OCPP 1.6 Subset Certificate

OCPP1.6
Subset
Certified

Certificate holder:	GRE System Inc.
Certificate number:	OCA.0016.0114.CS
Product type:	Charging Station
Product subtype:	Mode 1/2-only Charging Station
Product designation:	Charge Plus CP100 OCPP Software version: 1.6 Hardware feature set as stated below
Certification date:	April 20, 2022

This certificate attests that the above mentioned product successfully completed certification testing in conformance with the reference specification OCPP 1.6 – Edition 2 with OCPP 1.6 Errata sheet (v4.0 Release, 2019-10-23). The optional features of the protocol covered by this certificate can be found in the abstract of this certificate.

Test cases have been performed as described in the test report referred to below. The results and remarks can be found in the complete test report.

Applied tests	Performed by / on	Document evidence
Conformance testing according to the test specification referenced by the test report	*Korea Smart Grid Association,* *April 20, 2022*	*KSGA_20220421_Test Report_Mode 1,2_GRE System*

The abstract of test report in the Annex is an integral part of this certificate. This certificate is valid from the Certification Date specified above. This certificate is only applicable to the product designation described above and permits the use of the OCPP logo as laid down in the OCA certification logo license agreement on this product only.

This certificate shall neither be tendered nor accepted by any party as a guarantee covering quality of a product which includes OCPP. The Open Charge Alliance, and/or its agents, including, inter-alia, test laboratories, disclaim liability for any damages or losses incurred by the certified company or by any other party resulting from reliance on the results of OCPP certification testing.

For the Open Charge Alliance:

ONOPH CARON
Chairman

Abstract of test report

Test Result Summary

<table>
<tr><td colspan="3">Test Report OCPP 1.6 Certification</td></tr>
<tr><td>Test laboratory:</td><td colspan="2">Korea Smart Grid Association</td></tr>
<tr><td>Location:</td><td colspan="2">Seoul , Korea</td></tr>
<tr><td>Test Report Reference:</td><td colspan="2">KSGA-OCPP1.6TEST-054-2022</td></tr>
<tr><td>Vendor name:</td><td colspan="2">GRE System Inc.</td></tr>
<tr><td>Device Under Test:</td><td colspan="2">Mode 1/2-only Charging Station</td></tr>
<tr><td>Communication:</td><td colspan="2">JSON</td></tr>
<tr><td>OCPP Software version:</td><td colspan="2">1,6</td></tr>
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Test Result Summary for the certified functionalities

Functionalities	OCPP 1.6 Certification Test Results	Description
Core	Pass	Basic Charging Station functionality for booting, authorization (incl. cache if available), configuration, transactions, remote control.

Optional features		
Firmware Management	Pass	Support for (remote) firmware update management and diagnostic log file download.
Smart Charging	N/A	Support for Smart Charging (all profile types, including stacking), to control charging.
Reservation	N/A	Support for reservation of a connector of a Charging Station.
Local Authorization List Management	Pass	Features to manage a local list in the charging station containing authorization data for whitelisting users.
Remote Trigger	Pass	Support for remotely triggering messages that originate from a Charging Station. This can be used for resending messages or for getting the latest information from the Charging Station.

Performance Measurement Results

Performance Measurement Results			
Name	**PICS value**	**Measured value**	**Description**
OCPP triggered function timeout:	5s	00:00:03	The response time for when waiting for an OCPP function with its corresponding request message. (Firmware update, Diagnostics and Reboot are excluded from this measurement.)
OCPP response timeout:	20s	00:00:04	The response time for when waiting for an OCPP response message.
Response time RemoteStartTransaction:	5s	00:00:00	The response time for the RemoteStartTransaction message.

Test Configuration

Test Configuration	
Vendor	**GRE System Inc.**
DUT / SUT	Mode 1/2-only Charging Station
Communication	JSON
Type	CP100
OCPP Software version	1,6
OCTT version	OCTT 1.6 v1.4.3

Hardware feature set	
Feature	**Configuration**
Socket(s) / connector(s)	Single
Fixed cable	<Yes>
Communication technology	Wifi, Mobile Network
RFID readers	Single

Non-OCPP Charge Point Configuration	
Configuration key	**Value**
<>	<>

All other relevant limits and non-OCPP settings that are relevant for the test laboratory and for the correct functioning of the CSMS:	
Limit / setting	**Value**
Device supports sending milliseconds in timestamps.	Yes

OCPP Charging Station Configuration

Configuration key	Value
AllowOfflineTxForUnknownId	FALSE
AuthorizationCacheEnabled	FALSE
AuthorizeRemoteTxRequests	TRUE
BlinkRepeat	
ClockAlignedDataInterval	0
ConnectionTimeOut	180
ConnectorPhaseRotation	-
ConnectorPhaseRotationMaxLength	
GetConfigurationMaxKeys	20
HeartbeatInterval	20
LightIntensity	
LocalAuthorizeOffline	FALSE
LocalPreAuthorize	FALSE
MaxEnergyOnInvalidId	
MessageTimeout	
MeterValuesAlignedData	Energy.Active.Import.Register
MeterValuesAlignedDataMaxLength	1
MeterValuesSampledData	Energy.Active.Import.Register
MeterValuesSampledDataMaxLength	1
MeterValueSampleInterval	1
MinimumStatusDuration	0
NumberOfConnectors	
ResetRetries	1
StopTransactionMaxMeterValues	
StopTransactionOnEVSideDisconnect	TRUE
StopTransactionOnInvalidId	TRUE
StopTxnAlignedData	Energy.Active.Import.Register
StopTxnAlignedDataMaxLength	1
StopTxnSampledData	Energy.Active.Import.Register
StopTxnSampledDataMaxLength	1
SupportedFeatureProfiles	Core,FirmwareManagement,LocalAuthListManagement,RemoteTrigger
SupportedFeatureProfilesMaxLength	
TransactionMessageAttempts	3
TransactionMessageRetryInterval	3
UnlockConnectorOnEVSideDisconnect	FALSE
WebSocketPingInterval	120
LocalAuthListEnabled	
LocalAuthListMaxLength	20
SendLocalListMaxLength	10
ReserveConnectorZeroSupported	
ChargeProfileMaxStackLevel	
ChargingScheduleAllowedChargingRateUnit	
ChargingScheduleMaxPeriods	
ConnectorSwitch3to1PhaseSupported	
MaxChargingProfilesInstalled	
SupportedFileTransferProtocols	http, ftp

Statement of Approval

Vendor		Date: 2022.04.20	
Name	SungKyung Hong	Signature	
Company	GRE System Inc.		
Department	R&D		
Position	CDO		
Location	Yongin-Si, Kyeonggi-Do, South Korea		

Test laboratory		Date: 2022.04.20	
Name	Philip YANG	Signature	
Company	Korea Smart Grid Association		
Department	Quality Certification Center		
Position	Senior Researcher		
Location	Seoul, Korea		