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# MQTT APPLICATION

Rev: 1.0

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# 1. PRODUCT

This document is applicable to the following product, take HF2211 for example, other product usage is much the same.

 Ethernet IOT	 Wi-Fi IOT	 GPRS IOT	 4G IOT
FreeRTOS Embedded Network Device [Eport-E20-PIN] [Eport-E20] [Eport-E30]	Wi-Fi Serial Module [Wport-W20] [Wport-W10]	GPRS Serial Server [HF2111] [HF2111A]	4G Serial Server [HF2411]
Linux Embedded Network Device [Eport Pro-EP20-PIN] [Eport Pro-EP20]	Wi-Fi Serial Server [HF2211] [DTU-H100]		4G+WiFi+GPS Serial Server Device [HF2421G]
Ethernet Serial Server [HF5111A] [HF5111B]	Multiple Port Wi-Fi Serial Server [HF2221]		4G+WiFi Serial Server [HF2421]
Multiple Port Ethernet Serial Server [HF5142A] [HF5142B]	Wifi router (rail) [HF8104W]		Rail 4G Router [HF8102] [HF8104]

 Elfin IOT	 IO Control
4G_LTE [Elfin-EG4X]	Wi-Fi IO [HF6208]
GPRS [Elfin-EG1X]	Ethernet IO [HF6508]
Wi-Fi [Elfin-EW1X]	
Ethernet [Elfin-EE1X]	

