



SEPTMBER 2020

Terra AC Wallbox Commissioning process – Full guide

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Agenda

- Introduction
- **Preparation Off Site 1:** Accounts for TerraConfig and Web Portal - Account delivery
- **Preparation Off Site 2:** OCPP configuration in Web Portal TerraConfig
- **On site activity 1:** Installation - Installation Video and Guidelines
- **On site activity 2:** Configuration via TerraConfig APP
- **Operations**

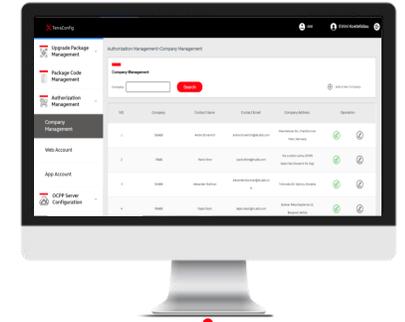
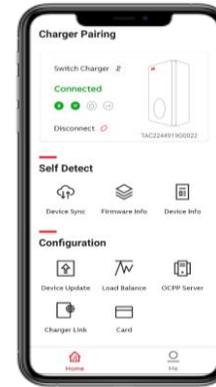


Introduction

Fully connected

Full Guide from chargers out of the box until connection to the backend

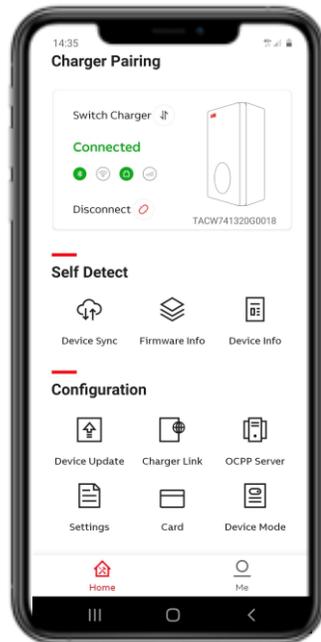
- This document aims to guide the installer or technical operator on the end-to-end commissioning process of Terra AC, from the Terra AC Wallbox unboxing until achieving the connection to the backend.
- In order to complete this process a Preparation Process is needed: A previous configuration in TerraConfig Web Portal (it can be done remotely), and the configuration via TerraConfig APP on site.
- Every user can be granted an App account via the TerraConfig Portal.
- The user can access any charger in proximity range (Bluetooth connection).
- Search for the charger and pair via pin code verification
- Goal is for the installer is to configure settings while commissioning.



Introduction

Fully connected

TerraConfig App



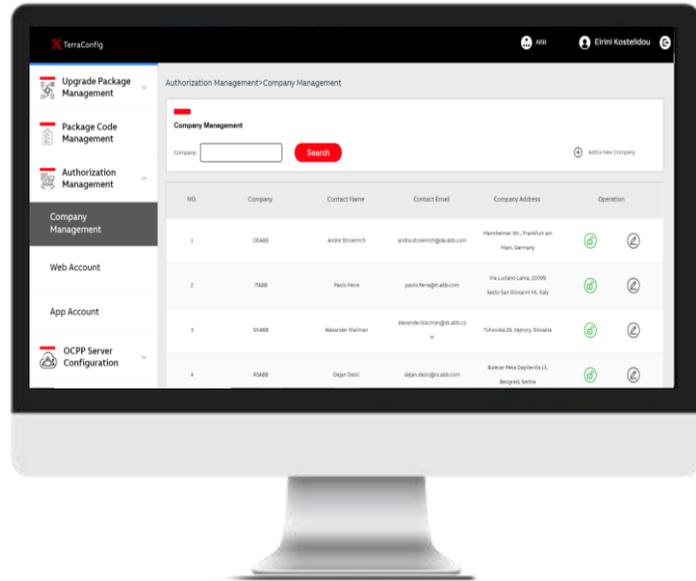
Functionality

- Device Sync : to synchronize charger with ABB back-end server
- Firmware info
- Device info
- Device update (firmware upgrade)
- Connectivity options : configuration internet
- OCPP configuration
- Settings
- Enable external RFID cards
- Device mode : free vending mode

Introduction

Fully connected

TerraConfig web portal



Specific account is required !

- User is typically the administrator/operator of a site/installation/group of chargers that creates a company and adds users to the web portal and app.
- The goal is to allow the administrator add an OCPP configuration and check the firmware version packages.

Preparation Step 1: Accounts for TerraConfig Web Portal and App

Account management and delivery

Before going on site and proceeding with the installation you must have all your IT tools ready to commission correctly the charger on site.

In this section you will find information regarding TerraConfig Web Portal and APP account management.

TerraConfig Portal Introduction

Function

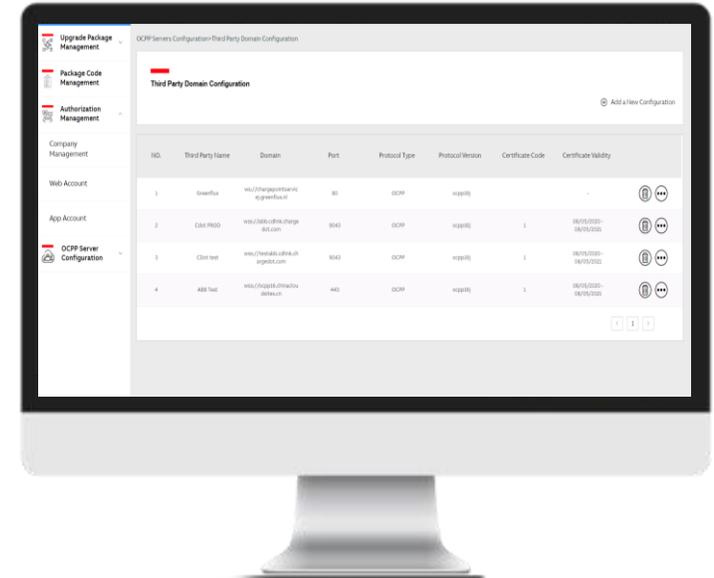
- Manage App Account
- Control the OCPP configuration settings

Link to the portal:

- <https://abb.installer.chargedot.com/#/login>

Specific account is required !

- **ABB provides TerraConfig Web Account for Installer partners, who could help to configure the OCPP backend on behalf of ABB.**
- Installer partners can create App account for their installers.
- Final Customers doesn't need any account for TerraConfig.

