

Raption 50 Series

Instruction Manual



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Raption 50 Series Instruction Manual



Here's your guide to use and configure Raption 50

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

The CIRCONTROL charge point provides the fastest way to charge electric vehicles nowadays. Its innovative and original design provides a quick and intuitive way for recharging their vehicle, according to the current regulations. You can make loads into alternating current (AC) and direct current (DC), either individually or simultaneously.

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

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



So, hello!



Read carefully all the instructions before using the charge point.

Important safety instructions

- Read all the instructions before using and configurating the charge point.
- Do not use the charge point for anything other than electric vehicle charging modes are expected in IEC 61851.
- Do not modify the charge point. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with electrical safety regulations according to your country.
- Do not make repairs or manipulations with the unit energised.

- Only trained and qualified personnel should have access to the electrical parts inside the charge point.
- Check the installation annually by qualified technician.
- Remove from service any item that has a fault that could be dangerous for users (broken connectors, caps that don't close...).
- Use only Circontrol supplied spare parts.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.

WARNING!



- People who use electronic medical devices such as implanted cardiac pacemaker or implantable cardio verterdefibrillator (ICD) might be affected by electric wave from the quick charger. Keep yourself away from the quick charger the minimum security distance according with your device meantime the unit is charging.





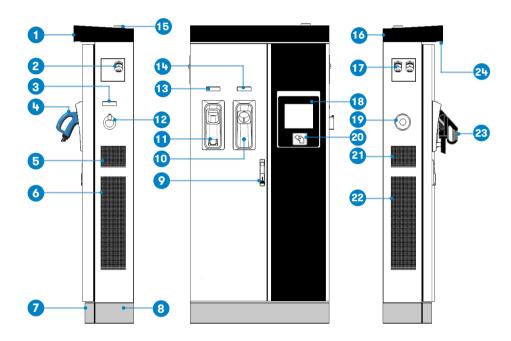
Main features

- HMI: there is a TFT colour touch screen of 8 inches, is the interface between the unit and the user. Provides detailed information for starting and stopping the unit, including information concerning the recharge that is in progress (charge state of the battery, charging time remaining, etc.).
- RFID: there is a radio frequency reader that allows user authentication to proceed with the recharging of the electric vehicle. At the discretion of the facility operator, the user's recharge also can be allowed or denied.
- User Management: provides a database that associates users with one or more identification cards, you can also assign consumption and load logs.
- Beacons light: by a LED beacons located above connectors, it is indicated the charging status of the unit.
- Ethernet: the unit allows communicate using TCP / IP on an Ethernet network, giving flexibility to the system operator and management of the charging equipment.
- Remote monitoring and control in real-time 3G: It can be done a remote device connection or make OCPP integrations thanks to 3G modem is integrated. In addition, by using a standard Web browser you can access your computer to monitor the status of recharge and even run a Start / Stop remote.
- Historic charge transactions: the system is able to generate charging process reports, according to the historical database of equipment.
- Energy metering: Integrated meter, independent for AC and DC, is measuring power and energy consumed by the EV during a charge transaction.
- OCPP integration: OCPP is a communication protocol between the charging station and management platforms (BackOffice) for comprehensive management of charging. This integration allows, among other things, management and user authentication as well as a variety of parameters to monitor during a recharge.



Features

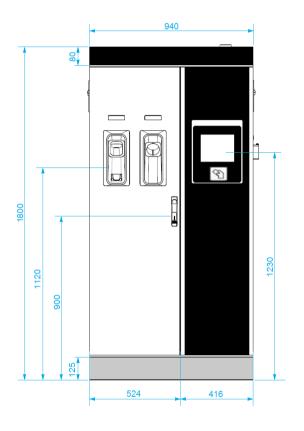
B Overview

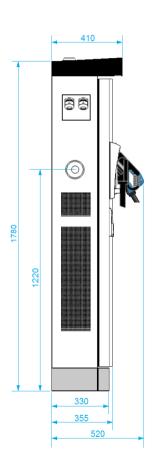


1- Cover	2- exit AC cable	3- AC light beacon	4- CHAdeMO connector	5- Unit air inlet
6- Power M. air outlet	7- D. front panel	8- D. rear panel	9- Handle	10- CHAdeMO holder
11- CCS holder	12- AC holder or socket 32A *	13- CCS light beacon	14- CHAdeMO light beacon	15-3G Antenna
16- Unit air outlet	17- exit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

© Dimensions

Units specified in millimeters:

