

UC20 FTP

AT Commands Manual

UMTS/HSPA Module Series

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About the Document

History

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Contents

About the Document.....	2
Contents	3
Table Index.....	4
1 Introduction	5
1.1. The Process of FTP Operation.....	5
1.2. Description of Data Mode.....	6
1.3. Error Handling	7
1.3.1. Executing FTP AT Command Fails	7
1.3.2. PDP Activation Fails.....	7
1.3.3. DNS Parse Fails	7
1.3.4. Error Response of FTP Server	8
2 Description of AT Command	9
2.1. AT+QFTPCFG FTP Configurations	9
2.2. AT+QFTPOPEN Login to FTP Server	11
2.3. AT+QFTPCWD Set the Current Directory on FTP Server	12
2.4. AT+QFTPPWD Get the Current Directory on FTP Server	13
2.5. AT+QFTPPUT Upload a File to FTP Server.....	13
2.6. AT+QFTPGET Download a File from FTP Server.....	17
2.7. AT+QFTPSIZE Get the File Size on FTP Server	19
2.8. AT+QFTPDEL Delete the File on FTP Server	20
2.9. AT+QFTPMKDIR Make a Folder on FTP Server	21
2.10. AT+QFTPRMDIR Delete a Folder on FTP Server	22
2.11. AT+QFTPLIST List Contents of Directory on FTP Server	22
2.12. AT+QFTPNLST List File Names of Directory on FTP Server	24
2.13. AT+QFTPRENAME Rename a File or Folder on FTP Server	27
2.14. AT+QFTPLEN Get the Transferred Data Length	27
2.15. AT+QFTPSTAT Get the Status of FTP Service	28
2.16. AT+QFTPCLOSE Logout from FTP Server.....	29
3 Example	30
3.1. Login to FTP Server	30
3.2. Folder Operation.....	31
3.3. File Operation	31
3.4. List File Information or File Names	32
3.5. Upload a File to FTP Server.....	33
3.6. Download a File from FTP Server	35
3.7. Logout from FTP Server.....	36
4 Summary of Error Codes	37
5 Summary of FTP Protocol Error Codes.....	39
6 Appendix A Reference.....	40

Table Index

TABLE 1: SUMMARY OF ERROR CODES	37
TABLE 2: SUMMARY OF FTP PROTOCOL ERROR CODES	39
TABLE 3: RELATED DOCUMENTS	40
TABLE 4: TERMS AND ABBREVIATIONS	40

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1 Introduction

1.1. The Process of FTP Operation

As the module provides FTP protocol, you can operate file and directory on FTP server by these FTP AT commands. The general process is as follows:

Step 1: Configure and activate the PDP context.

- 1) Configure the PDP context parameters <apn>, <user name>, <password> and other parameters by AT+QICSGP (Please refer to *UC20_TCPIP_AT_Commands_Manual*). If QoS settings need to be updated, configure them by the commands AT+CGQMIN, AT+CGEQMIN, AT+CGQREQ and AT+CGEQREQ (Please refer to *UC20_AT_Commands_Manual*).
- 2) Activate the PDP context by AT+QIACT.
- 3) Configure the PDP context ID for FTP by AT+QFTPCFG="contextid",<contextID>. You should activate the PDP context first.

Step 2: Configure FTP service settings.

- 1) Configure account information by AT+QFTPCFG="account",<user name>,<password>.
- 2) Configure file type by AT+QFTPCFG="filetype",<file type>. The file type means the transferred data between FTP server and client is binary data or ASCII data.
- 3) Configure the transfer mode by AT+QFTPCFG="transmode",<transmode>. The transfer mode means either the FTP server or client listens to the data connection.
- 4) Configure the response timeout value by AT+QFTPCFG="rsptimeout",<timeout>.

Step 3: Login to FTP server.

Login to FTP server by AT+QFTPOPEN=<host name>,<port>. And the URC "+QFTPOPEN: 0,0" indicates that login is successful.

Step 4: File operation.

- 1) Set the current directory by AT+QFTPCWD.
- 2) Upload a file to FTP server.
 - a) You can upload a local file to FTP server by AT+QFTPPUT. The file can be RAM files or UFS files. It is strongly recommended to use RAM file to upload the attachments. You can upload a file to RAM or UFS by AT+QFUPL (Please refer to *UC20_FILE_AT_Commands_Manual*). After uploading the file to FTP server successfully, you can delete the file by AT+QFDEL (Please refer to *UC20_FILE_AT_Commands_Manual*).
 - b) You can upload a file to FTP server from COM port by AT+QFTPPUT too. Then the module will

enter into data mode. You can input “+++” to complete the file uploading.

3) Download a file from FTP server.

You can download a file from FTP server by AT+QFTPGET. The file can be output to COM port or saved to RAM or UFS. It is strongly recommended to save the file in RAM. If you output the file to COM port, the module will enter into data mode.

4) Get the size of file on FTP server by AT+QFTPSIZE.

5) Get the length of data transferred between FTP server and client by AT+QFTPLEN.

6) Delete a file on FTP server by AT+QFTPDEL.

7) Rename a file on FTP server by AT+QFTPRENAME.

Step 5: Directory operation on FTP server.

1) Set the current directory by AT+QFTPCWD.

2) Create a directory by AT+QFTPMKDIR.

3) List the content of a directory by AT+QFTPLIST.

4) List file names of a directory by AT+QFTPNLST.

5) Rename a directory by AT+QFTPRENMAE.

