

EC2x&EG9x&EG2x-G&EM05 Series

FTP(S) Application Note

LTE Standard Module Series

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About the Document

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1.1	2020-08-21	Luffy LIU	<ol style="list-style-type: none">1. Added parameter <data_timeout> and value 2 for parameter <data_address_type> of AT+QFTPCFG="data_address" (Chapter 2.1).2. Added value 2 for parameter <SSL_type> of AT+QFTPCFG="ssltype" (Chapter 2.1).3. Added the range of parameter <port> of AT+QFTPOPEN (Chapter 2.2).4. Added the condition of validity of parameter <beof> and a note for AT+QFTPPUT (Chapter 2.5).

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1 Introduction

Quectel EC2x series, EG9x series, EG2x-G, EM05 series modules support FTP and FTPS file transfer protocols (hereinafter referred to as “FTP(S)”).

The FTP (File Transfer Protocol) is a standard network protocol used for the transfer of computer files between a client and server on a computer network, with high transmission rate.

FTPS (also known FTP-SSL, and FTP Secure) is an extension to the commonly used File Transfer Protocol (FTP) that adds support for the Transport Layer Security (TLS) and, formerly, the Secure Sockets Layer cryptographic protocols.

This document introduces how to use the FTP(S) function of the following Quectel modules through AT commands.

1.1. Applicable Modules

Table 1: Applicable Modules

Module Series	Model
EC2x series	EC21 series
	EC25 series
	EC20 R2.1
EG9x series	EG91 series
	EG95 series
EG2x-G	EG21-G
	EG25-G
EM05 series	EM05 series

1.2. AT Command Syntax

1.2.1. Definitions

- **<CR>** Carriage return character.
- **<LF>** Line feed character.
- **<...>** Parameter name. Angle brackets do not appear on command line.
- **[...]** Optional parameter of a command or an optional part of TA information response. Square brackets do not appear on command line. When an optional parameter is omitted, the new value equals its previous value or its default setting, unless otherwise specified.
- **Underline** Default setting of a parameter.

1.2.2. AT Command Syntax

The **AT** or **at** prefix must be added at the beginning of each command line. Entering **<CR>** will terminate a command line. Commands are usually followed by a response that includes **<CR><LF><response><CR><LF>**. Throughout this document, only the response **<response>** will be presented, **<CR><LF>** are omitted intentionally.

Table 2: Type of AT Commands and Responses

Test Command	AT+<cmd>=?	This command returns the list of parameters and value ranges set by the corresponding Write Command or internal processes.
Read Command	AT+<cmd>?	This command returns the currently set value of the parameter or parameters.
Write Command	AT+<cmd>=<p1> [,<p2>[,<p3>[...]]]	This command sets the user-definable parameter values.
Execution Command	AT+<cmd>	This command reads non-variable parameters affected by internal processes in the module.

1.3. The Process of Using FTP(S) AT Commands

As EC2x series, EG9x series, EG2x-G, EM05 series 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**. See *document [1]* for details. If QoS settings need to be updated, configure them by **AT+CGQMIN**, **AT+CGEQMIN**, **AT+CGQREQ** and **AT+CGEQREQ** commands. See *document [2]* for details.
- 2) Activate the PDP context via **AT+QIACT**. See *document [1]* for details.
- 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, execute the following commands:
 - a) Execute **AT+QFTPCFG="ssltype",1**.
 - b) Execute **AT+QFTPCFG="sslctxid",<sslctxid>** to specify <sslctxid>.
 - c) Execute **AT+QSSLCFG** to configure the specified <sslctxid>. For more details, see *document [3]*.

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 card 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, see *document [4]*.
 - b) Upload a file to FTP(S) server through COM port by **AT+QFTPPUT**, then the module will enter 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 card. If the file is outputted to COM port, the module will enter 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 file 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 file or folder by **AT+QFTPRENAME**.
- 6) Delete a folder 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 and **Step 3** to **Step 6** can be repeated.

