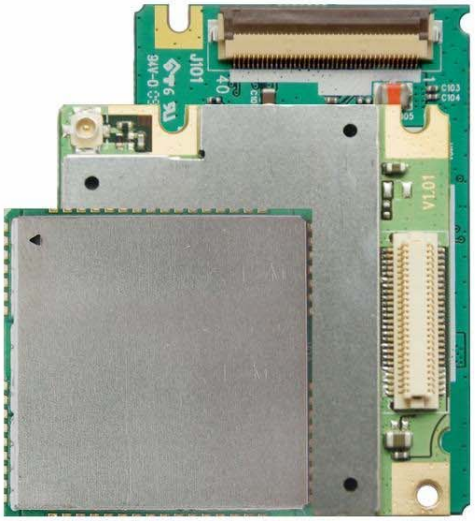
Quectel Cellular Engine

GSM FTP
AT Commands

GSM_FTP_ATC_V1.01



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0. Revision history

Revision	Date	Author	Description of change
1.00	2009-7-27	Colin HU	Initial
1.01	2010-4-12	Joanna LI	Add example for resuming file

1. Introduction

Quectel Module provides an internal TCP/IP stack that is driven by AT commands and enables the host application to easily access the Internet service. It includes TCP service, UDP service, HTTP service and FTP service, etc. This document is a reference guide to all the AT commands and responses defined for FTP Service.

1.1. Reference

Table 1: Reference

SN	Document name	Remark
[1]	M10_ATC.pdf	The introduction of AT commands for M10
[2]	GSM_TCPIP_AN.pdf	To introduce how to use the internal TCP/IP stack

1.2. Terms and abbreviations

Table 2: Terms and abbreviations

Abbreviation	Description
APN	Access Point Network
CSD	Circuit Switched Data
FTP	File Transfer Protocol
GPRS	General Packet Radio Service
HTTP	Hypertext Transfer Protocol Overview
TCP	Transmission Control Protocol
UART	Universal Asynchronous Receiver/Transmitter
UDP	User Datagram Protocol

2. AT Commands for FTP Service

2.1. Overview of AT Commands for FTP Service

Command	Description
AT+QFTPOPEN	OPEN AN FTP SERVICE TO THE GIVEN FTP SERVER
AT+QFTPCLOSE	CLOSE THE FTP SERVICE
AT+QFTPPUT	UPLOAD A FILE TO THE FTP SERVER
AT+QFTPGET	DOWNLOAD A FILE FROM THE FTP SERVER
AT+QFTPPATH	SET THE PATH IN THE FTP SERVER TO UPLOAD OR DOWNLOAD FILE
AT+QFTPUSER	SET THE USER NAME OF THE ACCOUNT TO OPEN FTP SERVICE
AT+QFTPPASS	SET THE PASSWORD OF THE ACCOUNT TO OPEN FTP SERVICE
AT+QFTPCFG	SET SOME CONFIGUABLE PARAMETERS FOR THE FTP SERVICE
AT+QFTPSTAT	QUERY STATUS OF FTP SERVICE

2.2. Detailed Description of AT Commands for FTP Service

2.2.1. AT+QFTPOPEN Open an FTP service to the given FTP server

AT+QFTPOPEN	Open an FTP service to the given FTP server
Test Command **AT+QFTPOPEN=?**	Response **+QFTPOPEN : "HOST NAME",(1-65535)** **OK** Parameters See Write Command
Read Command **AT+QFTPOPEN?**	Response **+QFTPOPEN :"<hostName>",(1-65535)** **OK** Parameters See Write Command
Write Command **AT+QFTPOPEN="<host Name>",<port>**	Response If format is right, response **OK** Otherwise response **ERROR** Next, if connect successfully, response

	+QFTPOPEN:0 Otherwise, response **+QFTPOPEN:<err>** Parameters **<hostName>** The address of the FTP server, it could be an IP address or a domain name. The maximum size of the parameter is 100. **<port>** The port of the FTP server. The range of the parameter is 1-65535. **<err>** A negative numeric to indicate the type of error, please refer to the chapter 3.
Reference	**Note:** 1. It is recommended to execute the commands **AT+QFTPUSER** and **AT+QFTPPASS** to set the user name and password before open FTP service. 2. If FTP state is IDLE or CLOSED (Please refer to 2.2.9), the fields of host name and port in the response of the read command are empty.