6) Delete a directory by AT+QFTPRMDIR.

Step 6: Close connection with FTP server.

Close the connection with FTP server by AT+QFTPCLOSE, and the URC “+QFTPCLOSE: 0,0” will be reported, it indicates the operation is successful. Step 3 to Step 6 can be repeated.

Step 7: Deactivate PDP context.

Deactivate the PDP context by AT+QIDEACT=<contextID> (For details, please refer to *UC20_TCPIP_AT_Commands_Manual*).

1.2. Description of Data Mode

The mode of the COM port includes AT command mode and data mode. The difference between them is that in AT command mode, the inputted data via COM port will be treated as AT command, while in data mode, it will be treated as data.

You can exit from data mode by “+++” or pulling up DTR (AT&D1 should be set). To prevent the “+++” from being misinterpreted as data, it should comply with the following sequence:

- 1) Do not input any character in 1 second or longer before inputting “+++”.
- 2) Input “+++” in 1 second, and no other characters can be input during this time.
- 3) Do not input any character in 1 second after “+++” has been inputted.

When you execute AT+QFTPPUT, AT+QFTPGET, AT+QFTPLIST and AT+QFTPNLST, if the local file path is “COM:”, which means data will be received from or output to COM port, the module will enter into data mode. You can exit from data mode by inputting “+++” or changing DTR level from low to high. Else,

you can reenter data mode by executing ATO command when executing AT+QFTPGET, AT+QFTPLIST and AT+QFTPNLST. You can't reenter data mode by ATO when executing AT+QFTPPUT.

1.3. Error Handling

1.3.1. Executing FTP AT Command Fails

If you execute FTP AT command and receive response "ERROR" from the module, please check whether the SIM card is inserted and whether the result of AT+CPIN? is "+CPIN: Ready".

1.3.2. PDP Activation Fails

If you failed to activate PDP context by AT+QIACT command, please check the following aspects:

1. Query whether the PS domain is attached by AT+CGATT? command, if not, execute AT+CGATT=1 to attach PS domain.
2. Query the CGREG status by AT+CGREG? command and make sure the PS domain has already been registered.
3. Query the PDP context parameters by AT+QICSGP command, make sure the APN of specified PDP context has been set.
4. Make sure the specified PDP context ID is neither used by PPP nor activated by AT+CGACT command.
5. The module only supports three PDP contexts activated simultaneously, so you must make sure the number of activated PDP contexts is less than 3.

If the result of checking is OK, but the result of executing AT+QIACT command still fails, please reboot the module to resolve this issue. After rebooting the module, please follow the above checking at least three times and each time at an interval of 10 minutes to avoid frequently rebooting of the module.

1.3.3. DNS Parse Fails

When executing AT+QFTPOPEN command, if "+QFTPOPEN: 604,0" is returned, please check the following aspects:

1. Make sure the domain name of FTP server is valid.
2. Query the status of PDP context by executing "AT+QIACT?" command to make sure the specified PDP context has been activated successfully.

1.3.4. Error Response of FTP Server

If the <protocol error> in “+QFTPXX: <err>,<protocol error>” is not 0, it is replied from FTP server. You can check the issues depending on the protocol error code. For example, if <protocol error> is 533 (Not login, refer to Chapter 5), <user name> or <password> may be wrong. If <protocol error> is 550 (Request failed, refer to Chapter 5), the file or directory may not exist. For details, you can refer to the document RFC959 (File Transfer Protocol).

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2 Description of AT Command

2.1. AT+QFTPCFG FTP Configurations

Configure FTP server, user account, file type, transfer mode and context ID. If the Write Command just takes one parameter, it will query the specified information

AT+QFTPCFG FTP Configurations

Test Command
AT+QFTPCFG=?

Response
+QFTPCFG: "account",<user name>,<password>
+QFTPCFG: "filetype",<0,1>
+QFTPCFG: "transmode",<0,1>
+QFTPCFG: "contextid",<1-16>
+QFTPCFG: "rsptimeout",<20-180>

OK

Write Command
AT+QFTPCFG="account",<user name>,<password>

Response
If <user name> and <password> are not omitted:
OK
or
+CME ERROR: <err>

Else query the current settings:
+QFTPCFG: "account",<user name>,<password>

OK

Write Command
AT+QFTPCFG="filetype",<file type>

Response
If <file type> is not omitted:
OK
or
+CME ERROR: <err>

Else query the current settings:
+QFTPCFG: "filetype",<file type>

OK

Write Command AT+QFTPCFG="transmode",<transmode>]	Response If <transmode> is not omitted: OK or +CME ERROR: <err> Else query the current settings: +QFTPCFG: "transmode",<transmode> OK
Write Command AT+QFTPCFG="contextid",<contextid>]	Response If <contextid> is not omitted: OK or +CME ERROR: <err> Else query the current settings: +QFTPCFG: "contextid",<contextid> OK
Write Command AT+QFTPCFG="rsptimeout",<timeout>]	Response If <timeout> is not omitted: OK or +CME ERROR: <err> Else query the current settings: +QFTPCFG: "rsptimeout",<timeout> OK

Parameter

<user name>	String type, the user name for the authentication. The maximum size of the parameter is 50 bytes
<password>	String type, the password for the authentication. The maximum size of the parameter is 50 bytes
<contextID>	Integer type, the PDP context ID, the range is 1-16. It should be activated by AT+QIACT before QFTPOPEN. For details, please refer to <i>UC20_TCPIP_AT Commands Manual</i>
<file type>	Integer type, indicates the type of transferred data is ASCII or binary data 0 Binary 1 ASCII

