EC2x&EG9x&EM05 FTP(S)
AT Commands Manual

LTE Module Series

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About the Document

History

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1 Introduction

EC2x&EG9x&EM05 modules provide FTP(S) application to FTP(S) server. This document is a reference guide to all the AT commands defined for FTP(S).

This document is applicable to following Quectel modules.

- EC2x (including EC25, EC21, EC20 R2.0 and EC20 R2.1)
- EG9x (including EG91 and EG95)
- EM05

1.1. The Process of Using FTP AT Commands

As EC2x&EG9x&EM05 modules support FTP(S) protocol, file and directory on FTP(S) server can be operated via FTP(S) AT commands. The general process is as follows:

Step 1: Configure and activate a PDP context.
1) Configure <APN>, <username>, <password> and other parameters of a PDP context by AT+QICSGP. Please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual* for details. If QoS settings need to be updated, configure them by AT+CGQMIN, AT+CGEQMIN, AT+CGQREQ and AT+CGEQREQ commands. For more details, please refer to *Quectel_EC25&EC21_AT_Commands_Manual, Quectel_EG9x_AT_Commands_Manual and Quectel_EM05_AT_Commands_Manual*.
2) Activate the PDP context via AT+QIACT.
3) Configure the PDP context ID for FTP(S) by AT+QFTPCFG="contextid",<contextID>. The PDP context should be activated first.

Step 2: Configure user account and FTP(S) server.
1) Configure account information by AT+QFTPCFG="account",<username>,<password>.
2) Configure file type by AT+QFTPCFG="filetype",<file_type>. The file type of the transferred data between FTP(S) server and client can be binary data or ASCII data.
3) Configure the transfer mode by AT+QFTPCFG="transmode",<transmode>. The transfer mode means either the FTP(S) server or client listens on a port for data connection. Please note that AT+QFTPCFG="transmode",1 must be set for FTPS operations, because FTPS does not support active mode currently.
4) Configure the response timeout value by AT+QFTPCFG="rsptimeout",<timeout>.
5) If the module works as FTPS client, then the following configurations are needed:

a) Execute AT+QFTPCFG="ssltype",1.

b) Execute AT+QFTPCFG="sslctxid",<sslctxid> to select a <sslctxid>.

c) Execute AT+QSSLCFG to configure the selected <sslctxid>. For more details, please refer to *Quectel_EC2x&EG9x&EM05_SSL_AT_Commands_Manual*.

Step 3: Login to FTP(S) server.

Login to FTP(S) server by AT+QFTPOPEN=<hostname>,<port>. If "+QFTPOPEN: 0,0" URC is returned, it indicates the operation is successful. Please note that the ports of FTPS and FTP server are different. The port of FTPS server depends on FTPS server provider, and it is 990 usually.

Step 4: File operation.

1) Set the current directory by AT+QFTPCWD.

2) Upload a file to FTP(S) server.

a) Upload a file from RAM, UFS or SD via AT+QFUPL, then upload the file to FTP(S) server by AT+QFTPPUT. After uploading the file to FTP(S) server successfully, the file should be deleted by AT+QFDEL. For more details, please refer to *Quectel_EC2x&EG9x&EM05 FILE_AT_Commands_Manual*.

b) Upload a file to FTP(S) server through COM port by AT+QFTPPUT, then the module will enter into data mode. "+++" can be inputted to finish the file uploading process.

3) Download a file from FTP(S) server by AT+QFTPGET. The file can be outputted to COM port or saved to RAM, UFS or SD. If the file is outputted to COM port, the module will enter into data mode.

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

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

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

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

Step 5: Directory operation on FTP(S) 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+QFTPRENAME.

6) Delete a directory by AT+QFTPRMDIR.

7) List standardized file and directory information by AT+QFTPMLSD.

8) Get the file modification time on FTP(S) server by AT+QFTPMDTM.

Step 6: Close connection with FTP(S) server.

Close the connection with FTP(S) server by AT+QFTPCLOSE. If "+QFTPCLOSE: 0,0" URC is 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 more details, please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual*.

1.2. Description of Data Mode

The COM port of EC2x&EG9x&EM05 modules has two working modes: AT command mode and data mode. 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.

Inputting "+++" or pulling up DTR (AT&D1 should be set first) can make the module exit from data mode. To prevent the "+++" from being misinterpreted as data, the following sequence should be followed:

1) Do not input any character within 1s or longer before inputting "+++".
2) Input "+++" within 1s, and no other characters can be inputted during the time.
3) Do not input any character within 1s after "+++" has been inputted.

When AT+QFTPPUT, AT+QFTPGET, AT+QFTPLIST and AT+QFTPNLST are executed, if the local file path is "COM:", which means data will be received from or outputted to COM port, the COM port will enter into data mode. Customers can exit from data mode by inputting "+++" or changing DTR level from low to high. In addition, customers can reenter data mode by executing ATO command after AT+QFTPGET, AT+QFTPLIST and AT+QFTPNLST are executed. And customers cannot reenter data mode via ATO when after AT+QFTPPUT is executed.

2 Description of FTP(S) AT Commands

2.1. AT+QFTPCFG   Configure Parameters for FTP(S) Server

The command is used to configure FTP(S) server, user account, file type, transfer mode and context ID. If the Write Command only executes one parameter, it will query the current settings.

