented may be seen. Usually predefined time intervals are represented (day, month, etc.). But the user can choose the most suitable as can be seen later.

- **Drawing area:** Contains the actual figure representing the variables of the area in question. There is a drawing area for each area of representation.
- **Graph toolbar:** Contains a series of actions that can be performed on the graph. Depending on the type of graph it will contain more or fewer options.

9.4.1 GRAPHS TOOLBAR

Graphs always have a toolbar at the bottom of the window that allows different actions related to the data represented.

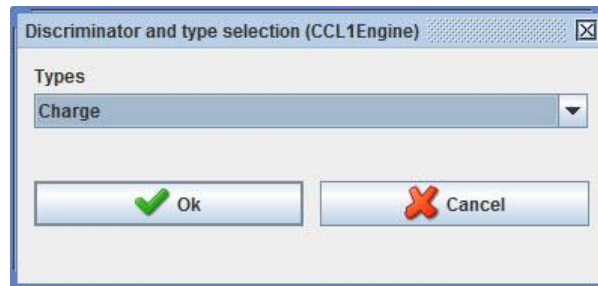
Option	Description
Back	Displays the previous interval of data.
Next	Displays the next interval of data.
Go to	Allows choosing a closed graph interval.
Grouped by	Allows choosing standard graph interval by day, week, month or year.
Period	Sampling period variables.

9.5 SCADA TABLES

Another important client tool is Scada table tool.

First, it is necessary to choose the device to display its recorded variables and click on table button option.

Once table button is pressed, a discriminator window appears:



CCL1Engine has two types of tables:

- **Standard:** sampling variable (energy, power, voltage) depending on the meter installed on the charge point.
- **Charge:** summary of recharges on the charge point.

Following image shows the appearance of table recharges:

Week 49, 3 December 2012 - 9 December 2012	
Date/time	CCL1Engine.PLUG B.Active energy (kWh)
Wednesday 05 10:00:00	0,000
Wednesday 05 11:00:00	1,000

Table tool has following sections:

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

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

9.5.1 TABLE PROPERTIES

It is possible to configure some aspects using the table “*Properties*” option. This option can be accessed using the “*Options*” menu, “*Properties*” submenu, or directly with the “*Properties*” button on the main toolbar.

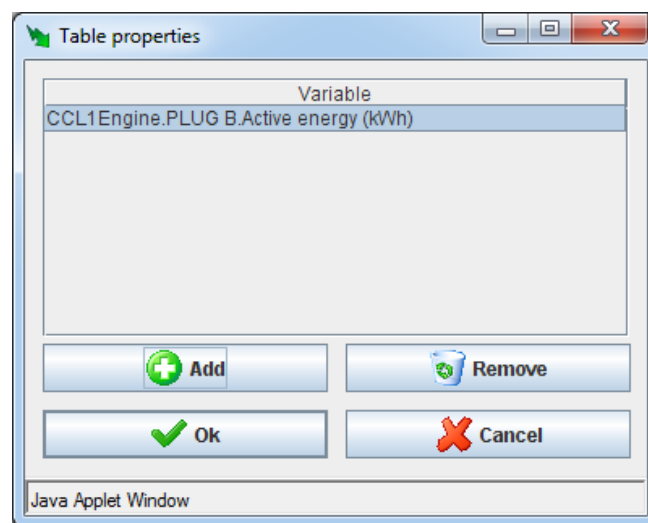


Table properties window

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

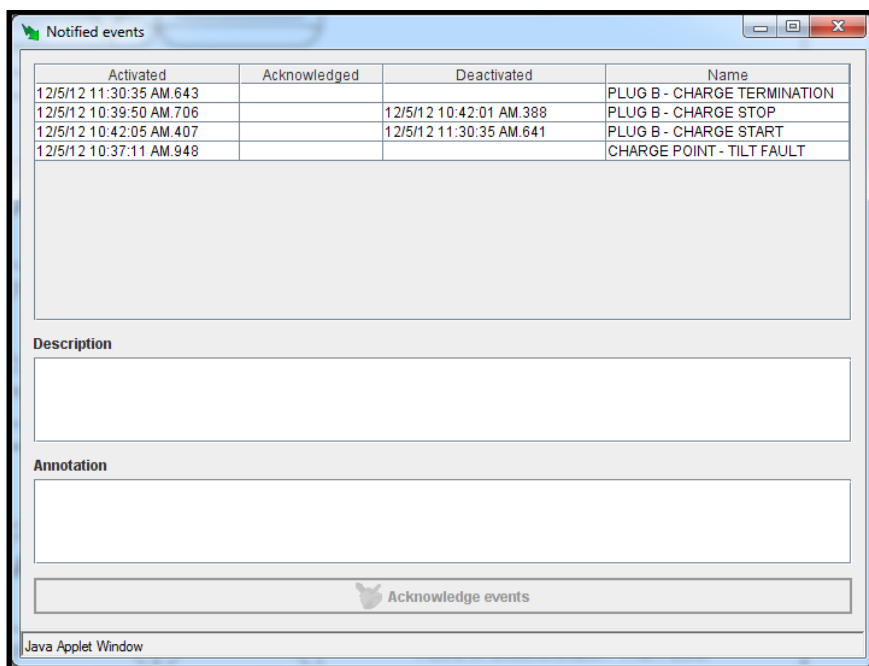
It is also possible to delete variables from the table selecting the desired variables and clicking on the “*Delete*” button.