<transmode>	Integer type, indicates whether the FTP server or client listens to data connection 0 Active mode, module will listen to data connection 1 Passive mode, FTP server will listen to data connection
<timeout>	Integer type, the range is 20-180, the unit is second, and the default value is 90s. Generally, it is the timeout value for most +QFTPXXX: xx,xx after the result code OK is returned, except the commands QFTPPUT/QFTPGET/QFTPLST/QFTPNLST. The rules for these four commands are shown as below: 1) When the command has been sent, but "CONNECT" has not been output yet, this parameter indicates the maximum interval time for "CONNECT" outputting after the command has been sent 2) When the module has entered into data mode, this parameter indicates the maximum interval time between two packets of received/transmitted data 3) When the <local name> is not "COM:", it indicates the maximum interval time between two packets of received/transmitted data
<err>	Integer type, indicates the error code of the operation. It is the type of error (Please refer to the Chapter 4)

2.2. AT+QFTPOPEN Login to FTP Server

This command is used to login to FTP server. You should activate the PDP context by AT+QIACT first. "+QFTPOPEN: <err>,<protocol error>" indicates the result of QFTPOPEN and it should be output in <timeout> set by AT+QFTPCFG.

AT+QFTPOPEN Login to FTP Server

Test Command AT+QFTPOPEN=?	Response +QFTPOPEN: <host name >,<port> OK
Write Command AT+QFTPOPEN=<hostname >[,<port>]	Response OK +QFTPOPEN: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<host name>	String type, the IP address or domain name of the FTP server. The maximum size of the parameter is 50 bytes
<port>	Integer type, the port of the FTP server. The default value is 21
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer

	to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

Example

```
AT+QFTPOPEN= "quectel.3322.org",21 //Login to FTP server
OK
+QFTPOPEN: 0,0
```

2.3. AT+QFTPCWD Set the Current Directory on FTP Server

Set the current directory on FTP server. If OK is returned, "+QFTPCWD: <err>,<protocol error>" should be output in <timeout> set by AT+QFTPCFG. All the files and directory operation will be set in the current directory.

AT+QFTPCWD Set the Current Directory on FTP Server	
Test Command AT+QFTPCWD=?	Response +QFTPCWD: <path name> OK
Write Command AT+QFTPCWD=<path name>	Response OK +QFTPCWD: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<path name>	String type, a directory path on FTP server. The maximum size of the parameter is 100 bytes. The root path of FTP server is "/"
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.4. AT+QFTPPWD Get the Current Directory on FTP Server

Get the current directory on FTP server. If OK is returned, “+QFTPPWD: 0,<path name>” or “+QFTPPWD: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG.

AT+QFTPPWD Get the Current Directory on FTP Server

Test Command AT+QFTPPWD=?	Response OK
Execute Command AT+QFTPPWD	Response OK If successfully get the current directory: +QFTPPWD: 0,<path name> Else fail to get current directory: +QFTPPWD: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<path name>	String type, a directory path on FTP server. The maximum size of the parameter is 100 bytes. The root path of FTP server is “/”
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.5. AT+QFTPPUT Upload a File to FTP Server

Upload file to FTP server. The file data can be uploaded from COM port, and the module will enter into data mode, you may input “+++” to abort the file uploading. You can also upload a local file to FTP server. The file can be RAM file or UFS file. You can upload a file to RAM or UFS by AT+QFUPL (For details, please refer to *UC20_FILE_AT_Commands_Manual*). And then use QFTPPUT command to upload it to FTP server, after uploading file successfully, you can delete the file by AT+QFDEL (For details, please refer to *UC20_FILE_AT_Commands_Manual*).

You can upload a file from specified file position by the <startpos> parameter. If the <local name> is “COM:”, “CONNECT” should be output in <timeout> set by AT+QFTPCFG. If the <local name> is not

“COM:”, “OK” will be output first, +QFTPPUT: 0,<transferlen> will be output after data being transferred completely.

If the module has entered data mode, the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data. If the <local name> is not “COM:”, the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data.

AT+QFTPPUT Upload a File to FTP Server

Test Command
AT+QFTPPUT=?

Response
+QFTPPUT: <file name>, <local name>,<startpos>,<uploadlen>,<beof>

OK

Write Command
AT+QFTPPUT=<file name>,<COM:>,<startpos>,<upload len>,<beof>]]

Response
CONNECT
<Input file data>
OK

If successfully upload the data:
+QFTPPUT: 0,<transferlen>

Else fail to upload the data:
+QFTPPUT: <err>,<protocol error>
or
+CME ERROR: <err>

Write Command
AT+QFTPPUT=<file name>,<local name>,<startpos>]
<local name> is not “COM:”

Response
OK

If successfully upload the data:
+QFTPPUT: 0,< transferlen>

Else fail to upload the data:
+QFTPPUT: <err>,<protocol error>
or
+CME ERROR: <err>

Parameter

<file name>	String type, the file name in FTP server. The maximum size of the parameter is 50 bytes
<local name>	String type, the local file name. The maximum size of the parameter is 60 bytes. If it is “COM:”, the file data will be input from COM port

