

473Use Guidance-How to use MQTTS

© 2015 Rakwireless all rights reserved .

Mentioned in this document , the actual company and
product names, trademarks are their respective owners.

After update the new version, this document without prior notice.

1. Module connection MQTTS server communication

1.1 Summary

This part gives the sample process, set the [MQTTS](#) parameter of the module A、 B, connect the module A、 B to the MQTTS 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:as
password:asasas
svr_ip:192.168.0.108
svr_port:1880
sub_topic:modulBS
pub_topic:modulAS
```

Module B parameters

```
clientId:CSCJ
alive:30
username:bs
password:bsbsbs
svr_ip:192.168.0.108
svr_port:1880
sub_topic:modulAS
pub_topic:modulBS
```

1.4 Operation steps

Install mosquitto software,Create a virtual MQTT serve , Open mosquitto Installation directory mosquitto.conf file , Change the path in the red box in the following picture to the path of the SSL certificate(**Certificate path cannot contain spaces**)。 If you do not want to set the certificate, In the blue box will be changed into require_certificate false , If you want to set the certificate, In the blue box will be changed into require_certificate true. In the PC side CMD interface to enter "C:\Program Files (x86)\mosquitto\mosquitto.exe" -c "C:\Program Files (x86)\mosquitto\mosquitto.conf" -p 1880 -v (C:\Program Files

V1.1

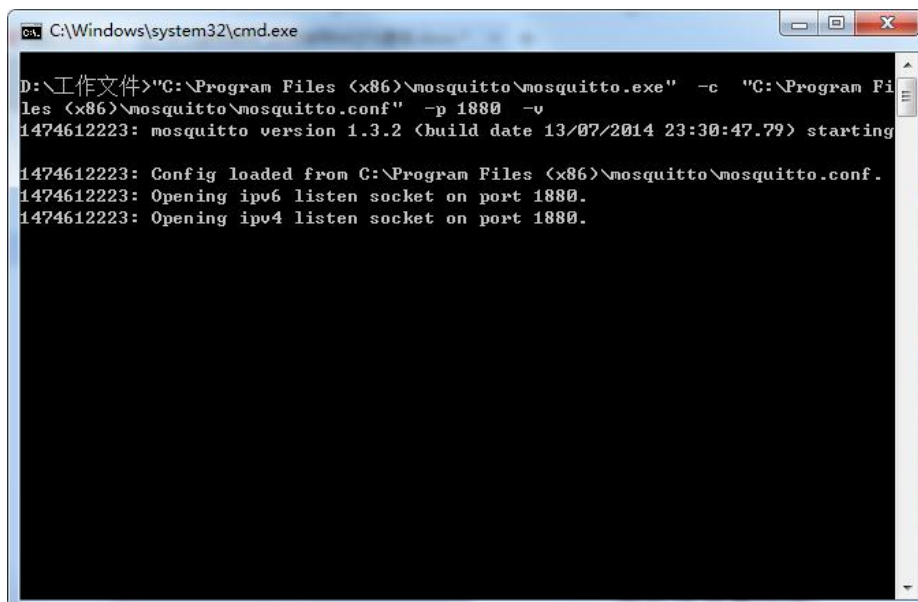
(x86)\mosquitto\mosquitto.exe show mosquitto.exe File path, "C:\Program Files (x86)\mosquitto\mosquitto.conf"
 show mosquitto.conf File path, 1880 show the MQTT sever Port number)

Be careful: If you want to use SSL, The ssl server Packet must less than 8K.

```

162 # certificate files must have ".crt" as the file ending and you must run
163 # "c_rehash <path to capath>" each time you add/remove a certificate.
164 cafile C:\Users\Administrator\Desktop\rakcert\raktest_ca.crt
165 #capath
166
167 # Path to the PEM encoded server certificate.
168 certfile C:\Users\Administrator\Desktop\rakcert\raktest_client.crt
169
170 # Path to the PEM encoded keyfile.
171 keyfile C:\Users\Administrator\Desktop\rakcert\raktest_client.key
172
173 # This option defines the version of the TLS protocol to use for this listener.
174 # The default value will always be the highest version that is available for
175 # the version of openssl that the broker was compiled against. For openssl >=
176 # 1.0.1 the valid values are tlsv1.2 tlsv1.1 and tlsv1. For openssl < 1.0.1 the
177 # valid values are tlsv1.
178 #tls_version
179
180 # By default a TLS enabled listener will operate in a similar fashion to a
181 # https enabled web server, in that the server has a certificate signed by a CA
182 # and the client will verify that it is a trusted certificate. The overall aim
183 # is encryption of the network traffic. By setting require_certificate to true,
184 # the client must provide a valid certificate in order for the network
185 # connection to proceed. This allows access to the broker to be controlled
186 # outside of the mechanisms provided by MQTT.
187 require_certificate true
188
189 # If require_certificate is true, you may set use_identity_as_username to true
190 # to use the CN value from the client certificate as a username. If this is
    
