

ETC天线MQTT接口文档V2.0

表格视图

🔒 三 版本	☺ 作者	📅 日期
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2 V2.0	杨召伟	2023-03-23
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连接认证

通过tcp连接认证mqtt服务器

- URL: mqtt://tyxh.f3322.net:1883
- 名称: 天线MAC地址
- Client ID: TYETC_XXXXXXXXXXXX (XXXXXX为天线12位mac地址大写字符串)
- password: XXXXXXXXXXXX (jwt密文)
- 连接超时时长: 10秒
- KEEP ALIVE: 30秒
- 自动重连: true
- 需要鉴权: 是

认证方式一：client ID 和 password 需要在mqtt server 配置页面授权。

认证方式二：password 携带 JWT token。

发送数据到天线板地址

Publish地址: /ETC/"天线MAC地址"/write

天线板返回数据地址

Subscribe地址： /ETC/"天线MAC地址"/read

通信数据

上线与离线信息

Subscribe地址： /ETC

上线信息格式：

JSON | 复制代码

```
1 {
2     "Client_ID": "TYETC_XXXXXXXXXXXX",
3     "status": "Online"
4 }
```

离线信息格式：

JSON | 复制代码

```
1 {
2     "Client_ID": "TYETC_XXXXXXXXXXXX",
3     "status": "Offline"
4 }
```

信息内容

参数	类型	解释
1 Client_ID	string	设备的Client_ID
2 status	string	Online： 上线。 Offline： 离线。

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读取设备信息示例

Publish地址： /ETC/"天线MAC地址"/write

发送数据

▼ JSON | 复制代码

```
1 {  
2   "mqtt": "read"  
3 }
```

成功响应

Subscribe地址: /ETC/"**天线MAC地址**"/read

```

1 {
2   "netconfig": {
3     "InternetMode": "WIFISTATION",
4     "SSID": "TYXH-005",
5     "PASSWORD": "TYXH@005",
6     "ConnectionType": "StaticIP",
7     "IP": "192.168.5.134",
8     "NetMask": "255.255.255.0",
9     "GateWay": "192.168.5.1"
10  },
11  "LogRetentionTime": "7",
12  "devicename": {
13    "province": "陕西省",
14    "city": "西安市",
15    "district": "雁塔区",
16    "parkingName": "测试停车场",
17    "exits": "200出口"
18  },
19  "ApplicationVersion": "ETC",
20  "CompileDate": "Mar 17 2023",
21  "CompileTime": "14:33:50",
22  "temperature": "29.28",
23  "humidity": "25.85",
24  "CurrentIP": "192.168.5.134",
25  "CurrentMASK": "255.255.255.0",
26  "CurrentGATEWAY": "192.168.5.1",
27  "ETCPower": "1",
28  "socketconfig": {
29    "TCPSEVERPORT": "8899",
30    "TCPServerLinkStatus": "0"
31  },
32  "MAC": "E0E2E6295AF8",
33  "DSRCVersion": "ZN20221009",
34  "ElapsedTime": "5370",
35  "RebootCount": "964"
36 }

```

数据参数

参数	二级参数	类型	值
1 netconfig		JSON对象	网络配置信息
2	InternetMode	string	ETH : 以太网
3	SSID	string	WIFI网络名称

3		SSID	string	WiFi网络名称
4		PASSWORD	string	WiFi密码 ETC
5		ConnectionType	string	StaticIP: 静态IP
6		IP	string	设置的静态IP
7		NetMask	string	设置的静态子网掩码
8		GateWay	string	设置的静态网关
9	socketconfig		JSON对象	Socket信息
10		TCPServerLinkStatus	string	TCP连接状态
11		ClientIP	string	已连接客户端IP
12		ClientPort	string	已连接客户端端口
13		TCPSEVERPORT	string	设置的TCPSEVERPORT
14	LogRetentionTime		string	日志存储天数
15	devicename		JSON对象	设备名称信息
16		province	string	省名
17		city	string	市名
18		district	string	县/区名
19		parkingName	string	停车场名称
20		exits	string	出口名称
21	ApplicationVersion		string	固件版本号
22	CompileDate		string	固件编译日期
23	CompileTime		string	固件编译时间
24	temperature		string	温度值 (°C)
25	humidity		string	湿度值 (%)
26	CurrentIP		string	当前IP
27	CurrentMASK		string	当前掩码
28	CurrentGATEWAY		string	当前网关
29	ETCPower		string	ETC电源状态

