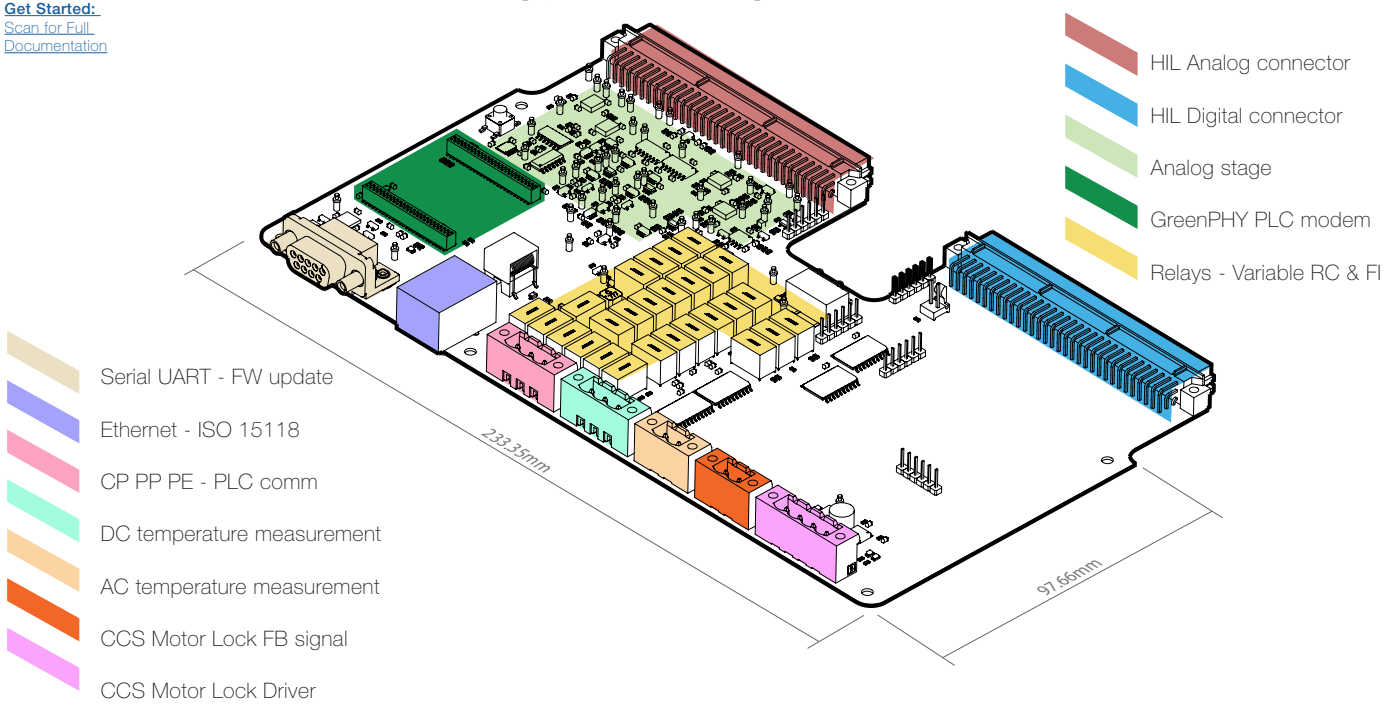
HIL CCS Interface

Start testing your control algorithm in no time.

Get Started:
Scan for Full Documentation



Application

The HIL CCS Interface enables seamless integration of Combined Charging System (CCS) with ISO 15118 communication protocol into Typhoon HIL real-time simulators. Designed according to the IEC 61851-1 standard, the interface supports both the low-level PWM signaling and Power Line Communication (PLC) necessary for AC and DC charging emulation. This allows users to validate EVSE and EV control strategies under realistic conditions, using real-time simulation with closed-loop communication. Within minutes, the CCS Interface can be connected to a Typhoon HIL device to simulate charging processes, test firmware, or develop interoperable solutions.

- CP/PP Interface with PWM Signaling
  Supports IEC 61851-1 Annex A for standard-compliant control and proximity signaling.
- Integrated PLC Communication
  Devolo dLAN® GreenPHY-based PLC; high-level protocol via Ethernet (RJ45) to HIL device.
- Continuous Voltage & Temperature Monitoring
  Real-time measurement of CP/PP voltages and contact temperatures for enhanced diagnostics.
- Direct Real-Time Interaction with HIL Emulator
  Configurable as EV or EVSE; enables live protocol and charging process testing.
- Error Injection & Configurable Parameters
  Simulate faults and adjust circuit parameters for comprehensive testing.
- Onboard PWM Generation & Measurement
  Closed-loop signal testing built into the interface module.
- Full Programmability via Typhoon API
  Real-time adjustment of all parameters through SCADA or Python scripting.