```

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" -c "C:\Program Files (x86)\mosquitto\mosquitto.conf" -p 1880 -v
1474612223: mosquitto version 1.3.2 (build date 13/07/2014 23:30:47.79) starting
1474612223: Config loaded from C:\Program Files (x86)\mosquitto\mosquitto.conf.
1474612223: Opening ipv6 listen socket on port 1880.
1474612223: Opening ipv4 listen socket on port 1880.
    
```

Module A setup process:

1.Power to module

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

V1.1

2. Configure the module to the router, Can refer [473476Use guidance-How to Easyconfig](#)、[473476Use guidance-How to use WPS](#) and so on.

3. If you want to set SSL Certificates, Can refer [473Use guidance-How to set SSL Certificates, \(SSL Certificates must be consistent with the certificate uploaded by the server\)](#)。

4. Initialize mqtt parameters

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

Return: 4F 4B 0D 0A

5. Set authentication parameters

Send: at+mqtt_auth=as,asasas\r\n

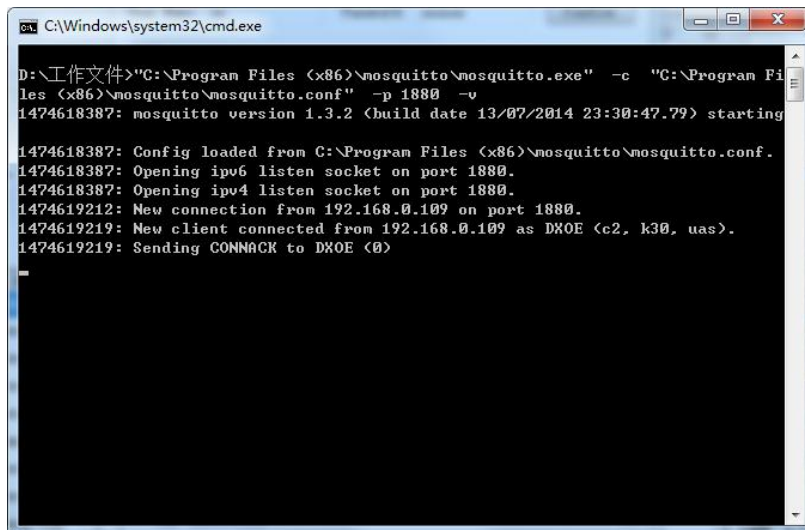
Return: 4F 4B 0D 0A

6. Connect server

Send: at+mqtt_con=192.168.1.113,1881,0\r\n

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" -c "C:\Program Files (x86)\mosquitto\mosquitto.conf" -p 1880 -v
1474618387: mosquitto version 1.3.2 (build date 13/07/2014 23:30:47.79) starting

1474618387: Config loaded from C:\Program Files (x86)\mosquitto\mosquitto.conf.
1474618387: Opening ipv6 listen socket on port 1880.
1474618387: Opening ipv4 listen socket on port 1880.
1474619212: New connection from 192.168.0.109 on port 1880.
1474619219: New client connected from 192.168.0.109 as DXOE (c2, k30, uas).
1474619219: Sending CONNACK to DXOE (0)
    