30	MAC		string	MAC地址
31	DSRCVersion		string	DSRC固件版
32	ElapsedTime		string	运行时长（秒
33	RebootCount		string	重启次数

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设备操作示例

Publish地址： /ETC/"**天线MAC地址**"/write

设备发送数据到天线

发送端数据：

▼ JSON 复制代码

```
1 {
2   "mqtt":"write",
3   "uart":"string",
4   "msg":"要发送的数据"
5 }
```

数据参数

参数	类型	值
1 mqtt	string	write： 操作设备
2 uart	string	string： 发送的数据类型为string。 HEX： 发
3 msg	string	要发送的数据

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成功响应：

Subscribe地址： /ETC/"**天线MAC地址**"/read

数据超时时间为3秒。若超时时间内有数据返回则：

JSON | 复制代码

```
1 {
2   "uart": "string",
3   "uart_status": "OK",
4   "msg": "返回的数据"
5 }
```

若超时时间内有没数据返回则：

JSON | 复制代码

```
1 {
2   "uart": "string",
3   "uart_status": "timeout"
4 }
```

数据参数

参数	类型	值
1 uart_status	string	OK:有返回数据。 timeout： 超时没有返回数据。
2 uart	string	string： 返回的数据类型为string。 HEX： 返回的数据类型为HEX。
3 msg	string	返回的数据（超时无此项）。

3 条记录

设备OTA升级

发送端数据：

Publish地址： /ETC/"天线MAC地址"/write

JSON | 复制代码

```
1 {
2   "mqtt":"write",
3   "OTA":"download"
4 }
```

数据无响应： 若升级成功自动重启可用read读版本号和编译时间。若两分钟后未重启则升级失败。

数据参数

参数	类型	值
----	----	---

1	mqtt	string	write: 操作设备
2	OTA	string	download: 从默认服务器升级固件。 rollback: 回滚固件。

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回滚固件时：若从未进行过固件升级，则会失败。回滚固件设备会立即重启。

设备配置

发送数据数据：

Publish地址：/ETC/"天线MAC地址"/write

JSON | 复制代码

```
1 {
2     "mqtt": "write",
3     "ETCPower": "1",
4     "LogRetentionTime": "7",
5     "devicename": {
6         "city": "西安市",
7         "district": "雁塔区",
8         "exits": "200出口",
9         "parkingName": "测试停车场",
10        "province": "陕西省"
11    },
12    "netconfig": {
13        "ConnectionType": "StaticIP",
14        "GateWay": "192.168.5.1",
15        "IP": "192.168.5.134",
16        "InternetMode": "WIFISTATION",
17        "NetMask": "255.255.255.0",
18        "PASSWORD": "TYXH@005",
19        "SSID": "TYXH-005"
20    },
21    "socketconfig": {
22        "TCPSEVERPORT": "8899"
23    }
24 }
25
```

数据参数

参数	二级参数	类型	值
1 netconfig		JSON对象	网络配置信息

2		InternetMode	string	ETH : 以太网
3		SSID	string	WIFI网络名 E
4		PASSWORD	string	WIFI密码 ETH
5		ConnectionType	string	StaticIP: 静态IP
6		IP	string	设置的静态IP
7		NetMask	string	设置的静态子网掩码
8		GateWay	string	设置的静态网关
9	socketconfig		JSON对象	Socket信息
10		TCPSEVERPORT	string	设置的TCPSEVERPORT
11	LogRetentionTime		string	日志存储天数
12	devicename		JSON对象	设备名称信息
13		province	string	省名
14		city	string	市名
15		district	string	县/区名
16		parkingName	string	停车场名称
17		exits	string	出口名称
18	ETCPower		string	ETC电源状态