2.2.2. AT+QFTPCLOSE Close the FTP service

AT+QFTPCLOSE Close the FTP service	
Test Command **AT+QFTPCLOSE=?**	Response **OK** Parameters See Write Command
Execution Command **AT+QFTPCLOSE**	Response **OK** Next, if the FTP service is closed successfully, response **+QFTPCLOSE:0** Otherwise, response **+QFTPCLOSE:<err>** Parameters **<err>** A negative numeric to indicate the type of error, please refer to the chapter 3.
Reference	**Note:**

2.2.3. AT+QFTPPUT Upload a file to the FTP server

AT+QFTPPUT	**Upload a file to the FTP server**

Test Command **AT+QFTPPUT=?**	Response **+QFTPPUT: "FILE NAME",<fileSz>,(1-65535)** **OK** Parameters See Write Command
Write Command **AT+QFTPPUT="<fileName>",<fileSz>[,<time>]**	Response If format is right, response **OK** Otherwise, response **ERROR** Next, if the UART successfully enter data mode, response **CONNECT** Otherwise, response **+QFTPPUT:<err>** Finally, if upload the file successfully, response **+QFTPPUT:<upSize>** Otherwise, response **+QFTPPUT:<err>** Parameters **<fileName>** The name of the file to upload. The maximum size of the parameter is 50. **<fileSz>** The size of the file to upload. **<time>** The maximum time allowed to input file data from UART. The default value is 900. The unit is second. The larger **<fileSz>** is, **<time>** should be set longer. **<upSize>** The actual size to upload successfully, theoretically, it should equals **<fileSz>**. **<err>** A negative numeric to indicate the type of error, please refer to the chapter 3.
Reference	**Note:** If the length of the input data from UART reaches **<fileSz>**, or the time to input data reaches **<time>**, the FTP service will stop receiving data from UART. After **CONNECT** appears, UART enter in data mode. It is supported to escape data mode by "+++". Please refer to [2] for the details.

2.2.4. AT+QFTPGET Download a file from the FTP server

AT+QFTPGET Download a file from the FTP server

Test Command **AT+QFTPGET=?**	Response **+QFTPGET: "FILE NAME"** **OK** Parameters See Write Command
Write Command **AT+QFTPGET="<fileName>"**	Response If format is right response **OK** Otherwise response **ERROR** Next, if the UART successfully enter data mode, response **CONNECT** Otherwise, response **+QFTPGET:<err>** Finally, if download the file successfully, response **+QFTPGET:<dwSize>** Otherwise, response **+QFTPGET:<err>** Parameters **<fileName>** The name of the file to download. The maximum size of the parameter is 50. **<dwSize>** The size of the download file. **<err>** A negative numeric to indicate the type of error, please refer to the chapter 3.
Reference	**Note:** After **CONNECT** appears, UART enter in data mode. It is supported to escape data mode by "+++". Please refer to [2] for the details.

2.2.5. AT+QFTPPATH Set the path in the FTP server to upload or download file

AT+QFTPPATH	**Set the path in the FTP server to upload or download file**
Test Command **AT+QFTPPATH=?**	Response **+QFTPPATH: "PATH NAME"** **OK** Parameters See Write Command

Read Command **AT+QFTPPATH?**	Response **OK** **+QFTPPATH:"<pathName>"** Parameters See Write Command
Write Command **AT+QFTPPATH="<pathName>"**	Response If format is right, response **OK** Otherwise, response **ERROR** Next, if the path is set successfully, response **+QFTPPATH:0** Otherwise, response **+QFTPPATH:<err>** Parameters **<pathName>** The name of the path to set. The maximum size of the parameter is 100. **<err>** A negative numeric to indicate the type of error, please refer to the chapter 3.
Reference	**Note:**

2.2.6. AT+QFTPUSER Set the user name of the account to open FTP service

AT+QFTPUSER	**Set the user name of the account to open FTP service**
Test Command **AT+QFTPUSER=?**	Response **+QFTPUSER: "USER NAME"** **OK** Parameters See Write Command
Read Command **AT+QFTPUSER?**	Response **+QFTPUSER:"<userName>"** **OK** Parameters See Write Command
Write Command **AT+QFTPUSER="<userName>"**	Response If format is right and the FTP service is idle, response **OK**

	Otherwise, response **ERROR** Parameters **<userName>** The user name of the account. If it is "", the module will use anonymous account to open FTP service. The maximum size of the parameter is 30.
Reference	**Note:**