```

7. Set subscription

Send: at+mqtt_sub=moduleBS\r\n

Return: 4F 4B 0D 0A

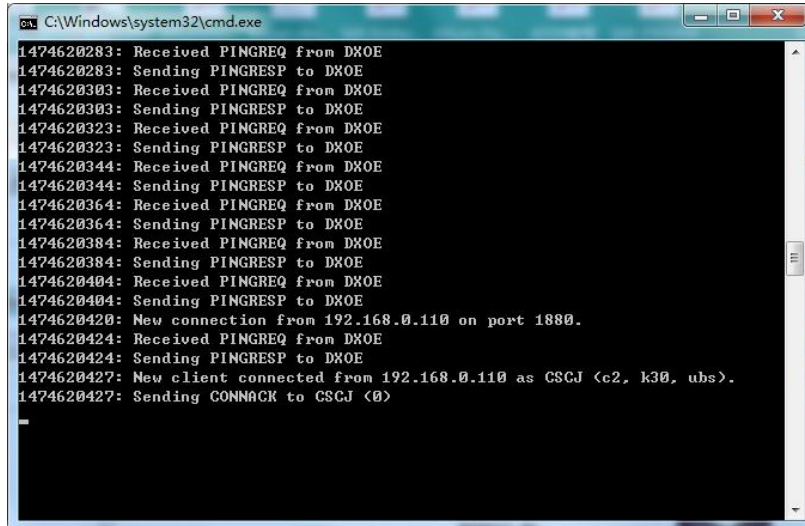
8. Set push theme

Send: at+mqtt_pub=moduleAS,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.



```

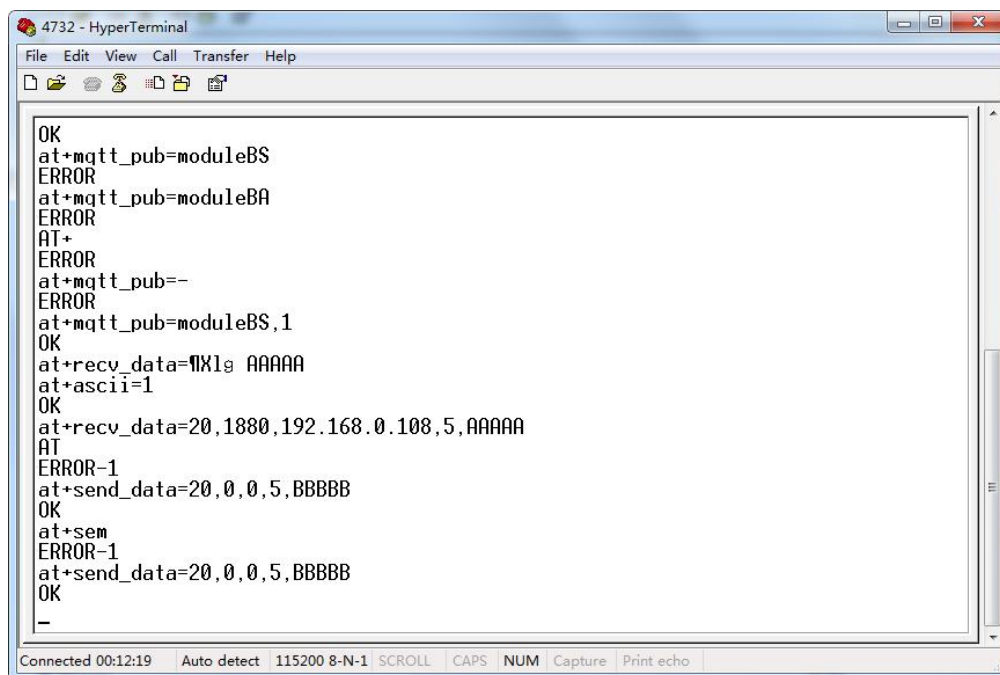
C:\Windows\system32\cmd.exe
1474620283: Received PINGREQ from DXOE
1474620283: Sending PINGRESP to DXOE
1474620303: Received PINGREQ from DXOE
1474620303: Sending PINGRESP to DXOE
1474620323: Received PINGREQ from DXOE
1474620323: Sending PINGRESP to DXOE
1474620344: Received PINGREQ from DXOE
1474620344: Sending PINGRESP to DXOE
1474620364: Received PINGREQ from DXOE
1474620364: Sending PINGRESP to DXOE
1474620384: Received PINGREQ from DXOE
1474620384: Sending PINGRESP to DXOE
1474620404: Received PINGREQ from DXOE
1474620404: Sending PINGRESP to DXOE
1474620420: New connection from 192.168.0.110 on port 1880.
1474620424: Received PINGREQ from DXOE
1474620424: Sending PINGRESP to DXOE
1474620427: New client connected from 192.168.0.110 as CSCJ <c2, k30, ub>.
1474620427: Sending CONNACK to CSCJ <0>
    
