

473/476 Use Guidance-How to use MQTT

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1. Module connection MQTT server communication

1.1 Summary

This part gives the sample process, set the MQTT parameter of the module A、B, connect the module A、B to the MQTT server and communicate with the server.

1.2 Operating instructions

NOTE:

1.Through the MCU to send command to control module,The command statement ends with the character "\r\n";

2.Through the serial port tool send command to control module,The command statement ends with the Enter;

3.For ease of viewing, the information sent back to the command is displayed in the ASCII code. If there is information that is not comprehensive or garbled, may have special characters return information,China text or other information,Then please display in sixteen.

Please remember the above, these are not repeated at the back of the document.

1.3 Parameter setting

Module A parameters

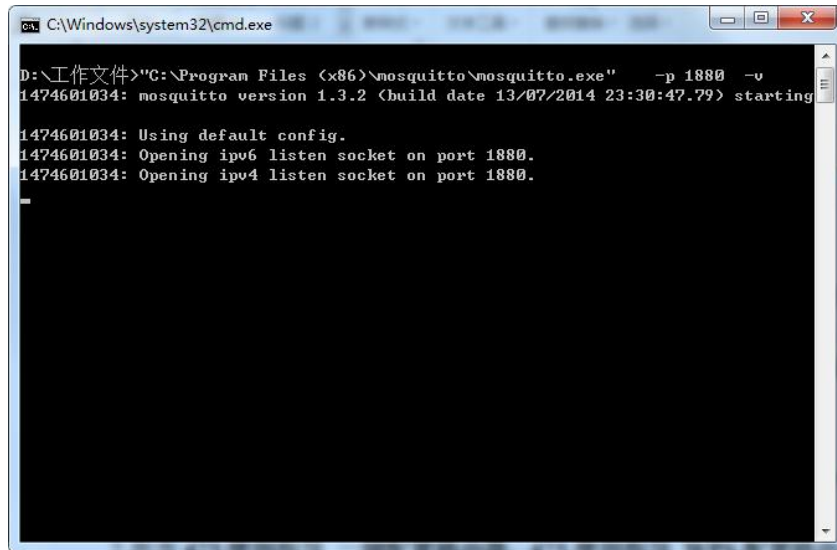
```
clientId:DXOE  
alive:30  
username:a  
password:aaa  
svr_ip:192.168.0.13  
svr_port:1880  
sub_topic:modulB  
pub_topic:modulA
```

Module B parameters

```
clientId:CSCJ  
alive:30  
username:b  
password:bbb  
svr_ip:192.168.0.13  
svr_port:1880  
sub_topic:modulA  
pub_topic:modulB
```

1.4 Operation steps

Install mosquitto software,Create a virtual MQTT serve,In the PC side CMD interface to enter "C:\Program Files (x86)\mosquitto\mosquitto.exe" -p 1880 -v(C:\Program Files (x86)\mosquitto\mosquitto.exe is the file path mosquitto.exe, 1880 is the Server port number) , MQTT server to create success as shown below:



```

C:\Windows\system32\cmd.exe
D:\工作文件>"C:\Program Files (x86)\mosquitto\mosquitto.exe" -p 1880 -v
1474601034: mosquitto version 1.3.2 (build date 13/07/2014 23:30:47.79) starting

1474601034: Using default config.
1474601034: Opening ipv6 listen socket on port 1880.
1474601034: Opening ipv4 listen socket on port 1880.
    
```

Module A setup process:

1.Power to module

Return: Welcome to RAK473(Welcome to RAK476), also show as sixteen(57 65 6C 63 6F 6D 65 20 74 6F 20 52 41 4B 34 37 33(36) 0D 0A) 。

2.Configure the module to the router, Can refer **473476Use guidance-How to Easyconfig**、**473476Use guidance-How to use WPS** and so on.