Step 7: Deactivate PDP context.

Deactivate the PDP context by **AT+QIDEACT=<contextID>**. For more details, see *document [1]*.

1.4. Description of Data Mode

The COM port of EC2x series, EG9x series, EG2x-G, EM05 series modules have two working modes: AT command mode and data mode. In AT command mode, the inputted data via COM port will be regarded as AT command, while in data mode, it will be regarded as data.

Inputting **+++** or pulling up DTR (AT&D1 should be set first) can make the module exit 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 executing **AT+QFTPPUT**, **AT+QFTPGET**, **AT+QFTPLIST** and **AT+QFTPNLST**, if the local file path is "COM:", which means data will be received from or outputted to COM port, the COM port will enter data mode. You can input **+++** or change DTR level from low to high to make the port exit data mode. In

In addition, you can reenter data mode by executing **ATO** command after **AT+QFTPGET**, **AT+QFTPLIST** and **AT+QFTPNLST** are executed. And you 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

This command configures 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",(list of supported <file_type>s) +QFTPCFG: "transmode",(list of supported <transmode>s) +QFTPCFG: "contextid",(range of supported <contextID>s) +QFTPCFG: "rsptimeout",(range of supported <timeout>s) +QFTPCFG: "ssltype",(range of supported <SSL_type>s) +QFTPCFG: "sslctxid",(range of supported <sslctxid>s) +QFTPCFG: "data_address",(range of supported <data_address>s),(range of supported <data_timeout>s) OK
Write Command AT+QFTPCFG="account"[,<username>,<password>]	Response If the optional parameters are omitted, query the current configuration: +QFTPCFG: "account",<username>,<password> OK If the optional parameters are specified, configure the user account: OK Or +CME ERROR: <err>
Write Command AT+QFTPCFG="filetype"[,<file_type>]	Response If the optional parameter is omitted, query the current

	<p>configuration: +QFTPCFG: "filetype",<file_type></p> <p>OK</p> <p>If the optional parameter is specified, configure the file type: OK Or +CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="transmode"[,<transmode>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current configuration: +QFTPCFG: "transmode",<transmode></p> <p>OK</p> <p>If the optional parameter is specified, configure the transfer mode: OK Or +CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="contextid"[,<contextid>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current configuration: +QFTPCFG: "contextid",<contextID></p> <p>OK</p> <p>If the optional parameter is specified, configure the context ID: OK Or +CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="rsptimeout"[,<timeout>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current configuration: +QFTPCFG: "rsptimeout",<timeout></p> <p>OK</p> <p>If the optional parameter is specified, configure the response timeout: OK Or</p>

	<p>+CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="ssltype"[,<SSL_type>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current configuration: +QFTPCFG: "ssltype",<SSL_type></p> <p>OK</p> <p>If the optional parameter is specified, configure the SSL type: OK Or +CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="sslctxid"[,<sslctxid>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current configuration: +QFTPCFG: "sslctxid",<sslctxid></p> <p>OK</p> <p>If the optional parameter is specified, configure the SSL context ID: OK Or +CME ERROR: <err></p>
<p>Write Command AT+QFTPCFG="data_address"[,<data_address_type>[,<data_timeout>]]</p>	<p>Response</p> <p>If the optional parameters are omitted, query the current configuration:</p> <p>1) <data_address_type> equals 2: +QFTPCFG: "data_address",<data_address_type>,<data_timeout></p> <p>OK</p> <p>2) <data_address_type> is not equal to 2: +QFTPCFG: "data_address",<data_address_type></p> <p>OK</p> <p>If any of the optional parameters are specified, configure the data connection address: OK Or +CME ERROR: <err></p>

Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<username>	String type. The user name for authentication. The maximum size is 255 bytes.
<password>	String type. The password for authentication. The maximum size is 255 bytes.
<file_type>	Integer type. The type of transmission data. 0 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 1 Passive mode, FTP(S) server will listen on a port for data connection
<contextID>	Integer type. PDP context ID. Range: 1–16. Default: 1. Activate it by AT+QIACT before using AT+QFTPOPEN . For more details, see document [1] .
<timeout>	Integer type. Range: 20–180. Default: 90. Unit: second. Generally, it is the maximum response time 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 response time for CONNECT to be outputted after the command has been sent. b) When the module has entered data mode, this parameter indicates the maximum interval time between two packets of received/transferred data. c) When the <local_name> is not "COM:", it indicates the maximum interval time between two packets of received/transferred data.
<SSL_type>	Integer type. The module works as FTP client or FTPS client. 0 FTP client 1 FTPS implicit encryption 2 FTPS explicit encryption
<sslctxid>	Integer type. The SSL context ID. Range: 0–5. Default: 0. You can configure the SSL parameters by AT+QSSLCFG . For more details, see document [3] .
<data_address_type>	Integer type. FTP(S) data connection address selection. 0 Use server dispatched address 1 Use FTP(S) control session address 2 Use FTP(S) control session address in priority. If the connection fails, an address assigned by server will be used.
<data_timeout>	Integer type. The time required to switch the address assigned by the server when the FTP(S) control session address connection fails. Valid only when <data_address_type> is 2. Range: 15–50. Default: 25. Unit: s.
<err>	Integer type. The error code of the operation. See Chapter 5 .

NOTE

Since FTPS does not currently support active mode, you must set **<transmode>** to 1 when operating FTPS.

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

This command logs in 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>
Maximum Response Time	125 s
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<hostname>	String type. The IP address or domain name of the FTP(S) server. The maximum size is 200 bytes.
<port>	Integer type. The port of the FTP(S) server. Default: 21. Range: 1–65535.
<err>	Integer type. The error code of the operation. See 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, see 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

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

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

The command configures 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<path_name>	String type. A directory path on FTP(S) server. The maximum size is 255 bytes. The root path of FTP(S) server is "/".
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command gets 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 the current directory is gotten successfully: +QFTPPWD: 0,<path_name> If it fails to get the current directory: +QFTPPWD: <err>,<protocol_error> Or +CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<path_name>	String type. A directory path on FTP(S) server. The maximum size is 255 bytes. The root path of FTP(S) server is "/".
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command uploads a file to FTP(S) server. The file data can be uploaded via COM port, and then the module will enter 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 card 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, see *document [4]*.

A file can be uploaded from specified file position by **<startpos>**. 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 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/transferred 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 When <local_name> is "COM:" AT+QFTPPUT=<file_name>,<local_name>[,<startpos>[,<uploadlen>,<beof>]]	Response CONNECT <Input file data> OK If the file is uploaded successfully: +QFTPPUT: 0,<transferlen> If it fails to upload the file: +QFTPPUT: <err>,<protocol_error> Or +CME ERROR: <err>
Write Command When <local_name> is not "COM:" AT+QFTPPUT=<file_name>,<local_name>[,<startpos>]	Response OK If the file is uploaded successfully: +QFTPPUT: 0,<transferlen> If it fails to upload the file: +QFTPPUT: <err>,<protocol_error> Or

	+CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size is 255 bytes.
<local_name>	String type. The local file name. The maximum size 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 card. After being uploaded successfully, the file can be deleted by AT+QFDEL . For more details, see document [4] .
<startpos>	Integer type. The start position of the file to be uploaded. Default: 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 when <local_name> is "COM:". When the length of data uploaded via COM port reaches <uploadlen> , the module will exit data mode. Unit: byte.
<beof>	Integer type. Whether it is the last packet of data to be uploaded. It is valid only when <local_name> is "COM:". <ul style="list-style-type: none"> 0 Not the last packet of data. When the data length reaches <uploadlen>, the module will exit 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 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. See 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, see Chapter 6 . If it is 0, it is invalid.

