

DC CHINA ANALYZER/SIMULATOR



DC China analysis and simulation for GB/T charging standard.

New challenges ...

Advancing developments in e-mobility make vehicle and charging system manufacturers meet new challenges. For example the Chinese standard GB/T describes the requirements on DC charging systems, electrical circuits and the communication protocol to control the charging process. By combining electric vehicles and charging systems of various manufacturer, different system tolerances and disturbing influences may occur. The reasons of charge interruptions are very difficult to locate due to the long charging process.

... meet new solutions.

The comemso DC China Analyzer/Simulator measures and verifies both – communication and load circuit – on standard-conformity over the complete duration of charging and captures all deviations. In this way it's possible to identify non-conformity of charging and get the reasons for charge interruptions.





Monitoring

- ▶ Communication analysis according to GB/T 27930-2011, 27930-2015
- ▶ Synchronous measurement of:
 - DC voltage and current
 - auxiliary power supply voltage and current
- ▶ Quality analysis of CAN physical layer
- ▶ Connection confirmation
- ▶ Temperature measurement of DC connectors (option)
- ▶ Protocol analysis:
 - Timings of communication and charging
 - Communication order
- ▶ All measurement and analysis data is provided over CAN

EV test

- ▶ Standard Charger simulation
- ▶ Professional Charger simulation (option)
- ▶ Semi-automated tests (option)
- ▶ Robustness tests and hardware fault injection (option)

Charger test

- ▶ Standard EV simulation
- ▶ Professional EV simulation (option)
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Graphical user interface (GUI)

- ▶ Ready project with comfortable panels for Vector CANoe. Recommended option: SAE J1939-21 CAN transport protocol

DC power circuit

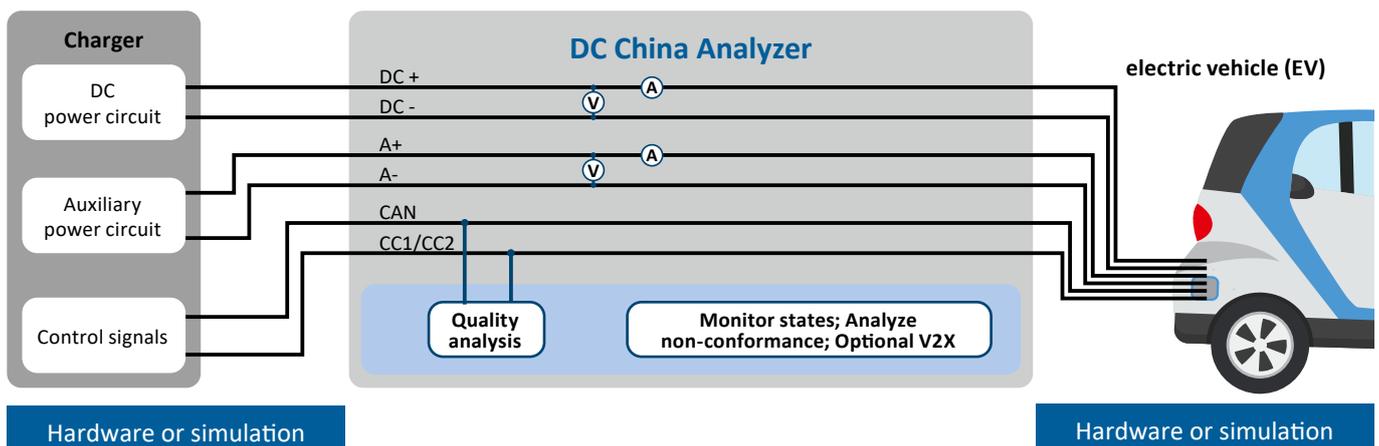
- ▶ Connectors for 750 V / 250 A (Connector limitation)
- ▶ Measurement up to 1000 V / 350 A