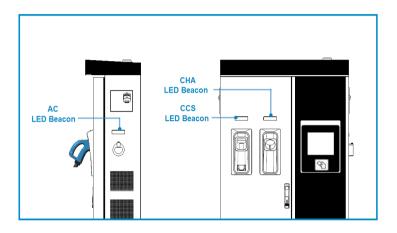






D Status LED

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



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

E Connectors

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

- AC (Mode 3): Type 2 tethered cable (63A/44kW) or Type 2 socket (32A/22kW)*
- DC (Mode 4): CHAdeMO, Tethered cable, 3m. Until 125 A / 50 kW
- DC (Mode 4): Combo 2 (CCS), Tethered cable, 3m. Until 125 A / 50 kW
- (*) Depending of the model, the components can vary.



The following considerations, before using this Charge point, must be consider.

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

- Only AC
- Only DC CHAdeMO
- Only DC CCS 2
- Simultaneous, AC and one DC connector at the same time







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



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



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



How to use it?

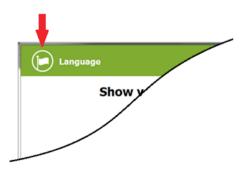


At this new screen, the Charge point is asking for showing the identification card or touch the screen, as you can see there are two options.

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

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

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



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



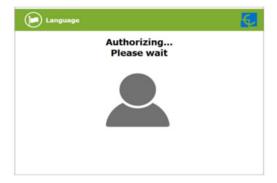
It is possible to choose between next languages:

Catalan; German; English; Spanish; Finnish; French; Italian; Dutch; Norwegian; Polish; Russian; Swedish.



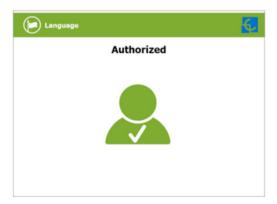
B Starting a charging session

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



Wait while Charge point performs identification

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



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



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

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

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



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



2- Checking vehicle connection... Please wait



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



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

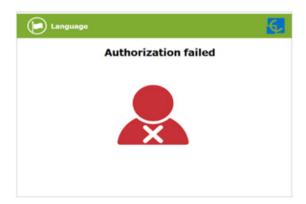


Special events starting a charge

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

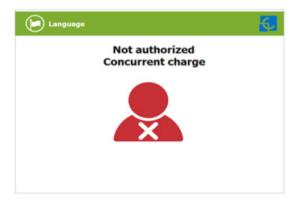


B - "Authorization failed": if there is some communication problem with the Back Office right at the connecting time:





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



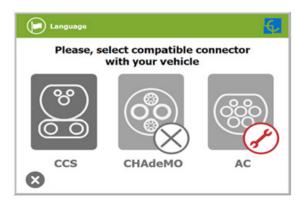
D - "Not authorized, Authorization expired": is possible that the back office has put deadline to your identification card and this date is already expired:



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



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





G - Another issue that can occur is "Vehicle not detected", unlock the connector, connect again and press over "Retry" button.



H – Almost all vehicles cannot charge if the shift lever is not in parking mode position. This situation can be detected for the Charging Station and it will be displayed by HMI as "Please, check vehicle shift position, put in parking mode", after pressing over "Retry" button.



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





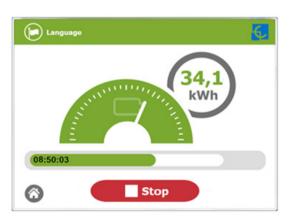


Stopping a charging session

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



- After showing your identification card, the Charge point will allow you to stop the charging session, press over the "Stop" touch button:



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





E Charging information

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

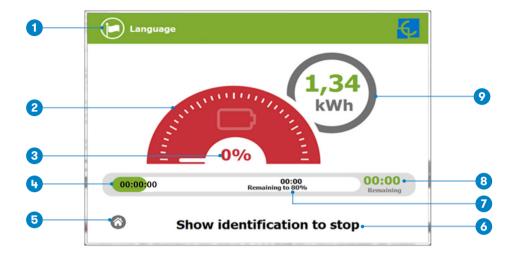
There are different information for AC (mode 3), DC (CCS) and DC (CHAdeMO); the following images show the basic charging process information.

1 - CHARGING AC (MODE 3)



- **1- Language button:** pressing over this button it is possible to change the HMI language.
- **2- Analog process indicator:** at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.
- 3- Charge time with status bar: charging time elapsed until now.
- 4- Touch button: it goes back to the "identification screen".
- **5- Additional information:** current status, errors, battery status, etc.
- 6- Energy charged: energy supplied to the vehicle so far.