AT+QFTPCFG Configure Parameters for FTP(S) Server	
Test Command **AT+QFTPCFG=?**	Response **+QFTPCFG: "account",<username>,<password>** **+QFTPCFG: "filetype",(0,1)** **+QFTPCFG: "transmode",(0,1)** **+QFTPCFG: "contextid",(1-16)** **+QFTPCFG: "rsptimeout",(20-180)** **+QFTPCFG: "ssltype",(0-2)** **+QFTPCFG: "sslctxid",(0-5)** **+QFTPCFG: "data_address",(0,1)** **OK**
Write Command **AT+QFTPCFG="account"[,<username>,<password>]**	Response If <username> and <password> are not omitted: **OK** Or **+CME ERROR: <err>** If <username> and <password> are both omitted, query the current settings: **+QFTPCFG: "account",<username>,<password>** **OK**
Write Command **AT+QFTPCFG="filetype"[,<file_type>]**	Response If <file_type> is not omitted: **OK** Or **+CME ERROR: <err>**

	If <file_type> is omitted, 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>** If <transmode> is omitted, 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>** If <contextID> is omitted, 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>** If <timeout> is omitted, query the current settings: **+QFTPCFG: "rsptimeout",<timeout>** **OK**
Write Command **AT+QFTPCFG="ssltype"[,<ssltype>]**	Response If <ssltype> is not omitted: **OK** Or **+CME ERROR: <err>** If <ssltype> is omitted, query the current settings: **+QFTPCFG: "ssltype",<ssltype>** **OK**

Write Command	Response
AT+QFTPCFG="sslctxid"[,<sslctxid>]	If <sslctxid> is not omitted: **OK** Or **+CME ERROR: <err>** If <sslctxid> is omitted, query the current settings: **+QFTPCFG: "sslctxid",<sslctxid>** **OK**
Write Command **AT+QFTPCFG="data_address"[,<data_address>]**	Response If <data_address> is not omitted: **OK** Or **+CME ERROR: <err>** If <data_address> is omitted, query the current settings: **+QFTPCFG: "data_address",<data_address>** **OK**

Parameter

<username>	String type. The user name for authentication. The maximum size of the parameter is 255 bytes.
<password>	String type. The password for authentication. The maximum size of the parameter is 255 bytes.
<contextID>	Integer type. The PDP context ID. The range is 1-16, and the default value is 1. It should be activated by AT+QIACT before using QFTPOPEN. For more details, please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual.*
<file_type>	Integer type. The type of transferred data. <u>0</u> Binary 1 ASCII
<transmode>	Integer type. 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 <u>1</u> Passive mode, FTP(S) server will listen on a port for data connection

<timeout>	Integer type. The range is 20-180, and the default value is 90. Unit: second.
	Generally, it is the timeout value for most +QFTPXXX: xx,xx commands after the "OK" result code is returned, except AT+QFTPPUT/QFTPGET/QFTPLST/QFTPNLST commands. The rules for these four commands are shown as below:
	  a) When the command has been sent, but "CONNECT" has not been outputted yet, this parameter indicates the maximum interval time for "CONNECT" to be outputted after the command has been sent.
	  b) When the module has entered into data mode, this parameter indicates the

	maximum interval time between two packets of received/transmitted data.
	c) When the <local_name> is not "COM:", it indicates the maximum interval time between two packets of received/transmitted data.
<ssltype>	Integer type. The module works as FTP client or FTPS client.
	<u>0</u> FTP client
	1 FTPS client
<sslctxid>	Integer type. The SSL context ID. The range is 0-5, and the default value is 0. Customers should configure the SSL parameters by AT+QSSLCFG. For details, please refer to *Quectel_EC2x&EG9x&EM05_SSL_AT_Commands_Manual*.
<data_address>	Integer type. FTP data connection address selection.
	<u>0</u> Use server dispatched address
	1 Use FTP control session address
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

NOTE

During FTPS operation, <transmode> must be set into 1 because FTPS does not support active mode currently.

2.2. AT+QFTPOPEN   Login to FTP(S) Server

The command is used to login to FTP(S) server. The PDP context should be activated by AT+QIACT first. "+QFTPOPEN: <err>,<protocol_error>" indicates the operation result of AT+QFTPOPEN and it should be outputted within <timeout> configured by AT+QFTPCFG.

AT+QFTPOPEN Login to FTP(S) Server	
Test Command **AT+QFTPOPEN=?**	Response **+QFTPOPEN: <hostname>,<port>** **OK**
Write Command **AT+QFTPOPEN=<hostname>[,<port>]**	Response **OK** **+QFTPOPEN: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<hostname>   String type. The IP address or domain name of the FTP(S) server. The maximum

	size of the parameter is 200 bytes.
<port>	Integer type. The port of the FTP(S) server. The default value is 21.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

Example

AT+QFTPOPEN="101.95.183.122",21   //Login to FTP server.
OK

+QFTPOPEN: 0,0
AT+QFTPOPEN="quectel.3322.org",990   //Login to FTPS server.
OK

+QFTPOPEN: 0,0

NOTE

Please note that the ports of FTPS and FTP server are different. The port of FTPS server depends on FTPS server provider, and it is 990 usually.