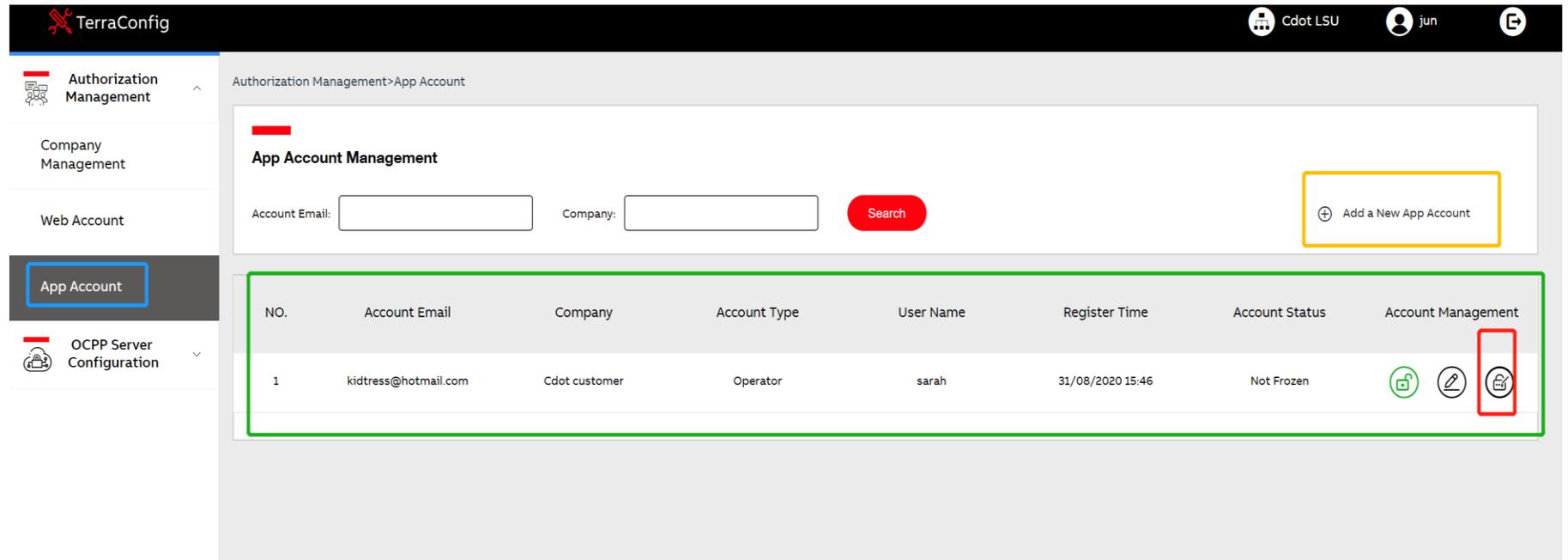


Authorization management

App Account

With the ABB created web account, you can create new app accounts for your colleagues. It's recommended to create new app accounts for your colleagues that will conduct the configuration activities on site.

-  app account
-  account list
-  add a new app account
-  change the password



The screenshot shows the TerraConfig web interface for App Account Management. The left sidebar contains navigation options: Authorization Management (selected), Company Management, Web Account, App Account (highlighted with a blue box), and OCPP Server Configuration. The main content area is titled 'App Account Management' and includes search filters for 'Account Email' and 'Company', a 'Search' button, and a yellow box containing an 'Add a New App Account' button. Below is a table with columns: NO., Account Email, Company, Account Type, User Name, Register Time, Account Status, and Account Management. A green box highlights the table, and a red box highlights the 'Account Management' column icons for the first row.

NO.	Account Email	Company	Account Type	User Name	Register Time	Account Status	Account Management
1	kidtress@hotmail.com	Cdot customer	Operator	sarah	31/08/2020 15:46	Not Frozen	  

→ The creation of an account triggers an email with the user's credentials for the TerraConfig application!

Authorization management

Add a New App account

The screenshot displays the TerraConfig web interface. The top navigation bar is black with the TerraConfig logo. A left sidebar contains menu items: Authorization Management, Company Management, Web Account, App Account (highlighted with a blue box), and OCPP Server Configuration. The main content area shows a breadcrumb trail: Authorization Management > App Account > Add a New App Account. A yellow box highlights the 'Add a New App Account' button. The form contains several input fields: Account Email, Account Type (dropdown), User Name, Company (dropdown), Contact Number, and Instructions. At the bottom right are 'Cancel' and 'OK' buttons.

TerraConfig

Authorization Management > App Account > Add a New App Account

Add a New App Account

* Account Email:

* Account Type:

* User Name:

* Company:

Contact Number:

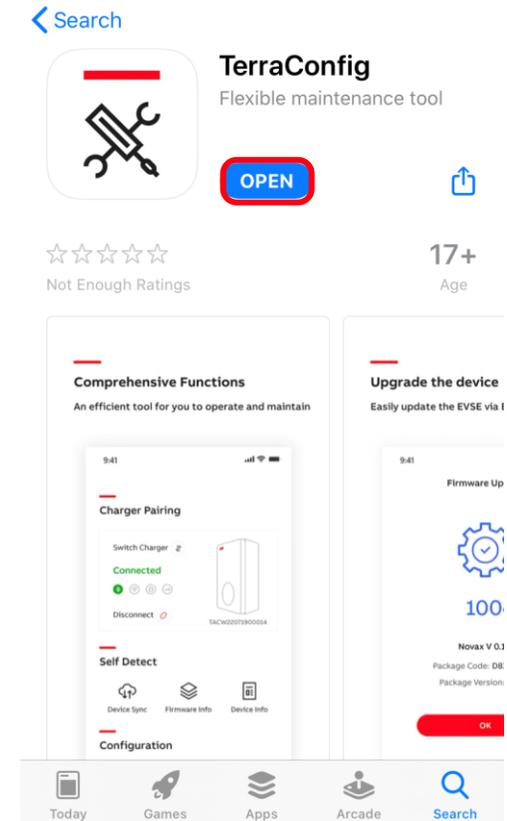
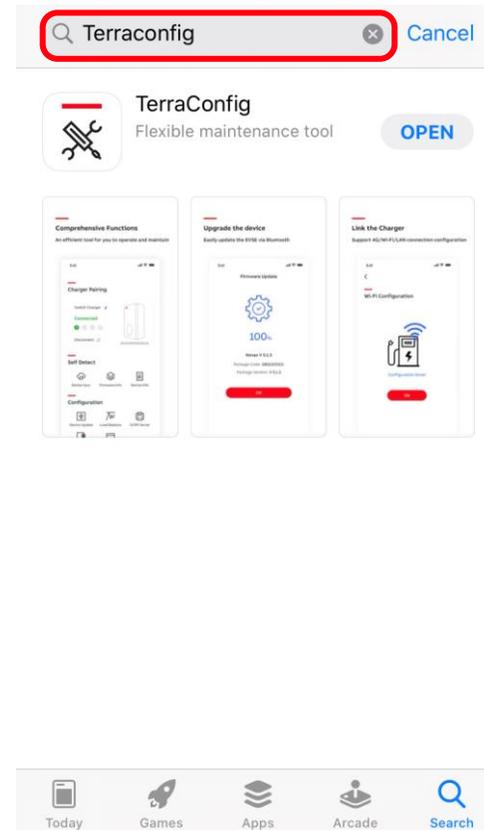
Instructions:

Cancel OK

Where to find the TerraConfig App?

By 'TerraConfig' in App or Google play store

Note:
Previously downloaded TerraConfig App need to be updated to minimum version 1.3.



Log in with TerraConfig account

1. Install and open TerraConfig App
2. Log in with credentials received by email **upon account request**
3. Follow the steps to log in. It is advised to change the autogenerated password after the first log in



Activation of your new TerraConfig account

Dear Marouan,

You have signed up for a TerraConfig user account [email address](#)

Please use the original password to log in, change it after first log in.

ME699159

Thank you for using TerraConfig , we are here to start a new experience in experiencing charger installer service.

For answers to frequently asked questions and additional support resources, email us at developer@chargedot.com

Best Regards,

TerraConfig Development Team.

* This is automatically generated e-mail, please do not reply. *



Log in

[Forget your password?](#)

LOGIN

Preparation Step 2: OCPP configuration in Web Portal TerraConfig

How to set up the connection to external server

If you want to connect Terra AC to another OCPP backend, before going on site and proceeding with the installation you must have registered the OCPP configuration in TerraConfig Web Portal.

In this section you will find how to register the configuration in TerraConfig Web Portal.

After conducting this activity, you will be ready to go on site and commission.