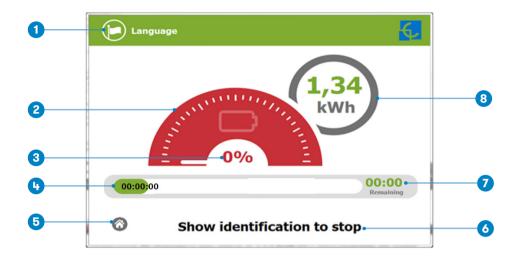
2 - CHARGING DC (CCS)



- **1- Language button:** pressing over this button it is possible to change the HMI language.
- **2- Analog process indicator:** at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.
- **3- Battery SOC:** It indicates the current battery state of charge.
- 4- Charge time with status bar: charging time elapsed until now.
- 5- Touch button: it goes back to the "identification screen".
- 6- Additional information: current status, errors, battery status, etc.
- 7- Remaining time until 80 %: remaining time until getting 80 % of the SOC.
- 8- Remaining time until 100 %: remaining time until 100 % of the SOC.
- 9- Energy charged: energy supplied to the vehicle so far.



3 - CHARGING DC (CHADEMO)



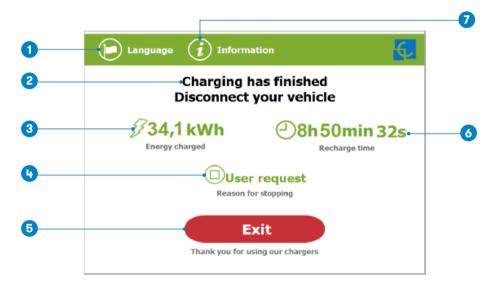
- **1- Language button:** pressing over this button it is possible to change the HMI language.
- **2- Analog process indicator:** at first moment it is red, as the vehicle is charging it will change to green, passing before for orange.
- **3- Battery SOC:** It indicates the current battery state of charge.
- 4- Charge time with status bar: charging time elapsed until now.
- 5- Touch button: it goes back to the "identification screen".
- 6- Additional information: current status, errors, battery status, etc.
- 7- Remaining time until 100 %: remaining time until 100 % of the SOC.
- 8- Energy charged: energy supplied to the vehicle so far.



Charging summary

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

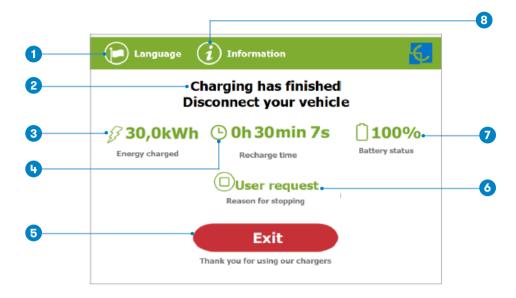
1 - SUMMARY SCREEN FOR AC (MODE 3)



- **1- Language button:** pressing over this button it is possible to change the HMI language.
- 2- Process instructions: different instructions can be displayed.
- **3- Energy charged:** total energy charged at the end of the charging session.
- **4- Stop reason:** It shows why the charging session has been stopped.
- **5- Exit button:** It has to be pressed in order to finish the charging session. After pressing, the HMI screen will go back to the "identification screen".
- **6- Recharge time:** total recharging time at the end of the charging session.
- **7- Information button:** pressing over this button you can get information about the charging session, per example the "reason for stopping" or another one.



2 - SUMMARY SCREEN FOR DC (CCS / CHADEMO)

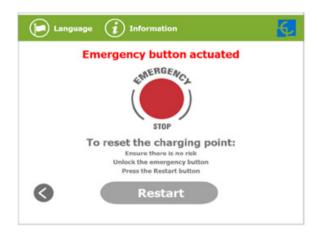


- **1- Language button:** pressing over this button it is possible to change the HMI language.
- **2- Process instructions:** different instructions can be displayed.
- **3- Energy charged:** total energy charged at the end of the charging session.
- **4- Recharge time:** total recharging time at the end of the charging session.
- **5- Exit button:** It has to be pressed in order to finish the charging session. After pressing, the HMI screen will go back to the "identification screen".
- **6- Stop reason:** It shows why the charging session has been stopped.
- **7- Battery SOC:** It indicates the final battery state of charge at the end of the charging session.
- **8- Information button:** pressing over this button you can get information about the charging session, per example the "reason for stopping" or another one.