Technical Details

Table 1: Routing of Analog signals

Typhoon HIL Analog Stage	Description
AI1	Measures peak voltage on CP
AI2	Measures low-state voltage on CP
AI3	PWM detection
AI4	Measures PWM frequency from CP
AI5	Derives PWM duty cycle
AI6	Measures voltage on PP
AI7	Locking motor load current
AI8	Vref for Motor driver
AI9	Raw CP measurement
AI10	DC- cable temperature
AI11	DC+ cable temperature
AI13	AC cable temperature
AI14	Motor Voltage
AI15	Locking Status
AO1	Sets low voltage on CP
AO2	Sets peak voltage on CP
AO3	Sets CP PWM duty cycle
AO4	Sets CP PWM frequency

Table 2: Routing of Digital signals

Typhoon HIL Analog Stage	Description
DI32	CP PWM digital reading
DO1 – DO27	Relay function according to schematic
DO28	IN1 - Controls motor driver H-bridge
DO29	IN2 - Controls motor driver H-bridge

Features and Benefits

Thank you!

Your order made our day, and we hope our package returns the same favor.

Your Typhoon HIL Service
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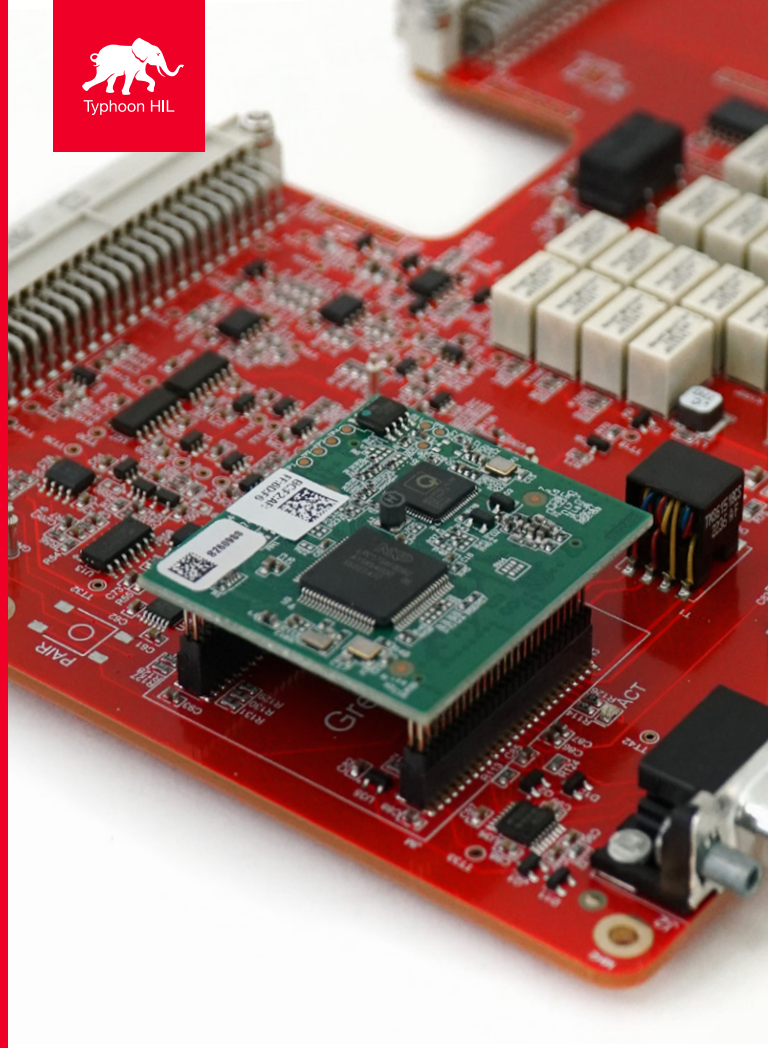

HIL CCS Interface

One board for complete EV and EVSE charging validation.

- ☑ No additional tools required.
- ☑ Plug and Play.

www.typhoon-hil.com