OCPP server configuration

Third party domain configuration

Example of list of 3rd Party

Server:

third party domain configuration section

list of backend showing:

Domain

Port

Protocol type and version

to add new configuration

detail about backend

The screenshot shows the TerraConfig interface for OCPP Servers Configuration. The left sidebar has a menu with 'Third Party Domain Configuration' highlighted. The main content area is titled 'Third Party Domain Configuration' and contains a table with one entry. A yellow box highlights the 'Add a New Configuration' button, and a red box highlights the details icon for the first entry.

NO.	Third Party Name	Url	Port	Protocol Type	Protocol Version	Certificate Code	Certificate Validity	
1	CDTEST	wss://testabb.cdlink.chargedot.com:9090/ocpp	9090	OCPP	ocpp16j	11	10/11/2006 - 10/11/2031	

OCPP server configuration

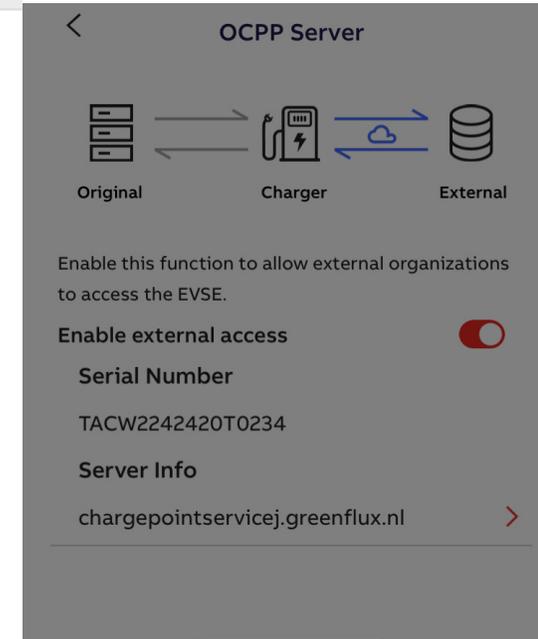
Add a new configuration

Once a new Configuration is created by filling all the fields, the server will add it to the list and will be available via TerraConfig App.

*Type: **wss (requires certificate)**
or ws (doesn't require certificate)

*URL: **please fill in the entirety of the link**

The screenshot shows the TerraConfig web interface. The left sidebar contains navigation options: Authorization Management, OCPP Server Configuration, Third Party Domain Configuration (highlighted with a blue box), and Certificate Management. The main content area is titled 'OCPP Server Configuration > Third Party Domain Configuration > Add a new OCPP Server Configuration'. A yellow box highlights the 'Add a New Configuration' button. Below it, there are several form fields with red asterisks indicating required fields: Third Party Name, Type (dropdown menu with 'wss://' selected), URL, Protocol Type, Protocol Version, Password (with a checked checkbox and an eye icon), Repeated Password, Certificate Upload, Company (dropdown menu with 'Cdot LSU, Cdot customer' selected and a 'Select' button), and Instruction.

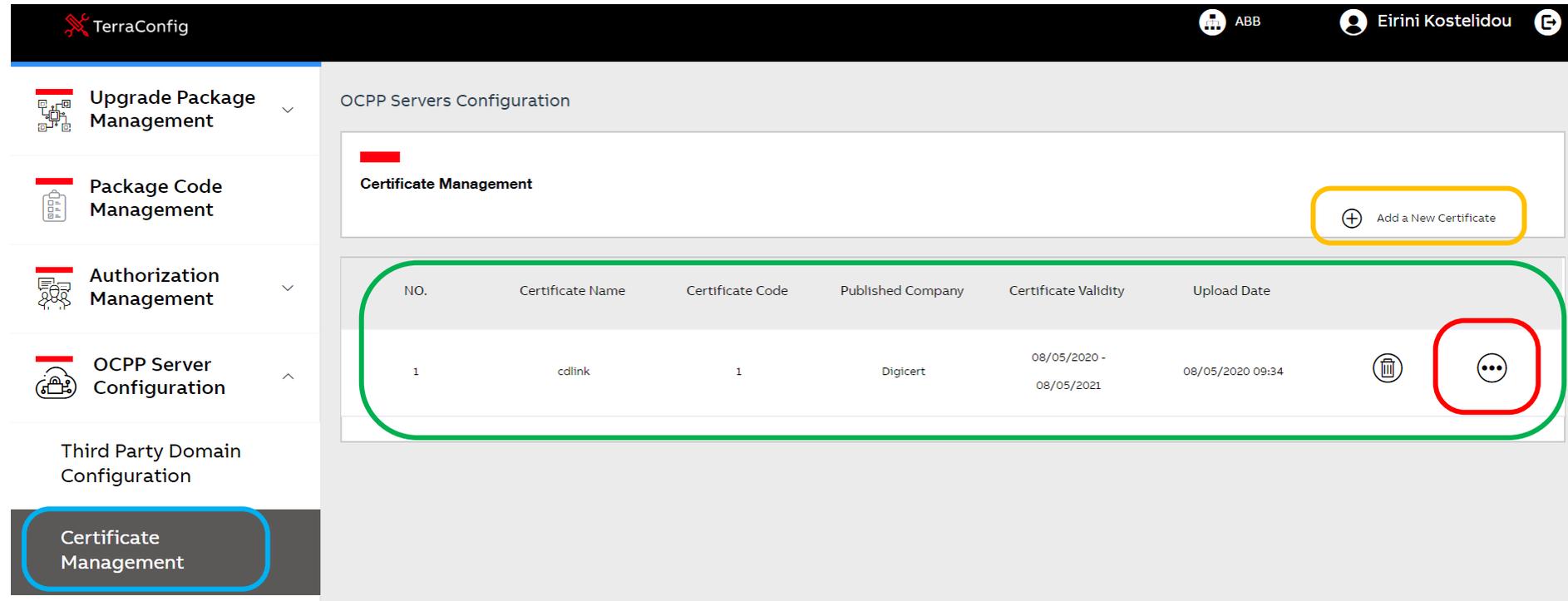


- Total: 4 data
- chargepointservicej.greenflux.nl
 - abb.cdlink.chargedot.com
 - testabb.cdlink.chargedot.com
 - ocpp16.chinacloudsites.cn

OCPP server configuration

Certificate management – for wss connections

-  certificate management
-  certificate list
-  add a new certificate
-  detail about certificate



The screenshot shows the TerraConfig web portal interface. The left sidebar contains navigation options: Upgrade Package Management, Package Code Management, Authorization Management, OCPP Server Configuration (highlighted with a blue box), and Third Party Domain Configuration. The main content area is titled 'OCPP Servers Configuration' and features a 'Certificate Management' section. This section includes a yellow 'Add a New Certificate' button and a table of certificates. The table has columns for NO., Certificate Name, Certificate Code, Published Company, Certificate Validity, and Upload Date. A single certificate is listed with NO. 1, Certificate Name 'cdlink', Certificate Code '1', Published Company 'Digicert', and Certificate Validity '08/05/2020 - 08/05/2021'. The upload date is '08/05/2020 09:34'. A red box highlights the three-dot menu icon for the first certificate, and a green box highlights the entire table area.

NO.	Certificate Name	Certificate Code	Published Company	Certificate Validity	Upload Date	
1	cdlink	1	Digicert	08/05/2020 - 08/05/2021	08/05/2020 09:34	 

If you need to have a secure wss connection you need to register first the certificate in TerraConfig Web Portal

OCPP server configuration

Certificate management – for wss connections

The format of the certificate that needs to be uploaded on TerraConfig Portal for WSS connection, should be **base-64 encoded (.CER)**.