	If it starts with "RAM:", the file is from RAM, else from UFS. It is strongly recommended to save file in RAM. After being uploaded successfully, you should delete the file by AT+QFDEL (For details, please refer to <i>UC20_FILE_AT_Commands_Manual</i>)
<startpos>	Integer type, the start position of file to be put. The default value is 0. If the <uploadlen> and <beof> is specified, the <startpos> should be consequent for uploading data to the same file
<uploadlen>	Integer type, length of data to be uploaded. It is valid only if <local name> is "COM:". When data from COM reached <uploadlen>, module will exit from data mode
<beof>	Integer type, indicates whether it is the last packet of data to be uploaded 0: Not the last packet of data, when data reached <uploadlen>, module will exit from data mode, "+QFTPPUT: 0,<transferlen>" will be output, but not close data connection, so you can continue to upload data to the same file on FTP 1: The last packet of data, when data reached <uploadlen>, module will exit from data mode and close data connection, "+QFTPPUT: 0,<transferlen>" will be output
<transferlen>	Integer type, length of successfully transferred data
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

Example

//Upload a file from COM port to FTP server.

AT+QFTPPUT="test.txt", "COM:",0

//All data will be saved as "test.txt" in FTP server.

CONNECT

<Input file data >

<++++>

OK

+QFTPPUT: 0,1000

//Upload a file from COM to FTP server twice, each time in 1024 bytes.

AT+QFTPPUT="test.txt", "COM:",0,1024,0

//It is not the last 1024 bytes of "test.txt".

CONNECT

<Input file data>

OK

//Data length get 1024.

+QFTPPUT: 0,1024

AT+QFTPPUT="test.txt", "COM:",0,1024,1

//It is the last 1024 bytes of "test.txt".

CONNECT

<Input file data>

OK

//Data length get 1024.

+QFTPPUT: 0,1024

//Upload a file from RAM to FTP server.

AT+QFUPL="RAM:test1.txt",1000,300,1

//Upload a file to RAM, the file will be saved as "test1.txt" and the maximum size of file is 1000. 300 indicates timeout, 1 indicates ACK mode. (Please refer to *UC20_FILE_AT_Commands_Manual*).

CONNECT

<Input 1000 bytes data>

+QFUPL: 1000,707

OK

AT+QFLST="RAM:?"

+QFLST: "RAM:test1.txt",1000

OK

AT+QFTPPUT="test.txt", "RAM:test1.txt",0

//Upload "RAM:test1.txt" to FTP server and save it as "test.txt" on FTP server.

OK

+QFTPPUT: 0,1000

AT+QFTPDEL="RAM:test1.txt"

OK

//Upload a file from UFS to FTP server.

AT+QFUPL="test2.txt",1000,200,1

//Upload a file to UFS, the file will be saved as "test2.txt" and the maximum of file size is 1000. 200 indicates timeout, 1 indicates ACK mode. (Please refer to *UC20_FILE_AT_Commands_Manual*).

CONNECT

<Input 1000 bytes data>

+QFUPL: 1000,707

OK

AT+QFLST

+QFLST: "test2.txt",1000

OK

AT+QFTPPUT="test.txt", "test2.txt",550

//Upload a local file "test2.txt" to FTP server and will be saved as "test.txt" on FTP server. The start position is

```

550.
OK

+QFTPPUT: 0,450
AT+QFTPDEL="test2.txt"
OK

```

2.6. AT+QFTPGET Download a File from FTP Server

Download a file from FTP server. You can output the file to COM port by AT+QFTPGET="filename","COM:". The module will enter data mode on receiving data from server. After data is transferred completely, the module will exit from data mode automatically and output "QFTPGET: 0,<transferlen>". You can save the file to RAM by AT+QFTPGET="filename","RAM:localname" or to UFS by AT+QFTPGET="filename","localname". After file being transferred completely, the module will output "+QFTPGET: 0,<transferlen>".

If the <local name> is "COM:", "CONNECT" should be output in <timeout> set by AT+QFTPCFG. If the <local name> is not "COM:", "OK" will be output first, "+QFTPGET: 0,<transferlen>" will be output after data being transferred completely.

If the module has entered data mode, the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data. If the <local name> is not "COM:", the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data.

AT+QFTPGET Get a File from FTP Server

Test Command AT+QFTPGET=?	Response +QFTPGET: <file name>,<local name>,<startpos>,<downloadlen> OK
Write Command AT+QFTPGET=<file name>,"COM:"[,<startpos >[,<downloadlen>]]	Response CONNECT <Output file data> OK If successfully download the file: +QFTPGET: 0,<transferlen> Else fail to download the file: +QFTPGET: <err>,<protocol error>

	or +CME ERROR: <err>
Write Command AT+QFTPGET=<file name>,<local name>[,<startpos>] <local name> is not "COM:"	Response OK If successfully download the file: +QFTPGET: 0,<transferlen> Else fail to download the file: +QFTPGET: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<file name>	String type, the file name in FTP server. The maximum size of the parameter is 50 bytes
<local name>	String type, the local file name. The maximum size of the parameter is 60 bytes. If it is "COM:", the file data will be output to COM port. If it starts with "RAM:", the file will be saved to RAM, else it will be saved to UFS. It is strongly recommended to save the file in RAM. Then you can read the file by AT+QFREAD (for details, please refer to <i>UC20_FILE_AT_Commands_Manual</i>)
<startpos>	Integer type, the start position of file to get. The default value is 0
<downloadlen>	Integer type, the data length to download. It is valid only if <local name> is "COM:". If this parameter is specified, module will output <downloadlen> bytes to COM and exit from data mode. You can continue to get data from <startpos> by the same AT command if there is data left
<transferlen>	Integer type, the actually transferred data length. If it is less than <downloadlen>, it means the whole file is transferred completely
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

Example

//Download a file and output to COM port.

