

SolarMAN OPEN API

(V1.1.6)

User Manual

| Version | Updated | Note |
|---------|------------|--|
| 1.0.0 | 2019-11-29 | First Draft |
| 1.0.1 | 2019-12-30 | Regular Update |
| 1.0.2 | 2019-12-30 | Regular Update |
| 1.0.3 | 2020-1-9 | 10-Dictionary (Phone Number Prefix) |
| 1.1.0 | 2020-03-10 | 1 Modify all interface incoming parameters 2 Delete interface incoming parameters userId, companyId (V1.0) 3 Add new interfaces (below) 2.4 Account registration 2.5 Obtain account info 2.6 Modify account info 2.7 Modify binding info 2.8 Reset password 2.9 Modify password 4.8 Create a plant 4.9 Modify a plant 4.10 Delete a plant 4.11 Calculation of accumulated production 4.12 Set offset 4.13 Add gateway (Logger/DTU) 4.14 Delete a device 5.1 Generate verification code |
| 1.1.1 | 2020-06-01 | Added a quick guide to help users quickly understand how to use |
| 1.1.2 | 2020-8-4 | Remove the guide of obtaining weather station |
| 1.1.3 | 2020-11-12 | Added device control capability through |

| | | |
|-------|------------|---|
| | | OpenApi, see 3.7 |
| 1.1.4 | 2020-12-17 | Added an interface for querying device communication relations, see 3.8 |
| 1.1.5 | 2021-03-19 | Added 3.7 callback response parameter description of device control interface |
| 1.1.6 | 2021-03-31 | Added 3.9 customized command interface |

| | |
|---|-----------|
| 1 Open Platform | 5 |
| 1.1 Terminology | 5 |
| 1.2 Access Process | 5 |
| 1.3 Call Restriction | 6 |
| 1.4 Calling Address | 6 |
| 1.5 Quick Guide | 7 |
| 1.5.1 Process data from SOLARMAN Smart via OpenAPI | 7 |
| 1.5.2 Process data from SOLARMAN Business via OpenAPI | 13 |
| 2 Account Interface | 23 |
| 2.1 Obtain Token | 23 |
| 2.2 Business Relation | 26 |
| 2.3 Permission | 28 |
| 2.4 Account Registration | 30 |
| 2.5 Obtain Account Info | 31 |
| 2.6 Modify Account Info | 33 |
| 2.7 Modify Binding Info | 35 |
| 2.8 Reset Password | 36 |
| 2.9 Modify Password | 37 |
| 3 Device Interface | 39 |
| 3.1 Alert Details—Device | 39 |
| 3.2 Alert List—Device | 41 |
| 3.3 Real-time Data—Device | 44 |
| 3.4 Historical Data—Device | 52 |
| 3.5 Device List | 55 |
| 3.6 Obtain SIM Card Info of Gateway Device | 57 |
| 3.7 Issued Device Control Command | 59 |
| 3.8 Device communication relationship | 62 |
| 3.9 Customized Command | 65 |
| 4 Plant Interface | 69 |
| 4.1 Query Plant Info | 69 |
| 4.2 Obtain Device List | 72 |
| 4.3 Obtain Historical Data | 74 |

| | |
|---|-----|
| 4.4 Obtain Plant List..... | 78 |
| 4.5 Obtain Real-time Data..... | 81 |
| 4.6 Obtain Operation Privilege..... | 83 |
| 4.7 Obtain Alert List..... | 85 |
| 4.8 Create a plant..... | 88 |
| 4.9 Modify a Plant..... | 91 |
| 4.10 Delete a Plant..... | 94 |
| 4.11 Calculation of Accumulated Production..... | 95 |
| 4.12 Set Offset..... | 96 |
| 4.13 Add Gateway (Logger/DTU)..... | 98 |
| 4.14 Delete a Device..... | 99 |
| 5 Common Interface..... | 101 |
| 5.1 Generate Verification Code..... | 101 |
| 6 Response State Value..... | 102 |
| 7 Enumerated Type..... | 104 |
| 8 Dictionary-Time Zone..... | 105 |
| 9 Dictionary-Currency..... | 109 |
| 10 Dictionary-Region..... | 115 |
| 11 Dictionary-Phone Number Prefix..... | 115 |

1. SolarMAN OpenAPI platform provides standard RESTful data calling service for authenticated users.
2. The platform interface is based on http/https protocol, which uses OAuth2.0 authentication mechanism.
3. GET/POST: Parameter: utf-8 code, Processing Code: urlencode
4. Data: utf-8 code
5. Support json format for return
6. Structure of return data: main body, code: error code, msg: error content.
7. It is required to add *Authorization* at *http header* under the circumstance of calling other interfaces (Obtain/Extend ACCESS_TOKEN interface is excluded). Value: ACCESS_TOKEN

1.1 Terminology

| | |
|---------------|---|
| Application | Basic element to call API |
| APP_ID | Unique ID |
| APP_SECRET | Authentication key (Confidential) |
| ACCESS_TOKEN | Request for server data |
| REFRESH_TOKEN | Extend the term of validity of ACCESS_TOKEN |

1.2 Access Process

1. Register at SolarMAN 3.0 and SolarMAN Business
2. Register as SOLARMAN developer (Contact our sales)
Create APP, generate APP_ID and APP_SECRET, then submit
3. Develop and test according to documents
4. Join with interface with formal settings

1.3 Call Restriction

- Default all general interface call restrictions

The maximum number of requests per 10 seconds for a single OpenApi account to call the interface: **300**

- Restrictions on device control interface calls (3.7 interface, 3.9 interface)

The maximum number of requests per minute for a single OpenApi account to call the interface: **50**

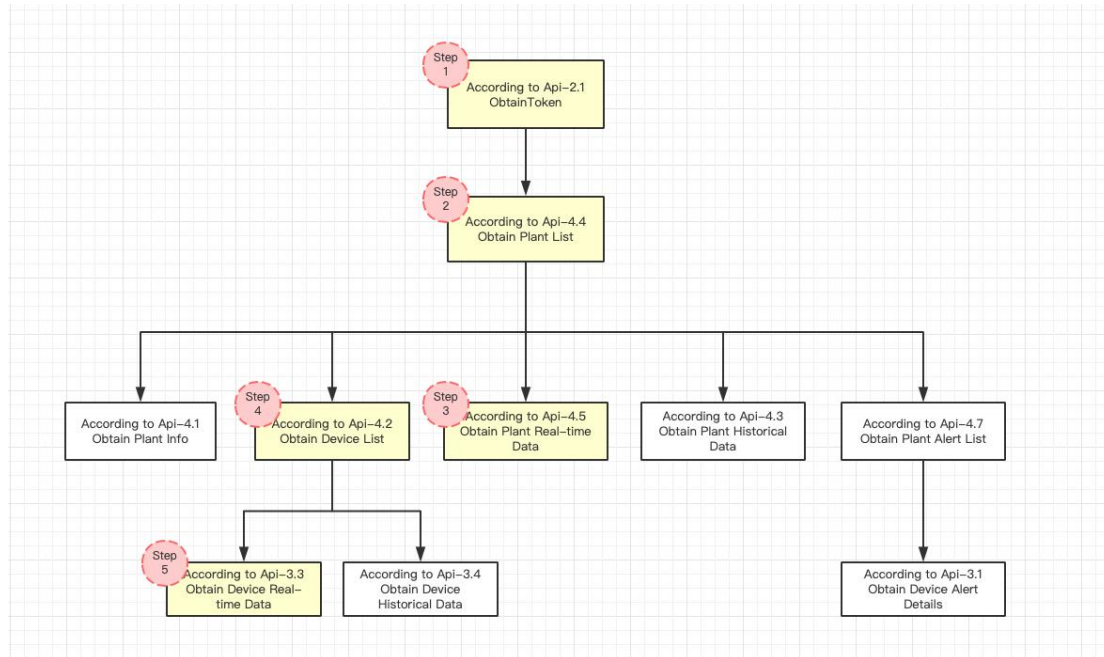
1.4 Calling Address

| Environment | Requested Address |
|----------------|---|
| Formal Setting | https://api.solarmanpv.com |

1.5 Quick Guide

1.5.1 Process data from SOLARMAN Smart via OpenAPI

1.5.1.1 Obtain plant/device data



Precondition (Meet any of the preconditions below)

- (1) Account has been created on SOLARMAN Smart Web/App or via OpenAPI, logger has been added, and data can be checked normally.
- (2) Authorized plant has been received via SOLARMAN Smart Web/App, and data can be checked normally.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token

Developer information and account on SOLARMAN Smart are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Smart yo obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain plant list

You can obtain plant list and Plant ID via this interface.

(1) Interface Code: [4.4](#)

(2) Notice:

- Header field authorization must be transmitted. Please put bearer as a prefix when transmitting token_type.
- Default: Inquiry the first page when paging parameter will not be transmitted.

Step 3: Obtain plant real-time data

Based on knowing Plant ID, you can check plant real-time data via this interface, e.g. plant production power, plant feed-in power.

(1) Interface Code: [4.5](#)

(2) Notice:

- stationId is necessary, only matched plant ID will be transmitted.

Step 4: Obtain device list

Based on knowing Plant ID, you can check device list via this interface to know device SN and Device ID.

(1) Interface Code: [4.2](#)

(2) Notice:

- Default: Inquiry all device data if deviceType field will not be transmitted, assigned device type will be obtained during the transmission.
- Please refer to API document [7. Enumeration Type Declaration](#) for device type.

Step 5: Obtain device real-time data

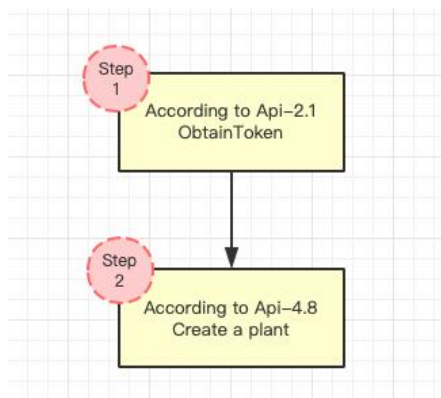
Based on knowing SN and Device ID, you can check device real-time data via this interface, e.g. inverter AC total output power, module production power, battery charging power.

(1) Interface Code: [3.3](#)

(2) Notice:

- Field deviceSn is necessary.

1.5.1.2 Create a Plant



Precondition

Account has been created on SOLARMAN Smart Web/App or via OpenAPI.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token

Developer information and account on SOLARMAN Smart are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Smart to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Create a Plant

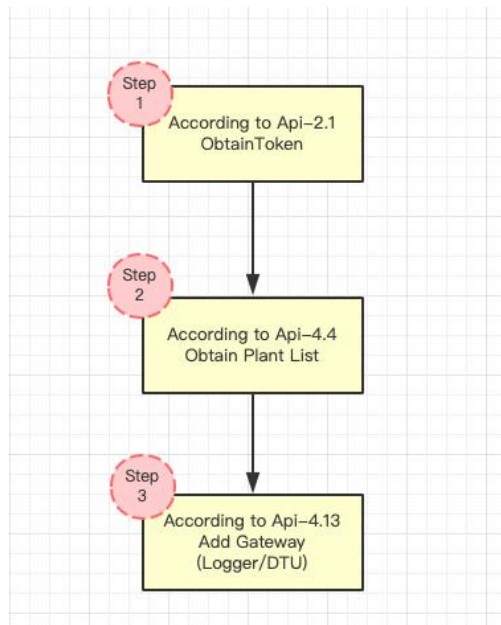
You can create a plant via this interface.

(1) Interface Code: [4.8](#)

(2) Notice:

- All required fields must be transmitted.
- gridInterconnectionType , please check API document [6. Enumeration Type Declaration](#) for type.
- Please check API document [9.Dictionary—Currency](#) for currency.

1.5.1.3 Add a Device



Precondition (Meet any of the preconditions below)

- (1) Account has been created on SOLARMAN Smart Web/App or via OpenAPI.
- (2) Authorized plant has been received via SOLARMAN Smart Web/App, and device can be added normally.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token

Developer information and account on SOLARMAN Smart are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

- (1) Interface Code: [2.1](#)

- (2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Smart to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain plant list

You can obtain plant list and Plant ID via this interface.

(1) Interface Code: [4.4](#)

(2) Notice:

- Header field authorization must be transmitted. Please put bearer as a prefix when transmitting token_type.
- Default: Inquiry the first page when paging parameter will not be transmitted.

Step 3: Add a Device

Based on Plant ID, you can add a device under target plant via this interface.

(1) Interface Code: [4.13](#)

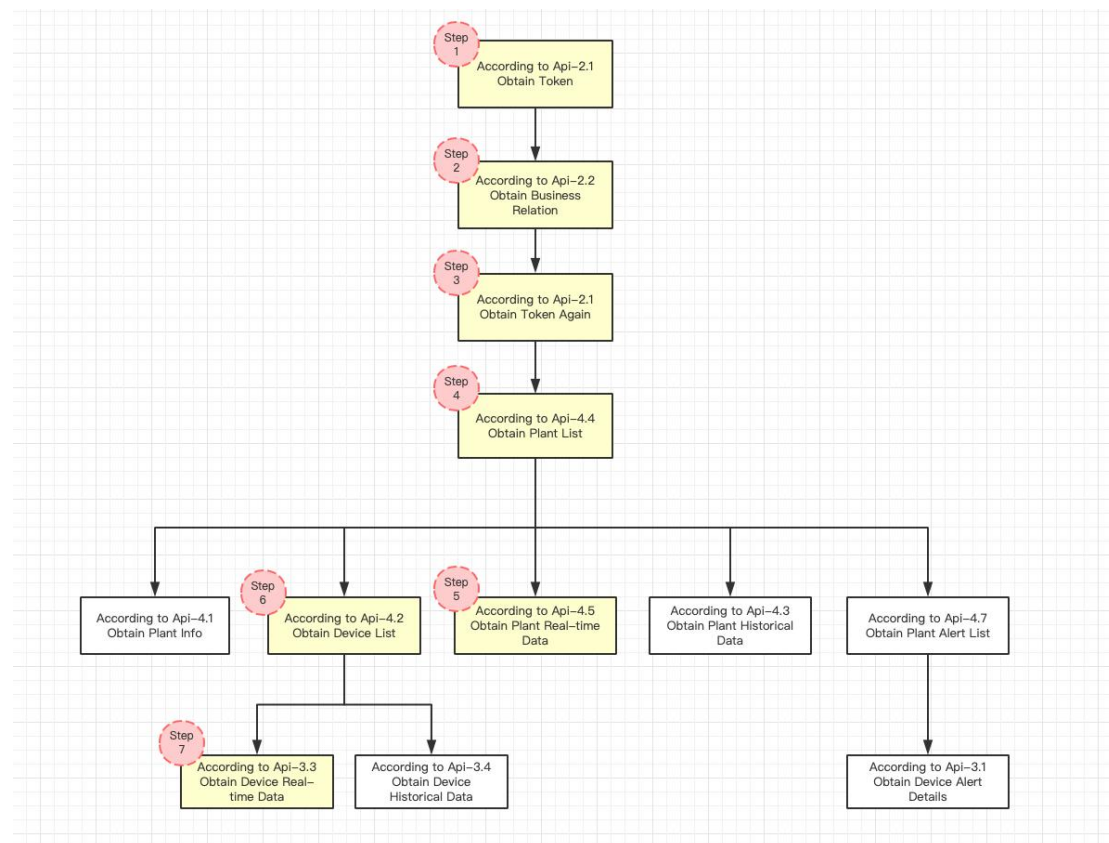
(2) Notice:

- isAuto field must be transmitted. When isAuto=true and the data is transmitting, the relationship between sub-device of this gateway device and plant will be established automatically. When isAuto=false, only the relationship between gateway device and plant will be established, sub-device needs to be added manually.