2.2.7. AT+QFTPPASS Set the password of the account to open FTP service

AT+QFTPPASS	**Set the password of the account to open FTP service**
Test Command **AT+QFTPPASS=?**	Response **+QFTPPASS: "PASSWORD"** **OK** Parameters See Write Command
Read Command **AT+QFTPPASS?**	Response **+QFTPPASS:"<password>"** **OK** Parameters See Write Command
Write Command **AT+QFTPPASS="<password>"**	Response If format is right and the FTP service is idle, response **OK** Otherwise, response **ERROR** Parameters **<password>** The password of the account. The maximum size of the parameter is 30.
Reference	**Note:**

2.2.8. AT+QFTPCFG Set some configurable parameters for the FTP service

AT+QFTPCFG	**Set some configurable parameters for the FTP service**

Test Command **AT+QFTPCFG=?**	Response **+QFTPCFG: (1-3)** **OK** Parameters See Write Command

Write Command
AT+QFTPCFG=<type>[,<value>]
	Response
	If format is right, response
	OK
	
	Otherwise, response
	ERROR
	Next, if the configurable parameter is set successfully, response
	+QFTPCFG:0
	
	Else if **<value>** is default and **<type>** is legal, this command is used to query the value of the corresponding parameter, and response
	+QFTPCFG:<value>
	
	Otherwise, response
	+QFTPCFG:<err>
	Parameters
	<type> The type of the configurable parameter to set.
	1 The mode of data connection.
	2 The transfer type
	3 The resuming point to resume file transfer
	<value> The value of the parameter to set. The following is the details about **<value>**.
	If (**<type>** == 1)
	0 active mode
	1 passive mode
	If (**<type>** == 2)
	0 set the transfer type as binary
	1 set the transfer type as ASCII
	If (**<type>** == 3), it is the resuming point to resume file transfer.
	<err> A negative numeric to indicate the type of error, please refer to the chapter 3.

Reference	**Note:** The resuming point will be reset as 0 after file transfer is finished.

2.2.9. AT+QFTPSTAT Query status of FTP service

AT+QFTPSTAT Query status of FTP service

Test Command **AT+QFTPSTAT =?**	Response **OK**
Execution Command **AT+QFTPSTAT**	Response **+QFTPSTAT: <state>** **OK** Parameters **<state>** A string indicate the current status of FTP service **IDLE** No FTP service. **OPENING** Opening an FTP service. **OPENED** The FTP service is opened and idle. **WORKING** Sending FTP commands to the FTP server and receiving response from the FTP server to start data transfer. **TRANSFER** Transferring data between the module and the FTP server. **CLOSING** Closing the FTP service. **CLOSED** The FTP service is closed.
Reference	**Note:**

3. Summary of Error Codes

When no command is executed and some error happens, The FTP service will report the URC "**+QFTPERROR:<err>**". The error code **<err>** indicates an error related to mobile equipment or network. The detail about **<err>** is described in the following table.

<err>	**Meaning**
-1	Unknown error
-3	The FTP service is busy. Such as, opening FTP service, controlled by another virtual UART, etc.
-4	Failed to get IP address according to domain name
-5	Network error. Such as, failed to activate GPRS/CSD context, failed to establish the TCP connection with the FTP server or failed to send FTP command to the FTP server, etc.
-6	The FTP session is closed by the FTP server
-7	The data connection of the FTP service is closed by the FTP server
-8	GPRS/CSD context is deactivated
-9	Timeout
-10	The input parameter is illegal
-421	The FTP server can't support service
-425	Failed to open data connection
-426	The connection is closed and stop transferring
-450	The request for the file isn't operated
-452	The FTP server has not enough memory
-500	The format of the FTP command is wrong
-501	The parameter of the FTP command is wrong
-502	The FTP command isn't operated by the FTP server
-530	Not login the FTP server
-532	Need the information of account
-550	The request is not operated
-551	The request is stopped
-552	The request of a file is stopped
-553	File name is illegal

4. Examples

4.1. Open an FTP service

AT+QIFGCNT=0 //choose the context 0 to activate GPRS/CSD context for the FTP service, please refer to [1] and [2]

OK

AT+QICSGP=1,"CMNET" //choose GPRS mode and set the APN as "CMNET"

OK

AT+QFTPUSER="quectel" //set the user name as "quectel"

OK

AT+QFTPPASS="123456" //set the password as "123456"

OK

AT+QFTPOPEN="quectel.3322.org",21 //visit the FTP server "quectel.3322.org:21"

OK

…… //wait for a moment

+QFTPOPEN:0 //successfully open the FTP service.