AT+QFTPGET="test.txt", "COM:",0

CONNECT

<Output file data >

OK

+QFTPGET: 0,1000

//Download a file and output to COM port twice, each time in 500 bytes.

AT+QFTPGET="test.txt","COM:",0,500 //The size of "test.txt" is 1000 bytes, download the first 500 bytes.

CONNECT

<Output file data >

OK

+QFTPGET: 0,500

AT+QFTPGET="test.txt","COM:",500,500 //Download 500-1000 bytes.

CONNECT

<Output file data >

OK

+QFTPGET: 0,500

//Download a file and save it to RAM.

AT+QFTPGET="test.txt","RAM:test2.txt",0

OK

+QFTPGET: 0,1000

AT+QFLST="RAM:*"

+QFLST: "RAM:test2.txt",1000

OK

//Download a file from FTP server and save it in UFS.

AT+QFTPGET="test.txt","test3.txt",550 //The start position is 550.

OK

+QFTPGET: 0,450

AT+QFLST

+QFLST: test3.txt,450

OK

2.7. AT+QFTPSIZE Get the File Size on FTP Server

Get the file size on FTP server. If "OK" is returned, "+QFTPSIZE: 0,<file size>" or "+QFTPSIZE: <err>,<protocol error>" should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should close the FTP connection, deactivate and reactive the network.

AT+QFTPSIZE Get the File Size on FTP Server

Test Command AT+QFTPSIZE=?	Response +QFTPSIZE: <file name> OK
Write Command AT+QFTPSIZE=<file name>	Response OK If successfully get the file size: +QFTPSIZE: 0,<file size> Else fail to get the file size: +QFTPSIZE: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<file name>	String type, the file name in FTP server. The maximum size of the parameter is 50 bytes
<file size>	Integer type, the size of file on FTP server
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.8. AT+QFTPDEL Delete the File on FTP Server

Delete file on FTP server. If “OK” is returned, “+QFTPDEL: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should close the FTP connection, deactivate and reactive the network.

AT+ QFTPDEL Delete the File on FTP Server

Test Command AT+QFTPDEL=?	Response + QFTPDEL: <file name> OK
Write Command AT+ QFTPDEL =<file name>	Response OK

+QFTPDEL: <err>,<protocol error>
or
+CME ERROR: <err>

Parameter

<file name>	String type, the file name in FTP server. The maximum size of the parameter is 50 bytes
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.9. AT+QFTPMKDIR Make a Folder on FTP Server

Make a folder on FTP server. If “OK” is returned, “+QFTPMKDIR: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should close the FTP connection, deactivate and reactive the network.

AT+QFTPMKDIR Make a File Folder on FTP Server

Test Command AT+QFTPMKDIR=?	Response +QFTPMKDIR: <folder name> OK
Write Command AT+QFTPMKDIR=<folder name>	Response OK +QFTPMKDIR: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<folder name>	String type, the folder name on FTP server. The maximum size of the parameter is 100 bytes.
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server

which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.10. AT+QFTPRMDIR Delete a Folder on FTP Server

Delete a folder on FTP server. If “OK” is returned, “+QFTPRMDIR: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should close the FTP connection, deactivate and reactive the network.

AT+QFTPRMDIR Delete a Folder on FTP Server

Test Command AT+QFTPRMDIR=?	Response +QFTPRMDIR: <folder name>
	OK
Write Command AT+QFTPRMDIR=<folder name>	Response OK
	+QFTPRMDIR: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<folder name>	String type, the folder name on FTP server. The maximum size of the parameter is 100 bytes
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.11. AT+QFTPLIST List Contents of Directory on FTP Server

List contents of directory on FTP server. If the <local name> is “COM:”, “CONNECT” should be output in <timeout> set by AT+QFTPCFG. Else “OK” will be returned first. “+QFTPLIST: 0,<transfer size>” will be output after contents being transferred completely.

If the module has entered data mode, the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data. If the <local name> is not “COM:”, the <timeout>

set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data.

AT+QFTPLIST List Contents of Directory on FTP Server

Test Command AT+QFTPLIST=?	Response +QFTPLIST: <dirname>, <local name> OK
Write Command AT+QFTPLIST= <dirname>[,“COM:”]	Response CONNECT <Output content data> OK If successfully list contents of the directory: +QFTPLIST: 0,<transfer size> Else fail to list contents of the directory: +QFTPLIST: <err>,<protocol error> or +CME ERROR: <err>
Write Command AT+QFTPLIST=<dirname>,<local name> The <local name> is not “COM:”	Response OK If successfully list contents of the directory: +QFTPLIST: 0,<transfer size> Else fail to list contents of the directory: +QFTPLIST: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<dirname>	String type, the folder name on FTP server. The maximum size of the parameter is 100 bytes. If it is “.”, it will get the content of current directory set by AT+QFTPCWD
<local name>	String type, the local position to save data from FTP server. The maximum size of the parameter is 60 bytes. The default value is “COM:”. If it is “COM:”, the data will be output to COM port. If it starts with “RAM:”, the data will be saved to RAM, else it will be saved to UFS. Then you can read the file by AT+QFREAD (For details, please refer to <i>UC20_FILE_AT_Commands_Manual</i>)
<transfer size>	Integer type, the size of transferred data from FTP server

<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

Example

//Get contents of current directory on FTP server and output to COM port.