User can print the current graph displayed using “*Print*” option on the “*Options*” menu of the main menu or the “*Print*” button of the upper toolbar.

9.6 NOTIFIED EVENTS

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

Events not requiring user acknowledgement are displayed in a pop-up window, which may be accessed via the “Views” menu option, then “Events” and finally “Active events” or directly from the status bar by clicking on the icon indicating there are active events in the system.



Notified events window

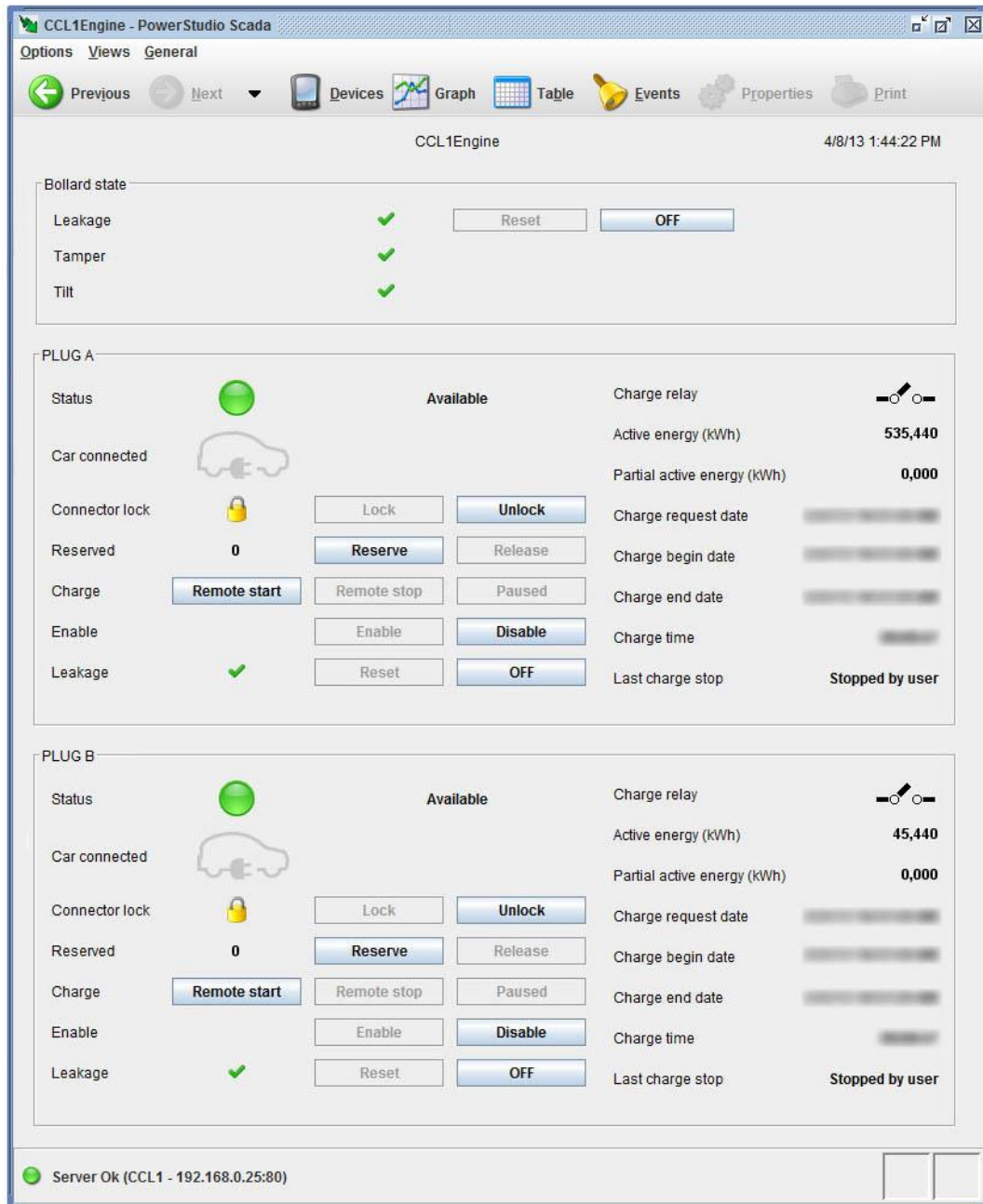
Note that an event with an acknowledgement date and a deactivation date will disappear from the list of events reported.

