comemso

EVCA interop

Technical datasheet

EVCA interop

Complete charging insight. Automated conformance.

EVCA Interop captures the full charging process — including PLC, CP, PP, voltage and current — and automatically evaluates timing and charging conformity against the standard.

The comemso EVCA interop is designed as a compact all-in-one man-in-the-middle solution for testing interoperability between EVs and EVSEs.
In combination with our software comframe, it enables efficient analysis, monitoring, and evaluation of communication behavior and charging processes according to relevant standards.

The comemso EVCA interop combines the charging standards AC + DC CCS 1 and AC + DC CCS 2, or AC + DC CCS 1 and DC NACS.

A maximum of 2 inlets (CCS 1 + CCS 2 or CCS 1 + NACS) are available in one system. The system is directly ready for use without the need of prior plugging or replacing of inlets. Once the desired charging standard has been set, the EVCA interop measures and checks communication and load circuit for standard conformity over the entire charging period and records any deviations.

The CCS 1, CCS 2, and NACS parts of the EVCA interop all share the same CCS Core. Therefore, you can only test one charging standard at a time.
The desired charging standard is selected by software means.

CCS Core
Control part of CCS simulations for conductive charging of electric vehicles, including data recording and controlling on CAN interface as remote control.

The CCS Core includes a PP simulator, CP simulator, and two CP measurment moduls for synchronous measurment of EV and EVSE CP signal behaviour.
The PP, R2 and R3 resistors can be simulated in the range of 0-8 kOhm in 1 Ohm steps.

The measurement of CP and PP signals, PLC timing, content analysis in accordance with standards, and voltage and current measurement (AC/DC) are all performed time-synchronously.

Control Pilot (CP)
· Long-term analysis throughout the charging process (e.g. as man-in-the-middle)
· Analysis / examination of the CP in all parameters
· Analysis / testing according to IEC 61851, SAE J1772
· Comfortable EV test / EVSE test in all parameters, stress tests, etc.

Power Line Communication (PLC)
· 2x PLC modules each with RJ45 socket for PC connection
· Connection of the PLC modules to the CP signal can be switched on/off, controllable over CAN
· Analysis according to DIN 70121 and ISO 15118 (basic included, for more additional software required)
· Integrated hardware possibilities for PLC passive gateway, which can be activated over CAN bus
· PLC Sniffer for PLC monitoring optional (hardware option)
· PLC manipulating gateway optional (software option)

Emulation of EV and Charger (ComOnly)
· Standard EV and charger behaviour (ideal behaviour according to the standard)
· Adjustable settings for EV and charger simulation
· Set values of communicated information, e.g. charge voltage, charge current (only communication - no DC voltage/current available)
· Parallel measurement and analysis with monitoring function for verification

Software Features
· Reports can be generated via the provided software.
· Automated measurement report of message timings, voltages, currents, signals for man-in-the-middle and similar for EV/EVSE simulation
· The EVCA interop can be remotely controlled with REST API via Ethernet (PC - PC/local host on same PC).

CE

Specifications

Power supply	90 - 240 V AC
Power consumption EVCA interop	Max. 200 W – inrush current might be higher
Configuration	Available in different configurations
Measuring range AC	Voltage: 0 - 400 V; resolution AC +/- 1 V Current: 0 - 32 A; +/- 0.5 A resolution (AC)
Measuring range DC	Voltage: 0 - 1000 V; resolution DC +/- 0.1 V Current: 0 - 200 A; +/- 0.1 A resolution (DC)
Measuring accuracy AC	Voltage: +/- (1 V + 0.5 % of measured value) Current: +/- (0,5 A + 0.5 % of measured value)
Measuring accuracy DC	Voltage: +/- (1 V + 0.2 % of measured value) Current: +/- (0,1 A + 1.0 % of measured value)
Measuring accuracy CP voltage signals	+/- 0.1 V
Measuring accuracy PP resistance	+/- 2 %
Protection class	IP 67 (closed case), IP 43 (opened case)
Temperature range	0 ... + 50 °C / 32 - 122 °F
Humidity	< 80 % non-condensing
Transportability	Portable case
Weight	About 17 kg / 38 lbs
Dimension (WxHxD)	60 x 33 x 40 cm / 24 x 13 x 16 inch

Measurement and Communication

EV Charging Analyzer AC	Voltage: AC 0 V rms ... 400 V rms Current: max. 32 A Communication: CAN-Bus CAN Baudrate: 1 MBd
EV Charging Analyzer DC-CCS/NACS	Voltage: max. 1000 V Current: max. 200 A Communication: CAN-Bus CAN Baudrate: 1 MBd

Charging Limit Values

Charging Standard	Voltage DC	Current DC	Voltage AC	Current AC
CCS 1	1000 V	200 A	240 V	32 A x 1 phase
CCS 2	1000 V	200 A	240 V	32 A x 3 phase
NACS	1000 V	200 A	–	–

Charging Protocols

AC CCS	IEC 61851-1, ISO 15118-2, ISO 15118-3, ISO 15118-4, ISO 15118-5, ISO 15118-20*, SAE J1772
DC CCS	IEC 61851-1, DIN 70121, ISO 15118-2, ISO 15118-3, ISO 15118-4, ISO 15118-5, ISO 15118-20*, SAE J1772
NACS	IEC 61851-1, DIN 70121, ISO 15118-2, ISO 15118-3

* Currently not yet as a man-in-the-middle.

EVCA Interoperability Testing with Man-in-the-Middle (Webinar):
https://chargedevs.com/mar-2026-session/how-to-isolate-charging-interoperability-failures-fast-without-endless-site-hopping-and-raw-hex-dumps/

Accessories

- Different AC and DC cables
- IXXAT® CAN Device (1 Ch or 2 Ch)
- USB 3.0 Ethernet Adapter
- Software comframe

Service

- Additional test standards available* (please contact sales@comemso.de).
- Optional calibration service according to ISO 17025
- Customer support

*The available test standards, test libraries and manual tests (half-automated tests) may differ from the table above and your purchased configuration

"For many years, comemso has set itself high standards in the development of test and validation systems in order to deliver optimal solutions for its customers."

16 years Innovation

Understanding and simulating test processes

For 16 years, comemso has been developing test systems to optimize e-mobility systems. Today, we are more determined than ever to continue enriching the electric mobility market with innovations. To find the best possible solution, we always carry out our own practical tests. The insights gained from these tests are directly incorporated into the development of new solutions and products.

Variants

116-1-063 –
EVCA interop Flex CCS 1 + 2

116-1-065 –
EVCA interop Flex CCS 1 + DC NACS

Accessories

116-3-002 –
Flex DC CCS COMBO2 200A cable

116-3-003 –
Flex DC CCS COMBO1 200A cable

116-3-008 –
Flex DC NACS 200A cable

003-3-102 –
EVCA-5 AC EV: Cable T2, 32A

003-3-112 –
EVCA-5 AC EV: Cable T1, 32A

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