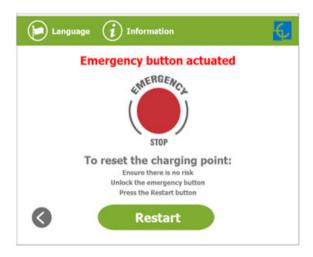


Emergency button

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

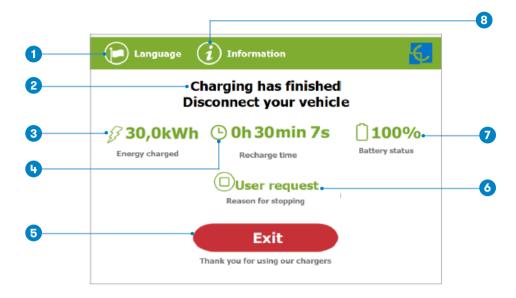


At first moment, the "Restart" touch button will be in grey and it will not be able to pressing, once you have Unlock the emergency button the "Restart" touch button will be in green and able to use.





2 - SUMMARY SCREEN FOR DC (CCS / CHADEMO)

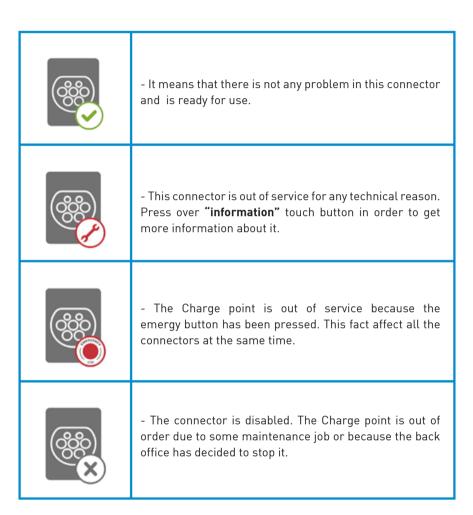


- **1- Language button:** pressing over this button it is possible to change the HMI language.
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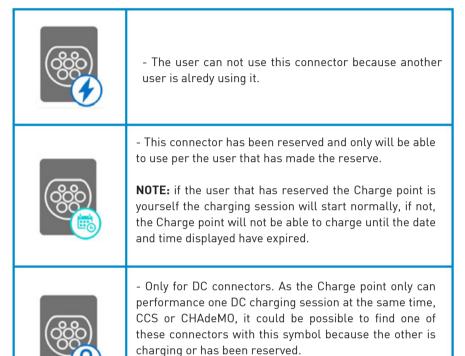


Connectors status

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





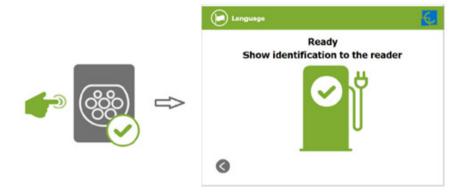




Consulting the connectors status

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

1 - CONNECTOR ABLE



2 - ERROR CONNECTOR





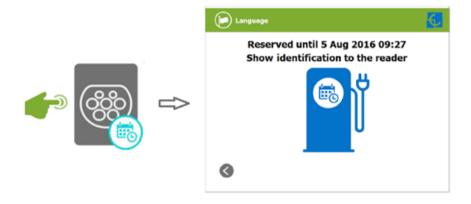
3 - CONNECTOR DISABLE



4 - CONNECTOR IN USE



5 - CONNECTOR RESERVED

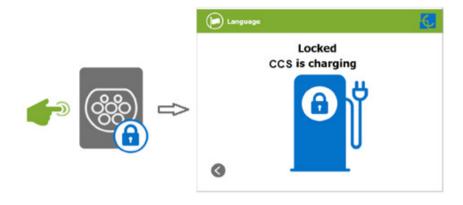


6 - CONNECTOR BLOCKED PER RESERVED



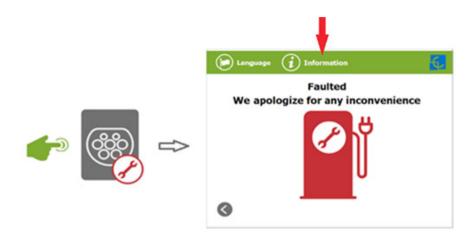


7 - CONNECTOR BLOCKED PER CHARGING

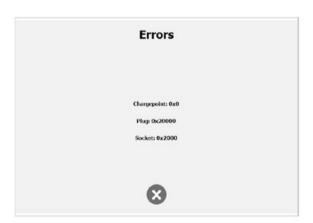




The Charge point can report about different sort of errors, it can be from different parts or devices from it.



