



Certificate Holder: RENOVA ELECTRONICS INC.
Certificate Number: OCA.0016.1197.CS
Product Type: Charging Station
Product Designation: R-EVC/A48D/SN/10/O
Firmware Version: V72.0.2
Certification Date: March 23, 2026

This certificate attests that the above mentioned product successfully completed certification testing in conformance with the reference specification OCPP 1.6 (Edition 2 FINAL, 2017-09-28 including Errata 2025-04) and Security Whitepaper Edition 3 (Improved security for OCPP 1.6-J v1.3, 2022-02-17). The optional OCPP protocol features that are covered by this certificate can be found in the Abstract of the Test Report that is part 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 this complete test report.

Applied	Performed by / On	Document Evidence
Conformance testing according to the test specification referenced by the test report	DNV Singapore Pte. Ltd. February 4, 2026	PICS_PRJ_10584026_ RENOVA_1

The abstract of test report 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 the Test Report

Test Report OCPP 1.6 Certification

Test laboratory:	DNV Singapore Pte. Ltd.
Location:	DNV Lab, Singapore, Singapore
Test Report Reference:	PRJ_10584026_RENOVA_1
Test Location	Singapore
Product Designation:	R-EVC/A48D/SN/10/O
Vendor name:	RENOVA ELECTRONICS INC.
Device Under Test:	Charging Station
Firmware Version:	V72.0.2
Config ID:	26209336-208F44CE

Test Result Summary For The Certified Functionalities

Certification Profile	Test Result	Description
Core	Pass	Basic Charging Station, functionality for booting, authorization, configuration, transactions, remote control, secure firmware updates and Security Profile 2.
Advanced Security	Not Tested	Support for TLS with client authentication.
Smart Charging	Not Tested	Support for Smart Charging, to control charging.

Hardware Feature Set

The Hardware Feature set is the actual set of relevant hardware properties of the product tested, that influence the OCPP messaging behavior. In the table below you can see for each hardware feature relevant for OCPP whether this is applicable for this product.

ID	Feature	Supported / Present
HFS-1	Has a detachable cable	No
HFS-2	Has a fixed cable	Yes
HFS-3	Has AC support	Yes
HFS-4	Has DC support	No
HFS-5	Has 1 phase support	Yes
HFS-6	Has 2 phase support	No
HFS-7	Has 3 phase support	No
HFS-8	No. Connectors	2
HFS-9	Communication technology	WiFi, Ethernet, Mobile Network
HFS-10	RFID readers	Single

Connector	Current	Phases	Type	Cable Type
1	AC	1	cType1	Fixed Cable
2	AC	1	cTesla	Fixed Cable



Optional Features

The OCPP specification contains many implementation options that can be selected by a vendor, often in the form of optional message fields or configuration variables, that can be used to support advanced functions. Whereas the certification profiles determine which OCPP functionality is implemented, the features describe how much of a certain functionality in a profile has been implemented. The tables below indicate per certification profiles, for each available optional feature within this profile, whether this has been implemented in this product and tested for conformance or not.

Core

ID	Core Features	Supported / Present
C-01	Support for offline authorization of transactions	Yes
C-02	Support for allowing Offline Authorization for Unknown Ids	Yes
C-03	Support for maximizing energy for invalid ids	Yes
C-04	Authorization Cache	Yes
C-05	Support to limit StatusNotifications	Yes
C-06	Authorization status after cable disconnected on EV side	
C-06.1	Support for maintaining authorization when cable disconnected on EV side	No
C-06.2	Support for not maintaining authorization when cable disconnected on EV side	Yes
C-07	Support for local start	Yes
C-08	Support for local stop	Yes
C-10	Unlocking of connector when cable disconnected on EV side	
C-10.1	Support for unlocking connector when cable disconnected on EV side	No
C-10.2	Support for not unlocking when cable disconnected on EV side	Yes
C-11	Support for Security Profile 1: Unsecured Transport with Basic Authentication	Yes

ID	Metervalues	Tested During Certification	Supported According to Vendor
C-09	Supported MeterValue Measurands		

ID	Metervalues	Tested During Certification	Supported According to Vendor
C-09.1	MeterValuesSampled Data	Power.Active.Import Energy.Active.Import.Interval Voltage Energy.Active.Import.Register Current.Import	Current.Import Power.Active.Import Voltage Energy.Active.Import.Register Energy.Active.Import.Interval
C-09.2	MeterValuesAligned Data	Power.Active.Import Energy.Active.Import.Interval Voltage Energy.Active.Import.Register Current.Import	Current.Import Power.Active.Import Voltage Energy.Active.Import.Register Energy.Active.Import.Interval

ID	Cipher Suites	Supported / Present
C-12	Supported Cipher Suites	TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384

ID	Local Authorization List Management	Supported / Present
LA-0	Support for Local Authorization List Management	Yes

ID	Remote Trigger	Supported / Present
RT-0	Support for Remote Trigger	Yes

ID	Reservations	Supported / Present
R-0	Support for Reservations	No
R-1	Support reservations of entire Charging Station	No

Additional Questions

The table below lists a number of questions that are needed for determining the complete list of conformance test for this product.