Auxiliary power supply

- ▶ Integrated signal simulation
- ▶ Measurement up to 30 V / 20 A

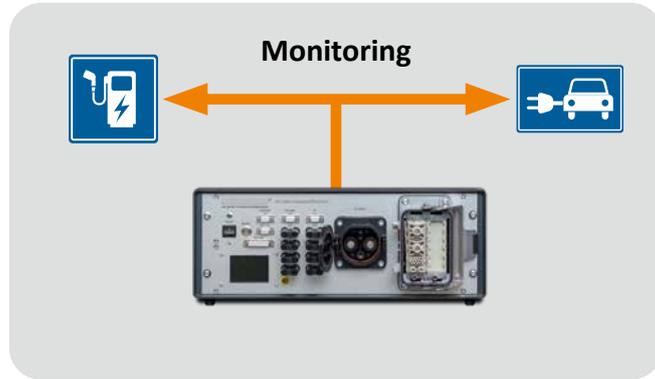
CC1 / CC2

- ▶ Measurement from 0 V to 30 V

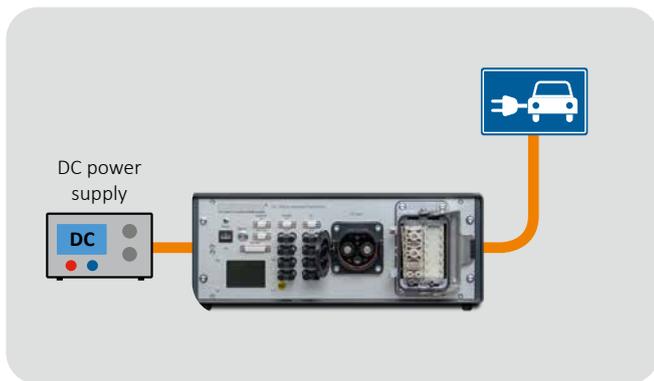


Engineered for different kind of use.

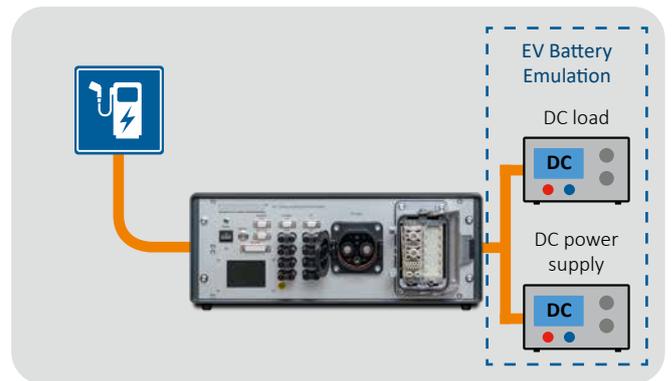
Charging verification (Measure only):



EV Test:



Charger Test:



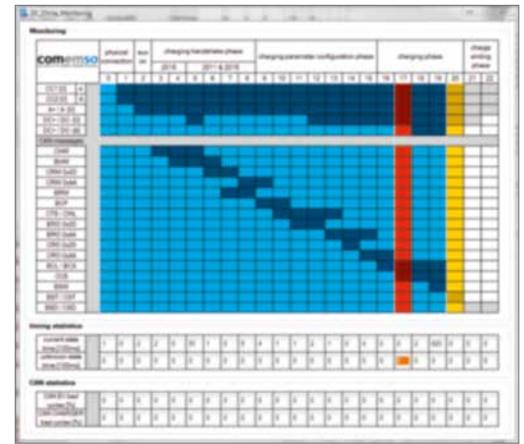
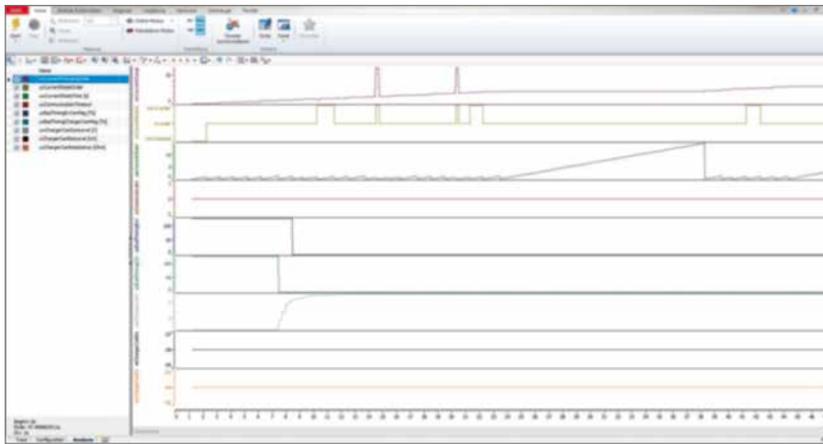
The DC power supply and DC load can be controlled via CAN and have an integrated comemso interface.

Charging verification (Monitoring):



The DC China Analyzer/Simulator supports communication between electric vehicle and charger according to the standards of GB/T 27930-2011 and GB/T 27930-2015, including the support of a simplified SAE J1939-21 CAN transport protocol to handle CAN messages with a DLC up to 512 bytes.

Detect and verify charge states, timings and CAN statistics.



Measurement

- ▶ Measure and check timings.
- ▶ Measure DC voltage and DC current.
- ▶ Measure temperature of DC contacts. (option)
- ▶ Measure auxiliary voltage and current.
- ▶ Measure CC1 and CC2 voltage.
- ▶ Measure CAN cycle time:
 - Statistics of good and bad cycle times.
- ▶ Measure CAN signal quality:
 - Voltage of dominant and recessive level.

