QSTM32
Test Guide

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About the Document

Revision History

Version	Date	Author	Description
1.0	2025-06-16	Mandy.Wang	Initial Version
2.0	2025-08-26	Mandy.Wang	1. Added IoT Application Protocol Online Testing Platform (Chapter 2.4.1). 2. Updated Save log Test commands (Chapter 3.1) 3. Updated HTTP(S) Test commands (Chapter 3.4). 4. Updated the Test Files (Chapter 4) 5. Updated all log (Chapter 4)

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1 Introduction

The article mainly illustrates how to test common functions (TCPUDP/FTP(s)/HTTP(s)/PSM/MQTT(s)) in Quectel STM32 LQFP64 EVK V2.0 board and Quectel Wireless Cellular LTE/LPWA Module TE-A board.

2 Test Setup

This chapter introduces how to use the STM32 EVK and module TE-A for testing. Before starting the procedures below, please ensure modules and the STM32 EVK are correctly assembled.

2.1. Preparation

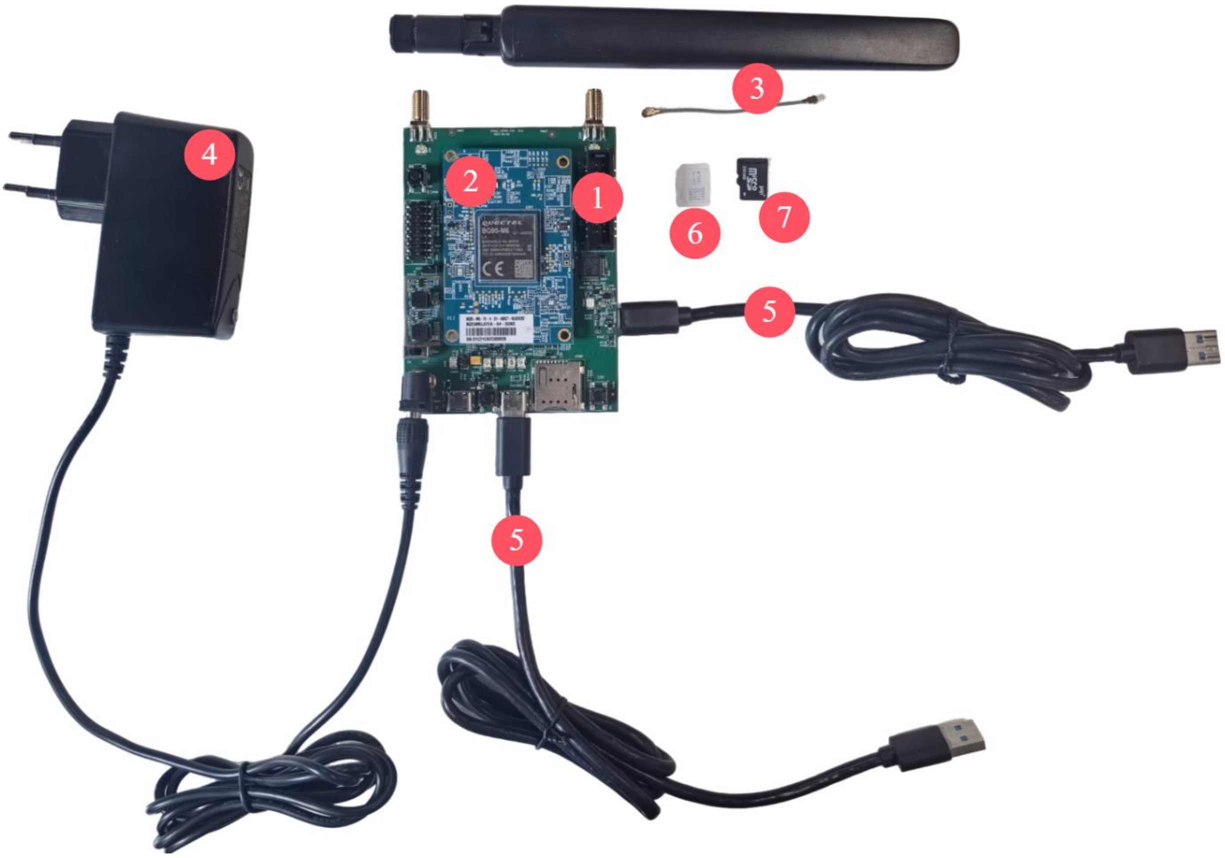


Figure 1: Accessories Assembly

Table 1: Accessories List

ID	Components
1	STM32 LQFP64 EVK V2.0 Adapter board
2	Wireless Cellular Module TE-A board
3	RF cable, and Cellular antenna
4	Power Supply DC Adapter 5V
5	USB Cable, used to download the firmware and do function test
6	SIM Card
7	SD Card: Store the certificate, test files, and save log

2.2. Operation Procedures

2.2.1. Turn on the device

1. Connect the module TE-A to the STM32 EVK via connectors J101 and J102.
2. Insert a (U)SIM card into the USIM1 card connector on EVK.
3. Insert a SD card into the SD1 connector.
4. Use RF cables to connect the module TE-A to the EVB, and connect the antenna to the EVK. Or connect antennas to the module TE-A directly.
5. Connect the STM32 EVK to a 5 V/ 2 A power, then switch S201 to the “ON” side. Then D206 (power supply ON/OFF indicator) will light up, which indicates that the power supply for the whole EVK board is ready
6. Since the STM32 EVK has already been programmed with a firmware by Quectel, so the pre-installed software program will turn on the module automatically.

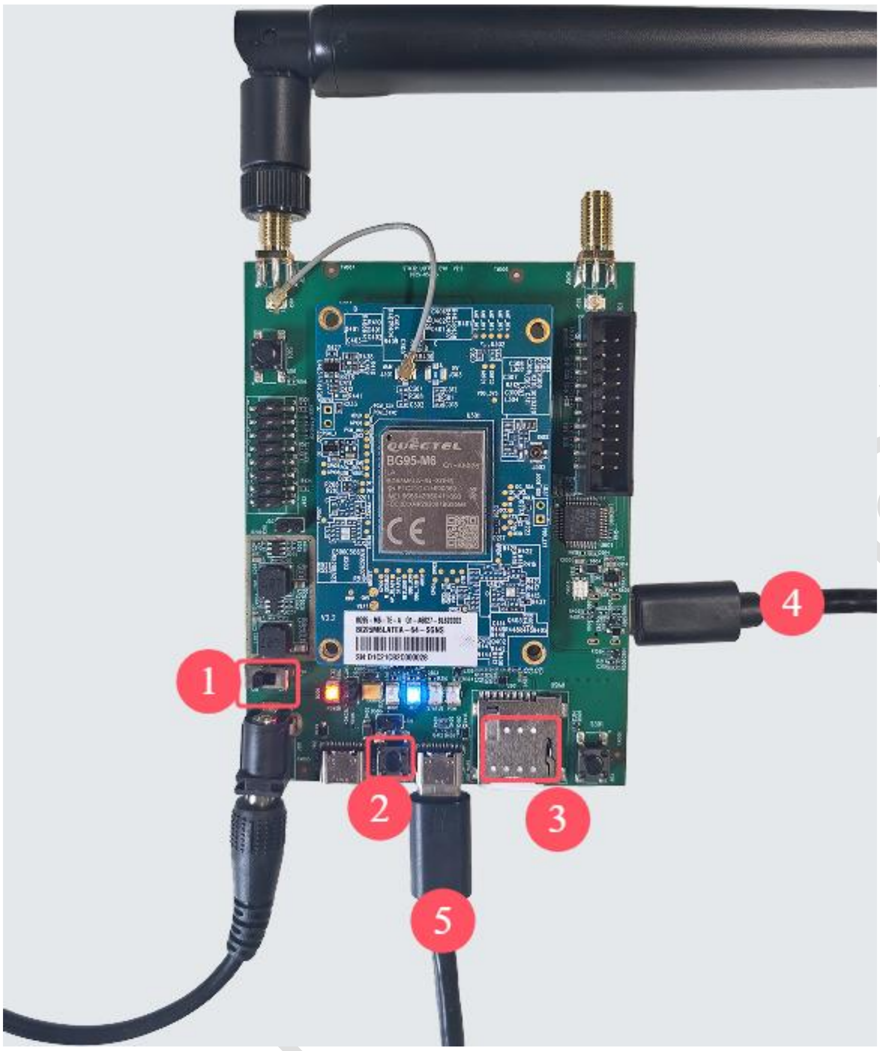


Figure 2: Top View of STM32 EVK

NOTE

❶ S201: Input power control switch
❷ POWKEY S302
❸ USIM1 Card slot, please insert the SIM card
❹ J602 USB Interface, used to download the firmware
❺ J403 USB Interface, used to do function test

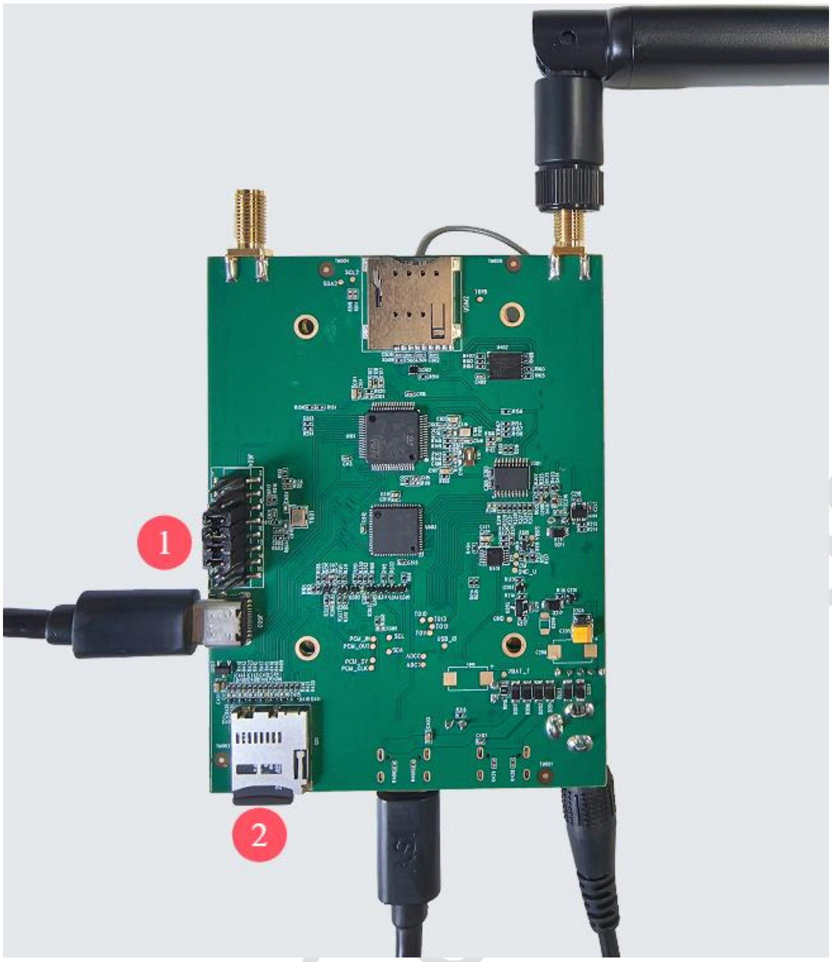


Figure 3: Bottom View of STM32 EVK

NOTE

❶ Jumper, please connect refer to the ***Figure 3***
❷ SD Card slot, please insert the SD card.