## 2. HARDWARE

- HF2211 1PCS
- HF2411 1PCS

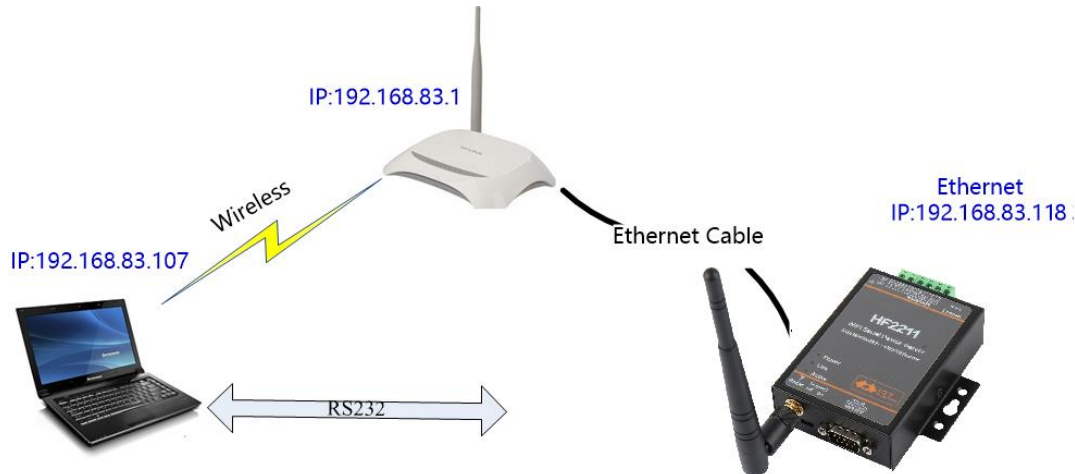
## 3. SOFTWARE

- IOTService
- MQTTfx tools
- UART tools

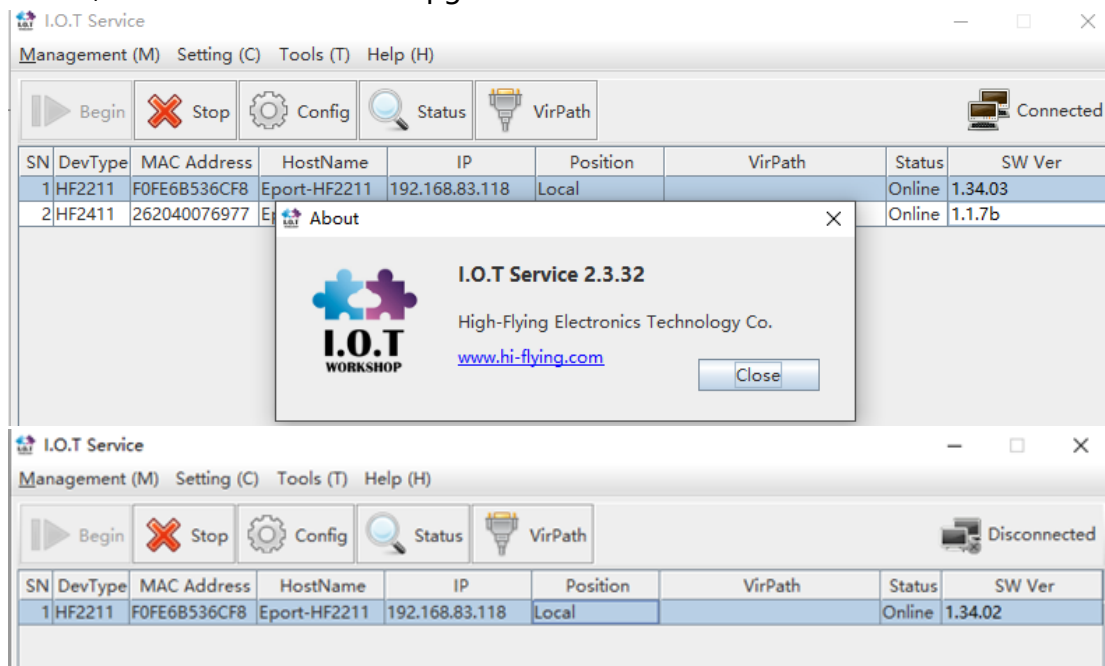
## 4. HF2211 HARDWARE CONNECTION

### 4.1. Test

- Connect device as the following pic



- Open IOTService tools (Tools at least need 2.3.32 Version), See our HF2211 device, Device firmware need upgrade to at least 1.34.02.



- Enable netp MQTT, HF test server: 112.124.43.15, port:1883 (we do not use TLS for our test MQTT server), local port fill with 0 (0 for random port).

Device Setting

System

User:

Password:

HostName:

DHCP:

IP Address:

Mask:

Gate Way:

DNS:

Network Mode:

Longitude:

Latitude:

SOCKET

SOCKET Name:

Protocol:

Server Addr:

Server Port:

Local Port:

Keep Alive:

Time Out:

Rout:

Buffer Size:

DI/DO Ctrl:

WiFi

Mode:

AP SSID:

AP Key:

AP Channel:

STA SSID:

STA Key:

UART

UART No:

Baudrate:

Data Bits:

Stop Bits:

Parity:

Flow Control:

Buffer Size:

LAN

IP Address:

Mask:

DHCP:

Eth Wan:

☐ LAN Separate

- Open webpage, it can also set such information.

192.168.83.118/socket.html

应用 设备 工作 购物 有人科技 百度 21IC电子网 谷歌邮箱 人人网

当前状态

系统设置

串口设置

SOCKET设置

高级设置

其他

通讯设置

修改设备的通讯配置信息

netp +添加 帮助 修改

基本设置

名称: netp

协议: MQTT

Socket设置

服务器地址: 112.124.43.15

服务器端口号: 1883

本地端口号: 0

缓存大小: 1024

心跳时间(s): 60

超时时间(s): 0

协议设置

MQTT版本: 4

MQTT客户端ID: F0FE6B536CF8

MQTT账号: F0FE6B536CF8

MQTT密码: \*\*\*\*\*

订阅主题: F0FE6B536CF8

订阅QoS: 0

- Click following icon to modify more parameters of MQTT.

Device Setting

System  
User: admin  
Password: admin  
HostName: Eport-HF2211  
DHCP: Enable  
IP Address: 192.168.8  
Mask: 255.255.255  
Gate Way: 192.168.1  
DNS: 10.10.10  
Network Mode: Router  
Longitude:  
Latitude:

SOCKET  
SOCKET Name: netp  
Protocol: MQTT  
Server Address: 112.124.43.15

WiFi  
Mode: AP  
AP SSID: HF2211\_6CF8  
AP Key: HF2211  
Scan

MQTT Edit  
Version: 4  
Ping Time: 60  
Client ID: F0FE6B536CF8  
User: F0FE6B536CF8  
Password: F0FE6B536CF8  
Subscribe Topic: down/F0FE6B536CF8  
Subscribe QoS: 0  
Public Topic: up/F0FE6B536CF8  
Public QoS: 0  
Confirm Cancel

UART  
UART No: UART 1  
Baudrate: 115200  
Data Bits: 8  
Stop Bits: 1  
Parity: NONE  
Flow Control: Half-Duplex  
Buffer Size: 1024

Eth Wan: Enable  
LAN Separate

Cancel Detail  
Export Import  
F-Set Upd... F-Set Clear VirPath

Protocol Settings

MQTT Version	4
MQTT Client ID	F0FE6B536CF8
MQTT Account	F0FE6B536CF8
MQTT Password	.....
Subscribe Topic	down/F0FE6B536CF8
Subscribe QoS	0
Publish Topic	up/F0FE6B536CF8
Publish QoS	0
Ping Period(s)	60

MQTT Client ID: Every device Client ID must be different, recommend to use device MAC.