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









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

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

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

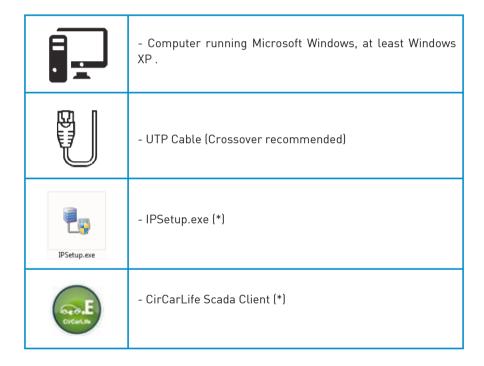
Step by step below guide detailed setup an IP address to the Charge Point in case there is no DHCP server available on the network.



How to configure it?



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



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

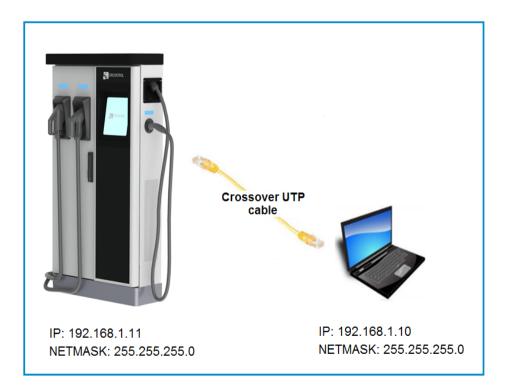
© Network topology

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

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

For laptop → IP: 192.168.1.10 NETMASK: 255.255.255.0

For Charge Point → IP: 192.168.1.11 NETMASK: 255.255.255.0

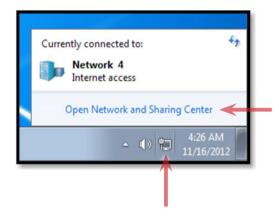




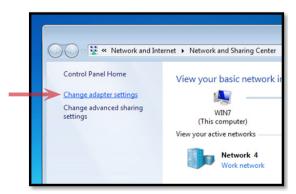
D LAN connection procedure

This section provides a step-by-step guide to connect the service PC to the Charging Station in order to see real-time status.

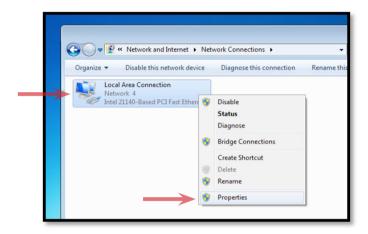
1- Click on the network icon next to the clock of the taskbar, and Click on ightarrow "Open Network and Sharing Center"



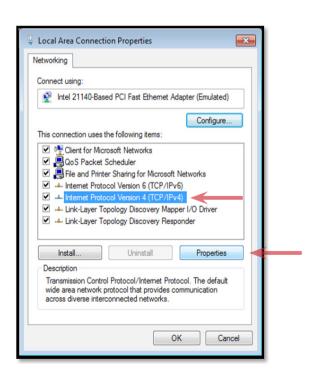
2- On the left pane, click on \rightarrow "Change adapter settings"



3- Make right click on \rightarrow "Local Area Connection" and then click on \rightarrow "Properties"

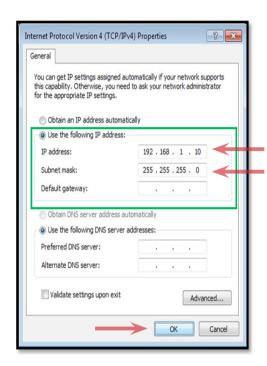


4- Select "Internet Protocol Version 4 (TCP/IP)" option and click on \rightarrow "Properties"





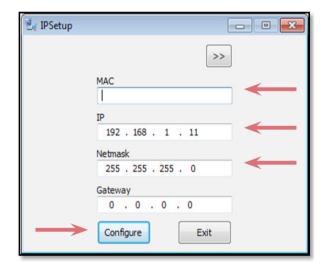
5- Setup IP address and subnet mask like as shown here below and click **"OK"** twice to complete the assigning IP address process to the computer.



6- Execute → IPSetup.exe on the service PC



- 7- Enter the following parameters and click on \rightarrow "Configure"
- MAC of the Charge Point (see label on the screen)
- IP address: i.e.(192.168.1.11)
- Netmask: i.e. (255.255.255.0)
- Gateway: leave default settings.



