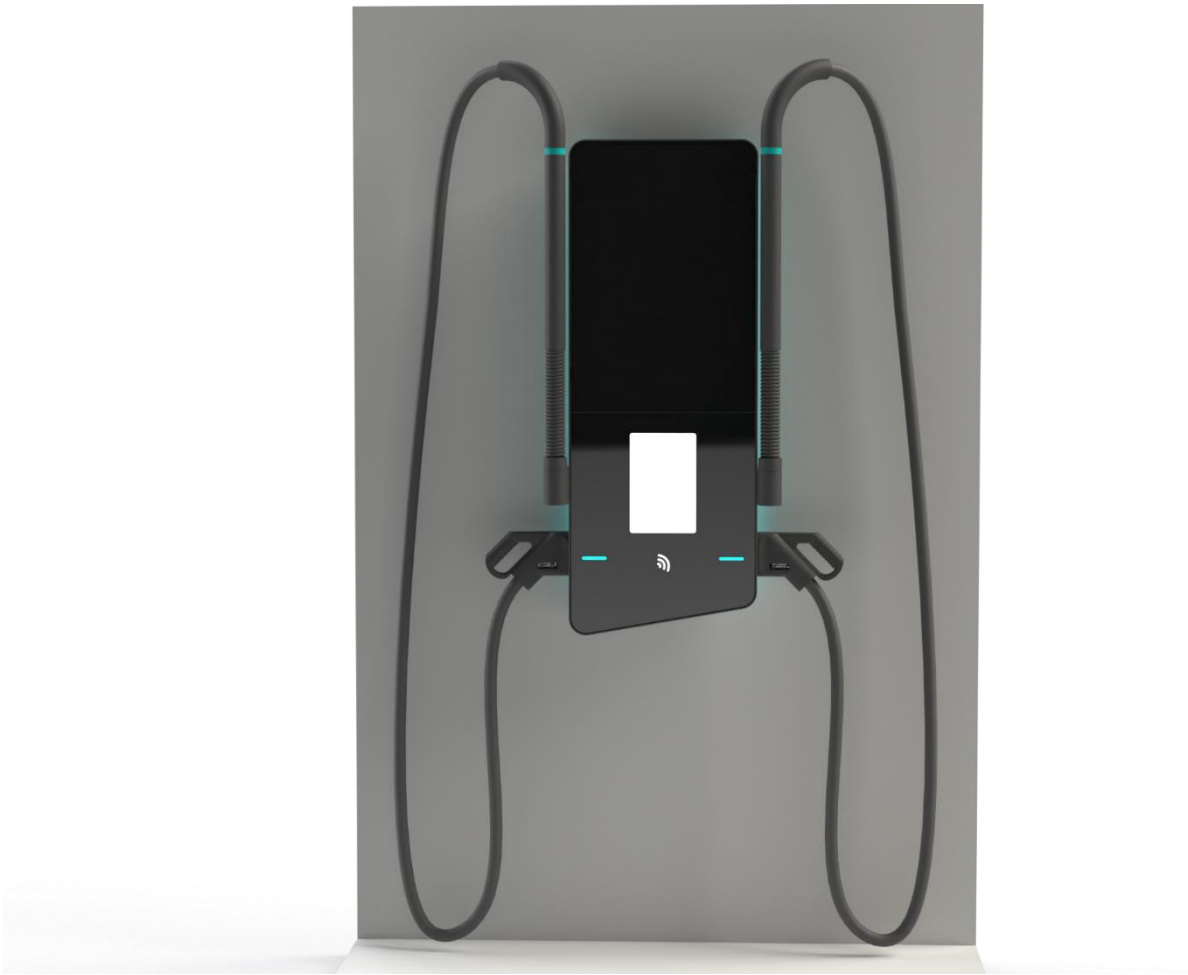
Operation Instructions and Installation Guide - Software

hypercharger HYC_50
(50 kW)
Fast charging system for electric vehicles

for SW-Version 1.0



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Operation Instructions and Installation Guide - Software

Version

Version 1-2 of operation instructions and installation guide, 9th June 2021

Original English version
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Attention

If the installation instructions described in this document are not adhered to, any warranty claim will be void.

Manufacturer

alpitronic S.r.l.
Via di Mezzo ai Piani, 33
39100 Bolzano (BZ)
ITALY
Tel.: +39 0471 096450
Fax: +39 0471 096451
Homepage: http://www.hypercharger.it
E-Mail: info@hypercharger.it

Service

alpitronic S.r.l.
Via di Mezzo ai Piani, 33
39100 Bolzano (BZ)
ITALY
Tel.: +39 0471 096333
Fax: +39 0471 096451
Homepage: http://www.hypercharger.it
E-Mail: support@hypercharger.it

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Version History

Version	Datum	Author	Description
1-1A	June 2021	Ch. Leimegger	First version
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Content

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1. Safety instructions

This chapter contains the safety instruction which must be considered at installation, operation and maintenance of the hypercharger ultra-fast charging system for electric vehicles. Incorrect operation as a result of non-compliance with the operation instructions may lead to severe injuries or damages. This safety operation must be read carefully before the installation, operation and maintenance of the hypercharger ultra-fast charging system.

1.1. Designated use

The hypercharger ultra-fast charging system for electric vehicles is intended to be used both in indoor and outdoor environments for performing ultra-fast charging for electric vehicles.

Attention

The charging station is designed for a stationary installation in an ambient with pollution degree class 3.
For the connection between the electric vehicle supply equipment (EVSE) and electric vehicle (EV), no additional cables are required besides the ones provided with the hypercharger. A charging cord shall not be altered to extend or divide the cable range.
No adapters may be used which are not approved by the vehicle manufacturer.
The use of Y-cables or similar devices is not permitted.
No cable extensions may be used
National application guidelines and specifications for charging stations must be considered.

1.2. Users

These operation instructions and installation guides are intended for the operators responsible for installation, operation, service and maintenance of the hypercharger ultra-fast charging system for electric vehicles. These operators should have a profound knowledge of electrical high-power systems and electric vehicles. Prior to carrying out any work the operator and the responsible technical personnel must carefully read these instructions.

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1.3. Safety instructions for installation and maintenance

These warnings and instructions apply to all activities of installation, service and maintenance on the hypercharger.

Attention

Any disregard from these instructions can lead to serious or fatal personal injury, as well as serious damage to property.

Installation and maintenance of the hypercharger ultra-fast charging system for electric vehicles HYC_50 must only be carried out by qualified personnel.

Before putting the system into operation, check the correct state of the installation and all connections.

Electrostatic discharge

The control cabinet contains components and circuit boards that are sensitive to electrostatic discharge. During assembly and maintenance, sufficient ESD measures should be taken to protect the electronic components (for example, wearing a grounding wristband).

Warnings

Warning of hazardous electrical voltage

Installation and maintenance of the hypercharger may be carried out only while power is off/disconnected. Before performing any installation, disassembly, repair or replacement of components, switch off the external group switch and the main switch in the hypercharger cabinet and do a voltage check to make sure that the electrical power is disconnected from the system.

Inside the hypercharger cabinet, hazardous electrical voltages are present (up to 1000Vdc) even if all circuit breakers are switched off, do not allow unqualified persons to go near it.

Only hypercharger certified technicians are permitted to install, disassembly, repair or replace components on the hypercharger. The hypercharger cabinet doors must be locked after installation, service or repair operations.

Warning of hot surface

Some internal components of the hypercharger like Power-Stack housings, cooling system, and conductors can remain hot long after the power supply has been disconnected.

Prior to performing any task such as disassembly, repair or replacement of components make sure that all components have cooled down.

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Heavy weight

Please note that the individual components of the device can be very heavy, for example the power-stacks.

Crushing

Please take care good when assembling and disassembling components in order to avoid crushing people or body part.

Remarks

Pushing the (optionally installed) Stop button on the front door stops charging/disables charging. The hypercharger Power-Stacks will be turned off.

To turn off the hypercharger, one can find the main switch in the cabinet, rotate the handle to position ‘0’. This will turn off all internal components of the hypercharger.

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2. Reference to hardware edition of hypercharger manual

Hardware relevant information regarding the hypercharger is found in the hardware edition of the manual.

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3. Connection to the charging station

After successful mechanical and electrical installation of the hypercharger, the correct function of the device can be checked with the diagnosis and parameterization web interface. You can access the hypercharger's interface either locally on site or remotely without a physical connection to the charging station.

3.1. Local access to the charging station

When you are on site, you can connect your Notebook directly to the charging station. Therefore, an Ethernet cable is required. The socket for this is marked with XF1 and is located on the side of the display door in the lower area of the charging station.

You now have two options for connecting to the user interface.

The simpler method is to scan the QR code that is attached to the cover of the CTRL_CHRG. This is located on the inside of the display door and is marked "KF1". The QR code contains the IPv6 address of the column, which takes you directly to the web interface. The advantage of this variant is that you do not have to be in the same network to gain access.

Remark

The IPv6 address is to be put in square brackets […].

Remark

The QR code is only attached from hardware version 4.

Alternatively, there is the option of accessing the user interface via a standard IPv4 address. This can be loaded from any internet browser.

Standard IP address	192.168.1.100

Table 1: Standard IP address of the hypercharger

Remark

The hypercharger is delivered with this default IP address. If this was subsequently changed by the customer, the new IPv4 must be used.

Attention

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In order to access the user interface, the network settings must be adjusted.

3.1.1. Adjustment of the network settings

Remark

Make a note of any settings you change so that you can restore your device to its original settings.

Remark

These instructions were created for Windows 10. This procedure may differ slightly with other operating systems.

Now press the Windows and the "R" key simultaneously to open the dialog shown in the following figure. Enter “ncpa.cpl” in the field and then click OK.

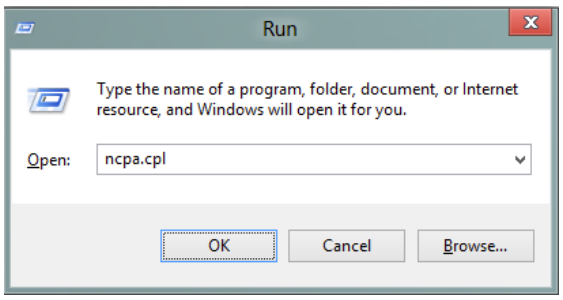

Figure 1: Win + R

The “Network Connections” window opens.

To find the right network, please pay attention to the following points:

- The network name should contain the term "Ethernet”
- The symbol (the screens) should be blue and not greyed out
- No red cross should be displayed next to the symbol
- In the description below the network name, a network should be displayed and not the terms "Network cable has been removed", "Disabled" or "Network not connected".

Now select the network for the hypercharger, press the right mouse button and open the properties.

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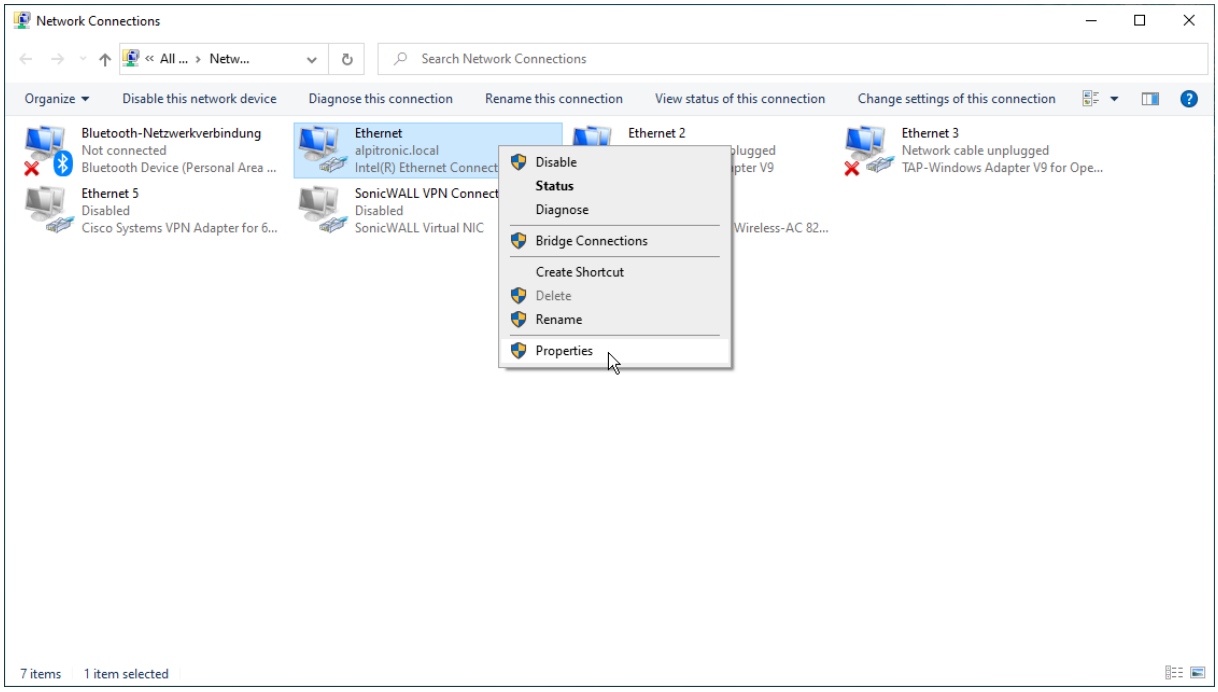

Figure 2: Network Connection

Select "Internet Protocol Version 4 (TCP/IPv4)" with a mouse click and then click on "Properties".

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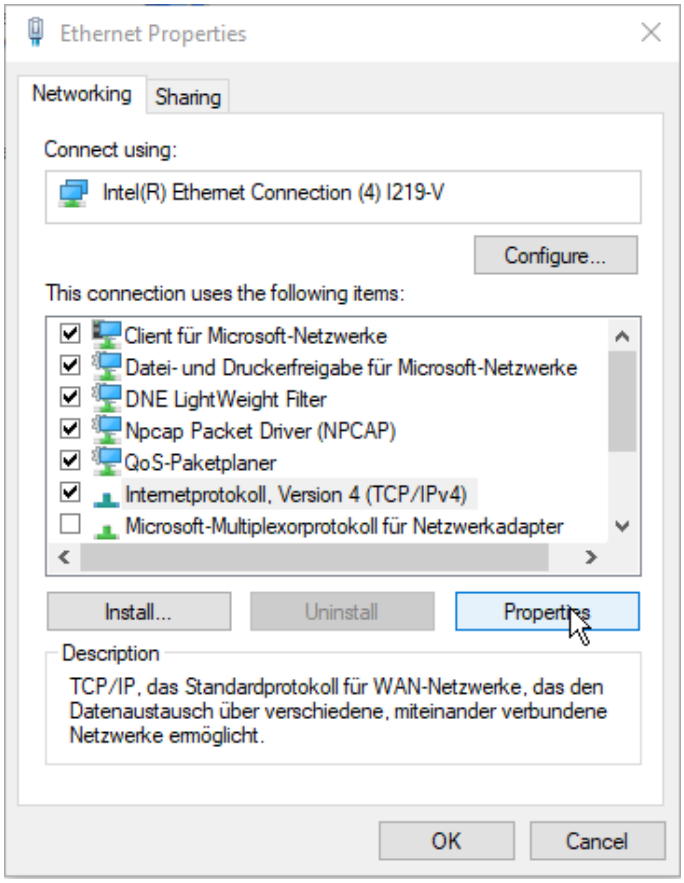

Figure 3: Network Properties

Now select the "Use the following IP address" and enter the following values:

- IP address: 192.168.1.101
- Subnet mask: 255.255.255.0
- Standard gateway: 192.168.1.1

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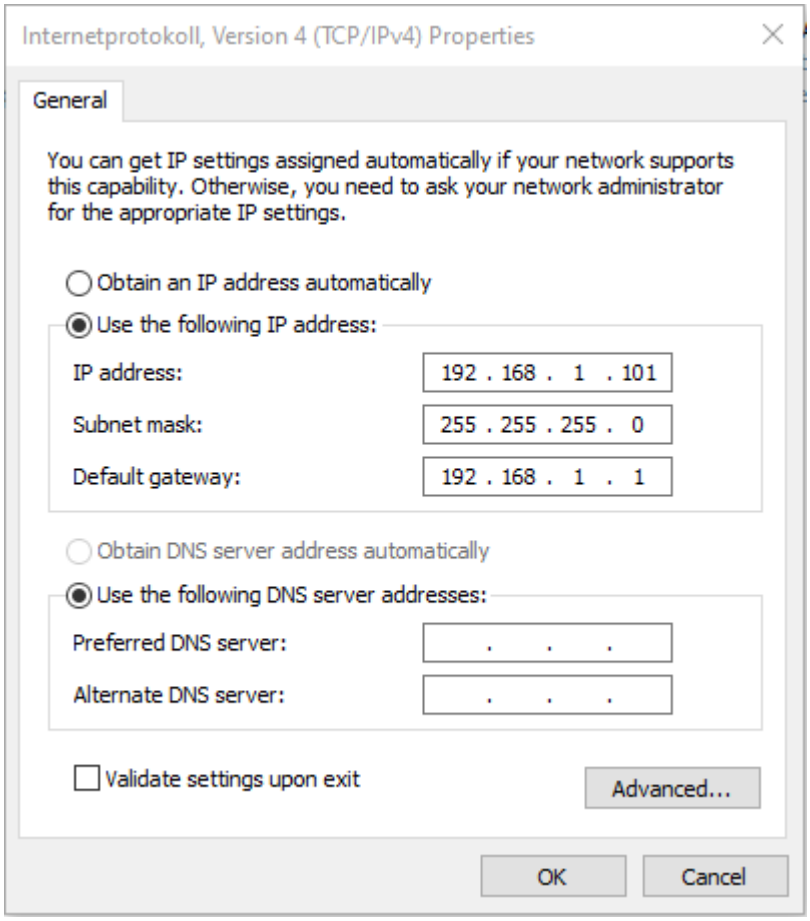

Figure 4: IPv4 Properties

Remark

Make a note of any settings you change so that you can restore your device to its original settings. "Obtain an IP address automatically" is selected by default.

Now confirm and enter the standard IP address of the charging station in your browser.