MQTT Account: MQTT login User

MQTT Password: MQTT login Password

- Confirm server status.

**Device Status**

**System**

Product ID: HF2211  
 Software Version: 1.34.02  
 RTC Time: NTP Disabled  
 Up Time: 0-Day 0:33:7  
 Total Free Memory: 1640448  
 Max Block Size: 1640448

**SOCKET**

SOCKET Name: netp  
 Protocol: MQTT  
 Status: Connected  
 Server IP: 112.124.43.15  
 Recv Bytes: 135 Recv Frames: 25  
 Send Bytes: 99 Send Frames: 16  
 Fail Bytes: 0 Fail Frames: 0

**UART**

UART No: UART 1  
 Config: 115200,8,1,NONE  
 Recv Bytes: 99 Recv Frames: 16  
 Send Bytes: 135 Send Frames: 25  
 Fail Bytes: 0 Fail Frames: 0

**Network**

HostName: Eport-HF2211  
 DHCP: Enable  
 IP Address: 192.168.83.118  
 Mask: 255.255.255.0  
 Gate Way: 192.168.83.1  
 MAC Address: F0FE6B536CF8

**WiFi**

Status: Disconnected  
 RSSI: 0

Buttons: Reload, Restart, Edit

- Open MQTTfx tools, fill in the server information.

**Edit Connection Profiles**

112.124.43.15  
 188.40.235.75  
 M2M Eclipse  
 a16PZjkCgqg  
 commander.worxlandroid.com  
 ljhmqt.weikeyun.cn  
 local mosquitto  
 mqtt-test.cn-qingdao.aliyuncs.com  
 xzyxd.vicp.net\_module

**Connection Profile**

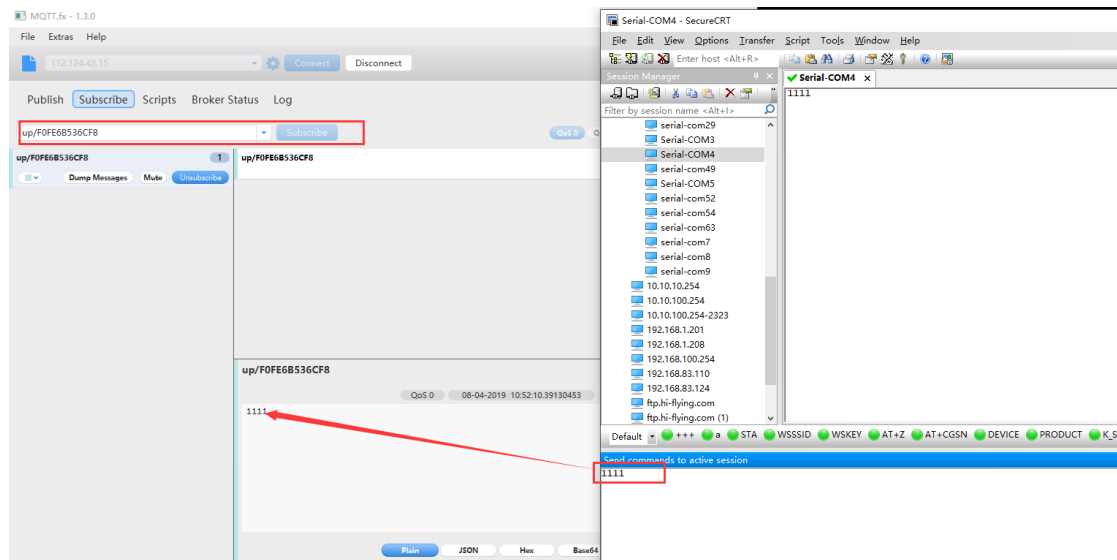
Profile Name: 112.124.43.15  
 Broker Address: 112.124.43.15  
 Broker Port: 1883  
 Client ID: c95b2f9bb5654897b964f082ab2d0ebb Generate

