Wifi Tag API

Integration Manual

V1.0.2

Dalian Sertag Technology Co., Ltd

Content

1. Parameter Config 3
1.1. WIFI parameter config 3
1.2. MQTT parameter config 3
2. Equipment data management 4
3. MQTT Interaction Protocol between Client and Server 5
3.1. Overview of Client MQTT Protocol 5
3.2. Device online messages subscribed by the client 5
3.3. Device offline messages subscribed by the client 6
3.4. USB status feedback message of client subscription device 6
3.5. Button feedback message of the client subscribes to the device 7
3.6. Client publishes update device screen message 7
3.7. Client subscribes to update device screen feedback result message 8
3.8. The client Publish message of getting the battery voltage of the device 9
3.9. The client subscribe feedback result message of getting the battery voltage of the device 9
3.10. Client publishes update device LED status message 10
3.11. Client subscribes to update device LED status feedback result message 11
3.12. Client subscribes device restart message 11
3.13. Client subscription device restart feedback result message 12
4. Client HTTP Protocol 13
4.1. Overview of http protocol interface 13
4.2. Get all device information through HTTP 13
4.3. Set the RGB light status of the device through HTTP 14
4.4. Obtain the device battery voltage through HTTP 15
4.5. Update the device screen image through HTTP 15
4.6. Restart the device through HTTP 15

1. Parameter Config

1.1. WIFI parameter config

SN	Name	Description	Default Value
1	SSID	AP SSID	
2	password	AP password	

1.2. MQTT parameter config

SN	Name	Description	Default Value
1	Broker IP	MQTT Broker IP address	
2	PORT	MQTT Broker Port	8883
3	username	MQTT Login username	
4	password	MQTT Login password	
5	client id	MQTT client ID	

2. Equipment data management

SN	Name	Description	Type	Default Value
1	MAC	MAC address	String	
2	IP	IP address	String	
3	Voltage	Battery Voltage	Integer	
4	Station.RSSI	Signal strength value	Integer	
5	Station.SSID	AP SSID	String	
6	Station.Password	AP password	String	
7	Mqtt.Broker	MQTT Broker IP address	String	
8	Mqtt.PORT	MQTT Broker Port	Integer	8883
9	Mqtt.Username	MQTT Login username	String	
10	Mqtt.Password	MQTT Login password	String	
11	Mqtt.Client ID	MQTT Client ID	String	
12	Device Type	Device Type	Object	
13	Screen Type	Screen Type	Object	
14	SN	Serial number	String	
15	SW	Software version number	Integer	
16	HW	Hardware version number	Integer	
17	Sms.display.success	Number of successful updates	Integer	
18	Sms.display.fail	Number of failure updates	Integer	
19	Sms.network.conn	Number of successful connections	Integer	
20	Sms.network.conn_fail	Number of failure connections	Integer	
21	Sms.network.discon	Number of disconnections	Integer	
22	Sms.reboot	Count the number of system restarts	Integer	
23	DevID	Device ID number	String	
24	UsbState	USB status	Integer	
25	Product	Product	Object	
26	Algorithm	Image algorithm	Object	

3. MQTT Interaction Protocol between Client and Server

3.1. Overview of Client MQTT Protocol

SN	Topic	Description	Reference section
1	/client/${ApiKey}/action/online	Subscribed device online messages	
2	/client/${ApiKey}/action/offline	Subscribed device offline messages	
3	/client/${ApiKey}/action/usb_state	Subscribed device USB status messages	
4	/client/${ApiKey}/action/button	Subscribed device button message	
5	/client/${ApiKey}/action/display	Publish device update screen message	
6	/client/${ApiKey}/action/display_reply	Subscribed device Update screen result message	
7	/client/${ApiKey}/action/battery	Publish device battery voltage massage	
8	/client/${ApiKey}/action/battery_reply	Subscribed device battery voltage result massage	
9	/client/${ApiKey}/action/led	Publish update LED status messages	
10	/client/${ApiKey}/action/led_reply	Subscribe to update LED status result messages	
11	/client/${ApiKey}/action/reboot	Publish restart message	
12	/client/${ApiKey}/action/reboot_reply	Subscribe restart result message	

3.2. Device online messages subscribed by the client

The TOPIC format of the device launch message subscribed by the client is as follows.

```
/client/${ApiKey}/action/online
```

Such as the ApiKey of client is `61a3bd3d4c10ad03f1b15a99`, the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/online
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:2A:84",
    "msgId":"1651211185462"
}
```

Message field description

SN	Field	type	value	Descrition
1	mac	String		Device MAC address
2	msgId	String	Time stamp	Mark unique

3.3. Device offline messages subscribed by the client

The TOPIC format of the device offline message subscribed by the client is as follows.

```
/client/${ApiKey}/action/offline
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/offline
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:2A:84",
    "msgId":"1651211185462"
}
```

Message field description

SN	Field	type	value	Descrition
1	mac	String		Device MAC address
2	msgId	String	Time stamp	Mark unique

3.4. USB status feedback message of client subscription device

The TOPIC format of USB status message subscribed by the client is as follows.