2.3. AT+QFTPCWD   Configure the Current Directory on FTP(S) Server

The command is used to configure the current directory on FTP(S) server. If "OK" is returned, "+QFTPCWD: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. All the files and directory operation will be configured in the current directory.

AT+QFTPCWD Configure the Current Directory on FTP(S) 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(S) server. The maximum size of the parameter is 255 bytes. The root path of FTP(S) server is "/".
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

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

The command is used to get the current directory on FTP(S) server. If "OK" is returned, "+QFTPPWD: 0,<path_name>" or "+QFTPPWD: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG.

AT+QFTPPWD　Get the Current Directory on FTP(S) Server	
Test Command **AT+QFTPPWD=?**	Response **OK**
Execution Command **AT+QFTPPWD**	Response **OK** If successfully got, response: **+QFTPPWD: 0,<path_name>** If failed to get, response: **+QFTPPWD: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<path_name>	String type. A directory path on FTP(S) server. The maximum size of the parameter is 255 bytes. The root path of FTP(S) server is "/".
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

2.5. AT+QFTPPUT   Upload a File to FTP(S) Server

The command is used to upload a file to FTP(S) server. The file data can be uploaded via COM port, and then the module will enter into data mode. Inputting "+++" can abort the file uploading. A local file can be uploaded to FTP(S) server and the file can be RAM, UFS or SD files. A file can be uploaded to RAM, UFS or SD by AT+QFUPL, and then uploaded to FTP(S) server via AT+QFTPPUT command. After a file is uploaded successfully, the file can be deleted by AT+QFDEL. For more details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*.

A file can be uploaded from specified file position by <startpos> parameter. If the <local_name> is "COM:", "CONNECT" should be outputted within <timeout> configured by AT+QFTPCFG. If the <local_name> is not "COM:", "OK" will be outputted first, and then "+QFTPPUT: 0,<transferlen>" will be outputted after data has been transferred completely.

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

AT+QFTPPUT Upload a File to FTP(S) Server	
Test Command **AT+QFTPPUT=?**	Response **+QFTPPUT:** **<file_name>,<local_name>,<startpos>,<uploadlen>,<beof>** **OK**
Write Command **AT+QFTPPUT=<file_name>,"COM:"** **[,<startpos>[,<uploadlen>,<beof>]]**	Response **CONNECT** <Input file data> **OK** If successfully uploaded, response: **+QFTPPUT: 0,<transferlen>** If failed to upload, response: **+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 uploaded, response: **+QFTPPUT: 0,< transferlen>** If failed to upload, response: **+QFTPPUT: <err>,<protocol_error>**

| | Or |
| | **+CME ERROR: <err>** |

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size of the parameter is 255 bytes.
<local_name>	String type. The local file name. The maximum size of the parameter is 60 bytes. If it is "COM:", the data will be inputted via COM port. If it is not "COM:", the data will be saved to RAM, UFS or SD. After being uploaded successfully, the file should be deleted by AT+QFDEL. For details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*.
<startpos>	Integer type. The start position of the file to be uploaded. The default value is 0. If <uploadlen> and <beof> are specified, <startpos> should be the position where the data continues to be uploaded to the same file.
<uploadlen>	Integer type. The length of data to be uploaded. It is valid only if <local_name> is "COM:". When the length of data uploaded via COM port reaches <uploadlen>, the module will exit from data mode. Unit: byte.
<beof>	Integer type. Whether it is the last packet of data to be uploaded.
	0 Not the last packet of data. When the data length reaches <uploadlen>, the module will exit from data mode, and "+QFTPPUT: 0,<transferlen>" will be outputted. In such case, please do not disconnect data connection, as the remained data needs to be uploaded to the same file on FTP.
	1 The last packet of data. When the data length reaches <uploadlen>, the module will exit from data mode and data connection can be disconnected, then "+QFTPPUT: 0,<transferlen>" will be outputted.
<transferlen>	Integer type. The length of successfully transferred data. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

Example

//Upload a file via COM port to FTP(S) server.

AT+QFTPPUT="test.txt","COM:",0   //All data will be saved as "*test.txt*" on FTP(S) server.
CONNECT
<Input file data>
<+++>
OK

+QFTPPUT: 0,1000

//Upload a file via COM port to FTP(S) server twice in 1024 bytes each time.

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 reaches 1024 bytes.

+QFTPPUT: 0,1024
AT+QFTPPUT="test.txt","COM:",1024,1024,1 //It is the last 1024 bytes of *"test.txt"*.
CONNECT
<Input file data>
OK   //Data length reaches 1024 bytes.

+QFTPPUT: 0,1024

//Upload a file to RAM.

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 bytes. 300 indicates timeout, and 1 indicates ACK mode. For details, please refer to *Quetel_EC2x&EG9x&EM05_ 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(S) server, the file will be saved as *"test.txt"* on FTP(S) server.

OK

+QFTPPUT: 0,1000
AT+QFDEL="RAM:test1.txt"
OK

2.6. AT+QFTPGET　Download a File from FTP(S) Server

The command is used to download a file from FTP(S) server. The file can be outputted via COM port by AT+QFTPGET="filename","COM:". The module will enter into data mode on receiving data from server. After the data is transferred completely, the module will exit from data mode automatically and output "QFTPGET: 0,<transferlen>". The file can be saved to RAM, UFS or SD by

AT+QFTPGET="filename","RAM:localname", AT+QFTPGET="filename","UFS:localname" or AT+QFTPGET="filename","SD:localname". After the file has been transferred completely, the module will output "+QFTPGET: 0,<transferlen>".