If calling sub-device is required, please contact the sales.

1.5.2 Process data from SOLARMAN Business via OpenAPI

1.5.2.1 Obtain plant and device data in O&M version



Precondition (Meet any of the preconditions below)

- (1) Account has been created on SOLARMAN Business Web/App or via OpenAPI, logger has been added, and data can be checked normally.
- (2) Authorized plant has been received via SOLARMAN Business Web/App, and data can be checked normally.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token for first time

Developer information and account on SOLARMAN Business are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Business to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain business relation

Based on obtaining Token, you can obtain the business relation here, please note business OrgID.

(1) Interface Code: [2.2](#)

(2) Notice:

- Return value: companyld means orgld
- One account can belong to multiple companies. Please select orgld according to actual situation.

Step 3: Obtain Token for second time

For obtaining Token for second time, you need to get OrgID first and submit to interface, then you will get the business Token. When you use this Token to call other interface in OpenAPI, then the data of this business will be returned.

(1) Interface Code: [2.1](#)

(2) Notice:

- When obtaining business Token, orgld field must be transmitted. Or user Token will be obtained.

Step 4: Obtain plant list

You can obtain plant list and Plant ID via this interface.

(1) Interface Code: [4.4](#)

(2) Notice:

- Header field authorization must be transmitted. Please put bearer as a prefix when transmitting token_type.
- Default: Inquiry the first page when paging parameter will not be transmitted.

Step 5: Obtain plant real-time data

Based on knowing Plant ID, you can check plant real-time data via this interface, e.g. plant production power, plant feed-in power.

(1) Interface Code: [4.5](#)

(2) Notice:

- stationId is necessary, only matched plant ID will be transmitted.

Step 6: Obtain device list

Based on knowing Plant ID, you can check device list via this interface to know device SN and Device ID.

(1) Interface Code: [4.2](#)

(2) Notice:

- Default: Inquiry all device data if deviceType field will not be transmitted, assigned device type will be obtained during the transmission.
- Please refer to API document [6. Enumeration Type Declaration](#) for device type.

Step 7: Obtain device real-time data

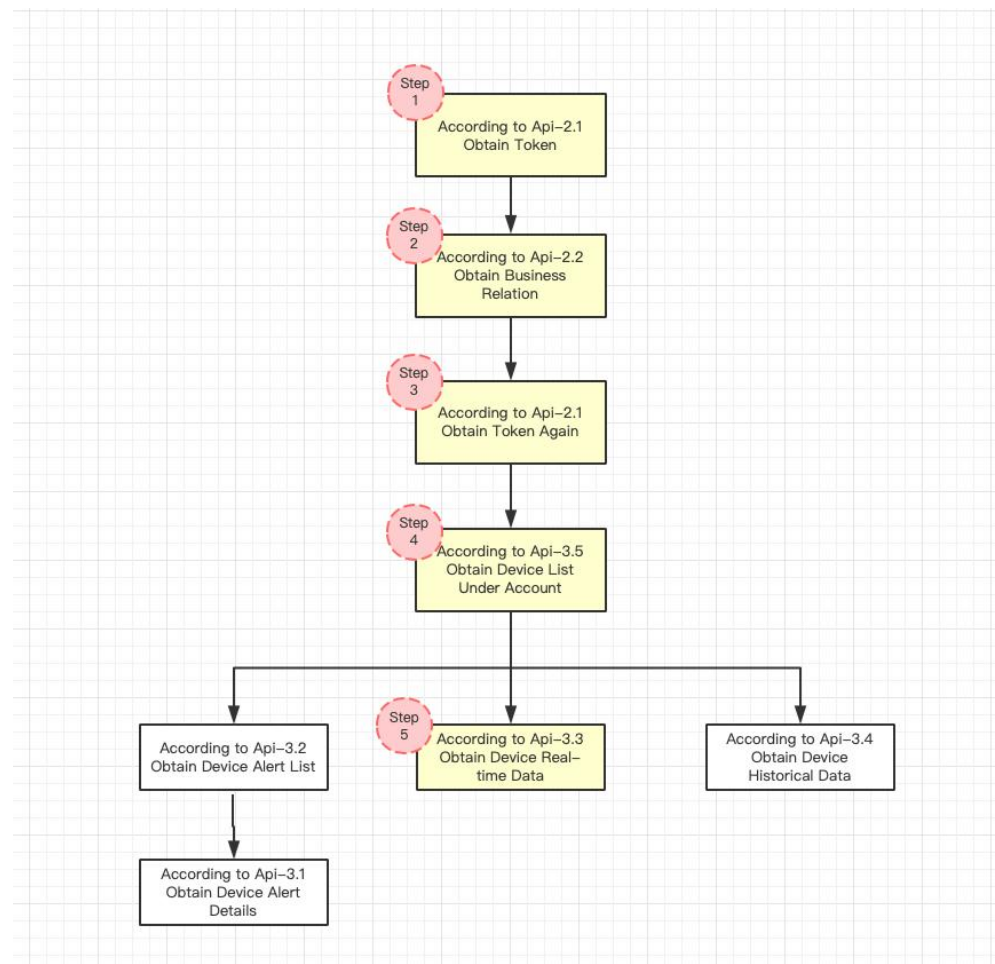
Based on knowing SN and Device ID, you can check device real-time data via this interface, e.g. inverter AC total output power, module production power, battery charging power.

(1) Interface Code: [3.3](#)

(2) Notice:

- Field deviceSn is necessary.

1.5.2.2 Obtain device data in device library



Precondition

Account has been created on SOLARMAN Business Web and logger has been imported in device library and data can be checked normally.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token for first time

Developer information and account on SOLARMAN Business are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Business to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain business relation

Based on obtaining Token, you can obtain the business relation here, please note business OrgID.

(1) Interface Code: [2.2](#)

(2) Notice:

- Return value: companyld means orgld
- One account can belong to multiple companies. Please select orgld according to actual situation.

Step 3: Obtain Token for second time

For obtaining Token for second time, you need to get OrgID first and submit to interface, then you will get the business Token. When you use this Token to call other interface in OpenAPI, then the data of this business will be returned.

(1) Interface Code: [2.1](#)

(2) Notice:

- When obtaining business Token, orgld field must be transmitted. Or user Token will be obtained.

Step 4: Obtain device list

Based on knowing Plant ID, you can check device list via this interface to know device SN and Device ID.

(1) Interface Code: [3.5](#)

(2) Notice:

- Header field authorization must be transmitted. Please put bearer as a prefix when transmitting token_type.
- Default: Inquiry the first page when paging parameter will not be transmitted.

Step 5: Obtain device real-time data

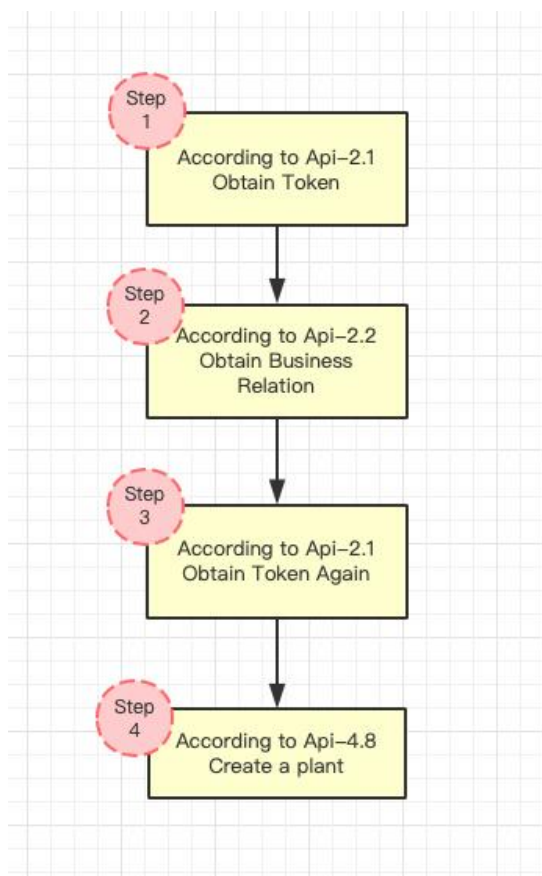
Based on knowing SN and Device ID, you can check device real-time data via this interface, e.g. inverter AC total output power, module production power, battery charging power.

(1) Interface Code: [3.3](#)

(2) Notice:

- Field deviceSn is necessary.

1.5.2.3 Create a Plant



Precondition

Account has been created on SOLARMAN Business Web/App or via OpenAPI.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token for first time

Developer information and account on SOLARMAN Smart are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Business to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain business relation

Based on obtaining Token, you can obtain the business relation here, please note business OrgID.

(1) Interface Code: [2.2](#)

(2) Notice:

- Return value: companyId means orgId
- One account can belong to multiple companies. Please select orgId according to actual situation.

Step 3: Obtain Token for second time

For obtaining Token for second time, you need to get OrgID first and submit to interface, then you will get the business Token. When you use this Token to call other interface in OpenAPI, then the data of this business will be returned.

(1) Interface Code: [2.1](#)

(2) Notice:

- When obtaining business Token, orgld field must be transmitted. Or user Token will be obtained.

Step 4: Create a Plant

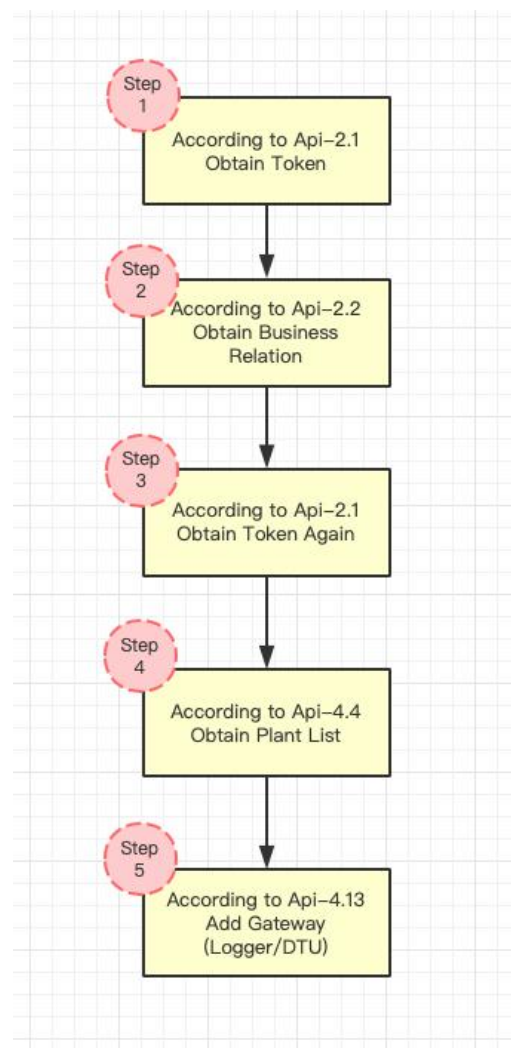
You can create a plant via this interface.

(1) Interface Code: [4.8](#)

(2) Notice:

- All required fields must be transmitted.
- gridInterconnectionType , please check API document [6. Enumeration Type Declaration](#) for type.
- Please check API document [8.Dictionary—Currency](#) for currency.

1.5.2.4 Add a Device



Precondition (Meet any of the preconditions below)

- (1) Account has been created on SOLARMAN Business Web/App or via OpenAPI.
- (2) Authorized plant has been received via SOLARMAN Business Web/App, and device can be added normally.

Calling Guide

This calling guide only demonstrates some marked scenes in the flowchart. If you wish to know other calling methods of other interfaces, please check the detailed documents.

Step 1: Obtain Token for first time

Developer information and account on SOLARMAN Smart are required to get the Token to call OpenAPI.

Token will be the unique voucher and necessary condition to call OpenAPI.

(1) Interface Code: [2.1](#)

(2) Notice:

- APPID parameter is query parameter, which is put on URL.
- Password field will use SHA256 for encryption and transmit parameter later.
- Multiple token calling will not cause original token invalid. Term of validity of token is two month. And token will expire if the password is reset or the role is modified.
- APPID in testing environment cannot call API in production environment.
- It is necessary to have an account on SOLARMAN Business to obtain Token. Please input one of mobile / email / username parameter according to actual situation along with password.

Step 2: Obtain business relation

Based on obtaining Token, you can obtain the business relation here, please note business OrgID.

(1) Interface Code: [2.2](#)

(2) Notice:

- Return value: companyId means orgId
- One account can belong to multiple companies. Please select orgId according to actual situation.

Step 3: Obtain Token for second time

For obtaining Token for second time, you need to get OrgID first and submit to interface, then you will get the business Token. When you use this Token to call other interface in OpenAPI, then the data of this business will be returned.

(1) Interface Code: [2.1](#)

(2) Notice:

- When obtaining business Token, orgId field must be transmitted. Or user Token will be obtained.

Step 4: Obtain plant list

You can obtain plant list and Plant ID via this interface.

(1) Interface Code: [4.4](#)

(2) Notice:

- Header field authorization must be transmitted. Please put bearer as a prefix when transmitting token_type.
- Default: Inquiry the first page when paging parameter will not be transmitted.

Step 5: Add a Device

Based on Plant ID, you can add a device under target plant via this interface.

(1) Interface Code: [4.13](#)

(2) Notice:

- isAuto field must be transmitted. When isAuto=true and the data is transmitting, the relationship between sub-device of this gateway device and plant will be established automatically. When isAuto=false, only the relationship between gateway device and plant will be established, sub-device needs to be added manually.

If calling sub-device is required, please contact the sales.