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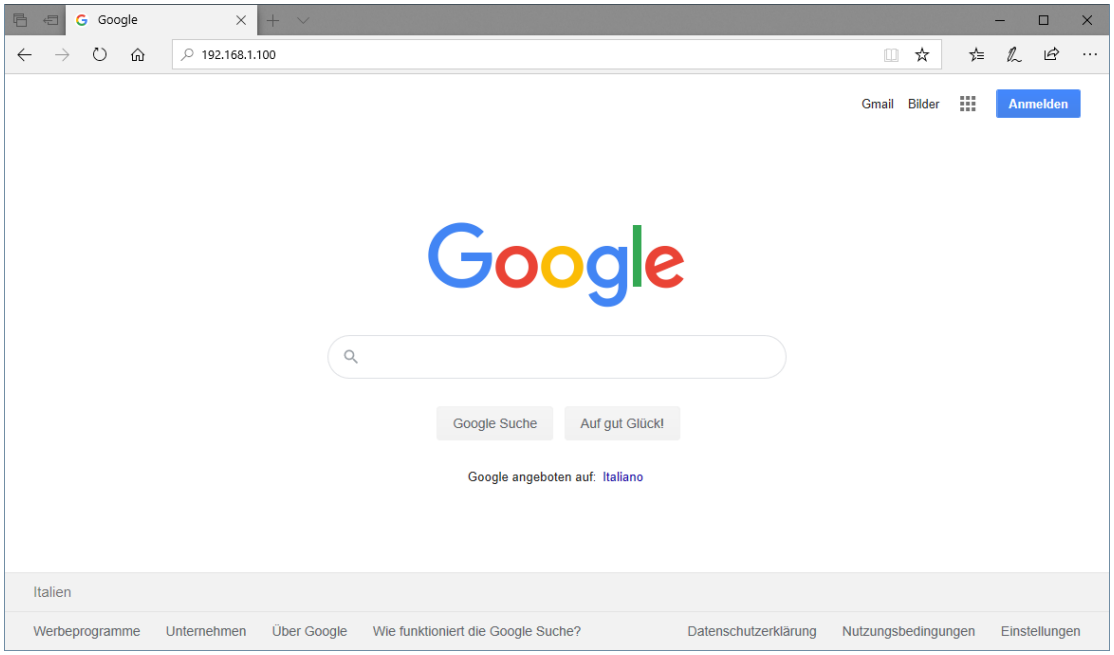

Figure 5: Entering IP address in the browser

After completing the work, the network settings should be reset to avoid connection problems with other networks.

3.2. Remote access to the charging station

There is also the option of remotely connecting to the charging station. The charging station can be connected to a backend using a SIM card or an Ethernet connection. Depending on the type of connection, the charging can be reached via the IP address of the SIM card or via the Ethernet connection.

In the former case, you must be on the same network or have VPN access. An OpenVPN certificate can be deposited on the hypercharger.

If, on the other hand, the charging station is connected to Ethernet, the remote connection is made via the local IP address of the station. The standard IP address may be changed depending on the network. In this case, remote access is possible via this IP address.

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3.3. Access data

When connecting to the web interface for the first time, you will be asked to enter a username and password.

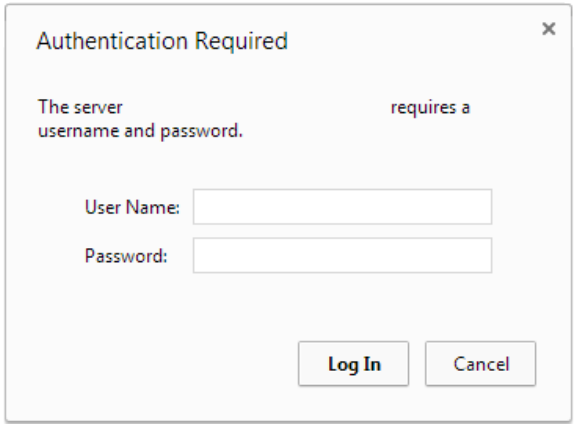

Figure 6: Authentication Required

Enter the following default username and password:

Standard credentials	
User Name	admin
Password	admin123

Table 2: Standard login information for the web interface

Remark

For security reasons it is important to change the username and password! You can make these changes in the "Password Configuration" menu.

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4. Graphical user interface

The following figure shows the landing page of the web interface. There are six menus with links to other pages. The individual menus and the corresponding pages are described in detail in the following subsections.

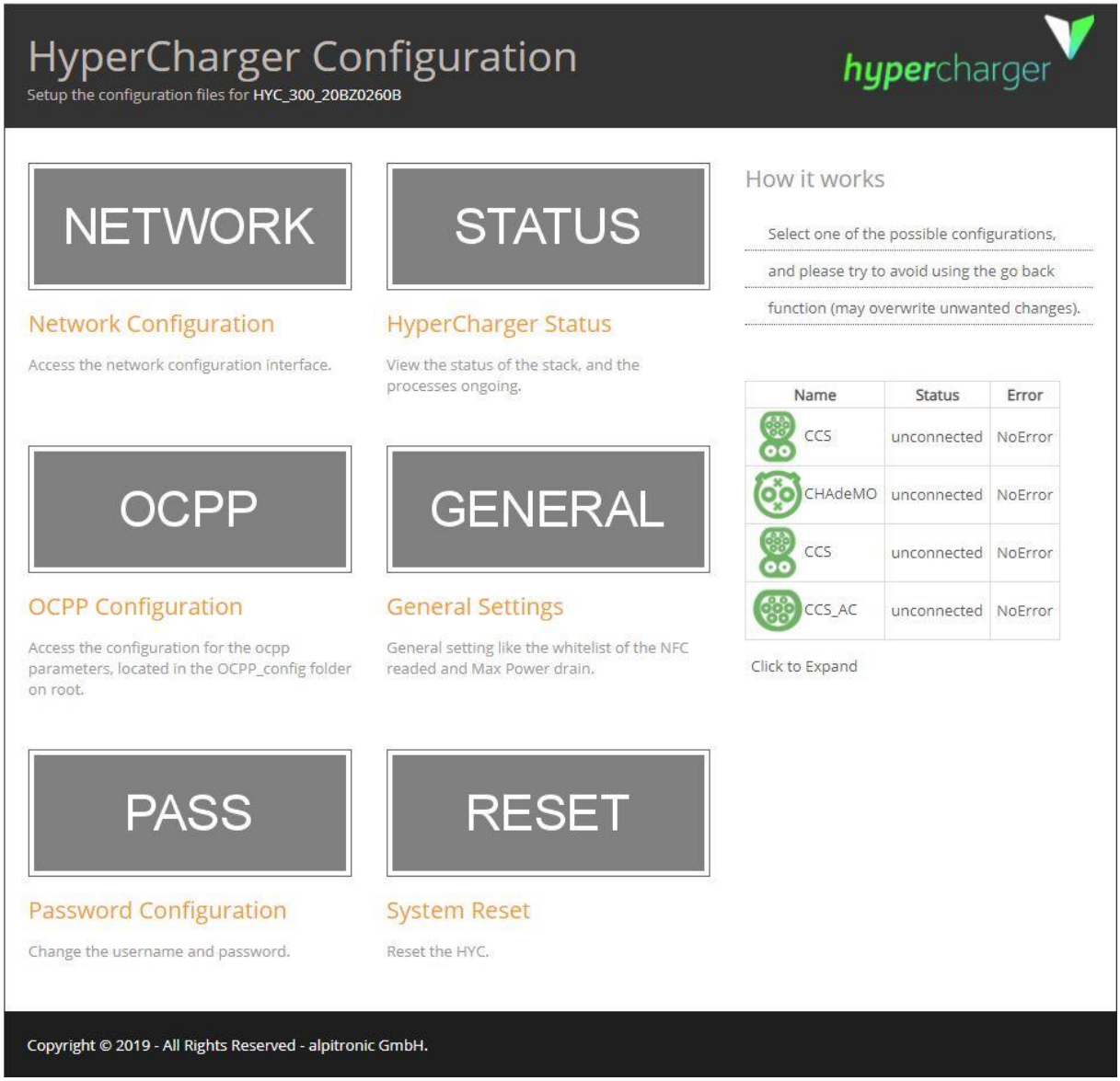

Figure 7: Landing page of the web interface

Remark

You can click on the respective menus for navigation. To return to the main menu, click on “Index” in the upper right area.

Attention

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For any changes in the web interface, a restart of the charging pole is necessary afterwards for them to take effect.

4.1. Network Configuration

In the Network menu the following settings can be changed:

- Ethernet Configuration
- SIM
- OpenVPN
- Preferred Network
- DNS

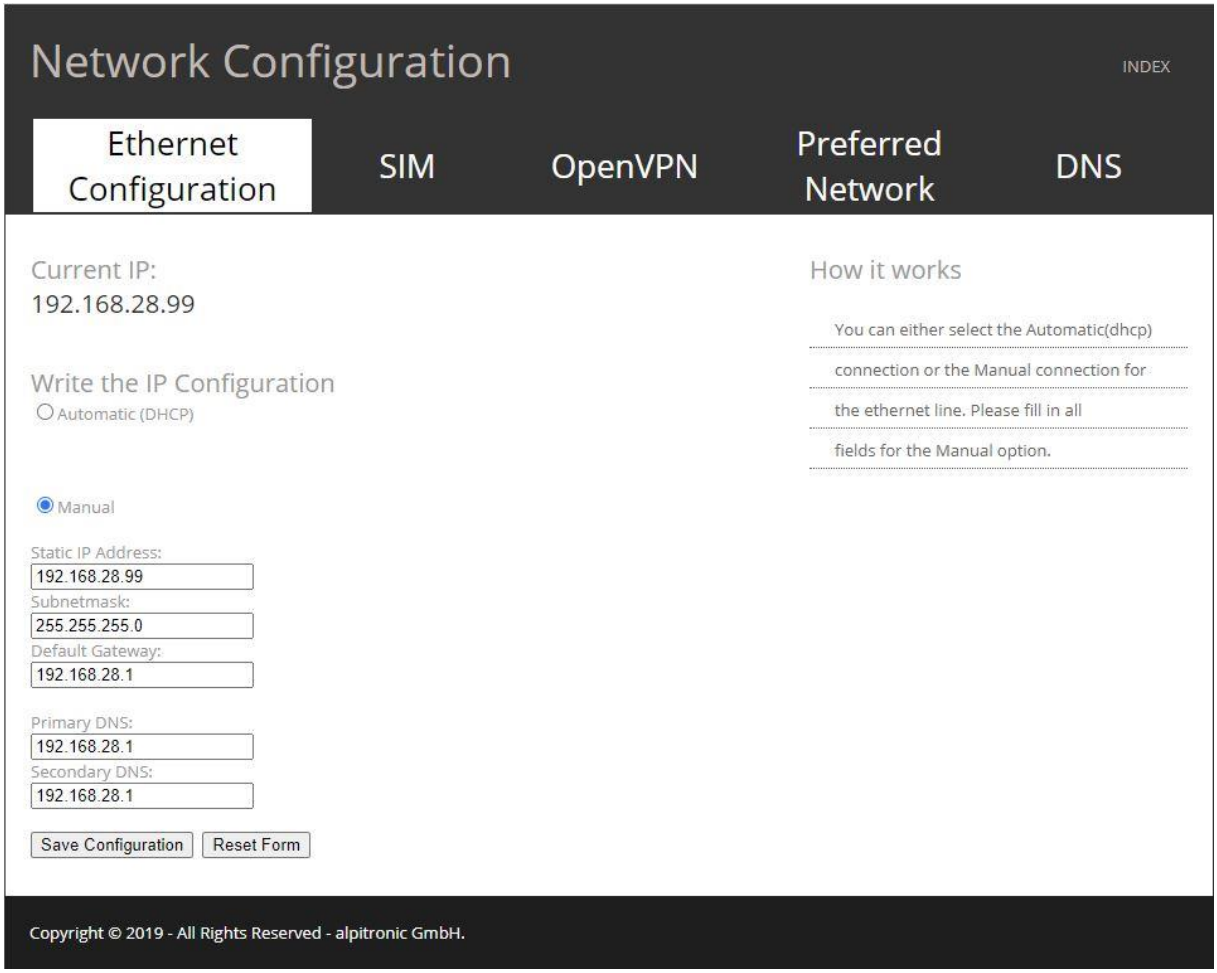

Figure 8: Network Configuration

4.1.1. Ethernet Configuration

The menu Ethernet configuration (see **Fehler! Verweisquelle konnte nicht gefunden werden.**) is used to choose between "DHCP" (automatic) or manual IP configuration for the backend connection implemented via cable. If the Ethernet connection is not required to

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establish a connection to the backend (e.g. because this is implemented via a GSM connection), this setup menu can be ignored.

4.1.2. SIM Configuration

The SIM Configuration menu contains the five categories which are presented below.

4.1.2.1. Signal

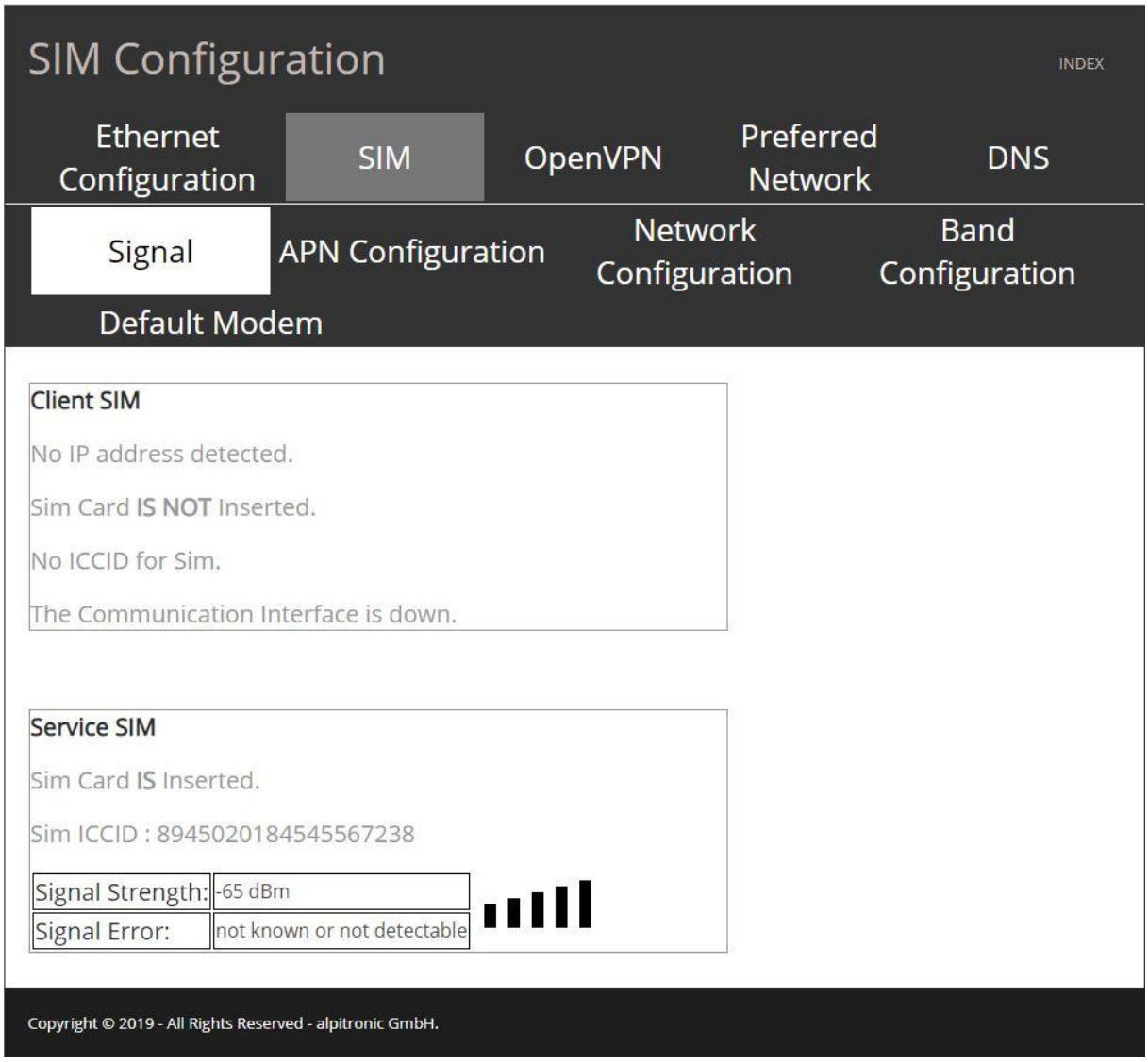

Figure 9: SIM - Signal

The SIM signal menu provides information about:

- the signal strength of the mobile connection
- the ICCID of the installed SIM card
- the status of whether a SIM card is inserted or not
- the IP address that was assigned to the modem by the mobile network operator

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Remark

The customer SIM card is in the first SIM slot (Y210). The service SIM that is used by hypercharger support is inserted in the second SIM slot (Y209).