If the <local_name> is "COM:", "CONNECT" should be outputted within <timeout> configured by AT+QFTPCFG. If the <local_name> is not "COM:", "OK" will be outputted first, and then "+QFTPGET: 0,<transferlen>" will be outputted after data has been transferred completely.

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

AT+QFTPGET Download a File from FTP(S) 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 downloaded, response: **+QFTPGET: 0,<transferlen>** If failed to download, response: **+QFTPGET: <err>,<protocol_error>** Or **+CME ERROR: <err>**
Write Command **AT+QFTPGET=<file_name>,<local_na me>[,<startpos >]** <local_name> is not "COM:"	Response **OK** If successfully downloaded, response: **+QFTPGET: 0,<transferlen>** If failed to download, response: **+QFTPGET: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<file_name> String type. The file name on FTP(S) server. The maximum size of the parameter is

	255 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 outputted via COM port. If it is not "COM:", the data will be saved to RAM, UFS or SD. It is strongly recommended to save the file in RAM, UFS or SD. Then the file can be read by AT+QFREAD. For more details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual.*
<startpos>	Integer type. The start position of the file to be downloaded. The default value is 0.
<downloadlen>	Integer type, the length of data to be downloaded. It is valid only if <local_name> is "COM:". If this parameter is specified, the module will output <downloadlen> bytes to COM port and exit from data mode. And data can be downloaded from <startpos> by the same AT command if there is any data left. Unit: byte.
<transferlen>	Integer type. The length of actually transferred data. If it is less than <downloadlen>, it means the whole file is transferred completely. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