2 Account Interface

2.1 Obtain Token

| Obtain token | |
|--------------------|---|
| Interface | Token is a credential to call resources. |
| Description | System supports registration via mobile, E-mail, username. (Field of mobile, email, username: one of three must be passed. Pass mobile field: countryCode must be passed. |

| | Passing orgld field will obtain business Token. Otherwise, C-end user Token will be obtained.) | | | |
|---------------------|---|----------------|-----------------|--|
| Request URL | https://api.solarmanpv.com/account/v1.0/token | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| appld | string | query | Y | APPID (Example): 201911067156002 |
| appSecret | string | body | Y | appSecret (Example): 1q3e2ee5w5w20ww |
| countryCode | string | body | N | Country Code(Example): 86 |
| email | string | body | N | Email (Example):13255@qq.com |
| mobile | string | body | N | Mobile (Example): 13255200000 |
| orgld | integer | body | N | Business ID (Example): 12 |
| password | string | body | Y | Password (Example): 13255208128 (sha256 encrypted) |
| username | string | body | N | Username (Example): sunsun |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| access_token | string | body | N | access_token (Example): eyJhbGciOiJSUzI1NiIsInR5cC |
| code | string | body | N | Code (Example): 10000 |
| expires_in | string | body | N | expires_in (Example): 5183999 (Unit:s) |
| refresh_token | string | body | N | refresh_token (Example): eyJhbGciOiJSUzI1NiIsInR5cC |

| | |
|--|---|
| | <p> pj754eMrPP3SVO9_HI4aufGsIP1P7PPWzJ3VZsckTLHas6cWWEvde ngunK2BLLsokdz4klxsT3oX0BmewfcWEZ9qjGenF0Ht0eRLZdaRwr2 skqHhUQ", "expires_in": "5183999", "scope": null, "uid": 6681 } </p> |
|--|---|

2.2 Business Relation

| Business Relation | | | | |
|---------------------|--|----------------|-----------------|--|
| Interface | Query corresponding company and role | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/info | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| orgInfoList | array | body | N | Business List |

| | | | | |
|--------------------|---|------|---|---|
| companyId | integer | body | N | Company ID (Example): 123 |
| companyName | string | body | N | Company Name (Example): IGEN-Tech |
| roleName | string | body | N | Role Name (Example): Admin |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b 659eec |
| Example | | | | |
| Request Parameters | /account/v1.0/info?language=en | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "c1cf72f30f4f483da94e81f458fd3f4a", "orgInfoList": [{ "companyId": 12, "companyName": "business-zcg01", "roleName": "超级管理员" }, { "companyId": 129, "companyName": "OpenAPI", "roleName": "超级管理员" }] }</pre> | | | |

2.3 Permission

| Permission | | | | |
|----------------------|---|----------------|-----------------|--|
| Interface | Login to SolarMAN Business and obtain the permission under the account. | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/role | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| viewDeviceAlertData | integer | body | N | View Device Alert Data (Example): 0: Denied; 1: Pass |
| viewDeviceAlertList | integer | body | N | View Device Alert List (Example): 0: Denied; 1: Pass |
| viewDeviceData | integer | body | N | View Device Data(Example): 0: Denied; 1: Pass |
| viewDeviceList | integer | body | N | View Device List(Example): 0: Denied; 1: Pass |
| viewStationAlertList | integer | body | N | View Station Alert List (Example): 0: Denied; 1: Pass |
| viewStationData | integer | body | N | View Station Data(Example): 0: Denied; 1: Pass |

| | | | | |
|---------------------------|---|------|---|--|
| viewStationDevice List | integer | body | N | View Sub-device/Device (Example): 0: Denied; 1: Pass |
| viewStationInfo | integer | body | N | View Station Info (Example): 0: Denied; 1: Pass |
| viewStationList | integer | body | N | View Station List (Example): 0: Denied; 1: Pass |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b 659eec |
| Example | | | | |
| Request Parameters | /account/v1.0/role?language=en | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "a5a7c7a7e8f8459f9ed04ebb3faaaa13", "viewStationList": 1, "viewStationInfo": 1, "viewStationDeviceList": 1, "viewStationData": 1, "viewStationAlertList": 1, "viewDeviceList": 1, "viewDeviceData": 1, "viewDeviceAlertList": 1, "viewDeviceAlertData": 1 }</pre> | | | |

2.4 Account Registration

| Account Registration | | | | |
|----------------------|--|----------------|-----------------|---|
| Interface | Register a new account | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/user | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| appld | string | query | Y | APPID (Example) 201911067156002 |
| appSecret | string | query | Y | appSecret Key |
| captcha | string | body | N | Verification Code (Example) 323488 |
| email | string | body | N | E-mail |
| nickname | string | body | N | Nick name Default:User+{10bits Time stamp} |
| oldUserId | string | body | N | Customer Uid, Rule: {APP_ID}_{OldUid} |
| originalPhotoUrl | string | body | N | Original Avatar Url |
| password | string | body | N | Password (sha256 Encrypted) |
| phoneNumber | string | body | N | Phone Number |
| phoneNumberPrefix | string | body | N | Phone Number Prefix (Example) 86 |
| photoUrl | string | body | N | Avatar compress picture Url |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |

| | | | | |
|-----------------------|--|------|---|--|
| code | string | body | N | Info Code (Example) 10000 |
| userId | integer | body | N | User ID |
| msg | string | body | N | Info Description (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request Id (Example) 1d6f6eca9bee4b6483d4af064b 659eec |
| Example | | | | |
| Request Parameters | <pre>{ "phoneNumber": "176250134584", "phoneNumberPrefix": "86", "captcha": "306051", "password": "8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c92", "originalPhotoUrl": "https://pic4.zhimg.com/6e66781f90ed16cb34656e0ea982f76b_xll.jpg", "photoUrl": "https://pic4.zhimg.com/6e66781f90ed16cb34656e0ea982f76b_xll.jpg" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "47ad0d1931d242699afad57223caf32c", "userId": 620 }</pre> | | | |

2.5 Obtain Account Info

Obtain Account Info

| Interface | Obtain Account Info | | | |
|---------------------|---|----------------|-----------------|---|
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/user-info | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code(Example) 10000 |
| email | string | body | N | E-mail |
| lastLoginTime | string | body | N | Last Login Time |
| nickname | string | body | N | Nickname |
| oldUserId | string | body | N | Customer Platform Uid |
| originalPhotoUrl | string | body | N | Original Photo Url |
| phoneNumber | string | body | N | Phone Number |
| phoneNumberPrefix | string | body | N | Phone Number Prefix |
| photoUrl | string | body | N | Avatar Url |
| regTime | string | body | N | Registration Time |
| userId | integer | body | N | User ID |
| username | string | body | N | User name |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) |

| | | | | |
|--------------------|--|--|--|----------------------------------|
| | | | | 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | /account/v1.0/user-info | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "b19522c0cda74b90992cd0cf1aa17d68", "userId": 14, "phoneNumberPrefix": "86", "phoneNumber": "1301110006", "email": "chenggong.zhang@igen-tech.com", "username": "zcg", "regTime": null, "lastLoginTime": 1583803446.000000000, "nickname": "张成功", "photoUrl": "http://img1.igen-tech.com/temp/79d4091821834ae9b3d35c69793f5a131583200093224b", "originalPhotoUrl": "" http://img1.igen-tech.com/temp/880861e2f1614733932eefaa13f3d1531583200091488.gif", "oldUserId": null }</pre> | | | |

2.6 Modify Account Info

| | |
|-----------------------|--|
| Modify Account Info | |
| Interface Description | Modify Account Info, e.g. Nickname, avatar |
| Request URL | https://api.solarmanpv.com/account/v1.0/user-info-update |

| | | | | |
|---------------------|--|----------------|-----------------|---|
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| newNickname | string | body | N | Nickname |
| originalPhotoUrl | string | body | N | Original Avatar Url |
| photoUrl | string | body | N | Avatar compress picture Url |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example) 10000 |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example)1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "newNickname": "ggg" } | | | |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "b46c65eee2064e278f9d2990c4a9a826" } | | | |

2.7 Modify Binding Info

| Modify Binding Info | | | | |
|---------------------|---|----------------|-----------------|---|
| Interface | Modify phone number, E-mail, username | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/bind-info | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| captcha | string | body | N | Verification Code (Example) 323488 |
| newEmail | string | body | N | New Email |
| newPhoneNumber | string | body | N | New Phone Number |
| newUsername | string | body | N | New Username |
| phoneNumberPrefix | string | body | N | Phone Number Prefix (Example) 86 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example) 10000 |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659ec |
| Example | | | | |

| | |
|--------------------|--|
| Request Parameters | <pre>{ "captcha": "153354", "newPhoneNumber": "126250134584", "phoneNumberPrefix": "86" }</pre> |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "bf05126704f14a44a51dd5513817ec26" }</pre> |

2.8 Reset Password

| Reset Password | | | | |
|--------------------|--|----------------|-----------------|---------------------------------------|
| Interface | Reset Password | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/password-reset | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| appld | string | query | Y | APPID (Example) 201911067156002 |
| appSecret | string | query | Y | appSecret Key |
| captcha | string | body | N | Verification Code (Example) 323488 |
| email | string | body | N | E-mail |
| newPassword | string | body | N | Password sha256 Encrypted |

| phoneNumber | string | body | N | Phone Number |
|----------------------------|---|----------------|-----------------|--|
| phoneNumberPrefix | string | body | N | Phone Number Prefix (Example) 86 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example) 10000 |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | <pre>{ "captcha": "035230", "phoneNumber": "126250134584", "phoneNumberPrefix": "86", "newPassword": "8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c92" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "6cef74d133814757b381489697220b21" }</pre> | | | |

2.9 Modify Password

Modify Password

| Interface | Modify Password | | | |
|---------------------|--|----------------|-----------------|---|
| Description | | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/password-update | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| newPassword | string | body | N | New Password sha256 Encrypted |
| oldPassword | string | body | N | Old Password sha256 Encrypted |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example) 10000 |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "newPassword": "8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6c921", "oldPassword": "8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12020c923adc6" | | | |

| | |
|--------------|--|
| | c92" |
| | } |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "6cef74d133814757b381489697220b21" } |

3 Device Interface

3.1 Alert Details-Device

| Alert Details-Device | | | | |
|----------------------|--|----------------|-----------------|---|
| Interface | Alert Details-Device | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/alertDetail | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| alertId | integer | body | Y | Alert ID (Example): 252525 |
| deviceId | integer | body | N | Device ID (Example): 252525 |

| deviceSn | string | body | Y | Device SN (Example): 12583SS |
|---------------------|-----------|----------------|-----------------|--|
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| addr | string | body | N | Alert Name(Example): ERR1 |
| alertCode | string | body | N | Alert Code (Example): 10 |
| alertId | integer | body | N | Alert ID (Example): 343 |
| alertName | string | body | N | Alert Name in PAAS platform (Example): 343 |
| alertTime | integer | body | N | Alert Time (Example): 1574133203 |
| code | string | body | N | Code (Example): 10000 |
| description | string | body | N | Description (Example): aaa |
| deviceSn | string | body | N | Device SN (Example): 12583SS |
| deviceType | string | body | N | Device Type (Example): COLLECTOR |
| influence | integer | body | N | Influence (0: No Influence, 1: Influence Production, 2: Influence Safety, 3: Influence Production&Safety) (Example): 10 |
| level | integer | body | N | Alert Level (0: Prompt, 1: Warning, 2: Failure) ,(Example): 10 |
| reason | string | body | N | Alert Reason (Example): aaa |
| solution | string | body | N | Solution (Example): aaa |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |

| Example | |
|--------------------|---|
| Request Parameters | <pre>{ "deviceId": 200203179, "deviceSn": "dev1800078101", "alertId": 4 }</pre> |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "85aff69bfabe4872846c5e9db11e4220", "alertId": 4, "deviceSn": "dev1800078101", "deviceType": "INVERTER", "alertName": "Error: 99+x", "addr": "ERR1", "alertCode": "3", "level": 2, "influence": 2, "alertTime": 1580621358, "description": "", "reason": null, "solution": null }</pre> |

3.2 Alert List-Device

| Alert List-Device | |
|-------------------|-------------------|
| Interface | Alert List-Device |
| Description | |

| Request URL | https://api.solarmanpv.com/device/v1.0/alertList | | | |
|---------------------|--|----------------|-----------------|---|
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| endTimeStamp | integer | body | Y | End Time Stamp (Example): 1574132094 |
| page | integer | body | N | Page |
| size | integer | body | N | View |
| startTimeStamp | integer | body | Y | Start Time Stamp(Example): 574132075 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| alertList | array | body | N | Alert List (Example): deviceList |
| addr | string | body | N | Alert Name(Example): ERR1 |
| alertId | integer | body | N | Alert ID (Example): 111 |
| alertName | string | body | N | Alert Name in PAAS platform (Example): 343 |
| alertTime | integer | body | N | Alert Time (Example): 1574133203 |
| code | string | body | N | Code (Example): 10000 |
| influence | integer | body | N | Influence (0: No Influence, 1: |

| | | | | |
|-----------------------|---|------|---|---|
| | | | | Influence Production, 2: Influence Safety, 3: Influence Production&Safety) (Example): 2 |
| level | integer | body | N | Alert Level (0: Prompt, 1: Warning,2: Failure) ,(Example): 1 |
| code | string | body | N | Code (Example): 10000 |
| deviceId | integer | body | N | Device ID(Example): 252525 |
| deviceSn | string | body | N | Device SN (Example): 12583SS |
| deviceType | string | body | N | Device Type (Example): COLLECTOR |
| total | integer | body | N | Total(Example): 322 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b65 9eec |
| Example | | | | |
| Request Parameters | <pre>{ "deviceId": 200203179, "deviceSn": "dev1800078101", "endTimestamp": 1580886244, "page": 1, "size": 10, "startTimestamp": 1580540643, }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "99bcad02b13241349dd89936793414a2", }</pre> | | | |

| | |
|--|---|
| | <pre> "deviceSn": "dev1800078101", "deviceId": 200203179, "deviceType": "INVERTER", "total": 5, "alertList": [{ "alertId": 2, "alertName": "Error: 99+x", "addr": "ERR1 ", "code": "1", "level": 0, "influence": 0, "alertTime": 1580621658 }] </pre> |
|--|---|