AT+QFTPLIST =“.”

CONNECT

<Output content data >

OK

+QFTPLIST: 0,1000

//Get content of specified directory on FTP server and save to RAM.

AT+QFTPLIST=“TESTDIR“, “RAM:test2.txt”

OK

+QFTPLIST: 0,1000

AT+QFLST=“RAM:”

+QFLST: “RAM:test2.txt“,1000

OK

//Get content of specified directory on FTP server and save to UFS.

AT+QFTPLIST= “TESTDIR”, “test.txt”

OK

+QFTPLIST: 0,1000

AT+QFLST

+QFLST: test.txt,1000

OK

2.12. AT+QFTPNLST List File Names of Directory on FTP Server

List file names of directory on FTP server. If the <local name> is “COM:”, “CONNECT” should be output in <timeout> set by AT+QFTPCFG. Else “OK” will be returned first. “+QFTPNLST: 0,<transfer size>” will be

output after file names being transferred completely.

If the module has entered data mode, the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data. If the <local name> is not "COM:", the <timeout> set by AT+QFTPCFG indicates the maximum interval time between two packets of received/transmitted data.

AT+QFTPLIST List File Names of Directory on FTP Server

Test Command
AT+QFTPNLST=?

Response
+QFTPNLST: <dirname> ,<local name>

OK

Write Command
AT+QFTPNLST=<dirname>[,"COM:"]

Response
CONNECT
<Output content data>
OK

If successfully list file names:
+QFTPNLST: 0,<transfer size>

Else fail to list file names:
+QFTPNLST: <err>,<protocol error>
or
+CME ERROR: <err>

Write Command
AT+QFTPNLST=<dirname>,<local name>
<local name> is not "COM:"

Response
OK
+QFTPNLST: 0,<transfer size>
or
+CME ERROR: <err>

If error occurs while listing file name:
+QFTPNLST: <err>,<protocol error>

Parameter

<dirname>	String type, the folder name on FTP server. The maximum size of the parameter is 100 bytes. If it is ".", it will get the content of current directory set by AT+QFTPCWD
<local name>	String type, the local position to save data from FTP server. The maximum size of the parameter is 60 bytes. The default value is "COM:". If it is "COM:", the data will be output to COM port. If it starts with "RAM:", the data will be saved to RAM, else it will be saved to UFS. Then you can read the file by AT+QFREAD (For details,

	please refer to <i>UC20_FILE_AT_Commands_Manual</i>)
<transfer size>	Integer type, the size of transferred data from FTP server
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

Example

//Get file names of current directory on FTP server and output to COM port.

AT+QFTPNLST="."

CONNECT

<Output content data >

OK

+QFTPNLST: 0,1000

//Get file name of specified directory on FTP server and save to RAM.

AT+QFTPNLST="TESTDIR","RAM:test2.txt"

OK

+QFTPNLST: 0,1000

AT+QFLST="RAM:.*"

+QFLST: "RAM:test2.txt",1000

OK

//Get file name of specified directory on FTP server and save to UFS.

AT+QFTPNLST="TESTDIR","test.txt"

OK

+QFTPNLST: 0,1000

AT+QFLST

+QFLST: test.txt,1000

OK

2.13. AT+QFTPRENAME Rename a File or Folder on FTP Server

Rename a file or folder on FTP server. If “OK” is returned, “+QFTPRENAME: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should close the FTP connection, deactivate and reactive the network.

AT+QFTPRENAME Rename a File or Folder on FTP Server

Test Command
AT+QFTPRENAME=?

Response
+QFTPRENAME: <old name>,<new name>

OK

Write Command
AT+ QFTPRENAME =<old name>,<new name>

Response
OK

+ QFTPRENAME: <err>,<protocol error>
or
+CME ERROR: <err>

Parameter

<old name>	String type, the old file name or folder name on FTP server. The maximum size of the parameter is 100 bytes
<new name>	String type, the new file name or folder name on FTP server. The maximum size of the parameter is 100 bytes
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

2.14. AT+QFTPLEN Get the Transferred Data Length

Get the transferred data length on FTP server.

AT+QFTPLEN Get the Transferred Data Length

Test Command
AT+QFTPLEN=?

Response

OK

Execute Command
AT+QFTPLEN

Response
OK

+QFTPLEN: 0,<transferlen>

or

+CME ERROR: <err>

Parameter

<transferlen> Integer type, the transferred data length on FTP server. When executing AT+QFTPPUT, AT+QFTPGET, AT+QFTPNLST or AT+QFTPLIST, you can query the transferred data length by AT+QFTPLEN

<err> Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)

2.15. AT+QFTPSTAT Get the Status of FTP Service

Get the status of FTP service.

AT+QFTPSTAT Get the Status of FTP Service

Test Command
AT+QFTPSTAT=?

Response

OK

Execute Command
AT+QFTPSTAT

Response

OK

+QFTPSTAT: 0,<ftpstat>

or

+CME ERROR: <err>

Parameter

<ftpstat> Integer type, indicates the current status of FTP services

- 0 Opening an FTP service
- 1 The FTP service is opened and idle
- 2 Transferring data with FTP server
- 3 Closing the FTP service
- 4 The FTP service is closed

<err> Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)

2.16. AT+QFTPCLOSE Logout from FTP Server

Logout from FTP server. If “OK” is returned, “+QFTPCLOSE: <err>,<protocol error>” should be output in <timeout> set by AT+QFTPCFG. Otherwise, you should deactivate and reactive the network.