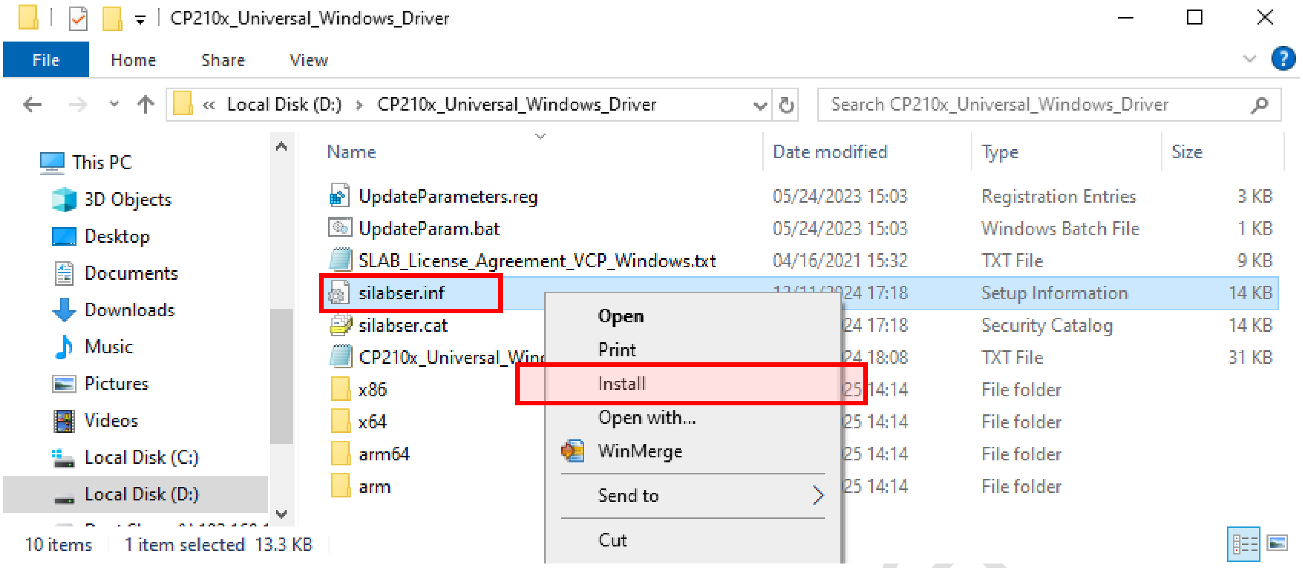
2.2.2. Turn off the device

Switch S201 to the “OFF” side, then the device will be turned off.

2.2.3. Port Introduction

1. Turn on the module according to the procedure in ***Chapter 2.2.1***
2. Connect the STM32 EVK and a PC with USB Cable through USB Type-C interface. J602 USB interface is used to update STM32 EVK firmware. J403 USB interface 1 is connected with MCU debug port by default, which can be used to do function test. Please refer to ***Figure 2*** to confirm the USB interface position of J602 and J403.
3. Install Driver
   - UART driver: CP210x Universal Windows Driver

Extract the installation package CP210x_Universal_Windows_Driver.zip -> Right-click on **silabser.inf** -> Click **"Install".** Please refer to ***Figure 4*.**



CP210x_Universal_Windows_Driver

Local Disk (D:) › CP210x_Universal_Windows_Driver

Search CP210x_Universal_Windows_Driver

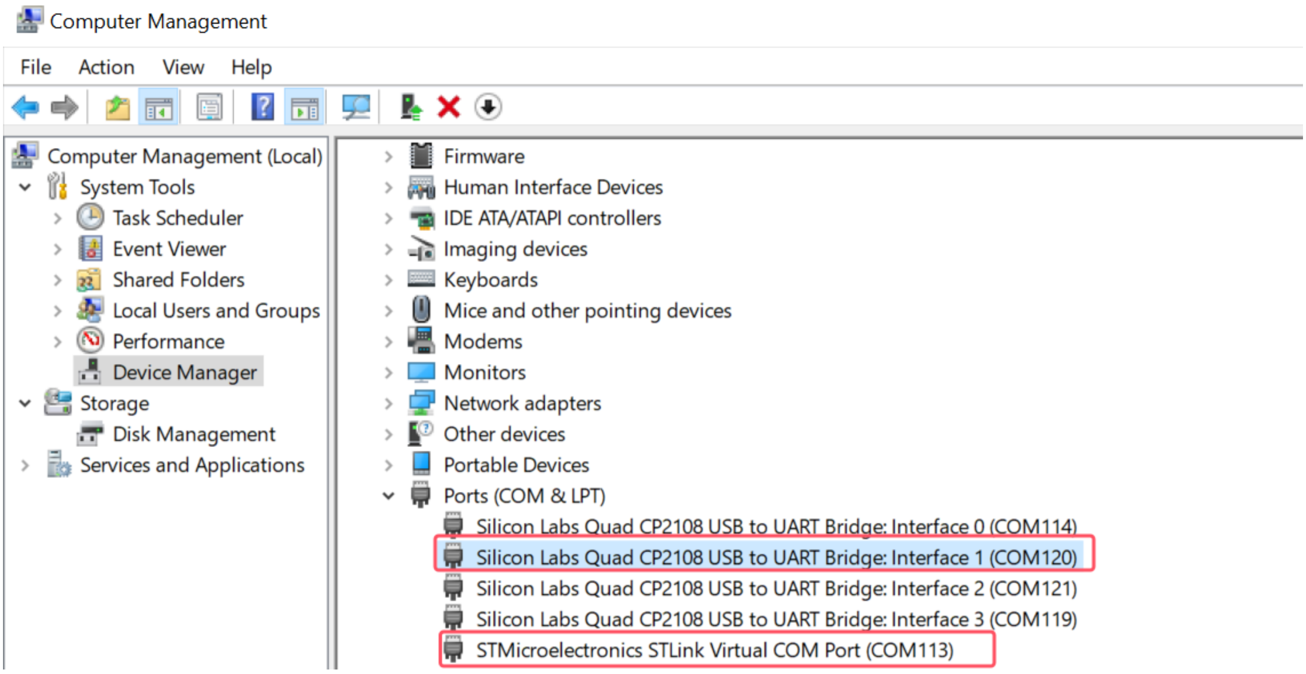
Name	Date modified	Type	Size
UpdateParameters.reg	05/24/2023 15:03	Registration Entries	3 KB
UpdateParam.bat	05/24/2023 15:03	Windows Batch File	1 KB
SLAB_License_Agreement_VCP_Windows.txt	04/16/2021 15:32	TXT File	9 KB
silabser.inf	12/11/2024 17:18	Setup Information	14 KB
silabser.cat	24 17:18	Security Catalog	14 KB
CP210x_Universal_Wind	24 18:08	TXT File	31 KB
x86	25 14:14	File folder	
x64	25 14:14	File folder	
arm64	25 14:14	File folder	
arm	25 14:14	File folder	

10 items 1 item selected 13.3 KB

Figure 4: Install the serial port driver

- ST-Link Driver: ST-LINK Windows Driver

4. After the driver is loaded successfully, from PC Device Manager we can find the Ports showed as below.
   The Silicon Labs Quad CP2108 USB to UART Bridge Interface 1 is used to function test.
   The STLink Virtual COM Port is used to download the firmware of STM32.
   For other port functions, please refer to ***document [1]***



Computer Management

Ports (COM & LPT)
- Silicon Labs Quad CP2108 USB to UART Bridge: Interface 0 (COM114)
- Silicon Labs Quad CP2108 USB to UART Bridge: Interface 1 (COM120)
- Silicon Labs Quad CP2108 USB to UART Bridge: Interface 2 (COM121)
- Silicon Labs Quad CP2108 USB to UART Bridge: Interface 3 (COM119)
- STMicroelectronics STLink Virtual COM Port (COM113)

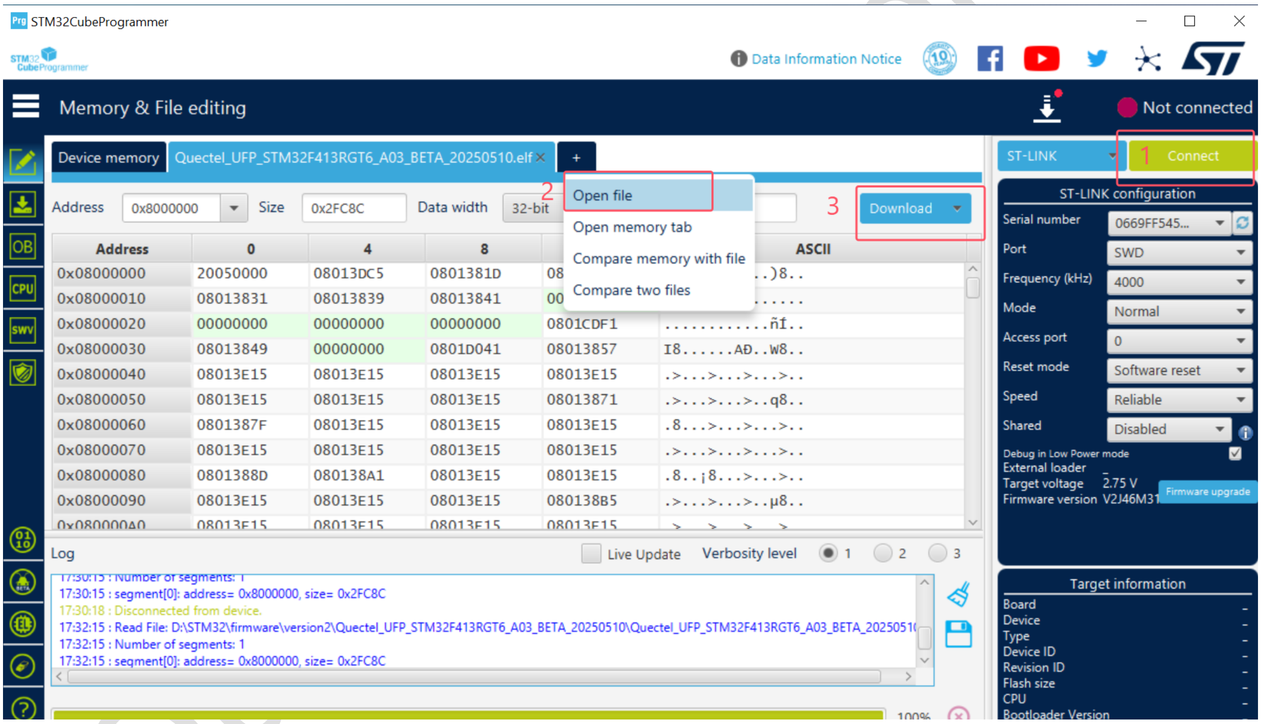
Figure 5: Port Introduction

2.3. Download STM32 firmware

Turn on the device, and connect the USB cable with PC according to the procedure in ***Chapter 2.2.1 and 2.2.3***.

We use the STM32CubeProgrammer tool to download STM32 firmware. Please open the STM32CubeProgrammer tool and refer to following steps to download:

1. Click "**Connect**" button to connect the STM32 EVK board.
2. Open file, select the firmware "Quectel_UFP_STM32F413RGT6_A03.elf", which is the STM32 firmware.
3. Click "**Download**" button to download the firmware, then wait "File download complete" message outputted.
4. Remove J602 USB cable, and switch S201 to the "OFF" side, and then "ON" side, then the device will be restarted successfully.