General User Credentials SSL/TLS Proxy Last Will and Testament

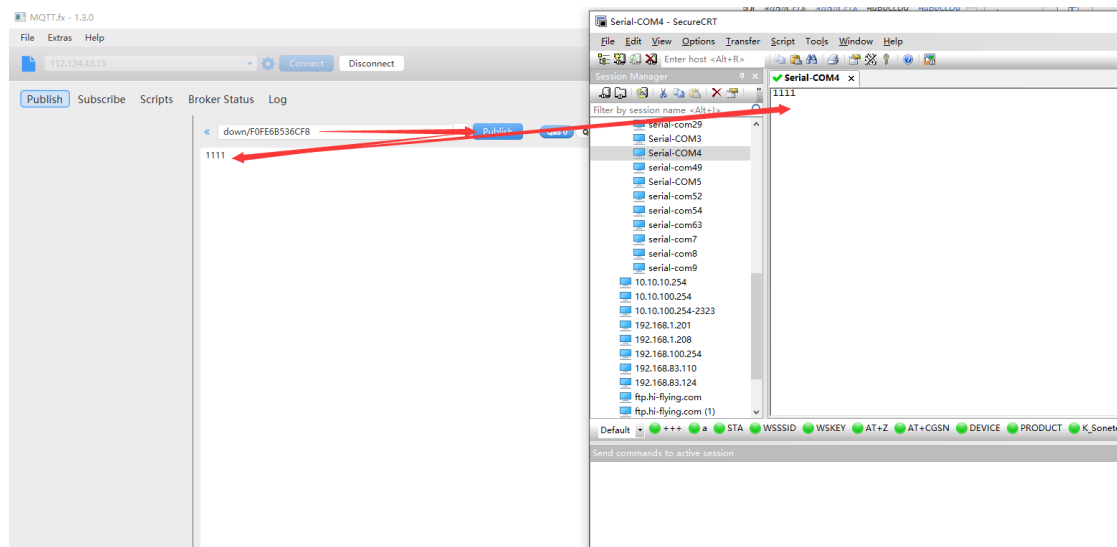
Connection Timeout: 30  
 Keep Alive Interval: 60  
 Clean Session: ☒  
 MQTT Version: ☐ Use Default  
 3.1

Buttons: Clear Publish History, Clear Subscription History, Revert, Cancel, OK, Apply

- Set subscribe topic in MQTTFX tools(Should be the same as publish topic in device), open UART tools (SecureCRT or other tools) , Send UART data to device and the tools shows the data received.



- Set publish topic in the tools (The same with subscribe topic in device), and send data, then the device UART output the data.

