

# OCPP 1.6 Subset Certificate



**Certificate holder:** Applemango Co., Ltd  
**Certificate number:** OCA.0016.0136.CS  
**Product type:** Charging Station  
**Product designation:** AC Charger/AM-WBS-7-02a  
OCPP Software version: OPOS1000  
Hardware feature set as stated below  
**Certification date:** May 5, 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
<i>Conformance testing according to the test specification referenced by the test report</i>	<i>Korea Smart Grid Association, May 5, 2022</i>	<i>KSGA_20220509_Test Report_Applemango</i>

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

A blue ink signature of Onoph Caron.

## Abstract of test report

### Test Result Summary

Test Report OCPP 1.6 Certification		
<b>Test laboratory:</b>	Korea Smart Grid Association	
<b>Location:</b>	Seoul , Korea	
<b>Test Report Reference:</b>	KSGA-OCPP1.6TEST-068-2022	
<b>Vendor name:</b>	APPLEMANGO CO.,LTD	
<b>Device Under Test:</b>	Charging Station	
<b>Communication:</b>	JSON	
<b>OCPP Software version:</b>	OPOS1000	
Test Result Summary for the certified functionalities		
Functionalities	OCPP 1.6 Certification Test Results	Description
<b>Core</b>	<b>Pass</b>	Basic Charging Station functionality for booting, authorization (incl. cache if available), configuration, transactions, remote control.
Optional features		
<b>Firmware Management</b>	<b>N/A</b>	Support for (remote) firmware update management and diagnostic log file download.
<b>Smart Charging</b>	<b>N/A</b>	Support for Smart Charging (all profile types, including stacking), to control charging.
<b>Reservation</b>	<b>N/A</b>	Support for reservation of a connector of a Charging Station.
<b>Local Authorization List Management</b>	<b>N/A</b>	Features to manage a local list in the charging station containing authorization data for whitelisting users.
<b>Remote Trigger</b>	<b>N/A</b>	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	00:00:08	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	00:00:01	The response time for the RemoteStartTransaction message.


## Test Configuration

Test Configuration	
<b>Vendor</b>	APPLEMANGO CO.,LTD
<b>DUT / SUT</b>	Charging Station
<b>Communication</b>	JSON
<b>Type</b>	AC Charger/AM-WBS-7-02a
<b>OCPP Software version</b>	OPOS1000
<b>OCTT version</b>	OCTT 1.6 v1.4.3
Hardware feature set	
<b>Feature</b>	<b>Configuration</b>
Socket(s) / connector(s)	Single
Fixed cable	<Yes>
Communication technology	Ethernet
RFID readers	Single
Non-OCPP Charge Point Configuration	
<b>Configuration key</b>	<b>Value</b>
<>	<>
All other relevant limits and non-OCPP settings that are relevant for the test laboratory and for the correct functioning of the CSMS:	
<b>Limit / setting</b>	<b>Value</b>
Device supports sending milliseconds in timestamps.	Yes

OCPP Charging Station Configuration	
Configuration key	Value
AllowOfflineTxForUnknownId	FALSE
AuthorizationCacheEnabled	FALSE
AuthorizeRemoteTxRequests	TRUE
BlinkRepeat	0
ClockAlignedDataInterval	0
ConnectionTimeOut	60
ConnectorPhaseRotation	NotApplicable
ConnectorPhaseRotationMaxLength	-
GetConfigurationMaxKeys	21
HeartbeatInterval	10
LightIntensity	-
LocalAuthorizeOffline	FALSE
LocalPreAuthorize	FALSE
MaxEnergyOnInvalidId	-
MessageTimeout	-
MeterValuesAlignedData	Current.Import, Current.Offered, Energy.Active.Import.Register, Energy.Active.Import.Interval, Power.Offered, SoC, Temperature, Voltage
MeterValuesAlignedDataMaxLength	10
MeterValuesSampledData	Current.Import, Current.Offered, Energy.Active.Import.Register, Energy.Active.Import.Interval, Power.Offered, SoC, Temperature, Voltage
MeterValuesSampledDataMaxLength	10
MeterValueSampleInterval	0
MinimumStatusDuration	-
NumberOfConnectors	1
ResetRetries	1
StopTransactionMaxMeterValues	-
StopTransactionOnEVSideDisconnect	TRUE
StopTransactionOnInvalidId	TRUE
StopTxnAlignedData	Current.Import, Current.Offered, Energy.Active.Import.Register, Energy.Active.Import.Interval, Power.Offered, SoC, Temperature, Voltage
StopTxnAlignedDataMaxLength	10
StopTxnSampledData	Current.Import, Current.Offered, Energy.Active.Import.Register, Energy.Active.Import.Interval, Power.Offered, SoC, Temperature, Voltage
StopTxnSampledDataMaxLength	10
SupportedFeatureProfiles	Core
SupportedFeatureProfilesMaxLength	-
TransactionMessageAttempts	3
TransactionMessageRetryInterval	30
UnlockConnectorOnEVSideDisconnect	TRUE
WebSocketPingInterval	-
LocalAuthListEnabled	FALSE
LocalAuthListMaxLength	
SendLocalListMaxLength	
ReserveConnectorZeroSupported	
ChargeProfileMaxStackLevel	
ChargingScheduleAllowedChargingRateUnit	
ChargingScheduleMaxPeriods	
ConnectorSwitch3to1PhaseSupported	
MaxChargingProfilesInstalled	
SupportedFileTransferProtocols	

Statement of Approval

Vendor		Date: 2022.05.09
Name	GeonHun Lee	Signature 
Company	APPLEMANGO CO.,LTD	
Department	Software Team	
Position	Team Manager	
Location	Incheon, Korea	

Test laboratory		Date: 2022.05.09
Name	Philip YANG	Signature 
Company	Korea Smart Grid Association	
Department	Quality Certification Center	
Position	Senior Researcher	
Location	Seoul, Korea	