Address 0x8000000 Size 0x2FC8C Data width 32-bit

```
Address      0         4         8         C         ASCII
0x08000000   20050000  08013DC5  0801381D  08        ..)8..
0x08000010   08013831  08013839  08013841  00        ......
0x08000020   00000000  00000000  00000000  0801CDF1  ............ñÍ..
0x08000030   08013849  00000000  0801D041  08013857  I8......AÐ..W8..
0x08000040   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
0x08000050   08013E15  08013E15  08013E15  08013871  .>...>...>..q8..
0x08000060   0801387F  08013E15  08013E15  08013E15  .8...>...>...>..
0x08000070   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
0x08000080   0801388D  080138A1  08013E15  08013E15  .8..¡8...>...>..
0x08000090   08013E15  08013E15  08013E15  080138B5  .>...>...>..µ8..
0x080000A0   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
```

Log ☐ Live Update Verbosity level ● 1 ○ 2 ○ 3

```
17:30:15 : Number of segments: 1
17:30:15 : segment[0]: address= 0x8000000, size= 0x2FC8C
17:30:18 : Disconnected from device.
17:32:15 : Read File: D:\STM32\firmware\version2\Quectel_UFP_STM32F413RGT6_A03_BETA_20250510\Quectel_UFP_STM32F413RGT6_A03_BETA_2025051(
17:32:15 : Number of segments: 1
17:32:15 : segment[0]: address= 0x8000000, size= 0x2FC8C
```

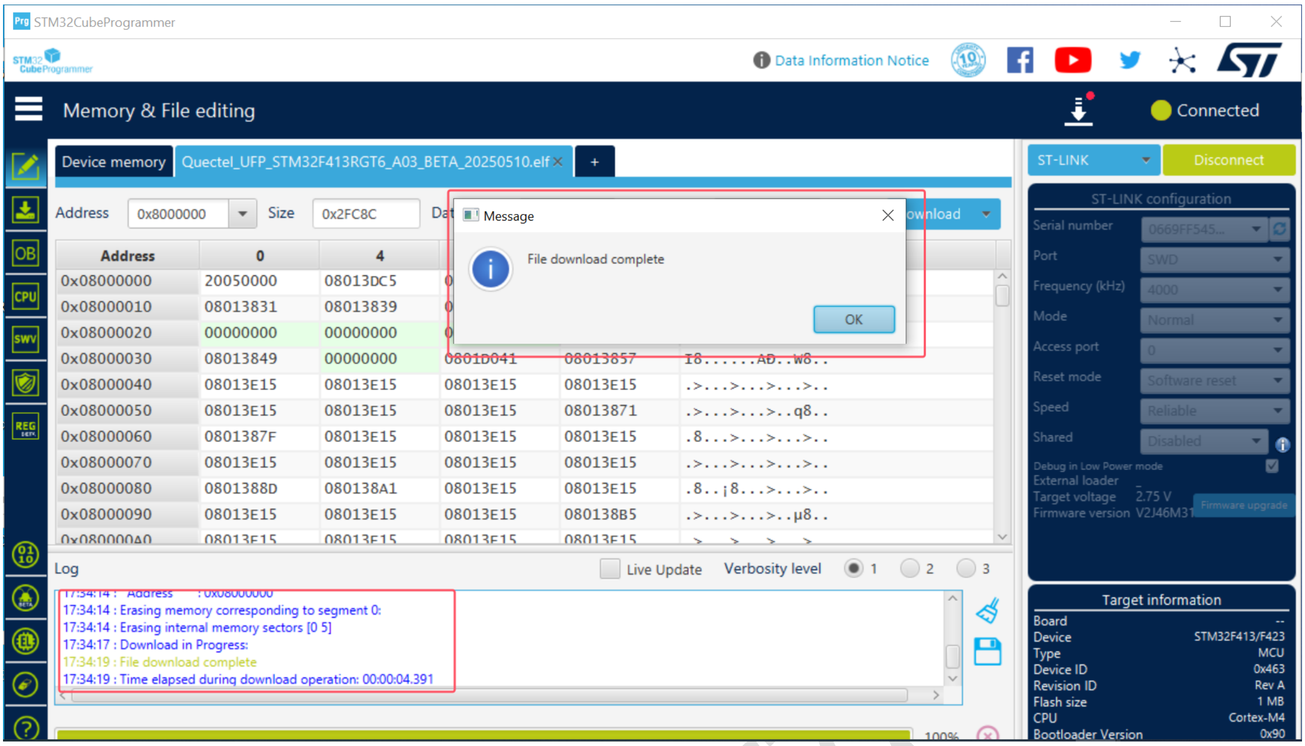
ST-LINK configuration

Serial number 0669FF545...
Port SWD
Frequency (kHz) 4000
Mode Normal
Access port 0
Reset mode Software reset
Speed Reliable
Shared Disabled
Debug in Low Power mode ☑
External loader _
Target voltage 2.75 V
Firmware version V2J46M31

Target information

Board -
Device -
Type -
Device ID -
Revision ID -
Flash size -
CPU -
Bootloader Version -

Figure 6: Download STM32 firmware



STM32CubeProgrammer

Memory & File editing

Connected

Device memory | Quectel_UFP_STM32F413RGT6_A03_BETA_20250510.elf

Address 0x8000000 Size 0x2FC8C

Message: File download complete OK

```
Address      0         4         
0x08000000   20050000  08013DC5  0
0x08000010   08013831  08013839  0
0x08000020   00000000  00000000  0
0x08000030   08013849  00000000  0801D041  08013857  I8......AÐ..W8..
0x08000040   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
0x08000050   08013E15  08013E15  08013E15  08013871  .>...>...>..q8..
0x08000060   0801387F  08013E15  08013E15  08013E15  .8...>...>...>..
0x08000070   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
0x08000080   0801388D  080138A1  08013E15  08013E15  .8..¡8...>...>..
0x08000090   08013E15  08013E15  08013E15  080138B5  .>...>...>..µ8..
0x080000A0   08013E15  08013E15  08013E15  08013E15  .>...>...>...>..
```

Log □ Live Update Verbosity level ● 1 ○ 2 ○ 3

```
17:34:14 :   Address      : 0x08000000
17:34:14 : Erasing memory corresponding to segment 0:
17:34:14 : Erasing internal memory sectors [0 5]
17:34:17 : Download in Progress:
17:34:19 : File download complete
17:34:19 : Time elapsed during download operation: 00:00:04.391
```

ST-LINK Disconnect

ST-LINK configuration

Serial number	0669FF545...
Port	SWD
Frequency (kHz)	4000
Mode	Normal
Access port	0
Reset mode	Software reset
Speed	Reliable
Shared	Disabled
Debug in Low Power mode	☑
External loader	_
Target voltage	2.75 V
Firmware version	V2J46M31

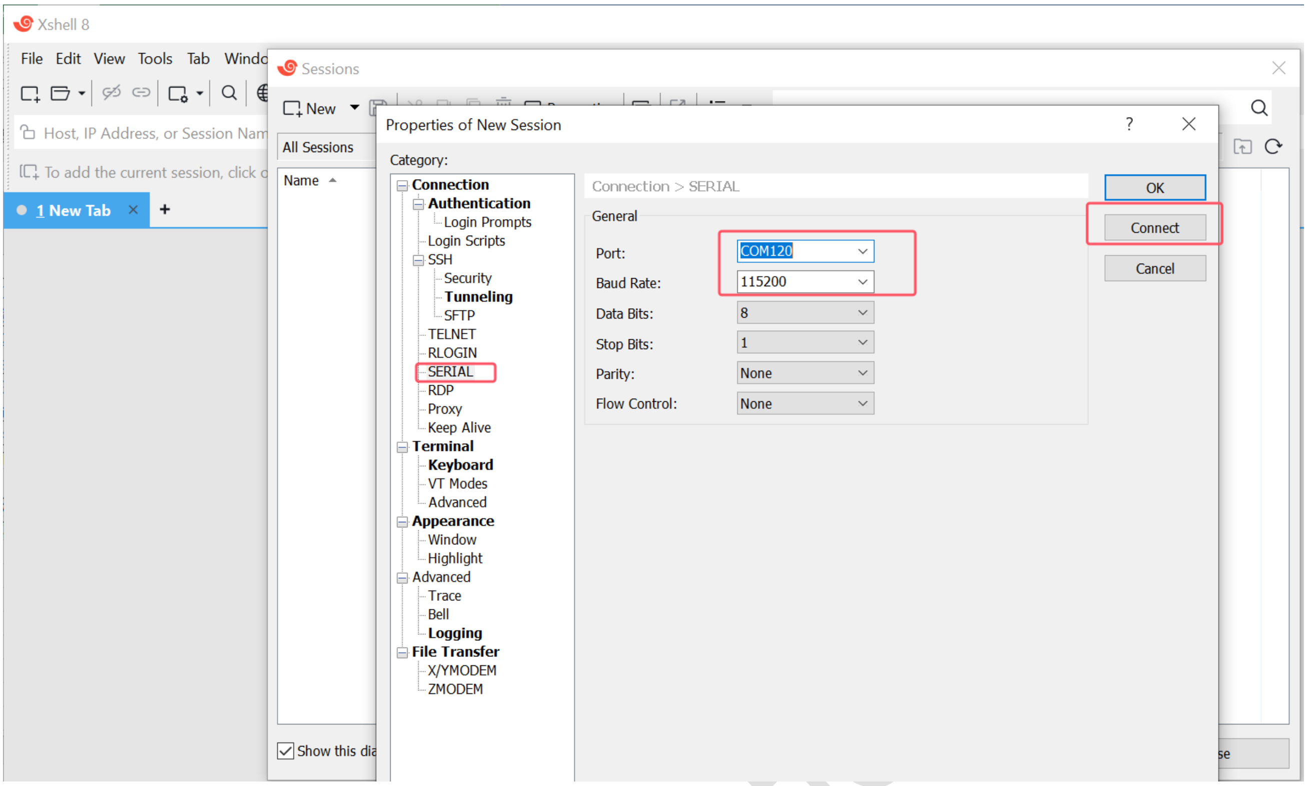
Target information

Board	--
Device	STM32F413/F423
Type	MCU
Device ID	0x463
Revision ID	Rev A
Flash size	1 MB
CPU	Cortex-M4
Bootloader Version	0x90

Figure 7: Successful Download

2.4. Function Test

Before the function test, please download STM32 firmware according to the procedure in ***Chapter 2.3***. Then Open the Serial communication tool, like Xshell, select the Silicon Labs Quad CP2108 USB to UART Bridge Interface 1. And set baud rate as 115200.