The screenshot displays the TerraConfig web interface. On the left is a navigation menu with the following items: Upgrade Package Management, Package Code Management, Authorization Management, OCPP Server Configuration (highlighted with a blue box), and Third Party Domain Configuration. At the bottom of the menu is a 'Certificate Management' button. The main content area is titled 'OCPP Servers Configuration > Add a new OCPP Server Configuration'. A yellow box highlights the 'Add a New Certificate' button. Below this are several form fields: a 'Certificate Upload' field with an 'Upload' button, a 'Certificate Name' field, a 'Published Company' field, and a 'Certificate Validity' field with a calendar icon and 'Start date', 'to', and 'End date' labels. At the bottom right are 'Cancel' and 'OK' buttons.

OCPP server configuration

Summary of information needed

If you **don't have a web account**, please send all information to the person that would make the configuration for you.

More specifically it is needed:

- Name of configuration
- Type of configuration (ws or wss) – secured or not secured
- URL to your backend (domain + port + path/end point)
- Protocol type is OCPP
- Protocol version we support is only OCPP1.6JSON
- Password (if applicable)
- Certificate (if the configuration is wss)

OCPP server configuration: Video example

The screenshot shows a web browser window with the URL `abb.installer.chargedot.com/#/account/app/list`. The page title is "TerraConfig" and the user is logged in as "Marc Test". The left sidebar contains navigation options: "Authorization Management", "OCPP Server Configuration", "Third Party Domain Configuration", and "Certificate Management". The main content area is titled "Authorization Management > App Account" and displays "App Account Management". It features a search form with "Account Email:" and "Company:" fields, a red "Search" button, and a "+ Add a New App Account" link. Below the search form is a table with the following data:

NO.	Account Email	Company	Account Type	User Name	Register Time	Account Status	Account Management
1	marc.heines@de.a bb.com	Marc Test	Administrator	Marc	14/09/2020 14:57	Not Frozen	  

On site Activity Step 1: Installation

Installation Video and Guidelines

By completing the Preparation process, you are ready to go on site.
During this step you will learn how to install Terra AC Wallbox.

Installation Video

How to install ABB Terra AC Wallbox Wallbox



<https://www.youtube.com/watch?v=gK-nZptM61l>

Installation Manual and User Manual

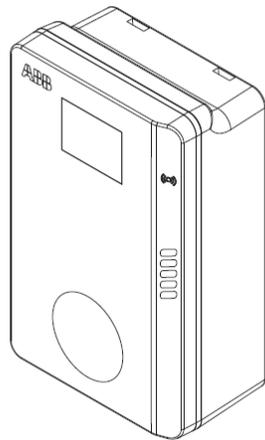
Manuals are available in 25 different languages

Installation Manual

ABB

Installation manual

Terra AC

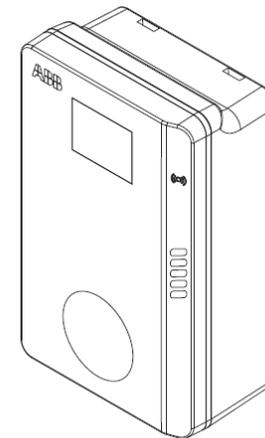


User Manual

ABB

User manual

Terra AC



Guidelines

How to install ABB Terra AC Wallbox Wallbox

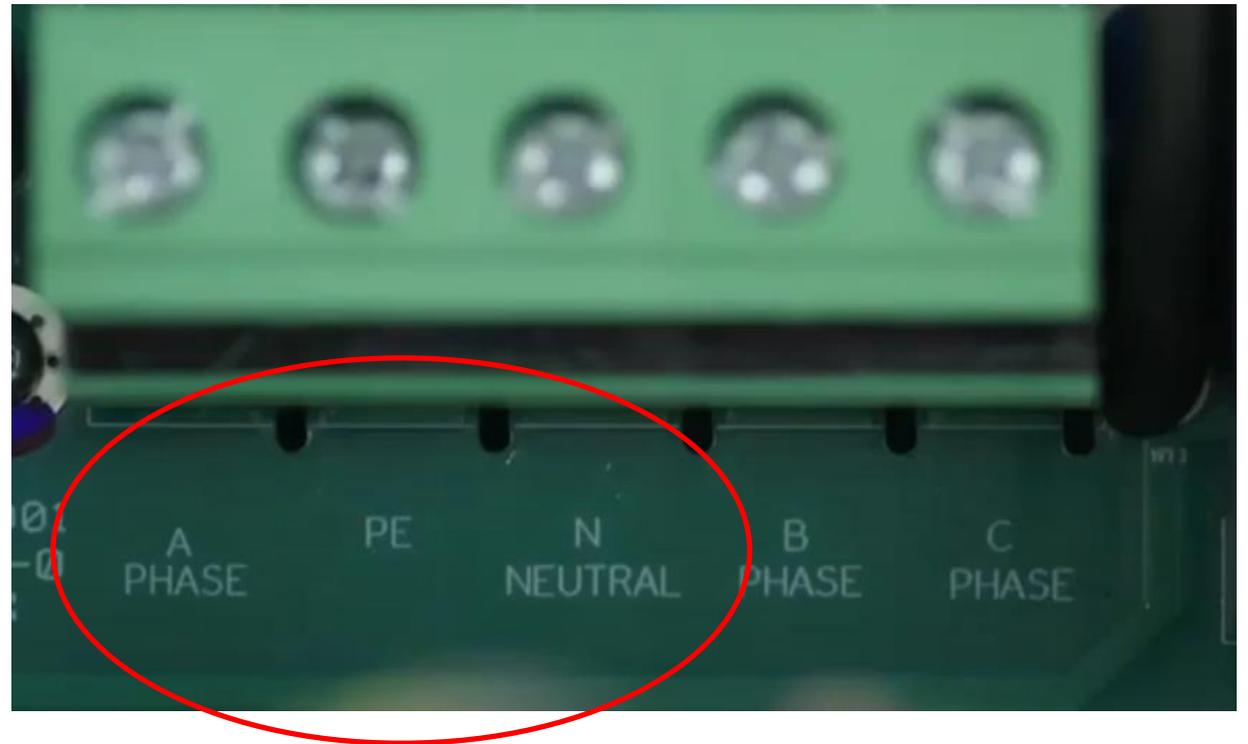
- Every Terra AC Wallbox Wallbox is delivered with a pin code. The pin code is the 8 digits code needed to configure the charger. This is a unique pin code that can bind successfully to the product. **Please store it carefully.**
- For big site installation is recommended to proceed 1 by 1. Completing installation and configuration of Terra AC Wallbox via TerraConfig APP and then move to the next charger.
- The pin code is delivered together with a small RFID card that it's locally whitelisted with the Terra AC Wallbox



Guidelines

Limitation regarding TACW22 3 Phases connected with only 1 Phase

- Terra AC has Phase Detection only on Phase A (L1). If this Phase is not connected the charger will display an error. Please complete the wiring accordingly to the diagram in this slide.
- Is not possible to achieve Dynamic Load Balancing with smart meter with TACW22 connected with only 1 Phase.