NOTE

If **<uploadlen>** and **<beof>** are not specified, all data will be uploaded to FTP(S) server.

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 s
//indicates timeout, and 1 indicates ACK mode. For more
//details, see document [4].

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

This command downloads a file from FTP(S) server. The file can be outputted via COM port by **AT+QFTPGET="filename","COM:"**. The module will enter data mode on receiving data from server. After the data is transferred completely, the module will exit data mode automatically and output **QFTPGET: 0,<transferlen>**. The file can be saved to RAM, UFS or SD card 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 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/transferred 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 When <local_name> is "COM:" AT+QFTPGET=<file_name>,<local_name>[,<startpos>[,<downloadlen>]]	Response CONNECT <Output file data> OK If the file is downloaded successfully: +QFTPGET: 0,<transferlen> If it fails to download the file: +QFTPGET: <err>,<protocol_error> Or +CME ERROR: <err>
Write Command When <local_name> is not "COM:" AT+QFTPGET=<file_name>,<local_name>[,<startpos>]	Response OK If the file is downloaded successfully: +QFTPGET: 0,<transferlen> If it fails to download the file: +QFTPGET: <err>,<protocol_error>

	Or +CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size is 255 bytes.
<local_name>	String type. The local file name. The maximum size 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 card. It is strongly recommended to save the file in RAM, UFS or SD card. Then the file can be read by AT+QFREAD . For more details, see document [4] .
<startpos>	Integer type. The start position of the file to be downloaded. Default: 0.
<downloadlen>	Integer type, the length of data to be downloaded. It is valid only when <local_name> is "COM:". If this parameter is specified, the module will output <downloadlen> bytes to COM port and exit 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. See 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, see Chapter 6 . If it is 0, it is invalid.

NOTE

When **<local_name>** is "COM:", if **<startpos>** and **<downloadlen>** are not specified, a whole file will be downloaded from FTP(S) server.

Example

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

AT+QFTPGET="test.txt","COM:",0 //Download a whole file from FTP(S) server.

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, and the first download
size is 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

This command gets 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 the file size is gotten successfully: +QFTPSIZE: 0,<file_size>

	<p>If it fails to get the file size: +QFTPSIZE: <err>,<protocol_error> Or +CME ERROR: <err></p>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size 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. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command deletes 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size is 255 bytes.
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command creates 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<folder_name>	String type. The folder name on FTP(S) server. The maximum size is 255 bytes.
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command deletes 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<folder_name>	String type. The folder name on FTP(S) server. The maximum size is 255 bytes.
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command lists 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 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/transferred data.

AT+QFTPLIST List Content of a Directory on FTP(S) Server	
Test Command AT+QFTPLIST=?	Response +QFTPLIST: <dirname>,<local_name> OK
Write Command When <local_name> is "COM:" AT+QFTPLIST=<dirname>[,<local_name>]	Response CONNECT <Output content data> OK If the directory content is listed successfully: +QFTPLIST: 0,<transfer_size> If it fails to list the directory content: +QFTPLIST: <err>,<protocol_error> Or +CME ERROR: <err>
Write Command When <local_name> is not "COM:" AT+QFTPLIST=<dirname>,<local_name>	Response OK If the directory content is listed successfully: +QFTPLIST: 0,<transfer_size> If it fails to list the directory content: +QFTPLIST: <err>,<protocol_error> Or +CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<dirname>	String type. The folder name on FTP(S) server. The maximum size 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 is 60 bytes. Default: "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, see document [4] .
<transfer_size>	Integer type. The size of transferred data from FTP(S) server. Unit: byte.

<err>	Integer type. The error code of the operation. See 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, see 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

This command lists 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 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/transferred data.