Example

```
//Download a file and the file is outputted via COM port.

AT+QFTPGET="test.txt","COM:",0
CONNECT
<Output file data>
OK


+QFTPGET: 0,1000

//Download a file and the file is outputted via COM port twice in 500 bytes each time.

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 the left 500 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

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

The command is used to get the file size on FTP(S) server. If "OK" is returned, "+QFTPSIZE: 0,<file_size>" or "+QFTPSIZE: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected, and the network should be deactivated and reactivated.

AT+QFTPSIZE Get the File Size on FTP(S) Server	
Test Command **AT+QFTPSIZE=?**	Response **+QFTPSIZE: <file_name>** **OK**
Write Command **AT+QFTPSIZE=<file_name>**	Response **OK** If successfully got, response: **+QFTPSIZE: 0,<file_size>** If failed to get, response: **+QFTPSIZE: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size of the parameter is 255 bytes.
<file_size>	Integer type. The size of file on FTP(S) server. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to ***Chapter 5***.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to ***Chapter 6***. If it is 0, it is invalid.

2.8. AT+QFTPDEL   Delete a File on FTP(S) Server

The command is used to delete a specified file on FTP(S) server. If "OK" is returned, "+QFTPDEL: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected, and the network should be deactivated and reactivated.

AT+QFTPDEL Delete a File on FTP(S) 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 on FTP(S) server. The maximum size of the parameter is 255 bytes.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

2.9. AT+QFTPMKDIR   Create a Folder on FTP(S) Server

The command is used to create a folder on FTP(S) server. If "OK" is returned, "+QFTPMKDIR: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected, and the network should be deactivated and reactivated.

AT+QFTPMKDIR Create a Folder on FTP(S) 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(S) server. The maximum size of the parameter is 255 bytes.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

2.10. AT+QFTPRMDIR   Delete a Folder on FTP(S) Server

The command is used to delete a specified folder on FTP(S) server. If "OK" is returned, "+QFTPRMDIR: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected and the network should be deactivated and reactivated.

AT+QFTPRMDIR Delete a Folder on FTP(S) 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(S) server. The maximum size of the parameter is 255 bytes.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

2.11. AT+QFTPLIST   List Content of a Directory on FTP(S) Server

The command is used to list content of a directory on FTP(S) server. If the <local_name> is "COM:", "CONNECT" should be outputted within <timeout> configured by AT+QFTPCFG. If the <local_name> is not "COM:", "OK" will be returned first. And then "+QFTPLIST: 0,<transfer_size>" will be outputted after the content has been transferred completely.

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

AT+QFTPLIST List Content of a Directory on FTP(S) 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 listed, response: **+QFTPLIST: 0,<transfer_size>** If failed to list, response: **+QFTPLIST: <err>,<protocol_error>** Or **+CME ERROR: <err>**
Write Command **AT+QFTPLIST=<dirname>,<local_na me>** The <local_name> is not "COM:"	Response **OK** If successfully listed, response: **+QFTPLIST: 0,<transfer_size>** If failed to list, response: **+QFTPLIST: <err>,<protocol_error>** or **+CME ERROR: <err>**

Parameter

<dirname>	String type. The folder name on FTP(S) server. The maximum size of the parameter is 255 bytes. If it is ".", it will list the content of current directory

configured by AT+QFTPCWD.

<local_name>	String type. The local storage location of the data from FTP(S) server. The maximum size of the parameter is 60 bytes. The default value is "COM:". If it is "COM:", the data will be outputted to COM port. If it is not "COM:", the data will be saved to RAM, UFS or SD. Then the file can be read via AT+QFREAD. For more details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*.
<transfer_size>	Integer type. The size of transferred data from FTP(S) server. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

Example

//Get the content of current directory on FTP(S) server and the data is outputted via COM port.

AT+QFTPLIST="."
CONNECT
<Output content data>
OK

+QFTPLIST: 0,1000

//Get the content of a specified directory on FTP(S) server and save it to RAM.

AT+QFTPLIST="TESTDIR","RAM:test2.txt"
OK

+QFTPLIST: 0,1000
AT+QFLST="RAM:*"
+QFLST: "RAM:test2.txt",1000

OK

2.12. AT+QFTPNLST   List File Names of a Directory on FTP(S) Server

The command is used to list file names of a directory on FTP(S) server. If the <local_name> is "COM:", "CONNECT" should be outputted within <timeout> configured by AT+QFTPCFG. If the <local_name> is not "COM:", "OK" will be returned first. And then "+QFTPNLST: 0,<transfer_size>" will be outputted after file names have been transferred completely.

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

AT+QFTPNLIST List File Names of a Directory on FTP(S) 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 listed, response: **+QFTPNLST: 0,<transfer_size>** If failed to list, response: **+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 an error occurred while listing file names: **+QFTPNLST: <err>,<protocol_error>**

Parameter

<dirname>	String type. The folder name on FTP(S) server. The maximum size of the parameter is 255 bytes. If it is ".", it will list the file names of current directory configured by AT+QFTPCWD.
<local_name>	String type. The local storage location of the data from FTP(S) server. The maximum size of the parameter is 60 bytes. The default value is "COM:". If it is "COM:", the data will be outputted to COM port. If it is not "COM:", the data will be saved to RAM, UFS or SD. Then the file can be read via AT+QFREAD. For more details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual.*
<transfer_size>	Integer type. The size of transferred data from FTP(S) server. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

Example

//Get the file name of current directory on FTP(S) server and the data is outputted via COM port.

AT+QFTPNLST="."
CONNECT
<Output content data>
OK

+QFTPNLST: 0,1000

//Get the file name of a specified directory on FTP(S) server and save it to RAM.

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

+QFTPNLST: 0,1000
AT+QFLST="RAM:*"
+QFLST: "RAM:test2.txt",1000

OK

2.13. AT+QFTPMLSD   List Standardized File and Directory Information

The command is used to list standardized file and directory information on FTP(S) server. If the <local_name> is "COM:", "CONNECT" should be outputted within <timeout> configured by AT+QFTPCFG. If the <local_name> is not "COM:", "OK" will be returned first. And then "+QFTPMLSD: 0,<transfer_size>" will be outputted after the content has been transferred completely.

