



SIM7500_SIM7600 Series_FTP(S)_Application Note

LTE Module

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About Document

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1.Introduction

1.1 Purpose of the document

Based on module AT command manual, this document will introduce FTP(S) application process. Developers could understand and develop application quickly and efficiently based on this document.

1.2 Related documents

[1] SIM7500_SIM7600 Series_AT Command Manual

1.3 Conventions and abbreviations

In this document, the GSM engines are referred to as following term:

ME (Mobile Equipment);

MS (Mobile Station);

TA (Terminal Adapter);

DCE (Data Communication Equipment) or facsimile DCE (FAX modem, FAX board);

In application, controlling device controls the GSM engine by sending AT Command via its serial interface.

The controlling device at the other end of the serial line is referred to as following term:

TE (Terminal Equipment);

DTE (Data Terminal Equipment) or plainly "the application" which is running on an embedded system;

2. FTP Introduction

FTP (File Transfer Protocol) is an application layer protocol. File Transfer Protocol is a standard Protocol for transferring files over a network, using the client / server mode. It's part of the Communications Protocol Application Layer.

2.1 Characteristic

A control connection is a communication link established between a client protocol interpreter and a server protocol interpreter for exchanging commands and responses. A data connection is a full-duplex connection for transmitting data. The transfer of data can occur between DTP for the server data transfer process and DTP for the client, or between DTP for the two servers.

2.2 The process of Using FTP(S) AT Commands

Step 1: Ensure GPRS network is available before performing FTP(S) related operations.

Step 2: Configure the parameter of PDP context by AT+CGDCONT.

Step 3: Activate the PDP context to start FTP(S) service by AT+CFTPSSTART.

Step 4: Login FTP(S) server by AT+CFTPSLOGIN.

Step 5: Download a file and save to module by AT+CFTPSGETFILE.

Step 6: Use AT+CFTPSABORT abort any FTP(S) operation.

Step 7: Use AT+CFTPSLOGOUT to logout FTP(S) server while finish FTP(S) operation.

Step 8: Deactivate the PDP context to stop FTP(S) service by AT+CFTPSSTOP.

Note: make sure you login to a FTP(S) sever successfully before any other FTP(S) operations.

3.AT Commands for FTP(S)

Command	Description
AT+CFTPSSTART	Start FTP(S) service
AT+CFTPSSTOP	Stop FTP(S) Service
AT+CFTPSLOGIN	Login to a FTP(S)server
AT+CFTPSLOGOUT	Logout FTP(S) server
AT+CFTPSMKD	Create a new directory on FTP(S) server
AT+CFTPSRMD	Delete a directory on FTP(S) server
AT+CFTPSDELE	Delete a file on FTP(S) server
AT+CFTPSCWD	Delete a file on FTP(S) server
AT+CFTPSPWD	Get the current directory on FTP(S) server
AT+CFTPSTYPE	set the transfer type on FTP(S) serve
AT+CFTPSLIST	List the items in the directory on FTP(S) server
AT+CFTPSGETFILE	Get a file from FTP(S) server to module
AT+CFTPSPUTFILE	Put a file from module to FTP(S) server
AT+CFTPSGET	Get a file from FTP(S) server to serial port
AT+CFTPSPUT	Put a file to FTP(S) server through serial port
AT+CFTPSSINGLEIP	Set FTP(S) data socket address type
AT+CFTPSCACHERD	Set FTP(S) data socket address type
AT+CFTPSABORT	Abort FTP(S) operations
AT+CFTPSSIZE	Get the File Size on FTP(S) server

For detail information, please refer to “SIM7500_SIM7600 Series_AT Command Manual ”.

4. Bearer Configuration

Usually module will register PS service automatically.

4.1 PDN Auto-activation

//Example of PDN Auto-activation.

```
AT+CPIN? //Check SIM card status
+CPIN: READY

OK
AT+CSQ //Check RF signal
+CSQ: 27,99

OK
AT+CGREG? //Check PS service
+CGREG: 0,1

OK
AT+COPS? //Query Network information, operator and network
+COPS: 0,0,"CHN-CT",9

OK
AT+CNACT=0,1 //Activating network bearing
OK

AT+CNACT?
+CNACT: 0,1
+CNACT: 1,0,
+CNACT: 2,1
+CNACT: 3,0
OK
```


5.HTTP(S) Samples

5.1 Access to FTP server

5.1.1 Download a file from FTP server to module/upload a file to FTP server form module

//Example of Download a file from FTP server to module/upload a file to FTP server form module

```

AT+CFTPSSTART //start FTP service
OK

+CFTPSSTART: 0
AT+CFTPS_SINGLEIP=1 //set data connection use the same address of
OK //control connection

AT+CFTPSLOGIN="serveraddr",21,"username", //login to a FTP server
"password",0
OK

+CFTPSLOGIN: 0
AT+CFTPSLIST="/" //list all items of directory "/"
OK

+CFTPSLIST: DATA,1024
drw-rw-rw- 1 user group 0
Aug 23 15:37 .
drw-rw-rw- 1 user group 0
Aug 23 15:37 ..
-rw-rw-rw- 1 user group 4
Aug 11 2016 008test
-rw-rw-rw- 1 user group 5505024
Jun 7 17:27 0529-0607.zip
drw-rw-rw- 1 user group 0
Apr 8 19:15 1
-rw-rw-rw- 1 user group 1388870
Apr 27 2017 1.isf
-rw-rw-rw- 1 user group 2