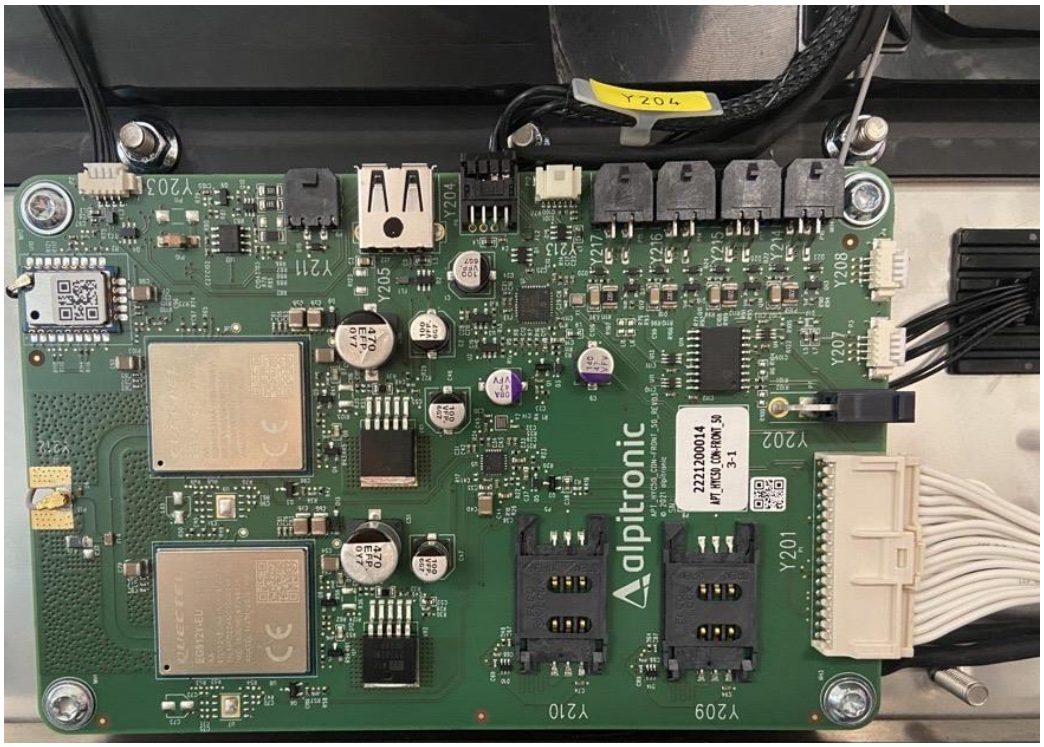

Figure 10: Location of SIM cards in the hypercharger (CTRL_COM)

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4.1.2.2. APN Configuration

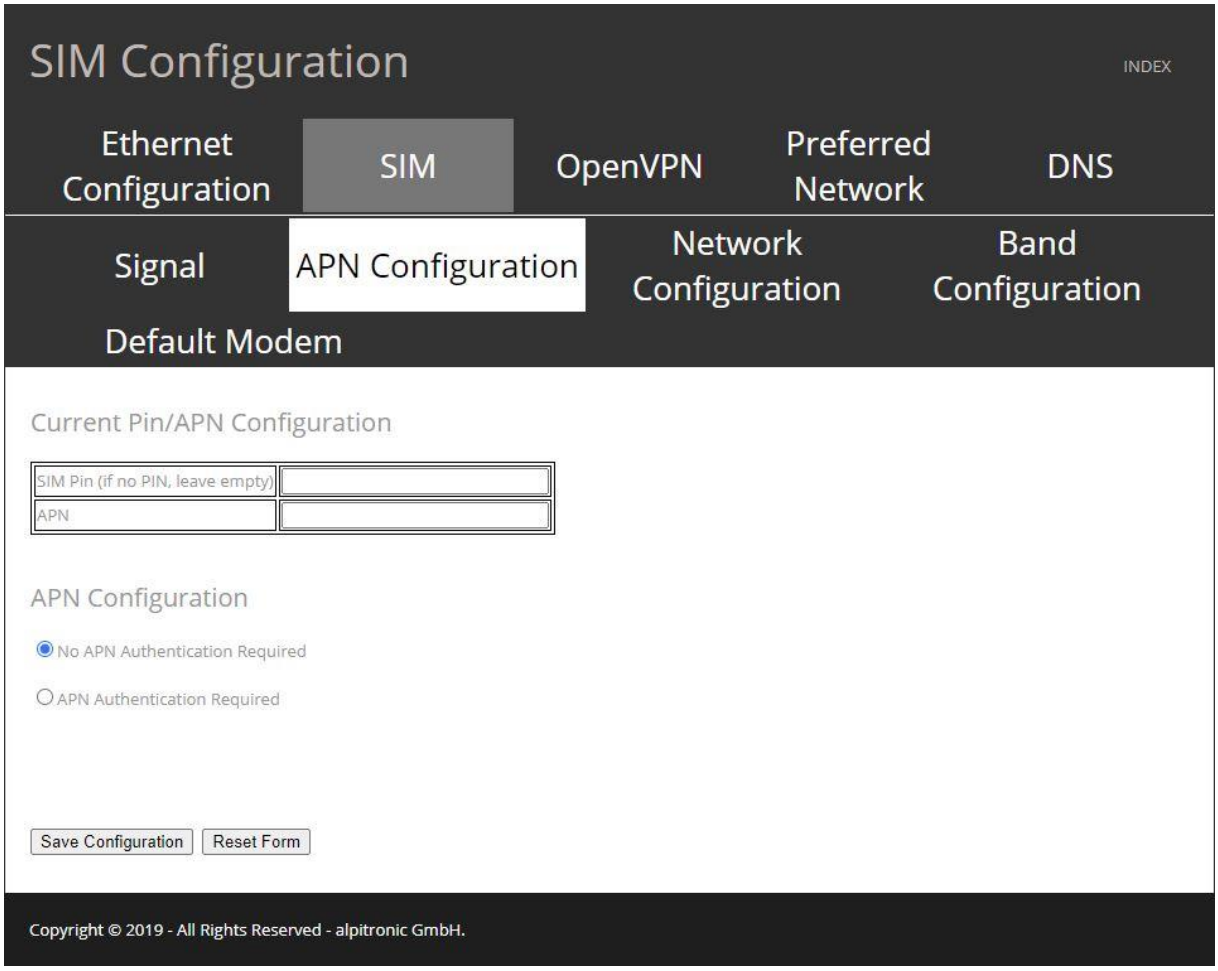

Figure 11: SIM - APN Configuration

This menu can be used to set up the connection to the backend via the GSM modem integrated in the charging station. You can obtain the APN data from your SIM service provider. If authentication is necessary, the data can be entered by selecting the option "APN Authentication Required"

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4.1.2.3. Provider Configuration

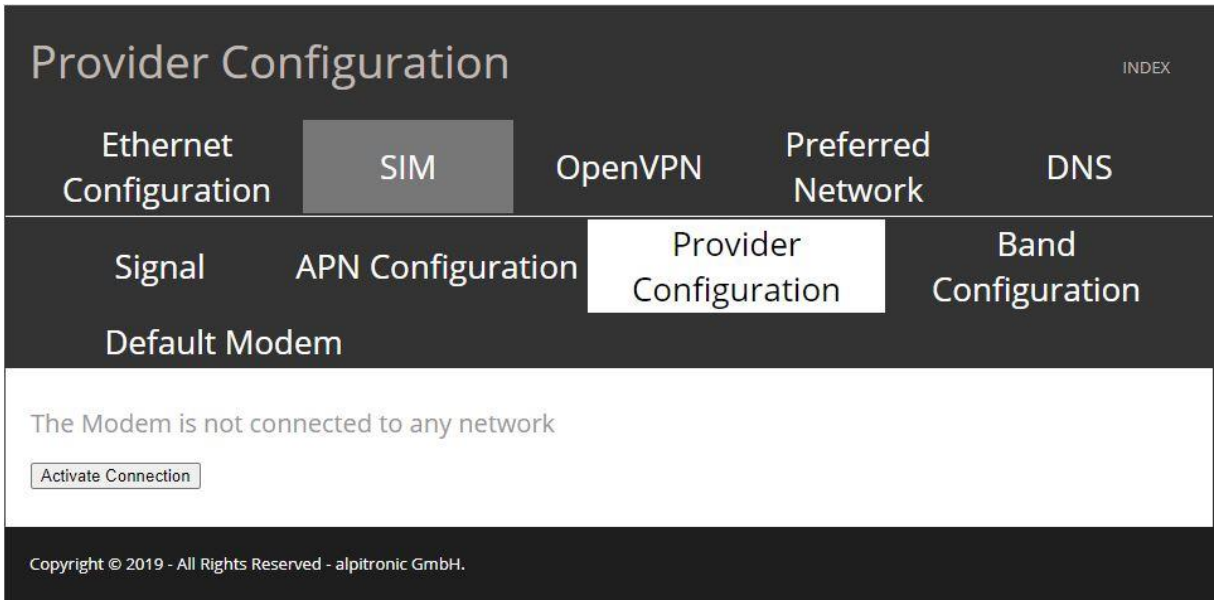

Figure 12: SIM - Provider Configuration

This menu is used to select which mobile network operator the modem should connect to. If nothing is selected, the connection is automatic. Since the modem needs some time to adopt the settings, the waiting time after configuration can be up to 60 seconds.

The currently connected network is always displayed in the upper area of the window. Underneath there is a drop-down menu that contains all the networks available for selection.

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4.1.2.4. Band Configuration

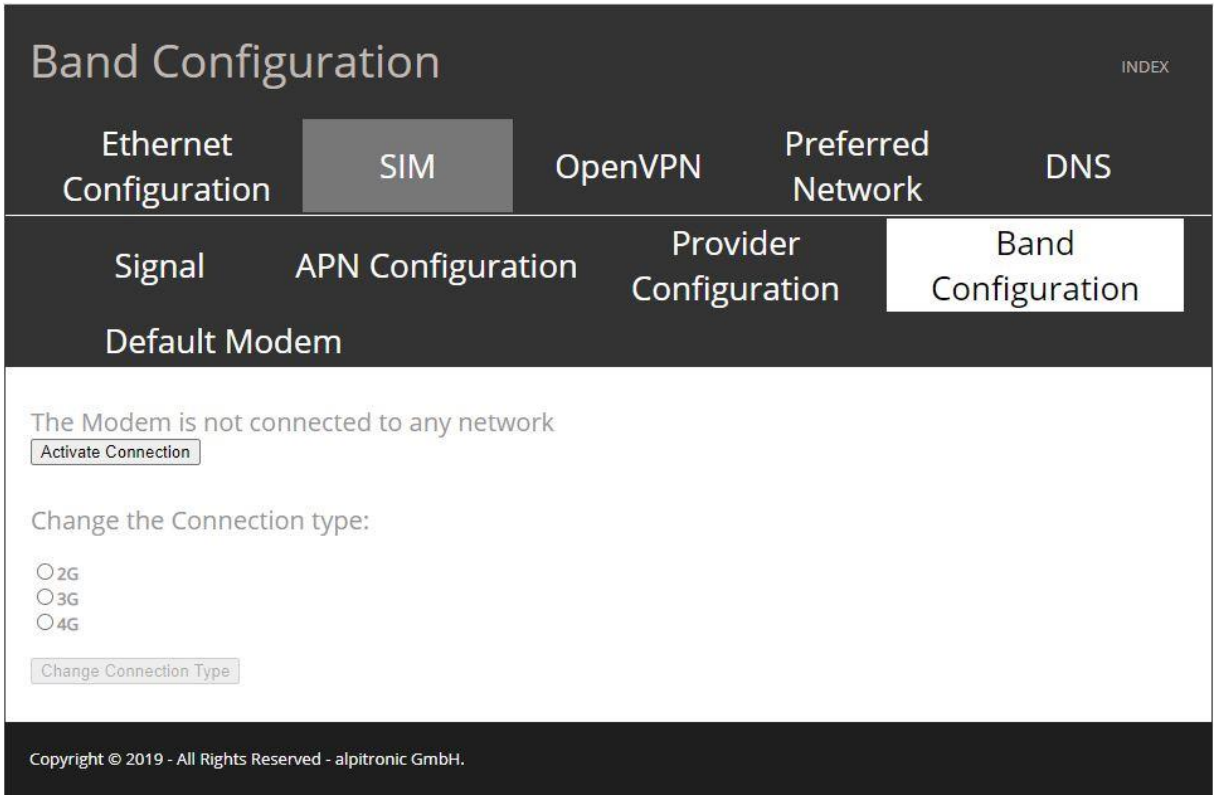

Figure 13: SIM - Band Configuration

In the Band Configuration menu you can set the connection standard (2G, 3G, 4G) with which the modem should connect to the mobile network operator statically.
This is especially necessary if the SIM cards used are only activated for certain standards or if the charging station is located in a zone in which only a certain standard is available. With this setting you can specify that the modem only connects to a certain standard.

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4.1.2.5. Default Modem

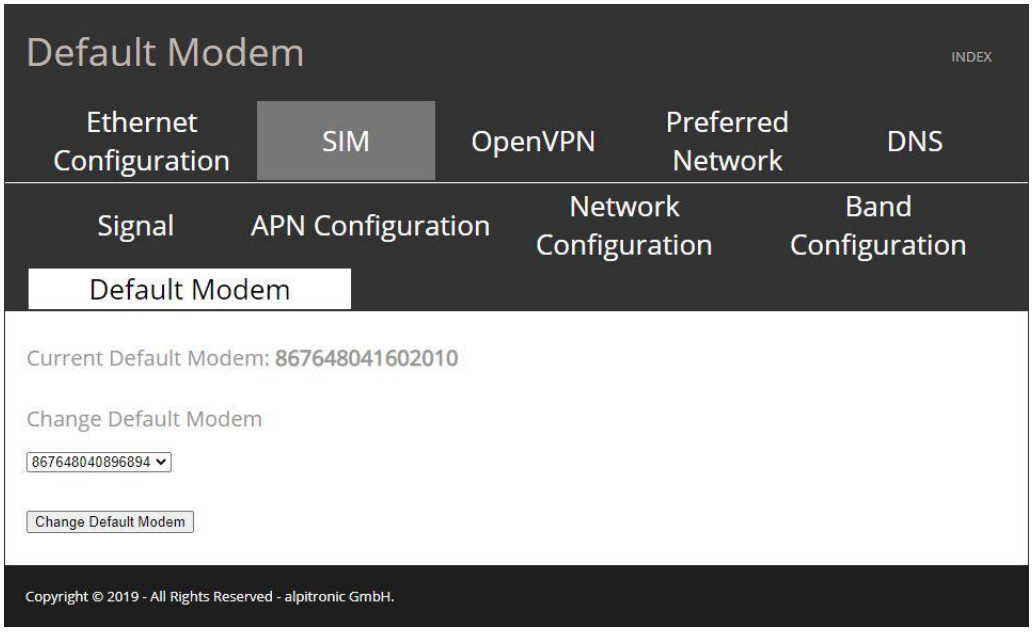

Figure 14: SIM - Default Modem

The Default Modem menu allows you to specify which modem should be started first. This menu is used if the CTRL_COM is exchanged and the built-in modems change.

Attention

It is very important that the default modem is set to the serial number that is on the right side of the CTRL_COM!

Figure 15: IMEI number

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4.1.3. Open VPN Configuration

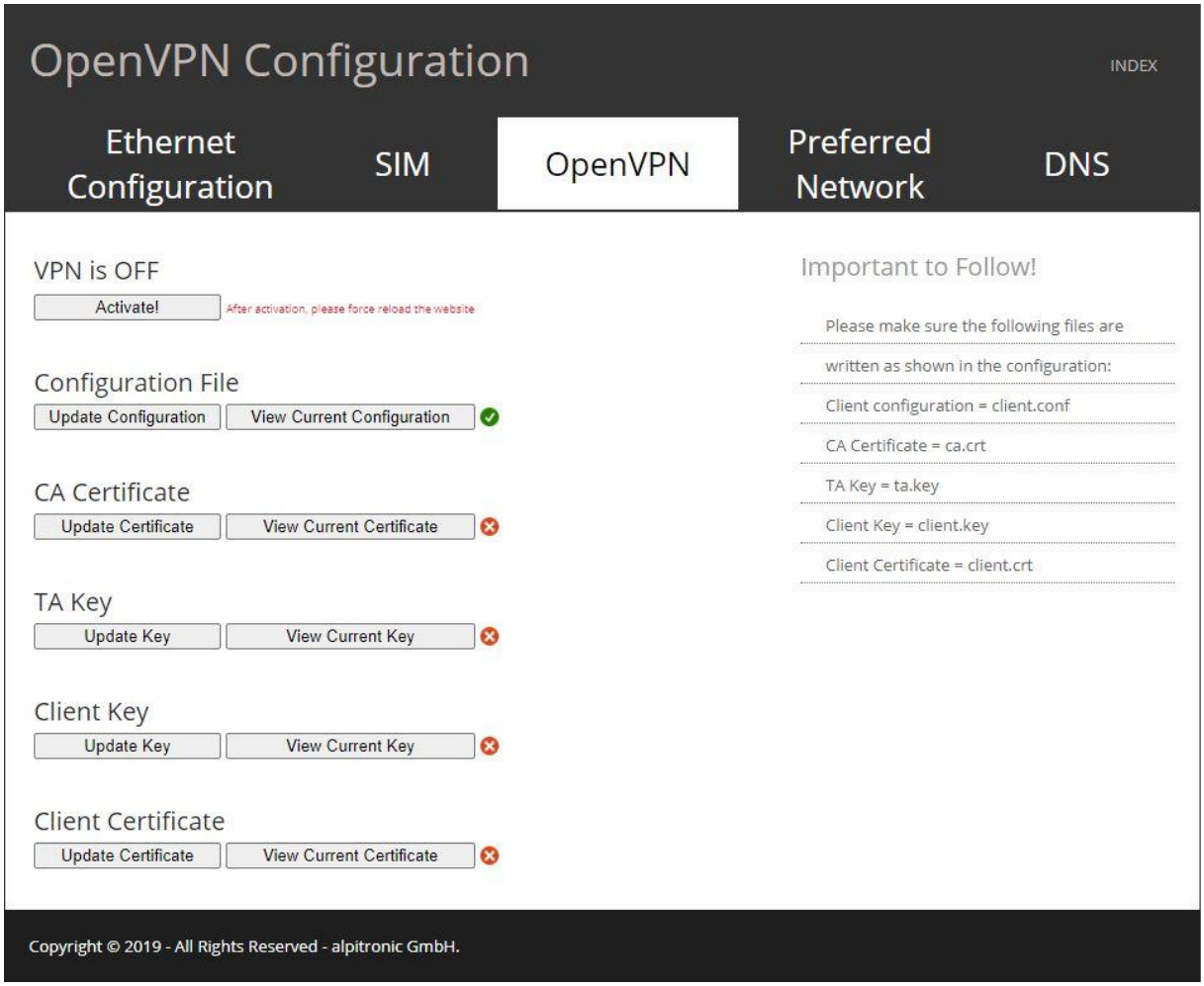

Figure 16: Open VPN Configuration

If you click on the "OpenVPN" menu, you get to the configuration of the VPN settings in order to establish a connection to backend servers using OpenVPN. The configuration files must correspond to the OpenVPN configuration rules, you can find them under this link: https://openvpn.net/index.php/open-source/documentation/howto.html

In the user interface, you can enable or disable the VPN connection. If the connection is enabled, you can specify the IP address that the client receives from the OpenVPN server to put the client into the OCPP configuration. With the "Update" button, the configuration files can be uploaded. Make sure that the files comply with the naming scheme specified in Table 3. Once all files have been uploaded, the client can be activated by clicking 'Activate'.