Note: Actually, the FTP server "quectel.3322.org:21" doesn't exist. It is just an example. Besides, it is strongly recommended to execute all the former commands only when SIM PIN is unlocked.

4.2. Upload a file to FTP server

After the FTP service is opened, it is OK to upload a file to the FTP server and download a file from the FTP server. The following is an example to upload file.

AT+QFTPPATH="/" //set the path to upload file as **"/"**

OK

+QFTPPATH:0 //successfully set the path

AT+QFTPPUT="sscom.ini",1587,200 //upload the file **"sscom.ini"** whose size is **1587**, and the maximum time to input file data is **200** seconds

OK

CONNECT	//successfully open data connection to upload file
……	//input the data of the file "sscom.ini"
+QFTPPUT:1587	//successfully upload the file "sscom.ini" to the FTP server. The size of the data successfully uploaded is **1587**.

4.3. Download a file from FTP server

The following is an example to download file.

AT+QFTPPATH="/"	//set the path to download file as **"/"**
OK	
+QFTPPATH:0	//successfully set the path
AT+QFTPGET="sscom.ini"	//download the file **"sscom.ini"** from the FTP server.
OK	
CONNECT	//successfully open data connection to download file
……	//the data of the file "sscom.ini" outputs from UART
+QFTPGET:1587	//successfully download the file "sscom.ini" from the FTP server. And the size of the data successfully downloaded is **1587**. Of course, this sentence is possible the content of the file "sscom.ini". So, it is recommended to execute the command AT later to confirm whether the file has been downloaded over.
AT	//input **AT** from UART.
OK	//there is an **OK** response for AT, which means the download operation is finished.

4.4. Resume file at the resuming point

While uploading or downloading file, the process may be interrupted because of disconnection. Quectel Module supports to transfer file at the resuming point if the server supports this function. Please execute the command "AT+QFTPCFG=3,<resuming point>" before putting or getting remaining data. See below for examples.

4.4.1. Upload a file to FTP server from the resuming point

AT+QFTPPUT="sscom.ini",1587,200	//upload the file **"sscom.ini".** The total size is **3587**, and here just upload 1587 bytes for the first time. The remaining data of 2000 bytes can be uploaded later.
OK	
CONNECT	//successfully open data connection to upload file
……	//input the data of the file "sscom.ini"
+QFTPPUT:1587	//successfully upload 1587 bytes of the file "sscom.ini" to the FTP server.
AT+QFTPCFG=3,1587	//Set the resuming point.
OK	
+QFTPCFG:0	
AT+QFTPPUT="sscom.ini",2000,200	//upload the remaining 2000 bytes of the file "sscom.ini" to the server.
OK	
CONNECT	
……	//input the rest data of the file "sscom.ini" from the position 1587
+QFTPPUT:2000	//successfully upload the rest 2000 bytes

4.4.2. Download a file from FTP server from the resuming point

Similar as uploading, it is supported to download file from the resuming point. For example, if file “sscom.ini” has been downloaded 1587 bytes, while the total size is 3587 bytes. it is supported to download the rest data from the position 1587.

AT+QFTPCFG=3,1587	//Set the resuming point.
OK	
+QFTPCFG:0	
AT+QFTPGET="sscom.ini"	//download the rest data of "sscom.ini" from the FTP server.
OK	
CONNECT	
……	//the data of the file "sscom.ini" started from the position 1587 outputs from UART
+QFTPGET:2000	//successfully download the rest file of 2000 bytes from the FTP server.

4.5. Close the FTP service

AT+QFTPCLOSE //close the FTP service
OK

+QFTPCLOSE:0 //successfully close the FTP service.

AT+QIDEACT //deactivate GPRS/CSD context**.** Please refer to [1].
OK

Generally, if the FTP service is not used for a time of period, the FTP server will indicate the user that the FTP service can't be used. The module will report "**+QFTPERROR:-421**" for this information. After a moment, the FTP server will close the control connection of the FTP service. And the module will report "**+QFTPERROR:-6**" for this information. It is recommended to execute the command "**AT+QFTPCLOSE**" to close the FTP service after receiving these two report messages from UART.

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