```

Push theme for the moduleAS module A to subscribe to the theme of the module B moduleBS push data

Return: at+send_data=20,0,0,5,AAAAA\r\n

Module B Return: OK\r\n

Module A Return: at+recv_data=20,1880,192.168.0.108,5,AAAAA\r\n



```

4732 - HyperTerminal
File Edit View Call Transfer Help
OK
at+mqtt_pub=moduleBS
ERROR
at+mqtt_pub=moduleBA
ERROR
AT+
ERROR
at+mqtt_pub=-
ERROR
at+mqtt_pub=moduleBS,1
OK
at+recv_data=1X1g AAAAA
at+ascii=1
OK
at+recv_data=20,1880,192.168.0.108,5,AAAAA
AT
ERROR-1
at+send_data=20,0,0,5,BBBBB
OK
at+sem
ERROR-1
at+send_data=20,0,0,5,BBBBB
OK
    
```

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

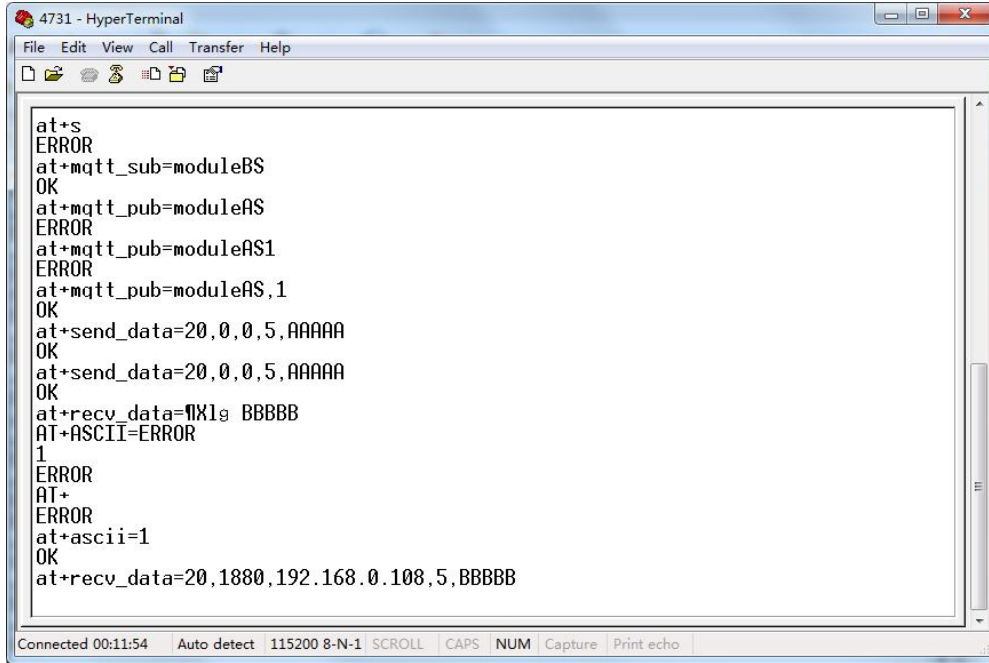
Push theme for the moduleBS module B to subscribe to the theme of the module A moduleAS push data

Return: at+send_data=20,0,0,5,BBBBB\r\n

Module B Return: OK\r\n

Module A Return: at+recv_data=20,1880,192.168.0.108,5,BBBBB\r\n

V1.1



```
4731 - HyperTerminal
File Edit View Call Transfer Help
[at+s
ERROR
at+mqtt_sub=moduleBS
OK
at+mqtt_pub=moduleAS
ERROR
at+mqtt_pub=moduleAS1
ERROR
at+mqtt_pub=moduleAS,1
OK
at+send_data=20,0,0,5,AAAAA
OK
at+send_data=20,0,0,5,AAAAA
OK
at+recv_data=11x1g BBBB
AT+ASCII=ERROR
1
ERROR
AT+
ERROR
at+ascii=1
OK
at+recv_data=20,1880,192.168.0.108,5,BBBBB
Connected 00:11:54 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```

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

V1.1

2. Modify record

| Version | Author | Time | Modify content |
|---------|--------|------------|------------------|
| V1.0 | 王连博 | 2016/02/02 | Create documents |
| V1.1 | 操小成 | 2016/09/24 | Update document |