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File name	Description
client.conf	Client configuration
ca.crt	OpenVPN Server CA Certificate
ta.key	OpenVPN Server TA Key
client.key	Client Key
client.crt	Client Certificate

Table 3: Naming scheme

4.1.4. Preferred Network

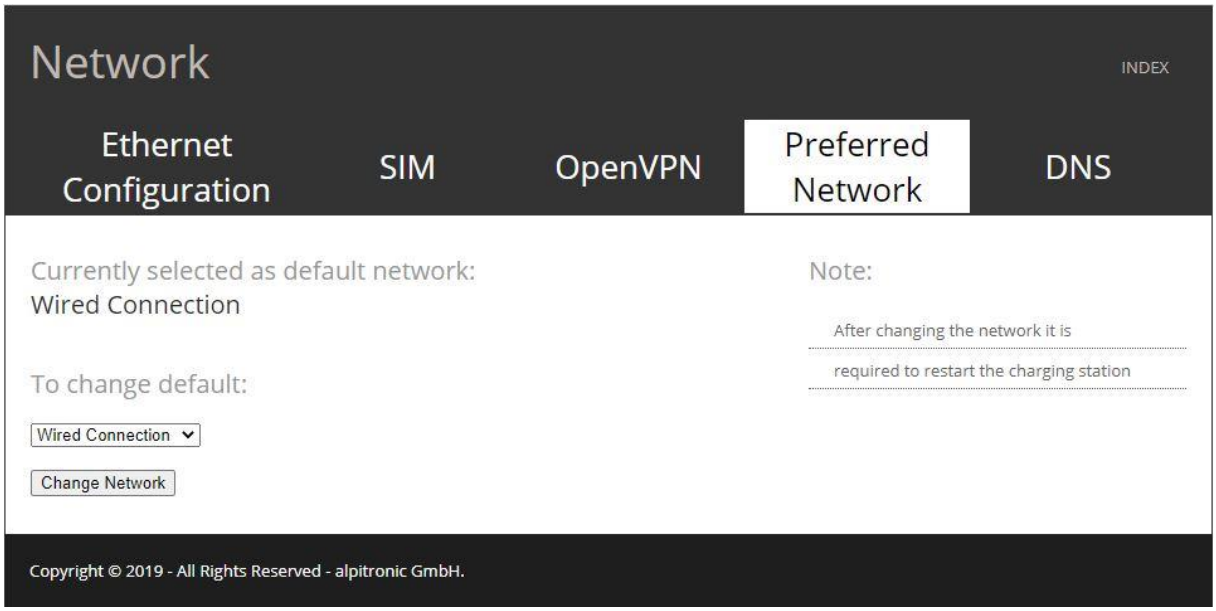

Figure 17: Preferred Network

Here you can choose whether you prefer a wired or mobile SIM connection. Confirm your selection with "Change Network".

Remark

The charging station will only attempt to establish a connection with the backend using the channel selected here.

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4.1.5. DNS

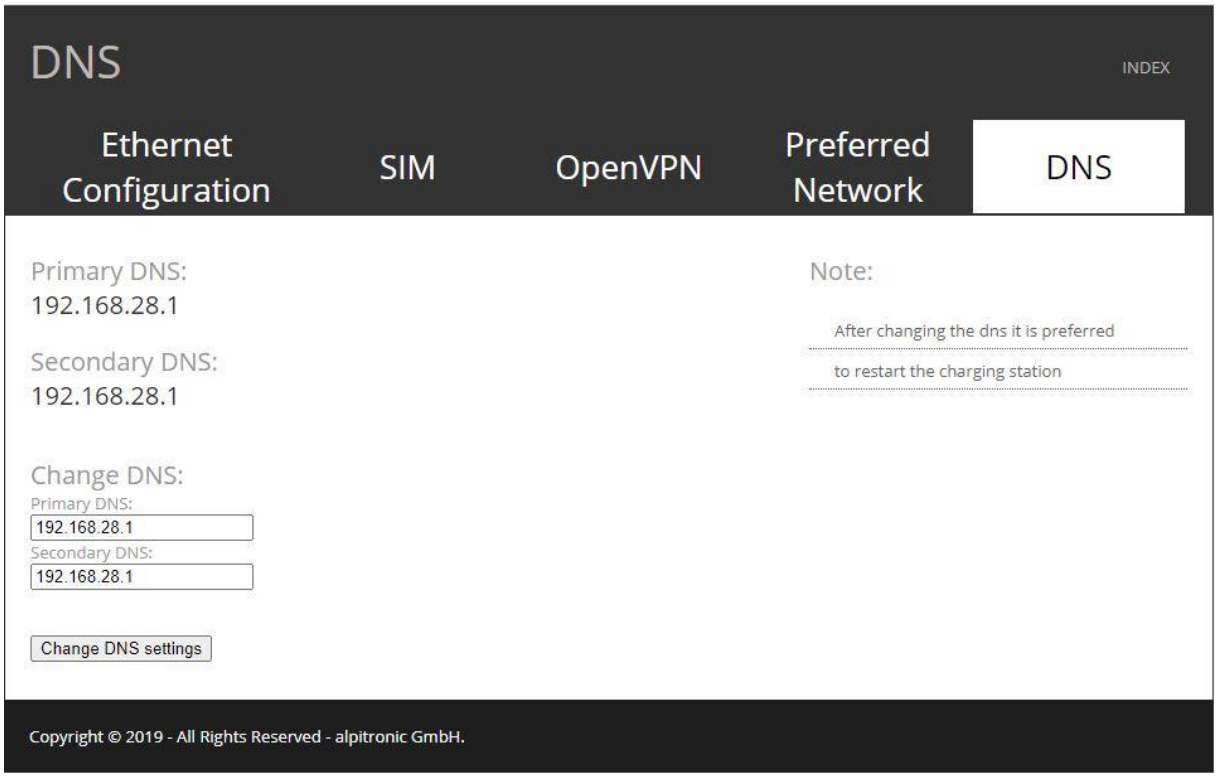

Figure 18: DNS

Via the DNS menu, you have the option of specifying dedicated DNS servers that enable the connection to the backend based on top level domains.

4.2. HyperCharger Status

The following settings are available in the HyperCharger Status menu:

- Processes View
- Connectors
- LoadManagement
- Software Version
- Logs

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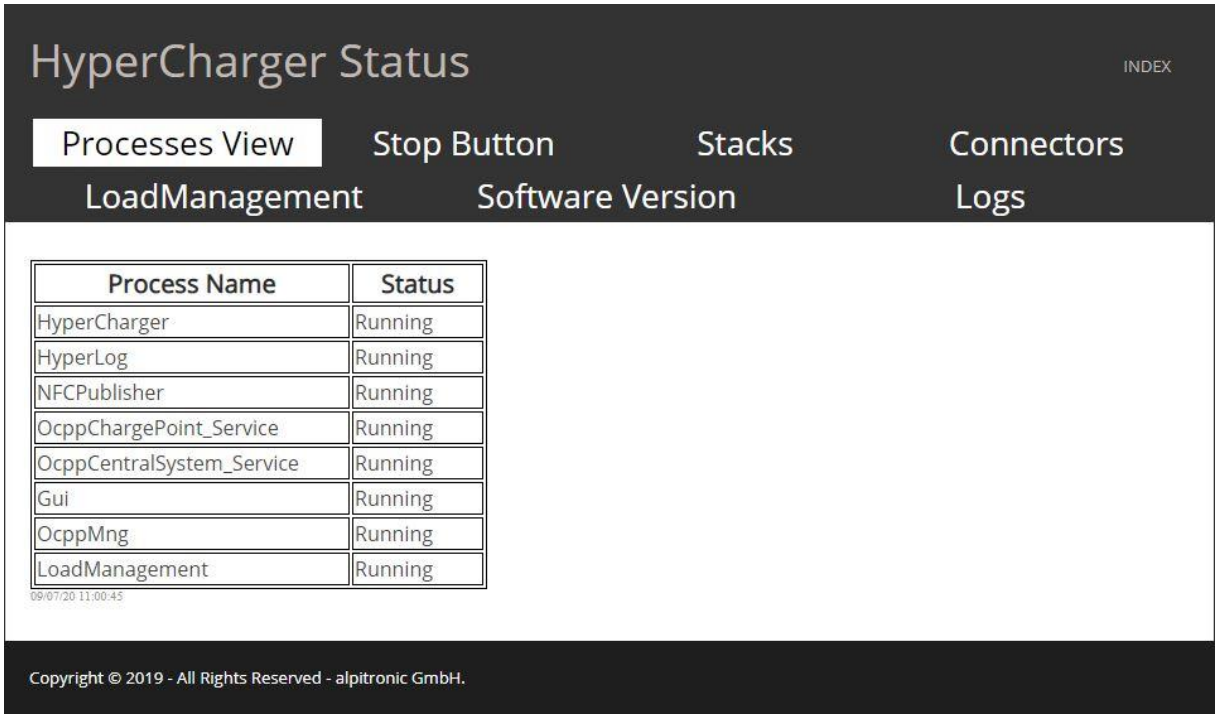

Figure 19: HyperCharger Status

4.2.1. Processes View

The "Process overview" (see **Fehler! Verweisquelle konnte nicht gefunden werden.**) shows the status of the processes that are important for the proper functioning of the charging station. For each process there are the two options “Running” or “Not Running”. Note that the website is updated automatically and has a time stamp.

4.2.2. Connectors

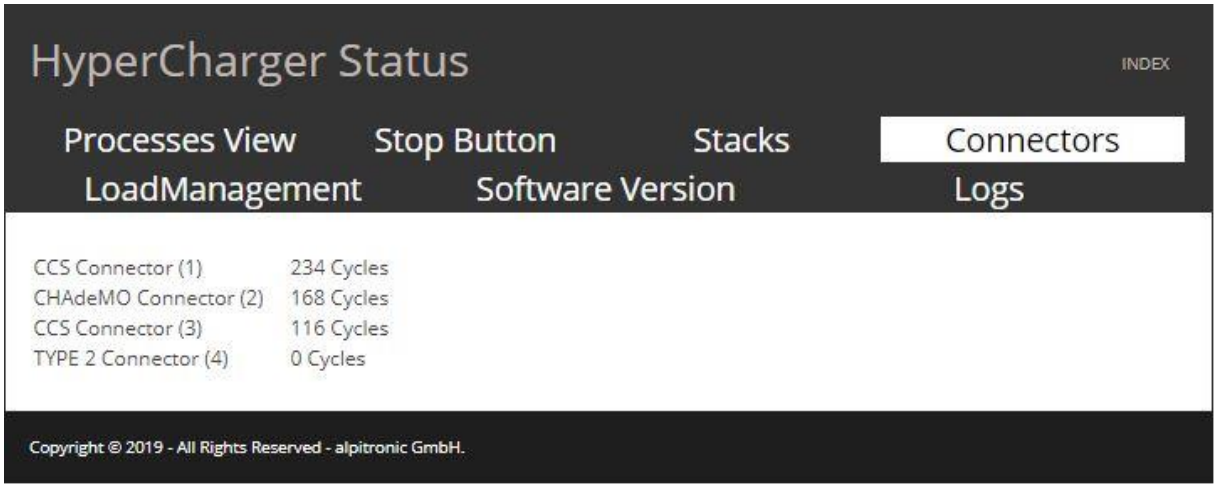

Figure 20: Status – Connectors

This menu lists all the available cables and the respective number of charging cycles.

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A cycle is counted every time a cable is plugged in- and then out of a car, even if no charging occurred.

4.2.3. Load Management

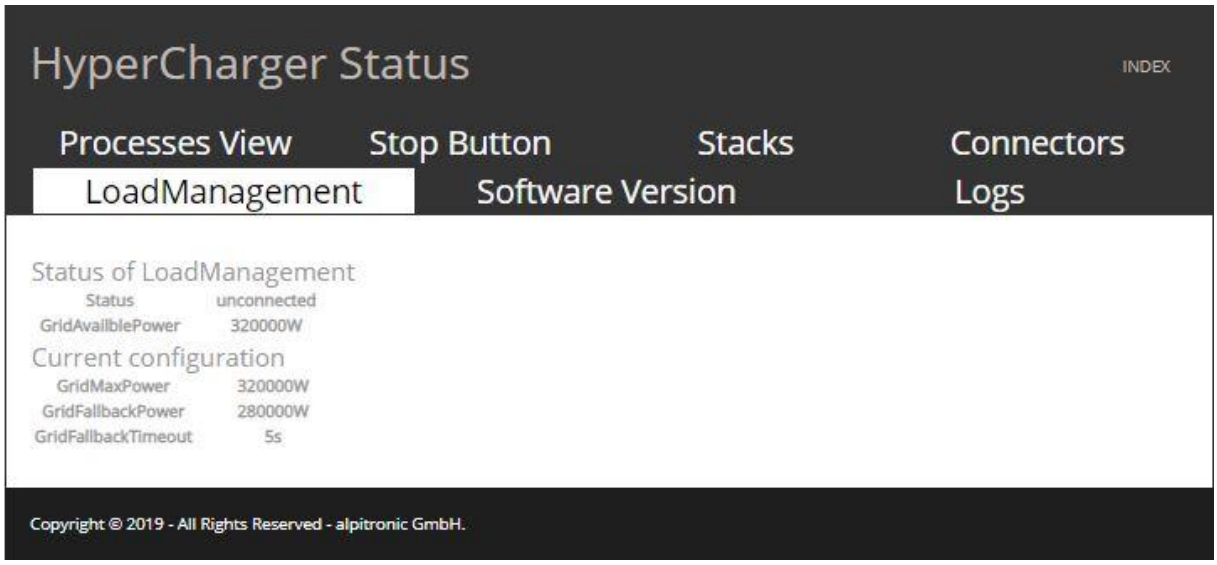

Figure 21: Status - Load Management

In this menu the user can view the currently configured parameters that affect load management.

- The status provides information on whether the external load management controller is connected or not.
- Grid Available Power represents the maximum power that the charging station makes available and which has been released by the load management controller.
- GridMaxPower indicates the globally configured maximum power of the charging station.
- GridFallbackPower indicates with which power can still be charged if the load management controller loses the connection to the hypercharger.
- GridFallbackTimeout specifies the time from which the charging station should assume without an update from the load management controller that the column is no longer available and therefore the GridFallbackPower takes effect.

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4.2.4. Software Version

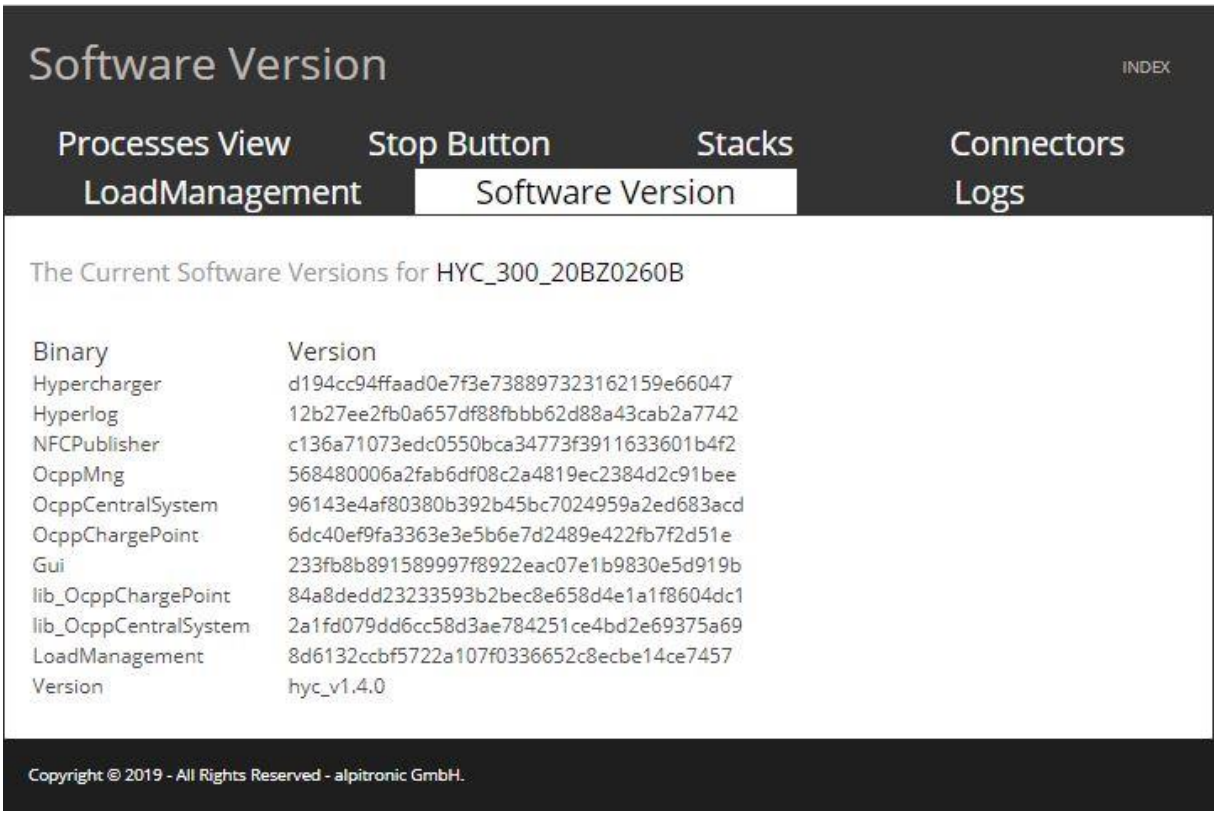

Figure 22: Status - Software Version

The Software Version menu shows the current version of the binary files running on the charging station.

4.2.5. Logs

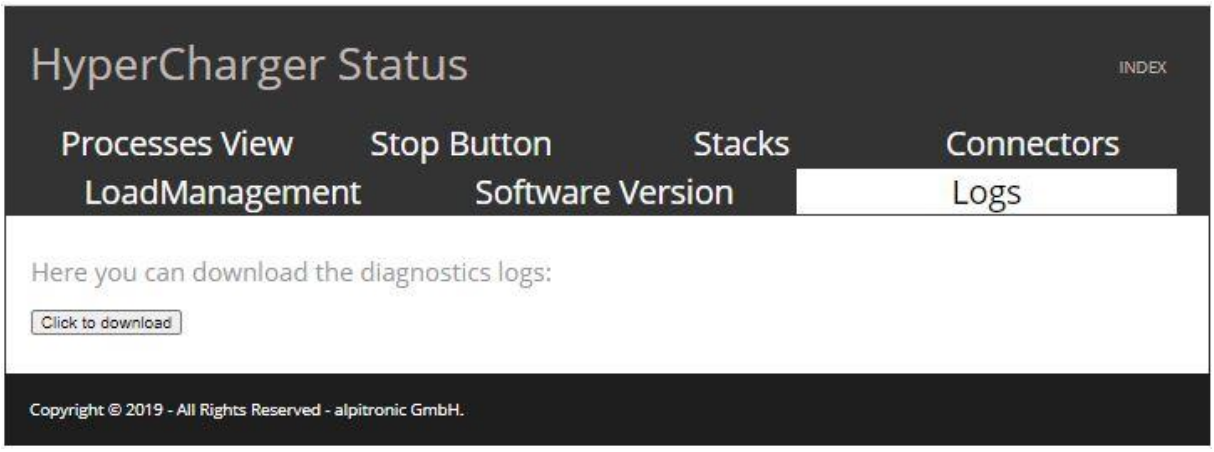

Figure 23: Status - Logs

Here you can download the log files of the last charging sessions and the communication with the backend.