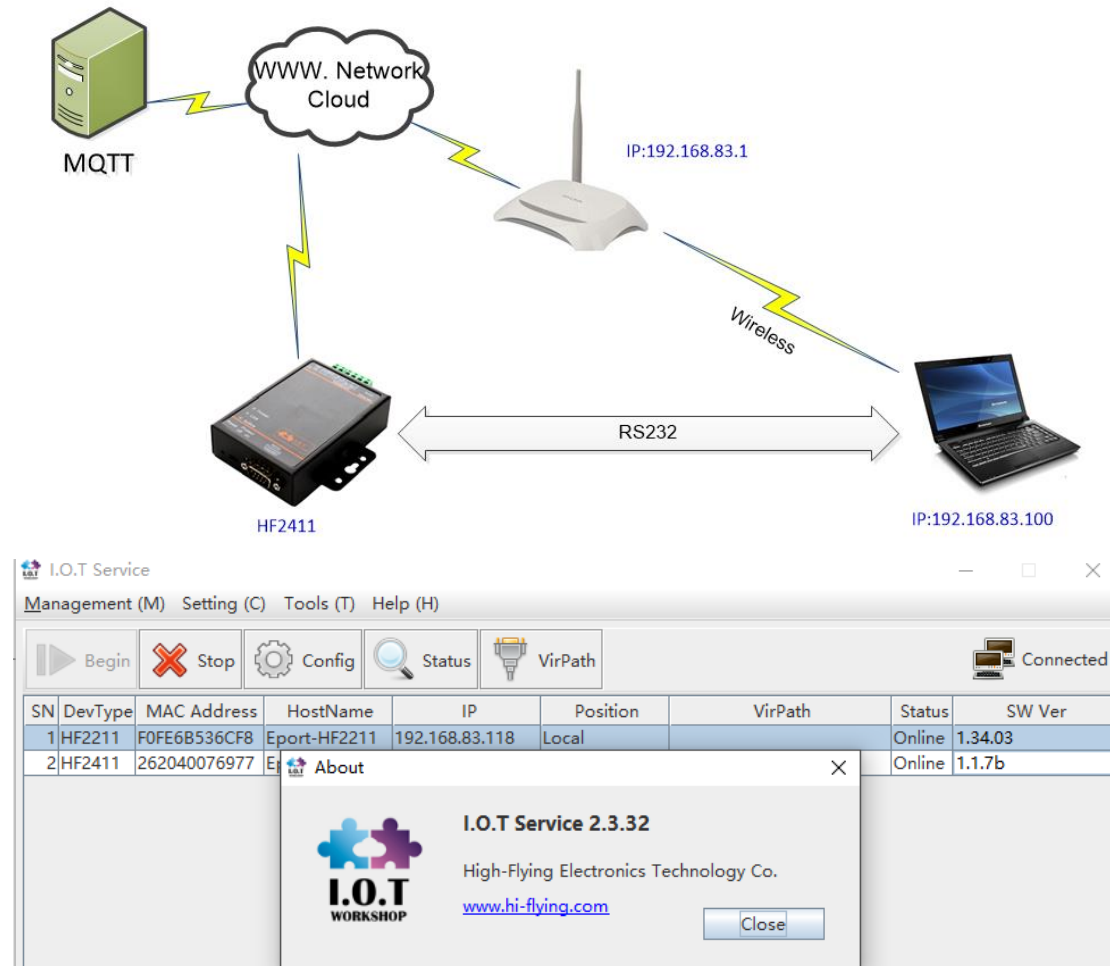




## 5. HF2411 HARDWARE CONNECTION

### 5.1. Test

- Connect device as the following pic



PC Serial Para

COM: COM4 Refr...

Baudrate: 115200

Data Bits: 8

Parity: NONE

Stop Bits: 1

Auto Close COM

Read Device Clear

Quit CMD Detail

HF2411 1.1.7e(2019-04-08 17:00)

SIM Para

IMEI: 866262040055062

ICCID: 89860030091871006351

Status: Connected

RSSI: 21

4G\_V1.786

Refresh

UART

UART No: uart1

Baudrate: 115200

Data Bits: 8

SOCKET

SOCKET Name: A

Protocol: OFF

Server Addr:

Server Port: 0

Connect Mode: Always

Burst Time: 300

Route:

HeartBeat Time: 0

HeartBeat Serial: ...

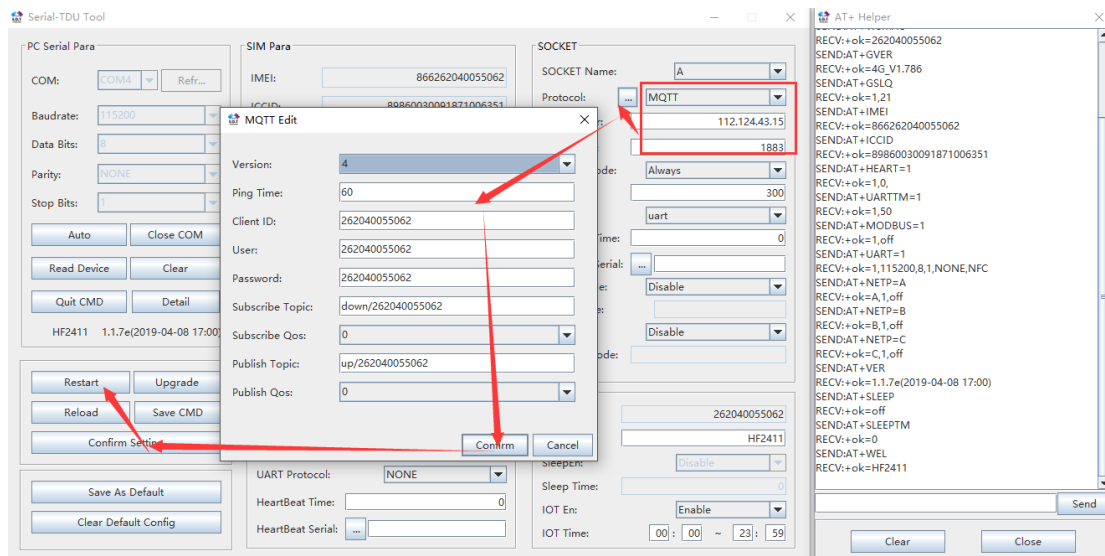
Regist Mode: Disable

Regist Code:

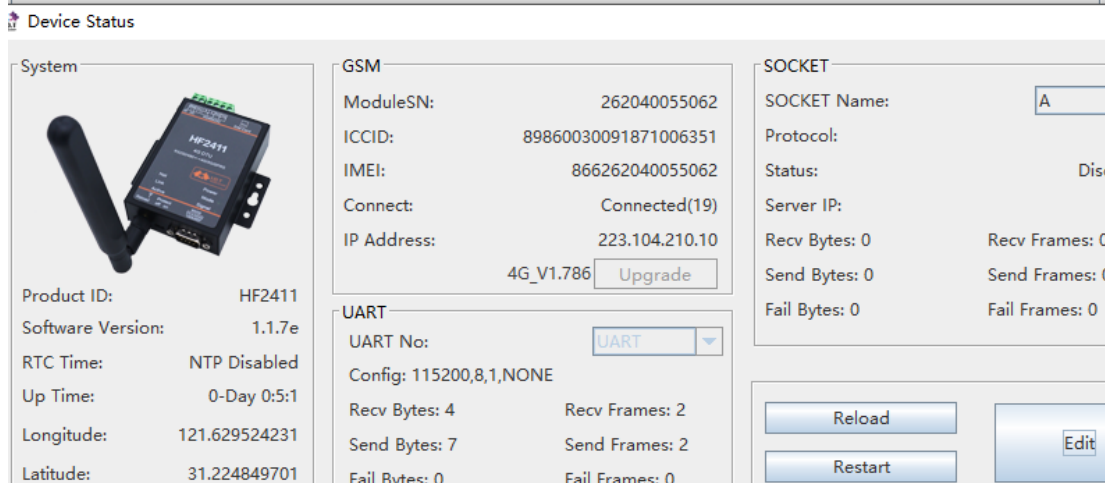
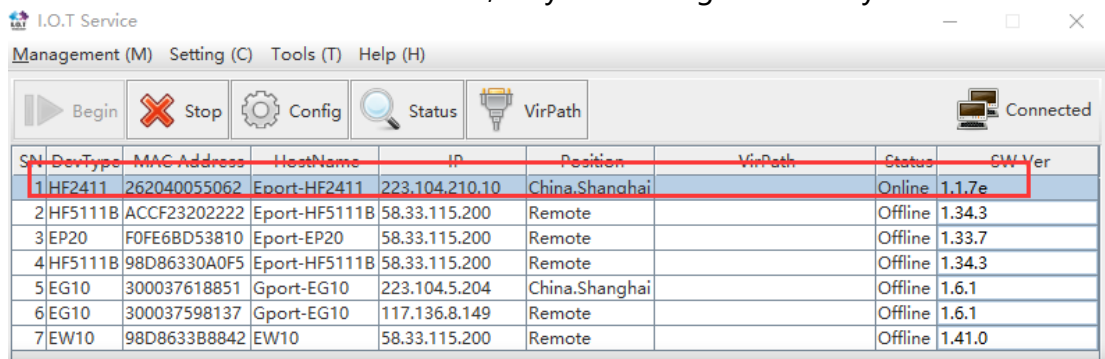
Data Tag: Disable

