OCPP 2.0.1 CORE CERTIFIED

I U R D C L S

Certificate Holder:	**IoCharger**
Certificate Number:	**OCA.0201.0086.CS**
Product Type:	**Charging Station**
Product Designation:	**IOCAH20**
Firmware Version:	**25020101-24120701**
Certification Date:	**April 8, 2025**

This certificate attests that the above mentioned product successfully completed certification testing in conformance with the reference specification OCPP 2.0.1 (Edition 3 FINAL, 2024-05-06 including Errata 2025-02). 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 February 25, 2025	DNV 20250305_OCPP 2.0.1 PICS CS - 2.0.2-rc1 - iocharger

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 2.0.1 Certification

Test laboratory:	DNV
Location:	Arnhem, Netherlands
Test Report Reference:	DNV 20250305_OCPP 2.0.1 PICS CS - 2.0.2-rc1 - iocharger.xlsx
Test Location	ElaadNL Arnhem, The Netherlands
Product Designation:	IOCAH20
Vendor name:	IoCharger
Device Under Test:	Charging Station
Firmware Version:	25020101-24120701
Config ID:	5E7177AB-C010D25F

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, including basic security.
Advanced Security	Pass	Support for TLS with client authentication.
Local Authorization List Management	Pass	Support for local authorization list management and optionally of an authorization cache.
Smart Charging	Pass	Support for Smart Charging, to control charging.
Advanced Device Management	Pass	Support for the OCPP Device Model and advanced logging and monitoring.
Reservation	Pass	Support for reservation of a connector of a Charging Station.
Advanced User Interface	Pass	Support for tariff & cost and DisplayMessage functionality.
ISO 15118 Support	Pass	Support for ISO 15118 Smart Charging and Plug and Charge authorization.

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	Yes
HFS-2	Has a fixed cable	No
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	Yes
HFS-8	No. EVSEs	1
HFS-9	Communication technology	Ethernet/WiFi/4G
HFS-10	RFID readers	Single
HFS-12	Number of displays	1

EVSE	Current	Phases	Connector	Type	Cable Type
1	AC	1 & 3	1	sType2	Detachable 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.Please refer to part 5 of the OCPP specification for the list of optional features and the reference to the relevant use cases in part 2 of the OCPP specification.

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	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 using a Master Pass for charging stations with UI	No
C-08	Support for using a Master Pass for charging stations without UI	Yes
C-09	Supported Transaction Start points	
C-09.1	Start transaction options - EVConnected	Yes
C-09.2	Start transaction options - Authorized	Yes
C-09.3	Start transaction options - DataSigned	No
C-09.4	Start transaction options - PowerPathClosed	No
C-09.5	Start transaction options - EnergyTransfer	No
C-09.6	Start transaction options - ParkingBayOccupancy	No
C-10	Supported Transaction Stop points	
C-10.1	Stop transaction options - EVConnected	Yes
C-10.2	Stop transaction options - Authorized	Yes
C-10.3	Stop transaction options - PowerPathClosed	No
C-10.4	Stop transaction options - EnergyTransfer	No

ID	Core Features	Supported / Present
C-10.5	Stop transaction options - ParkingBayOccupancy	No
C-12	Unlocking of connector when cable disconnected on EV side	
C-12.1	Support for unlocking connector when cable disconnected on EV side	Yes
C-12.2	Support for not unlocking when cable disconnected on EV side	No
C-13	Support for Reset per EVSE	No
C-14	Support for retrieving / deleting CustomerInformation - CustomerIdentifier	Yes
C-20	Allowing New Sessions Pending a FirmwareUpdate	Yes
C-21	Support for queuing all or only Transaction related messages until they are delivered to the CSMS	Yes
C-23	Supported time sources	Heartbeat NTP
C-25	Support for setting a TimeOffset	No
C-26	Support for setting the TimeZone	Yes
C-28	Toggle sending clock aligned meter values when a transaction is ongoing / Idle	Yes
C-29	TriggerMessage	
C-29.1	Trigger message - MeterValues	Yes
C-29.2	Trigger message - TransactionEvent	Yes
C-29.3	Trigger message - LogStatusNotification	Yes
C-29.4	Trigger message - FirmwareStatusNotification	Yes
C-29.5	Trigger message - StatusNotification	Yes
C-29.6	Trigger message - BootNotification	Yes

ID	Authorization Options for Local Start	Tested During Certification
C-30	Authorization - using RFID ISO14443	Yes
C-31	Authorization - using RFID ISO15693	No
C-32	Authorization - using KeyCode	No
C-33	Authorization - using locally generated id	No
C-34	Authorization - MacAddress	Yes
C-35	Authorization - NoAuthorization	Yes