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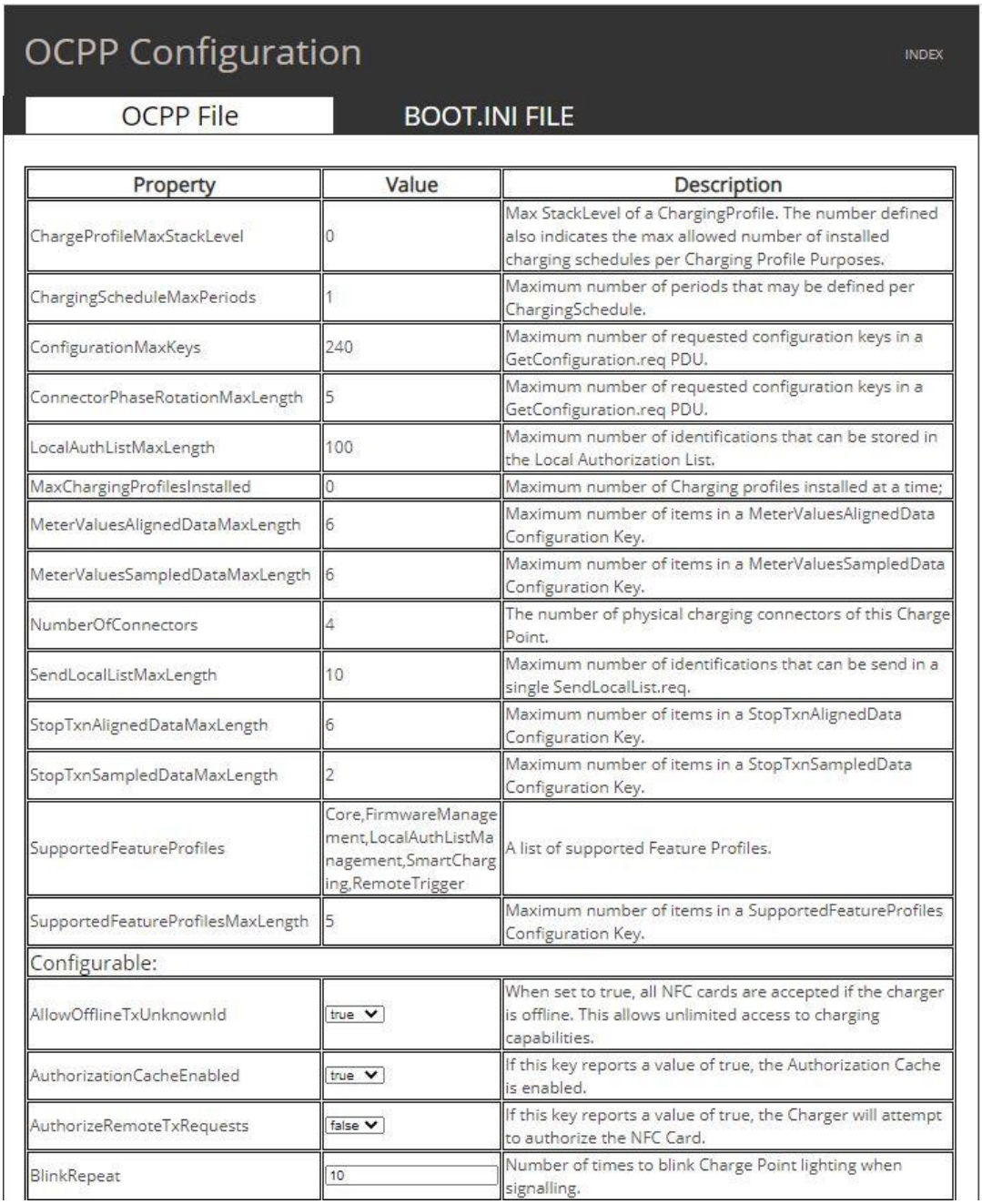
4.3. OCPP Configuration

The OCPP parameters for the charging station are set in this menu, these must be inserted manually. If they have been coordinated in advance, the parameters have already been configured correctly.

4.3.1. OCPP File



Property	Value	Description
ChargeProfileMaxStackLevel	0	Max StackLevel of a ChargingProfile. The number defined also indicates the max allowed number of installed charging schedules per Charging Profile Purposes.
ChargingScheduleMaxPeriods	1	Maximum number of periods that may be defined per ChargingSchedule.
ConfigurationMaxKeys	240	Maximum number of requested configuration keys in a GetConfiguration.req PDU.
ConnectorPhaseRotationMaxLength	5	Maximum number of requested configuration keys in a GetConfiguration.req PDU.
LocalAuthListMaxLength	100	Maximum number of identifications that can be stored in the Local Authorization List.
MaxChargingProfilesInstalled	0	Maximum number of Charging profiles installed at a time;
MeterValuesAlignedDataMaxLength	6	Maximum number of items in a MeterValuesAlignedData Configuration Key.
MeterValuesSampledDataMaxLength	6	Maximum number of items in a MeterValuesSampledData Configuration Key.
NumberOfConnectors	4	The number of physical charging connectors of this Charge Point.
SendLocalListMaxLength	10	Maximum number of identifications that can be send in a single SendLocalList.req.
StopTxnAlignedDataMaxLength	6	Maximum number of items in a StopTxnAlignedData Configuration Key.
StopTxnSampledDataMaxLength	2	Maximum number of items in a StopTxnSampledData Configuration Key.
SupportedFeatureProfiles	Core,FirmwareManagement,LocalAuthListManagement,SmartCharging,RemoteTrigger	A list of supported Feature Profiles.
SupportedFeatureProfilesMaxLength	5	Maximum number of items in a SupportedFeatureProfiles Configuration Key.
Configurable:		
AllowOfflineTxUnknownId	true	When set to true, all NFC cards are accepted if the charger is offline. This allows unlimited access to charging capabilities.
AuthorizationCacheEnabled	true	If this key reports a value of true, the Authorization Cache is enabled.
AuthorizeRemoteTxRequests	false	If this key reports a value of true, the Charger will attempt to authorize the NFC Card.
BlinkRepeat	10	Number of times to blink Charge Point lighting when signalling.

Figure 24: OCPP File_1

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ClockAlignedDataInterval	900	Size (in seconds) of the clock-aligned data interval. This is the size (in seconds) of the set of evenly spaced aggregation intervals per day, starting at 00:00:00 (midnight). For example, a value of 900 (15 minutes) indicates that every day should be broken into 96 15-minute intervals. When clock aligned data is being transmitted, the interval in question is identified by the start time and (optional) duration interval value, represented according to the ISO8601 standard. All "per-period" data (e.g. energy readings) should be accumulated (for "flow type measurands such as energy), or averaged (for other values) across the entire interval (or partial interval, at the beginning or end of a charging session), and transmitted (if so enabled) at the end of each interval, bearing the interval start time timestamp. A value of "0" (numeric zero), by convention, is to be interpreted to mean that no clock-aligned data should be transmitted.
ConnectionTimeOut	30	Interval (from successful authorization) until incipient charging session is automatically canceled due to failure of EV user to (correctly) insert the charging cable connector(s) into the appropriate connector(s).
ConnectorPhaseRotation	0.RST,	The phase rotation per connector in respect to the connector's electrical meter (or if absent, the grid connection).
HeartbeatInterval	1800	Interval of inactivity (no OCPP exchanges) with central system after whichthe Charge Point should send a Heartbeat.req PDU.
HycKioskModeEnabled	true	Wheter the Hypercharger Kiosk Mode is enabled or not
HycKioskModeTagIds	80000000000009,8000000(	Tag IDs (comma separated) that are enabled for Kiosk Mode
LightIntensity	50	Percentage of maximum intensity at which to illuminate Charge Point lighting.
LocalAuthListEnabled	true	Whether the Local Authorization List is enabled.
LocalAuthorizeOffline	true	Whether the Charge Point, when offline, will start a transaction for locally-authorized identifiers.
LocalPreAuthorize	true	Whether the Charge Point, when online, will start a transaction for locally-authorized identifiers without waiting for or requesting an Authorize.conf from the Central System
MaxEnergyOnInvalidId	0	Maximum energy in Wh delivered when an identifier is invalidated by the Central System after start of a transaction.
MeterValuesAlignedData	Energy.Active.Import.Regist	Clock-aligned measurand(s) to be included in a MeterValues.req PDU, every ClockAlignedDataInterval seconds.
MeterValuesSampledData	Energy.Active.Import.Regist	Sampled measurands to be included in a MeterValues.req PDU, every MeterValueSampleInterval seconds.
MeterValueSampleInterval	30	Interval between sampling of metering (or other) data, intended to betransmitted by "MeterValues PDUs.
MinimumStatusDuration	1	The minimum duration that a Charge Point or Connector status is stable before a StatusNotification.req PDU is sent to the Central System.
ResetRetries	3	Number of times to retry an unsuccessful reset of the Charge Point.

Figure 25: OCPP File_2

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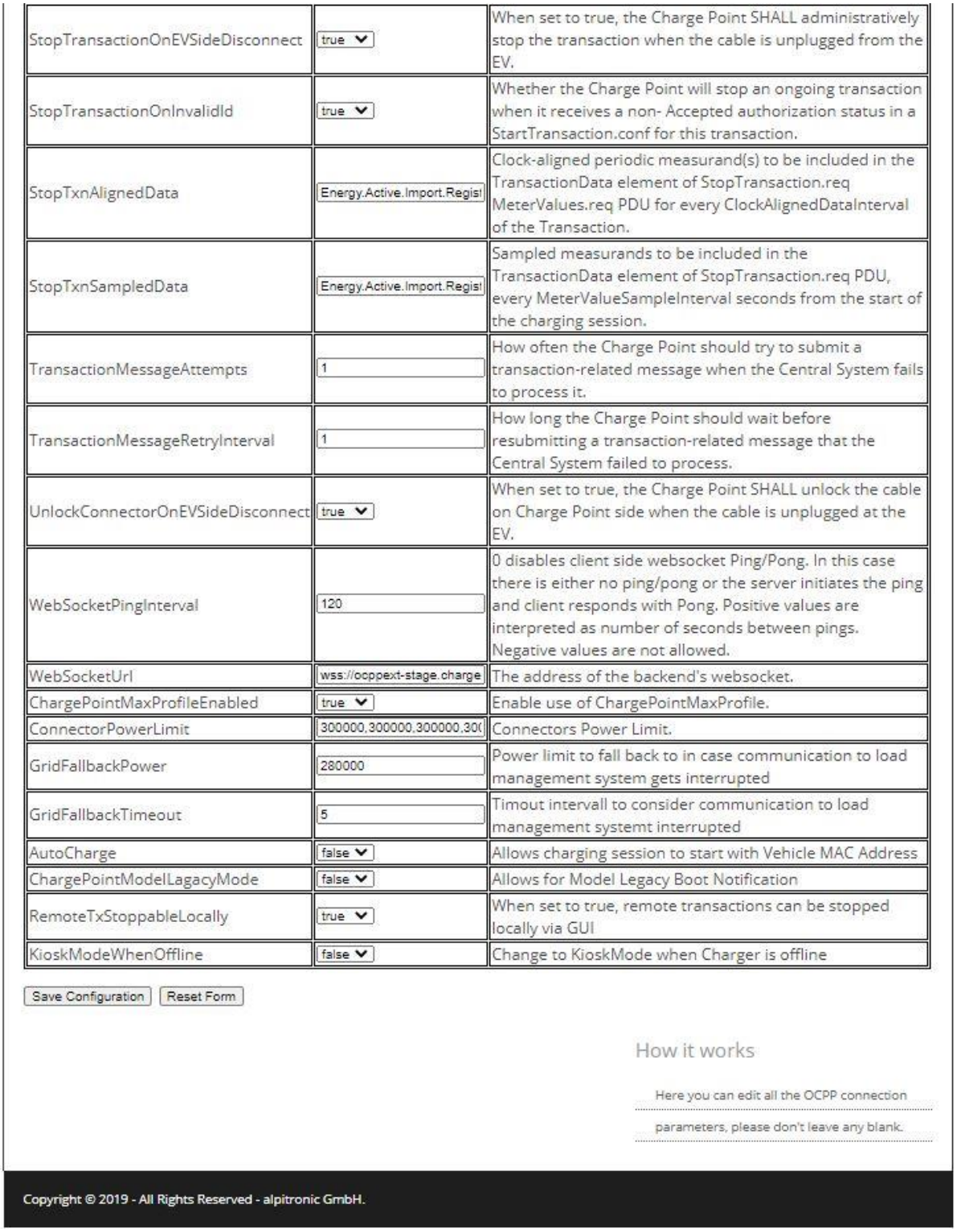

StopTransactionOnEVSideDisconnect	true	When set to true, the Charge Point SHALL administratively stop the transaction when the cable is unplugged from the EV.
StopTransactionOnInvalidId	true	Whether the Charge Point will stop an ongoing transaction when it receives a non- Accepted authorization status in a StartTransaction.conf for this transaction.
StopTxnAlignedData	Energy.Active.Import.Regist	Clock-aligned periodic measurand(s) to be included in the TransactionData element of StopTransaction.req MeterValues.req PDU for every ClockAlignedDataInterval of the Transaction.
StopTxnSampledData	Energy.Active.Import.Regist	Sampled measurands to be included in the TransactionData element of StopTransaction.req PDU, every MeterValueSampleInterval seconds from the start of the charging session.
TransactionMessageAttempts	1	How often the Charge Point should try to submit a transaction-related message when the Central System fails to process it.
TransactionMessageRetryInterval	1	How long the Charge Point should wait before resubmitting a transaction-related message that the Central System failed to process.
UnlockConnectorOnEVSideDisconnect	true	When set to true, the Charge Point SHALL unlock the cable on Charge Point side when the cable is unplugged at the EV.
WebSocketPingInterval	120	0 disables client side websocket Ping/Pong. In this case there is either no ping/pong or the server initiates the ping and client responds with Pong. Positive values are interpreted as number of seconds between pings. Negative values are not allowed.
WebSocketUrl	wss://ocppext-stage.charge	The address of the backend's websocket.
ChargePointMaxProfileEnabled	true	Enable use of ChargePointMaxProfile.
ConnectorPowerLimit	300000,300000,300000,30(	Connectors Power Limit.
GridFallbackPower	280000	Power limit to fall back to in case communication to load management system gets interrupted
GridFallbackTimeout	5	Timout intervall to consider communication to load management systemt interrupted
AutoCharge	false	Allows charging session to start with Vehicle MAC Address
ChargePointModelLagacyMode	false	Allows for Model Legacy Boot Notification
RemoteTxStoppableLocally	true	When set to true, remote transactions can be stopped locally via GUI
KioskModeWhenOffline	false	Change to KioskMode when Charger is offline

Save Configuration Reset Form

How it works

Here you can edit all the OCPP connection parameters, please don't leave any blank.

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Figure 26: OCPP File_3

Remark

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OCPP Configuration Keys and Error Codes are found in chapter 5 and 6.

4.3.2. BOOT.INI File

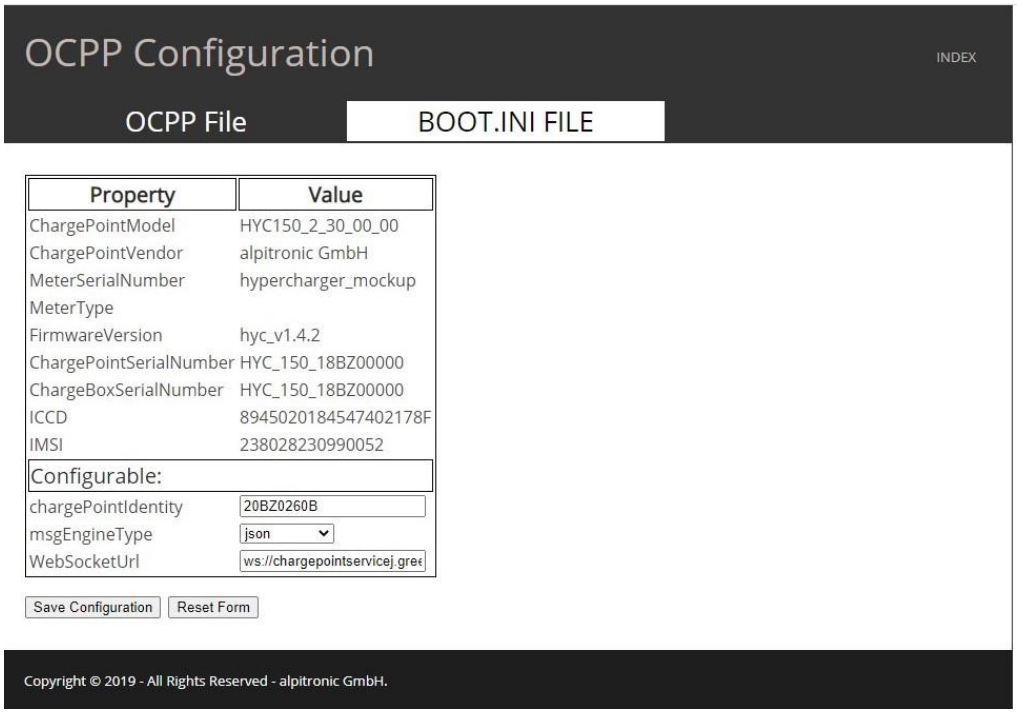

Figure 27: OCPP - BOOT.INI File

In this menu the main operating parameters for the charging station (see Table 4) can be set up. The parameters are saved with the "Save Configuration" button.

Field name	Field type	Description
chargeBoxSerialNumber	CiString25Type	Optional. This contains a value that identifies the serial number of the Charge Box inside the Charge Point. Deprecated, will be removed in future version
chargePointSerialNumber	CiString25Type	Optional. This contains a value that identifies the serial number of the Charge Point.
chargePointVendor	CiString20Type	Required. This contains a value that identifies the vendor of the ChargePoint.
firmwareVersion	CiString50Type	Optional. This contains the firmware version of the Charge Point.
iccid	CiString20Type	Optional. This contains the ICCID of the modem's SIM card.
imsi	CiString20Type	Optional. This contains the IMSI of the modem's SIM card.
meterSerialNumber	CiString25Type	Optional. This contains the serial number of the main electrical meter of the Charge Point.
meterType	CiString25Type	Optional. This contains the type of the main electrical meter of the Charge Point.

Table 4: Overview BOOT.INI parameters

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4.3.2.1. chargeBoxSerialNumber

This value identifies the serial number of the Charge Box inside the Charge Point. Deprecated, will be removed in future version (see 4.3.2.2 chargePointSerialNumber).

4.3.2.2. chargePointSerialNumber

This value identifies the serial number of the Charge Point. This value is unique for each individual ChargePoint. **Example:** 22BZ00055

4.3.2.3. chargePointVendor

This value identifies the vendor of the ChargePoint. All hyperchargers report “alpitronic GmbH” as vendor.