Summary

- ▶ Detect charge states.
- ▶ Verify state changes.
- ▶ Detect stop events.
- ▶ Detect disturbances.
- ▶ Check DC voltage/DC current values.
- ▶ Check auxiliary voltage/current values.
- ▶ Compare signals with communicated values.
- ▶ Detect reasons of charging issues.
- ▶ Detect Safety issues (overtemperature of contacts, voltage and current peaks, missing welding check etc.).

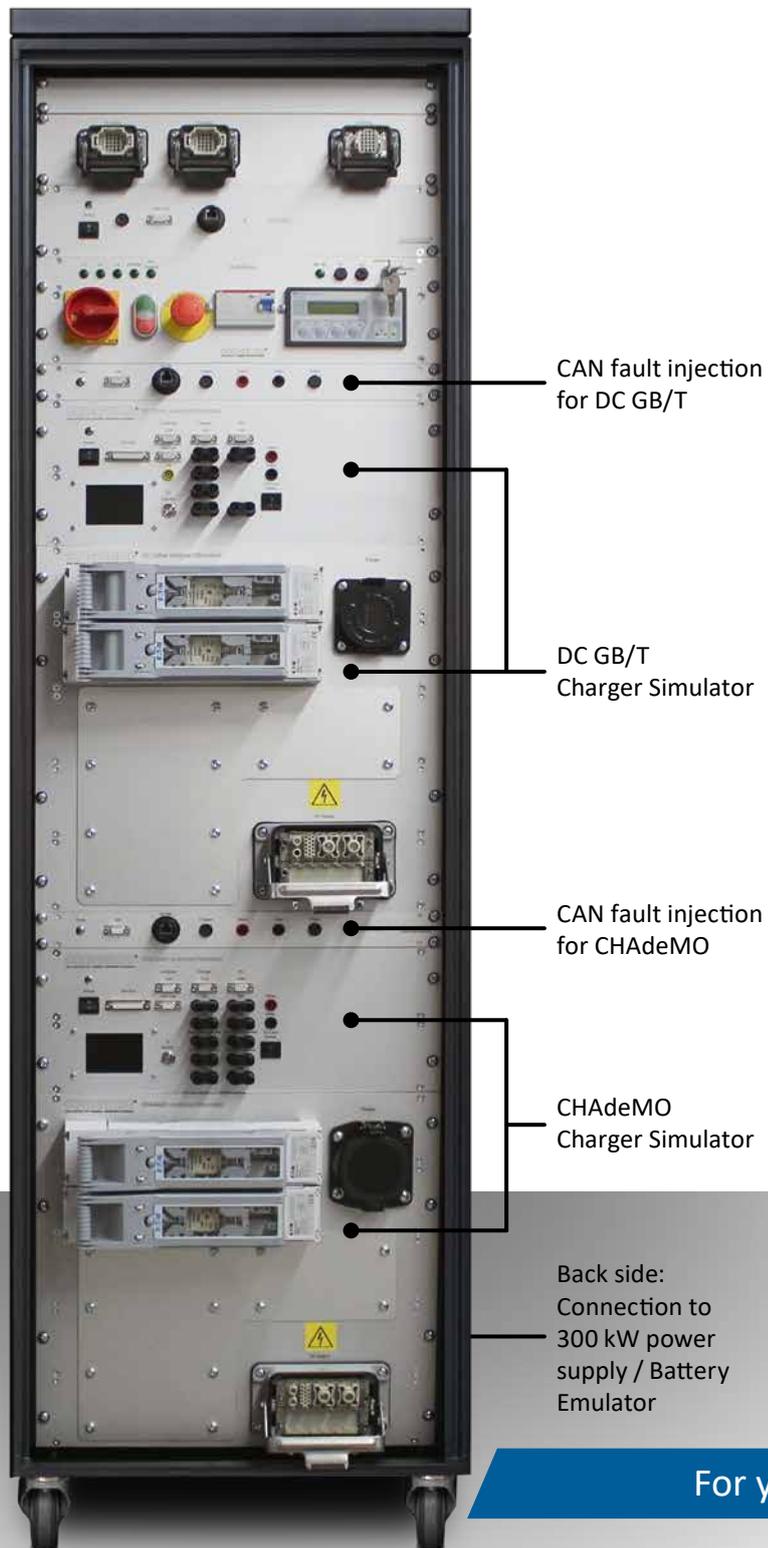
Also available:

- ▶ Full simulation of electric vehicle.
- ▶ Full simulation of charger.
- ▶ Test libraries. (coming soon)
- ▶ Robustness tests.
- ▶ Further hardware for fault injection.
- ▶ Different power supplies and loads available, integrated for control fitting to the charging process. On request integration of customer's power supply and load possible. (customization)

For field application or laboratory use:

- ▶ Robust casing for mobile outdoor use – IP67.
- ▶ Power supply 100V .. 230V.

