DC China Analyzer / Simulator

for DC charging of electric vehicles – analysis according to the GB/T standard

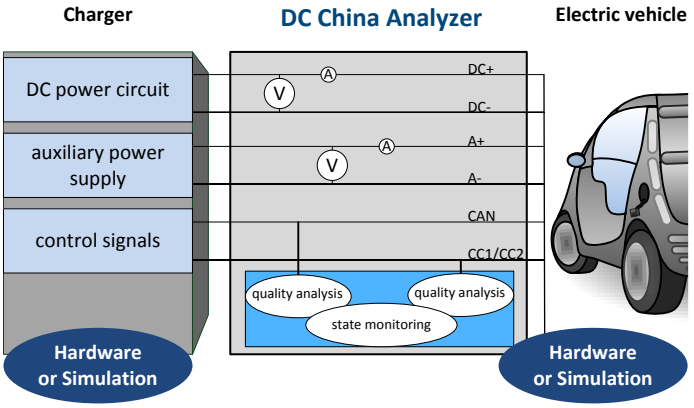
New challenges…

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.

Charging verification



Features

Monitoring:

- communication analysis according to GB/T 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
- protocol analysis:
  - timings of communication and charging
  - communication order
- All measurement and analysis data is provided over CAN

Gateway with manipulation:

- manipulation of CAN data

EV test:

- Standard Charger simulation

Charger test:

- Standard EV simulation

Graphical user interface (GUI):

- ready project with comfortable panels for Vector CANalyzer / Vector CANoe. Recommended Option: SAE J1939-21 CAN transport protocol

DC power circuit:

- connectors for 750V / 125A
- Measurement up to 1000V / 350A

Auxiliary power supply:

- connectors for 30V / 20A
- measurement up to 30V / 20A

CC1/CC2 signals:

- Measurement from 0V to 30V

Please contact for more information:

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DC China Analyzer / Simulator

Use cases

Charging verification (man-in-the-middle)

Monitoring

Gateway with manipulation

EV test

Charger test

DC power supply:

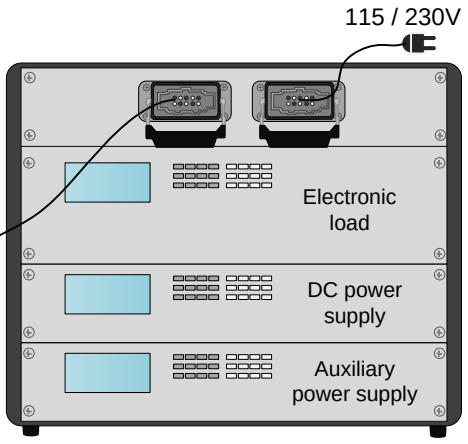
- controllable over CAN
- integrated interface by comemso

Auxiliary power supply:

- controllable over CAN
- integrated interface by comemso

DC load:

- controllable over CAN
- integrated interface by comemso



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DC China Analyzer / Simulator

Monitoring

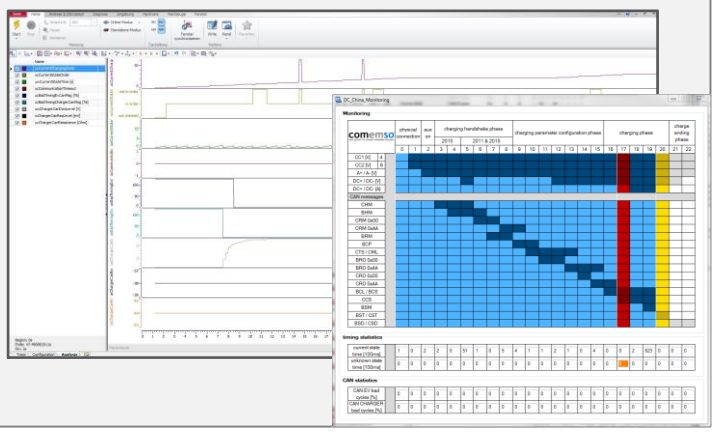
Charging verification (man-in-the-middle / monitoring)

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.

Measurement

- ☑ Measure and check timings
- ☑ Measure DC voltage and DC current
- ☑ Measure temperature of DC contacts
- ☑ 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

Detect and Verify charge states, timings and CAN statistics:



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 problems
- ☑ Detect Safety issues (overtemperature of contacts, voltage and current peaks, etc.)

Also available:

- ☑ Fully simulation of electric vehicle
- ☑ Fully simulation of charger

For field application or laboratory use:

- ☑ robust casing for mobile outdoor use - IP67
- ☑ power supply 100...230V

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