On site Activity Step 2: Configuration via TerraConfig APP

Installation Video and Guidelines

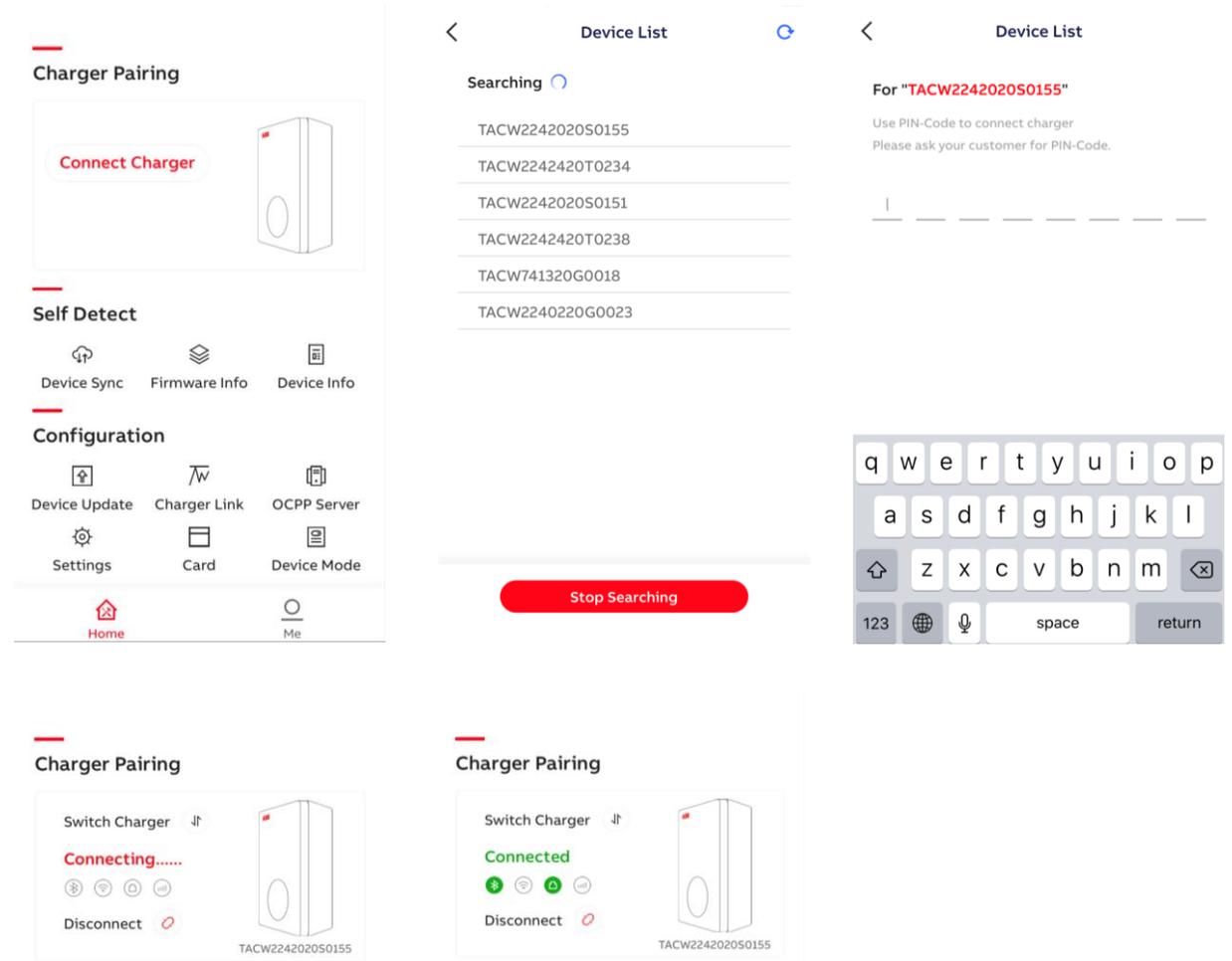
The Terra AC Wallbox is now installed on site. It's time to configure your Terra AC Wallbox via TerraConfig APP.

During this step you will learn how to:

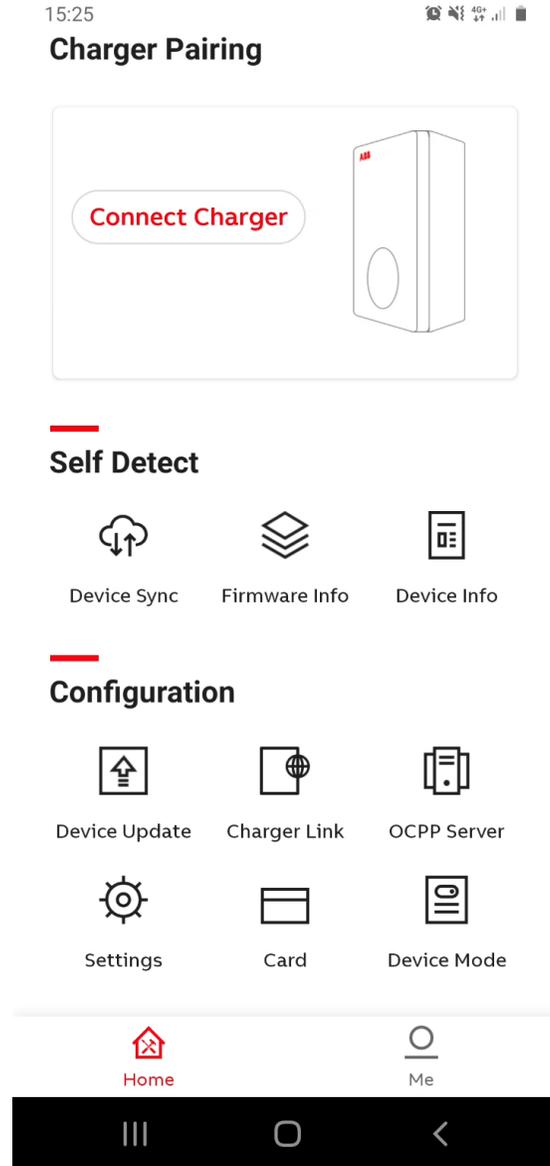
1. Pair the TerraConfig app with the charger via Bluetooth
2. Check firmware version. If required, update FW to the latest version
3. Establish stable internet connection of the Terra AC over WiFi, LAN or 4G
4. Enable external OCPP server and choose the correct backend URL if needed
5. Check via Device info that the URL is the correct one and that internet connection has been established

1- Connect to Charger

1. Smart phone needs to be connected to the internet
2. Bluetooth needs to be enabled
3. Log in to TerraConfig app with your credentials
4. Press 'Connect Charger' to activate search for charger
5. Select your charger from the Device List by Serial Number
6. Enter the Pin code (letters + numbers) **located in the package or** given by charger owner and press 'Continue'.
Note: owner can change the pin code by ChargerSync app
7. TerraConfig app will connect to that charger