3.3 Real-time Data-Device

| Real-time Data-Device | | | | |
|-----------------------|--|----------------|-----------------|--|
| Interface | Real-time Data-Device | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/currentData | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6I |

| | | | | lkpXVCJ9 |
|----------------------------|---|----------------|-----------------|--|
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| dataList | array | body | N | Data List (Example): dataList |
| key | string | body | N | Parameter key (Example): PG_Pt1 |
| name | string | body | N | Parameter Name (Example): Total Grid Power |
| unit | string | body | N | Parameter Unit (Example): W |
| value | string | body | N | Parameter Value(Example): 55 |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | N | Device SN (Example): 12583SS |
| deviceState | integer | body | N | Device State Value: 1. Online 2. Alerting 3. Offline (Example): 1 |
| deviceType | string | body | N | Device Type (Example): COLLECTOR |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064 b659eec |
| Example | | | | |
| Request Parameters | <pre>{ "deviceId": 200203179, "deviceSn": "dev1800078101" }</pre> | | | |

| | |
|--------------|---|
| Return Value | <pre> { "timeType": 4, "startTime": "2019", "endTime": "2020", "deviceSn": "dev1800078101", "deviceId": 200203179 } { "code": null, "msg": null, "success": true, "requestId": "d35ced8da68d4fa1868c540afb7166bc", "deviceSn": "dev1800078101", "deviceId": 200203179, "deviceType": "INVERTER", "deviceState": 3, "dataList": [{ "key": "SN1", "value": "dev1800078101", "unit": null, "name": "SN" }, { "key": "DV1", "value": "4980.60", "unit": "V", "name": "DC Voltage PV1" }, { "key": "DV2", "value": "5803.20", "unit": "V", </pre> |
|--------------|---|

| | |
|--|--|
| | <pre>"name": "DC Voltage PV2" }, { "key": "DC1", "value": "5056.50", "unit": "A", "name": "DC Current PV1" }, { "key": "DC2", "value": "3089.50", "unit": "A", "name": "DC Current PV2" }, { "key": "DP1", "value": "4004365166", "unit": "W", "name": "DC Power PV1" }, { "key": "DP2", "value": "447735664", "unit": "W", "name": "DC Power PV2" }, { "key": "DPi_t1", "value": "3495584498", "unit": "W", "name": "Total DC Input Power" }, },</pre> |
|--|--|

| | |
|--|---|
| | <pre>{ "key": "AV1", "value": "5803.10", "unit": "V", "name": "AC Voltage R/U/A" }, { "key": "AV2", "value": "6298.00", "unit": "V", "name": "AC Voltage S/V/B" }, { "key": "AV3", "value": "3996.80", "unit": "V", "name": "AC Voltage T/W/C" }, { "key": "AC1", "value": "4072.60", "unit": "A", "name": "AC Current R/U/A" }, { "key": "AC2", "value": "3526.90", "unit": "A", "name": "AC Current S/V/B" }, { "key": "AC3",</pre> |
|--|---|

| | |
|--|--|
| | <pre> "value": "996.60", "unit": "A", "name": "AC Current T/W/C" }, { "key": "APo_t1", "value": "0", "unit": "W", "name": "Total AC Output Power (Active)" }, { "key": "A_Fo1", "value": "493.07", "unit": "Hz", "name": "AC Output Frequency R" }, { "key": "PF0", "value": "5.97", "unit": null, "name": "Power Factor" }, { "key": "Et_ge0", "value": "29110.00", "unit": "kWh", "name": "Cumulative Production (Active)" }, { "key": "Etdy_ge1", "value": "800", "unit": "kWh", </pre> |
|--|--|

| | |
|--|---|
| | <pre>"name": "Daily Production (Active)" }, { "key": "INV_T0", "value": "6519.00", "unit": "°C", "name": "Temperature- Inverter" }, { "key": "t_w_hou1", "value": "1575738915", "unit": "h", "name": "Total Running Hour" }, { "key": "INV_ST1", "value": "56462", "unit": null, "name": "Inverter status" }, { "key": "PG_V_ERR0", "value": "6026.00", "unit": null, "name": "Grid Voltage Error Value" }, { "key": "PG_F_ERR0", "value": "436.80", "unit": null, "name": "Grid Frequency Error Value" }, },</pre> |
|--|---|

```
{
  "key": "MAC_T_ERRin1",
  "value": "2777.80",
  "unit": null,
  "name": "Inner Temperature Error Value "
},
{
  "key": "N_I_ERR1",
  "value": "521.35",
  "unit": null,
  "name": "Isolation Impedance Error Value "
},
{
  "key": "D_ERRcp1",
  "value": "2206.50",
  "unit": null,
  "name": "DC Component Error Value"
},
{
  "key": "V_ERRi1",
  "value": "4121.10",
  "unit": null,
  "name": "Input Voltage 1 Error Value"
},
{
  "key": "ELC_ERR1",
  "value": "559.12",
  "unit": null,
  "name": "Leak Current Error Value"
}
]
```

3.4 Historical Data-Device

| Historical Data—Device | | | | |
|------------------------|---|----------------|-----------------|---|
| Interface | Historical Data—Device | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/historical | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceId | integer | body | N | Device ID(Example): 252525 |
| deviceSn | string | body | Y | Device SN(Example): 12583SS |
| endTime | string | body | Y | End Time yyyy-MM-dd or yyyy-MM or yyyy , (Example): 2019-11-18 |
| startTime | string | body | Y | Start Time yyyy-MM-dd or yyyy-MM or yyyy , (Example): 2019-11-18 |
| timeType | integer | body | Y | Value Type 1. Frame: Frame data someday 2. Day: Daily statistics (Less than 30 days) 3. Month: Monthly statistics (Less than 12 months) 4. Year: Yearly statistics, |

| | | | | (Example): 1 |
|---------------------|-----------|----------------|-----------------|--|
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | N | Device SN (Example): 12583SS |
| deviceType | string | body | N | Device Type (Example): COLLECTOR |
| paramDataList | array | body | N | Data List (Example): paramDataList |
| collectTime | string | body | N | timeType is different, the format is different 1: Time Stamp 2: yyyy-MM-dd 3: yyyy-MM 4: yyyy ,(Example): 123456 |
| dataList | array | body | N | Data (Example): dataList |
| key | string | body | N | Parameter key (Example): PG_Pt1 |
| name | string | body | N | Parameter Name (Example): Total Grid Power |
| unit | string | body | N | Parameter Unit (Example): W |
| value | string | body | N | Parameter Value(Example): 55 |
| timeType | integer | body | N | Value Type 1. Frame: Frame data someday 2. Day: Daily statistics (Less than 30 days) 3. Month: Monthly statistics (Less than 12 months) 4. Year: Yearly statistics, (Example): 1 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b65 |

| | | | | |
|--------------------|---|--|--|------|
| | | | | 9eec |
| Example | | | | |
| Request Parameters | <pre>{ "timeType": 4, "startTime": "2019", "endTime": "2020", "deviceSn": "dev1800078101", "deviceId": 200203179 }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "150657ef285d414894870310d03b448e", "deviceSn": "dev1800078101", "deviceId": 200203179, "deviceType": "INVERTER", "timeType": 4, "paramDataList": [{ "collectTime": "2019", "dataList": [{ "key": "generation", "value": "9292.00", "unit": "kWh", "name": "Production" }] }, { "collectTime": "2020",</pre> | | | |

| | |
|--|--|
| | <pre> "dataList": [{ "key": "generation", "value": "16935.00", "unit": "kWh", "name": "Production" }] }] } </pre> |
|--|--|

3.5 Device List

| Device List | | | | |
|--------------------|---|----------------|-----------------|---|
| Interface | Device List | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/list | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXV CJ9 |
| page | integer | body | N | Page |

| size | integer | body | N | View |
|----------------------------|--|----------------|-----------------|---|
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| deviceList | array | body | N | Device List (Example): deviceList |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | N | Device SN (Example): 12583SS |
| deviceState | integer | body | N | Device State Value: 1. Online 2. Alerting 3. Offline (Example): 1 |
| deviceType | string | body | N | Device Type (Example): COLLECTOR |
| updateTime | integer | body | N | Update Time(Example): 2332d22 |
| total | integer | body | N | Total (Example): 322 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659 eec |
| Example | | | | |
| Request Parameters | <pre>{ "page":1, "size":2 }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "9300c3b735c6470bb583a0bf58d4daa5", "total": 27, "deviceList": [{</pre> | | | |

| | |
|--|---|
| | <pre> "deviceSn": "1800072201", "deviceId": 200197997, "deviceType": "COLLECTOR", "deviceState": 3, "updateTime": 1582772840 }, { "deviceSn": "1800072201-lgen", "deviceId": 200206455, "deviceType": "INVERTER", "deviceState": 3, "updateTime": 1582772840 }] </pre> |
|--|---|

3.6 Obtain SIM Card Info of Gateway Device

| Obtain SIM Card Info of Gateway Device | | | | |
|--|--|----------------|-----------------|--|
| Interface | Obtain SIM Card Info of Gateway Device | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/simInfo | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6Ikp |

| | | | | XVCJ9 |
|----------------------------|--|----------------|-----------------|--|
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| limitTime | string | body | N | Valid Date: yyyy-MM-dd (Example): 2019-12-31 |
| status | integer | body | N | COM Status 1: Unactivated, 2: Normal, 3: In Arrears, 4: Recharged, 5: Write Off, 6: About to expire, (Example): 343 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | <pre>{ "deviceId": 200203179, "deviceSn": "dev1800078101" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "c6ffed3a4dae44d59dc30f3af19ea062", "status": 2, "limitTime": "2020-12-11" }</pre> | | | |

3.7 Issued Device Control Command

Note:

1. This interface is a general description of the interface for issuing device control commands. If your device has implemented device control functions on the platform, you need to obtain a further command configuration table before operating this interface.
2. The maximum number of requests per minute for a single OpenApi account to call the interface: 50

| Issued Device Control Command | | | | |
|-------------------------------|--|----------------|-----------------|---|
| Interface | Issued Device Control Command | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/remoteControl | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| controlCode | string | body | Y | Device Control code (Example): 1100,s_kgjsn |
| content | string | body | Y | Control content (Example): {"inputParam":[{"value":190}]} |
| callBackUrl | string | body | Y | Command result callback address , (Example): https://www.solarman.cn/ |

| | | | | |
|---------------------|---|---|--|--|
| | | | | <p>For the definition of response parameters in the callback result, see below</p> <p>Callback address request type: POST</p> <p>After sending the command, the command result is requested every 3 seconds for the first 60 seconds, and every 30 seconds after 60 seconds. After the command result is available, a callback is initiated. The callback party needs to return a "SUCCESS" response, otherwise the callback will be initiated again. If the callback fails after more than 600s, it will be discarded. No more callback</p> |
| Response Parameters | | | | |
| Parameter Name | Data Type | Description | | |
| code | string | Info Code(Example) 10000 | | |
| msg | string | Message (Example) success | | |
| success | boolean | Success or not (Example) true | | |
| requestId | string | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659eec | | |
| collectionTime | string | The latest data receiving timestamp, (Example) 1615900034 | | |
| connectStatus | INT | Network status 0: offline 1: online | | |
| orderId | string | ID of the command task | | |
| Example | | | | |
| Request Parameters | { "controlCode": "1107,r_kgjsn", | | | |

| | |
|--------------|---|
| | <pre> "deviceSN":"1800800121-lgen", "callBackUrl":"http://localhost:8019/device/v1.0/callback", "content":{"inputParam":[{"value":"190","ext":"","oValue":"190"}]} </pre> |
| Return Value | <pre> { "code": null, "msg": null, "success": true, "requestId": "311d34904f1841999f2f58b9b43f8719", "collectionTime": "1615900034", "connectStatus": 1, "orderId": "19928812" } </pre> |

Callback result—response parameter description

| Response Parameters | | |
|---------------------|-----------|--|
| Parameter Name | Data Type | Description |
| ack | string | The original value of the device feedback, example value: 010302000A3843 |
| analysisResult | string | Result analyzed by the platform, example value: 10 |
| content | string | The content of the command issued by the platform, example value: 01030BFB0001F7DF |
| createTime | string | The creation time of the command task, example value: 1615342904000 |
| deviceId | string | Device ID (Example): 252525 |
| deviceSn | string | Device SN (Example): 12583SS |
| orderId | string | ID of the command task |
| success | boolean | The feedback result of the command task, success: true failure: false |

| | | |
|--------------------|--|--|
| updateTime | string | The feedback time of the command task, example value: 1615342904000 |
| Example | | |
| Request Parameters | <pre>{ "ack": "010302000A3843", "analysisResult": "10", "content": "01030BFB0001F7DF", "createTime": 1615342904000, "deviceId": 205546783, "deviceSn": "120D70206040057", "orderId": 1011830, "success": true, "updateTime": 1615343254000 }</pre> | |
| Return Value | <pre>{ "success": true }</pre> | |

3.8 Device communication relationship

| Issued Device Control Command | | | | |
|-------------------------------|--|----------------|-----------------|-------------|
| Interface | Device communication relationship | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/communication | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |

| language | string | query | N | Language (Example): zh |
|---------------------|-----------|----------------|-----------------|--|
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | 信息码 ,示例值: 10000 |
| communication | Object | body | N | communication relationship |
| childList | array | body | N | childList |
| deviceId | integer | body | N | Device ID (Example): 252525 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| deviceState | integer | body | N | The current state of the device. Value: 1. Online 2. Alarm 3. Offline, sample value: 1 |
| deviceType | string | body | N | Device Type(Example): COLLECTOR |
| parentSn | string | body | N | Unique identification of parent device (Example): 12583SS |
| timeZone | string | body | N | Device time zone (Example): Asia/Shanghai |
| updateTime | integer | body | N | Last Updated Time |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) 1d6f6eca9bee4b6483d4af064b6 59eec |
| Example | | | | |

| | |
|-----------------------|--|
| Request Parameters | <pre>{ "deviceId": 288888888, "deviceSn": "dev180000" }</pre> |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "2a3544de2f624a18869c0c8f12a1078e", "communication": { "deviceSn": "180000", "deviceId": 299999999, "parentSn": "180000", "deviceType": "COLLECTOR", "deviceState": 1, "updateTime": 1608181709, "timeZone": "America/Los_Angeles", "childList": [{ "deviceSn": "dev180000", "deviceId": 288888888, "parentSn": "180000", "deviceType": "INVERTER", "deviceState": 1, "updateTime": 1608181709, "timeZone": "America/Los_Angeles", "childList": null }] } }</pre> |

3.9 Customized Command

Note:

1. After your device has implemented the customized command function on the SOLARMAN Business platform or the SOLARMAN Smart platform, you can perform Api layer operations through this interface.
2. The maximum number of requests per minute for a single OpenApi account to call the interface: 50

| Customized Command | | | | |
|-----------------------|--|----------------|-----------------|---|
| Interface Description | Supports the issuance of custom transparent transmission commands through OpenApi. Through this interface, developers can encapsulate instruction services on their own to meet the needs of a wealth of personalized instruction scenarios. | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/customControl | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceSn | string | body | Y | Device SN (Example): 12583SS |
| content | string | body | Y | The content of the custom transparent transmission command (usually a string composed of hexadecimal digits, for example: 0103001B0001F40D) |

| | | | | |
|-------------|--------|------|---|---|
| callBackUrl | string | body | Y | <p>Command result callback address ,</p> <p>(Example):</p> <p>https://www.solarman.cn/</p> <p>For the definition of response parameters in the callback result, see below</p> <p>Callback address request type: POST</p> <p>After sending the command, the command result is requested every 3 seconds for the first 60 seconds, and every 30 seconds after 60 seconds. After the command result is available, a callback is initiated. The callback party needs to return a "SUCCESS" response, otherwise the callback will be initiated again. If the callback fails after more than 600s, it will be discarded. No more callback</p> |
|-------------|--------|------|---|---|