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

AT+QFTPMLSD List Standardized File and Directory Information	
Test Command **AT+QFTPMLSD=?**	Response **+QFTPMLSD: <dirname>,<local_name>** **OK**
Write Command **AT+QFTPMLSD=<dirname>[,"COM:"]**	Response **CONNECT**

	<Output content data> **OK**
	If successfully listed, response: **+QFTPMLSD: 0,<transfer_size>**
	If failed to list, response: **+QFTPMLSD: <err>,<protocol_error>** Or **+CME ERROR: <err>**
Write Command **AT+QFTPMLSD=<dirname>,<local_na me>** The <local_name> is not "COM:"	Response **OK**
	If successfully listed, response: **+QFTPMLSD: 0,<transfer_size>**
	If failed to list, response: **+QFTPMLSD: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<dirname>	String type. The folder name on FTP(S) server. The maximum size of the parameter is 255 bytes. If it is ".", it will list standardized file and directory information configured by AT+QFTPCWD.
<local_name>	String type. The local storage location of the data from FTP(S) server. The maximum size of the parameter is 60 bytes. The default value is "COM:". If it is "COM:", the data will be outputted to COM port. If it is not "COM:", the data will be saved to RAM, UFS or SD. Then the file can be read via AT+QFREAD. For more details, please refer to *Quetel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual.*
<transfer_size>	Integer type. The size of transferred data from FTP(S) server. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

Example

//Get standardized file and directory information on FTP(S) server and the data is outputted via COM port.

AT+QFTPMLSD="."
CONNECT

\<Output content data>
OK

+QFTPMLSD: 0,1000

//Get standardized file and directory information on FTP(S) server and save them to RAM.

AT+QFTPMLSD="TESTDIR","RAM:test2.txt"
OK

+QFTPMLSD: 0,1000
AT+QFLST="RAM:*"
+QFLST: "RAM:test2.txt",1000

OK

2.14. AT+QFTPMDTM   Get the File Modification Time on FTP(S) Server

The command is used to get the file modification time on FTP(S) server. If "OK" is returned, "+QFTPMDTM: 0,\<modify_time>" or "+QFTPMDTM: \<err>,\<protocol_error>" should be outputted within \<timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected, and the network should be deactivated and reactivated.

AT+QFTPMDTM Get the File Modification Time on FTP(S) Server	
Test Command **AT+QFTPMDTM=?**	Response **+QFTPMDTM: \<file_name>** **OK**
Write Command **AT+QFTPMDTM=\<file_name>**	Response **OK** If successfully got, response: **+QFTPMDTM: 0,\<modify_time>** If failed to get, response: **+QFTPMDTM: \<err>,\<protocol_error>** Or **+CME ERROR: \<err>**

Parameter

\<file_name>   String type. The file name on FTP(S) server. The maximum size of the parameter

	is 255 bytes.
<modify_time>	String type. The file modification time on FTP(S) server. The format is "YYYYMMDDHHMMSS" or "YYYYMMDDHHMMSS.NNN".
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

2.15. AT+QFTPRENAME   Rename a File or Folder on FTP(S) Server

The command is used to rename a file or folder on FTP(S) server. If "OK" is returned, "+QFTPRENAME: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the FTP(S) connection should be disconnected, and the network should be deactivated and reactivated.

AT+QFTPRENAME Rename a File or Folder on FTP(S) Server	
Test Command **AT+QFTPRENAME=?**	Response **+QFTPRENAME: <old_name>,<new_name>** **OK**
Write Command **AT+QFTPRENAME=<old_name>,<ne w_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(S) server. The maximum size of the parameter is 255 bytes.
<new_name>	String type. The new file name or folder name on FTP(S) server. The maximum size of the parameter is 255 bytes.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to **Chapter 6**. If it is 0, it is invalid.

2.16. AT+QFTPLEN   Get the Length of Transferred Data

The command is used to get the length of transferred data on FTP(S) server.

AT+QFTPLEN Get the Length of Transferred Data	
Test Command **AT+QFTPLEN=?**	Response **OK**
Execution Command **AT+QFTPLEN**	Response **OK** **+QFTPLEN: 0,<transferlen>** Or **+CME ERROR: <err>**

Parameter

<transferlen>	Integer type. The length of transferred data on FTP(S) server. When executing AT+QFTPPUT, AT+QFTPGET, AT+QFTPNLST or AT+QFTPLIST command, the length of transferred data can be queried by AT+QFTPLEN. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.

2.17. AT+QFTPSTAT   Get the Status of FTP(S) Server

The command is used to get the status of FTP(S) server.

AT+QFTPSTAT Get the Status of FTP(S) Server	
Test Command **AT+QFTPSTAT=?**	Response **OK**
Execution Command **AT+QFTPSTAT**	Response **OK** **+QFTPSTAT: 0,<ftpstat>** Or **+CME ERROR: <err>**

Parameter

<ftpstat>		Integer type. The current status of FTP(S) server
	0	Opening an FTP(S) server

1	The FTP(S) server is open and idle
2	Transferring data with FTP(S) server
3	Closing the FTP(S) server
4	The FTP(S) server is closed
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.

2.18. AT+QFTPCLOSE   Log out from FTP(S) Server

The command is used to log out from FTP(S) server. If "OK" is returned, "+QFTPCLOSE: <err>,<protocol_error>" should be outputted within <timeout> configured by AT+QFTPCFG. Otherwise, the network should be deactivated and reactivated.

AT+QFTPCLOSE Log out from FTP(S) Server	
Test Command **AT+QFTPCLOSE=?**	Response **OK**
Execution Command **AT+QFTPCLOSE**	Response **OK** **+QFTPCLOSE: <err>,<protocol_error>** Or **+CME ERROR: <err>**

Parameter

<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.
<protocol_error>	Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, please refer to *Chapter 6*. If it is 0, it is invalid.

3 Examples

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   //Activated successfully.
AT+QIACT?   //Query the state of PDP context.
+QIACT: 1,1,1,"10.7.157.1"

OK
AT+QFTPCFG="contextid",1   //Configure the PDP context ID as 1. The PDP context ID must be activated first.

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. Login to FTPS 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   //Activated successfully.
AT+QIACT?   //Query the state of PDP context.
+QIACT: 1,1,1,"10.7.157.1"

OK
AT+QFTPCFG="contextid",1   //Configure the PDP context ID as 1. The PDP context ID must be activated first.
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: FTPS configuration

AT+QFTPCFG="ssltype",1   //Set SSL type as 1, the module works as FTPS client.

OK
AT+QFTPCFG="sslctxid",1   //Select SSL context 1.
OK
AT+QSSLCFG="ciphersuite",1, 0xffff   //Configure SSL cipher suite type as 0xffff, which supports all cipher suite type.
OK
AT+QSSLCFG="seclevel",1,0   //Configure SSL security level as 0, which means the SSL CA certificate is not needed .
OK
AT+QSSLCFG="sslversion",1,1   //Configure SSL version as 1, which means TLS1.0.
OK

//Step 4: Login to FTPS server.

AT+QFTPOPEN="quectel.3322.org",990

OK

+QFTPOPEN: 0,0

3.3. 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" on FTP(S) 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
```

