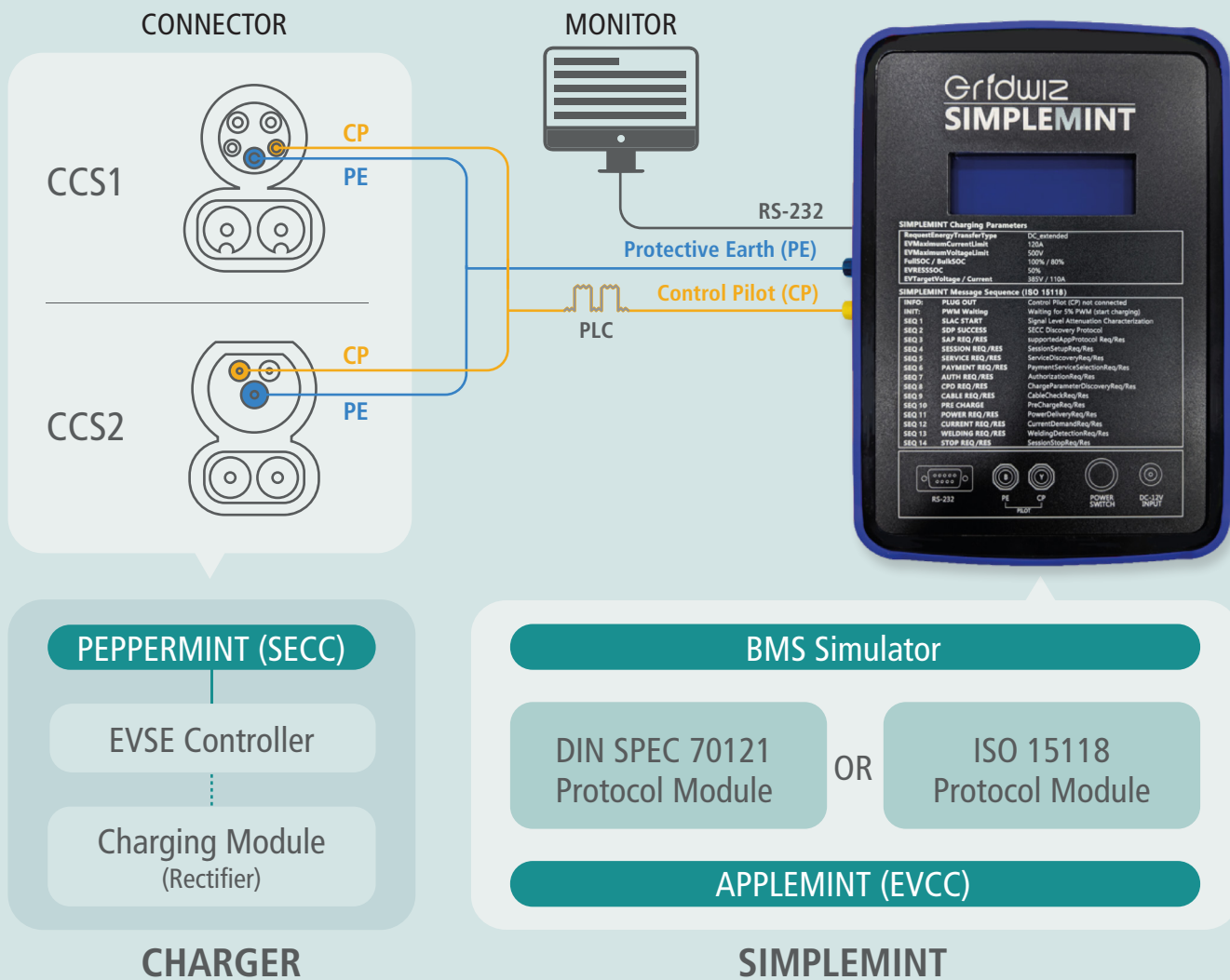# Gridwiz SIMPLEMINT

EV Simulator for CCS EVSE Development

SIMPLEMINT is an EV Simulator embedded with the common charging sequences for the communication between EV Charger and Electric Vehicle (EV) based on **DIN SPEC 70121** and **ISO 15118**.