This window allows event acknowledgement. Select from the events to be acknowledged from the events list and click the “Recognize events” button at the bottom. The event acknowledgement date is shown. When an event is disabled it will disappear from the list. If a previously acknowledge event is acknowledged again the operation will not produce any effect.

10 CCL1 ENGINE

CCL1 engine is the application of recharging Wallbox Smart and it is showed as a main screen when CirCarLife Scada client is connected on the CCL1 device.

Following image shows the aspect of the charge point engine:



The engine is divided on two sections:

- **Bollard state:** describes general state of the charge point.
- **Plug status:** plug status and other useful information.

10.1 BOLLARD STATE SECTION

This section describes the general state of charge point.



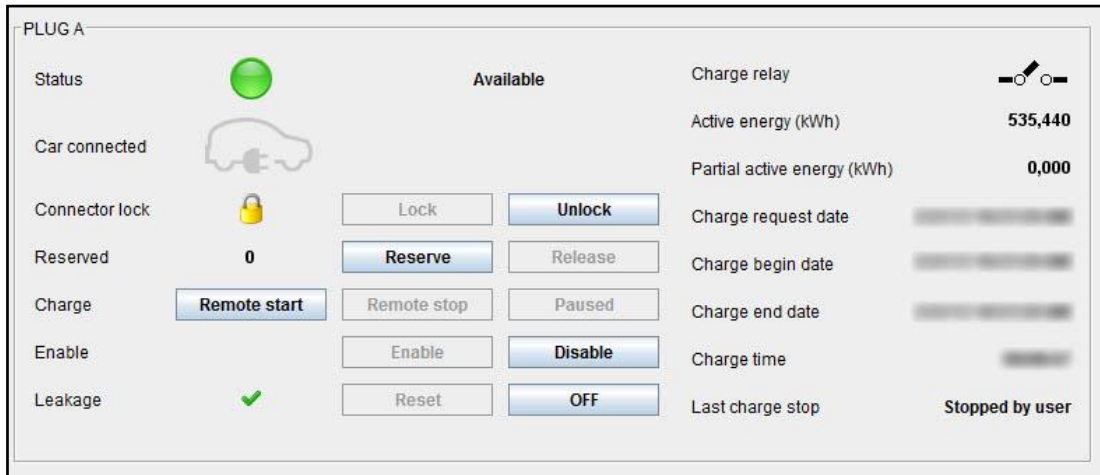
Any of these options may not appear on the charge point. It depends on the hardware of the unit purchased or by software configuration.

		Status	
Leakage	Charge point leakage status		
	✓	✗	
	Normal operation	Channel 3 tripped	
Tamper switch	Tamper switch status		
	✓	✗	
	Normal operation	Rear cover removed	
Tilt <i>(sensor inside CCL1 device)</i>	Charge point tilt status		
	✓	✗	
	Normal operation	Charge station tilted	

If any of the points mentioned above is in ✗ status, charge point will be out of service (plug A and plug B) until event is resolved.


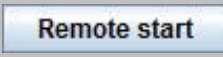






10.2 PLUGS SECTION

This section describes the plug status and other useful information. Each plug looks the same configuration as shown below:



Following table shows the status of each option showed on plug section.

Description									
Status	Plug status								
	<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><i>Plug available</i></td> <td><i>Starting recharge</i></td> <td><i>Plug in use</i></td> <td><i>Fault</i></td> </tr> </table>					<i>Plug available</i>	<i>Starting recharge</i>	<i>Plug in use</i>	<i>Fault</i>
	<i>Plug available</i>	<i>Starting recharge</i>	<i>Plug in use</i>	<i>Fault</i>					
Car connected	Vehicle connection status								
<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td>Car connected</td> <td>Car not connected</td> </tr> </table>			Car connected	Car not connected					
Car connected	Car not connected								
Connector lock	Connector lock status								
	<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td>Locked plug</td> <td>Unlocked plug</td> </tr> </table>			Locked plug	Unlocked plug				
Locked plug	Unlocked plug								

	Description	
Reserved	Reservation status	
	0 = No reservation	Status:  Reserved
Charge		Starts a charge from remotely point.
		Stop charging in progress
		Pauses charging in progress.
Enable	Enable or disable the plug.	
Leakage	RCD plug status.	
	 Normal operation	 Channel 1 or 2 tripped
Charge relay	Indicates contactor status	
	 Voltage is being supplied to the vehicle.	 No voltage is being supplied to the vehicle.
Active Energy (kWh)	Total charge measured energy	
Partial active energy (kWh)	Partial energy meter of the last charge	
Charge request date	Date of the last charge request	
Charge begin date	Starting date of the last charge	
Charge end date	End date of the last charge	
Charge time	Duration of the last charge	
Last charge stop	Reason for the last charge stop.	

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