3.4. 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 the size of "test_my1.txt" on FTP(S) server.
OK

+QFTPSIZE:0, 1000
AT+QFTPRENAME="test_my1.txt","test_new.txt"   //Rename a file.
OK

+QFTPRENAME: 0,0
```

```
AT+QFTPMDTM="test_new.txt"        //Get the file modification time of "test_new.txt" on FTP(S) server.
OK


+QFTPMDTM: 0,"20140708110039"
AT+QFTPDEL="test_new.txt"         //Delete "test_new.txt" on FTP(S) server.
OK


+QFTPDEL: 0,0
```

3.5. List File Information or File Names

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


+QFTPCWD: 0,0
AT+QFTPLIST="."                   //List the content of current directory and the data is outputted to
                                    COM port.

CONNECT
<Output content data>
OK


+QFTPLIST: 0,1000
AT+QFTPLIST=".","RAM:list.txt"    //List the content of current directory and the data is outputted to
                                    "RAM:list.txt".

OK


+QFTPLIST: 0,1000
AT+QFTPLIST="TEST_2","COM:"       //List the content of "/TEST_2" and the data is outputted to COM
                                    port.

CONNECT
<Output content data>
OK


+QFTPLIST: 0,1000
AT+QFTPNLST="."                   //List file names of current directory and the data is outputted to
                                    COM port.

CONNECT
<Output content data>
OK


+QFTPNLST: 0,1000
AT+QFTPNLST=".","RAM:nlst.txt"    //List file names of current directory and the data is outputted to
                                    "RAM:nlst.txt".
```

```
OK

+QFTPNLST: 0,1000
AT+QFTPNLST="TEST_2","COM:"    //List file names of "/TEST_2" and the data is outputted via COM
                                 port.
CONNECT
<Output content data>
OK

+QFTPNLST: 0,1000
AT+QFTPMLSD="."                 //List standardized file and directory information of current directory
                                 and the data is outputted via COM port.
CONNECT
<Output content data>
OK

+QFTPMLSD: 0,1000
AT+QFTPMLSD=".","RAM:nlst.txt" //List standardized file and directory information of current directory
                                 and the data is outputted to "RAM:nlst.txt".
OK

+QFTPMLSD: 0,1000
AT+QFTPMLSD="TEST_2","COM:"    //List standardized directory information of "/TEST_2" and the data
                                 is outputted via COM port.
CONNECT
<Output content data>
OK

+QFTPMLSD: 0,1000
```

3.6. Upload a File to FTP(S) Server

```
AT+QFTPCWD="/"
OK

+QFTPCWD: 0,0
AT+QFTPSTAT
+QFTPSTAT: 0,1

OK
//Upload a file via COM port.

AT+QFTPPUT="test_my1.txt","COM:",0    //All data will be saved as "test_my1.txt" on FTP(S) server.
```

```
CONNECT
<Input file data>
<+++>
OK


+QFTPPUT: 0,1000
AT+QFTPLEN
OK


+QFTPLEN: 0,1000
AT+QFTPSIZE="test_my1.txt"
OK


+QFTPSIZE: 0,1000

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

AT+QFTPPUT="test_my1.txt","COM:",1000    //All data will be saved as "test_my1.txt" on FTP(S)
                                                        server.
CONNECT
<Input file data>
<+++>
OK


+QFTPPUT: 0,500
AT+QFTPSIZE="test_my1.txt"
OK


+QFTPSIZE: 0,1500

//Solution 1: Upload a file via COM port to FTP(S) server twice in 1024 bytes each time.

AT+QFTPPUT="test_my1.txt","COM:",0,1024,0       //It is not the last 1024 bytes of "test_my1.txt".
CONNECT
<Input file data>
OK                                                 //Data length reaches 1024 bytes.


+QFTPPUT: 0,1024
AT+QFTPPUT="test_my1.txt","COM: ",1024,1024,1   //It is the last 1024 bytes of "test_my1.txt".
CONNECT
<Input file data>
OK                                                 //Data length reaches 1024 bytes.


+QFTPPUT: 0,1024

//Solution 2: Upload a file from RAM to FTP(S) 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 file size is 1000 bytes. 300 indicates timeout and 1 indicates ACK mode. For more details, please refer to *Quectel_EC2x&EG9x&EM05_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(S) server and save as "*test_my1.txt*" on FTP(S) server.

OK

+QFTPPUT: 0,1000

//Solution 3: Upload a file from UFS to FTP(S) server.

AT+QFUPL="UFS:test_ufs.txt",1000,300,1   //Upload a file to UFS, the file will be saved as "*test_ufs.txt*" and the maximum file size is 1000 bytes. 300 indicates timeout and 1 indicates ACK mode. For more details, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual.*

CONNECT
<Input 1000 bytes data>
+QFUPL: 1000,707

OK
AT+QFLST="UFS:*"
+QFLST: "UFS:test_ufs.txt",1000

OK
AT+QFTPPUT="test_my1.txt","UFS:test_ufs.txt",0   //Upload "*UFS:test_ufs.txt*" to FTP(S) server and save as "*test_my1.txt*" on FTP(S) server.

OK

+QFTPPUT: 0,1000

//Solution 4: Upload a file from SD to FTP(S) server.

AT+QFUPL="SD:test_sd.txt",1000,300,1   //Upload a file to SD, the file will be saved as "*test_sd.txt*" and the maximum file size is 1000 bytes. 300 indicates

timeout and 1 indicates ACK mode. For more details, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*.