Response Parameters

| Parameter Name | Data Type | Description |
|----------------|-----------|---|
| code | string | Info Code(Example) 10000 |
| msg | string | Message (Example) success |
| success | boolean | Success or not (Example) true |
| requestId | string | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659eec |
| collectionTime | string | The latest data receiving timestamp, (Example) 1615900034 |
| connectStatus | INT | Network status 0: offline 1: online |
| orderId | string | ID of the command task |

| Example | |
|--------------------|---|
| Request Parameters | <pre>{ "deviceSN": "1800800121-lgen", "callBackUrl": "http://localhost:8019/device/v1.0/callback", "content": "0103001B0001F40D" }</pre> |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "311d34904f1841999f2f58b9b43f8719", "collectionTime": "1615900034", "connectStatus": 1, "orderId": "19928812" }</pre> |

Callback result—response parameter description

| Response Parameters | | |
|---------------------|-----------|--|
| Parameter Name | Data Type | Description |
| ack | string | The original value of the device feedback, example value: 010302000A3843 |
| content | string | The content of the command issued by the platform, example value: 01030BFB0001F7DF |
| createTime | string | The creation time of the command task, example value: 1615342904000 |
| deviceId | string | Device ID (Example): 252525 |
| deviceSn | string | Device SN (Example): 12583SS |
| orderId | string | ID of the command task |
| success | boolean | The feedback result of the command task, success: true failure: false |

| | | |
|-----------------------|--|--|
| updateTime | string | The feedback time of the command task, example value: 1615342904000 |
| Example | | |
| Request Parameters | <pre>{ "ack": "010302000A3843", "content": "01030BFB0001F7DF", "createTime": 1615342904000, "deviceId": 205546783, "deviceSn": "120D70206040057", "orderId": 1011830, "success": true, "updateTime": 1615343254000 }</pre> | |
| Return Value | <pre>{ "success": true }</pre> | |

4 Plant Interface

4.1 Query Plant Info

| Query Plant Info | | | | |
|-------------------------|------------------|----------------|-----------------|---|
| Interface | Query Plant Info | | | |
| Description | | | | |
| Request URL | | | | |
| Request Mode | | | | |
| Request Type | | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| stationId | integer | body | Y | Plant ID (Example): 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| constructionCost | number | body | N | Total Cost (RMB) |
| contactPhone | string | body | N | Contact Number (Example): 13101969190 |
| createdDate | string | body | N | Created Date |
| currency | string | body | N | Currency |
| gridInterconnectionType | string | body | N | System Type (Example): DISTRIBUTED_FULLY |

| | | | | |
|------------------------------|---------|------|---|--------------------------------------|
| id | integer | body | N | Plant ID (Example): 1234 |
| installationAzimuth Angle | number | body | N | Azimuth |
| installationTiltAngle | number | body | N | Tilt Angle |
| installedCapacity | number | body | N | Capacity |
| locationAddress | string | body | N | Address |
| locationLat | number | body | N | Latitude |
| locationLng | number | body | N | Longitude |
| mergeElectricPrice | number | body | N | Electric Price (RMB/kWh) |
| name | string | body | N | Plant Name (Example): Plant: A |
| ownerCompany | string | body | N | Owner Work Place |
| ownerName | string | body | N | Owner Name |
| region | Object | body | N | Region |
| level1 | integer | body | N | Administrative Area 1 |
| level2 | integer | body | N | Administrative Area 2 |
| level3 | integer | body | N | Administrative Area 3 |
| level4 | integer | body | N | Administrative Area 4 |
| level5 | integer | body | N | Administrative Area 5 |
| nationId | integer | body | N | Nation ID |
| timezone | string | body | N | Time Zone |
| startOperatingTime | string | body | N | Commissioning Time |
| stationImage | string | body | N | Plant Cover |
| stationImages | array | body | N | Image List |
| description | string | body | N | Description |
| id | integer | body | N | Photo ID |
| name | string | body | N | Photo Name |
| url | string | body | N | Photo url |
| type | string | body | N | Plant Type (Example): HOUSE_ROOF |
| msg | string | body | N | Message (Example): success |

| | | | | |
|--------------------|--|------|---|--|
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b 659eec |
| Example | | | | |
| Request Parameters | /station/v1.0/base?language=en { "stationId": 895 } | | | |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "ceb09fee2d184064a8e7cc38aad3e5d0", "id": 895, "name": "001_OPENAPI_报警", "locationLat": 32.025278437978635, "locationLng": 120.4771381250024, "locationAddress": "苏州张家港市", "region": { "nationId": 44, "level1": 156922, "level2": 158778, "level3": 158861, "level4": null, "level5": null, "timezone": "PRC" }, "type": "HOUSE_ROOF", "gridInterconnectionType": "BATTERY_BACKUP", "installedCapacity": 6754.0, "installationAzimuthAngle": 183.0, } | | | |

| | |
|--|--|
| | <pre> "installationTiltAngle": 32.0, "startOperatingTime": 1577030400.0000000000, "currency": "CNY", "ownerName": "张成功", "ownerCompany": "无锡英臻科技", "contactPhone": "13011110001", "mergeElectricPrice": 0.98, "constructionCost": 6666.0, "stationImage": null, "stationImages": [{ "id": 85, "name": "OPENAPI001", "description": "jpg 格式", "url": "http://img1.igen-tech.com/temp/fff4520a38ea44e2a3781850aea55fc41577074336462.jpg" }], "createdDate": 1577069449.0000000000 } </pre> |
|--|--|

4.2 Obtain Device List

| Obtain Device List | |
|--------------------|--|
| Interface | |
| Description | Obtain Device List, support paged query |
| Request URL | https://api.solarmanpv.com/station/v1.0/device |
| Request Mode | post |
| Request Type | application/json |
| Return Type | */* |

| Request Parameters | | | | |
|---------------------|-----------|----------------|-----------------|---|
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceType | string | body | N | Device Type, Default: All device types) (Example): Check device type |
| page | integer | body | N | Page |
| size | integer | body | N | View |
| stationId | integer | body | Y | Plant ID (Example): 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| deviceListItems | array | body | N | Device List |
| collectionTime | integer | body | N | Updated Time |
| connectStatus | integer | body | N | Device State (Example): 1. Offline 2. Online 3. Alerting |
| deviceId | integer | body | N | Device ID (Example): 123212123 |
| deviceSn | string | body | N | Device SN (Example): 123 |
| deviceType | string | body | N | Device Type (Example): INVERTER |
| total | integer | body | N | Device Number (Example): 322 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |

| | |
|--------------------|---|
| Request Parameters | <pre> /station/v1.0/device?language=en { "deviceType": "INVERTER", "page": 1, "size": 10, "stationId": 895 } </pre> |
| Return Value | <pre> { "code": null, "msg": null, "success": true, "requestId": "b9bba24b99e045d981f5040411b08246", "total": 2, "deviceListItems": [{ "deviceSn": "1800078009-lgen", "deviceId": 200203165, "deviceType": "INVERTER", "connectStatus": 0, "collectionTime": 1580621692 }] } </pre> |

4.3 Obtain Historical Data

| Obtain Historical Data | |
|------------------------|--|
| Interface Description | Obtain Historical Data, support query via frame, day, month, year. |
| Request URL | https://api.solarmanpv.com/station/v1.0/history |

| | | | | |
|---------------------|------------------|----------------|-----------------|--|
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| endTime | string | body | N | End Time (Example): 2019-10-01 |
| startTime | string | body | Y | Start Time (Example): 2019-10-01 |
| stationId | integer | body | Y | Plant ID (Example): 322 |
| timeType | integer | body | Y | Time Type 1. Frame: Frame data someday 2. Day: Daily statistics (Less than 30 days) 3. Month: Monthly statistics (Less than 12 months) 4. Year: Yearly statistics, |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| stationDataItems | array | body | N | Result List |
| batteryPower | number | body | N | Battery Power |
| batterySoc | number | body | N | Battery Capacity |
| buyRatio | number | body | N | Consumption/Purchased Ratio |
| buyValue | number | body | N | Energy Purchased |
| chargePower | number | body | N | Charging Power |
| chargeRatio | number | body | N | Self-used Ratio |
| chargeValue | number | body | N | Charge Volume |
| cpr | number | body | N | cpr |

| | | | | |
|-----------------------|---------|------|---|---|
| dateTime | string | body | N | Date Time |
| day | integer | body | N | Day of Treatment |
| dischargePower | number | body | N | Discharging Power |
| dischargeValue | number | body | N | Discharge Volume |
| fullPowerHours | number | body | N | Peak Hours |
| generationPower | number | body | N | Production Power |
| generationRatio | number | body | N | Self-used Ratio |
| generationValue | number | body | N | Production |
| gridPower | number | body | N | Grid Power |
| gridRatio | number | body | N | Production, Feed-in Ratio |
| gridValue | number | body | N | Grid Feed-in |
| irradiate | number | body | N | Irradiate |
| irradiateIntensity | number | body | N | Irradiate Intensity |
| month | integer | body | N | Month of Treatment |
| pr | number | body | N | PR |
| purchasePower | number | body | N | Purchased Power |
| theoreticalGeneration | number | body | N | Theoretical Production |
| useDischargeRatio | number | body | N | Consumption Discharge Ratio |
| usePower | number | body | N | Consumption Power |
| useRatio | number | body | N | Consumption Ration From Production |
| useValue | number | body | N | Consumption |
| wirePower | number | body | N | Grid Power |
| year | integer | body | N | Year of Treatment |
| total | integer | body | N | Total (Example): 322 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b6 |

| | | | | |
|--------------------|--|--|--|-------|
| | | | | 59eec |
| Example | | | | |
| Request Parameters | <pre>{ "stationId": 895, "timeType": 2, "startTime": "2019-12-10", "endTime": "2019-12-30" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "931f71e74fc64050b364c2e67bf33cad", "total": 8, "stationDataItems": [{ "generationPower": null, "usePower": null, "gridPower": null, "purchasePower": null, "wirePower": null, "chargePower": null, "dischargePower": null, "batteryPower": null, "batterySoc": null, "irradiateIntensity": null, "generationValue": 1788.0, "generationRatio": 89.93288590604027, "gridRatio": -2.7755575615628914E-15, "chargeRatio": 10.06711409395973, "useValue": 1608.0, "useRatio": 100.0, }] }</pre> | | | |

| | |
|--|--|
| | <pre> "buyRatio": 0.0, "useDischargeRatio": 0.0, "gridValue": 0.0, "buyValue": 1608.0, "chargeValue": 1608.0, "dischargeValue": 0.0, "fullPowerHours": 0.2647320106603494, "irradiate": 0.72, "theoreticalGeneration": 0.0, "pr": 0.3676833481393742, "cpr": null, "dateTime": null, "year": 2019, "month": 12, "day": 23 }] } </pre> |
|--|--|

4.4 Obtain Plant List

| Obtain Plant List | | | | |
|--------------------|--|----------------|-----------------|-------------|
| Interface | Obtain Plant List | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/list | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |

| language | string | query | N | language |
|-------------------------|-----------|----------------|-----------------|---|
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| page | integer | body | N | Page |
| size | integer | body | N | View |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| stationList | array | body | N | Plant List |
| batterySoc | number | body | N | Battery Capacity |
| createdDate | string | body | N | Created Date |
| generationPower | number | body | N | Production Power |
| gridInterconnectionType | string | body | N | System Type (Example): DISTRIBUTED_FULLY |
| id | integer | body | N | Plant ID |
| installedCapacity | number | body | N | Capacity |
| lastUpdateTime | string | body | N | Last Updated Time |
| locationAddress | string | body | N | Address |
| locationLat | number | body | N | Latitude |
| locationLng | number | body | N | Longitude |
| name | string | body | N | Plant Name |
| networkStatus | string | body | N | COM Status |
| regionLevel1 | integer | body | N | Region Level 1 |
| regionLevel2 | integer | body | N | Region Level 2 |
| regionLevel3 | integer | body | N | Region Level 3 |
| regionLevel4 | integer | body | N | Region Level 4 |
| regionLevel5 | integer | body | N | Region Level 5 |
| regionNationId | integer | body | N | Nation |
| regionTimezone | string | body | N | Time Zone |

| | | | | |
|--------------------|--|------|---|--|
| startOperatingTime | string | body | N | Commissioning Time |
| stationImage | string | body | N | Plant Cover |
| type | string | body | N | Plant Type (Example): HOUSE_ROOF |
| total | integer | body | N | Total (Example): 322 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b6 59eec |
| Example | | | | |
| Request Parameters | /station/v1.0/list?language=en { "page": 1, "size": 50 } | | | |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "c6645d538e7b41b6b8f7b406783ec4ee", "total": 6, "stationList": [{ "id": 895, "name": "001_OPENAPI_报警", "locationLat": 32.025278437978635, "locationLng": 120.4771381250024, "locationAddress": "苏州张家港市", "regionNationId": 44, "regionLevel1": 156922, | | | |

| | |
|--|---|
| | <pre> "regionLevel2": 158778, "regionLevel3": 158861, "regionLevel4": null, "regionLevel5": null, "regionTimezone": "PRC", "type": "HOUSE_ROOF", "gridInterconnectionType": "BATTERY_BACKUP", "installedCapacity": 6754.0, "startOperatingTime": 1577030400.000000000, "stationImage": null, "createdDate": 1577069449.000000000, "batterySoc": 56.0, "networkStatus": "ALL_OFFLINE", "generationPower": 678.0, "lastUpdateTime": 1580621692.000000000 }] } </pre> |
|--|---|

4.5 Obtain Real-time Data

| Obtain Real-time Data | | | | |
|-----------------------|--|----------------|-----------------|-------------|
| Interface | Obtain Real-time Data | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/realTime | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |

| language | string | query | N | Language (Example): zh |
|----------------------------|----------------------------|----------------|-----------------|---|
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| stationId | integer | body | Y | Plant ID (Example): 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| batteryPower | number | body | N | Battery Power |
| batterySoc | number | body | N | Battery Capacity |
| chargePower | number | body | N | Charging Power |
| code | string | body | N | Code (Example): 10000 |
| dischargePower | number | body | N | Discharging Power |
| generationPower | number | body | N | Production Power |
| gridPower | number | body | N | Grid Power |
| irradiateIntensity | number | body | N | Irradiate Intensity |
| lastUpdateTime | string | body | N | Last Updated Time |
| purchasePower | number | body | N | Purchasing Power |
| usePower | number | body | N | Consumption Power |
| wirePower | number | body | N | Grid Power |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "stationId": 895 } | | | |
| Return Value | { "code": null, } | | | |

| | |
|--|---|
| | <pre> "msg": null, "success": true, "requestId": "80682ee60ddc4c5f95c8ee0022bbf570", "generationPower": 678.0, "usePower": 678.0, "gridPower": null, "purchasePower": -678.0, "wirePower": -678.0, "chargePower": -678.0, "dischargePower": null, "batteryPower": -678.0, "batterySoc": 56.0, "irradiateIntensity": 236.18, "lastUpdateTime": 1580621692.000000000 } </pre> |
|--|---|