Connection > SERIAL

General

Port: COM120

Baud Rate: 115200

Data Bits: 8

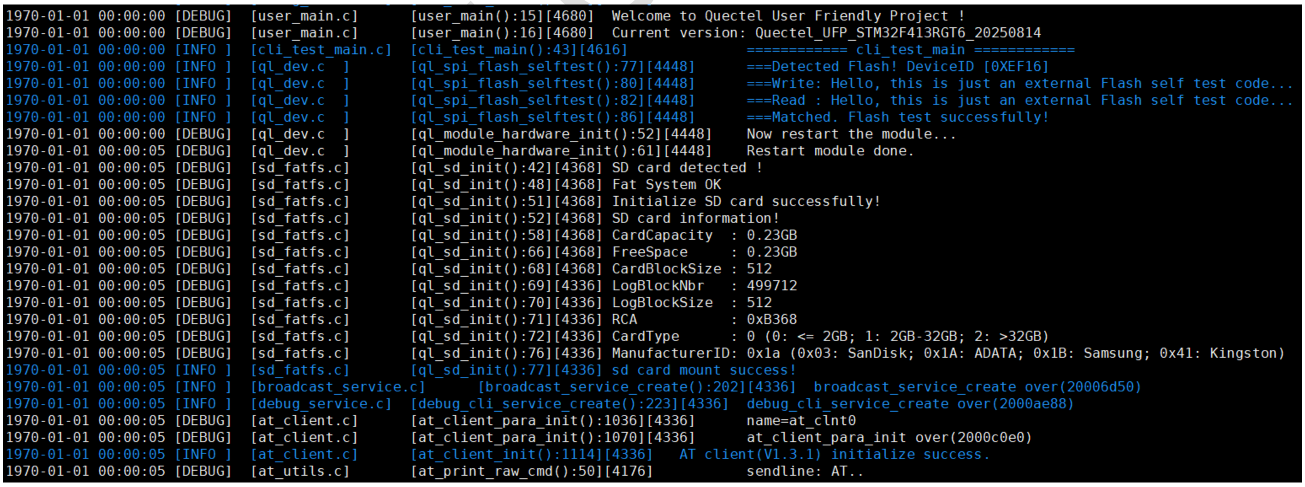
Stop Bits: 1

Parity: None

Flow Control: None

Figure 8: Serial port communication tool

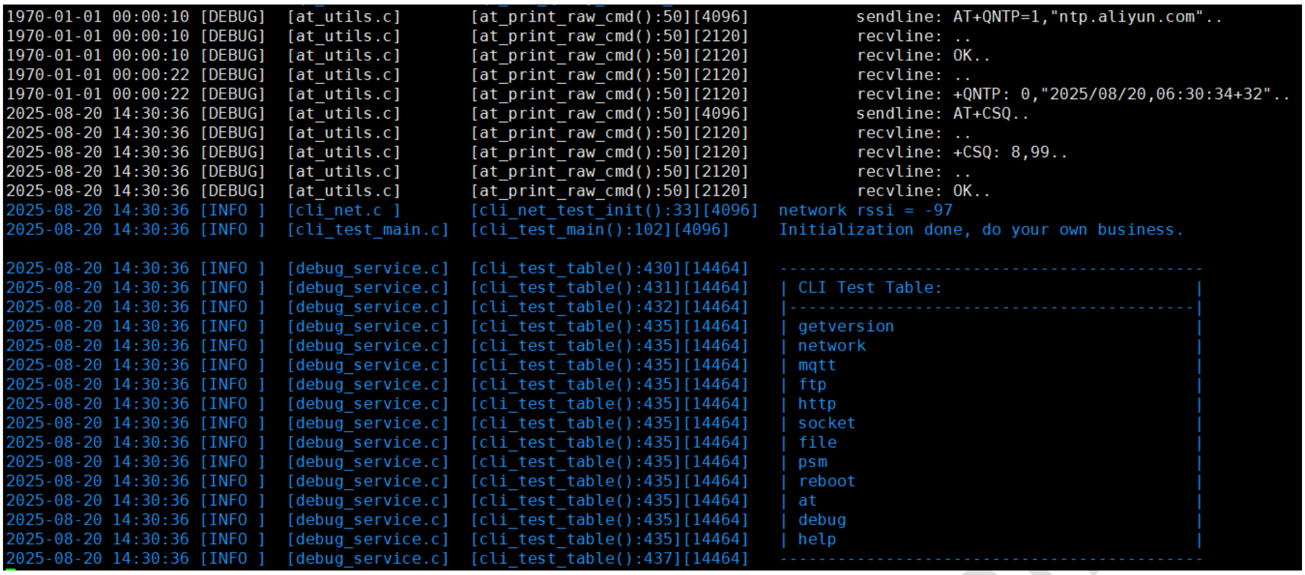
After download STM32 firmware and restart the device, the STM32 will automatically turn on the module. From the Xshell tool, we can check the log is outputted automatically.



```
1970-01-01 00:00:00 [DEBUG]  [user_main.c]       [user_main():15][4680]  Welcome to Quectel User Friendly Project !
1970-01-01 00:00:00 [DEBUG]  [user_main.c]       [user_main():16][4680]  Current version: Quectel_UFP_STM32F413RGT6_20250814
1970-01-01 00:00:00 [INFO ]  [cli_test_main.c]   [cli_test_main():43][4616]              ============ cli_test_main ============
1970-01-01 00:00:00 [INFO ]  [ql_dev.c  ]        [ql_spi_flash_selftest():77][4448]      ===Detected Flash! DeviceID [0XEF16]
1970-01-01 00:00:00 [INFO ]  [ql_dev.c  ]        [ql_spi_flash_selftest():80][4448]      ===Write: Hello, this is just an external Flash self test code...
1970-01-01 00:00:00 [INFO ]  [ql_dev.c  ]        [ql_spi_flash_selftest():82][4448]      ===Read : Hello, this is just an external Flash self test code...
1970-01-01 00:00:00 [INFO ]  [ql_dev.c  ]        [ql_spi_flash_selftest():86][4448]      ===Matched. Flash test successfully!
1970-01-01 00:00:00 [DEBUG]  [ql_dev.c  ]        [ql_module_hardware_init():52][4448]    Now restart the module...
1970-01-01 00:00:05 [DEBUG]  [ql_dev.c  ]        [ql_module_hardware_init():61][4448]    Restart module done.
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():42][4368] SD card detected !
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():48][4368] Fat System OK
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():51][4368] Initialize SD card successfully!
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():52][4368] SD card information!
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():58][4368] CardCapacity  : 0.23GB
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():66][4368] FreeSpace     : 0.23GB
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():68][4368] CardBlockSize : 512
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():69][4336] LogBlockNbr   : 499712
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():70][4336] LogBlockSize  : 512
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():71][4336] RCA           : 0xB368
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():72][4336] CardType      : 0 (0: <= 2GB; 1: 2GB-32GB; 2: >32GB)
1970-01-01 00:00:05 [DEBUG]  [sd_fatfs.c]        [ql_sd_init():76][4336] ManufacturerID: 0x1a (0x03: SanDisk; 0x1A: ADATA; 0x1B: Samsung; 0x41: Kingston)
1970-01-01 00:00:05 [INFO ]  [sd_fatfs.c]        [ql_sd_init():77][4336] sd card mount success!
1970-01-01 00:00:05 [INFO ]  [broadcast_service.c]       [broadcast_service_create():202][4336]  broadcast_service_create over(20006d50)
1970-01-01 00:00:05 [INFO ]  [debug_service.c]   [debug_cli_service_create():223][4336]  debug_cli_service_create over(2000ae88)
1970-01-01 00:00:05 [DEBUG]  [at_client.c]       [at_client_para_init():1036][4336]      name=at_clnt0
1970-01-01 00:00:05 [DEBUG]  [at_client.c]       [at_client_para_init():1070][4336]      at_client_para_init over(2000c0e0)
1970-01-01 00:00:05 [INFO ]  [at_client.c]       [at_client_init():1114][4336]   AT client(V1.3.1) initialize success.
1970-01-01 00:00:05 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][4176]           sendline: AT..
```

Figure 9: Initialization Output

Module initialization like network related log will be outputted. “**Initialization done, do your own business”** message will be displayed till the network registration is done. Then you can execute command to do function test, like TCP/HTTP/FTP/MQTT, etc.



```
1970-01-01 00:00:10 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][4096]          sendline: AT+QNTP=1,"ntp.aliyun.com"..
1970-01-01 00:00:10 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: ..
1970-01-01 00:00:10 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: OK..
1970-01-01 00:00:22 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: ..
1970-01-01 00:00:22 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: +QNTP: 0,"2025/08/20,06:30:34+32"..
2025-08-20 14:30:36 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][4096]          sendline: AT+CSQ..
2025-08-20 14:30:36 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: ..
2025-08-20 14:30:36 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: +CSQ: 8,99..
2025-08-20 14:30:36 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: ..
2025-08-20 14:30:36 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2120]          recvline: OK..
2025-08-20 14:30:36 [INFO ]  [cli_net.c ]       [cli_net_test_init():33][4096]  network rssi = -97
2025-08-20 14:30:36 [INFO ]  [cli_test_main.c]  [cli_test_main():102][4096]     Initialization done, do your own business.

2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():430][14464]   -------------------------------------------
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():431][14464]   | CLI Test Table:                         |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():432][14464]   |-----------------------------------------|
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | getversion                              |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | network                                 |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | mqtt                                    |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | ftp                                     |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | http                                    |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | socket                                  |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | file                                    |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | psm                                     |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | reboot                                  |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | at                                      |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | debug                                   |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():435][14464]   | help                                    |
2025-08-20 14:30:36 [INFO ]  [debug_service.c]  [cli_test_table():437][14464]   -------------------------------------------
```

Figure 10: **Do your own business**

2.4.1. IoT Application Protocol Online Testing Platform

Quectel have its own IoT Application Protocol Online Testing Platform.
Login address: https://connectlab.phicotek.com. Select Tourist Mode.

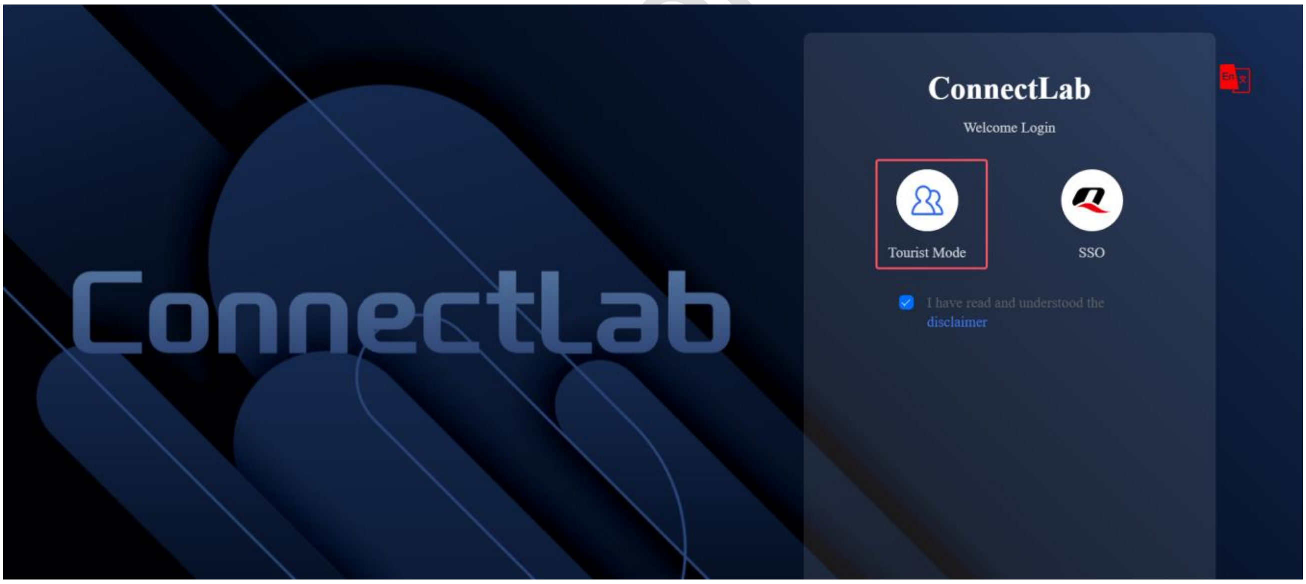
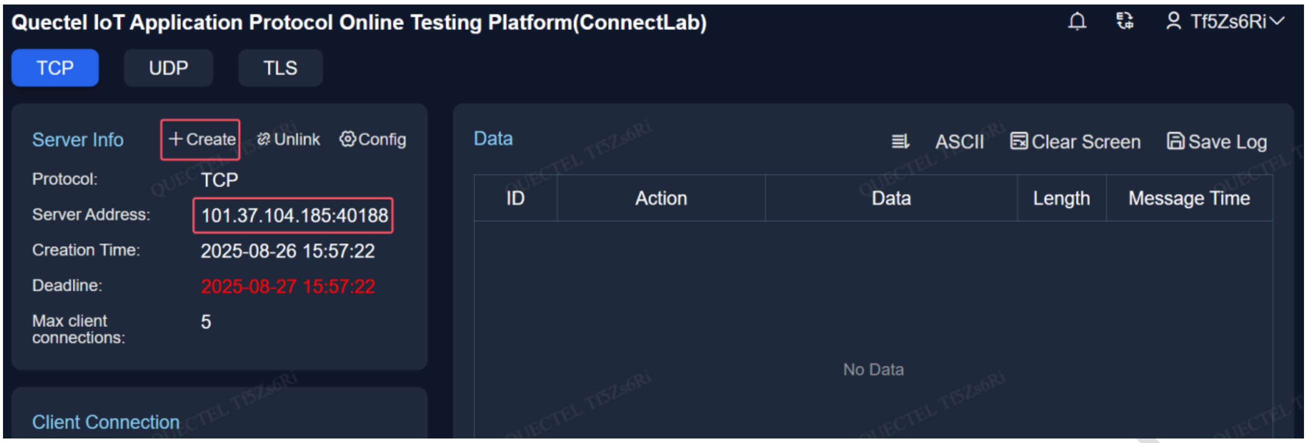


Figure 11: Tourist Mode

If want to create TCP/UDP server, please create TCP/UDP Server as follows.



Protocol: TCP

Server Address: 101.37.104.185:40188

Creation Time: 2025-08-26 15:57:22

Deadline: 2025-08-27 15:57:22

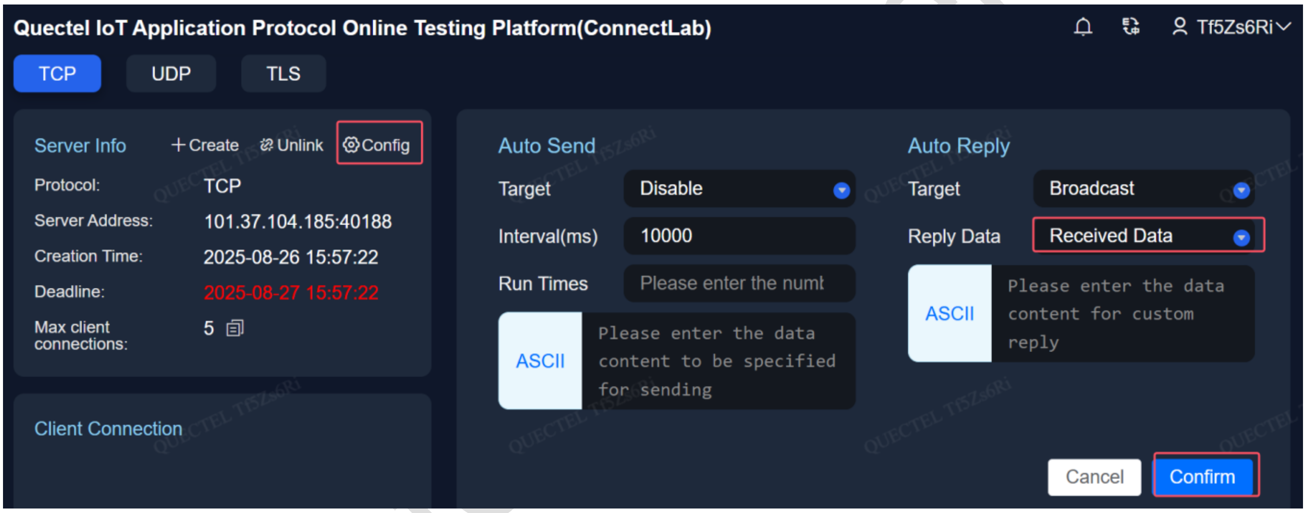
Max client connections: 5

ID	Action	Data	Length	Message Time

No Data

Figure 12: TCP/UDP Server

Support the configuration for automatic sending and automatic reply, such as enable the function of automatically replying to the received data.