3.Initialize mqtt parameters

Send: at+mqtt_init=DXOE,30\r\n

Return: 4F 4B 0D 0A

4.Set authentication parameters

Send: at+mqtt_auth=a,aaa\r\n

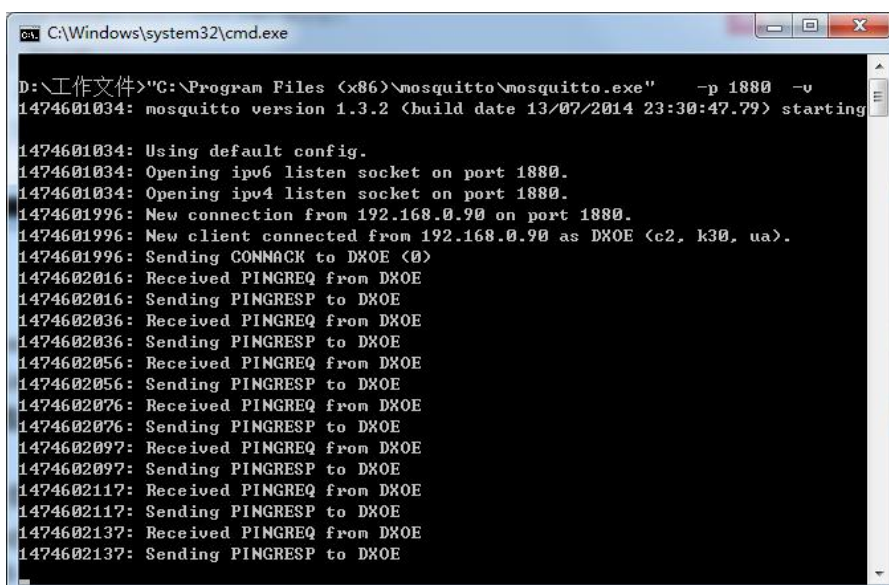
Return: 4F 4B 0D 0A

5.Connect server

Send: at+mqtt_con=192.168.0.13,1880,0\r\n(If it is 476 module the last 0 get rid of)

Return: 4F 4B 0D 0A

Connected to the server will be shown as the following figure:



```

C:\Windows\system32\cmd.exe
D:\工作文件>"C:\Program Files (x86)\mosquitto\mosquitto.exe" -p 1880 -v
1474601034: mosquitto version 1.3.2 (build date 13/07/2014 23:30:47.79) starting

1474601034: Using default config.
1474601034: Opening ipv6 listen socket on port 1880.
1474601034: Opening ipv4 listen socket on port 1880.
1474601996: New connection from 192.168.0.90 on port 1880.
1474601996: New client connected from 192.168.0.90 as DXOE (c2, k30, ua).
1474601996: Sending CONNACK to DXOE (0)
1474602016: Received PINGREQ from DXOE
1474602016: Sending PINGRESP to DXOE
1474602036: Received PINGREQ from DXOE
1474602036: Sending PINGRESP to DXOE
1474602056: Received PINGREQ from DXOE
1474602056: Sending PINGRESP to DXOE
1474602076: Received PINGREQ from DXOE
1474602076: Sending PINGRESP to DXOE
1474602097: Received PINGREQ from DXOE
1474602097: Sending PINGRESP to DXOE
1474602117: Received PINGREQ from DXOE
1474602117: Sending PINGRESP to DXOE
1474602137: Received PINGREQ from DXOE
1474602137: Sending PINGRESP to DXOE
    
```

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6.Set subscription

Send: at+mqtt_sub=moduleB\r\n

Return: 4F 4B 0D 0A

7.Set push theme

Send: at+mqtt_pub=moduleA,1\r\n

Return: 4F 4B 0D 0A

Module B setup process:

According to the parameters of module B, the configuration mode of the reference module A, To bconfiguration parameters of the module B.

1.Power to module

Return: Welcome to RAK473(Welcome to RAK476), also show as sixteen(57 65 6C 63 6F 6D 65 20 74 6F 20 52 41 4B 34 37 33(36) 0D 0A) 。

2.Configure the module to the router, Can refer **473476Use guidance-How to Easyconfig**、**473476Use guidance-How to use WPS** and so on. (Be careful the module A、 B and the sever must in the same network)

