SEVENSTAX V2G Simulator

SEVENSTAX V2G Simulator is the perfect sparring partner for the development, test and analysis of Electric Vehicles and Electric Chargers supporting V2G charging communication by providing an opposing station conforming to the DIN 70121 and ISO/IEC 15118 standard. The simulator takes charge of all protocol layers and creates a standardcompliant and most importantly reliable



remote station. The V2G simulator further conforms to the norms by supporting Powerline Communication (HPGP including SLAC) and IEC 61851 Control Pilot (CP) handling (pulse width modulation, voltage reading/control).



User guidance takes place via a convenient Web Application on your browser. During operation, the PLC communication can be mirrored to an Ethernet interface and analyzed using SEVENSTAX GreenShark (optionally available). It is furthermore possible to integrate the V2G simulator into an automated test system via the HTTP/JSON interface.

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The Web GUI of SEVENSTAX V2G Simulator delivers a comprehensive overview about the entire charging process. All necessary steps are of the charging sequence can be monitored. That e.g. allows the user to easily identify in which phase errors occur.

rd V2G Status Session Parameters	Charger Control Pilot	Power Line	PLC IPV6			Session Parameters	×
						Current regulation tolerance	0.4
🗱 Charger	×					Energy to be delivered	0 Wh
Status	v2g running		V2G Status	×		Max. current limit	21 A
Current regulation tolerance	0 A		Control pilot connected	0		Max. power limit	41000 W
Max. current limit	21 A		Control pilot PWM active	0		Max. voltage limit	400 V
Max. power limit	41000 W		SLAC matching initialized	0		Min. current limit	2 A
Max. voltage limit Min. current limit	400 V		SLAC matching finished	0		Min. voltage limit	80 V
Min. current limit	80 V		Session started	0		Peak current ripple	1.4
Peak current ripple	1 A		Authentication started	0		Present current	0.4
Voltage Regulation kp	0.001		Authentication finished	0		Present voltage	0 V
Voltage Regulation ki	0.0001		Charge parameter discovery started	0		Payment option	Unknown
Voltage Regulation kd	0	4	Charge parameter discovery finished	0		Response code	ОК
Current Regulation kp	0.001		Charge loop started	0	~	Req. energy transfer mode	DC extended
Current Regulation ki	0.0001		Charge loop finished	0	٨X	EVSE ID	DE*123*E12A*348
Current Regulation kd	Apply		Session stopped	0			

Furthermore the user gets full control about the simulated charging process. All relevant parameters can be configured via the Web Application. An integrated PID-controller controls current and voltage of the simulated charging process and its parameters can also been configured via the Web Application (EVSE version).



Additionally the integrated Dashboard and the Graph Window summarize the most relevant realtime data of the charging sequence and visualize them ideally for a perfect overview.

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Functionality

- Conforms to the following charging protocols:
 - ISO/IEC 15118-2 2014 EIM
 - DIN 70121-2012
- Energy Transfer Modes:
 - AC single phase
 - AC three phase
 - DC

Hardware

- Integrated STM32F7 Microcontroller
- HomePlug GreenPHY PLC Chipset
- IEC61851 Control Pilot Frontend
- RJ45 Ethernet Port
- Power Supply via USB 3.0 port
- Robust Aluminium Case

Further SEVENSTAX V2G Offering

SEVENSTAX is offering an outstanding selection of software stacks and tools to reduce development time and accelerate your time to market.

SEVENSTAX V2G Stack

Worldwide's first commercial implementation of V2G Software stack for Electric Vehicle Charging Controllers (EVCC) and Supply Equipment Charging Controllers (SECC). The offerings also includes professional implementation of all needed sub protocols (TCP/IPv6, TLS, etc.).

SEVENSTAX GreenShark

SEVENSTAX GreenShark is your first choice for full-featured DIN 70121 and ISO/IEC 15118 protocol analysis. GreenShark is a plug-in for the most powerful Wireshark packet sniffer bringing ISO/IEC 15118 and DIN 70121 support to your PC.

SEVENSTAX Conformance Tester

SEVENSTAX Conformance Tester includes a full-featured test suite according to ISO15118-4 and DIN 70122 including hundreds of test cases to certify your development results for interoperability in the field.

