OCPP 1.6 Subset Certificate

Certificate holder: CROCUS INC

Certificate number: OCA.0016.0796.CS

Product type: Charging Station

Product designation: AE50K-C1XS-MX-1C
OCPP Software version: Crocus_HMI_V.1.1.0
Hardware feature set as stated below

Certification date: June 12, 2024

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,* June 12, 2024	*(KSGA)CROCUS INC_Test Report_AE50K-C1XS-MX-1C_v1.5*

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

Test Report OCPP 1.6 Certification	
Test laboratory:	**Korea Smart Grid Association**
Location:	Seoul, Korea
Test execution location:	CROCUS INC (Incheon, Korea)
Test Report Reference:	KSGA-OCPP1.6TEST-088-2024
Vendor name:	**CROCUS INC**
Device Under Test:	Charging Station
Communication:	JSON
OCPP Software version:	Crocus_HMI_V.1.1.0
Product designation:	AE50K-C1XS-MX-1C

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 Manageme	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

Name	PICS value	Measured value	Description
OCPP triggered function timeout:	30s	00:00:15	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:	10s	00:00:01	The response time for when waiting for an OCPP response message.
Response time RemoteStartTransaction:	10s	00:00:00	The response time for the RemoteStartTransaction message.

Test Configuration

Vendor	CROCUS INC
DUT / SUT	Charging Station
Communication	JSON
Type	AE50K-C1XS-MX-1C
OCPP Software version	Crocus_HMI_V.1.1.0
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	TRUE
AuthorizationCacheEnabled	-
AuthorizeRemoteTxRequests	TRUE
BlinkRepeat	5
ClockAlignedDataInterval	0
ConnectionTimeOut	60
ConnectorPhaseRotation	RST
ConnectorPhaseRotationMaxLength	1
GetConfigurationMaxKeys	19
HeartbeatInterval	30
LightIntensity	0
LocalAuthorizeOffline	TRUE
LocalPreAuthorize	FALSE
MaxEnergyOnInvalidId	0
MessageTimeout	-
MeterValuesAlignedData	Energy.Active.Import.Register
MeterValuesAlignedDataMaxLength	10
MeterValuesSampledData	Energy.Active.Import.Register
MeterValuesSampledDataMaxLength	10
MeterValueSampleInterval	20
MinimumStatusDuration	0
NumberOfConnectors	1
ResetRetries	3
StopTransactionMaxMeterValues	10
StopTransactionOnEVSideDisconnect	TRUE
StopTransactionOnInvalidId	FALSE
StopTxnAlignedData	Energy.Active.Import.Register
StopTxnAlignedDataMaxLength	10
StopTxnSampledData	Energy.Active.Import.Register
StopTxnSampledDataMaxLength	10
SupportedFeatureProfiles	Core
SupportedFeatureProfilesMaxLength	10
TransactionMessageAttempts	3
TransactionMessageRetryInterval	60
UnlockConnectorOnEVSideDisconnect	FALSE
WebSocketPingInterval	10
LocalAuthListEnabled	-
LocalAuthListMaxLength	-
SendLocalListMaxLength	-
ReserveConnectorZeroSupported	-
ChargeProfileMaxStackLevel	-
ChargingScheduleAllowedChargingRateUnit	-
ChargingScheduleMaxPeriods	-
ConnectorSwitch3to1PhaseSupported	-
MaxChargingProfilesInstalled	-
SupportedFileTransferProtocols	-

Statement of Approval

Vendor		Date: 2024.06.12
Name	Daniel Lim	Signature
Company	CROCUS INC	
Department	-	
Position	CEO	
Location	Seoul, Korea	

Test laboratory		Date: 2024.06.12
Name	Philip YANG	Signature
Company	Korea Smart Grid Association	
Department	Quality Certifcation Center	
Position	Chief Researcher	
Location	Seoul, Korea	