3.Initialize mqtt parameters

Send: at+mqtt_init=CSCJ,30\r\n

Return: 4F 4B 0D 0A

4.Set authentication parameters

Send: at+mqtt_auth=b,bbb\r\n

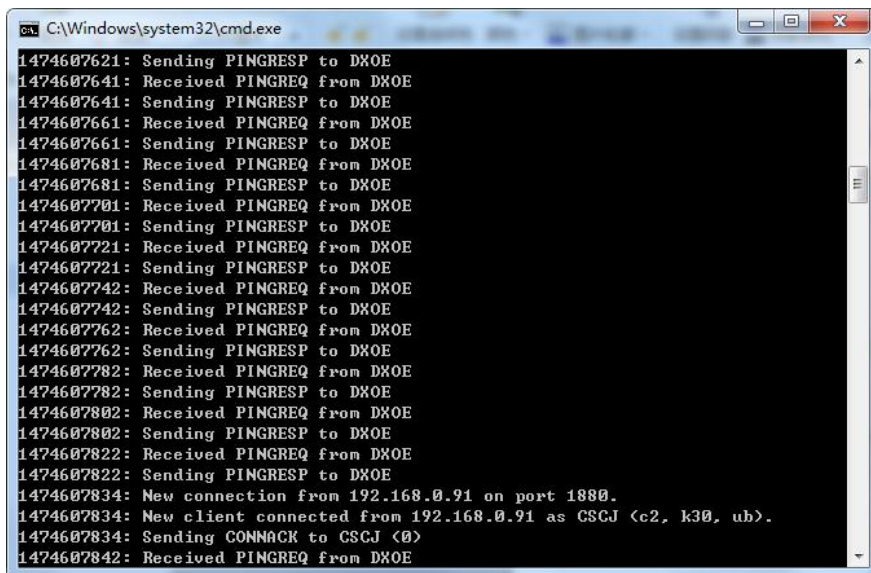
Return: 4F 4B 0D 0A

5.Connect sever

Send: at+mqtt_con=192.168.0.13,1880,0\r\n(If it is 476 module the last 0 get rid of)

Return: 4F 4B 0D 0A

Connected to the server will be shown as the following figure:



```

C:\Windows\system32\cmd.exe
1474607621: Sending PINGRESP to DXOE
1474607641: Received PINGREQ from DXOE
1474607641: Sending PINGRESP to DXOE
1474607661: Received PINGREQ from DXOE
1474607661: Sending PINGRESP to DXOE
1474607681: Received PINGREQ from DXOE
1474607681: Sending PINGRESP to DXOE
1474607701: Received PINGREQ from DXOE
1474607701: Sending PINGRESP to DXOE
1474607721: Received PINGREQ from DXOE
1474607721: Sending PINGRESP to DXOE
1474607742: Received PINGREQ from DXOE
1474607742: Sending PINGRESP to DXOE
1474607762: Received PINGREQ from DXOE
1474607762: Sending PINGRESP to DXOE
1474607782: Received PINGREQ from DXOE
1474607782: Sending PINGRESP to DXOE
1474607802: Received PINGREQ from DXOE
1474607802: Sending PINGRESP to DXOE
1474607822: Received PINGREQ from DXOE
1474607822: Sending PINGRESP to DXOE
1474607834: New connection from 192.168.0.91 on port 1880.
1474607834: New client connected from 192.168.0.91 as CSCJ <c2, k30, ub>.
1474607834: Sending CONNACK to CSCJ <0>
1474607842: Received PINGREQ from DXOE
    
```

6.Set subscription

Send: at+mqtt_sub=moduleA\r\n

Return: 4F 4B 0D 0A

7.Set push theme

Send: at+mqtt_pub=moduleB,1\r\n

Return: 4F 4B 0D 0A

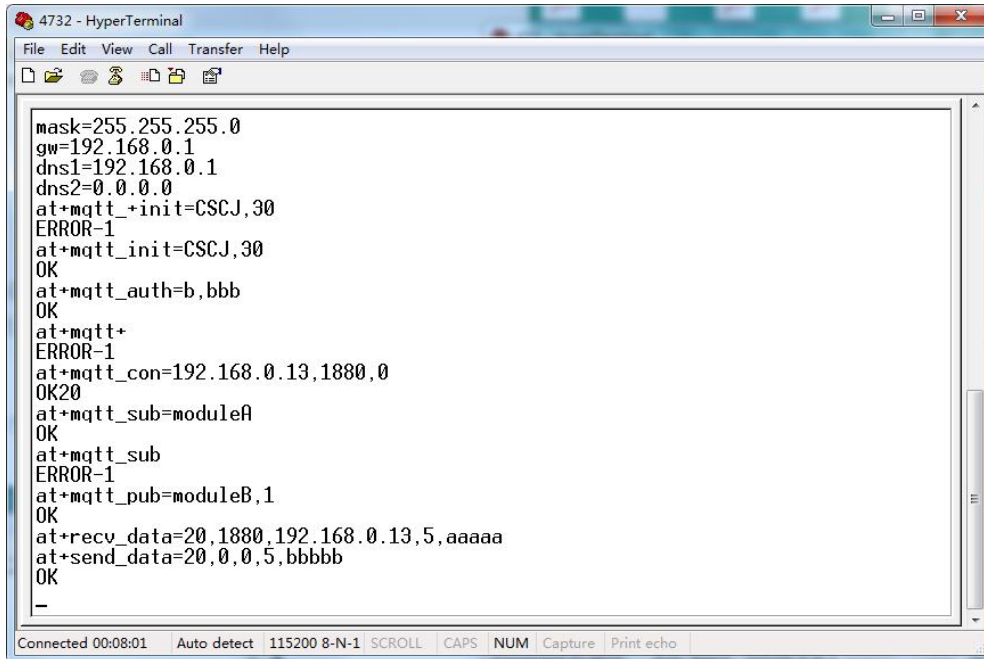
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Push theme for the moduleA module A to subscribe to the theme of the module B moduleB push data

