

Electric Vehicle Powertrain Control Unit

www.sigratech.de



- Designed for 12/24V systems
- Compact housing
- Customised features and applications
- Universal calibration and monitoring

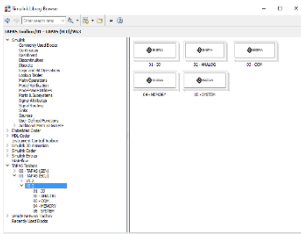
SIGRA electric vehicle power control unit manages the complete powertrain. The control unit features a powerful microcontroller designed for automotive safety applications to provide high performance. This control unit utilizes MATLAB/Simulink based software development process to speed up the algorithm development by using automatic code and document generation. The flexible hardware design allows for easy customisation of functionalities as per customer specifications.

Application

Drive management	Start/Stop control
	Control of the main MCU
	Brake and acceleration control
	Regenerative braking
	Driving profile with modes

	Gear monitoring
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Communication with the BMS	
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AC charging communication and monitoring	Communicate with the AC charger
	Control pilot and proximity pilot control
	Monitoring AC charging status for safe operation
DC charging monitoring	Plug lock monitoring
	Monitoring DC charging status for safe operation
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Communication with the on-board charger	
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Communication with the power steering control unit	
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Communication with instrument cluster unit and infotainment system	
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Cabin climate control management	
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Control of the Auxiliary MCU	
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Communication with DC-DC charger	
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Universal calibration and monitoring	
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System diagnostics	
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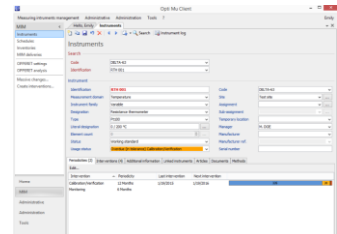
MATLAB/Simulink based design environment



Electric vehicle powertrain control unit



TAPAS calibration tool



SIGRA provides the option to include new functionalities and applications as per our customers need. We provide TAPAS universal measurement and calibration protocol for calibrating the powertrain control unit.

We provide the option to run software code on the powertrain control unit that has been developed by our customers. This feature can run in parallel to all the powertrain control unit functionalities.

We deliver libraries and a package of MATLAB/Simulink toolboxes to interface with all I/Os and calibration tool with access to all signals.

Hardware Specifications

Aluminium housing

121 pin connector

Power supply 5...30V

CPU 160MHz safety uC

3 CAN

1 UART

SPI

32 Digital Inputs

10 Analog Inputs

20 Digital outputs

6 PWM outputs – correlated (optional)

4 PWM inputs

Technical Specifications

Software Specifications

Algorithm development environment in MATLAB/Simulink

Support for generating executables that include algorithms, device-drivers and real-time operating system

Full access to I/Os

Full read access of all signals

Real time calibration

SW download via TAPAS calibration tool

Calibration and measurements interface via CAN