Different DC CHINA test systems according to your needs.



For your lab ...



... or mobile application.

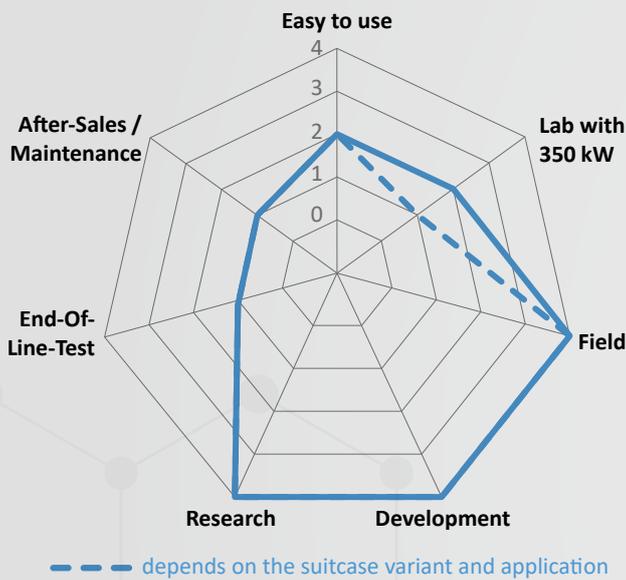
Product categorization matrix.

The product categorization matrix from comemso gives you an overview of the features and possibilities of the system presented in this brochure. This

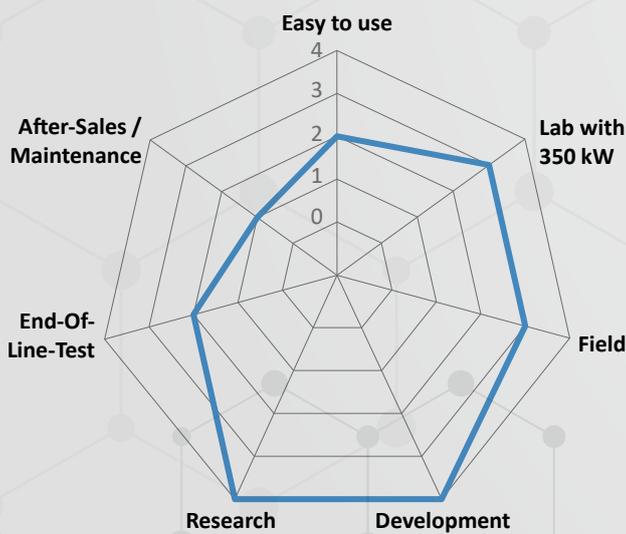
helps you to find the right comemso system for your application.

General

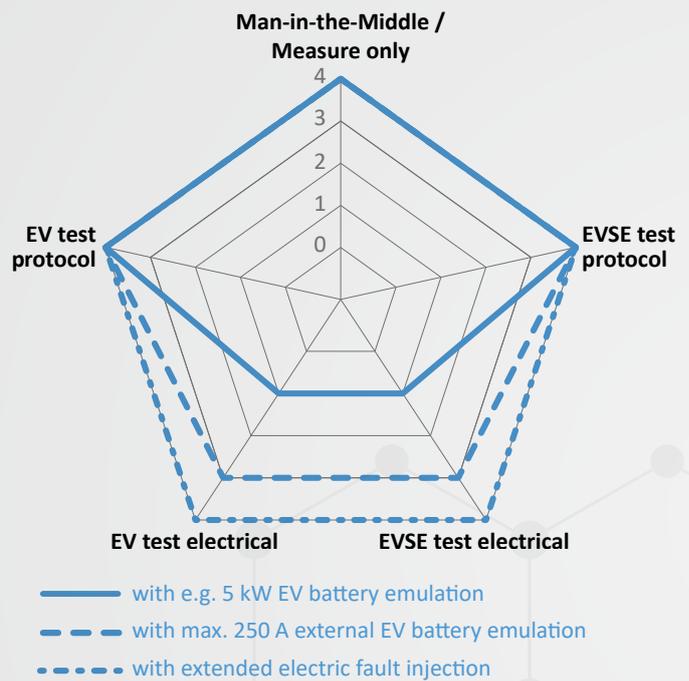
Mobile suitcase version



Mobile rack version



Applications



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