4.3.2.4. firmwareVersion

This value contains the firmware version of the Charge Point. **Example:** hyc_v1.3.1

4.3.2.5. iccid

This value identifies each SIM card internationally. It is inscribed on the back of the SIM Card. A full ICCID is 19 or 20 characters. The ICCID can be thought of as the serial number of the SIM Card. It is also considered as Issuers Identification Number.

4.3.2.6. imsi

This value represents the unique International Mobile subscriber Indetity. It is stored inside the SIM. It consists of three parts:

1. Mobile Country Code (MCC): The first 3 digits of IMSI give you the MCC.
2. Mobile Network Code (MNC): the next 2 or 3 digits give you the MNC.
3. Mobile Station ID (MSID): The rest of the digits represent the network you are using like IS-95, TDMA, GSM etc.

The **Mobile network code** (MNC) is used in combination with a **mobile country code** (MCC) (also known as a "MCC / MNC tuple") to uniquely identify a mobile phone operator/carrier.

4.3.2.7. meterSerialNumber

This value represents the serial number of the main electrical meter of the Charge Point. Since all hypercharger Charge Points use individual meters for each connector, no main meter is specified.

4.3.2.8. meterType

This value represents the type of the main electrical meter of the Charge Point. Nothing is specified here for hypercharger charging points.

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4.4. General Settings

The following setting are available in the general settings menu:

- WhiteList NFC
- Power
- GUI
- Software Update

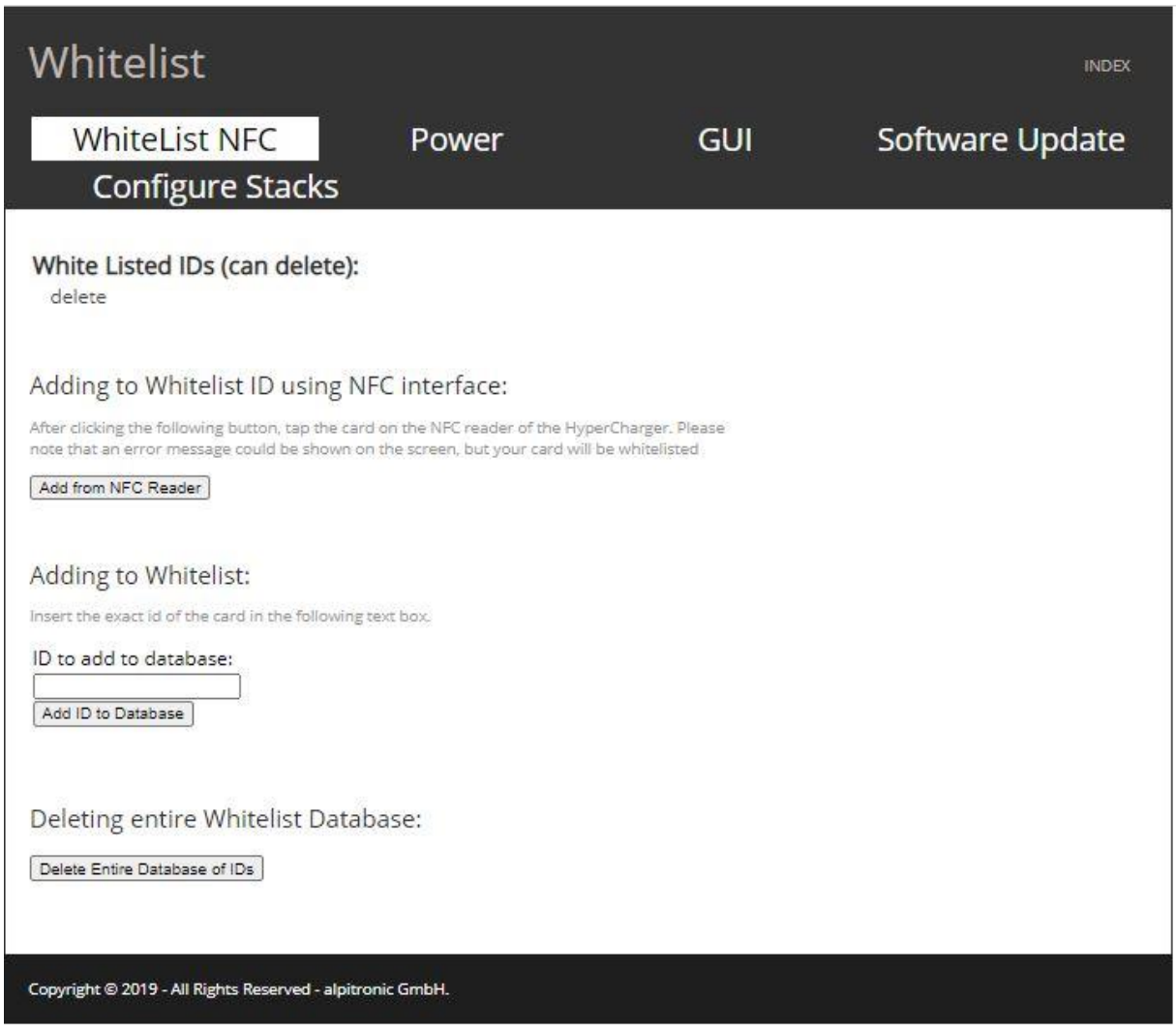

Figure 28: General Settings

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4.4.1. WhiteList NFC

In the NFC whitelist configuration menu (see **Fehler! Verweisquelle konnte nicht gefunden werden.**) it is possible to set up the NFC tags which are allowed to charge an electric vehicle without confirmation from the backend server. This works primarily when no backend is used.

The configuration consists of four parts:

- The first part shows the NFC tags that are currently whitelisted in the charging station
- The second part enables a new NFC tag to be added by pressing the “Add from NFC Reader” button and then placing the charge card on the NFC reader
- The third allows the addition of new NFC tags by entering the ID directly into the text box
- The last part allows to delete the entire list of NFC cards stored on the charging station

4.4.2. Power Settings

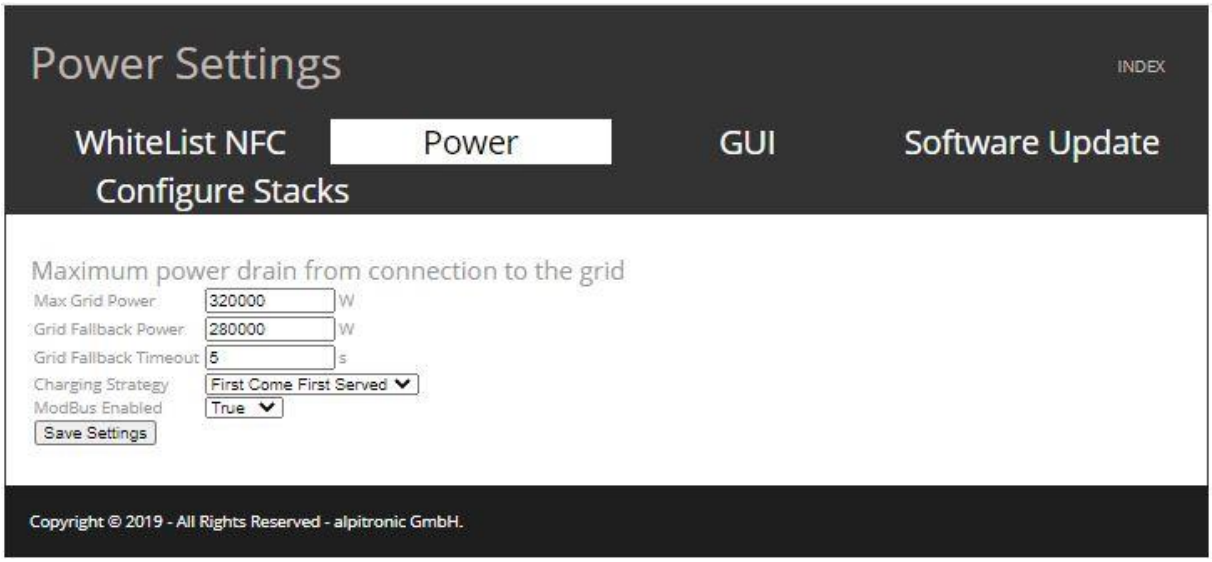

Figure 29: General - Power Settings

In this menu you can set the maximum power consumption from the main supply. This menu is used when a lower power is available on the main side than the maximum charging power. Furthermore, the parameters relevant for load management and the charging strategy can be changed here. There are two strategies:

- First Come First Serve: The vehicle that drives first to the charging station receives the entire power released by the station – as far as this can be used up by the vehicle. If the available power is completely used by the vehicle, it is not possible to start an additional charging session on any other connector.
- Fair Share: The vehicle that drives first to the charging station receives the entire power available – as far as this can be used up by the vehicle. If a second vehicle drives to the charging station, it can start a charging session and the available power will be divided 50:50 between the first and the second charging point.

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4.4.3. GUI

In the GUI (Graphical User Interface) menu the three settings "Configuration", "Welcome Screen" and "Slide Show" are available.

4.4.3.1. GUI Configuration

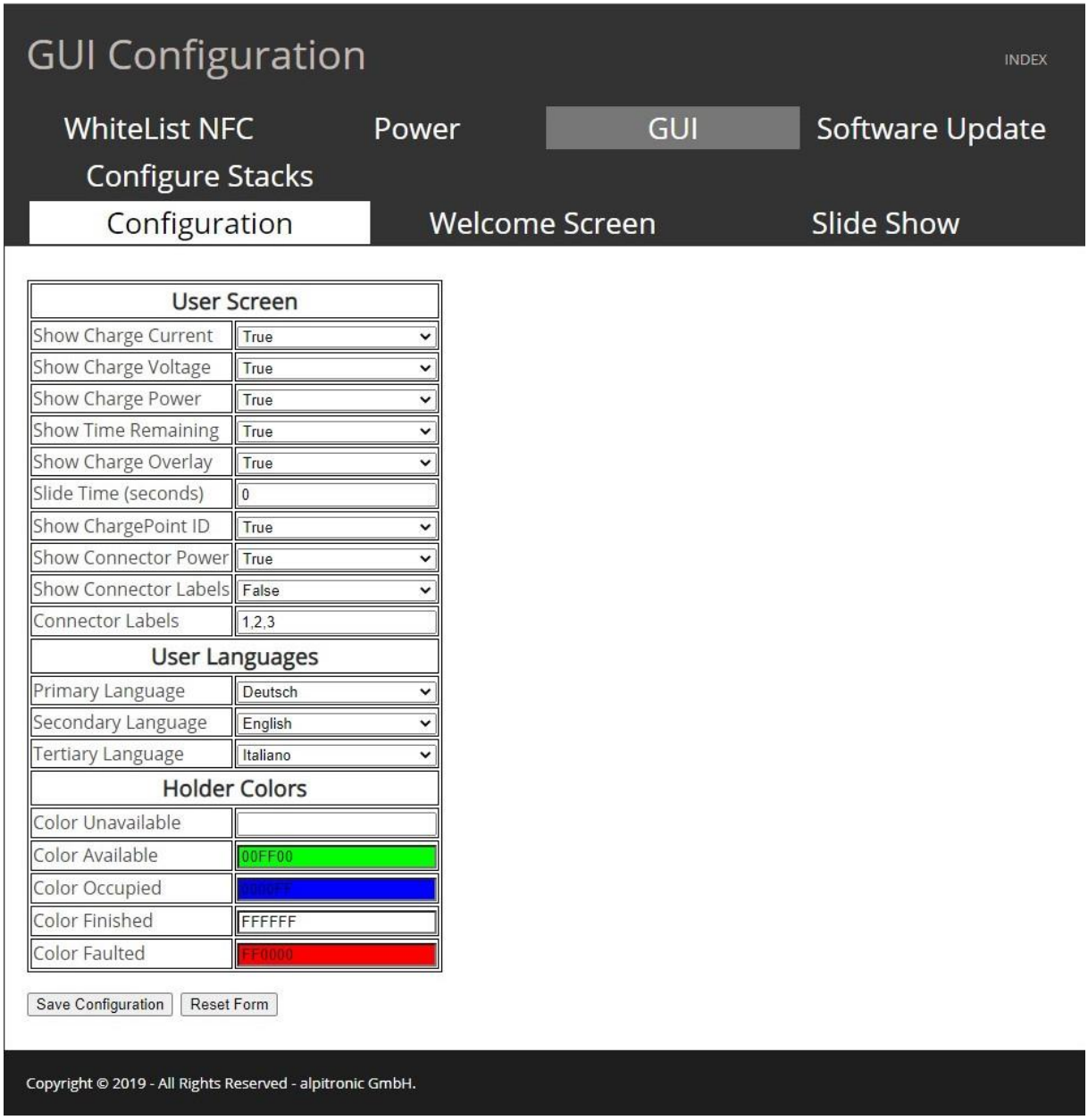

Figure 30: General - GUI Configuration

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The GUI menu can be used to select which charging parameters are displayed on the screen during a charging process:

- Show Charger Current: shows the charging current
- Show Charge Voltage: shows the charge voltage
- Show Charge Power: shows the charge power
- Show Time Remaining: Shows the remaining time until the bulk SoC (80%) or full SoC (100%)
- Show Charge Overlay: Shows the charge session overlay on the lock screen
- Slide Time: The display duration of the images from the Welcome Screen and Slide Show sections can be defined here (more on this in chapter 4.4.3.2 and 4.4.3.3).
- User Languages: Allows to set the primary, secondary and tertiary language of the charging station.
- Holder Colors: The user can enter a dedicated color code for each status of the charging station, which is displayed on the LED rings. The color code are web colors. All colors of the RGB scale can be selected https://de.wikipedia.org/wiki/Webfarben.

Remark

The following languages are currently available:
Czech, Dansk, Deutsch, English, Español, Français, Hrvatski, Italiano, Magyar, Nederlands, Norsk, Polski, Portugues, Romana, ру́сский, Slovak, Slovenscina, Suomi, Svenska

4.4.3.2. Welcome Screen

You have the option of showing your own graphics on the display of the hypercharger. Graphics must be saved in the following settings:

- PNG format
- 1366 x 768 pixels
- RGB colours

You can upload two graphics in the 'Welcome Screen' mode. These must be saved with the names "Authenticate.png" and "Logo.png" - the graphics are only adopted and displayed by the system with this name.

Remark

Images should only be saved with alphanumeric characters (German umlauts aren’t supported).
Right: gruen_gross123.png
Wrong: grün.groß!.jpg

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4.4.3.3. Slide Show

For the "Slide Show" mode, there is no limit of graphics that can be displayed alternately. There are no requirements on the naming, whereas the required formatting remains the same as for the Welcome Screen (PNG, 1366 x 768 pixels, RGB). It should be taken into consideration that the graphics are presented in alphabetical order.

In the "Configuration" tab (chapter 4.4.3.1) the "Slide Time" can be changed. This value can be used to set the presentation time (specified in seconds) of the individual graphics in the slide show.

Remark

The logo and the Authenticate image from the Welcome Screen section are displayed first, followed by the images of the slide show

Remark

If the duration of the slide show is> 0 seconds, the welcome screen and the slides are displayed alternately.

With a value of 0, only the welcome screen with a predefined display time of 10 seconds is used.

Remark

If you don't upload your own graphics, the hypercharger standard screens will be used.

Remark

Please note that an overlay can be activated. This is shown on the display during the charging process. The overlay can be adjusted in the menu “Configuration” (4.4.3.1). Please take this into account when designing the graphics.

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4.4.4. Software Update

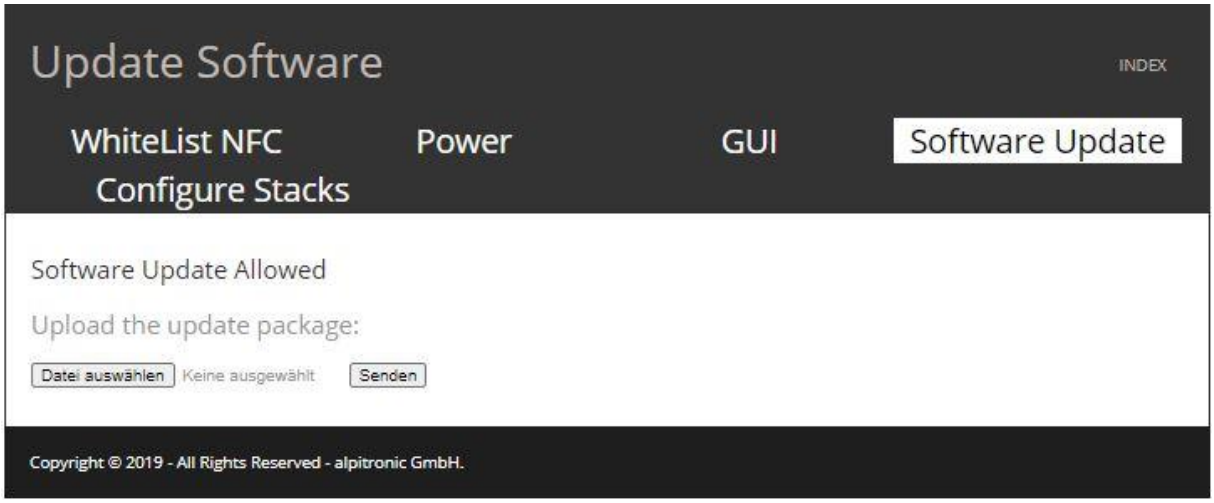

Figure 31: General - Software Update

Here you can upload a software update, if available.

Attention

Make sure that you do not skip any intermediate version steps when updating the hypercharger!

Remark

In our newsletter we inform you about update releases. If you are interested in being added to the mailing list, please contact support@hypercharger.it.

Remark

Software updates are included in the first two years after purchasing a hypercharger. If no warranty extension is active for the period after that, you have the option of purchasing software upgrade packages separately. You can send a request to sales@hypercharger.it.