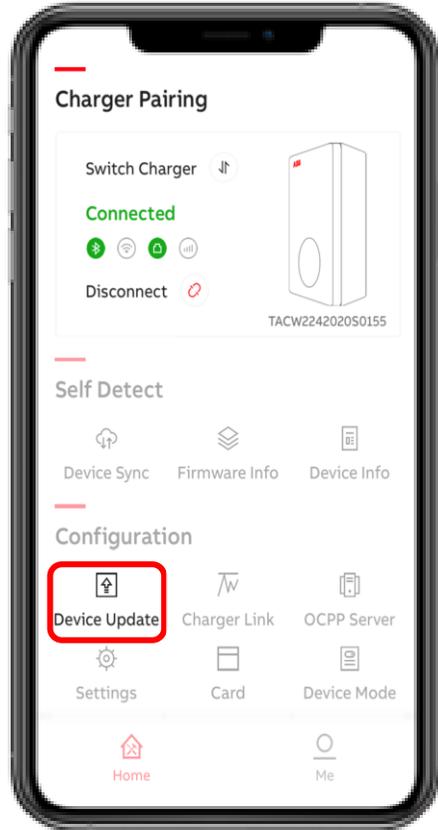


1- Connect to Charger: Video Example



2 - Firmware update

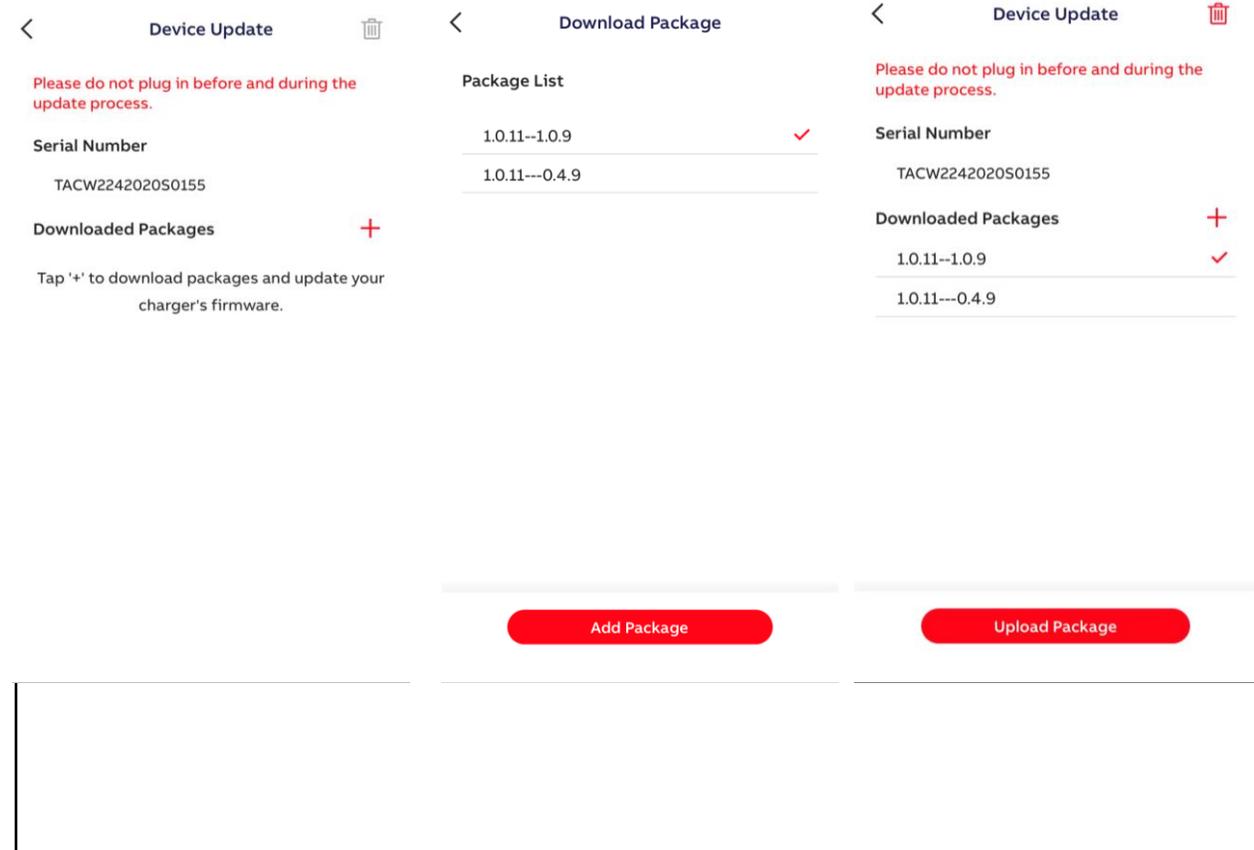
Device Update



With 'Device Update' the latest firmware or specific version can be downloaded and uploaded to the charger.

Press "+" and the TerraConfig App will search for available Firmware.

Followed by Add Package and Upload Package to the charger.



3- Establish stable internet connection

Connectivity

Connectivity options

- Bluetooth established every time the app pairs with the charger

The app connects with the charger only via Bluetooth!

- The internet connectivity options for Terra AC are **WiFi, LAN and 4G**
Depending the option, the symbol becomes green – as shown in the following pictures
- Offline mode is also possible!
(for the connection led to stop blinking)

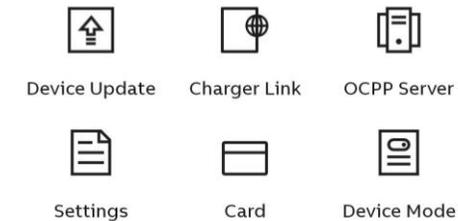
Charger Pairing



Self Detect



Configuration



3- Establish stable internet connection: LAN

Charger Link options

For a charger to talk OCPP with any backend, it needs to be connected to the internet!

At Charger Link we can see the connectivity options.

Any Terra AC has the following options:

- WiFi and LAN
 - 4G type is an extra feature and has to be ordered as one
- Enable LAN will initiate the charger to restart

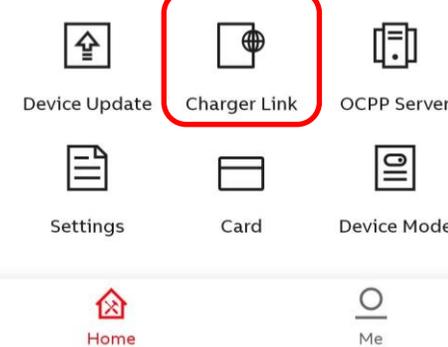
Charger Pairing



Self Detect



Configuration

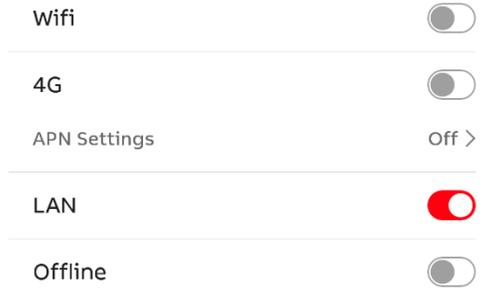


Charger Link

Activation of Network

Select the type of network you want to connect your charger to.

Enable LAN will initiate the charger to restart.



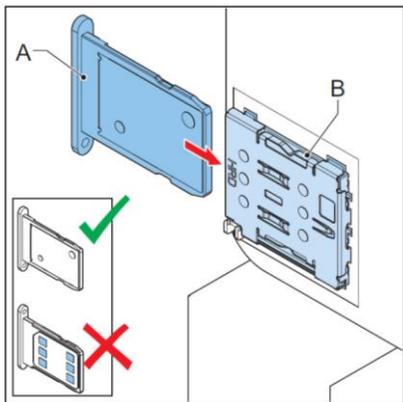
3- Establish stable internet connection: 4G