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

Test Command	Response
AT+QFTPNLST=?	+QFTPNLST: <dirname>,<local_name>
	OK

<p>Write Command When <local_name> is "COM:" AT+QFTPNLST=<dirname>[,<local_name>]</p>	<p>Response CONNECT <Output content data> OK</p> <p>If file names is listed successfully: +QFTPNLST: 0,<transfer_size></p> <p>If it fails to list file names: +QFTPNLST: <err>,<protocol_error> Or +CME ERROR: <err></p>
<p>Write Command When <local_name> is not "COM:" AT+QFTPNLST=<dirname>,<local_name></p>	<p>Response OK</p> <p>+QFTPNLST: 0,<transfer_size> Or +CME ERROR: <err></p> <p>If an error occurred while listing file names: +QFTPNLST: <err>,<protocol_error></p>
<p>Maximum Response Time</p>	<p>Determined by <timeout> configured in AT+QFTPCFG</p>
<p>Characteristics</p>	<p>This command takes effect immediately. The configuration will not be saved.</p>

Parameter

<p><dirname></p>	<p>String type. The folder name on FTP(S) server. The maximum size is 255 bytes. If it is ".", it will list the file names of current directory configured by AT+QFTPCWD.</p>
<p><local_name></p>	<p>String type. The local storage location of the data from FTP(S) server. The maximum size is 60 bytes. Default: "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 card. Then the file can be read via AT+QFREAD. For more details, see document [4].</p>
<p><transfer_size></p>	<p>Integer type. The size of transferred data from FTP(S) server. Unit: byte.</p>
<p><err></p>	<p>Integer type. The error code of the operation. See Chapter 5.</p>
<p><protocol_error></p>	<p>Integer type. For reference only. Indicates the original error code from FTP(S) server which is defined in FTP(S) protocol. For more details, see Chapter 6. If it is 0, it is invalid.</p>

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

This command lists 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 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/transferred data.

AT+QFTPMLSD List Standardized File and Directory Information

Test Command	Response
AT+QFTPMLSD=?	+QFTPMLSD: <dirname>,<local_name> OK
Write Command When <local_name> is "COM:" AT+QFTPMLSD=<dirname>[,<local_name>]	Response CONNECT <Output content data> OK If the standardized file and directory information are listed successfully:

	<p>+QFTPMLSD: 0,<transfer_size></p> <p>If it fails to list the standardized file and directory information: +QFTPMLSD: <err>,<protocol_error> Or +CME ERROR: <err></p>
<p>Write Command When <local_name> is not "COM:" AT+QFTPMLSD=<dirname>,<local_name></p>	<p>Response OK</p> <p>If the standardized file and directory information are listed successfully: +QFTPMLSD: 0,<transfer_size></p> <p>If it fails to list the standardized file and directory information: +QFTPMLSD: <err>,<protocol_error> Or +CME ERROR: <err></p>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<dirname>	String type. The folder name on FTP(S) server. The maximum size 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 is 60 bytes. Default: "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 card. Then the file can be read via AT+QFREAD . For more details, see document [4] .
<transfer_size>	Integer type. The size of transferred data from FTP(S) server. Unit: byte.
<err>	Integer type. The error code of the operation. See 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, see 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

This command gets the time to modify the file 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 the file modification time is gotten successfully : +QFTPMDTM: 0,<modify_time> If it fails to get the file modification time: +QFTPMDTM: <err>,<protocol_error> Or +CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<file_name>	String type. The file name on FTP(S) server. The maximum size 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. See 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, see Chapter 6 . If it is 0, it is invalid.

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

This command renames a file or folder on FTP(S) server. If **OK** is returned, **+QFTPNAME: <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+QFTPNAME Rename a File or Folder on FTP(S) Server	
Test Command AT+QFTPNAME=?	Response +QFTPNAME: <old_name>,<new_name> OK
Write Command AT+QFTPNAME=<old_name>,<new_name>	Response OK +QFTPNAME: <err>,<protocol_error> Or +CME ERROR: <err>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

Parameter

<old_name>	String type. The old file name or folder name on FTP(S) server. The maximum size is 255 bytes.
<new_name>	String type. The new file name or folder name on FTP(S) server. The maximum size is 255 bytes.
<err>	Integer type. The error code of the operation. See 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, see Chapter 6 . If it is 0, it is invalid.

