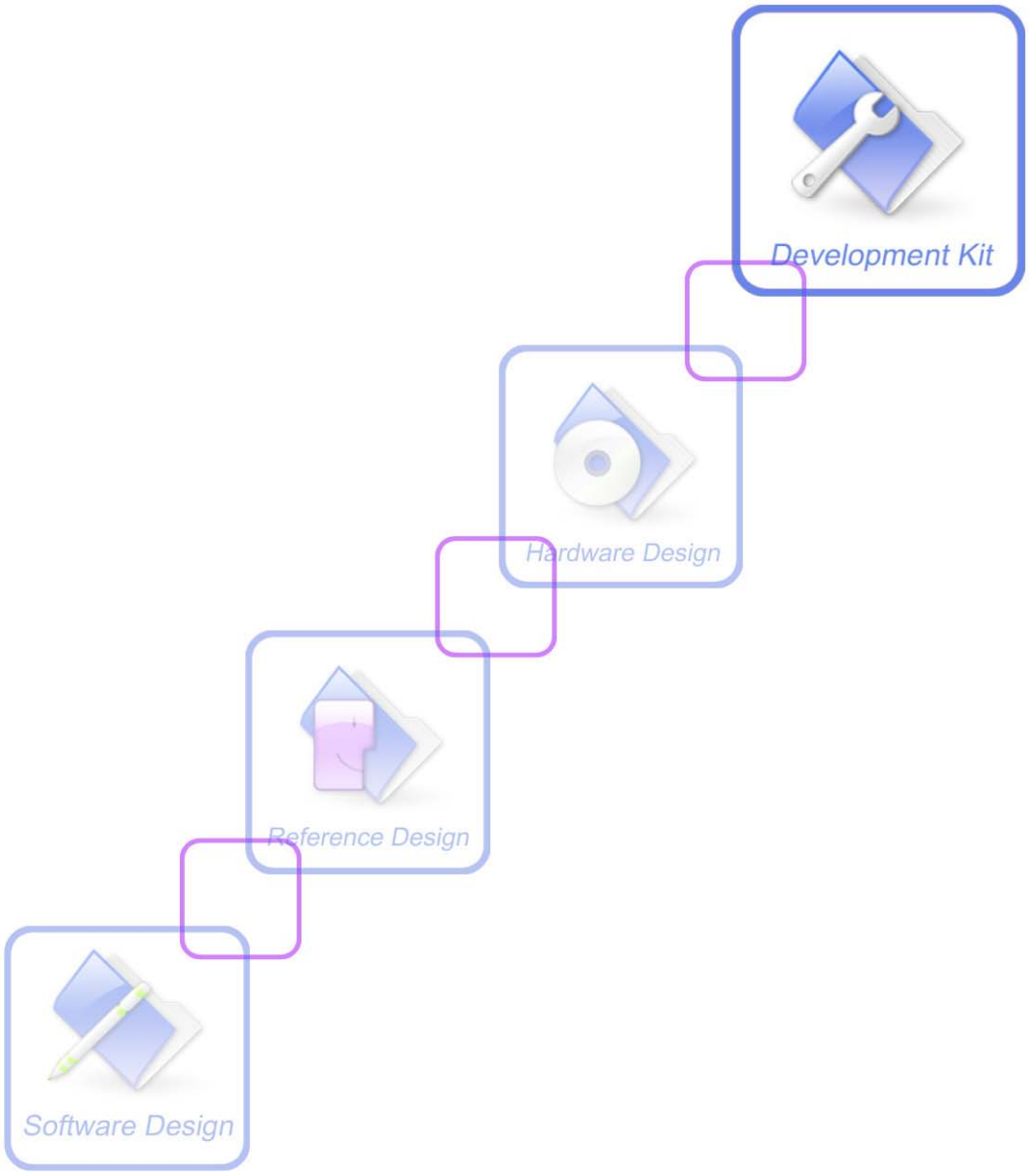
FTP **Application Note**



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Version History

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1. Introduction

1.1 Overview

This document gives the usage of SIM7100 FTP functions; user can get useful information about the SIM7100 FTP functions quickly through this document.

The FTP functions are provided in AT command format, and they are designed for customers to design their FTP applications easily. User can access the FTP AT commands through UART/ USB interface which communicates with SIM7100 module.

SIM7100 FTP features:

- Basic FTP PUT and GET operation.
- Support passive and proactive mode of FTP transfering.
- Support transferring file between external MCU and FTP server
- Support transferring file between internal EFS and FTP server
- Support FTP URL parsing using DNS.

1.2 References

The present document is based on the following documents:

[1] SIM7100_Internet_Service_Application_Note_V0.01.doc.