Charger Link 4G

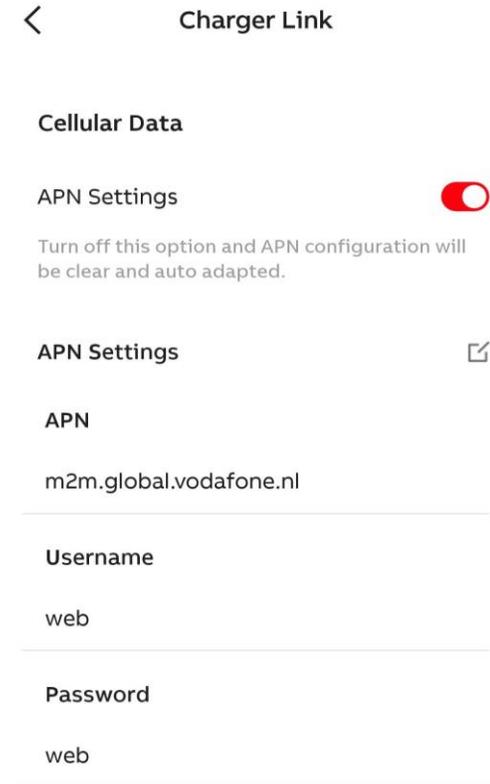
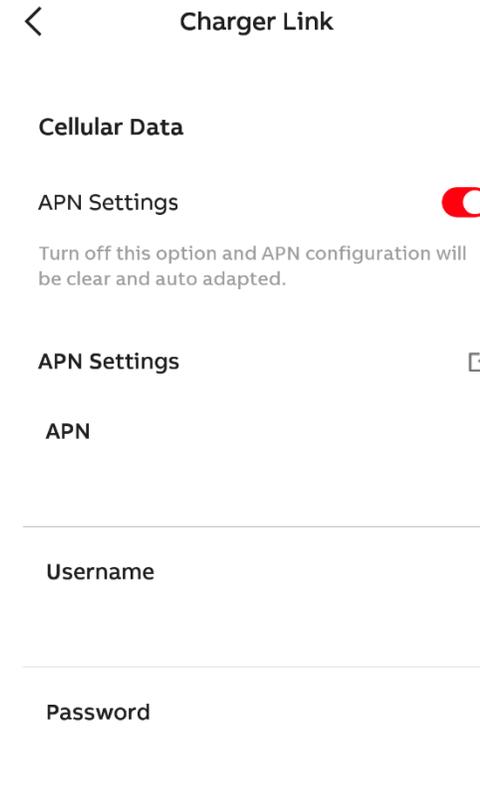
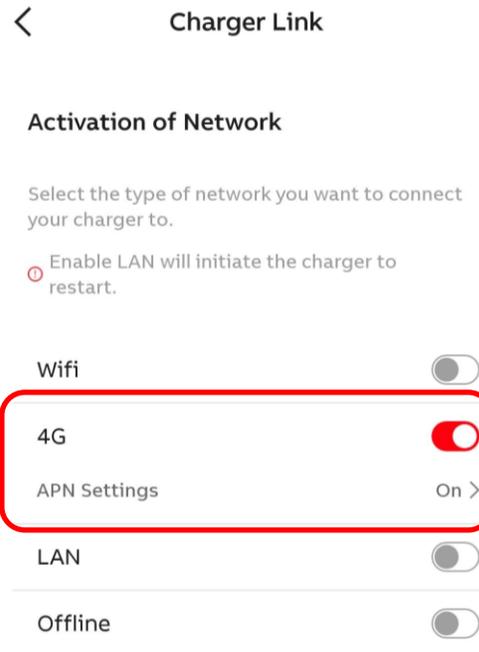
Before configuring the Charger 4G connection insert the m2m nano sim card.

APN settings are necessary!

So make sure you have this information in advance from the 3rd party backend provider

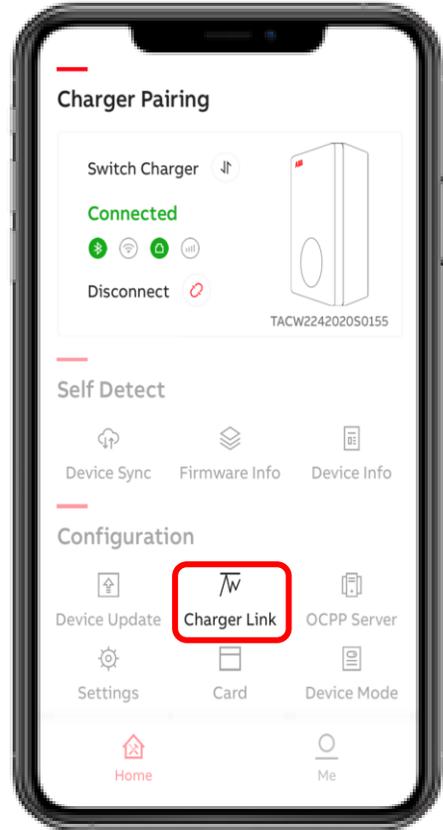


example



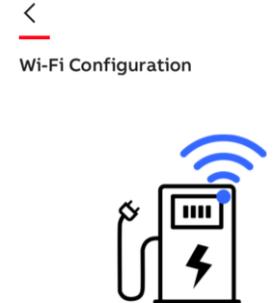
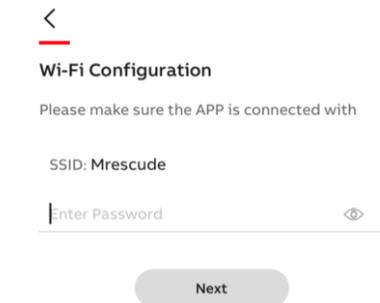
3- Establish stable internet connection: Wi-Fi

Charger Link WiFi



Before configuring the Charger Wi-Fi connection the smart phone needs to be connected to the selected Wi-Fi network first.

1. Enable Wi-Fi and press Wi-Fi Settings
2. SSID shows the connected Wi-Fi network
3. Enter Wi-Fi password and press 'Next'
4. Charger is connected to Wi-Fi network



4- Enable external OCPP server and chooses the correct backend URL

OCPP server

In the OCPP server feature you can enable the external access.

More specifically, if you enable it you can connect to another server.

Default setting is the abb.cdlink.chargedot.com

The screenshot displays the ABB mobile application interface. At the top, the 'Charger Pairing' section shows a 'Switch Charger' button, a 'Connected' status with signal strength icons, and a 'Disconnect' button. The charger ID is TACW741320G0018. Below this is the 'Self Detect' section with icons for 'Device Sync', 'Firmware Info', and 'Device Info'. The 'Configuration' section has a grid of icons: 'Device Update', 'Charger Link', 'OCPP Server' (highlighted with a red box), 'Settings', 'Card', and 'Device Mode'. At the bottom are 'Home' and 'Me' navigation icons.

The 'OCPP Server' configuration screen is shown in two states:

- default OCPP Server:** Shows a diagram with 'Original' server, 'Charger', and 'External' server. The 'Enable external access' toggle is turned off.
- OCPP Server:** Shows the same diagram but with the 'Enable external access' toggle turned on. The 'Serial Number' is TAC2245019S0056 and the 'Server Info' is testabb.cdlink.chargedot.com:9043.

4- Enable external OCPP server and chooses the correct backend URL

OCPP server
external access

Enabling external access shows a drop-down list of possible URLs to connect to.

This list is the same as the OCPP configuration from TerraConfig web portal account! That is why it is needed to put the configuration in advance in the web portal.

By clicking one of the URLs and pressing OK configure the charger.

options

The image displays three sequential screenshots of the OCPP Server configuration interface. The leftmost screenshot shows the 'OCPP Server' configuration page with the 'Enable external access' toggle turned on (red). Below the toggle, the 'Serial Number' is set to 'TACW741320G0018'. Under 'Server Info', the URL 'ocpp16dev.azurewebsites.net:80' is selected. A red 'Configure' button is at the bottom. The middle screenshot is a semi-transparent overlay of the same interface, but the 'Enable external access' toggle is turned off (grey). A red bracket highlights the 'Server Info' section, which lists three URLs: 'http://hcf123.com', 'testabb.cdlink.chargedot.com', and 'uatabb.cdlink.chargedot.com'. The rightmost screenshot shows the 'OCPP Server' configuration page with the 'Enable external access' toggle turned on. The 'Serial Number' is 'TACW741320G0018'. Under 'Server Info', the URL 'ocpp16dev.azurewebsites.net:80' is selected. A red 'Ok' button is at the bottom.

5- Check via Device info correct URL and connection has been established

Device info

Here you can find general information about the Terra AC.

Most specifically, in this case we are interested in the internet connection.

On the server info you can find which backend the charger is connected to.

So please double-check that the charger has established stable connection with the backend.