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可在发送数据后read查看配置，**重启生效，重启生效，重启生效。**

若ConnectionType 为 StaticIP。则无需加、ETC_IP，ETC_NetMask，ETC_GateWay参数。

不需要更改的参数可不填。

"ETCPower": 参数重启默认为1: 打开。断电不保存。

设备重启

发送端数据：

Publish地址：/ETC/"**天线MAC地址**"/write

JSON | 复制代码

```

1 {
2   "mqtt":"write",
3   "reboot":"reboot"
4 }

```

数据发送成功立即生效。

设备日志

发送端数据：

Publish地址：/ETC/"天线MAC地址"/write

JSON | 复制代码

```

1 {
2   "mqtt":"write",
3   "log":"20230101"
4 }

```

数据参数

参数	类型	值
1 mqtt	string	write：操作设备
2 log	string	日期格式为： 19000101

2 条记录 ▾

成功响应：

Subscribe地址：/ETC/"天线MAC地址"/read

JSON | 复制代码

```

1 {
2   "log": "OpenFailed"
3 }

```

数据参数

参数	类型	值
1 log	string	OpenFailed：没有这个文件或其他错误 OpenSucceed：打开成功

log	Summary	Open failed: 没有这个文件或其他错误 OpenSucceeded: 打...
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1 条记录 ▾

日志内容返回地址:

Subscribe地址: /ETC/"**天线MAC地址**"/log

返回文本格式, 超过2048字节会自动分段。

```
1 [00:00:26.076][28328s]temp:26.90 C
2 [00:00:26.661][28328s]hum:18.04 RH
3 [00:09:48.789][28890s]Time synchronization succeeds.
4 [00:17:16.944][29338s]temp:26.82 C
5 [00:17:16.953][29339s]hum:18.01 RH
6 [00:34:07.502][30349s]temp:26.82 C
7 [00:34:07.513][30349s]hum:18.00 RH
8 [00:50:57.533][31359s]temp:26.73 C
9 [00:50:57.543][31359s]hum:18.03 RH
10 [01:07:47.951][32370s]temp:26.72 C
11 [01:07:47.963][32370s]hum:17.98 RH
12 [01:09:48.845][32490s]Time synchronization succeeds.
13 [01:24:37.985][33380s]temp:26.59 C
14 [01:24:37.989][33380s]hum:18.07 RH
15 [01:41:28.553][34390s]temp:26.55 C
16 [01:41:28.559][34390s]hum:17.99 RH
17 [01:58:18.960][35400s]temp:26.45 C
18 [01:58:18.969][35401s]hum:17.97 RH
19 [02:09:48.900][36090s]Time synchronization succeeds.
20 [02:15:09.554][36411s]temp:26.52 C
21 [02:15:09.565][36411s]hum:18.00 RH
22 [02:31:59.568][37421s]temp:26.45 C
23 [02:31:59.575][37421s]hum:18.01 RH
24 [02:48:49.983][38432s]temp:26.39 C
25 [02:48:49.995][38432s]hum:18.04 RH
26 [03:05:40.000][39442s]temp:26.38 C
27 [03:05:40.005][39442s]hum:18.01 RH
28 [03:09:48.956][39690s]Time synchronization succeeds.
29 [03:22:30.584][40452s]temp:26.31 C
30 [03:22:30.590][40452s]hum:18.10 RH
31 [03:39:20.998][41463s]temp:26.27 C
32 [03:39:21.010][41463s]hum:18.04 RH
33 [03:56:11.582][42473s]temp:26.22 C
34 [03:56:11.591][42473s]hum:18.08 RH
35 [04:09:49.012][43291s]Time synchronization succeeds.
36 [04:13:02.007][43483s]temp:26.18 C
37 [04:13:02.016][43484s]hum:18.10 RH
38 [04:29:52.028][44494s]temp:26.19 C
39 [04:29:52.036][44494s]hum:18.03 RH
40 [04:46:42.599][45504s]temp:26.18 C
41 [04:46:42.606][45504s]hum:18.02 RH
42 [05:03:33.014][46515s]temp:26.11 C
43 [05:03:33.026][46515s]hum:18.08 RH
44 [05:09:49.067][46891s]Time synchronization succeeds.
45 [05:20:23.590][47525s]temp:26.14 C
```

```

46 [05:20:23.601][47525s]hum:18.05 RH
47 [05:37:13.615][48535s]temp:26.02 C
48 [05:37:13.621][48535s]hum:18.06 RH
49 [05:54:04.029][49546s]temp:25.97 C
50 [05:54:04.041][49546s]hum:18.02 RH
51 [06:09:49.122][50491s]Time synchronization succeeds.
52 [06:10:54.062][50556s]temp:26.02 C
53 [06:10:54.066][50556s]hum:18.04 RH
54 [06:27:44.630][51566s]temp:26.04 C
55 [06:27:44.636][51566s]hum:18.03 RH
56 [06:44:35.044][52577s]temp:25.95 C
57 [06:44:35.057][52577s]hum:18.04 RH
58 [07:01:25.630][53587s]temp:25.92 C
59 [07:01:25.636][53587s]hum:18.08 RH
60 [07:09:49.179][54091s]Time synchronization succeeds.
61 [07:18:16.058][54598s]temp:25.90 C
62 [07:18:16.062][54598s]hum:18.02 RH
63 [07:35:06.078][55608s]temp:25.85 C
64 [07:35:06.082][55608s]hum:18.08 RH
65 [07:51:56.645][56618s]temp:25.79 C
66 [07:51:56.652][56618s]hum:18.11 RH
67 [08:08:47.060][57629s]temp:25.77 C
68 [08:08:47.072][57629s]hum:18.15 RH
69 [08:09:49.244][57691s]Time synchronization succeeds.
70 [08:25:37.657][58639s]temp:25.76 C
71 [08:25:37.667][58639s]hum:18.15 RH
72 [08:42:28.075][59650s]temp:25.77 C
73 [08:42:28.087][59650s]hum:18.14 RH
74 [08:59:18.093][60660s]temp:25.79 C
75 [08:59:18.097][60660s]hum:18.17 RH
76 [09:10:04.505][61306s]Time synchronization succeeds.
77 [09:16:08.598][61670s]temp:26.08 C
78 [09:16:08.604][61670s]hum:19.02 RH
79 [09:32:59.012][62681s]temp:26.87 C
80 [09:32:59.024][62681s]hum:20.11 RH
81 [09:49:49.598][63691s]temp:27.40 C
82 [09:49:49.604][63691s]hum:20.15 RH
83 [10:06:40.007][64701s]temp:27.37 C
84 [10:06:40.014][64702s]hum:22.93 RH
85 [10:10:34.645][64936s]Time synchronization succeeds.
86 [10:23:30.124][65712s]temp:27.82 C
87 [10:23:30.129][65712s]hum:22.29 RH
88 [unkonw ntp time :08:00:00.363][0s] _____
89 _____
[unkonw ntp time :08:00:00.407][0s]| ____|__ _/ ____| / ____|__
_||/\ | _ \_ _|
90 [unkonw ntp time :08:00:00.410][0s]| |__ | | | | ____| (____ |
| / \ | |_) | | |

