MRS MCharger

Release Notes

Version 2.3.0-Connected

Prepared for MRS Electronic

Contents

Abbreviations

The following table displays abbreviations used in the document along with their full forms.

Abbreviation	Full Form
CPMS	Charge Point Management System
EV	Electric Vehicle
OCPP	Open Charge Point Protocol
OTA	Over The Air
PC	Personal Computer

Introduction to MRS MCharger Release Notes

Notices

This section lists the important notices related to MRS MCharger.

The release date of this version is **May 12, 2023**.

Pre-Requisites

An internet connection is required for downloading the charging history from the **Local Web Portal**.

Browser Compatibility

The **Local Web Portal** works accurately with the following browsers:

- Google Chrome
- Microsoft Edge
- Mozilla Firefox
- Opera
- Safari

Release Summary

The following table contains the count of items impacting this release:

Release Summary	Count
New Features	1
Enhancements	1
Fixes	1
Known Issues	0
Limitations	4

1. New Features

This section discusses the new features included in this release.

1.1. OCPP Smart Charging

Smart Charging feature of the Open Charge Point Protocol (OCPP) has now been implemented in MCharger. This feature allows its users to remotely control and optimize the charging of EVs by adjusting the charging rate or timing based on various factors such as grid capacity, electricity prices, and user preferences.

The Smart Charging feature operates by creating Charging Profiles on the basis of grid connection, energy availability on the grid, or the wiring of a building.

> **! Important**
>
> The OCPP Smart Charging feature has been tested with the **vCharM** charging management and load management software only.

Important Details

1. MCharger supports the following ChargePoint profiles of the OCPP Smart Charging feature:
   - ChargePointMaxProfile
   - TxDefaultProfile
   - TxProfile
2. A maximum of 8 profiles each can be saved for the *ChargePointMaxProfile* and *TxDefaultProfile*. Moreover, 22 schedules are supported for each type of profile.
3. The Smart Charging feature allows stacking of charging profiles in order to describe complex calendars. It also allows combining the prevailing charging profiles in order to guide the charging limit through a Composite Schedule.
4. The major use cases of the Smart Charging feature include server-based Load Balancing and Central Smart Charging.
5. MCharger advertises the following capabilities via OCPP configurations:
   - ChargeProfileMaxStackLevel
   - ChargingScheduleAllowedChargingRateUnit
   - ChargingScheduleMaxPeriods
   - MaxChargingProfilesInstalled

2. Enhancements

This section lists all the enhancements made to this release.

2.1. OCPP Error Handling

The error handling mechanism in OCPP has been improved to add vendor error codes in the *StatusNotification* message. Given below is a list of errors sent to the CPMS for OCPP:

OCPP Error Name	MCharger Error ID & Description
GroundFailure	Error-ID 0001 - RCD Error
EVCommunicationError	Error-ID 0002 - EV Signals Error
OtherError	Error-ID 0004 - Master Slave Error
WeakSignal	Error-ID 0008 - Network Error
HighTemperature	Error-ID 0010 - Temperature Error
OtherError	Error-ID 0020 - EV Vent Required
OverCurrentFailure	Error-ID 0040 - EV Overcurrent Error
InternalError	Error-ID 0080 - Device Power Rail Error
OtherError	Error-ID 0100 - Phase Sequence Mismatch
PowerSwitchFailure	Error-ID 0200 - Power Relay Error
ConnectorLockFailure	Error-ID 0400 - Cable Lock Error
PowerSwitchFailure	Error-ID 0800 - Power Relay Opened Error
OtherError	Error-ID 1000 - Faulty Cable

3. Bug Fixes

This section lists all the bug fixes made to this release.

3.1. Charging Control from Local Web Portal

The Local Web Portal has been updated to only allow stopping the charging process when RFID-authentication is enabled. Previously, the charging-stop functionality was not working properly when the RFID-authentication was disabled.

4. Limitations

This section lists all the limitations associated to this release.

1. Over the Air (OTA) updates can be initiated from Cloud by an Admin user only. MCharger has no mechanism to check or request for updates.
2. Load balancing supports only one device with *A priority*. Behaviour with multiple *A priorities* is not defined.
3. Internet connectivity on PC is required to download the charging history while it is not mandatory to have internet connectivity on the MCharger.
4. Details for Admin account cannot be changed except for the password.