```
/client/${ApiKey}/action/usb_state
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/usb_state
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:2A:84",
```

```
    "msgId":"1651211185462",
    "state": 1
}
```

Message field description

SN	Field	type	value	Descrition
1	mac	String	station_reply	Device MAC address
2	msgId	String	Time stamp	Mark unique
3	state	Integer	1/0	Insert / pull out

3.5. Button feedback message of the client subscribes to the device

The TOPIC format of Button feedback message subscribed by the client is as follows.

```
/client/${ApiKey}/action/button
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/button
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:2A:84",
    "msgId":"1651211185462",
}
```

Message field description

SN	Field	type	value	Descrition
1	mac	String		Device MAC address
2	msgId	String	Time stamp	Mark unique

3.6. Client publishes update device screen message

The TOPIC format of Client publishes update device screen message is as follows.

```
/client/${ApiKey}/action/display
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/display
```

Message format as follows.

```
{
    "method": "display",
    "msgId": "1651211643524",
    "version": 1,
```

```
        "message": {
            "mac": "D4:3D:39:17:42:F6",
            "imgsrc":
"https://t7.baidu.com/it/u=1575628574,1150213623&fm=193&f=GIF"
        }
    }
```

Message field description

SN	Data Field	Value Type	Value	Option	Description
1	method	String	display	Required	Method
2	msgId	String	Time stamp	Required	Mark unique
4	version	Integer	1	Required	Version number
5	message.mac	String	Mac	Required	MAC address of Device
6	message.imgsrc	String		Required	1. If not, the system defaults to the picture 2. Convert the picture to Base64 format 3. Image download address

3.7. Client subscribes to update device screen feedback result message

The TOPIC format of Client subscribers to update device screen feedback result message is as follows.

```
/client/${ApiKey}/action/display_reply
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/display_reply
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:42:F6",
    "msgId": "1651211643524",
    "result": 200
}
```

Message field description

SN	Data Field	Value Type	Value	Description
1	mac	String	Station reply	Method

2	msgId	String	Time stamp	Mark unique
3	result	Integer	200/400/401	Success / failure / other

3.8. The client Publish message of getting the battery voltage of the device

The TOPIC format of Client Publish message of getting the battery voltage of the device is as follows.

```
/client/${ApiKey}/action/battery
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/battery
```

Message format as follows.

```
{
    "method": "battery",
    "msgId": "1651211849119",
    "version": 1,
    "message": {
        "mac": "D4:3D:39:17:42:F6"
    }
}
```

Message field description

SN	Data Field	Value Type	Value	Option	Description
1	method	String	battery	Required	Method
2	msgId	String	Time stamp	Required	Mark unique
4	version	Integer	1	Required	Version number
5	message.mac	String	Mac	Required	MAC address of Device

3.9. The client subscribe feedback result message of getting the battery voltage of the device

The TOPIC format of Client subscribe feedback result message of getting the battery voltage of the device is as follows.

```
/client/${ApiKey}/action/battery_reply
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

/client/61a3bd3d4c10ad03f1b15a99/action/battery_reply

Message format as follows.

```
{
    "mac": "D4:3D:39:17:42:F6",
    "msgId": "1651211849119",
    "voltage": 410
}
```

Message field description

SN	Data Field	Value Type	Value	Description
1	mac	String	station_reply	Method
2	msgId	String	Time stamp	Mark unique
3	voltage	Integer		100 Times the battery voltage

3.10. Client publishes update device LED status message

The TOPIC format of Client subscribe update device LED status message is as follows.

/client/${ApiKey}/action/led

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

/client/61a3bd3d4c10ad03f1b15a99/action/led

Message format as follows.

```
{
    "method": "led",
    "msgId": "1651211844116",
    "version": 1,
    "message": {
        "mac": "D4:3D:39:17:42:F6",
        "red": 255,
        "green": 0,
        "blue": 255,
    }
}
```

Message field description

SN	Data Field	Value Type	Value	Option	Description
1	method	String	battery	Required	Method
2	msgId	String	Time stamp	Required	Mark unique
4	version	Integer	1	Required	Version number

5	message.mac	String	Mac	Required	MAC address of Device
6	message.red	Integer	0/255	Optional	Red light off / on
7	message.green	Integer	0/255	Optional	Green light off / on
8	message.blue	Integer	0/255	Optional	Blue light off / on

3.11. Client subscribes to update device LED status feedback result message

The TOPIC format of Client subscribes to update device LED status feedback result message is as follows.

```
/client/${ApiKey}/action/led_reply
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/led_reply
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:42:F6",
    "msgId": "1651211844116",
    "result": 200
}
```

Message field description

SN	Data Field	Value Type	Value	Description
1	mac	String	station_reply	Method
2	msgId	String	Time stamp	Mark unique
3	result	Integer	200/400	Success / failure

3.12. Client subscribes device restart message

The TOPIC format of Client subscribes device restart message is as follows.

```
/client/${ApiKey}/action/reboot
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/reboot
```