```

```

91 [unkonw ntp time :08:00:00.413][0s]|  _|  | | | |  |____\__ \  |
92 | / /\ \ |  _ /  | |
[unkonw ntp time :08:00:00.416][0s]| |____  | | | |____  ____ ) | |
93 | / ____ \ | | \ \  | |
[unkonw ntp time :08:00:00.419][0s]|____|  | _|  \____|  |____/  |_/
94 _/  \_\_ |  \_\ | _|
[unkonw ntp time :08:00:00.422][0s]System start count is 107 !
95 [unkonw ntp time :08:00:00.436][0s]Reset due to power-on event.
96 [unkonw ntp time :08:00:00.443][0s]ETC Power pin has been initialized!
97 [unkonw ntp time :08:00:00.446][0s]ETC Power ON!
98 [unkonw ntp time :08:00:00.448][0s]Bluetooth is initializing ...
99 [unkonw ntp time :08:00:00.746][0s]Bluetooth has been initialized!
100 [unkonw ntp time :08:00:00.797][0s]The T/H sensor is being initialized
101 ...
102 [unkonw ntp time :08:00:00.906][0s]temp:22.13 C
103 [unkonw ntp time :08:00:00.917][0s]hum:21.70 RH
104 [unkonw ntp time :08:00:00.938][0s]LED has been initialized!
105 [unkonw ntp time :08:00:00.947][0s]Network is initializing ...
106 [unkonw ntp time :08:00:00.950][0s]InternetMode: ETH.
107 [unkonw ntp time :08:00:00.953][0s]ETH is initializing ...
108 [unkonw ntp time :08:00:00.957][0s]ConnectionType StasticIP .
109 [unkonw ntp time :08:00:02.706][2s]Delegate eth disconnect status !
110 [unkonw ntp time :08:00:02.718][2s]Delegate eth connected status !
111 [unkonw ntp time :08:00:02.722][2s]Ethernet Link Up !
112 [unkonw ntp time :08:00:02.738][2s]ETH got IP:192.168.5.188
113 [unkonw ntp time :08:00:02.747][2s]ETH got MASK:255.255.255.0
114 [unkonw ntp time :08:00:02.751][2s]ETH got GW:192.168.5.1
115 [unkonw ntp time :08:00:02.754][2s]sntp_restart !
116 [unkonw ntp time :08:00:02.757][2s]ETH has been initialized!
117 [unkonw ntp time :08:00:02.759][2s]Network has been initialized!
118 [unkonw ntp time :08:00:02.763][2s]Webserver is initializing ...
119 [unkonw ntp time :08:00:02.777][2s]Starting HTTP Server on port: '80'
120 [unkonw ntp time :08:00:02.783][2s]Webserver has been initialized!
121 [unkonw ntp time :08:00:02.787][2s]The NTP obtaining time is initializin
122 g ...
123 [unkonw ntp time :08:00:02.791][2s]The NTP obtaining time has been initia
124 lized !
125 [unkonw ntp time :08:00:02.795][2s]Uart1 has been initialized!
126 [unkonw ntp time :08:00:02.825][2s]socketserver is disconnect .
127 [10:35:49.812][4s]Time synchronization succeeds.
128 [10:35:58.481][12s]temp:26.93 C
129 [10:35:58.492][12s]hum:21.72 RH
[10:36:17.203][0s]  ____  ____  ____  ____  ____  ____  ____  ____
[10:36:17.255][0s]|  ____|__  _/  ____|  /  ____|__  _|/\  |  _ \
129 _  __|
[10:36:17.258][0s]| |__  | | | |  ____| (____  | | /  \  | |__ ) |
| |