```

```

Aug 23 2016 1.txt
-rw-rw-rw- 1 user      group      21
Jan 15 2018 11.txt
-rw-rw-rw- 1 user      group      41
Apr  8 19:32 11111.txt
-rw-rw-rw- 1 user      group     327680
Mar 15 2017 111ww.txt

+CFTPSLIST: 0
AT+CFTPSPWD                               //get current directory of FTP server
+CFTPSPWD: "/"

OK
AT+CFTPSGETFILE="111ww.txt"               //download a file from FTP server to module
OK                                         directory "F:/"
+CFTPSGETFILE: 0

AT+FSCD=F:/                               ///change current directory to "F:/"
+FSCD: F:/

OK
AT+FSLS/                                  //list all items in "F:/"
+FSLS: FILES:
111ww.txt
OK
AT+CFTPSPUTFILE="Code_204_NOK.qmdl"       //upload file from"F:/" to FTP server
OK

+CFTPSPUTFILE: 0

AT+CFTPSLOGOUT                             //logout FTP server
+CFTPSLOGOUT: 0

OK

AT+CFTPSSTOP                               //stop FTP service
OK

+CFTPSSTOP: 0

```

5.1.2 Download file from FTP server to serial port /upload file to FTP server

//Example of download a file from FTP server to serial port and how to upload a file from serial port to

FTP server.

```

AT+CFTPSSTART //start FTP service
OK

+CFTPSSTART: 0
AT+CFTPSSINGLEIP=1 //Set HTTP body length
OK
AT+CFTPSLOGIN="serveraddr",21,"username", // login to a FTP server
"password",0
OK
AT+CFTPSLIST="/" //list all items of directory "/"
OK
drw-rw-rw-  1 user      group      0
Aug 23 15:37 .
drw-rw-rw-  1 user      group      0
Aug 23 15:37 ..
-rw-rw-rw-  1 user      group      4
Aug 11  2016 008test
-rw-rw-rw-  1 user      group     5505024
Jun  7 17:27 0529-0607.zip
drw-rw-rw-  1 user      group      0
Apr  8 19:15 1
-rw-rw-rw-  1 user      group     1388870
Apr 27  2017 1.isf
-rw-rw-rw-  1 user      group      2
Aug 23  2016 1.txt
-rw-rw-rw-  1 user      group     21
Jan 15  2018 11.txt

+CFTPSLIST: DATA,1024
AT+CFTPSPWD //get current directory of FTP server
+CFTPSPWD: "/"

OK
AT+CFTPSPUT="wwwputsss" //upload a file from serial port, please start to input
>aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa data while ">"received.
OK

+CFTPSPUT: 0
AT+CFTPSGET="wwwputsss" //download the file sent by AT+CFTPSPUT from
OK FTP server to serial port.
+CFTPSGET: DATA,78
AT+CFTPSLOGOUT //logout FTP server
OK

```

5.2 Access to FTPS server

5.2.1 HTTPS Download a file from FTPS server to module/upload a file from module

//Example of download a file from FTPS sever to module and how to upload a file from module to FTPS server:

```

AT+FTPSSTART //start FTP service
OK

+CFTPSSTART: 0
AT+CFTPSINGLEIP=1 //set data connection use the same address of
OK //control connection
AT+CFTPSLOGIN="serveraddr",990,"username" //login to a FTPS server
,"password",3
OK
AT+CFTPSLIST="/" //list all items of directory "/"
OK
+CFTPSLIST: DATA,963
-rw-r--r-- 1 ftp ftp 8 Apr 13 2018
t0411982.txt
-rw-r--r-- 1 ftp ftp 8 Apr 13 2018
t0411988.txt
-rw-r--r-- 1 ftp ftp 88 Apr 11 2018
t0412.txt
-rw-r--r-- 1 ftp ftp 88 Aug 21 11:12
t0821234567.txt
-rw-r--r-- 1 ftp ftp 10 Jun 15 2018
t1.txt
-rw-r--r-- 1 ftp ftp 10 Apr 17 2018
t2.txt

+CFTPSLIST: 0
AT+CFTPSPWD //get current directory of FTP server
+CFTPSPWD: "/"

OK
AT+CFTPSGETFILE="update2.zip" //download a file from FTPS server to module
OK //directory"F:"