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4.5. Password Configuration

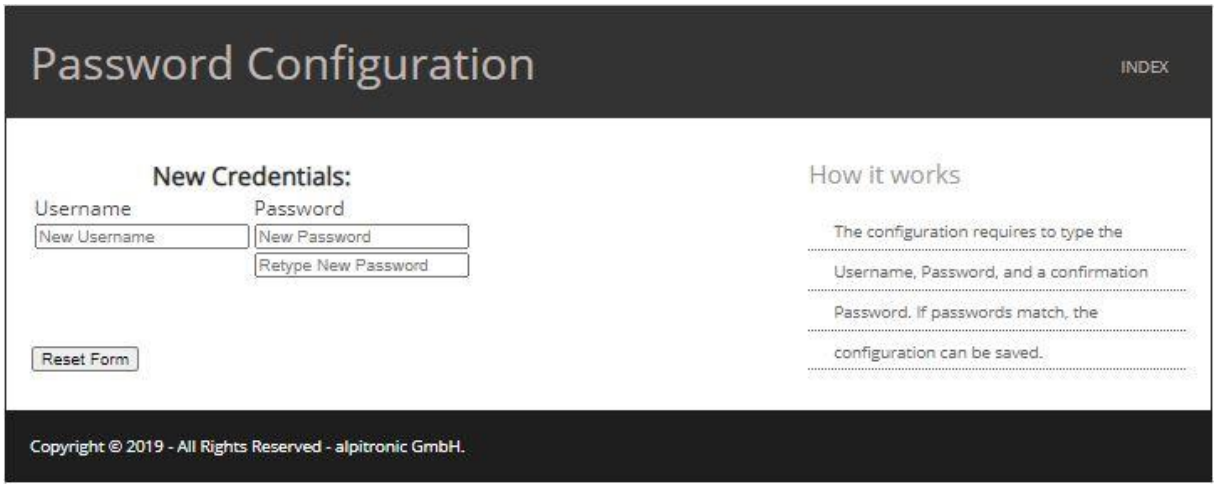

Figure 32: Password Configuration

Here you can change your username and password for the web interface. Currently only one user can be created in the web interface. Multi User Management will be implemented in a future release.

Remark

It is recommended to change the access data immediately after the first entry.

4.6. Reset

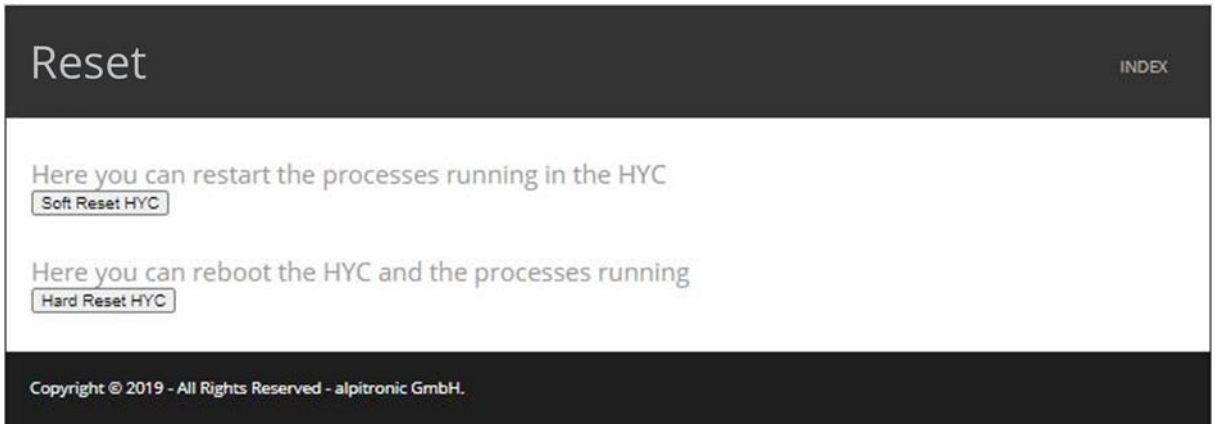

Figure 33: Reset

This menu is used to carry out soft or hard resets on the charging station.

Remark

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Changes to the OCPP configuration of the charger require a soft reset, while modifications to the network settings of the charger require a hard reset.

Attention

Before resetting, make sure that no vehicles are connected to the charging station!

4.7. Overview of connectors

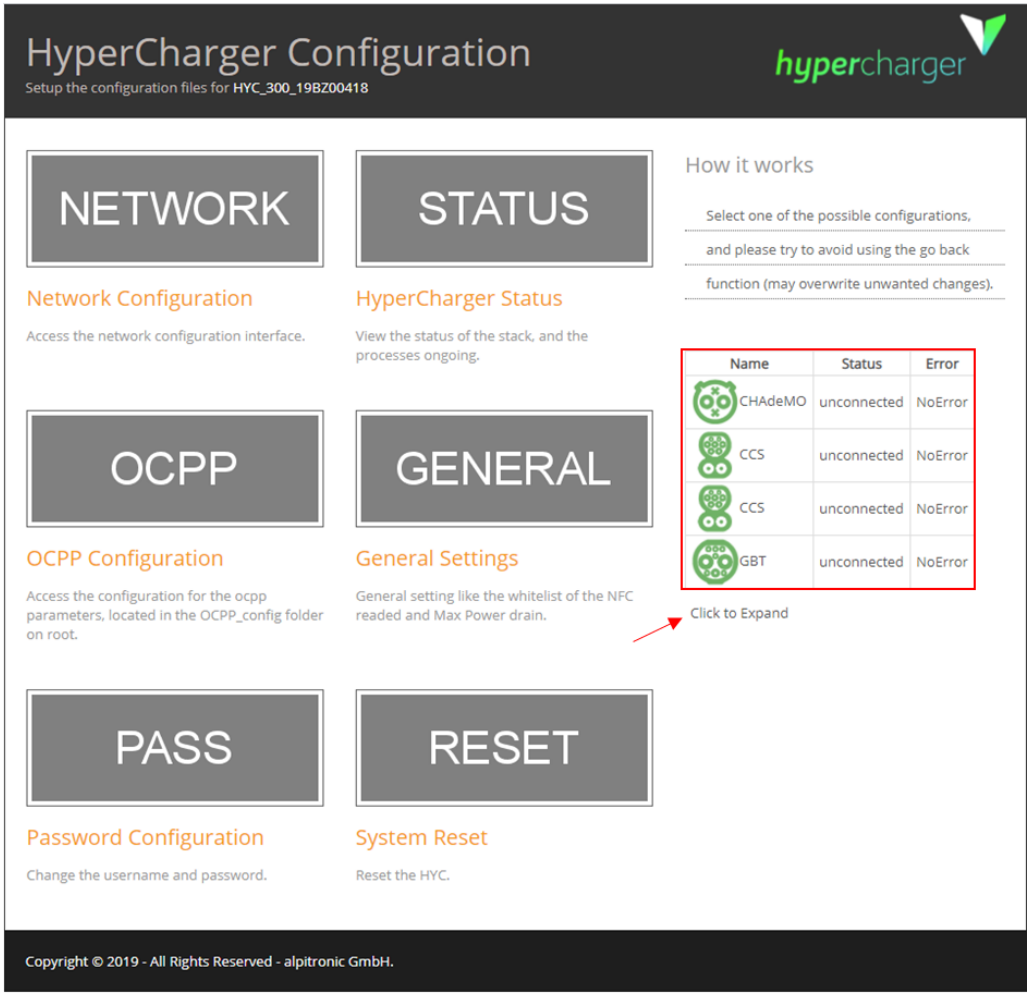

Figure 34: Overview of connectors

On the right side of the main page the user will find a connector overview. This provides brief information about the current status of the charging station and its connectors.

By clicking on "Click to Expand" the user gets to the detailed view.

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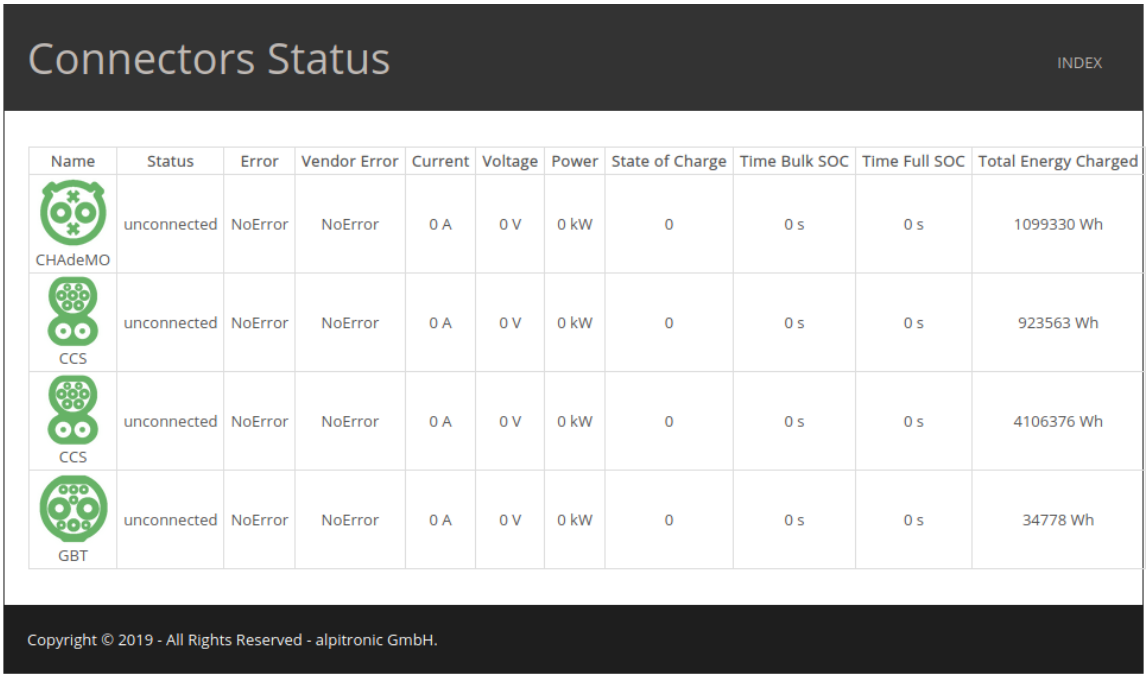

Figure 35: Connectors Status

- Name: Provides information about the built-in charging standard
- Status: Provides information on whether the cable is connected to a vehicle or not
- Error and Vendor Error: Provide information about any errors that could occur during a charging session
- Current / Voltage / Power: Provide information about the performance data of a charging session, if one is in progress.
- State of Charge: Shows the current SoC of the vehicle
- Time Bulk SOC and Time Full SOC: Indicates the number of seconds the vehicle needs to reach the respective SoC (Bulk SoC: 80%, Full SoC: 100%).
- Total Energy Charged: Indicates the current absolute counter value of the energy measurement which is built into the charging station and which was installed on this path.

Remark

If you have questions or if you encounter any problems, please do not hesitate to contact our hypercharger support team:
support@hypercharger.it or +39 0471 096 333

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5. OCPP Configuration Keys

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC2119 (Key words for use in RFCs to Indicate Requirement Levels. S. Bradner. March 1997. http://www.ietf.org/rfc/rfc2119.txt).

5.1. Standard Configuration Key Names & Values

The following configuration keys are defined in the Open Charge Point Protocol 1.6 (https://www.openchargealliance.org/downloads/).

5.1.1. Core profile

5.1.1.1. AllowOfflineTxForUnknownId

Required/ supported	Optional / supported
Accessibility	RW
Type	boolean
Description	If this key exists, the Charge Point supports Unknown Offline Authorization. If this key reports a value of true, Unknown Offline Authorization is enabled.

5.1.1.2. AuthorizationCacheEnabled

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	If this key exists, the Charge Point supports an Authorization Cache. If this key reports a value of true, the Authorization Cache is enabled.

5.1.1.3. AuthorizeRemoteTxRequests

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	Whether a remote request to start a transaction in the form of a RemoteStartTransaction.req message should be authorized beforehand like a local action to start a transaction.

5.1.1.4. BlinkRepeat

Required/ supported	optional / not supported

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Accessibility	RW
Type	integer
Unit	times
Description	Number of times to blink Charge Point lighting when signalling

5.1.1.5. ClockAlignedDataInterval

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Size (in seconds) of the clock-aligned data interval. This is the size (in seconds) of the set of evenly spaced aggregation intervals per day, starting at 00:00:00 (midnight). For example, a value of 900 (15 minutes) indicates that every day should be broken into 96 15-minute intervals. When clock aligned data is being transmitted, the interval in question is identified by the start time and (optional) duration interval value, represented according to the ISO8601 standard. All "per-period" data (e.g. energy readings) should be accumulated (for "flow" type measurands such as energy), or averaged (for other values) across the entire interval (or partial interval, at the beginning or end of a Transaction), and transmitted (if so enabled) at the end of each interval, bearing the interval start time timestamp. A value of "0" (numeric zero), by convention, is to be interpreted to mean that no clock-aligned data should be transmitted.

5.1.1.6. ConnectionTimeOut

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Interval from beginning of status: 'Preparing' until incipient Transaction is automatically cancelled, due to failure of EV driver to (correctly) insert the charging cable connector(s) into the appropriate socket(s). The Charge Point will go back to the original state, probably: 'Available'.

5.1.1.7. ConnectorPhaseRotation

Required/ supported	required / supported
Accessibility	RW
Type	CSL
Description	The phase rotation per connector in respect to the connector's electrical meter (or if absent, the grid connection). Possible values per connector are: NotApplicable (for Single phase or DC Charge Points) Unknown (not (yet) known) RST (Standard Reference Phasing) RTS (Reversed Reference Phasing) SRT (Reversed 240 degree rotation) STR (Standard 120 degree rotation)

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	TRS (Standard 240 degree rotation) TSR (Reversed 120 degree rotation) R can be identified as phase 1 (L1), S as phase 2 (L2), T as phase 3 (L3). If known, the Charge Point MAY also report the phase rotation between the grid connection and the main energymeter by using index number Zero (0). Values are reported in CSL, formatted: 0.RST, 1.RST, 2.RTS

5.1.1.8. ConnectorPhaseRotationMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a ConnectorPhaseRotation Configuration Key.

5.1.1.9. GetConfigurationMaxKeys

Required/ supported	required / supported
Accessibility	R
Type	integer
Description	Maximum number of requested configuration keys in a GetConfiguration.req PDU.

5.1.1.10. HeartbeatInterval

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Interval of inactivity (no OCPP exchanges) with central system after which the Charge Point should send a Heartbeat.req PDU

5.1.1.11. LightIntensity

Required/ supported	optional / not supported
Accessibility	RW
Type	integer
Unit	%
Description	Percentage of maximum intensity at which to illuminate Charge Point lighting

5.1.1.12. LocalAuthorizeOffline

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	whether the Charge Point, when **offline**, will start a transaction for

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	locally-authorized identifiers.

5.1.1.13. LocalPreAuthorize

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	whether the Charge Point, when **online**, will start a transaction for locally-authorized identifiers without waiting for or requesting an Authorize.conf from the Central System

5.1.1.14. MaxEnergyOnInvalidId

Required/ supported	optional /not supported
Accessibility	RW
Type	integer
Unit	Wh
Description	Maximum energy in Wh delivered when an identifier is invalidated by the Central System after start of a transaction.

5.1.1.15. MeterValuesAlignedData

Required/ supported	required / supported
Accessibility	RW
Type	CSL
Description	Clock-aligned measurand(s) to be included in a MeterValues.req PDU, every ClockAlignedDataInterval seconds

5.1.1.16. MeterValuesAlignedDataMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a MeterValuesAlignedData Configuration Key.

5.1.1.17. MeterValuesSampledData

Required/ supported	required / supported
Accessibility	RW
Type	CSL
Description	Sampled measurands to be included in a MeterValues.req PDU, every MeterValueSampleInterval seconds. Where applicable, the Measurand is combined with the optional phase; for instance: Voltage.L1 Default: "Energy.Active.Import.Register"

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5.1.1.18. MeterValuesSampledDataMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a MeterValuesSampledData Configuration Key.

5.1.1.19. MeterValueSampleInterval

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Interval between sampling of metering (or other) data, intended to be transmitted by "MeterValues" PDUs. For chargingsession data (ConnectorId>0), samples are acquired and transmitted periodically at this interval from the start of the charging transaction. A value of "0" (numeric zero), by convention, is to be interpreted to mean that no sampled data should be transmitted.

5.1.1.20. MinimumStatusDuration

Required/ supported	optional / not supported
Accessibility	RW
Type	integer
Unit	seconds
Description	The minimum duration that a Charge Point or Connector status is stable before a StatusNotification.req PDU is sent to the Central System.

5.1.1.21. NumberOfConnectors

Required/ supported	required / supported
Accessibility	R
Type	integer
Description	The number of physical charging connectors of this Charge Point.

5.1.1.22. ResetRetries

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	times
Description	Number of times to retry an unsuccessful reset of the Charge Point.

5.1.1.23. StopTransactionOnEVSideDisconnect

Required/ supported	required / not supported

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Accessibility	RW
Type	boolean
Description	When set to true, the Charge Point SHALL administratively stop the transaction when the cable is unplugged from the EV.

5.1.1.24. StopTransactionOnInvalidId

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	whether the Charge Point will stop an ongoing transaction when it receives a non- Accepted authorization status in a StartTransaction.conf for this transaction

5.1.1.25. StopTxnAlignedData

Required/ supported	required / supported
Accessibility	RW
Type	CSL
Description	Clock-aligned periodic measurand(s) to be included in the TransactionData element of StopTransaction.req MeterValues.req PDU for every ClockAlignedDataInterval of the Transaction

5.1.1.26. StopTxnAlignedDataMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a StopTxnAlignedData Configuration Key.

5.1.1.27. StopTxnSampledData

Required/ supported	required / supported
Accessibility	RW
Type	CSL
Description	Sampled measurands to be included in the TransactionData element of StopTransaction.req PDU, every MeterValueSampleInterval seconds from the start of the charging session

5.1.1.28. StopTxnSampledDataMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a StopTxnSampledData Configuration Key.

5.1.1.29. SupportedFeatureProfiles

Required/	required / supported

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supported	
Accessibility	R
Type	CSL
Description	A list of supported Feature Profiles. Possible profile identifiers: Core, FirmwareManagement, LocalAuthListManagement, Reservation, SmartCharging and RemoteTrigger.

5.1.1.30. SupportedFeatureProfilesMaxLength

Required/ supported	optional / supported
Accessibility	R
Type	integer
Description	Maximum number of items in a SupportedFeatureProfiles Configuration Key.

5.1.1.31. TransactionMessageAttempts

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	times
Description	How often the Charge Point should try to submit a transaction-related message when the Central System fails to process it.

5.1.1.32. TransactionMessageRetryInterval

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	How long the Charge Point should wait before resubmitting a transaction-related message that the Central System failed to process.

5.1.1.33. UnlockConnectorOnEVSideDisconnect

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	When set to true, the Charge Point SHALL unlock the cable on Charge Point side when the cable is unplugged at the EV.

5.1.1.34. WebSocketPingInterval

Required/ supported	optional / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Only relevant for websocket implementations. 0 disables client side websocket Ping/Pong. In this case there is either no ping/pong or the

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server initiates the ping and client responds with Pong. Positive values are interpreted as number of seconds between pings. Negative values are not allowed. ChangeConfiguration is expected to return a REJECTED result.