4.6 Obtain Operation Privilege

| Obtain Operation Privilege | | | | |
|----------------------------|--|----------------|-----------------|--|
| Interface | Login to User Platform, then obtain plant operation privilege. If permission denied, | | | |
| Description | system will display error. | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/role | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6Ikp |

| | | | | XVCJ9 |
|----------------------------|-----------------------------------|----------------|-----------------|--|
| stationId | integer | body | Y | Plant ID (Example): 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| addStationDevice | integer | body | N | Permission: Add a device (Example): 0: Denied; 1: Pass |
| code | string | body | N | Code (Example): 10000 |
| deleteStation | integer | body | N | Permission: Delete a plant (Example): 0: Denied; 1: Pass |
| deleteStationDevice | integer | body | N | Permission: Delete a device (Example): 0: Denied; 1: Pass |
| editStation | integer | body | N | Permission: Edit a plant (Example): 0: Denied; 1: Pass |
| setStation | integer | body | N | Permission: Set a plant (Example): 0: Denied; 1: Pass |
| viewStationAlert | integer | body | N | Permission: Check plant alerts (Example): 0: Denied; 1: Pass |
| viewStationDevice | integer | body | N | Permission: Check plant device (Example): 0: Denied; 1: Pass |
| viewStationInfo | integer | body | N | Permission: Check plant info (Example): 0: Denied; 1: Pass |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b6 59eec |
| Example | | | | |
| Request Parameters | <pre>{ "stationId": 895 }</pre> | | | |

| | |
|--------------|---|
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "6cf5668095a34224b5c078fc81bf014e", "viewStationAlert": 1, "viewStationInfo": 1, "viewStationDevice": 1, "editStation": 1, "deleteStation": 0, "setStation": 1, "addStationDevice": 1, "deleteStationDevice": 1 }</pre> |
|--------------|---|

4.7 Obtain Alert List

| Obtain Alert List | | | | |
|--------------------|---|----------------|-----------------|--|
| Interface | Obtain Alert List, support paged query | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/alert | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language (Example): zh |
| authorization | string | header | Y | accessToken (Example): eyJhbGciOiJSUzI1NiIsInR5cCI6Ikp |

| | | | | XVCJ9 |
|----------------------------|-----------|----------------|-----------------|--|
| endTime | string | body | Y | End Time (Example): 2019-10-01 Format: yyyy-MM-dd |
| page | integer | body | N | Page |
| size | integer | body | N | View |
| startTime | string | body | Y | Start Time (Example): 2019-10-01 Format: yyyy-MM-dd |
| stationId | integer | body | Y | Plant ID (Example): 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Code (Example): 10000 |
| stationAlertItems | array | body | N | Alert List (Example): stationAlertItems |
| addr | string | body | N | Alert Name |
| alertTime | integer | body | N | Alert Time |
| code | string | body | N | Alert Code |
| deviceId | integer | body | N | Device ID(Example): 23523 |
| deviceSn | string | body | N | Device SN(Example): 2332d22 |
| deviceType | string | body | N | Device Type, check <i>Device Type</i> in appendix |
| influence | integer | body | N | Influence in PAAS platform (Example): Influence Production, Influence Safety, Influence Production&Safety. |
| level | integer | body | N | Alert level in PAAS platform (Example): Prompt, Warning, Failure |
| ruleId | integer | body | N | Alert ID (Example): 343 |
| showName | string | body | N | Alert Name in PAAS platform |
| total | integer | body | N | Total (Example): 322 |

| | | | | |
|--------------------|---|------|---|--|
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b6 59eec |
| Example | | | | |
| Request Parameters | <pre>{ "stationId": 895, "startTime":"2020-02-01", "endTime":"2020-02-29", "page":1, "size":2 }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "b1752aedc8a94169a14a0353fde524e4", "total": 5, "stationAlertItems": [{ "deviceSn": "dev1800078101", "deviceId": 200203179, "deviceType": "INVERTER", "ruleId": 2, "showName": "Error: 99+x", "addr": "ERR1", "code": "1", "level": 0, "influence": 0, "alertTime": 1580621658 }] }</pre> | | | |

| | |
|--|---|
| |] |
| | } |

4.8 Create a plant

| Create a plant | | | | |
|--------------------------|--|----------------|-----------------|--|
| Interface | Create a plant | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/create | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type(Example) zh |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| constructionCost | number | body | N | Construction Cost (CNY) |
| contactPhone | string | body | N | Contact Number(Example) 13101969190 |
| currency | string | body | Y | Currency |
| gridInterconnectionType | string | body | Y | Grid-Tied (Example) DISTRIBUTED_FULLY |
| installationAzimuthAngle | number | body | N | Azimuth Angle |
| installationTiltAngle | number | body | N | Tilt Angle |
| installedCapacity | number | body | Y | Installed Capacity |
| locationAddress | string | body | Y | Location Address |

| locationLat | number | body | Y | Longitude |
|---------------------|-----------|----------------|-----------------|--|
| locationLng | number | body | Y | Latitude |
| mergeElectricPrice | number | body | N | Unit Price (CNY/kWh) |
| name | string | body | Y | Plant Name |
| ownerCompany | string | body | N | Owner Company |
| ownerName | string | body | N | Owner Name |
| region | Object | body | Y | Region |
| level1 | integer | body | N | Administration Area 1 |
| level2 | integer | body | N | Administration Area 2 |
| level3 | integer | body | N | Administration Area 3 |
| level4 | integer | body | N | Administration Area 4 |
| level5 | integer | body | N | Administration Area 5 |
| nationId | integer | body | Y | Nation ID |
| timezone | string | body | Y | Time zone |
| startOperatingTime | string | body | N | Operating Time(Time Stamp) |
| stationImage | string | body | N | Plant Cover |
| type | string | body | Y | Plant Type(Example) HOUSE_ROOF |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code(Example) 10000 |
| id | integer | body | N | Plant ID (Example) 1234 |
| msg | string | body | N | Message (Example) success |
| success | boolean | body | N | Success or not (Example) true |
| requestId | string | body | N | Request ID (Example) 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request | { | | | |

| | |
|--------------|--|
| Parameters | <pre>"constructionCost": 55000, "region": { "nationId": 44, "level1": 156922, "level2": 158774, "level3": 158828, "level4": null, "level5": null, "timezone": "PRC" }, "ownerName": "八零超管", "contactPhone": "15200000000", "gridInterconnectionType": "BATTERY_BACKUP", "ownerCompany": "八零超管有限公司", "installationTiltAngle": 60, "type": "GROUND", "mergeElectricPrice": 5.5, "locationLng": 120.36131, "currency": "CNY", "installationAzimuthAngle": 50, "name": 1, "startOperatingTime": 1580486400, "locationLat": 31.5064, "installedCapacity": 10, "stationImage": "有", "locationAddress": "天安智慧城" }</pre> |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "7d0f65b40b4248ab88d2bb0603ab673e", }</pre> |

| | |
|--|-----------------|
| | "id": 2052 } |
|--|-----------------|

4.9 Modify a Plant

| Modify a Plant | | | | |
|--------------------------|--|----------------|-----------------|---|
| Interface | Modify a Plant | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/update | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type (Example) zh |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| constructionCost | number | body | N | Construction Cost (CNY) |
| contactPhone | string | body | N | Contact Number (Example) 13101969190 |
| currency | string | body | Y | Currency |
| gridInterconnectionType | string | body | Y | Grid-Tied Type (Example) DISTRIBUTED_FULLY |
| installationAzimuthAngle | number | body | N | Azimuth Angle |
| installationTiltAngle | number | body | N | Tilt Angle |
| installedCapacity | number | body | Y | Installed Capacity |
| locationAddress | string | body | Y | Location Address |
| locationLat | number | body | Y | Longitude |

| locationLng | number | body | Y | Latitude |
|---------------------|--|----------------|-----------------|---|
| mergeElectricPrice | number | body | N | Unit Price (CNY/kWh) |
| name | string | body | Y | Plant Name |
| ownerCompany | string | body | N | Owner Company |
| ownerName | string | body | N | Owner Name |
| region | Object | body | Y | Region |
| level1 | integer | body | N | Administration Area 1 |
| level2 | integer | body | N | Administration Area 2 |
| level3 | integer | body | N | Administration Area 3 |
| level4 | integer | body | N | Administration Area 4 |
| level5 | integer | body | N | Administration Area 5 |
| nationId | integer | body | Y | Nation ID |
| timezone | string | body | Y | Time zone |
| startOperatingTime | string | body | N | Operating Time(Time Stamp) |
| stationId | integer | body | Y | Plant ID (Example) 1234 |
| stationImage | string | body | N | Plant Cover |
| type | string | body | Y | Plant Type (Example) HOUSE_ROOF |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example): 10000 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "constructionCost": 55000, "region": { | | | |

| | |
|--------------|--|
| | <pre> "nationId": 44, "level1": 156922, "level2": 158774, "level3": 158828, "level4": null, "level5": null, "timezone": "PRC" }, "ownerName": "八零超管", "contactPhone": "15200000000", "gridInterconnectionType": "BATTERY_BACKUP", "ownerCompany": "八零超管有限公司", "installationTiltAngle": 60, "type": "GROUND", "mergeElectricPrice": 5.5, "locationLng": 120.36131, "currency": "CNY", "installationAzimuthAngle": 50, "name": 1, "startOperatingTime": 1580486400 "locationLat": 31.5064, "installedCapacity": 10, "stationImage": "有", "locationAddress": "天安智慧城", "stationId": 2052 } </pre> |
| Return Value | <pre> { "code": null, "msg": null, "success": true, "requestId": "fa396f22567344c5bc9c1f1307dfceda" } </pre> |

4.10 Delete a Plant

| Delete a Plant | | | | |
|---------------------|--|----------------|-----------------|---|
| Interface | Delete a Plant | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/delete | | | |
| Request Mode | delete | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type (Example) zh |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| stationId | integer | body | Y | Plant ID (Example) 1234 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code(Example): 10000 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | {"stationId":2052} | | | |

| | |
|--------------|--|
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "a49a4923f3a249e0bc9df2f532596f87" }</pre> |
|--------------|--|

4.11 Calculation of Accumulated Production

| Calculation of accumulated production | | | | |
|---------------------------------------|--|----------------|-----------------|--|
| Interface | Calculation of accumulated production | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/metering | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type (Example) zh |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| stationId | integer | body | Y | Plant ID (Example) 322 |
| totalProductionType | integer | body | Y | Calculation of accumulated production 1 : Accumulated data uploaded by devices; 2: Daily data summation uploaded by devices (Example) 1 |
| Response Parameters | | | | |

| Parameter Name | Data Type | Parameter Type | Required or not | Description |
|--------------------|--|----------------|-----------------|---|
| code | string | body | N | Info Code (Example): 10000 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "stationId" : 2053,"totalProductionType":1} | | | |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "2c992d590c3d4194a44fd366903c1edd" } | | | |

4.12 Set Offset

| Set Offset | | | | |
|--------------------|--|----------------|-----------------|----------------------------|
| Interface | Set Offset | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/station/v1.0/offset | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type (Example) zh |

| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
|----------------------------|---|-------------------|--------------------|--|
| date | string | body | N | Daily offset date When OffsetType=2 must be passed, then format: yyyy-MM-dd (Example) 2019-01-16 |
| offsetType | integer | body | Y | Offset type 1、Accumulated production offset 2、Daily production offset (Example) 1 |
| offsetValue | number | body | Y | Offset Value Positive number:Add Negative number: Reduce (Example) 3.0 |
| stationId | integer | body | Y | Plant ID (Example) 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example): 10000 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "stationId" : 2053, "date":"2019-01-16", "offsetType":1, "offsetValue":110 } | | | |
| Return Value | { "code": null, } | | | |

| | |
|--|--|
| | <pre> "msg": null, "success": true, "requestId": "7fc2640dcd194ab39831fcb8e7d673da" } </pre> |
|--|--|

4.13 Add Gateway (Logger/DTU)

| Add Gateway (Logger/DTU) | | | | |
|--------------------------|---|----------------|-----------------|---|
| Interface | Add Gateway (Logger/DTU) | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/register | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| language | string | query | N | Language Type (Example) zh |
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceSn | string | body | Y | Device SN (Example) 4A2034A8 |
| isAuto | boolean | body | Y | Auto or not (Example) true |
| stationId | integer | body | Y | Plant ID (Example) 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example) 10000 |
| gatewayId | integer | body | N | Gateway ID (Example) :200124803 |

| | | | | |
|--------------------|---|------|---|---|
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | { "stationId" : 2053, "deviceSn":"2323dddg", "isAuto":false } | | | |
| Return Value | { "code": null, "msg": null, "success": true, "requestId": "fb6e16fb5f49447d975688578d069a1b", "gatewayId": 200206594 } | | | |

4.14 Delete a Device

| | | | | |
|--------------------|---|-----------|----------|-------------|
| Delete a Device | | | | |
| Interface | Delete a Device | | | |
| Description | | | | |
| Request URL | https://api.solarmanpv.com/device/v1.0/delete | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter | Data | Parameter | Required | Description |
| Name | Type | Type | or not | |

| language | string | query | N | Language Type (Example) zh |
|----------------------------|--|-------------------|--------------------|---|
| authorization | string | header | Y | accessToken (Example) eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9 |
| deviceSn | string | body | Y | Device SN (Example) 4A2034A8 |
| stationId | integer | body | Y | Plant ID (Example) 322 |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| code | string | body | N | Info Code (Example): 10000 |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | <pre>{ "stationId" : 2053, "deviceSn":"2323dddg" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "5f741dfaab634b4392ba49a0243e9e85" }</pre> | | | |

5.1 Generate Verification Code

| Generate Verification Code | | | | |
|----------------------------|--|----------------|-----------------|---|
| Interface Description | Obtain Verification Code via phone number/E-mail | | | |
| Request URL | https://api.solarmanpv.com/account/v1.0/captcha | | | |
| Request Mode | post | | | |
| Request Type | application/json | | | |
| Return Type | */* | | | |
| Request Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| appld | string | query | Y | APPID (Example) 201911067156002 |
| appSecret | string | query | Y | appSecret Key |
| email | string | body | N | E-mail |
| phoneNumber | string | body | N | Phone Number |
| phoneNumberPrefix | string | body | N | Phone Number Prefix (Example) 86 |
| purpose | string | body | Y | Verification Code Type (Registration: REG , Reset Password: RESET_PWD , Bind: BIND) (Example): ACCOUNT |
| Response Parameters | | | | |
| Parameter Name | Data Type | Parameter Type | Required or not | Description |
| captcha | string | body | N | Verification Code |
| code | string | body | N | Info Code (Example): 10000 |
| validity | integer | body | N | Valid Until (Unit: s) |
| msg | string | body | N | Message (Example): success |
| success | boolean | body | N | Success or not (Example): true |

| | | | | |
|--------------------|---|------|---|---|
| requestId | string | body | N | Request ID (Example): 1d6f6eca9bee4b6483d4af064b659eec |
| Example | | | | |
| Request Parameters | <pre>{ "phoneNumber":"176250134584", "phoneNumberPrefix":"86", "purpose":"BIND" }</pre> | | | |
| Return Value | <pre>{ "code": null, "msg": null, "success": true, "requestId": "0ea84ef086a546cd84b69e31121e6ac4", "captcha": "566380", "validity": 1800 }</pre> | | | |