AT+QFTPCLOSE Logout from FTP Server

Test Command AT+QFTPCLOSE=?	Response OK
Execute Command AT+QFTPCLOSE	Response OK +QFTPCLOSE: <err>,<protocol error> or +CME ERROR: <err>

Parameter

<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)
<protocol error>	Integer type, for reference only, indicates the original error code from FTP server which is defined in FTP protocol (Please refer to Chapter 5). If it is 0, it is meaningless

3 Example

3.1. Login to FTP Server

// Step 1: Configure and activate the PDP context.

AT+QICSGP=1,1, "UNINET", "", "", 1

//Configure PDP context 1, APN is "UNINET" for China Unicom.

OK

AT+QIACT=1

//Activate PDP context 1.

OK

//Activate successfully.

AT+QIACT?

//Query the state of PDP context.

+QIACT: 1,1,1,"10.7.157.1"

OK

AT+QFTPCFG="contextid",1

//Set the PDP context ID as 1. The PDP context ID must be activated before.

OK

//Step 2: Configure user account and transfer settings.

AT+QFTPCFG="account","test","test"

//Set user name and password.

OK

AT+QFTPCFG="filetype",1

//Set file type as Binary.

OK

AT+QFTPCFG="transmode",1

//Set transfer mode as Passive mode.

OK

AT+QFTPCFG="rsptimeout",90

//Set response timeout value.

OK

//Step 3: Login to FTP server.

AT+QFTPOPEN="quectel.3322.org",21

OK

+QFTPOPEN: 0,0

3.2. Folder Operation

```
AT+QFTPCWD="/" //Set current directory.
OK

+QFTPCWD: 0,0
AT+QFTPPWD //Query current directory.
OK

+QFTPPWD: 0,/
AT+QFTPMKDIR="TEST" //Create a folder as "TEST" in FTP server.
OK

+QFTPMKDIR: 0,0
AT+QFTPRENAME="TEST", "TEST_NEW" //Rename a folder.
OK

+QFTPRENAME: 0,0
AT+QFTPRMDIR="TEST_NEW" //Delete a folder.
OK

+QFTPRMDIR: 0,0
```

3.3. File Operation

```
AT+QFTPCWD="/" //Set current directory.
OK

+QFTPCWD: 0,0
AT+QFTPPWD //Query current directory.
OK

+QFTPPWD: 0,/
AT+QFTPSIZE="test_my1.txt" //Query size of "test_my1.txt" on FTP server.
OK

+QFTPSIZE: 1000
AT+QFTPRENAME="test_my1.txt", "test_new.txt" //Rename a file.
OK

+QFTPRENAME: 0,0
```



```
AT+QFTPDEL="test_new.txt" //Delete "test_new.txt" on FTP server.  
OK  
  
+QFTPDEL: 0,0
```

3.4. List File Information or File Names

```
AT+QFTPCWD="/" //Set current directory.  
OK  
  
+QFTPCWD: 0,0  
AT+QFTPLIST="." //List file information of current directory and output to COM.  
CONNECT  
<Output content data>  
OK  
  
+QFTPLIST: 0,1000  
AT+QFTPLIST=".", "RAM:list.txt" //List file information of current directory and output to RAM:list.txt.  
OK  
  
+QFTPLIST: 0,1000  
  
AT+QFTPLIST="TEST_2", "COM:" //List file information of "/TEST_2" and output to COM.  
CONNECT  
<Output content data>  
OK  
  
+QFTPLIST: 0,1000  
  
AT+QFTPNLST="." //List file names of current directory and output to COM.  
CONNECT  
<Output content data>  
OK  
  
+QFTPNLST: 0,1000  
AT+QFTPNLST=".", "RAM:nlst.txt" //List file information of current directory and output to RAM:nlst.txt.  
OK  
  
+QFTPNLST: 0,1000  
  
AT+QFTPNLST="TEST_2", "COM:" //List file names of "/TEST_2" and output to COM.  
CONNECT  
<Output content data>
```

OK

+QFTPNLST: 0,1000

3.5. Upload a File to FTP Server

AT+QFTPCWD="/"

OK

+QFTPCWD: 0,0

AT+QFTPSTAT

+QFTPSTAT: 0,1

OK

//Upload a file from COM.

AT+QFTPPUT="test_my.txt", "COM:",0

//All data will be saved as "test.txt" in FTP server.

CONNECT

<Input file data >

<++++>

OK

+QFTPPUT: 0,1000

AT+QFTPLEN

+QFTPLEN: 0,1000

OK

AT+QFTPSIZE="test_my.txt"

OK

+QFTPSIZE: 0,1000

//Upload a file from COM and the start position is 1000.

AT+QFTPPUT="test_my.txt", "COM:",1000

//All data will be saved as "test.txt" in FTP server.

CONNECT

<Input file data >

<++++>

OK

+QFTPPUT: 0,500

AT+QFTPSIZE="test_my.txt"

OK

+QFTPSIZE: 0,1500

//Upload a file from COM to FTP server twice, each time in 1024 bytes.

AT+QFTPPUT="test.txt", "COM:",0,1024,0

//It is not the last 1024 bytes of "test.txt".

CONNECT

<Input file data>

OK

//Data length get 1024.

+QFTPPUT: 0,1024

AT+QFTPPUT="test.txt", "COM:",0,1024,1

//It is the last 1024 bytes of "test.txt".