Message format as follows.

```
{
    "method": "battery",
    "msgId": "1651211843741",
```

```
    "version": 1,
    "message": {
        "mac": ["D4:3D:39:17:42:F6"]
    }
}
```

Message field description

SN	Data Field	Value Type	Value	Option	Description
1	method	String	battery	Required	Method
2	msgId	String	Time stamp	Required	Mark unique
4	version	Integer	1	Required	Version number
5	message.mac	ARRAY	Mac	Required	MAC address of Device

3.13. Client subscription device restart feedback result message

The TOPIC format of Client subscribes device restart feedback result message is as follows.

```
/client/${ApiKey}/action/reboot_reply
```

Such as the ApiKey of client is 61a3bd3d4c10ad03f1b15a99，the TOPIC format of subscribed as follows.

```
/client/61a3bd3d4c10ad03f1b15a99/action/reboot_reply
```

Message format as follows.

```
{
    "mac": "D4:3D:39:17:42:F6",
    "msgId": "1651211843741",
    "result": 200
}
```

Message field description

SN	Data Field	Value Type	Value	Description
1	mac	String	station_reply	Method
2	msgId	String	Time stamp	Mark unique
3	result	Integer	200/400	Success / failure

4. Client HTTP Protocol

4.1. Overview of http protocol interface

Send setting message through HTTP protocol

SN	Api	method	Description
1	/admin/api/rest/devices	GET	Get all device information
2	/admin/api/rest/devices/:id	GET	Obtain single device information according to ID
3	/admin/api/rest/devices	POST	Add device
4	/admin/api/rest/devices/:id	DELETE	Delete device
5	/admin/api/rest/devices/:id	PUT	Update device information
6	/admin/api/rest/devices/mac/:mac	GET	Get device according to MAC address
7	/admin/api/rest/products	GET	Get product information
8	/admin/api/rest/products/:id	GET	Obtain individual product information according to ID
9	/admin/api/rest/products	POST	Add product
10	/admin/api/rest/products/:id	DELETE	Delete product by ID
11	/admin/api/rest/products/:id	PUT	Update product information
12	/admin/api/rest/products/apiKey/:apiKey	GET	Obtain product information according to apikeyvalue
13	/admin/api/generate/product/apiKey	GET	Generate the apikeyvalue of the product
14	/admin/api/mqtt/publish/:mac/led	POST	Set the RGB light status of the device
15	/admin/api/mqtt/publish/:mac/battery	POST	Get the battery power of the device
16	/admin/api/mqtt/publish/:mac/display	POST	Update screen picture
17	/admin/api/mqtt/publish/:mac/reboot	POST	reboot device

4.2. Get all device information through HTTP

API interface

```
/admin/api/rest/devices
```

Get all device MAC information

```
/admin/api/rest/devices?query=mac
```

Return routine

```
{
    "itemList": [{
        "_id": "62622dc2bb5b52ba1187d87f",
        "mac": "D4:3D:39:17:2A:84"
    }],
    "paginator": {
        "itemCount": 1,
        "offset": 0,
        "pageSize": 1,
        "pageCount": 1,
        "pageNum": 1,
        "slNO": 1,
        "hasPrevPage": false,
        "hasNextPage": false,
        "prevPage": null,
        "nextPage": null
    }
}
```


Message field description

SN	Data Field	Value Type	Value	Description
1	itemList	Array		Get the list of objects
2	paginator.itemCount	Integer		Total queries
3	paginator.offset	Integer		ApiKey Value of the product
3	paginator.pageSize	Integer		Paging size
4	paginator.pageNum	Integer		Page number

4.3. Set the RGB light status of the device through HTTP

URLformat is as follows.

```
/admin/api/mqtt/publish/:mac/led
```

JSON data as below.

```
{
    "red": 0,
    "green": 0,
    "blue": 0,
}
```

JSON Data Field Description.

SN	Data Field	Value Type	Value	Option	Description

1	red	Integer	0/255	Optional	Red light off / on
2	green	Integer	0/255	Optional	Green light off / on
3	blue	Integer	0/255	Optional	Blue light off / on

Note：: mac is MAC address of Device

4.4. Obtain the device battery voltage through HTTP

URLformat is as follows.

```
/admin/api/mqtt/publish/:mac/battery
```

No JSON data

Note：: mac is MAC address of Device

4.5. Update the device screen image through HTTP

URLformat is as follows.

```
/admin/api/mqtt/publish/:mac/display
```

JSON data

```
{
    "algorithm": "binarization",
    "imgsrc": "http://192.168.1.108:3000/uploads/4e5c84d2f.thumb"
}
```

JSONData Field Description.

SN	Data Field	Value Type	Value	Option	Description
1	binarization	String		Optional	If not, the system defaults to the algorithm
2	imgsrc	String		Optional	If not, the system defaults to the image or converts the image to Base64 format

Note：:mac is MAC address of Device

4.6. Restart the device through HTTP

URLformat is as follows.

```
/admin/api/mqtt/publish/:mac/reboot
```

No JSON data

Note：:mac is MAC address of Device