

# Charge SOM

## An open, low-footprint EVSE controller with Open-Source charging stack.

The Charge SOM is a future-proof powerhouse based on i.MX93 for AC and DC charging stations. With universal compatibility, advanced safety features and lots of options for customization, the Charge SOM is the core of your EVSE portfolio. The module (80 x 70 mm) has two standard board-to-board connectors and is intended to be used as the core component of stationary Electric Vehicle Supply Equipment like HPCs or any DC or Bi-directional charging unit for mobile electric vehicles.

### Key Features

#### IEC 61851 & SAE J1772 Compatibility

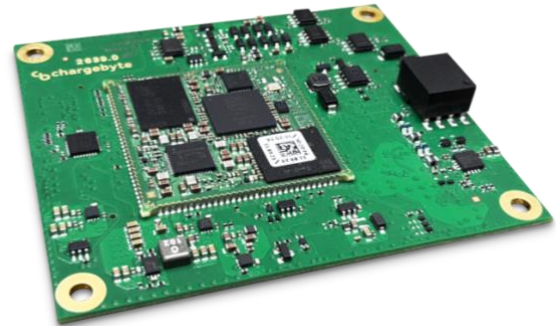
- Works with CCS1 / CCS2 and NACS according to IEC 61851, SAE J1772, and ISO 15118, ensuring smooth communication with all types of EVs.

#### Safety Compliance

- Renesas co-processor monitors and controls CP and PP signals, DC circuit breakers and other vital components
- PT1000 plug temperature monitoring
- Firmware meets IEC 61508 standard

#### Software Stack Optimization

- Plug-and-Play with EVerest, the popular Open-Source charging stack
- Also available as commercial LTS version including professional support
- Well maintained, open Yocto BSP



#### HomePlug Green PHY Standard & ISO 15118 Support

- Classic coupling of Powerline signal to CP
- Utilizes the Vertexcom MSE1022 chip

#### Advanced Security

- TPM for secure hardware-based key storage
- RTC support via I2C for precise timekeeping<sup>i</sup>
- Integrated EdgeLock secure enclave in i.MX93 SoC

#### Host Controller

- NXP i.MX93 1.7 GHz
- 1 GB DDR4 RAM
- 8 GB eMMC

#### Interfaces

- 2x **USB**, **Ethernet** 1 x 10/100 MBit/s, 2x **SPI**, 3x **RS232** TTL, 2x **CAN**, **LVDS**, **RS485**
- **Specialized Inputs/Outputs:** CP, PP, PE, PLC\_P, PLC\_N for control and monitoring of charging processes
- **PT1000:** 4 channels
- **optional Wi-Fi, Bluetooth, 5G** routed to modules on carrier board
- additional PLC and IEC 61851 monitors possible

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<sup>i</sup> IC / battery on carrier board