ID	Authorization Options for Remote Start	Tested During Certification
C-36	Authorization - using RFID ISO14443	Yes
C-37	Authorization - using RFID ISO15693	No
C-38	Authorization - using centrally, in the CSMS generated id	No
C-39	Authorization - NoAuthorization	No

ID	Metervalues	Tested During Certification	Supported According to Vendor
C-40	Supported MeterValue Measurands		
C-40.1	SampledTxStarted Measurands	Energy.Active.Import.Register	Current.Import, Current.Offered Energy.Active.Import.Register Power.Active.Import Voltage
C-40.2	SampledTxUpdated Measurands	Energy.Active.Import.Register	Current.Import, Current.Offered Energy.Active.Import.Register Power.Active.Import Voltage
C-40.3	SampledTxEnded Measurands	Energy.Active.Import.Register	Current.Import, Current.Offered Energy.Active.Import.Register Power.Active.Import Voltage
C-40.4	AlignedData Measurands	Energy.Active.Import.Register	Current.Import, Current.Offered Energy.Active.Import.Register Power.Active.Import Voltage
C-40.5	AlignedDataTxEnded Measurands	Energy.Active.Import.Register	Current.Import, Current.Offered Energy.Active.Import.Register Power.Active.Import Voltage

ID	Cipher Suites	Supported / Present
C-41	Supported Cipher Suites	TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 TLS_RSA_WITH_AES_128_GCM_SHA256 TLS_RSA_WITH_AES_256_GCM_SHA384

ID	Core Features	Supported / Present
C-42	Signed Metervalues	No
C-43	Install Firmware with ongoing transaction	No
C-47	Support for falling back to default OCPP reconnection mechanism when NetworkConnection profile connection has failed	Yes
C-48	Authorization of remote start	
C-48.1	Option for authorization in case of a remote start	Yes
C-48.2	Option for no authorization in case of a remote start	Yes
C-58	Option for disabling remote authorization	Yes
C-49	Authorization Cache	Yes
C-59	Option for disabling remote authorization for cached invalid idTokens	Yes
C-51	Configurable TxStartPoint	Yes
C-52	Configurable TxStopPoint	Yes
C-53	Support for lifetime cached token	Yes
C-54	Supported policies for replacing cached entries	Yes
C-56	Support for providing the SummaryInventory	Yes
C-57	Support for cancelling ongoing log file upload	No
C-60	Support for cancelling ongoing firmware update	Yes

Smart Charging

ID	Certification Profile: Smart Charging	Supported / Present
SC-2	Supported charging rate units	
SC-2.1	A	Yes
SC-2.2	W	Yes

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Advanced Security

ID	Certification Profile: Advanced Security	Supported / Present
AS-2	Additional root certificate check mechanism implemented	No
AS-3	Update Charging Station Certificate - CertificateSignedRequest Timeout	Yes

Reservation

ID	Certification Profile: Reservation	Supported / Present
R-2	Support for reservation of unspecified EVSE	Yes
R-3	Support for disabling Reservations	Yes

Advanced Device Management

ID	Certification Profile: Advanced Device Management	Supported / Present
DM-3	Queue notifyEventRequest messages for specific severities	Yes

Local Authorization List Management

ID	Certification Profile: Local Authorization List Management	Supported / Present
LA-1	Authorization list support	Yes
LA-3	Option for disabling remote authorization for invalid idTokens stored at the Local Authorization List	Yes

Advanced User Interface

ID	Certification Profile: Advanced User Interface	Supported / Present
UI-1	Supported message priorities	
UI-1.1	AlwaysFront	Yes
UI-1.2	InFront	Yes
UI-1.3	NormalCycle	Yes
UI-2	Supported message formats	
UI-2.1	ASCII	Yes
UI-2.2	HTML	No
UI-2.3	URI	No
UI-2.4	UTF8	Yes

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 CSMSRootCertificate 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 ChargingStationCertificate be removed?	Yes
AQ-4	Is there at least one unsupported NumberOfPhases?	Yes
AQ-5	Does the Charging Station have at least one hardWired monitor?	No
AQ-6	Does the Charging Station have a pre-configured monitor?	Yes
AQ-7	Is your Charging Station able to download firmware while there is an ongoing transaction?	Yes
AQ-8	Does your Charging Station enforce a selection of EVSE prior to authorization?	Yes
AQ-9	Does your Charging Station support charging an EV using IEC 61851-1?	Yes

ID	Additional Questions for Lab Testing	Answer
AQ-10	Does your Charging Station support setting a Delta monitor on the WriteOnly component.variable SecurityCtrlr.BasicAuthPassword?	No
AQ-11	Does your Charging Station support a combined charging station Certificate	No