```

```

+CFTPSGETFILE: 0
AT+FSCD=F:                                     //change current directory to F:/
+FSCD: F:/

OK
AT+FSLs                                         //list all items in directory F:/
+FSLs: FILES:
POST_JPG.DAT
update2.zip

OK
AT+CFTPSPUTFILE="Code_204_NOK.qmdl"           //upload a file from directory "F:/" to FTPS server
OK

+CFTPSPUTFILE: 0
AT+CFTPSLOGOUT                                 // log out FTPS server
+CFTPSLOGOUT: 0

OK
AT+CFTPSSTOP                                   //deactive the PDP context, stop FTP service.
+CFTPSSTOP: 0

OK

```

5.2.2 Download a file to serial port/upload a file from serial port

//Example of download a file form FTPS sever to serial port and how to upload a file from serial port to FTPS server:

```

AT+CFTPSSTART                                   //start FTP service
OK

+CFTPSSTART: 0
AT+CFTPSsingleIP=1                             //set data connection use the same address of
OK                                             control connection

AT+CFTPSLOGIN="serveraddr",990,"uename"       //login to a FTPS server
,"password",3
OK
AT+CFTPSLIST="/"                               //Set connect server parameter
OK
+CFTPSLIST: DATA,963
-rw-r--r-- 1 ftp ftp                          8 Apr 13 2018

```

t0411982.txt		
-rw-r--r-- 1 ftp ftp	8 Apr 13	2018
t0411988.txt		
-rw-r--r-- 1 ftp ftp	88 Apr 11	2018
t0412.txt		
-rw-r--r-- 1 ftp ftp	88 Aug 21	11:12
t0821234567.txt		
-rw-r--r-- 1 ftp ftp	10 Jun 15	2018
t1.txt		
-rw-r--r-- 1 ftp ftp	10 Apr 17	2018
t2.txt		
+CFTPSLIST: 0		
AT+CFTPSPWD		//get current directory of FTP server
+CFTPSPWD: "/"		
OK		
AT+CFTPSPUT="wwwpute",10		//upload a file from serial to FTPS server
>qqqqqqqqqq		
OK		
+CFTPSPUT: 0		
AT+CFTPSGET="wwwpute",0		//download the file uploaded by AT+CFTPSPUT
OK		to serial port
+CFTPSGET: DATA,10		
qqqqqqqqqq		
+CFTPSGET: 0		
AT+CFTPSLOGOUT		// log out FTPS server
+CFTPSLOGOUT: 0		
OK		
AT+CFTPSSTOP		//deactive the PDP context, stop FTP service.
+CFTPSSTOP: 0		
OK		

5.2.3 FTP Resume-From-Break-Point

//Example of uses the resume-from-break-point function of the module to download a file in FTP server to the directory F:/.

<p>AT+CFTPSSTART OK</p> <p>+CFTPSSTART: 0 AT+CFTPSLOGIN="112.74.93.163",21,"tmf","tmf123",0 OK +CFTPSLOGIN: 0 AT+FSCD=F:/ +FSCD: F:/</p> <p>OK</p> <p>AT+FSLs +FSLs: FILES: data_bk_ver.txt need_adb_mass_storage 1M.txt</p> <p>OK AT+CFTPSSIZE="test0129" OK</p> <p>+CFTPSSIZE:1261568 AT+CFTPSGETFILE="test0129",1,3 OK</p> <p>+CFTPSGETFILE: 7 AT+CSHELL="sync" OK</p> <p>+CPIN: READY</p> <p>SMS DONE</p> <p>PB DONE AT+FSCD=F:/ +FSCD: F:/</p> <p>OK AT+FSLs +FSLs: FILES: data_bk_ver.txt test0129 need_adb_mass_storage 1M.txt</p>	<p>// start FTP service</p> <p>//login ftp server</p> <p>//change current directory to F:/</p> <p>//list all items in directory F:/</p> <p>//get file size</p> <p>//the file exists in the ftp server, while not in the file system of the module, in this case, if use the parameter //<offset>, <err_code> 7 will be returned.</p> <p>//this command is used to output the data in buffer to the disk of module.It is not mandatory, only used for test, avoiding the data lost.</p> <p>//here reset the module</p> <p>//change current directory to F:/</p> <p>//list all items in directory F:/</p>
---	---

OK	
AT+FSATTRI="test0129" +FSATTRI: 401408,1980/01/06 15:49:11 Sun	//query the size of the file "test0129" which has been downloaded last time.
OK	
AT+CFTPSSTART	// start FTP service
OK	
+CFTPSSTART: 0 AT+CFTPSLOGIN="112.74.93.163",21,"tmf","tmf123",0	//login server
OK	
+CFTPSLOGIN: 0	
AT+CFTPSGETFILE="test0129",1,401408	//use resume-from-break-point, the <offset> should be the size of downloaded file.
OK	
+CFTPSGETFILE: 0	
AT+FSATTRI="test0129" +FSATTRI: 1261568,1980/01/06 15:58:13 Sun	//the file is successfully downloaded, query the size of the file, it's the same size as the file in ftp server
OK	
AT+CFTPSSIZE="test0129"	//get file size
OK	
+CFTPSSIZE:1261568	