Send: at+send_data=20,0,0,5,aaaaa\r\n

Module A Return: 4F 4B 0D 0A

Module B Return: at+recv_data=20,1880,192.168.0.13,5,aaaaa\r\n



```

4732 - HyperTerminal
File Edit View Call Transfer Help
mask=255.255.255.0
gw=192.168.0.1
dns1=192.168.0.1
dns2=0.0.0.0
at+mqtt_init=CSCJ,30
ERROR-1
at+mqtt_init=CSCJ,30
OK
at+mqtt_auth=b,bbb
OK
at+mqtt+
ERROR-1
at+mqtt_con=192.168.0.13,1880,0
OK20
at+mqtt_sub=moduleA
OK
at+mqtt_sub
ERROR-1
at+mqtt_pub=moduleB,1
OK
at+recv_data=20,1880,192.168.0.13,5,aaaaa
at+send_data=20,0,0,5,bbbbbb
OK
-
    
```

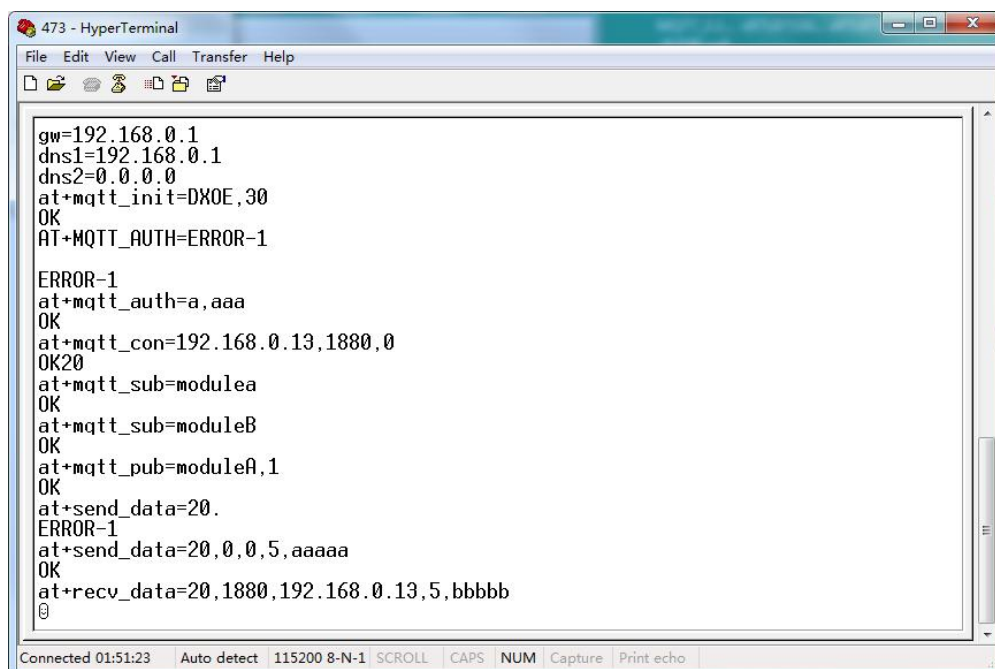
picture 1-1 Module B serial port to send commands to the schematic

Push theme for the moduleB module B to subscribe to the theme of the module A moduleA push data

Send: at+send_data=20,0,0,5,bbbbbb\r\n

Module B Return: 4F 4B 0D 0A

Module A Return: at+recv_data=20,1880,192.168.0.13,5,bbbbbb\r\n



```

473 - HyperTerminal
File Edit View Call Transfer Help
gw=192.168.0.1
dns1=192.168.0.1
dns2=0.0.0.0
at+mqtt_init=DX0E,30
OK
AT+MQTT_AUTH=ERROR-1
ERROR-1
at+mqtt_auth=a,aaa
OK
at+mqtt_con=192.168.0.13,1880,0
OK20
at+mqtt_sub=moduleA
OK
at+mqtt_sub=moduleB
OK
at+mqtt_pub=moduleA,1
OK
at+send_data=20.
ERROR-1
at+send_data=20,0,0,5,aaaaa
OK
at+recv_data=20,1880,192.168.0.13,5,bbbbbb
@
    
```

picture 1-2 Module A serial port to send commands to the schematic

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2. Modify record

Version	Author	Time	Modify content
V1.0	王连博	2016/02/02	Create documents
V1.1	操小成	2016/09/23	Update document