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	ItemsPerMessageGetReport	99
ORS-2	ItemsPerMessageGetVariables	99
ORS-3	ItemsPerMessageSetVariables	99
ORS-4	BytesPerMessageGetReport	32768
ORS-5	BytesPerMessageGetVariables	32768
ORS-6	BytesPerMessageSetVariables	32768
ORS-7	Minimum MessageAttemptIntervalTransactionEvent supported	3
ORS-8	Maximum MessageAttemptIntervalTransactionEvent supported	3600
ORS-9	Minimum SampledDataTxUpdatedInterval supported	10
ORS-10	Maximum SampledDataTxUpdatedInterval supported	604800
ORS-11	Minimum HeartbeatInterval supported	1
ORS-12	Maximum HeartbeatInterval supported	604800
ORS-14	Minimum WebSocketPingInterval supported	1
ORS-15	Maximum WebSocketPingInterval supported	604800
ORS-16	WebSocketPingInterval	90

ID	Security Related Settings	Value
ORS-17	CertificateEntries	10

ID	Security Related Settings	Value
ORS-18	MaxCertificateChainSize	10

ID	Certification Profile: Local Authorization List Management	Value
ORS-19	LocalAuthListEntries	1000
ORS-20	ItemsPerMessageSendLocalList	1000
ORS-21	BytesPerMessageSendLocalList	1024000

ID	Certification Profile: Smart Charging	Value
ORS-22	ChargingProfileMaxStackLevel	8
ORS-23	PeriodsPerSchedule	256
ORS-28	ChargingProfilesEntries	32

ID	Firmware Management Settings	Value
ORS-24	Supported file transfer protocols	HTTP HTTPS

ID	Certification Profile: Advanced Device Management	Value
ORS-25	ItemsPerMessageSetVariableMonitoring	256
ORS-26	BytesPerMessageSetVariableMonitoring	1048576
ORS-29	Preconfigured Monitor Id	20000001
ORS-31	Numeric Monitor Component.Variable	Power
ORS-32	Numeric Monitor Value	100
ORS-33	Non-Numeric Monitor Component.Variable	EVSE.1.AvailabilityState
ORS-34	Non-Numeric Monitor Value	True
ORS-35	Threshold Monitor With MaxLimit Component.Variable	Power
ORS-36	MaxLimit Monitor Value	60000

ID	Certification Profile: Advanced Device Management	Value
ORS-37	Threshold Monitor Component.Variable	Power
ORS-38	Lower Threshold Monitor Value	10.00
ORS-39	Upper Threshold Monitor Value	100.00
ORS-40	Non-Trigger Threshold Monitor Value	100.00

ID	Certification Profile: Advanced User Interface	Value
ORS-27	NumberOfDisplayMessages	1

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 time	30	seconds	The response time for when waiting for an OCPP response message after sending an OCPP request message. This entails all OCPP messages. Messages to the DUT can be handled within this timeout.
OCPP triggered function response time	30	seconds	The response time used when waiting for an asynchronous OCPP report after requesting this report.
Transaction authorization time by RequestStartTransaction Request	30	seconds	The time between a RequestStartTransactionRequest and the corresponding TransactionEventRequest. Only cases where the RequestStartTransactionRequest immediately results in an authorization followed by a TransactionEventRequest, without the need of any additional manual actions or chargingState transitions inbetween are included.
Transaction authorization end time by RequestStopTransaction Request	30	seconds	The time between a RequestStopTransactionRequest and the corresponding TransactionEventRequest Only cases where the RequestStopTransactionRequest immediately results in an end of the authorization followed by a TransactionEventRequest, that do not contain transactionInfo.chargingState = EVConnected are included.

Name	Min Value	Max Value	Average Value	Unit
OCPP response time	0.04	5.49	0.16	seconds
OCPP triggered function response time	0.18	6.33	2.81	seconds
Transaction authorization time by RequestStartTransactionRequest	0.31	0.63	0.48	seconds
Transaction authorization end time by RequestStopTransactionRequest	0.23	0.54	0.33	seconds

Communication technology used during performance measurement	Ethernet

Statement of Approval

Vendor

Name	Chen Bing	Date: 2025-03-04
Company	Iocharger	Signature:
Department	R & D Center	
Position	CTO	
Location	Xiamen, China	

Test Laboratory

Name	Rares Botezatu	Date: 2025-03-05
Company	DNV	Signature:
Department	Digital System Operations	
Position	Digital Grid Operations Engineer	
Location	Arnhem, Netherlands	

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