Protocol: TCP

Server Address: 101.37.104.185:40188

Creation Time: 2025-08-26 15:57:22

Deadline: 2025-08-27 15:57:22

Max client connections: 5

Auto Send

Target: Disable

Interval(ms): 10000

Run Times: Please enter the numt

Please enter the data content to be specified for sending

Auto Reply

Target: Broadcast

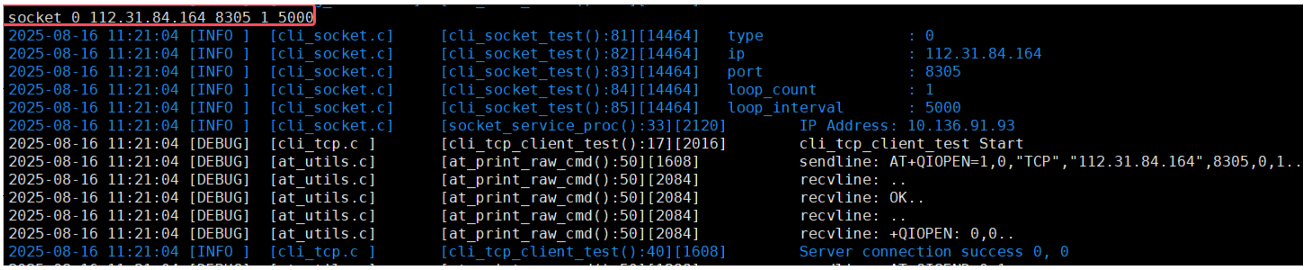
Reply Data: Received Data

Please enter the data content for custom reply

Figure 13: TCP/UDP Server Config

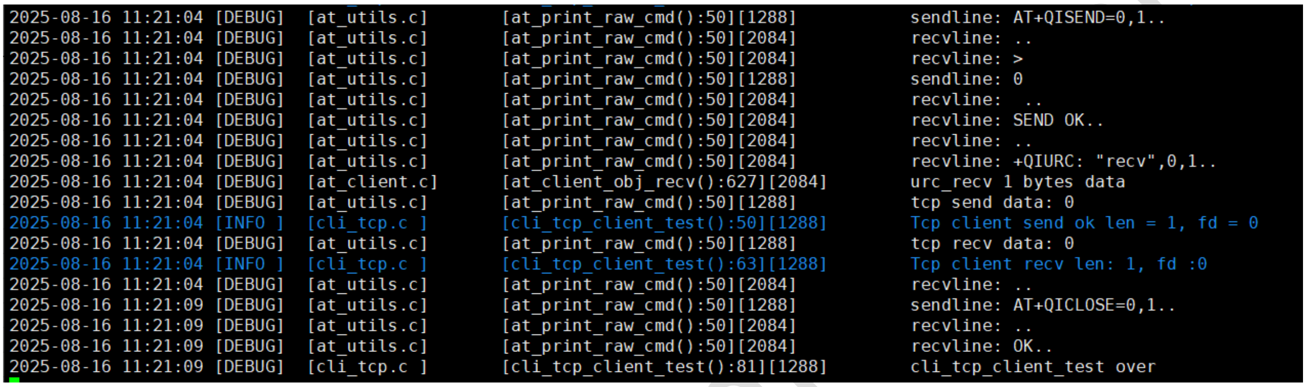
2.4.2. TCP-client Test

1. After turn on the board, it will occur “**Initialization done, do your own business**” after initialization.
2. Execute the command “**socket 0 112.31.84.164 8305 1 5000**”. For the introduction of different parameters in the command, please refer to ***Chapter 3.2***, or execute the "socket help" to check. Please refer to ***Chapter 2.4.1*** to create TCP/UDP Server, then it will help you to do TCP/UDP test.



```
socket 0 112.31.84.164 8305 1 5000
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [cli_socket_test():81][14464]   type               : 0
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [cli_socket_test():82][14464]   ip                 : 112.31.84.164
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [cli_socket_test():83][14464]   port               : 8305
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [cli_socket_test():84][14464]   loop_count         : 1
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [cli_socket_test():85][14464]   loop_interval      : 5000
2025-08-16 11:21:04 [INFO ] [cli_socket.c]     [socket_service_proc():33][2120]        IP Address: 10.136.91.93
2025-08-16 11:21:04 [DEBUG] [cli_tcp.c ]       [cli_tcp_client_test():17][2016]        cli_tcp_client_test Start
2025-08-16 11:21:04 [DEBUG] [at_utils.c]       [at_print_raw_cmd():50][1608]           sendline: AT+QIOPEN=1,0,"TCP","112.31.84.164",8305,0,1..
2025-08-16 11:21:04 [DEBUG] [at_utils.c]       [at_print_raw_cmd():50][2084]           recvline: ..
2025-08-16 11:21:04 [DEBUG] [at_utils.c]       [at_print_raw_cmd():50][2084]           recvline: OK..
2025-08-16 11:21:04 [DEBUG] [at_utils.c]       [at_print_raw_cmd():50][2084]           recvline: ..
2025-08-16 11:21:04 [DEBUG] [at_utils.c]       [at_print_raw_cmd():50][2084]           recvline: +QIOPEN: 0,0..
2025-08-16 11:21:04 [INFO ] [cli_tcp.c ]       [cli_tcp_client_test():40][1608]        Server connection success 0, 0
```

Figure 14: TCP Command

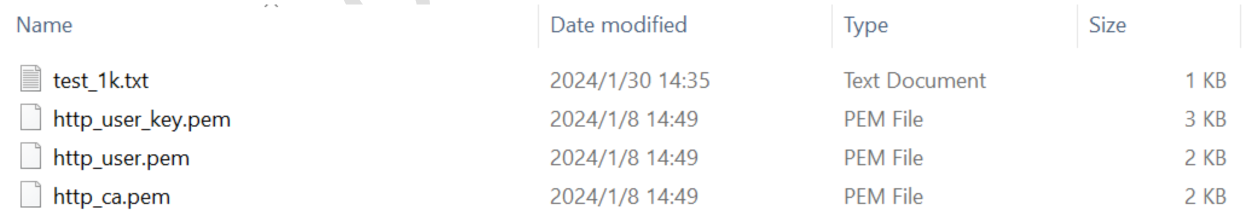


```
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1288]         sendline: AT+QISEND=0,1..
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: ..
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: >
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1288]         sendline: 0
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline:  ..
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: SEND OK..
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: ..
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: +QIURC: "recv",0,1..
2025-08-16 11:21:04 [DEBUG]  [at_client.c]     [at_client_obj_recv():627][2084]      urc_recv 1 bytes data
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1288]         tcp send data: 0
2025-08-16 11:21:04 [INFO ]  [cli_tcp.c ]      [cli_tcp_client_test():50][1288]      Tcp client send ok len = 1, fd = 0
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1288]         tcp recv data: 0
2025-08-16 11:21:04 [INFO ]  [cli_tcp.c ]      [cli_tcp_client_test():63][1288]      Tcp client recv len: 1, fd :0
2025-08-16 11:21:04 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: ..
2025-08-16 11:21:09 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1288]         sendline: AT+QICLOSE=0,1..
2025-08-16 11:21:09 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: ..
2025-08-16 11:21:09 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][2084]         recvline: OK..
2025-08-16 11:21:09 [DEBUG]  [cli_tcp.c ]      [cli_tcp_client_test():81][1288]      cli_tcp_client_test over
```

Figure 15: Successful TCP

2.4.3. HTTPS-POST Test

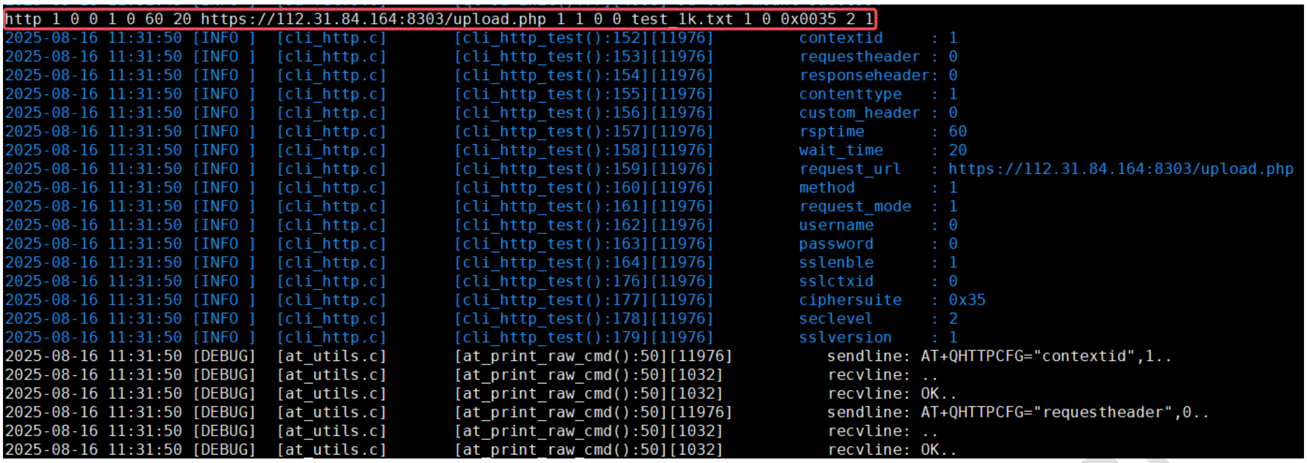
In order to test HTTPS POST (two-way authentication), please make sure that the certificates (**http_ca.pem, http_user.pem, http_user_key.pem**) and the post file (**test_1k.txt**) are stored in the SD card. Please refer to ***Chapter 4*** to get test files.



Name	Date modified	Type	Size
test_1k.txt	2024/1/30 14:35	Text Document	1 KB
http_user_key.pem	2024/1/8 14:49	PEM File	3 KB
http_user.pem	2024/1/8 14:49	PEM File	2 KB
http_ca.pem	2024/1/8 14:49	PEM File	2 KB

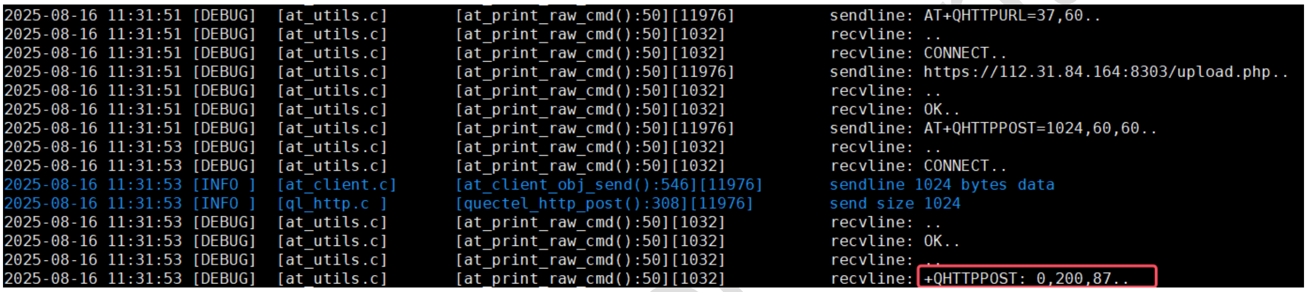
Figure 16: Test Files

1. Execute the command "**http 1 0 0 1 0 60 20 https://112.31.84.164:8303/upload.php 1 1 0 0 test_1k.txt 1 0 0x0035 2 1**". For the introduction of different parameters in the command, please refer to ***Chapter 3.4***, or execute the "http help" to check.
2. After post successfully, check the path and name of the posted file.
3. Open the HTTP server and check the posted file **a0c5b150-56ba-14d1-a8ef-54cd28f487fc**.