6 Response State Value

| Code | Description |
|---------|-------------------------------|
| 1000000 | success |
| 3201001 | Service Currently Unavailable |
| 2101002 | client execute Too Frequently |
| 2101003 | client is forbidden |
| 3501004 | remote rpc exception |
| 2101005 | param not exist |
| 2101006 | invalid param |

| | |
|---------|--|
| 2101007 | list too long |
| 2101008 | invalid param type |
| 2101009 | appld or api is locked |
| 2101010 | appld insufficient allowance |
| 2101011 | number of users up to five |
| 2101012 | should be within 30 days |
| 2101013 | should be within 12 month |
| 2101014 | start time should be earlier than end time |
| 2101015 | time format error |
| 2101016 | device no upload records found |
| 2101017 | auth token not found |
| 2101018 | auth appld not found |
| 2101019 | auth invalid token |
| 2101020 | auth invalid orgld |
| 2101021 | auth invalid appld |
| 2101022 | bussiness error |
| 2101023 | access Denied |
| 2101024 | resource not found |
| 2101025 | auth failed |
| 2101026 | page too big |
| 2101027 | auth no out operation permission |
| 2101028 | auth invalid user |
| 2101029 | no out roleld |
| 2101030 | no out external station delete permission |
| 2101031 | station not found |
| 2101032 | device not found |
| 2101033 | email already registd |
| 2101034 | phone number already registd |
| 2101035 | email not registd |
| 2101036 | phone number not registd |

| | |
|---------|---|
| 2101037 | username already registered |
| 2101038 | reset password not allowed |
| 2101039 | this date can only be before current date |
| 2102001 | captcha request too frequently |
| 2102002 | captcha was wrong |
| 2102003 | captcha was expire |
| 2102004 | email already registered |
| 2102005 | phone number already registered |
| 2102006 | username already registered |
| 2102007 | old user id already registered |
| 2102008 | old password wrong |
| 2102009 | username format error |
| 2102010 | email format error |
| 2102011 | phone number format error |
| 2104001 | gateway existed |
| 2104002 | auto discovery gateway existed |
| 2104003 | gateway can not be auto discovery |

7 Enumerated Type

| On-Grid Code | Description |
|-------------------|------------------------------|
| DISTRIBUTED_FULLY | Distributed All on Grid |
| EXCESS | Distributed Self-consumption |
| OFF_GRID | Offline |
| BATTERY_BACKUP | Energy Storage System |
| GROUND_FULLY | Ground All on Grid |

| Plant Type Code | Description |
|-----------------|---------------------|
| HOUSE_ROOF | Residential Rooftop |

| | |
|---------------------|---------------------------|
| COMMERCIAL_ROOF | Commercial Rooftop |
| INDUSTRIAL_ROOF | Industrial Rooftop |
| GROUND | Ground-mounted Plant |
| POVERTY_ALLEVIATION | Poverty Alleviation Plant |

| Device Type Code | Instruction |
|------------------|-----------------|
| INVERTER | Inverter |
| WEATHER_STATION | Weather Station |
| METER | Meter |
| DTU | DTU |
| FAN | Fan |
| COLLECTOR | Logger |
| PV_MODULE | PV |
| MICRO_INVERTER | Micro inverter |
| BATTERY | Battery |
| REPEATER | REPEATER |

8 Dictionary-Time Zone

| Time Zone CODE | Time Zone |
|---------------------|---|
| Etc/GMT+12 | (UTC-12:00) International Date Line West |
| Etc/GMT+11 | (UTC-11:00) Coordinated Universal Time-11 |
| Pacific/Honolulu | (UTC-10:00) Hawaii |
| Pacific/Marquesas | (UTC-09:30) Marquesas Islands |
| America/Anchorage | (UTC-09:00) Alaska |
| America/Los_Angeles | (UTC-08:00) Pacific Time (US & Canada) |
| Mexico/BajaNorte | (UTC-08:00) Baja California |
| America/Chihuahua | (UTC-07:00) Chihuahua,La Paz,Mazatlan |
| America/Denver | (UTC-07:00) Mountain Time (US & Canada) |

| | |
|--------------------------------|--|
| US/Arizona | (UTC-07:00) Arizona |
| America/Mexico_City | (UTC-06:00) Guadalajara,Mexico,City Monterrey |
| Canada/Saskatchewan | (UTC-06:00) Saskatchewan |
| America/Chicago | (UTC-06:00) Central Time (US & Canada) |
| US/Central | (UTC-06:00) Central America |
| America/Bogota | (UTC-05:00) Bogota,Lima,Quito,Rio Branco |
| America/New_York | (UTC-05:00) Eastern Time (US & Canada) |
| US/East-Indiana | (UTC-05:00) Indiana (East) |
| America/Caracas | (UTC-04:30) Caracas |
| Canada/Atlantic | (UTC-04:00) Atlantic Time (Canada) |
| America/Cuiaba | (UTC-04:00) Cuiaba |
| America/La_Paz | (UTC-04:00) Georgetown,La Paz,Manaus,San Juan |
| America/Asuncion | (UTC-04:00) Asuncion |
| Canada/Newfoundland | (UTC-03:30) Newfoundland |
| America/Sao_Paulo | (UTC-03:00) Brasilia |
| America/Argentina/Buenos_Aires | (UTC-03:00) Buenos Aires |
| America/Cayenne | (UTC-03:00) Cayenne,Fortaleza |
| America/Montevideo | (UTC-03:00) Montevideo |
| America/Santiago | (UTC-03:00) Santiago |
| Etc/GMT+2 | (UTC-02:00) Coordinated Universal Time-02-02 |
| Atlantic/Cape_Verde | (UTC-01:00) Cape Verde Is. |
| Atlantic/Azores | (UTC-01:00) Azores |
| Europe/Dublin | (UTC) Dublin,Edinburgh,Lisbon,London |
| Africa/Casablanca | (UTC) Casablanca |
| Africa/Monrovia | (UTC) Monrovia,Reykjavik |
| UTC | (UTC) Coordinated Universal Time |
| Europe/Amsterdam | (UTC+01:00) Amsterdam,Berlin,Bern,Rome,Stockholm,Vienna |
| Europe/Belgrade | (UTC+01:00) Belgrade,Bratislava,Budapest,Ljubljana,Prague |

| | |
|--------------------|---|
| Europe/Brussels | (UTC+01:00) Brussels,Copenhagen,Madrid,Paris |
| Europe/Sarajevo | (UTC+01:00) Sarajevo,Skopje,Warsaw,Zagreb |
| Africa/Windhoek | (UTC+01:00) Windhoek |
| Africa/Bangui | (UTC+01:00) West Central Africa |
| Asia/Beirut | (UTC+02:00) Beirut |
| Asia/Damascus | (UTC+02:00) Damascus |
| EET | (UTC+02:00) Eastern Europe |
| Africa/Harare | (UTC+02:00) Harare,Pretoria |
| Europe/Helsinki | (UTC+02:00) Helsinki,Kyiv,Riga,Sofia,Tallinn,Vilnius |
| Africa/Cairo | (UTC+02:00) Cairo |
| Europe/Athens | (UTC+02:00) Athens,Bucharest |
| Asia/Jerusalem | (UTC+02:00) Jerusalem |
| Europe/Istanbul | (UTC+02:00) Istanbul |
| Asia/Baghdad | (UTC+03:00) Baghdad |
| Asia/Kuwait | (UTC+03:00) Kuwait,Riyadh |
| Europe/Minsk | (UTC+03:00) Minsk |
| Europe/Moscow | (UTC+03:00) Moscow,St.Petersburg,Volgograd(RTZ 2) |
| Africa/Nairobi | (UTC+03:00) Nairobi |
| Asia/Tehran | (UTC+03:30) Tehran |
| Asia/Muscat | (UTC+04:00) Abu Dhabi,Muscat |
| Asia/Yerevan | (UTC+04:00) Yerevan |
| Asia/Baku | (UTC+04:00) Baku |
| Asia/Tbilisi | (UTC+04:00) Tbilisi |
| Indian/Mauritius | (UTC+04:00) Port Louis |
| Asia/Kabul | (UTC+04:30) Kabul |
| Asia/Ashgabat | (UTC+05:00) Ashgabat, Tashkent |
| Asia/Yekaterinburg | (UTC+05:00) Ekaterinburg(RTZ 4) |
| Asia/Karachi | (UTC+05:00) Islamabad Karachi |
| Asia/Calcutta | (UTC+05:30) Chennai,Kolkata,Mumbai,New Delhi |

| | |
|---------------------|---|
| Asia/Kathmandu | (UTC+05:45) Kathmandu |
| Asia/Dacca | (UTC+06:00) Dhaka |
| Asia/Novosibirsk | (UTC+06:00) Novosibirsk(RTZ 5) |
| Asia/Rangoon | (UTC+06:30) Yangon (Rangoon) |
| Asia/Krasnoyarsk | (UTC+07:00) Krasnoyarsk(RTZ 6) |
| Asia/Bangkok | (UTC+07:00) Bangkok,Hanoi,Jakarta |
| PRC | (UTC+08:00) Beijing,Chongqing,Hong Kong,Urumqi |
| Asia/Singapore | (UTC+08:00) Kuala Lumpur,Singapore |
| Australia/Perth | (UTC+08:00) Perth |
| Asia/Taipei | (UTC+08:00) Taipei |
| Asia/Ulaanbaatar | (UTC+08:00) Ulaanbaatar |
| Asia/Irkutsk | (UTC+08:00) Irkutsk(RTZ 7) |
| Asia/Pyongyang | (UTC+08:00) Pyongyang |
| Australia/Eucla | (UTC+08:45) Australia (Eucla unofficial) |
| Asia/Tokyo | (UTC+09:00) Osaka,Sapporo,Tokyo |
| Asia/Seoul | (UTC+09:00) Seoul |
| Australia/Adelaide | (UTC+09:30) Adelaide |
| Australia/Darwin | (UTC+09:30) Darwin |
| Australia/Brisbane | (UTC+10:00) Brisbane |
| Asia/Vladivostok | (UTC+10:00) Vladivostok, Magadan(RTZ 9) |
| Pacific/Guam | (UTC+10:00) Guam,Port Moresby |
| Australia/Hobart | (UTC+10:00) Hobart |
| Australia/Canberra | (UTC+10:00) Canberra,Melbourne,Sydney |
| Australia/Lord_Howe | (UTC+10:30) Lord Howe Island |
| Asia/Magadan | (UTC+11:00) Magadan |
| Pacific/Guadalcanal | (UTC+11:00) Solomon Is.,New Caledonia |
| Pacific/Norfolk | (UTC+11:30) Norfolk |
| Asia/Anadyr | (UTC+12:00) Anadyr,Petropavlovsk-Kamchatsky - Old(RTZ 11) |
| Pacific/Auckland | (UTC+12:00) Auckland,Wellington |
| Pacific/Fiji | (UTC+12:00) Fiji |

| | |
|--------------------|---|
| Etc/GMT-12 | (UTC+12:00) Coordinated Universal Time+12 |
| Pacific/Chatham | (UTC+12:45) Chatham Standard Time |
| Pacific/Apia | (UTC+13:00) Samoa |
| Pacific/Kiritimati | (UTC+14:00) Christmas Island |

9 Dictionary-Currency

Refer to IOS 4217.

| Currency CODE | Description |
|---------------|-------------------------------------|
| KWD | Kuwaiti dinars |
| ZAR | South African rand |
| UAH | Ukraine's Hrifnia |
| AUD | Australian dollar |
| CLP | Chilean peso |
| CRC | Colon, Costa Rica |
| QAR | Qatari rials |
| DOP | Dominican peso |
| YER | Yemeni rials |
| SAR | Saudi riyals |
| KRW | Han Won |
| MAD | Moroccan dirham |
| HNL | Larenpira, Honduras |
| PAB | Panama Baboa |
| LBP | Lebanese pound |
| BAM | Bosnia-Herzegovina Exchange Voucher |
| PEN | New Sol, Peru |
| NZD | NEW ZEALAND DOLLAR |
| CNY | Renminbi |
| INR | Indian Rupee |
| SYP | Syrian pound |

| | |
|-----|----------------------------|
| DKK | Danish krone |
| UYU | Uruguayan peso |
| TRY | New Turkish Lira |
| CHF | Swiss franc |
| VEF | Venezuela's Strong Bolivar |
| AED | UAE Dirram |
| DZD | Algerian dinar |
| ISK | Isk |
| EGP | Egyptian pound |
| TND | Tunisian dinar |
| HUF | Hungarian forint |
| CSD | Old Serbian dinar |
| JOD | Jordanian dinar |
| SVC | Salvadoran Colon |
| ILS | New Israeli shekel |
| TWD | Nt \$ |
| CZK | Czech kroner |
| ARS | Argentine peso |
| ALL | Albanian lek |
| NOK | Norwegian krone |
| COP | Colombian peso |
| JPY | Yen |
| BYR | Belarusian ruble |
| BHD | Bahrainn dinar |
| OMR | Omani rial |
| HRK | Kuna, Croatia |
| SDG | Sudanese pound |
| PYG | Guarani, Paraguay |
| RON | Romanian ley |
| GBP | Pounds |
| PLN | Polish zloty |
| MYR | Malaysian ringgit |

| | |
|-----|---------------------------------------|
| IQD | Iraqi dinars |
| GTQ | Quetzal , Guatemala |
| LYD | Libyan dinar |
| MXN | Mexican peso |
| HKD | Hong kong dollar |
| RUB | Russian ruble |
| VND | Vietnamese dong |
| PHP | Philippine Peso |
| SEK | SEK |
| BGN | Bulgaria's New Lev |
| MKD | Didinar , Macedonia |
| NIO | Kincodoba , Nicaragua |
| RSD | Serbian dinar |
| CAD | Canadian dollar |
| THB | Baht |
| SGD | Singapore Dollar |
| BRL | Brazilian real |
| IDR | Indonesian rupiah |
| BOB | Boliviano |
| USD | Dollar |
| EUR | Euro |
| MUR | Mauritian Rupee |
| PKR | Pakistani Rupee |
| AFN | Afghanistan Afghani |
| AMD | Armenian Dram |
| ANG | Netherlands Antillean Shield / Florin |
| AOA | Kwanza , Angola |
| AWG | Aruba Florin/Kield |
| AZN | Manat , Azerbaijan |
| BBD | Barbados Dollar |
| BDT | Bangladesh Taka |
| BIF | Burundian franc |