```

```

130 [10:36:17.261][0s]|  _|  | | | |  _ _ \ _ \  | | / \ \ |  _ /
131 | |
[10:36:17.264][0s]| | _ _  | | | | _ _  _ _ ) | | | / _ _ \ | | \ \
132 | |
[10:36:17.266][0s]| _ _ _ |  | _ | \ _ _ |  | _ _ /  | _ / _  \ _ \ |  \ \
133 | _ |
[10:36:17.269][0s]System start count is 108 !
134 [10:36:17.273][0s]Software reset due to exception/panic.
135 [10:36:17.290][0s]ETC Power pin has been initialized!
136 [10:36:17.293][0s]ETC Power ON!
137 [10:36:17.295][0s]Bluetooth is initializing ...
138 [10:36:17.598][0s]Bluetooth has been initialized!
139 [10:36:17.643][0s]The T/H sensor is being initialized ...
140 [10:36:17.775][0s]temp:21.93 C
141 [10:36:17.786][0s]hum:22.10 RH
142 [10:36:17.807][0s]LED has been initialized!
143 [10:36:17.816][0s]Network is initializing ...
144 [10:36:17.819][0s]InternetMode: ETH.
145 [10:36:17.821][0s]ETH is initializing ...
146 [10:36:17.827][0s]ConnectionType StasticIP .
147 [10:36:19.576][2s]Delegate eth disconnect status !
148 [10:36:19.587][2s]Delegate eth connected status !
149 [10:36:19.590][2s]Ethernet Link Up !
150 [10:36:19.606][2s]ETH got IP:192.168.5.188
151 [10:36:19.617][2s]ETH got MASK:255.255.255.0
152 [10:36:19.620][2s]ETH got GW:192.168.5.1
153 [10:36:19.622][2s]sntp_restart !
154 [10:36:19.625][2s]ETH has been initialized!
155 [10:36:19.627][2s]Network has been initialized!
156 [10:36:19.630][2s]Webserver is initializing ...
157 [10:36:19.634][2s]Starting HTTP Server on port: '80'
158 [10:36:19.648][2s]Webserver has been initialized!
159 [10:36:19.651][2s]The NTP obtaining time is initializing ...
160 [10:36:19.654][2s]The NTP obtaining time has been initialized !
161 [10:36:19.658][2s]Uart1 has been initialized!
162 [10:36:19.680][2s]socketserver is disconnect .
163 [10:36:21.557][0s]  _ _ _  _ _ _  _ _ _  _ _ _  _ _ _  _ _ _
164 _ _ _
[10:36:21.610][0s]|  _ _ | _  _ / _ _ |  / _ _ | _  _ | / \  |  _ \
165 _  _ |
[10:36:21.613][0s]| | _  | | | |  _ _ | ( _  | | | / \  | | _ ) |
166 | |
[10:36:21.615][0s]|  _|  | | | |  _ _ \ _ \  | | / \ \ |  _ /
167 | |
[10:36:21.618][0s]| | _ _  | | | | _ _  _ _ ) | | | / _ _ \ | | \ \
168 | |
[10:36:21.621][0s]| _ _ _ |  | _ | \ _ _ |  | _ _ /  | _ / _  \ _ \ |  \ \
| _ |

```

```

169 [10:36:21.623][0s]System start count is 109 !
170 [10:36:21.627][0s]Software reset due to exception/panic.
171 [10:36:21.644][0s]ETC Power pin has been initialized!
172 [10:36:21.647][0s]ETC Power ON!
173 [10:36:21.649][0s]Bluetooth is initializing ...
174 [10:36:21.948][0s]Bluetooth has been initialized!
175 [10:36:22.000][0s]The T/H sensor is being initialized ...
176

```

使用天线板搜索停车场天线

发送端数据:

Publish地址: /ETC/"**天线MAC地址**"/write

▼ JSON | 复制代码

```

1 {
2     "DeviceSearch": "Search",
3     "mqtt": "write"
4 }
5

```

成功响应:

Subscribe地址: /ETC/"**天线MAC地址**"/read

▼ JSON | 复制代码

```

1 {
2     "devicelist": "[\"MAC:E0E2E6295B24,IP:192.168.5.111,exports:东出口\",
3         \"MAC:E0E2E6295B25,IP:192.168.5.112,exports:西出口\",
4         \"MAC:E0E2E6295B26,IP:192.168.5.116,exports:南出口\",
5         \"MAC:E0E2E6295B27,IP:192.168.5.114,exports:北出口\"]"
6 }

```

测试天线信号

发送端数据:

Publish地址: /ETC/"**天线MAC地址**"/write

JSON | 复制代码

```
1 {
2     "mqtt": "write",
3     "uart": "TEST"
4 }
5
```

成功响应：

Subscribe地址： /ETC/"天线MAC地址"/read

JSON | 复制代码

```
1 {
2     "Uart": "TEST",
3     "uart_status": "OK",
4     "msg": "陕U12345"
5 }
```

数据参数

参数	类型	值
1 Uart	string	TEST
2 uart_status	string	OK：串口成功返回数据 Timeout：超时没有返回数据
3 msg	string	NotScanned：没扫到OBU DataError：成功扫到OBU，数...

3 条记录