OCPP 1.6 Subset Certificate

Certificate holder: AHA Co., LTD.

Certificate number: OCA.0016.0190.CS

Product type: Charging Station

Product designation: AHA-EVC
OCPP Software version: VF2201-R001
Hardware feature set as stated below

Certification date: September 8, 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,* September 8, 2022	*KSGA_20220908_Test Report _AHA*

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="2" align="center">**Test Report OCPP 1.6 Certification**</td></tr>
<tr><td>**Test laboratory:**</td><td>**Korea Smart Grid Association**</td></tr>
<tr><td>**Location:**</td><td>Seoul , Korea</td></tr>
<tr><td>**Test Report Reference:**</td><td>KSGA-OCPP1.6TEST-108-2022</td></tr>
<tr><td>**Vendor name:**</td><td>**AHA Co., LTD.**</td></tr>
<tr><td>**Device Under Test:**</td><td>Charging Station</td></tr>
<tr><td>**Communication:**</td><td>JSON</td></tr>
<tr><td>**OCPP Software version:**</td><td>VF2201-R001</td></tr>
</table>

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	N/A	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 Managemer	N/A	Features to manage a local list in the charging station containing authorization data for whitelisting users.
Remote Trigger	N/A	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:	60s	00:00:05	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:	60s	00:00:01	The response time for when waiting for an OCPP response message.
Response time RemoteStartTransaction:	60s	00:00:00	The response time for the RemoteStartTransaction message.

Test Configuration

Test Configuration	
Vendor	AHA Co., LTD.
DUT / SUT	Charging Station
Communication	JSON
Type	AHA-EVC
OCPP Software version	VF2201-R001
OCTT version	OCTT 1.6 v1.4.3

Hardware feature set	
Feature	**Configuration**
Socket(s) / connector(s)	Multiple
Fixed cable	<Yes>
Communication technology	Wifi,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	-
AuthorizationCacheEnabled	-
AuthorizeRemoteTxRequests	TRUE
BlinkRepeat	-
ClockAlignedDataInterval	0
ConnectionTimeOut	60
ConnectorPhaseRotation	Unknown
ConnectorPhaseRotationMaxLength	-
GetConfigurationMaxKeys	20
HeartbeatInterval	300
LightIntensity	-
LocalAuthorizeOffline	FALSE
LocalPreAuthorize	FALSE
MaxEnergyOnInvalidId	-
MessageTimeout	-
MeterValuesAlignedData	-
MeterValuesAlignedDataMaxLength	12
MeterValuesSampledData	-
MeterValuesSampledDataMaxLength	12
MeterValueSampleInterval	10
MinimumStatusDuration	
NumberOfConnectors	2
ResetRetries	3
StopTransactionMaxMeterValues	99999999,999
StopTransactionOnEVSideDisconnect	TRUE
StopTransactionOnInvalidId	TRUE
StopTxnAlignedData	-
StopTxnAlignedDataMaxLength	12
StopTxnSampledData	-
StopTxnSampledDataMaxLength	12
SupportedFeatureProfiles	Core
SupportedFeatureProfilesMaxLength	
TransactionMessageAttempts	1
TransactionMessageRetryInterval	30
UnlockConnectorOnEVSideDisconnect	TRUE
WebSocketPingInterval	60
LocalAuthListEnabled	-
LocalAuthListMaxLength	-
SendLocalListMaxLength	-
ReserveConnectorZeroSupported	-
ChargeProfileMaxStackLevel	-
ChargingScheduleAllowedChargingRateUnit	-
ChargingScheduleMaxPeriods	-
ConnectorSwitch3to1PhaseSupported	-
MaxChargingProfilesInstalled	-
SupportedFileTransferProtocols	

Statement of Approval

Vendor		Date: 2022.09.08	
Name	Sangkwon OH	Signature	
Company	AHA Co., LTD.		
Department	EVC Technology Research Institute		
Position	Research Director		
Location	Seoul, Korea		

Test laboratory		Date: 2022.09.08	
Name	Philip YANG	Signature	
Company	Korea Smart Grid Association		
Department	Quality Certification Center		
Position	Senior Researcher		
Location	Seoul, Korea		