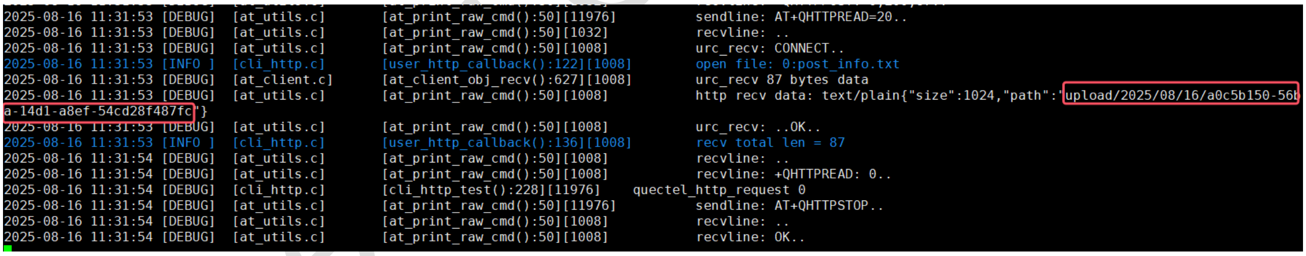
```
http 1 0 0 1 0 60 20 https://112.31.84.164:8303/upload.php 1 1 0 0 test_1k.txt 1 0 0x0035 2 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():152][11976]       contextid     : 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():153][11976]       requestheader : 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():154][11976]       responseheader: 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():155][11976]       contenttype   : 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():156][11976]       custom_header : 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():157][11976]       rsptime       : 60
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():158][11976]       wait_time     : 20
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():159][11976]       request_url   : https://112.31.84.164:8303/upload.php
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():160][11976]       method        : 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():161][11976]       request_mode  : 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():162][11976]       username      : 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():163][11976]       password      : 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():164][11976]       sslenble      : 1
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():176][11976]       sslctxid      : 0
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():177][11976]       ciphersuite   : 0x35
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():178][11976]       seclevel      : 2
2025-08-16 11:31:50 [INFO ]  [cli_http.c]        [cli_http_test():179][11976]       sslversion    : 1
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][11976]        sendline: AT+QHTTPCFG="contextid",1..
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: OK..
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][11976]        sendline: AT+QHTTPCFG="requestheader",0..
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:50 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: OK..
```

Figure 17: HTTPS-POST Command



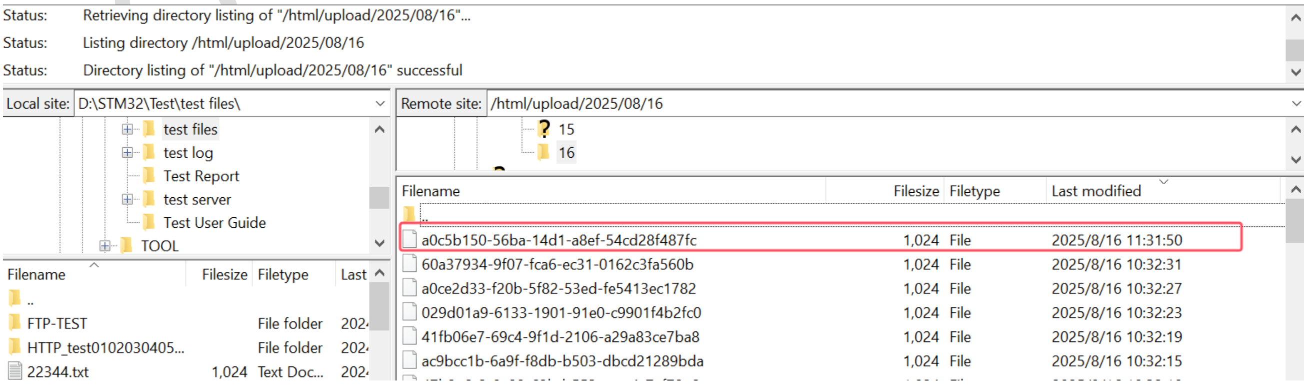
```
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][11976]        sendline: AT+QHTTPURL=37,60..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: CONNECT..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][11976]        sendline: https://112.31.84.164:8303/upload.php..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: OK..
2025-08-16 11:31:51 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][11976]        sendline: AT+QHTTPPOST=1024,60,60..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: CONNECT..
2025-08-16 11:31:53 [INFO ]  [at_client.c]       [at_client_obj_send():546][11976]     sendline 1024 bytes data
2025-08-16 11:31:53 [INFO ]  [ql_http.c ]        [quectel_http_post():308][11976]      send size 1024
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: OK..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: ..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]        [at_print_raw_cmd():50][1032]         recvline: +QHTTPPOST: 0,200,87..
```

Figure 18: POST Successfully



```
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][11976]       sendline: AT+QHTTPREAD=20..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1032]        recvline: ..
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        urc_recv: CONNECT..
2025-08-16 11:31:53 [INFO ]  [cli_http.c]      [user_http_callback():122][1008]     open file: 0:post_info.txt
2025-08-16 11:31:53 [DEBUG]  [at_client.c]     [at_client_obj_recv():627][1008]     urc_recv 87 bytes data
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        http recv data: text/plain{"size":1024,"path":"upload/2025/08/16/a0c5b150-56b
a-14d1-a8ef-54cd28f487fc"}
2025-08-16 11:31:53 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        urc_recv: ..OK..
2025-08-16 11:31:53 [INFO ]  [cli_http.c]      [user_http_callback():136][1008]     recv total len = 87
2025-08-16 11:31:54 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        recvline: ..
2025-08-16 11:31:54 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        recvline: +QHTTPREAD: 0..
2025-08-16 11:31:54 [DEBUG]  [cli_http.c]      [cli_http_test():228][11976]     quectel_http_request 0
2025-08-16 11:31:54 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][11976]       sendline: AT+QHTTPSTOP..
2025-08-16 11:31:54 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        recvline: ..
2025-08-16 11:31:54 [DEBUG]  [at_utils.c]      [at_print_raw_cmd():50][1008]        recvline: OK..
```

Figure 19: Path of the Posted File



Status: Retrieving directory listing of "/html/upload/2025/08/16"...

Status: Listing directory /html/upload/2025/08/16

Status: Directory listing of "/html/upload/2025/08/16" successful

Local site: D:\STM32\Test\test files\

Remote site: /html/upload/2025/08/16

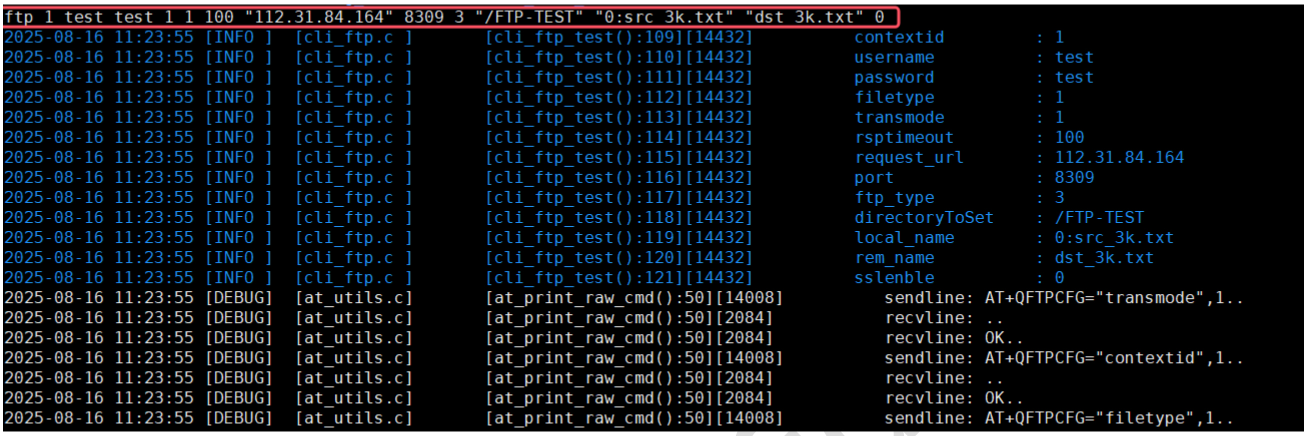
Filename	Filesize	Filetype	Last
..			
FTP-TEST		File folder	202
HTTP_test0102030405...		File folder	202
22344.txt	1,024	Text Doc...	202

Filename	Filesize	Filetype	Last modified
..			
a0c5b150-56ba-14d1-a8ef-54cd28f487fc	1,024	File	2025/8/16 11:31:50
60a37934-9f07-fca6-ec31-0162c3fa560b	1,024	File	2025/8/16 10:32:31
a0ce2d33-f20b-5f82-53ed-fe5413ec1782	1,024	File	2025/8/16 10:32:27
029d01a9-6133-1901-91e0-c9901f4b2fc0	1,024	File	2025/8/16 10:32:23
41fb06e7-69c4-9f1d-2106-a29a83ce7ba8	1,024	File	2025/8/16 10:32:19
ac9bcc1b-6a9f-f8db-b503-dbcd21289bda	1,024	File	2025/8/16 10:32:15

Figure 20: Post File Successfully

2.4.4. FTP Upload Test

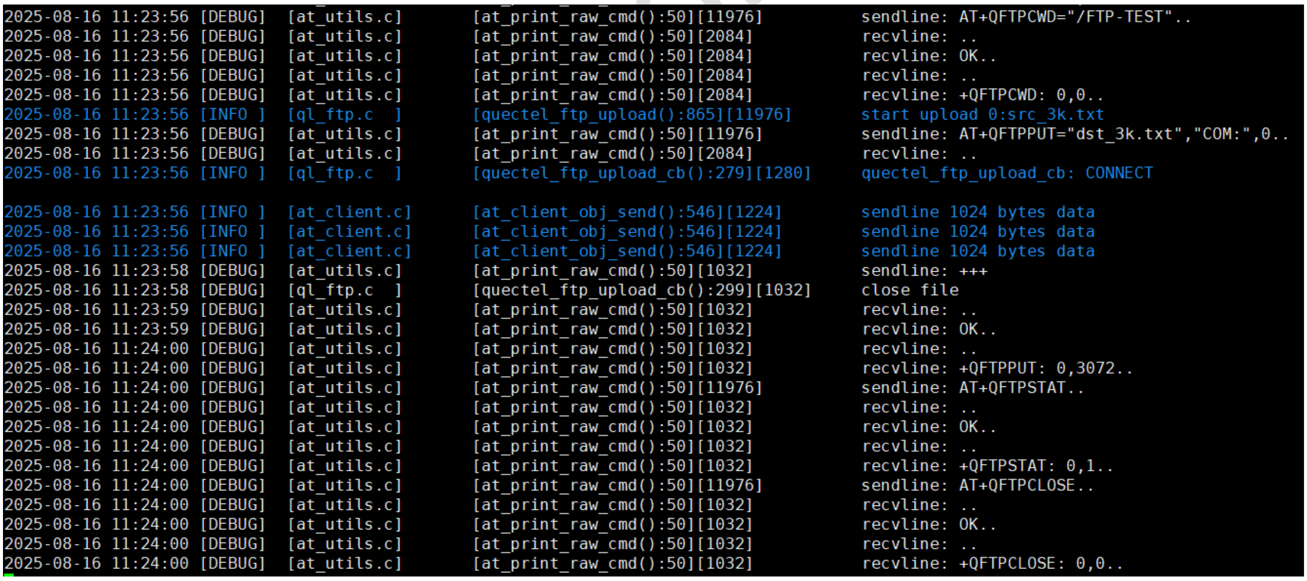
In order to test FTP upload function, please make sure the upload file (**src_3k.txt**) are stored in the SD card.
Execute the command “**ftp 1 test test 1 1 100 "112.31.84.164" 8309 3 "/FTP-TEST" "0:src_3k.txt" "dst_3k.txt" 0**”. For the introduction of different parameters in the command, please refer to ***Chapter 3.3***, or execute the "ftp help" to check.



```
ftp 1 test test 1 1 100 "112.31.84.164" 8309 3 "/FTP-TEST" "0:src_3k.txt" "dst_3k.txt" 0
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():109][14432]         contextid        : 1
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():110][14432]         username         : test
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():111][14432]         password         : test
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():112][14432]         filetype         : 1
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():113][14432]         transmode        : 1
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():114][14432]         rsptimeout       : 100
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():115][14432]         request_url      : 112.31.84.164
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():116][14432]         port             : 8309
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():117][14432]         ftp_type         : 3
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():118][14432]         directoryToSet   : /FTP-TEST
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():119][14432]         local_name       : 0:src_3k.txt
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():120][14432]         rem_name         : dst_3k.txt
2025-08-16 11:23:55 [INFO ]  [cli_ftp.c ]       [cli_ftp_test():121][14432]         sslenble         : 0
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][14008]         sendline: AT+QFTPCFG="transmode",1..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: ..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: OK..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][14008]         sendline: AT+QFTPCFG="contextid",1..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: ..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: OK..
2025-08-16 11:23:55 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][14008]         sendline: AT+QFTPCFG="filetype",1..
```

Figure 21: FTP Command

The file is uploaded successfully.