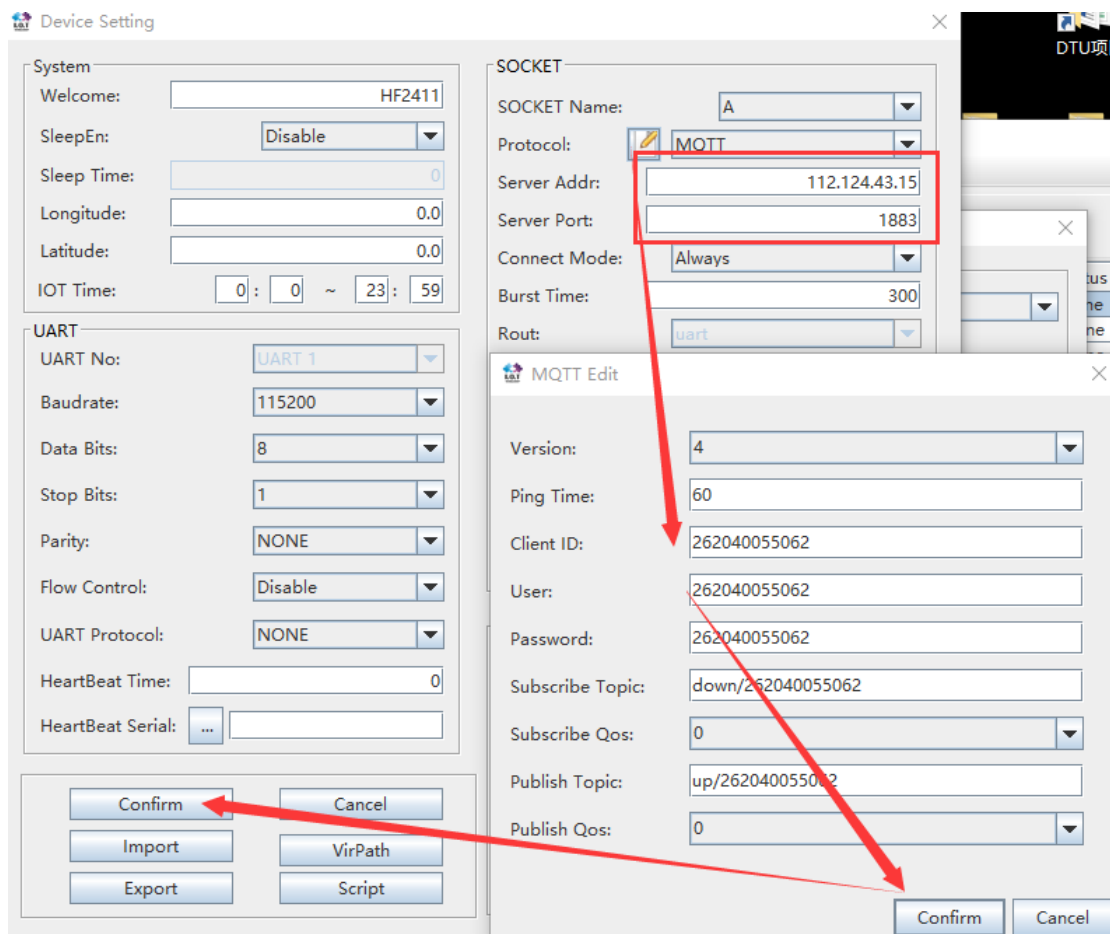
Data Tag Code:

- Enable netp MQTT, HF test server: 112.124.43.15, port:1883(we do not use TLS for our test MQTT server), local port fill with 0(0 for random port).



- If device is bound to IOTService, may also config it wirelessly.