2.16. AT+QFTPLEN Get the Length of Transferred Data

This command gets 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	/

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. See Chapter 5 .

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

This command gets 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG

Characteristics

/

Parameter

<ftpstat>	Integer type. The current status of FTP(S) server 0 Opening an FTP(S) server 1 The FTP(S) server is opened 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. See Chapter 5 .

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

This command logs 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>
Maximum Response Time	Determined by <timeout> configured in AT+QFTPCFG
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<err>	Integer type. The error code of the operation. See 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, see 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 //Set PDP context as 1 and China Unicom APN as "UNINET".

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 //Set 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 ASCII.

OK

AT+QFTPCFG="transmode",1 //Set transfer mode as passive mode.

OK

AT+QFTPCFG="rsptimeout",90 //Set the maximum response time as default 90.

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 //Set 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 //Set 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 ASCII.

OK

AT+QFTPCFG="transmode",1 //Set transfer mode as passive mode.

OK

AT+QFTPCFG="rsptimeout",90 //Set response timeout value.

OK

//Step 3: Configure FTPS.

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

OK

AT+QFTPCFG="sslctxid",1 //Set SSL context as 1.

OK

AT+QSSLCFG="ciphersuite",1,0xffff //Set SSL cipher suite type as 0xffff, which supports all cipher suite type.

OK

AT+QSSLCFG="secllevel",1,0 //Set SSL security level as 0, which means the SSL CA certificate is not needed .

OK

AT+QSSLCFG="sslversion",1,1 //Set 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 the folder as TEST_NEW.
OK

+QFTPRENAME: 0,0
AT+QFTPRMDIR="TEST_NEW" //Delete the folder TEST_NEW.
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 the file as test_new.txt.
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, see *document [4]*.

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,
see *document [4]*.

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,
see *document [4]*.

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, and the first
download size is 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 card 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 card 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** 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 fails to activate a PDP context by **AT+QIACT**, please check the following configurations:

1. Query whether the PS domain is attached or not by **AT+CGATT?**, if not, please execute **AT+CGATT=1** to attach the PS domain.
2. Query the PS domain status by **AT+CGREG?** and make sure the PS domain has been registered.
3. Query the PDP context parameters by **AT+QICSGP** 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**.
5. According to 3GPP specifications, the module only supports three PDP contexts activated simultaneously, so please make sure the number of activated PDP contexts is no more than 3.

If all above configurations are correct, but activating the PDP context by **AT+QIACT** 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**, 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?** 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.

You 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, see **document [5]**.

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 3: 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. See [document \[5\]](#). The details about `<protocol_error>` are described in the following table.

Table 4: Summary of FTP(S) Protocol Error Codes

<code><protocol_error></code>	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 5: Related Documents

SN	Document Name	Remark
[1]	Quectel_LTE_Standard_TCP(IP)_Application_Note	TCP/IP Application Note applicable for EC2x series, EG9x series, EG2x-G and EM05 series modules
[2]	Quectel_EC2x&EG9x&EG2x-G&EM05_Series_AT_Commands_Manual	AT Commands Manual applicable for EC2x series, EG9x series, EG2x-G and EM05 series modules
[3]	Quectel_EC2x&EG9x&EG2x-G&EM05_Series_SSL_Application_Note	SSL Application Note applicable for EC2x series, EG9x series, EG2x-G and EM05 series modules
[4]	Quectel_LTE_Standard_FILE_Application_Note	FILE application note applicable for EC2x series, EG9x series, EG2x-G and EM05 series modules
[5]	RFC959	File Transfer Protocol

Table 6: 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