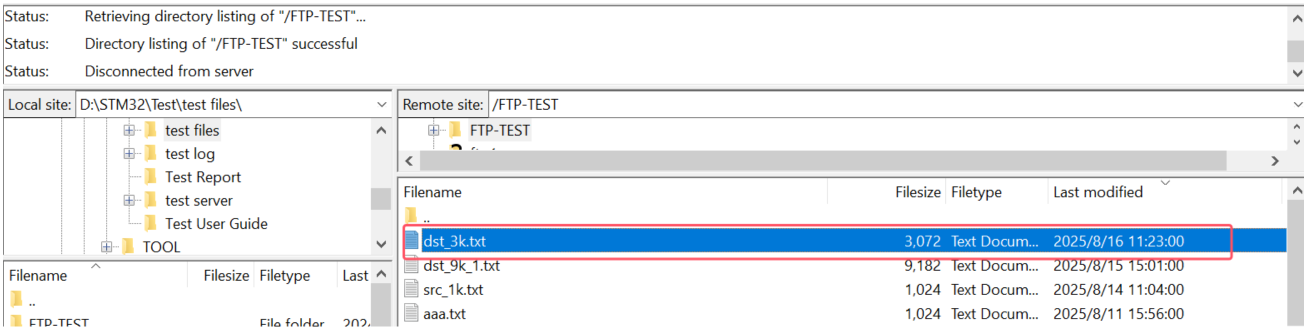


```
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][11976]         sendline: AT+QFTPCWD="/FTP-TEST"..
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: ..
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: OK..
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: ..
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: +QFTPCWD: 0,0..
2025-08-16 11:23:56 [INFO ]  [ql_ftp.c  ]       [quectel_ftp_upload():865][11976]      start upload 0:src_3k.txt
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][11976]         sendline: AT+QFTPPUT="dst_3k.txt","COM:",0..
2025-08-16 11:23:56 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][2084]          recvline: ..
2025-08-16 11:23:56 [INFO ]  [ql_ftp.c  ]       [quectel_ftp_upload_cb():279][1280]    quectel_ftp_upload_cb: CONNECT

2025-08-16 11:23:56 [INFO ]  [at_client.c]      [at_client_obj_send():546][1224]       sendline 1024 bytes data
2025-08-16 11:23:56 [INFO ]  [at_client.c]      [at_client_obj_send():546][1224]       sendline 1024 bytes data
2025-08-16 11:23:56 [INFO ]  [at_client.c]      [at_client_obj_send():546][1224]       sendline 1024 bytes data
2025-08-16 11:23:58 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          sendline: +++
2025-08-16 11:23:58 [DEBUG]  [ql_ftp.c  ]       [quectel_ftp_upload_cb():299][1032]    close file
2025-08-16 11:23:59 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:23:59 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: OK..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: +QFTPPUT: 0,3072..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][11976]         sendline: AT+QFTPSTAT..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: OK..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: +QFTPSTAT: 0,1..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][11976]         sendline: AT+QFTPCLOSE..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: OK..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: ..
2025-08-16 11:24:00 [DEBUG]  [at_utils.c]       [at_print_raw_cmd():50][1032]          recvline: +QFTPCLOSE: 0,0..
```

Figure 22: Successful Uploading

By opening the FTP Server folder, it is vivid the src_3k.txt from SD card is uploaded to the FTP-TEST/dst_3k.txt.



```
Status:     Retrieving directory listing of "/FTP-TEST"...
Status:     Directory listing of "/FTP-TEST" successful
Status:     Disconnected from server
```

Local site: D:\STM32\Test\test files\

Remote site: /FTP-TEST

Filename	Filesize	Filetype	Last
..			
FTP-TEST		File folder	202

Filename	Filesize	Filetype	Last modified
..			
dst_3k.txt	3,072	Text Docum...	2025/8/16 11:23:00
dst_9k_1.txt	9,182	Text Docum...	2025/8/15 15:01:00
src_1k.txt	1,024	Text Docum...	2025/8/14 11:04:00
aaa.txt	1,024	Text Docum...	2025/8/11 15:56:00

Figure 23: Location of the uploaded file

3 Functions Test Commands

3.1. Save Log in SD Card

Table 2: SD Function Definition

Function	Commands
Log level configuration	debug level 0
Log level configuration	debug level 1
Log level configuration	debug level 2
Log level configuration	debug level 3
Log level configuration	debug level 4
SD-storage Start	debug save 1
SD-storage Stop	debug save 0

NOTE

Command format:

```
debug mode <val>
        <val>   0: debug
                1: release
```

```
debug save <val>
            <val>   0: off
                    1: on
                    2: status
debug level <val>
            <val>   0: Verbose
                    1: Debug
                    2: Info
                    3: Warn
                    4: Error
debug test
```

3.2. TCP&UDP

Table 3: TCP&UDP Function Definition

Function	Commands	Log
TCP-Client	socket 0 112.31.84.164 8305 1 5000	tcp-client.txt
UDP-Client	socket 1 112.31.84.164 8305 1 5000	udp-client.txt
TCP-Server	socket 2 127.0.0.1 2020 100 1000 5	tcp-server.txt
UDP-Server	socket 3 127.0.0.1 2023 100 1000	udp-server.txt

NOTE

1. Command format:

socket socket_type ip port count interval_ms max_connect_num

Parameter:

socket_type:

0: TCP

1: UDP

2: TCP SERVER

3: UDP SERVER

ip: ip address

port: port

count: Number of times the TCP/UDP client sends data

interval_ms: Time interval between TCP/UDP client data transmissions

max_connect_num: Maximum connection request (only tcp server needs to set)

2. When do TCP-Client and UDP-Client test, please confirm that the TCP/UDP server has enabled the function of automatically replying to the received data.
3. When do TCP-Server and UDP-Server test, if the IP address of the module is not public, the ASR module could be used for testing. Because ASR module supports the function of opening a TCP Client Socket connection to the TCP Server Socket in the same PDP context. For detail, please check tcp-server.txt and udp-server.txt.

3.3. FTP(S)

Table 4: FTP(S) Function Definition

Function	Commands	Log
FTP-list	ftp 1 test test 1 1 100 "112.31.84.164" 8309 1 "/FTP-TEST" "0:ftplist.txt" "ftplist.txt" 0	ftp-list.txt
FTP-download	ftp 1 test test 1 1 100 "112.31.84.164" 8309 2 "/FTP-TEST" "0:dst_1k.txt" "src_1k.txt" 0	ftp-download.txt
FTP-upload	ftp 1 test test 1 1 100 "112.31.84.164" 8309 3 "/FTP-TEST" "0:src_3k.txt" "dst_3k.txt" 0	ftp-upload.txt
FTPS-list	ftp 1 test test 1 1 100 "112.31.84.164" 8311 1 "/FTP-TEST" "0:ftpslist.txt" "ftpslist.txt" 1 1 0 0xffff 1 4	ftps-list.txt
FTPS-download	ftp 1 test test 1 1 100 "112.31.84.164" 8311 2 "/FTP-TEST" "0:dst_1k.txt" "src_1k.txt" 1 1 0 0xffff 1 4	ftps-download.txt
FTPS-upload	ftp 1 test test 1 1 100 "112.31.84.164" 8311 3 "/FTP-TEST" "0:src_3k.txt" "dst_3k.txt" 1 1 0 0xffff 1 4	ftps-upload.txt

NOTE

1. **Command format:**

ftp contextid username password filetype transmode rsptimeout hostname port ftp_type directoryToSet local_name rem_name sslenble sslctxid ciphersuite seclevel sslversion

Parameter:

contextid: PDP context ID

username: Username for logging in to the Ftp(S) server

password: Password for logging in to the Ftp(S) server

file_type: The type of transferred data

0: Binary

1: ASCII

transmode: Whether the FTP(S) server or client listens on a port for data connection

0: Active mode, the module will listen on a port for data connection
1: Passive mode, the FTP(S) server will listen on a port for data connection
rsptimeout:

Range: 20-180.

Default value: 90.
Unit: second.
hostname: FTP(S) server URL
port: FTP(S) server port
ftp_type: FTP fun mode
1: file list
2: file get
3: file upload
directoryToSet: The directory of the server
local_name: The file name in SD card
rem_name: The file name in the server
sslenble: Whether ssl is enabled
0: Disable SSL
1: Enable SSL
sslctxid: SSL context ID used for HTTP(S). Range: 0-5
ciphersuite: Numeric type in HEX format. SSL cipher suites
seclevel: Authentication mode
0: No authentication
1: Perform server authentication
2: Perform server and client authentication if requested by the remote server
sslversion: SSL Version
0: SSL3.0
1: TLS1.0
3: TLS1.2
4: ALL

2. If test FTPS related function, please make sure that the certificates (**ftp_ca.pem, ftp_user.pem, ftp_user_key.pem**). Please refer to ***Chapter 4*** to get test files
3. If test FTP/FTPS upload function, please make sure the upload file (**src_3k.txt**) are stored in the SD card.

3.4. HTTP(S)

Table 5: HTTP(S) Function Definition

Function	Example commands	Log

HTTP-POST	http 1 0 0 1 0 60 20 http://112.31.84.164:8300/upload.php 1 1 0 0 test_1k.txt 0	http-post.txt
HTTP-GET	http 1 0 0 1 0 60 20 http://112.31.84.164:8300/upload/2025/08/19/3b80f0bd-b5b9-79b4-c630-b416460f50c9 0 1 0 0 get_1k.txt 0	http-get.txt
HTTPS-POST	http 1 0 0 1 0 60 20 https://112.31.84.164:8303/upload.php 1 1 0 0 test_1k.txt 1 0 0x0035 2 1	https-post.txt
HTTPS-GET	http 1 0 0 1 0 60 60 https://112.31.84.164:8303/1024.txt 0 1 0 0 get_1k.txt 1 0 0x0035 2 1	https-get.txt

NOTE

1. **Command format:**

http contextid requestheader responseheader contenttype custom_header rsptime wait_time request_url method request_mode username password sd_card_path sslenble sslctxid ciphersuite seclevel sslversion

Parameter:

contextid: PDP context ID, Range: 1-16

requestheader: Disable or enable customization of HTTP(S) request header

0: Disable

1: Enable

responseheader: Disable or enable the outputting of HTTP(S) response header

0: Disable

1: Enable

contenttype: Data type of HTTP(S) body

0: application/x-www-form-urlencoded

1: text/plain

2: application/octet-stream

3: multipart/form-data

4: application/json

5: image/jpeg

custom_header: User-defined HTTP(S) request header

timeout: The maximum time for inputting URL.

Range: 1-2038.

Unit: second

rsptime: Timeout for the HTTP(S) GET response

Range: 1-65535.

Unit: second

wait_time: Maximum time between receiving two packets of data.

Range: 1-65535.