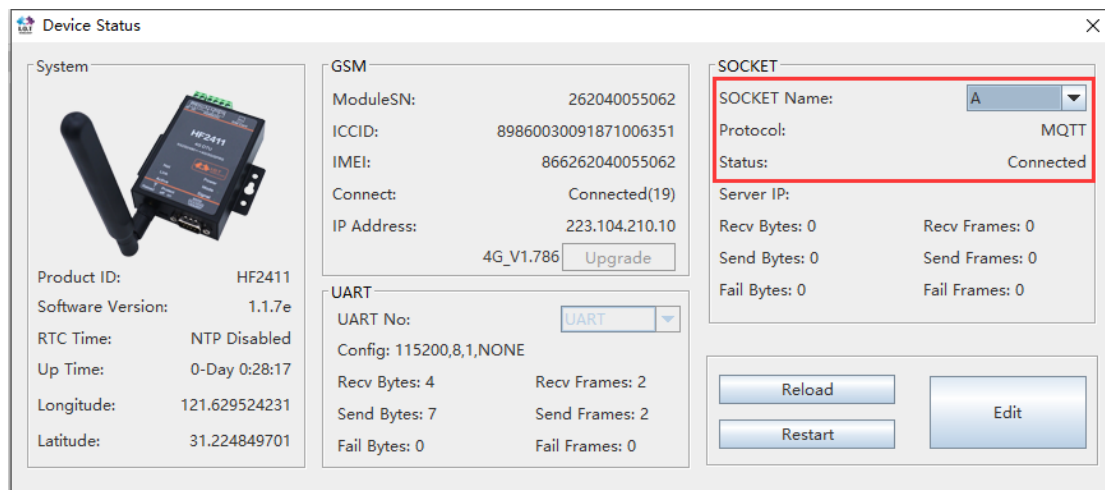


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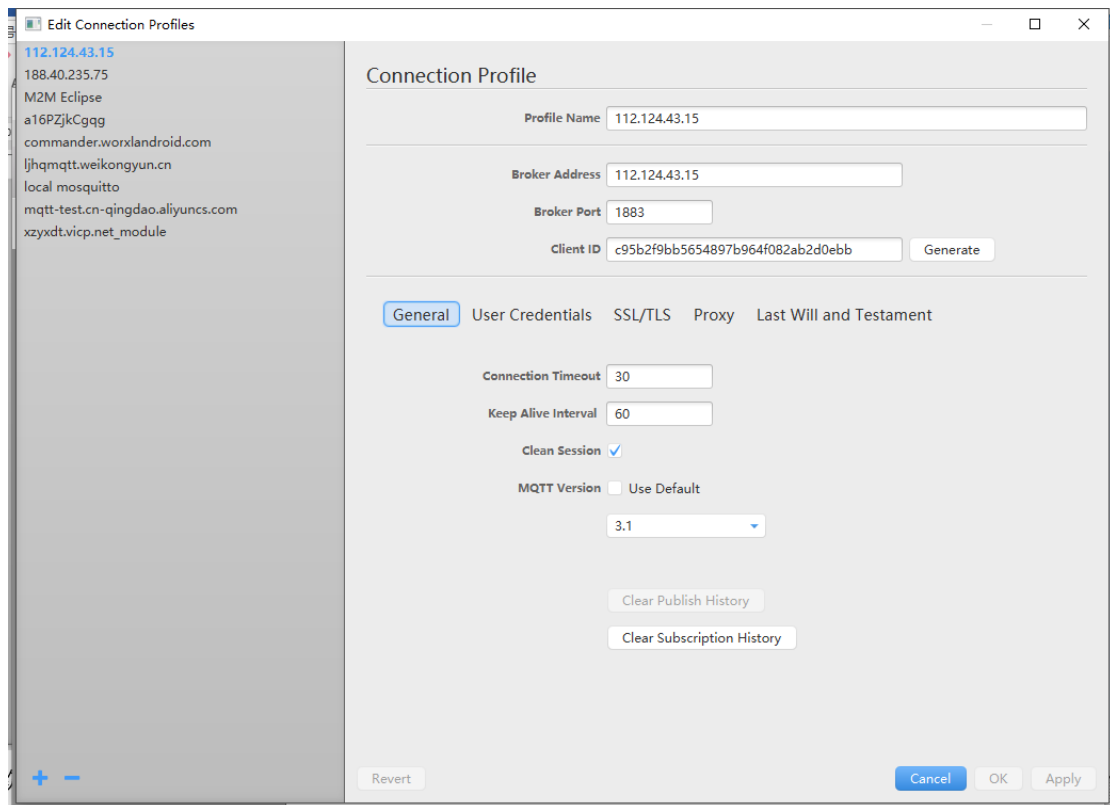
MQTT Account: MQTT login User

MQTT Password: MQTT login Password

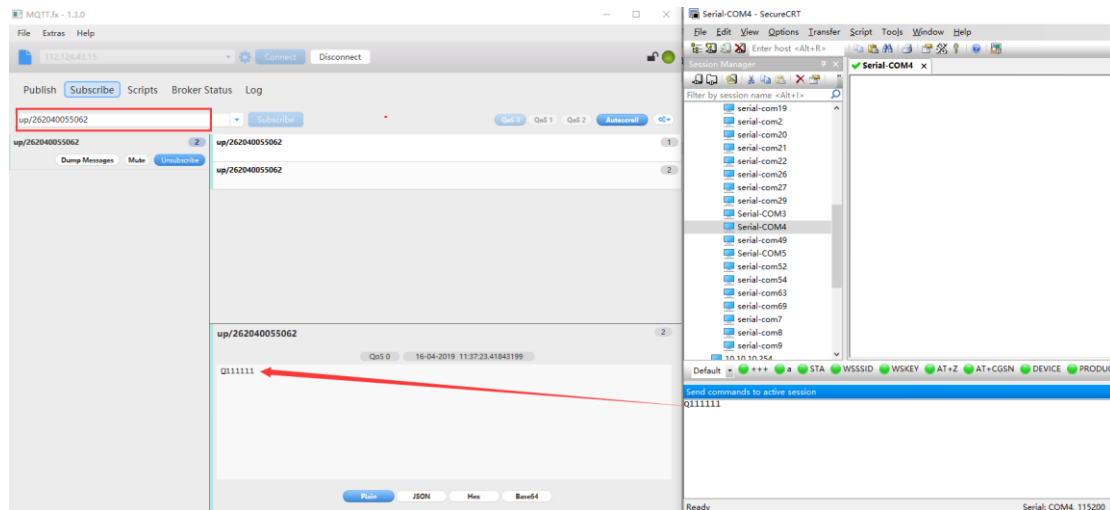
- Confirm server status.



- Open MQTTfx tools, fill in the server information.



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