5.1.2. Local Auth List Management Profile

5.1.2.1. LocalAuthListEnabled

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	whether the Local Authorization List is enabled

5.1.2.2. LocalAuthListMaxLength

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	Maximum number of identifications that can be stored in the Local Authorization List

5.1.2.3. SendLocalListMaxLength

Required/ supported	required / supported
Accessibility	RW
Type	boolean
Description	Maximum number of identifications that can be send in a single SendLocalList.req

5.1.3. Reservation Profile

5.1.3.1. ReserveConnectorZeroSupported

Required/ supported	optional / not supported
Accessibility	R
Type	boolean
Description	If this configuration key is present and set to true: Charge Point support reservations on connector 0.

5.1.4. Smart Charging Profile

5.1.4.1. ChargeProfileMaxStackLevel

Required/ supported	required /not supported
Accessibility	R
Type	integer
Description	Max StackLevel of a ChargingProfile. The number defined also indicates the max allowed number of installed charging schedules per Charging Profile Purposes.

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5.1.4.2. ChargingScheduleAllowedChargingRateUnit

Required/ supported	required / supported
Accessibility	R
Type	CSL
Description	A list of supported quantities for use in a ChargingSchedule. Allowed values: 'Current' and 'Power'

5.1.4.3. ChargingScheduleMaxPeriods

Required/ supported	required / not supported
Accessibility	R
Type	integer
Description	Maximum number of periods that may be defined per ChargingSchedule.

5.1.4.4. ConnectorSwitch3to1PhaseSupported

Required/ supported	optional / not supported
Accessibility	R
Type	boolean
Description	If defined and true, this Charge Point support switching from 3 to 1 phase during a Transaction.

5.1.4.5. MaxChargingProfilesInstalled

Required/ supported	required / not supported
Accessibility	R
Type	integer
Description	Maximum number of Charging profiles installed at a time

5.1.5. Security Profiles

5.1.5.1. AuthorizationKey

Required / supported	optional / supported
Accessibility	W
Type	String
Description	The basic authentication password is used for HTTP Basic Authentication, minimal length: 16 bytes. It is strongly advised to be randomly generated binary to get maximal entropy. Hexadecimal represented (20 bytes maximum,represented as a string of up to 40 hexadecimal digits). This configuration key is write-only, so that it cannot be accidentally stored in plaintext by the Central System when it reads out all configuration keys. If security profile: '3 - TLS with client side certificates' is used, this Configuration Key does not have to be present.

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5.1.5.2. CertificateSignedMaxChain

Required/ supported	optional / not supported
Accessibility	R
Type	integer
Description	Maximum length of a certificate chain that can be installed via a CertificateSigned.req PDU.

5.1.5.3. CertificateSignedMaxChain

Required/ supported	optional / not supported
Accessibility	R
Type	integer
Description	Maximum number of Root/CA certificates that can be installed in the Charge Point.

5.1.5.4. CpoName

Required/ supported	optional / not supported
Accessibility	RW
Type	String
Description	This configuration key contains CPO name (or an organization trusted by the CPO) as used in the Charge Point Certificate. This is the CPO name that is to be used in a CSR send via: SignCertificate.req

5.1.5.5. SecurityProfile

Required/ supported	optional / not supported
Accessibility	RW
Type	integer
Description	This configuration key is used to set the security profile used by the Charge Point. The value of this configuration key can only be increased to a higher level, not decreased to a lower level, if the Charge Point receives a lower value then currently configured,the Charge Point SHALL Rejected the ChangeConfiguration.req Before accepting the new value, the Charge Point SHALL check if all the prerequisites for the new Security Profile are met, if not, the Charge Point SHALL Rejected the ChangeConfiguration.req. After the security profile was successfully changed, the Charge Point disconnects from the Central System and SHALL reconnect using the new configured Security Profile. Default, when no security profile is yet configured: 0.

5.1.6. hypercharger specific keys

5.1.6.1. WebSocketUrl

Required/ supported	optional / supported
Accessibility	RW

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Type	string
Description	Websocket URL used for Backend Communication over OCPP 1.6 JSON
RebootRequired	true

5.1.6.2. HycKioskModeEnabled

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	Enables everybody who approaches the CP to charge without authenticating themselves using a RFID Card. Similar to OCPP Freemode. If set true, the content of Authorization.res will be ignored and authorization will always succeed.
RebootRequired	false

5.1.6.3. HycKioskModeTagIds

Required/ supported	optional / supported
Accessibility	RW
Type	CSL
Description	Virtual ID's to be used in Authorization.req to keep track of free charging sessions. If less than 3 IDs (= max. number of parallel charging session) get provided, the charging station will use generic IDs: HycKioskTag1…n
RebootRequired	false

5.1.6.4. SimPin

Required/ supported	Optional / supported
Accessibility	RW
Type	numeric
Description	PIN of SIM card inserted in the customer SIM card slot
RebootRequired	true

5.1.6.5. APN

Required/ supported	optional / supported
Accessibility	RW
Type	string
Description	APN to be used by customer SIM
RebootRequired	true

5.1.6.6. ApnUsername

Required/ supported	Optional / supported
Accessibility	RW
Type	string
Description	APN username used to authenticate customer SIM card to mobile

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	network operator
RebootRequired	true

5.1.6.7. ApnPassword

Required/ supported	optional / supported
Accessibility	RW
Type	string
Description	APN Password used to authenticate customer SIM card to mobile network operator
RebootRequired	true

5.1.6.8. DnsServer

Required/ supported	optional / supported
Accessibility	RW
Type	string
Description	Set static IP address to an external DNS server If set, the DNS Server provided by the mobile network operator gets ignored.
RebootRequired	false

5.1.6.9. SecondaryDnsServer

Required/ supported	optional / supported
Accessibility	RW
Type	string
Description	Set static IP address to an external DNS server If set, the DNS Server provided by the mobile network operator gets ignored
RebootRequired	false

5.1.6.10. GUIchargingCurrentVisible

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	Show charging current on charging screen
RebootRequired	true

5.1.6.11. GUIchargingVoltageVisible

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	Show charging voltage on charging screen
RebootRequired	true

5.1.6.12. GUIchargingPowerVisible

Required/	optional / supported

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supported	
Accessibility	RW
Type	boolean
Description	Show charging power on charging screen
RebootRequired	true

5.1.6.13. GUItimeRemainingVisible

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	Show time to bulk / full SoC on charging screen
RebootRequired	true

5.1.6.14. GUIchargeParameterOverlayVisible

Required/ supported	optional / supported
Accessibility	RW
Type	Boolean
Description	Show charging parameters overlay on standby screen
RebootRequired	true

5.1.6.15. GUIprimaryLanguage

Required/ supported	required / supported
Accessibility	RW
Type	string
Description	Set primary GUI language
RebootRequired	true

5.1.6.16. GUIsecondaryLanguage

Required/ supported	required / supported
Accessibility	RW
Type	string
Description	Set secondary GUI language
RebootRequired	true

5.1.6.17. GUItertiaryLanguage

Required/ supported	required / supported
Accessibility	RW
Type	string
Description	Set tertiary GUI language
RebootRequired	true

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5.1.6.18. GUIslideTime

Required/ supported	optional / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Time in seconds till the next image of the slide show is shown. If set to 0 slide show is disabled.
RebootRequired	true

5.1.6.19. GUIChargingSessionScreenTimeout

Required/ supported	optional / supported
Accessibility	RW
Type	integer
Unit	seconds
Description	Timeout in seconds till the screen locks itself
RebootRequired	false

5.1.6.20. MaxGridPower

Required/ supported	required / supported
Accessibility	RW
Type	integer
Unit	W
Description	Maximum power to be drawn from the AC grid
RebootRequired	true

5.1.6.21. ChargePointMaxProfileEnabled

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	If true loadmanagement over OCPP using SmartCharging is enabled
RebootRequired	true

5.1.6.22. chargePointIdentity

Required/ supported	Required / supported
Accessibility	RW
Type	string
Description	Charge Point identity used by CP to identify itself against the OCPP Backend
RebootRequired	true

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5.1.6.23. Connectors

Required/ supported	optional / supported
Accessibility	R
Type	string -JSON array

Description	JSON array which contains information to the installed connectors:
	e.g.
	{
	"connectors": [
	{
	"max_current": 125,
	"pos": 1,
	"type": "CHAdeMO"
	},
	{
	"max_current": 500,
	"pos": 2,
	"type": "CCS"
	},
	{
	"max_current": 32,
	"pos": 3,
	"type": "CCS_AC"
	}
	]
	}
	Attention: To avoid issues parsing the json string inside the key value, double quotes (“) are substituted with single quotes (‘). Resubstitute single quotes to double quotes before parsing the json array!

RebootRequired	false

5.1.6.24. ConnectorsPowerLimit

Required/ supported	optional / supported
Accessibility	RW
Type	CSL

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Unit	W
Description	Max Power limit in Watt of every connector of the CP. Comma separated list starting with connector 1
RebootRequired	true

5.1.6.25. MobileRSSI

Required/ supported	Optional / supported
Accessibility	R
Type	string
Description	RSSI of customer SIM Card
RebootRequired	false

5.1.6.26. MobileProvider

Required/ supported	optional / supported
Accessibility	R
Type	string
Description	Current mobile network operator customer SIM card is connected to.
RebootRequired	false

5.1.6.27. MobileConnectionStandard

Required/ supported	optional / supported
Accessibility	R
Type	string
Description	Current mobile network technology customer SIM card is connected to (4G,3G,2G)
RebootRequired	false

5.1.6.28. GUIConnectorHolderColors

Required/ supported	optional / supported
Accessibility	RW
Type	CSL
Description	CSL of Webcolor codes that determine the color of the LED holders in different states (Unavailable, Available, Occupied, Finished, Faulted)
RebootRequired	false

5.1.6.29. GridFallbackPower

Required/ supported	optional / supported
Accessibility	RW
Type	string
Description	Fallback Power the charging stations falls back to in case of missing communication with the external load management controller.
RebootRequired	true

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5.1.6.30. GridFallbackTimeout

Required/ supported	optional / supported
Accessibility	RW
Type	Integer
Unit	seconds
Description	Timeout after the charging station falls back to the GridFallbackPower due to missing communication with the external load management controller
RebootRequired	true

5.1.6.31. ModbusLoadManagementEnabled

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	Defines if the load management is enabled and an external load management controller is available or not
RebootRequired	true

5.1.6.32. ChargingStrategy

Required/ supported	optional / supported
Accessibility	RW
Type	string
Values	FCFS, FAIR
Description	Defines if on the charging station is applied the “first come first serve” or “fair share” policy
RebootRequired	true

5.1.6.33. AutochargeEnabled

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	If enabled charging stations tries automatically to start charging session without additional authorization. EVID will be passed as idTag in StartTransaction request to backend in case of an activated OCPP backend.
RebootRequired	true

5.1.6.34. RemoteTxStoppableLocally

Required/ supported	optional / supported
Accessibility	RW
Type	Boolean
Description	Defines if a charging session that has been started from remote is stoppable directly on the charger or only from remote
RebootRequired	false

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5.1.6.35. KioskModeWhenOffline

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	The charging station switches automatically into kiosk mode in case the connection with the backend is lost.
RebootRequired	false

5.1.6.36. GUIchargePointIdVisible

Required/ supported	optional / supported
Accessibility	RW
Type	Boolean
Description	Show ChargePointId in the upper left corner of the standby screen
RebootRequired	true

5.1.6.37. GUIconnectorPowerVisible

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Description	False -> Show charging type per connector in connector selection screen (AC/DC) True -> Show maximum output power per connector in connector selection screen
RebootRequired	true

5.1.6.38. GUIconnectorLabelsVisible

Required/ supported	optional / supported
Accessibility	RW
Type	boolean
Overrides	GUIconnectorPowerVisible
Description	False -> Show default value or GUIconnectorPowerVisible True -> Show GUIconnectorLabels
RebootRequired	true

5.1.6.39. GUIconnectorLabels

Required/ supported	optional / supported
Accessibility	RW
Type	CSL - String
Description	Provide custom connector label per connector in connector selection screen
RebootRequired	true

5.1.6.40. ChargePointModelLagacyMode

Required/	optional / supported

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supported	
Accessibility	RW
Type	boolean
Description	Defines if in the BootNotification.res the chargepoint model is sent the whole charger configuration or just the general model description.
RebootRequired	true

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6. OCPP Error Codes

6.1. EV communication error codes

6.1.1. No Error

Vendor error code	0
ChargePointErrorCode	NoError
Description	No error to report.
CP / Connector	No / No
Reason	
Measures	

6.1.2. PLC Error

Vendor error code	1
ChargePointErrorCode	EVCommunicationError
Description	Communication failure with powerline modem of CCS connector.
CP / Connector	No / Yes
Reason	Powerline modem does not respond or communication gets interrupted
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.1.3. SLAC Timeout

Vendor error code	2
ChargePointErrorCode	EVCommunicationError
Description	Timeout while waiting for SLAC match
CP / Connector	No / Yes
Reason	Error at communication with vehicle
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

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6.1.4. SLAC Interrupted

Vendor error code	3
ChargePointErrorCode	EVCommunicationError
Description	Timeout while waiting for SLAC match
CP / Connector	No / Yes
Reason	Cable disconnect has been detected. Loose connection / Charge cable may not be plugged in correctly
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.1.5. Link Timeout

Vendor error code	4
ChargePointErrorCode	EVCommunicationError
Description	Timeout while waiting for GPhy LINK after SLAC match
CP / Connector	No / Yes
Reason	Error at communication with vehicle
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.1.6. Link Interrupted

Vendor error code	5
ChargePointErrorCode	EVCommunicationError
Description	Connection interrupted while waiting for GPhy LINK after SLAC match.
CP / Connector	No / Yes
Reason	Loose connection / Charge cable may not be plugged in correctly
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

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6.1.7. SDP Timeout

Vendor error code	6
ChargePointErrorCode	EVCommunicationError
Description	Timeout waiting for SECCDiscover request from EV
CP / Connector	No / Yes
Reason	Error at communication with vehicle
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.1.8. SDP Interrupted

Vendor error code	7
ChargePointErrorCode	EVCommunicationError
Description	Cable disconnect detected while waiting for SECCDiscover request
CP / Connector	No / Yes
Reason	Loose connection / Charge cable may not be plugged in correctly
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.1.9. TCP Error

Vendor error code	8,9,10,11,12
ChargePointErrorCode	EVCommunicationError
Description	TCP socket to EV failed.
CP / Connector	No / Yes
Reason	Error at communication with vehicle
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

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6.1.10. V2G Error

Vendor error code	14
ChargePointErrorCode	EVCommunicationError
Description	V2G Sequence error
CP / Connector	No / Yes
Reason	The received V2G message is not allowed during the current state.
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.2. HW error codes

6.2.1. Lock Fault

Vendor error code	15
ChargePointErrorCode	ConnectorLockFailure
Description	Failure to lock or unlock connector.
CP / Connector	No / Yes
Reason	- Charge cable may not be plugged in correctly - Failure of the locking actuator
Measures	1. Reconnect vehicle / Resend connector unlock command via Backend 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.2.2. Lock Fault – Open Load

Vendor error code	16
Error	ConnectorLockFailure
Description	Failure to lock or unlock connector.
CP / Connector	No / Yes
Reason	- Locking actuator not connected properly to CTRL_IO board (KF3) - Failure of the locking actuator
Measures	1. Reconnect vehicle 2. Resend connector unlock command via Backend 3. Soft reset 4. Hard reset 5. Fault analysis through alpitronic 6. Technician on site

6.2.3. Lock Fault - Overcurrent

Vendor error code	17

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ChargePointErrorCode	ConnectorLockFailure
Description	Failure to lock or unlock connector.
CP / Connector	No / Yes
Reason	- Charge cable may not be plugged in correctly - Failure of the locking actuator
Measures	1. Reconnect vehicle 2. Resend connector unlock command via Backend 3. Soft reset 4. Hard reset 5. Fault analysis through alpitronic 6. Technician on site

6.2.4. Isolation Fault

Vendor error code	18
Error	GroundFailure
Description	- CCS, CHAdeMO: Isolation monitor tripped - Type 2: RCD tripped
CP / Connector	No / Yes
Reason	- Insulation resistance dropped below alarm threshold. - Residual current device (RCD) tripped
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Try different vehicle 5. Fault analysis through alpitronic 6. Technician on site

6.2.5. Stack Error

Vendor error code	19
ChargePointErrorCode	OtherError
Description	Generic Powerstack error
CP / Connector	No / Yes
Reason	At least one Powerstack is in Fault-state. Check individual errors – if available.
Measures	1. Reconnect vehicle 2. Hard reset 3. Try different vehicle 4. Fault analysis through alpitronic 5. Technician on site

6.2.6. Cable Error

Vendor error code	20
ChargePointErrorCode	OtherError

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Description	Generic charging cable error
CP / Connector	No / Yes
Reason	- Cable not properly connected to CTRL_IO board (KF3) - Cable damaged
Measures	1. Hard reset 2. Fault analysis through alpitronic 3. Technician on site

6.2.7. Cooler Error

Vendor error code	21
ChargePointErrorCode	OtherError
Description	An error with cooling unit of liquid cooled charging cable ocurred
CP / Connector	No / Yes
Reason	- Software error while communicating with the cooling unit - Hardware issue with cooling unit
Measures	1. Soft reset 2. Hard reset 3. Fault analysis through alpitronic 4. Technician on site

6.2.8. Meter Error

Vendor error code	22
ChargePointErrorCode	PowerMeterFailure
Description	Failure to read power meter.
CP / Connector	No / Yes
Reason	- Software error while reading the meter - Hardware issue with meter
Measures	5. Soft reset 6. Hard reset 7. Fault analysis through alpitronic 8. Technician on site

6.2.9. EV Voltage Error

Vendor error code	50
ChargePointErrorCode	OtherError
Description	Voltage > 60 V Measuresd at charging connector before charging session has been initialized
CP / Connector	No / Yes
Reason	
Measures	

6.2.10. EV Error

Vendor error code	51
ChargePointErrorCode	OtherError
Description	The EV has communicated an error
CP / Connector	

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Reason	Communication error or EV is damaged
Measures	1. Reconnect vehicle 2. Soft reset 3. Hard reset 4. Fault analysis through alpitronic 5. Technician on site

6.2.11. Door Closed

Vendor error code	1000
Error	OtherError
Description	Closed signal from door contact switch
CP / Connector	Yes / no
Reason	All doors of the charger have been closed
Measures	No measures have to be taken

6.2.12. Door Opened

Vendor error code	1001
ChargePointErrorCode	OtherError
Description	Open signal from door contact switch
CP / Connector	Yes / no
Reason	At least one door of the charger got opened
Measures	1. Close all service doors

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