SIMPLEMINT is economically efficient product, which includes EVCC and BMS Simulator, to get the accurate correspondence without Electric Vehicle.

CONNECTOR   MONITOR

CCS1

CP
PE

RS-232

Protective Earth (PE)

Control Pilot (CP)

PLC

CP
PE

CCS2

Gridwiz
SIMPLEMINT

SIMPLEMINT Charging Parameters

RequestEnergyTransferType	DC_extended
EVMaximumCurrentLimit	120A
EVMaximumVoltageLimit	500V
FullSOC / BulkSOC	100% / 80%
EVRESSSOC	50%
EVTargetVoltage / Current	385V / 110A

SIMPLEMINT Message Sequence (ISO 15118)

INFO:	PLUG OUT	Control Pilot (CP) not connected
INIT:	PWM Waiting	Waiting for 5% PWM (start charging)
SEQ 1	SLAC START	Signal Level Attenuation Characterization
SEQ 2	SDP SUCCESS	SECC Discovery Protocol
SEQ 3	SAP REQ /RES	supportedAppProtocol Req/Res
SEQ 4	SESSION REQ /RES	SessionSetupReq/Res
SEQ 5	SERVICE REQ /RES	ServiceDiscoveryReq/Res
SEQ 6	PAYMENT REQ /RES	PaymentServiceSelectionReq/Res
SEQ 7	AUTH REQ /RES	AuthorizationReq/Res
SEQ 8	CPD REQ /RES	ChargeParameterDiscoveryReq/Res
SEQ 9	CABLE REQ /RES	CableCheckReq/Res
SEQ 10	PRE CHARGE	PreChargeReq/Res
SEQ 11	POWER REQ /RES	PowerDeliveryReq/Res
SEQ 12	CURRENT REQ /RES	CurrentDemandReq/Res
SEQ 13	WELDING REQ /RES	WeldingDetectionReq/Res
SEQ 14	STOP REQ /RES	SessionStopReq/Res

RS-232   PE   CP   POWER SWITCH   DC-12V INPUT
PILOT

CHARGER

PEPPERMINT (SECC)

EVSE Controller

Charging Module
(Rectifier)

SIMPLEMINT

BMS Simulator

DIN SPEC 70121 Protocol Module	OR	ISO 15118 Protocol Module

APPLEMINT (EVCC)

On the LCD display, the user can **monitor real-time EV charging sequence** without connecting PC program.

This device is also best fit for testing communication in the maintenance and product inspection as well as developing of the EV Charger.

The user can check the following data in each charging sequence:

- PWM signaling based on IEC 61851 (CP duty, CP voltage)
- SLAC sequence for PLC association of HomePlug Green PHY standard
- HLC (High Level Communication) of charging protocol for data communication

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EV Simulator for CCS EVSE Development

SEQUENCE

SLAC

HLC

PWM Signaling

- SEQ 1. SLAC START
- SEQ 2. SDP SUCCESS
- SEQ 3. SAP REQ/RES
- SEQ 4. SESSION REQ/RES
- SEQ 5. SERVICE REQ/RES
- SEQ 6. PAYMENT REQ/RES
- SEQ 7. AUTH REQ/RES
- SEQ 8. CPD REQ/RES
- SEQ 9. CABLE REQ/RES
- SEQ 10. PRECHARGE REQ/RES
- SEQ 11. POWER REQ/RES
- SEQ 12. CURRENT REQ/RES
- SEQ 13. WELDING REQ/RES
- SEQ 14. STOP REQ/RES

RS-232 Port
- Debug console
- F/W update

PE
Protective Earth

CP
Control Pilot

Power Switch

DC 12V Input

LCD
- Sequence
- CP DUTY
- CP VOLTAGE

215 mm

46 mm

150 mm

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RS-232   PE   CP   POWER SWITCH   DC-12V INPUT
PILOT

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