vSECC.single (Supply Equipment Communication Controller) is a communication board for the fast development of smart DC wallboxes and charging stations. It is the single version of the vSECC and can operate one charging connector. The board is designed to sit on top of customer electronics in the same housing. With dedicated base boards it will also become available as stand-alone-controller in a DIN rail housing for CCS and CHAdeMO.

The board serves as a communication interface between the electric vehicle, the charging station management system and the power electronics. It handles the communication for the complete charging process. Communication to the back end is via OCPP 2.0.1 and to the power electronics via CAN or Ethernet. The communication board supports the charging communication over CCS according to ISO 15118, DIN SPEC 70121 and in the future also CHAdeMO (Japanese Charging Consortium) or ChaoJi.

Due to its form factor, the vSECC.single Board is ideal to use in intelligent AC or DC charging stations or wallboxes and therefore particularly suitable for charging electric passenger cars at home or at work. It is equally suitable for any fast charging station that supplies one charge point. Furthermore, it enables photovoltaic system manufacturers to easily enhance their product with charging communication intelligence and thus using the generated electricity in an efficient way for charging EVs.

Main Features
- Communication board handling the complete charging process for one charge point
- Charging communication according to ISO 15118, DIN SPEC 70121; in the future also CHAdeMO or ChaoJi
- Supports OCPP 2.0.1 for the back end communication via Ethernet
- Communication to PE via CAN or Ethernet
- Vehicle identification possible via External Identification Means (EIM), RFID, Autocharge, Plug & Charge ready

Overview of Advantages
- Accelerates development and paves the way into the emerging DC wallbox market
- All charging communication functions to the EV, CSMS and PE control in one device
- Small form factor ideal for wallboxes and single dispenser charging stations
- High performant iMX 8 processor
- Ready for future use cases, e.g. energy management integration and bi-directional charging
- Remote software updates for standard conformity and functionality extensions via OCPP
- OCPP 2.0.1 implementation for more efficient error handling and configuration of the charge controller in the CSMS
**Technical Data:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>vSECC.single Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main CPU</td>
<td>i.MX8M Nano</td>
</tr>
<tr>
<td>Power supply</td>
<td>12 V DC</td>
</tr>
<tr>
<td>Communication</td>
<td>1 x CAN, 1 x 1000Base-Tx, 1 x RS232, 1 x RS485</td>
</tr>
<tr>
<td>Charging interfaces</td>
<td>IEC 61851-23, DIN SPEC 70121, ISO 15118-2/-3, ready for ISO 15118-20</td>
</tr>
<tr>
<td>Digital inputs and outputs</td>
<td>10 x digital I/O (logic level 3.3 V)</td>
</tr>
<tr>
<td>Analog inputs</td>
<td>4 x 0-5 V analog input, 2 x temperature sensor input</td>
</tr>
<tr>
<td>Safety output</td>
<td>1 x (logic level 3.3 V)</td>
</tr>
<tr>
<td>Operation temperature</td>
<td>-40 °C to +70 °C</td>
</tr>
<tr>
<td>Connectors</td>
<td>1 x RJ45, 1 x 30 pole base board connector, 1 x 10 pole charging connector</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>14,25 mm x 58 mm x 99,2 mm</td>
</tr>
</tbody>
</table>

**Glossary**

- **CAN:** Controller Area Network
- **CCS:** Combined Charging System
- **HW:** Hardware
- **OCPP:** Open Charge Point Protocol
- **PEP:** Power Electronics Protocol
- **PLC:** Power Line Communication
- **PV:** Photovoltaic
- **RFID:** Radio-frequency Identification
- **UI:** User Interface
- **VAS:** Value Added Services

*Highest flexibility for all use cases: Connectivity interfaces of vSECC.single Board*