ID	Additional Questions for Lab Testing	Answer
AQ-1	Can the last CentralSystemRootCertificate can be removed?	Yes
AQ-2	Does the Charging Station have a cable lock, which prevents the EV driver to connect the EV and EVSE before authorization?	No
AQ-3	Can the last ChargePointCertificate be removed?	No
AQ-4	Is your Charging Station able to download firmware while there is an ongoing transaction?	No
AQ-5	Does your Charging Station enforce a selection of EVSE prior to authorization?	Yes
AQ-6	Does your Charging Station support charging an EV using IEC 61851-1?	Yes
AQ-7	Reporting of StopTransaction after power loss	
AQ-7.1	Charge Point configured to report StopTransaction before going down.	Yes
AQ-7.2	Charge Point configured to report StopTransaction after going down and being back online again.	No
AQ-9	Does your Charging Station have at least one connector with an mechanized locking mechanism on Charging Station side?	No
AQ-11	Does your Charging Station support an authorization method, that does not rely on the communication between EV and Charging Station?	Yes

Other Relevant Settings

The table below lists a number of settings that are needed for configuring the test setup for the conformance test for this product.

ID	Limit / Setting	Value
ORS-1	GetConfigurationMaxKeys	20
ORS-2	MeterValuesAlignedDataMaxLength	6
ORS-3	MeterValuesSampledDataMaxLength	6
ORS-4	Minimum MeterValueSampleInterval supported	20
ORS-5	Maximum MeterValueSampleInterval supported	90
ORS-6	Minimum HeartbeatInterval supported	30
ORS-7	Maximum HeartbeatInterval supported	3600

ID	Limit / Setting	Value
ORS-8	StopTransactionMaxMeterValues	2
ORS-9	StopTxnAlignedDataMaxLength	1
ORS-10	StopTxnSampledDataMaxLength	1
ORS-11	WebSocketPingInterval	120
ORS-12	LocalAuthListMaxLength	2048
ORS-13	SendLocalListMaxLength	10
ORS-17	CertificateSignedMaxChainSize	2048
ORS-18	CertificateStoreMaxLength	2048

ID	Firmware Management Settings	Value
ORS-16	Supported file transfer protocols	FTP

Performance Measurement Result

The tables below shows the list of key performance indicators that are measured during the conformance test. The first table indicates the values that the vendor indicates that are valid maximum values for this product. The second table lists the actual performance measurements during the tests performed in a controlled environment.

Name	Max Value	Unit	Description
OCPP response timeout	10	seconds	The timeout used for exchanging OCPP response messages. Messages to the DUT can be handled within this timeout.
OCPP triggered function timeout	10	seconds	The timeout used for when waiting for an OCPP function with its corresponding request message. Messages to the DUT can be handled within this timeout. This value excludes firmware, diagnostics and rebooting
Transaction authorization time by RemoteStartTransaction	10	seconds	The time between the RemoteStartTransaction.req message and the corresponding StartTransaction.req. Only cases where the RemoteStartTransaction immediately results in an authorization followed by a StartTransaction.req are included.
Transaction authorization end time by RemoteStopTransaction	10	seconds	The time between the RemoteStopTransaction.req message and the corresponding StopTransaction.req. Only cases where the RemoteStopTransaction immediately results in an end of the authorization followed by a StopTransaction.req are included.

Name	Min Value	Max Value	Average Value	Unit
OCPP response timeout	0.18	0.33	0.21	seconds
OCPP triggered function timeout	0.31	2.67	1.76	seconds
Transaction authorization time by RemoteStartTransaction	8.54	8.54	8.54	seconds
Transaction authorization end time by RemoteStopTransaction	6.35	6.35	6.35	seconds

Communication technology used during performance measurement	Ethernet
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Statement of Approval

Vendor		
Name	Zhen Lan Long	Date: 2026-03-23
Company	RENOVA ELECTRONICS INC.	Signature:
Department	R & D	
Position	Product Manager	
Location	Los Angeles, USA / Shenzhen, China	

Test Laboratory		
Name	Huang Qilin	Date: 2026-03-23
Company	DNV Singapore Pte. Ltd.	Signature:
Department	Energy Systems	
Position	Consultant	
Location	DNV Lab, Singapore, Singapore	

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