| | |
|-----|---|
| BMD | Bermudian Dollar |
| BND | Brunei Dollar |
| BOV | Bolivia mvdol |
| BSD | Bahamian Dollar |
| BTN | Nuzam, Bhutan (also in Indian Rupee (INR)) |
| BWP | Pra, Botswana |
| BYN | Belarusian ruble |
| BZD | Belizean Dollar |
| CDF | Congolese franc of the Democratic Republic of the Congo |
| CHE | WIR Euros |
| CHW | Swiss franc |
| CLF | Chilean peso (convertible fund) |
| COU | Colombia unidad de valor real |
| CUC | Convertible pesos |
| CUP | Cuban peso |
| CVE | Escudo, Cape Verde |
| DJF | Djibouti franc |
| ERN | Nakfa, Eritrea |
| ETB | Ethiopian Birr |
| FJD | Fijian dollar |
| FKP | Falkland Pound |
| GEL | Georgia Lari |
| GHS | Ghana |
| GIP | Gibraltar Pound |
| GMD | Darasi, Gambia |
| GNF | Guinean franc |
| GYD | Guyana Dollar |
| HTG | Haiti Goode |
| IRR | Iranian rials |
| JMD | Jamaican dollar |
| KES | Kenyan shillings |
| KGS | Som |

| | |
|-----|--|
| KHR | Rare |
| KMF | Comorian franc |
| KPW | Korean Dollar |
| KYD | Cayman Islands Dollar |
| KZT | Teng |
| LAK | Kip, Laos |
| LKR | Sri Lankan Rupee |
| LRD | Liberian dollar |
| LSL | Loti, Lesotho (plural: Malotti) |
| MDL | Ley/Molei, Moldova |
| MGA | Ariari, Madagascar |
| MMK | Myanmar Dollar (Kyeen) |
| MNT | Tuglirk, Mongolia |
| MOP | MACAU DOLLAR |
| MRU | Ogueia |
| MVR | Rafia, Maldives |
| MWK | Malawi Kwacha |
| MXV | Unidad de Inversion (UDI) (Funds) |
| MZN | Mozobikmetikar |
| NAD | Namibian dollar (also with South African rand (ZAR)) |
| NGN | Naira, Nigeria |
| NPR | Nepali Rupee |
| PGK | Kina, Papua New Guinea |
| RWF | Rwandan francs |
| SBD | Solomon Islands Dollar |
| SCR | Seychelles Rupee |
| SHP | St. Helena Pound |
| SLL | Leon, Sierra Leone |
| SOS | Somali shillings |
| SRD | Surinames00 |
| SSP | South Sudan Pound |
| STN | Dobra |

| | |
|-----|---|
| SZL | Swazi Lirangini (plural: Emarangini emalangeni) |
| TJS | Somoni, Tajikistan |
| TMT | New Manat, Turkmenistan |
| TOP | Tonga Panga |
| TTD | Trinidad and Tobago Dollar |
| TZS | Tanzanian shillings |
| UGX | Ugandan shillings |
| USN | United States dollar (next day) (funds) |
| UYI | Uruguayan Peso Index (UI) |
| UYW | Uyu |
| UZS | Uzbekistan Sum |
| VES | Sobenano |
| VUV | Vatu, Vanuatu |
| WST | Samoa Tara |
| XAF | Cfa Financial Cooperation Franc (CFA Franc) |
| XAG | Silver |
| XAU | Gold |
| XBA | European Composite Unit (EURCO) / European Hybrid Unit (Bond Market Unit) |
| XBB | E.M.U.—6 (Bond Market Unit) |
| XBC | European units of Account 9 (Bond Market Unit) |
| XBD | European units (bond market units) of account 17 |
| XCD | Eastern Caribbean Dollar |
| XDR | Special Drawing Rights |
| XOF | CFA francs (CFA francs) |
| XPD | Palladium |
| XPF | Pacific franc (CFP franc) |
| XPT | Platinum |
| XSU | Sucre |
| XUA | Asian Development Bank Account Unit |
| ZMW | Kwacha, Zambia |
| ZWL | Zimbabwean dollar |

10 Dictionary-Region

Appendix: area.csv

11 Dictionary-Phone Number Prefix

| Country CODE | Prefix | Country Name(EN) | Supported or Not |
|--------------|--------|------------------|------------------|
| CN | 86 | China | Y |
| NL | 31 | Netherlands | Y |
| US | 1 | USA | Y |
| BR | 55 | Brazil | Y |
| AU | 61 | Australia | |
| DE | 49 | Germany | |
| ES | 34 | Spain | |
| FR | 33 | France | |
| GB | 44 | UK | |
| ID | 62 | Indonesia | |
| IN | 91 | India | |
| IT | 39 | Italy | |
| JP | 81 | Japan | |
| KR | 82 | South Korea | |
| MY | 60 | Malaysia | |
| PH | 63 | The Philippines | |
| PL | 48 | Poland | |
| PT | 351 | Portugal | |
| SG | 65 | Singapore | |
| TH | 66 | Thailand | |

| | | | |
|----|------|-----------------------------|--|
| TW | 886 | Taiwan(Province of China) | |
| HK | 852 | Hong Kong | |
| MO | 853 | Macau | |
| AW | 297 | Aruba | |
| AF | 93 | Afghanistan | |
| AO | 244 | Angola | |
| AI | 1264 | Anguilla | |
| AX | 358 | Åland Island | |
| AL | 355 | Albania | |
| AD | 376 | Andorra | |
| AE | 971 | United Arab Emirates | |
| AR | 54 | Argentina | |
| AM | 374 | Armenia | |
| AS | 1684 | American Samoa | |
| AQ | 672 | Antarctica | |
| TF | 262 | French Southern Territories | |
| AG | 1268 | Antigua and Barbuda | |
| AT | 43 | Austria | |
| AZ | 994 | Azerbaijan | |
| BI | 257 | Burundi | |
| BE | 32 | Belgium | |
| BJ | 229 | Benin | |
| BQ | 599 | Caribbean Netherlands | |
| BF | 226 | Burkina Faso | |
| BD | 880 | Bangladesh | |
| BG | 359 | Bulgaria | |
| BH | 973 | Bahrain | |
| BS | 1242 | Bahamas | |
| BA | 387 | Bosnia & Herzegovina | |
| BL | 590 | Saint Barthélemy | |
| BY | 375 | Belarus | |
| BZ | 501 | Belize | |

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|----|------|----------------------------------|--|
| BM | 1441 | Bermuda | |
| BO | 591 | Bolivia | |
| BB | 1246 | Barbados | |
| BN | 673 | Brunei | |
| BT | 975 | Bhutan | |
| BV | 47 | Bouvet Island | |
| BW | 267 | Botswana | |
| CF | 236 | Central African Republic | |
| CA | 1 | Canada | |
| CC | 61 | Cocos (Keeling) Islands | |
| CH | 41 | Switzerland | |
| CL | 56 | Chile | |
| CI | 225 | Côte d'Ivoire | |
| CM | 237 | Cameroon | |
| CD | 243 | Democratic Republic of the Congo | |
| CG | 242 | Republic of the Congo | |
| CK | 682 | Cook Islands | |
| CO | 57 | Colombia | |
| KM | 269 | The Comoros | |
| CV | 238 | Cape Verde | |
| CR | 506 | Costa Rica | |
| CU | 53 | Cuba | |
| CW | 599 | Curaçao | |
| CX | 61 | Christmas Island | |
| KY | 1345 | Cayman Islands | |
| CY | 357 | Cyprus | |
| CZ | 420 | Czech Republic | |
| DJ | 253 | Djibouti | |
| DM | 1767 | Dominica | |
| DK | 45 | Denmark | |
| DO | 1809 | Dominican Republic | |

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|----|------|---------------------------|--|
| DO | 1829 | Dominican Republic | |
| DO | 1849 | Dominican Republic | |
| DZ | 213 | Algeria | |
| EC | 593 | Ecuador | |
| EG | 20 | Egypt | |
| ER | 291 | Eritrea | |
| EH | 212 | Western Sahara | |
| EE | 372 | Estonia | |
| ET | 251 | Ethiopia | |
| FI | 358 | Finland | |
| FJ | 679 | Fiji | |
| FK | 500 | Falkland Islands | |
| FO | 298 | Faroe Islands | |
| FM | 691 | Micronesia | |
| GA | 241 | Gabon | |
| GE | 995 | Georgia | |
| GG | 44 | Guernsey | |
| GH | 233 | Ghana | |
| GI | 350 | Gibraltar | |
| GN | 224 | Guinea | |
| GP | 590 | Guadeloupe | |
| GM | 220 | Gambia | |
| GW | 245 | Guinea-Bissau | |
| GQ | 240 | Equatorial Guinea | |
| GR | 30 | Greece | |
| GD | 1473 | Grenada | |
| GL | 299 | Greenland | |
| GT | 502 | Guatemala | |
| GF | 594 | French Guiana | |
| GU | 1671 | Guam | |
| GY | 592 | Guyana | |
| HM | 672 | Heard Island and McDonald | |

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|----|------|--------------------------------|--|
| | | Islands | |
| HN | 504 | Honduras | |
| HR | 385 | Croatia | |
| HT | 509 | Haiti | |
| HU | 36 | Hungary | |
| IM | 44 | Isle of Man | |
| IO | 246 | British Indian Ocean Territory | |
| IE | 353 | Ireland | |
| IR | 98 | Iran | |
| IQ | 964 | Iraq | |
| IS | 354 | Iceland | |
| IL | 972 | Israel | |
| JM | 1658 | Jamaica | |
| JM | 1876 | Jamaica | |
| JE | 44 | Jersey | |
| JO | 962 | Jordan | |
| KZ | 7 | Kazakhstan | |
| KE | 254 | Kenya | |
| KG | 996 | Kyrgyzstan | |
| KH | 855 | Cambodia | |
| KI | 686 | Kiribati | |
| KN | 1869 | St. Kitts & Nevis | |
| KW | 965 | Kuwait | |
| LA | 856 | Laos | |
| LB | 961 | Lebanon | |
| LR | 231 | Liberia | |
| LY | 218 | Libya | |
| LC | 1758 | St. Lucia | |
| LI | 423 | Liechtenstein | |
| LK | 94 | Sri Lanka | |
| LS | 266 | Lesotho | |

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|----|------|--------------------------|--|
| LT | 370 | Lithuania | |
| LU | 352 | Luxembourg | |
| LV | 371 | Latvia | |
| MF | 590 | Saint Martin (France) | |
| MA | 212 | Morocco | |
| MC | 377 | Monaco | |
| MD | 373 | Moldova | |
| MG | 261 | Madagascar | |
| MV | 960 | Maldives | |
| MX | 52 | Mexico | |
| MH | 692 | Marshall Islands | |
| MK | 389 | Macedonia | |
| ML | 223 | Mali | |
| MT | 356 | Malta | |
| MM | 95 | Myanmar (Burma) | |
| ME | 382 | Montenegro | |
| MN | 976 | Mongolia | |
| MP | 1670 | Northern Mariana Islands | |
| MZ | 258 | Mozambique | |
| MR | 222 | Mauritania | |
| MS | 1664 | Montserrat | |
| MQ | 596 | Martinique | |
| MU | 230 | Mauritius | |
| MW | 265 | Malawi | |
| YT | 262 | Mayotte | |
| NA | 264 | Namibia | |
| NC | 687 | New Caledonia | |
| NE | 227 | Niger | |
| NF | 672 | Norfolk Island | |
| NG | 234 | Nigeria | |
| NI | 505 | Nicaragua | |
| NU | 683 | Niue | |

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|----|------|---|--|
| NO | 47 | Norway | |
| NP | 977 | Nepal | |
| NR | 674 | Nauru | |
| NZ | 64 | New Zealand | |
| OM | 968 | Oman | |
| PK | 92 | Pakistan | |
| PA | 507 | Panama | |
| PN | 64 | Pitcairn Islands | |
| PE | 51 | Peru | |
| PW | 680 | Palau | |
| PG | 675 | Papua New Guinea | |
| PR | 1787 | Puerto Rico | |
| PR | 1939 | Puerto Rico | |
| KP | 850 | North Korea | |
| PY | 595 | Paraguay | |
| PS | 970 | Palestina | |
| PF | 689 | French Polynesia | |
| QA | 974 | Qatar | |
| RE | 262 | Reunion | |
| RO | 40 | Romania | |
| RU | 7 | Russian Federation | |
| RW | 250 | Rwanda | |
| SA | 966 | Saudi Arabia | |
| SD | 249 | Sudan | |
| SN | 221 | Senegal | |
| GS | 500 | South Georgia and the South Sandwich Islands | |
| SH | 290 | St. Helena & Dependencies | |
| SJ | 47 | Svalbard and Jan Mayen | |
| SB | 677 | Solomon Islands | |
| SL | 232 | Sierra Leone | |
| SV | 503 | El Salvador | |

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|----|------|---|--|
| SM | 378 | San Marino | |
| SO | 252 | Somalia | |
| PM | 508 | Saint Pierre and Miquelon | |
| RS | 381 | Serbia | |
| SS | 211 | South Sudan | |
| ST | 239 | Sao Tome & Principe | |
| SR | 597 | Suriname | |
| SK | 421 | Slovakia | |
| SI | 386 | Slovenia | |
| SE | 46 | Sweden | |
| SZ | 268 | Swaziland | |
| SX | 1721 | Sint Maarten | |
| SC | 248 | Seychelles | |
| SY | 963 | Syria | |
| TC | 1649 | Turks & Caicos Islands | |
| TD | 235 | Chad | |
| TG | 228 | Togo | |
| TJ | 992 | Tajikistan | |
| TK | 690 | Tokelau | |
| TM | 993 | Turkmenistan | |
| TL | 670 | Timor-Leste (East Timor) | |
| TO | 676 | Tonga | |
| TT | 1868 | Trinidad & Tobago | |
| TN | 216 | Tunisia | |
| TR | 90 | Turkey | |
| TV | 688 | Tuvalu | |
| TZ | 255 | Tanzania | |
| UG | 256 | Uganda | |
| UA | 380 | Ukraine | |
| UM | 1 | United States Minor Outlying Islands | |
| UY | 598 | Uruguay | |

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|----|------|---------------------------------|--|
| UZ | 998 | Uzbekistan | |
| VA | 379 | Vatican City (The Holy See) | |
| VC | 1784 | St. Vincent & the Grenadines | |
| VE | 58 | Venezuela | |
| VG | 1284 | British Virgin Islands | |
| VI | 1340 | United States Virgin Islands | |
| VN | 84 | Vietnam | |
| VU | 678 | Vanuatu | |
| WF | 681 | Wallis and Futuna | |
| WS | 685 | Samoa | |
| YE | 967 | Yemen | |
| ZA | 27 | South Africa | |
| ZM | 260 | Zambia | |
| ZW | 263 | Zimbabwe | |