Unit: second

request_url: HTTP(S) server URL

method: Request type

0: Get
1: Post
request_mode: Request mode
0: Async
1: Sync
username: Username for logging in the HTTP(S) server
password: Password for logging in the HTTP(S) server
sd_card_path: Data path in SD card
sslenble: Whether ssl is enabled
0: Disable SSL
1: Enable SSL
sslctxid: SSL context ID used for HTTP(S)，Range: 0-5
ciphersuite: Numeric type in HEX format. SSL cipher suites
seclevel: Authentication mode
0: No authentication
1: Perform server authentication
2: Perform server and client authentication if requested by the remote server
sslversion: SSL Version
0: SSL3.0
1: TLS1.0
3: TLS1.2
4: ALL

2. If test HTTPS related function, please make sure that the certificates (**http_ca.pem, http_user.pem, http_user_key.pem**). Please refer to ***Chapter 4*** to get test files
3. If test HTTP/HTTPS post function, please make sure the post file (**test_1k.txt**) are stored in the SD card.

3.5. MQTT(S)

Table 6: MQTT(S) Function Definition

Function	Example commands	Log
MQTT Open	mqtt 1 0 Test a1vvrmkn43t.iot-as-mqtt.cn-shanghai.aliyuncs.com 1883 a1vvrmkn43t NiFtKoHMcu6j0VIXtC6e 3115a9a768482d98a28d7390e7b9376b 0	mqtt-open.txt
MQTT Subscribe	mqtt 2 0 /a1vvrmkn43t/NiFtKoHMcu6j0VIXtC6e/user/get	mqtt-subscribe.txt

MQTT Publish	mqtt 3 0 /a1vvrmkn43t/NiFtKoHMcu6j0VIXtC6e/user/get 1234567890	mqtt-publish.txt
MQTT Disconnect	mqtt 4 0	mqtt-disconnect.txt
MQTTS Open	mqtt 1 1 quectel001 a9ohm2zbim3d5-ats.iot.us-east-1.amazonaws.com 8883 0 0 0 1 0XFFFF 2 4	mqtts-open.txt
MQTTS Subscribe	mqtt 2 0 aws/quectel001/data/report/message	mqtts-subcribe.txt
MQTTS Publish	mqtt 3 0 aws/quectel001/data/report/message 1234567890	mqtts-publish.txt
MQTTS Disconnect	mqtt 4 0	mqtts-disconnect.txt

NOTE

1. open mqtt

Command format: mqtt test_type Server_type 0:ALP 1:other Client_ID server port ProductKey/username DeviceName/password DeviceSecret sslenble ciphersuite seclevel sslversion

example: mqtt 1 0 Test a1vvrmkn43t.iot-as-mqtt.cn-shanghai.aliyuncs.com 1883 a1vvrmkn43t NiFtKoHMcu6j0VIXtC6e 3115a9a768482d98a28d7390e7b9376b 0

2. subscribe topic

Command format: mqtt test_type mqtt_fd topic_name

example: mqtt 2 0 /a1vvrmkn43t/NiFtKoHMcu6j0VIXtC6e/user/tre1

3. public topic

Command format: mqtt test_type mqtt_fd topic_name mssagec

example: mqtt 3 0 /a1vvrmkn43t/p1U1UtVAPjZhkOEZnlUt/user/get 111

4. disconnect mqtt

Command format: mqtt test_type mqtt_fd

example: mqtt 4 0

Parameter:

test_type:

0: open mqtt

1: subscribe topic

2: public topic

3: disconnect mqtt

Server_type:

0: Alibaba Cloud
1: others

Client_ID: The client identifier string
server: The address of the server

port: The port of the server

ProductKey/username:
If it is Alibaba Server, need to configure Product key issued by Alibaba Cloud
Others, configure User name of the client

DeviceName/password:
If it is Alibaba Server, need to configure Device name issued by Alibaba Cloud.
Others, configure Password corresponding to the user name of the client

DeviceSecret:
If it is Alibaba Server, need to configure Device verification certificate issued by Alibaba Cloud.
Others, configure 0

sslenble: Whether ssl is enabled
0: Disable SSL
1: Enable SSL

ciphersuite: Numeric type in HEX format. SSL cipher suites
0x0035: TLS_RSA_WITH_AES_256_CBC_SHA
0x002F: TLS_RSA_WITH_AES_128_CBC_SHA
0x0005: TLS_RSA_WITH_RC4_128_SHA
0x0004: TLS_RSA_WITH_RC4_128_MD5
0x000A: TLS_RSA_WITH_3DES_EDE_CBC_SHA
0x003D: TLS_RSA_WITH_AES_256_CBC_SHA256
0xC002: TLS_ECDH_ECDSA_WITH_RC4_128_SHA
0xC003: TLS_ECDH_ECDSA_WITH_3DES_EDE_CBC_SHA
0xC004: TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA
0xC005: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA
0xC007: TLS_ECDHE_ECDSA_WITH_RC4_128_SHA
0xC008: TLS_ECDHE_ECDSA_WITH_3DES_EDE_CBC_SHA
0xC009: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA
0xC00A: TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA
0xC011: TLS_ECDHE_RSA_WITH_RC4_128_SHA
0xC012: TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA
0xC013: TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA
0xC014: TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA
0xC00C: TLS_ECDH_RSA_WITH_RC4_128_SHA

0xC00D: TLS_ECDH_RSA_WITH_3DES_EDE_CBC_SHA
0xC00E: TLS_ECDH_RSA_WITH_AES_128_CBC_SHA
0xC00F: TLS_ECDH_RSA_WITH_AES_256_CBC_SHA
0xC023: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256
0xC024: TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384
0xC025: TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256
0xC026: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384
0xC027: TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
0xC028: TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
0xC029: TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256
0xC02A: TLS_ECDH_RSA_WITH_AES_256_CBC_SHA384
0xC02B: TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
0xC02F: TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
0xC0A8: TLS_PSK_WITH_AES_128_CCM_8
0x00AE: TLS_PSK_WITH_AES_128_CBC_SHA256
0xC0AE: TLS_ECDHE_ECDSA_WITH_AES_128_CCM_8
0xFFFF: ALL

seclevel: Authentication mode
0: No authentication
1: Perform server authentication
2: Perform server and client authentication if requested by the remote server

sslversion: SSL Version
0: SSL3.0
1: TLS1.0
2: TLS1.1
3: TLS1.2
4: ALL

If test MQTTS related function, please make sure that the certificates (**mqtt_ca.pem, mqtt_user.pem, mqtt_user_key.pem**). Please refer to ***Chapter 4*** to get test files

3.6. PSM

Table 7: PSM Function Definition

Function	Example commands	Log
PSM-setting	psm setting 00000100 0000111	psm-setting.txt

PSM-disable	psm disable	psm-disable.txt
PSM-enable	psm enable	psm-enable.txt
PSM-modem-optimization	psm modem 2 2 120 5 120 3	psm-modem.txt
PSM-stat	psm stat	psm-stat.txt
PSM-threshold	psm threshold 100	psm-threshold.txt

NOTE

1. **Command format:** psm enable/disable

psm settings - TAU/active time (ex setting 00000100 00001111)
0: Requested Periodic TAU
1: Requested Active Time
psm threshold - sets the minimum threshold value to enter PSM(ex threshold 100)
psm modem Optimization - sets the Modem Optimization (ex modem 2 2 120 5 120 3)
0: PSM opt mask
1: PSM max oos full scans
2: PSM duration due to oos
3: PSM randomization window
4: PSM max oos time
5: PSM early wakeup time
psm stat - show all psm setting

2. If the module enters into PSM, either of the following methods wakes up the module (BG95) from PSM. Different module has different methods.
   1) Give PON_TRIG a rising edge to wake up the module.
   2) Drive PWRKEY low to wake up the module.
   3) When the T3412 timer expires, the module will be automatically woken up.

3.7. FILE

Table 8: FILE Function Definition

Function	Example commands	Log
FILE-query free	file 2 "UFS"	file-query-free.txt
FILE-open	file 3 “test.txt” 0	file-open.txt

FILE-write	file 4 1 10 abcd123!@#	file-write.txt
FILE-close	file 5 1	file-close.txt
FILE-query file	file 0 “*”	file-query-file.txt
FILE-delete	file 1 “ test.txt”	file-delete.txt

NOTE

Command format:

0. query files

example: file 0 "*"

1. del files

example: file 1 "123.txt"

2. query free

example: file 2 "UFS"

3. open files

example: file 3 “text” 0

example: file 3 filename mode

mode Integer type. The open mode of the file

0 If the file does not exist, it is created. If the file exists, it is opened directly. In any case, the file can be read and written.

1 If the file does not exist, it is created. If the file exists, it is overwritten. In any case, the file can be read and written.

2 If the file exists, it is opened directly and is read only. If the file does not exist, an error is returned.

3 If the file does not exist, it is created. If the file exists, write data to the file. In any case, the file can be read and written.

4. write files

example: file 4 1 5 12345

example: file 4 filehandle length DATA

<filehandle> Integer type. The handle of the file to be operated.

<length> Integer type. The length of the file to be written.

<DATA> WIRTE DATA

5. close files

example: file 5 1

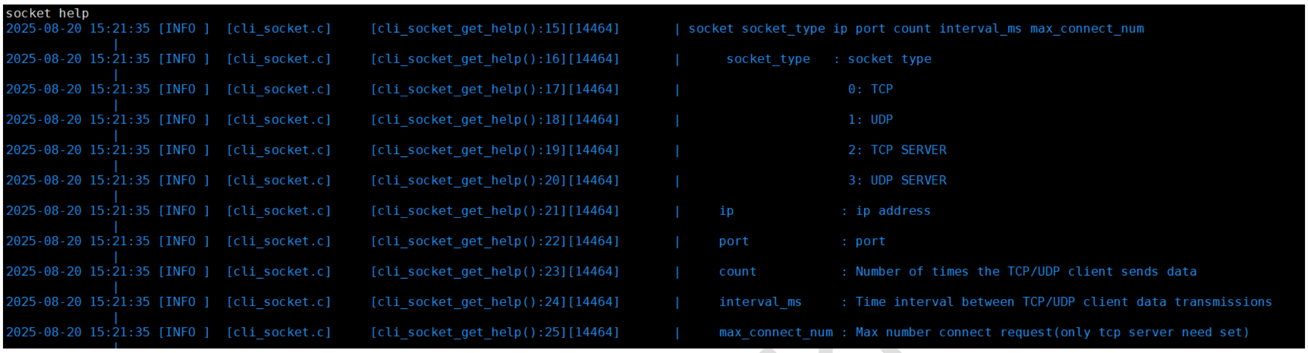
example: file 5 filehandle

6. read files

example: file 6 1 5
example: file 6 filehandle length

3.8. Function Help

Execute the command “**Function Help**” and you can get the information of the command. For example, following shows **socket help**.



```
socket help
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():15][14464]       | socket socket_type ip port count interval_ms max_connect_num
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():16][14464]       |      socket_type   : socket type
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():17][14464]       |                      0: TCP
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():18][14464]       |                      1: UDP
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():19][14464]       |                      2: TCP SERVER
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():20][14464]       |                      3: UDP SERVER
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():21][14464]       |     ip              : ip address
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():22][14464]       |     port            : port
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():23][14464]       |     count           : Number of times the TCP/UDP client sends data
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():24][14464]       |     interval_ms     : Time interval between TCP/UDP client data transmissions
              |
2025-08-20 15:21:35 [INFO ]  [cli_socket.c]     [cli_socket_get_help():25][14464]       |     max_connect_num : Max number connect request(only tcp server need set)
              |
```

Figure 24: Reference Circuit of the Help

4 Test Files

When testing FTPS/HTTPS/MQTTS, we need to put certifications into the SD card. Additionally, the http post file **test_1k.txt** and ftp upload file **src_3k.txt** shall also be placed on the SD card in order to test HTTP.

Please check test files to get these files.

Note: The test server and related certificates provided above are only for testing purposes. If for commercial use, please create your own server.

Table 9: Certificates for the Test

Functions	Certificate
ftps	ftp_ca.pem
https	http_ca.pem http_user.pem

	http_user_key.pem
mqtts	mqtt_ca.pem mqtt_user.pem mqtt_user_key.pem

5 Appendix References

Table 10: Related Documents

SN	Document Name
[1]	STM32 LQFP64 EVK User Guide
[2]	Quectel_QSTM32_SDK_Quick_Start_Guide