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





9- The process will complete when the following message appears, click on ightarrow "0K"



10- If the message shown is the next one, check the following parameters and click on \rightarrow "OK"



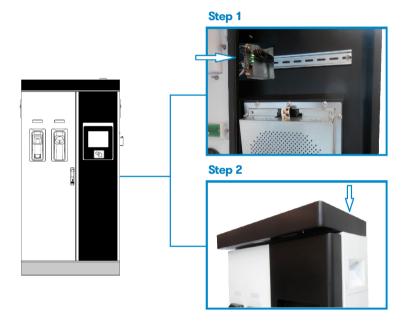
- Check IP address entered.
- Check the MAC of the device entered.
- Try with another UTP CAT5e cable.



This section describes how to install the SIM card into the unit's 3G modem.

1 - 3G MODEM LOCATION

The modem is installed inside the unit and the antenna is fixed outside, right on the roof of the unit.



Steps:

- 1- Open the right door of the Charge Point and locate the 3G modern right on the rear side.
- 2- Check that the Charge Point is provided with the 3G antenna on the cover top.

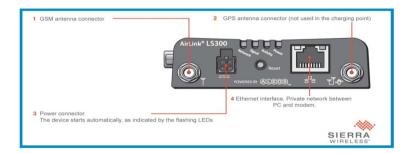


2 - MODEM OVERVIEW

The 3G modem installed from factory in the unit is:

Sierra Wireless AirLink LS300

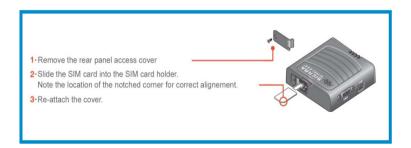
This device allows to the Charge Point connects over 3G networks to remotely view or manage the Charge Point status.



3 - MODEM INSTALLATION

Before installing the SIM card into the modem, make sure you have unplugged the power cord from the modem.

The following schematic explains in detail the proper installation of the SIM card:



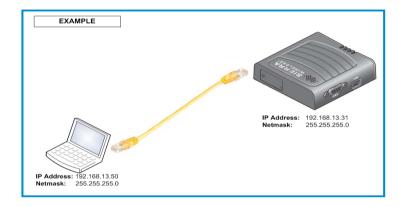
NOTE: SIM card not provided with equipment.

4 - MODEM CONFIGURATION

Plug again the power supply for the modem.

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

36 modem configuration is performed using the Ethernet interface. Connect your computer using an Ethernet cable as shown in the following image:



Steps:

- 1- Open a web browser in the computer and enter http://192.168.13.31:9191. Wait until ACE manager login screen appears.
- 2- Default username is **user** and default password is **12345**. Do not change the default credentials; the charge point requires consulting information from the 3G modem.
- 3- The ACE manager homepage appears. You can now configure each device with ACE manager.

For more information about how to configure the 3G modem in detail, please visit following website: http://www.sierrawireless.com





GENERAL DATA		
Display	LCD Multi-language touch screen	
Light beacon	RGB Colour indicator	
ISO / IEC 14443A/B MIFARE Classic/Desfire EV1 ISO 18092 / ECMA-340 NFC 13.56MHz		
Compliance	npliance IEC-61851; IEC-62196; CE; CHAdeM0 Certified; CCS (DIN 70121, ISO 15118)	

MECHANICAL DATA			
Enclosure rating	IP54 / IK10		
Enclosure material	Stainless steel		
Enclosure acces	Frontal key locked door		
	AC	DC	
Connector type	Type 2 tethered cable / socket	JEVS G105	CCS 2
Cable length	3 meters / 3 meters 3 meters		3 meters
Net weight	233 Kg		
Dimensions (W x H x D)	940 x 1800 x 355 mm		

ENVIRONMENTAL CONDITIONS		
Operating temperature -10°C to +45°C		
Low temperature kit *	-30°C to +45°C *	
Storage temperature	orage temperature -20°C to +60°C	
Operating humidity	5% to 95% Non-condensing	
Sound level in operation 55 dB		



Technical Data

CONNECTIVITY	
Ethernet	10/100BaseTX (TCP-IP)
Cellular * Modem 3G / GPRS / GSM *	
Interface protocol	OCPP

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

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

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



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





Need help?

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



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CIRCONTROL Raption 50 Series INSTRUCTION MANUAL

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

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