OCPP 1.6
Subset Certificate

Certificate holder: Klinelex Co., Ltd.

Certificate number: OCA.0016.0224.CS

Product type: Charging Station

Product designation: KL51-050-COO8S
OCPP Software version: 1.0.0
Hardware feature set as stated below

Certification date: November 29, 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,* November 29, 2022	*KSGA_20221129_Test Report Klinelex_ KL51-050-COO8S*

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-136-2022</td></tr>
<tr><td>**Vendor name:**</td><td colspan="2">**Klinelex Co., Ltd.**</td></tr>
<tr><td>**Device Under Test:**</td><td colspan="2">Charging Station</td></tr>
<tr><td>**Communication:**</td><td colspan="2">JSON</td></tr>
<tr><td>**OCPP Software version:**</td><td colspan="2">1.0.0</td></tr>
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<table>
<tr><td colspan="3">**Test Result Summary for the certified functionalities**</td></tr>
<tr><td>**Functionalities**</td><td>**OCPP 1.6 Certification Test Results**</td><td>**Description**</td></tr>
<tr><td>**Core**</td><td>Pass</td><td>Basic Charging Station functionality for booting, authorization (incl. cache if available), configuration, transactions, remote control.</td></tr>
</table>

<table>
<tr><td colspan="3">**Optional features**</td></tr>
<tr><td>**Firmware Management**</td><td>N/A</td><td>Support for (remote) firmware update management and diagnostic log file download.</td></tr>
<tr><td>**Smart Charging**</td><td>N/A</td><td>Support for Smart Charging (all profile types, including stacking), to control charging.</td></tr>
<tr><td>**Reservation**</td><td>N/A</td><td>Support for reservation of a connector of a Charging Station.</td></tr>
<tr><td>**Local Authorization List Managemen**</td><td>N/A</td><td>Features to manage a local list in the charging station containing authorization data for whitelisting users.</td></tr>
<tr><td>**Remote Trigger**</td><td>N/A</td><td>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.</td></tr>
</table>

Performance Measurement Results

Performance Measurement Results			
Name	**PICS value**	**Measured value**	**Description**
OCPP triggered function timeout:	90s	00:01:14	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:	5s	00:00:01	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	**Klinelex Co., Ltd.**
DUT / SUT	Charging Station
Communication	JSON
Type	KL51-050-COO8S
OCPP Software version	1.0.0
OCTT version	OCTT 1.6 v1.4.3

Hardware feature set	
Feature	**Configuration**
Socket(s) / connector(s)	Single
Fixed cable	<Yes>
Communication technology	Ethernet, 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	1
ClockAlignedDataInterval	0
ConnectionTimeOut	180
ConnectorPhaseRotation	RST
ConnectorPhaseRotationMaxLength	2
GetConfigurationMaxKeys	10
HeartbeatInterval	300
LightIntensity	50
LocalAuthorizeOffline	FALSE
LocalPreAuthorize	FALSE
MaxEnergyOnInvalidId	0
MessageTimeout	
MeterValuesAlignedData	-
MeterValuesAlignedDataMaxLength	10
MeterValuesSampledData	Energy.Active.Import.Register,SoC, Voltage,Current.Import
MeterValuesSampledDataMaxLength	10
MeterValueSampleInterval	10
MinimumStatusDuration	0
NumberOfConnectors	1
ResetRetries	1
StopTransactionMaxMeterValues	999999
StopTransactionOnEVSideDisconnect	TRUE
StopTransactionOnInvalidId	FALSE
StopTxnAlignedData	-
StopTxnAlignedDataMaxLength	10
StopTxnSampledData	-
StopTxnSampledDataMaxLength	10
SupportedFeatureProfiles	Core
SupportedFeatureProfilesMaxLength	6
TransactionMessageAttempts	2
TransactionMessageRetryInterval	90
UnlockConnectorOnEVSideDisconnect	TRUE
WebSocketPingInterval	120

LocalAuthListEnabled	-
LocalAuthListMaxLength	-
SendLocalListMaxLength	-
ReserveConnectorZeroSupported	-
ChargeProfileMaxStackLevel	-
ChargingScheduleAllowedChargingRateUnit	-
ChargingScheduleMaxPeriods	-
ConnectorSwitch3to1PhaseSupported	-
MaxChargingProfilesInstalled	-
SupportedFileTransferProtocols	-

Statement of Approval

Vendor		Date: 2022.11.29
Name	Lee Hyo Young	Signature
Company	Klinelex Co., Ltd.	
Department	Headquarters	
Position	CEO	
Location	Korea	

Test laboratory		Date: 2022.11.29
Name	Philip YANG	Signature
Company	Korea Smart Grid Association	
Department	Quality Certification Center	
Position	Senior Researcher	
Location	Seoul, Korea	