CONNECT

<Input file data>

OK

//Data length get 1024.

+QFTPPUT: 0,1024

//Upload a file from RAM to FTP server.

AT+QFUPL="RAM:test_ram.txt",1000,300,1

//Upload a file to RAM, the file will be saved as "test_ram.txt" and the maximum of file size is 1000. 300 indicates timeout, 1 indicates ACK mode. (Please refer to UC20_FILE_AT_Commands_Manual).

CONNECT

<Input 1000 bytes data>

+QFUPL: 1000,707

OK

AT+QFLST="RAM:.*"

+QFLST: "RAM:test_ram.txt",1000

OK

AT+QFTPPUT="test_my1.txt", "RAM:test_ram.txt",0

//Upload "RAM:test_ram.txt" to FTP server and saved as "test_my1.txt" on FTP server.

OK

+QFTPPUT: 0,1000

AT+QFTPLEN

+QFTPLEN: 0,1000

OK

AT+QFTPSIZE="test_my1.txt"

OK

```
+QFTPSIZE: 0,1000
AT+QFDEL="RAM:test_ram.txt"           //Delete local RAM file.
OK
```

3.6. Download a File from FTP Server

```
AT+QFTPCWD="/"
OK

+QFTPCWD: 0,0
//Download a file from FTP server and output to COM.

AT+QFTPGET="test_my.txt", "COM:"
CONNECT
<Output file data>
OK

+QFTPGET: 0,1000
//Download a file and output to COM port twice, each time in 500 bytes.

AT+QFTPGET="test.txt", "COM:",0,500    //The size of test.txt is 1000 bytes, download the
                                        first 500 bytes.

CONNECT
<Output file data>
OK

+QFTPGET: 0,500
AT+QFTPGET="test.txt", "COM:",500,500  //Download 500-1000 bytes.
CONNECT
<Output file data>
OK

+QFTPGET: 0,500
//Download a file from FTP server and save to RAM.

AT+QFTPGET="test_my1.txt", "RAM:test.txt" //Download file and save it to RAM as "test.txt".
OK

+QFTPGET: 0,1000
AT+QFLST="RAM:*"
+QFLST: RAM:test.txt,1000
```

OK

//Download a file from FTP server and save it to RAM, the start position is 450.

AT+QFTPGET="test_my1.txt", "RAM:test1.txt",450 //Download file and save to RAM as "test.txt".

OK

+QFTPGET: 0,550

AT+QFTPLEN

+QFTPLEN: 0,550

OK

AT+QFLST="RAM:.*"

+QFLST: RAM:test.txt,1000

+QFLST: RAM:test1.txt,550

OK

3.7. Logout from FTP Server

AT+QFTPCLOSE //Logout from FTP server.

OK

+QFTPCLOSE: 0,0

AT+QIDEACT=1 //Deactivate the PDP context which was activated for FTP.

OK

4 Summary of Error Codes

The error code <err> indicates an error related to mobile equipment or network. The details about <err> are described in the following table.

Table 1: Summary of Error Codes

<err>	Meaning
0	Operate successfully
601	Unknown error
602	FTP service would block
603	FTP service busy
604	DNS parse fails
605	Network error
606	Control connection closed.
607	Data connection closed
608	Socket closed by peer
609	Timeout error
610	Invalid parameter
611	Fail to open file
612	File position invalid
613	File error
614	Service not available, closing control connection
615	Open data connection fails
616	Connection closed; transfer aborted
617	Requested file action not taken

618	Requested action aborted: local error in processing
619	Requested action not taken: insufficient system storage
620	Syntax error, command unrecognized
621	Syntax error in parameters or arguments
622	Command not implemented
623	Bad sequence of commands
624	Command parameter not implemented
625	Not logged in
626	Need account for storing files
627	Requested action not taken.
628	Requested action aborted: page type unknown
629	Requested file action aborted
630	Requested file name invalid

5 Summary of FTP Protocol Error Codes

The protocol error code <protocol error> indicates an error replied from FTP server. Please refer to RFC959 (File Transfer Protocol). The details about <protocol error> are described in the following table.

Table 2: Summary of FTP Protocol Error Codes

<protocol error>	Meaning
421	Service not available, closing control connection
425	Open data connection fails
426	Connection closed; transfer aborted
450	Requested file action not taken
451	Requested action aborted: local error in processing
452	Requested action not taken: insufficient system storage
500	Syntax error, command unrecognized
501	Syntax error in parameters or arguments
502	Command not implemented
503	Bad sequence of commands
504	Command parameter not implemented
530	Not logged in
532	Need account for storing files
550	Requested action not taken. File unavailable
551	Requested action aborted: page type unknown
552	Requested file action aborted. Exceeded storage allocation
553	Requested action not taken. File name not allowed

6 Appendix A Reference

Table 3: Related Documents

SN	Document Name	Remark
[1]	RFC959	File Transfer Protocol
[2]	UC20_TCPIP_AT_Commands_Manual	Introduction about UC20 TCPIP AT commands
[3]	UC20_FILE_AT_Commands_Manual	Introduction about UC20 file AT commands
[4]	UC20_AT_Commands_Manual	UC20 AT commands manual

Table 4: Terms and Abbreviations

Abbreviation	Description
FTP	File Transfer Protocol
PDP	Packet Data Protocol
DTR	Data Terminal Ready
PPP	Point-to-Point Protocol
DNS	Domain Name Server