

# ComboCS4M OCPP - OCPP Simulator

Accelerate and make CCS developments more reliable

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Trialog is working on EV charge since more than 10 years and had several opportunities to develop a strong expertise on Electro-Mobility charge protocols like IEC 61851-1, DIN 70121, ISO 15118 and OCPP 1.6/2.0.

In this context, Trialog has developed several testing and validation tools.



**ComboCS4M OCPP, the EVSE Simulator for OCPP testing** is one of these tools. It aims to enable and simplify CCS and OCPP developments by providing simulation and test means of OCPP 1.6 and 2.0.1 protocols for Mode 3 or Mode 4 charging sessions with or without CCS communication. This tool allows to:

- Simulate an AC Mode 3 EVSE and a DC Mode 4 charger, including the OCPP communication;
- Follow in real-time the communication through the embedded UI;
- Change in real-time the EVSE behaviour.

ComboCS4M OCPP is actually an EVSE ComboCS4M with the OCPP option activated. For more details about the Mode 3 and CCS communication, check the EVSE ComboCS4M datasheet.

## Technical Details

ComboCS4M OCPP is a box, simulating an EVSE with an OCPP endpoint. This EVSE allows to perform AC or DC, ISO 15118 or DIN 70121 communications with an EV, including the HPGP PLC and IEC 61851-1 communications.



Figure 1: ComboCS connectors - Face 1



Figure 2: ComboCS connectors - Face 2

- Size: 23x15x6 cm
- Connectors:
  - Control Pilot and Protective Earth: BNC
  - CAN: DB9 (*reserved for future usage or specific development*)
  - 6 GPIO: AWHW 10G-0202-T (*reserved for power transfer add-on or specific development*)
- Interface
  - WiFi hotspot
  - Ethernet RJ45
- Wires provided with the tool
  - AC/DC 230V/12V barrel jack
  - Type 2 plug with BNC connector
  - Ethernet wire

## Typical Setup

The ComboCS4M OCPP shall be connected to an OCPP CSMS using the Ethernet port or the WiFi access. As depicted below, to trigger charging sessions, it shall also be connected to an EV simulator:

Either a simple Mode 3 simulator:



Or a CCS EV simulator like the EV ComboCS4M:



## Supported Features

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### **Development in progress**

Implementation in progress. First release is already available with an almost complete OCPP implementation but a limited User Interface. A more complete release is expected for December 2022. For more information, please contact us.

This datasheet will be updated regularly.

The ComboCS4M OCPP could be used in any setup in needs of a Mode 3 or CCS EVSE implementation for OCPP validation. For example, to validate the correct behaviour of an OCPP 1.6 or 2.0.1 CSMS implementation.

### **Simple configuration**

The ComboCS4M OCPP configuration and CSMS endpoint can be configured from the Web interface.

OCPP Configuration

✓ Configure

**Enable OCPP**  Enable

General

**OCPP Version** v1.6

**CSMS endpoint URL** ws://127.0.0.1:8085/csms

**EVSEID** FR\*TRI\*E001

Basic Authentication

**Basic Authentication password** testing

Secured Channel

Port + Proxy path

Figure 3: OCPP configuration interface

## Simple access to OCPP details

OCPP communication logs can be downloaded to analyse the OCPP connexion status and the last exchanged OCPP messages and OCPP errors.

## Supported OCPP Use Cases

The ComboCS4M OCPP is supporting both OCPP 1.6 and 2.0.1 versions. All OCPP messages are supported, but the OCPP ComboCS4M does not react necessarily to all of them. The following use cases are currently supported:

Use Case	Status
A01 - Update Charging Station Password for HTTP Basic Authentication	Available
A02 - Update Charging Station Certificate by request of CSMS	Validation in progress
A03 - Update Charging Station Certificate initiated by the Charging Station	Validation in progress
B01 - Cold Boot Charging Station	Available
B02 - Cold Boot Charging Station - Pending	Available
B03 - Cold Boot Charging Station - Rejected	Available
B04 - Offline Behavior Idle Charging Station	Validation in progress
B05 - Set Variables	Validation in progress
B06 - Get Variables	Available
B11 - Reset - Without Ongoing Transaction	Available
B12 - Reset - With Ongoing Transaction	Available
C01 - EV Driver Authorization using RFID	Available
C08 - Authorization at EVSE using ISO 15118 External Identification Means (EIM)	Available
C15 - Offline Authorization of unknown Id	Validation in progress
Additional UC: Authentication via l'EVCCID	Not implemented yet
E01 - Start Transaction Options	Available
E02 - Start Transaction - Cable Plugin First	Available

E03 - Start Transaction - IdToken First	Available
E04 - Transaction started while Charging Station is offline	Available
E06 - Stop Transaction options	Available
E07 - Transaction locally stopped by IdToken	Validation in progress
E11 - Connection Loss During Transaction	Validation in progress
E12 - Inform CSMS of an Offline Occurred Transaction	Validation in progress
E13 - Transaction related message not accepted by CSMS	Validation in progress
E15 - End of charging process	Validation in progress
F03 - Remote Stop Transaction	Available
F04 - Remote Stop ISO / IEC 15118 charging from CSMS	Available
F05 - Remotely Unlock Connector	Validation in progress
F06 - Trigger Message	Available
G01 - Status Notification	Available
G02 - Heartbeat	Available
G03 - Change Availability EVSE	Implementation in progress
G04 - Change Availability Charging Station	Implementation in progress
J02 - Sending transaction related Meter Values	Available
K01 - SetChargingProfile	Implementation in progress
K02 - Central Smart Charging	Implementation in progress
K05 - Remote Start Transaction with Charging Profile	Implementation in progress
K06 - Offline Behavior Smart Charging During Transaction	Implementation in progress
K07 - Offline Behavior Smart Charging at Start of Transaction	Implementation in progress
K16 - Optimized charging with scheduling to the CSMS	Implementation in progress
K17 - Renegotiating a Charging Schedule	Implementation in

	progress
N01 - Retrieve Log Information	Validation in progress

## Contact us

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For more information about **ComboCS4M OCPP**, please contact us:  
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