```
CONNECT
<Input 1000 bytes data>
+QFUPL: 1000,707

OK
AT+QFLST=SD:*"
+QFLST: "SD:test_sd.txt",1000

OK
AT+QFTPPUT="test_my1.txt","SD:test_sd.txt",0    //Upload "SD:test_sd.txt" to FTP(S) server and
                                                  save as "test_my1.txt" on FTP(S) server.
OK

+QFTPPUT: 0,1000
AT+QFTPLEN
OK

+QFTPLEN: 0,1000
AT+QFTPSIZE="test_my1.txt"
OK

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

3.7. Download a File from FTP(S) Server

```
AT+QFTPCWD="/"
OK

+QFTPCWD: 0,0
```

//Solution 1: Output downloaded data directly via COM port.

//Download a file from FTP(S) server and the data is outputted via COM port.

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

+QFTPGET: 0,1000

//Download a file and the data is outputted via COM port twice in 500 bytes each time.

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 the left 500 bytes.
CONNECT
<Output file data>
OK

+QFTPGET: 0,500

//Solution 2: Save downloaded data to RAM file.

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

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

+QFTPGET: 0,550

//Solution 3: Save downloaded data to UFS file.

//Download a file from FTP(S) server and save it to UFS

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

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

OK

//Download a file from FTP(S) server and save it to UFS, the start position is 450.

AT+QFTPGET="test_my1.txt","UFS:test1.txt",450   //Download file and save it to UFS as "*test1.txt*".
OK

+QFTPGET: 0,550

//Solution 4: Save downloaded data to SD file

//Download a file from FTP(S) server and save it to SD

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

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

OK

//Download a file from FTP(S) server and save it to SD, the start position is 450.

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

+QFTPGET: 0,550
AT+QFTPLEN
OK

+QFTPLEN: 0,550
AT+QFLST="RAM:*"
+QFLST: RAM:test.txt,1000
+QFLST: RAM:test1.txt,550

OK

3.8. Log out from FTP(S) Server

AT+QFTPCLOSE   //Log out from FTP(S) server.
OK

+QFTPCLOSE: 0,0
AT+QIDEACT=1   //Deactivate the PDP context which was activated for FTP(S).
OK

4 Error Handling

4.1. Executing FTP(S) AT Command Fails

When executing FTP(S) AT commands, if "ERROR" response is received from the module, please check whether the U(SIM) card is inserted and whether it is "+CPIN: READY" returned when executing AT+CPIN?.

4.2. PDP Activation Fails

If it is failed to activate a PDP context by AT+QIACT command, please check the following configurations:

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

If all above configurations are correct, but activating the PDP context by AT+QIACT command still fails, please reboot the module to resolve this issue. After rebooting the module, please check the configurations mentioned above for at least three times and each time at an interval of 10 minutes to avoid frequently rebooting the module.

4.3. 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(S) server is valid.
2. Query the status of the PDP context by AT+QIACT? command to make sure the specified PDP context has been activated successfully.

4.4. Error Response of FTP(S) Server

If the <protocol_error> in "+QFTPXX: <err>,<protocol_error>" is not 0, it indicates the error code replied from FTP(S) server.

Customers can check the issue depending on the protocol error code. For example, if <protocol_error> is 530 (not logged in), it indicates <username> or <password> may be wrong. If <protocol_error> is 550 (requested action not taken: file unavailable.), it means the file or directory may not exist. For more details, please refer to the document *RFC959* (File Transfer Protocol).

5 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>	Description of Error Codes
0	Operation successful
601	Unknown error
602	FTP(S) server blocked
603	FTP(S) server busy
604	DNS parse failed
605	Network error
606	Control connection closed.
607	Data connection closed
608	Socket closed by peer
609	Timeout error
610	Invalid parameter
611	Failed to open file
612	File position invalid
613	File error
614	Service not available, closing control connection
615	Open data connection failed
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
631	SSL authentication failed

6 Summary of FTP(S) Protocol Error Codes

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

Table 2: Summary of FTP(S) Protocol Error Codes

<protocol_error>	Meaning
421	Service not available, closing control connection
425	Open data connection failed
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

7 Appendix A References

Table 3: Related Documents

SN	Document Name	Remark
[1]	RFC959	File Transfer Protocol
[2]	Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual	EC2x&EG9x&EM05 TCP/IP AT Commands Manual
[3]	Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual	EC2x&EG9x&EM05 FILE AT Commands Manual
[4]	Quectel_EC21&EC25_AT_Commands_Manual	EC21&EC25 AT Commands Manual
[5]	Quectel_EG9x_AT_Commands_Manual	EG9x AT Commands Manual
[6]	Quectel_EM05_AT_Commands_Manual	EM05 AT Commands Manual
[7]	Quectel_EC2x&EG9x&EM05_SSL_AT_Commands_Manual	EC2x&EG9x&EM05 SSL AT Commands Manual

Table 4: Terms and Abbreviations

Abbreviation	Description
ACK	Acknowledgement
APN	Access Point Name
ASCII	American Standard Code for Information Interchange
DNS	Domain Name Server
ID	Internet Protocol
DTR	Data Terminal Ready
FTP	File Transfer Protocol
FTPS	FTP over SSL

PDP	Packet Data Protocol
PPP	Point-to-Point Protocol
PS	Packet Switching
QOS	Quality of Service
RAM	Random Access Memory
SD	Secure Digital
SSL	Secure Sockets Layer
TLS	Transport Layer Security
UFS	Universal Flash Storage
URC	Unsolicited Result Code
(U)SIM	(Universal) Subscriber Identity Module