Charger Pairing

Switch Charger **Connected** **Disconnect**

TACW741320G0018

Self Detect

Device Sync Firmware Info **Device Info** OCPP Server

Configuration

Device Update Charger Link OCPP Server Settings Card Device Mode

Device Info

TAC2245019S0056

Product Type

Performance

Max Power 22kW

Max Current 32A

Phase 3

Outlet type 2 socket with shutter

Internet support

Certification

Internet Connection

Type LAN

Status **Connected**

Server Info

testabb.cdlink.chargedot.com

Device Info

TACW2240220G0044

Product Type

Performance

Max Power 22kW

Max Current 32A

Phase 3

Outlet type 2 cable

Internet support WIFI LAN BLE RFID

Certification

Internet Connection

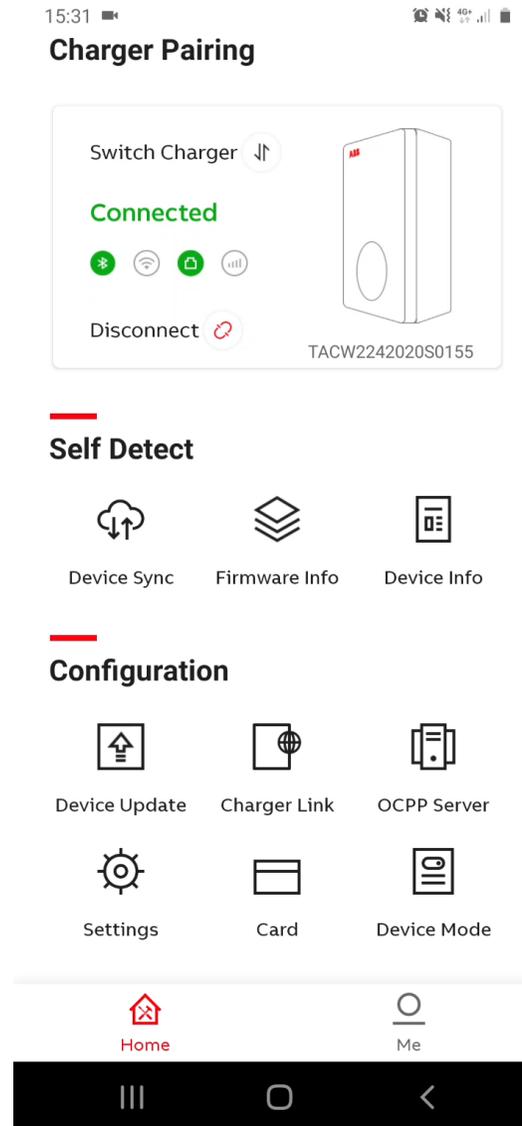
Type 4G

Status **Connected**

Server Info

ocpp16dev.azurewebsites.net

Enable external OCPP server and chooses the correct backend URL: Video Example



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Operations

Operations

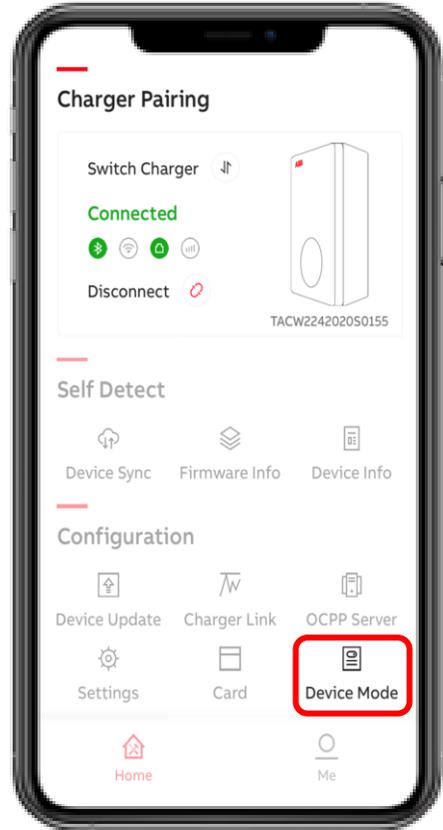
How to operate the site

- Once OCPP integration is achieved, the Server provider must deliver RFID cards to final customers.
- Every Terra AC Wallbox is delivered with a small RFID card which is locally whitelisted. This card will work and authorize even if the site may go offline. Please store it carefully. Every RFID card work only with his Serial Number assigned; it is a 1 to 1 relationship.
- If is not needed to achieve OCPP connection in the first stage and every car will always charge in the same stall, the most convenient solution is always keeping the local RFID link with the key of the car. In this way you will always be able to authorize the charging session. If for some reason the RFID is not available on site, it's recommended to leave the Terra AC Wallbox in Free Vending mode. This is a simple activity to do via TerraConfig APP. Please check it in the next slide



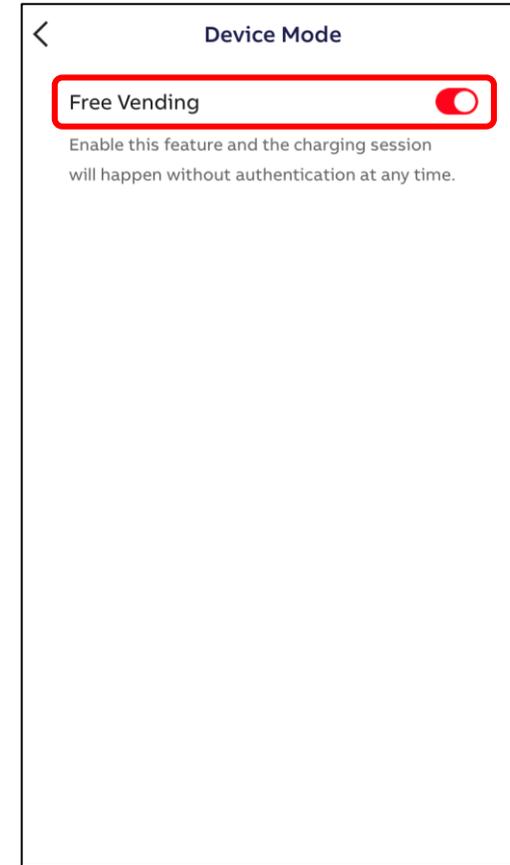
How to achieve Free Vending Mode

Device Mode



With Device mode the Terra AC Wallbox can be enabled for free vending mode.

- **no authentication** (RFID authorization is not needed)



Full guide summary :



1. Preparation Step 1: Accounts for TerraConfig Web Portal and App.

Before going on site and proceeding with the installation you must have all your IT tools ready to commission correctly the charger on site. In this section you will find information regarding TerraConfig Web Portal and APP account management.

2. Preparation Step 2: OCPP configuration in Web Portal TerraConfig.

If you want to connect Terra AC to another OCPP backend, before going on site and proceeding with the installation you must have registered the OCPP configuration in TerraConfig Web Portal.

In this section you will configure in TerraConfig Web Portal.



1. On site Activity Step 1: Installation.

After completing the Preparation process, you are ready to go on site.

During this step you will install Terra AC Wallbox.

Please watch the installation video before conducting any installation

2. On site Activity Step 2: Configuration via TerraConfig APP.

The Terra AC Wallbox is now installed on site. It's time to configure your Terra AC Wallbox via TerraConfig APP.

During this step you will learn how to:

1. Pair the TerraConfig app with the charger via Bluetooth
2. Check firmware version. If required, update FW to the latest version
3. Establish stable internet connection of the Terra AC over WiFi, LAN or 4G
4. Enable external OCPP server and choose the correct backend URL if needed
5. Check via Device info that the URL is the correct one and that internet connection has been established.

ABB