1.3 Terms and Abbreviations

For the purposes of the present document, the following abbreviations apply:

- AT ATtention; the two-character abbreviation is used to start a command line to be sent from TE/DTE to TA/DCE
- EDGE Enhanced Data GSM Environment
- EGPRS Enhanced General Packet Radio Service
- FTP File Transfer Protocol
- GPRS General Packet Radio Service
- GSM Global System for Mobile communications
- PIN Personal Identification Number
- TA Terminal Adaptor; e.g. a data card (equal to DCE)
- TE Terminal Equipment; e.g. a computer (equal to DTE)
- UMTS Universal Mobile Telecommunications System
- URC Unsolicited Result Code
- USIM Universal Subscriber Identity Module
- WCDMA Wideband Code Division Multiple Access

2. FTP Quick Start – Setting

The purpose of this section is to help get you start with FTP setting.

2.1 Set FTP Server Address

User can set the FTP address with the domain name or IPv4 address:

- Set FTP server address using domain:

AT+CFTPSERV=”ftp.myserver.com”

- Set FTP server address using IPv4 address:

AT+CFTPSERV=”192.168.0.1”

2.2 Set FTP Port

Usually the default FTP port is 21. If the FTP server listening port is not 21, user should set the port using AT+CFTPPORT command. Following is the FTP port setting example:

AT+CFTPPORT= 9021

2.3 Set FTP Mode

FTP protocol supports passive and proactive modes, and this can be set using AT+CFTPMODE. If not set, the default mode is proactive mode.

- Set passive FTP mode:

AT+CFTPMODE=1

- Set proactive FTP mode:

AT+CFTPMODE=0

2.4 Set FTP Transfer type

User can set the FTP transfer type to BINARY or ASCII. Following is an example for setting

the FTP transfer type:

- Set FTP transfer type with BINARY:

AT+CFTPTYPE=I

- Set FTP transfer type with ASCII:

AT+CFTPTYPE=A

2.5 Set User Name

User can set the FTP user name using AT+CFTPUN:

AT+CFTPUN="myname"

2.4 Set Password

User can set the FTP user name using AT+CFTPPW:

AT+CFTPPW="mypass"

3. Transfer a File

3.1 Upload a File from Local EFS to FTP server

The following command uploads the C:\Picture\test1.txt to FTP server and save it as /pub/mydir/test1.txt:

AT+CFTPPUTFILE="/pub/mydir/test1.txt", 1

When the file name contains non-ASCII characters, user can add {non-ascii} in the beginning of the first parameter of AT+CFTPPUTFILE. Following is also an example for uploading the C:\Picture\test1.txt to FTP server and save it as /pub/mydir/test1.txt:

AT+CFTPPUTFILE={non-ascii}"2F7075622F6D796469722F74657374312E747874", 1

3.2 Download a File from FTP server to local EFS

The following command downloads /pub/mydir/test1.txt from FTP server to local EFS as

C:\Picture\test1.txt:

AT+CFTPGETFILE="/pub/mydir/test1.txt", 1

When the file name contains non-ASCII characters, user can add {non-ascii} in the beginning of the first parameter of AT+CFTPGETFILE. Following is also an example for downloading the /pub/mydir/test1.txt to local EFS as C:\Picture\test1.txt:

AT+CFTPGETFILE={non-ascii}"2F7075622F6D796469722F74657374312E747874", 1

3.3 Upload a file From TE to FTP server

The following command uploads data from TE using USBAT or UART port to FTP server and save it as /pub/mydir/test1.txt:

1) TE inputs AT+CFTPPUT command

AT+CFTPPUT="/pub/mydir/test1.txt"

2) Module reports +CFTPPUT: BEGIN to indicate that FTP server has been connected successfully, and TE can input the FTP file data now.

+CFTPPUT: BEGIN

3) TE inputs FTP file data. If the data contains character with decimal value of 03 or 26, the character should be converted to 03 03 or 03 26 which contains two characters. When TE is uploading data, if there is any report like +CME ERROR: or +CFTPPUT: <error> occurs, TE should stop uploading data.

…

4) TE inputs <CTRL+Z> with decimal value 26 to indicate end of the FTP file data.

<CTRL+Z>

5) Module reports OK.

OK

When the file name contains non-ASCII characters, user can add {non-ascii} in the beginning of the first parameter of AT+CFTPPUT. Following is also an example for uploading data from TE using USBAT or UART port to FTP server and save it as /pub/mydir/test1.txt:

AT+CFTPPUTFILE={non-ascii}"2F7075622F6D796469722F74657374312E747874"

3.4 Download a File from FTP server to TE

The following command downloads /pub/mydir/test1.txt from FTP server to TE:

1) TE inputs AT+CFTPGET command

AT+CFTPGET=”/pub/mydir/test1.txt”

2) Module reports +CFTPGET: DATA, <len>\r\n<data> to indicate that module has received new packet of data from FTP server. The <len> is the length of <data> part. The <data> part contains the data received from FTP server. This unsolicited result may be reported for multiple times which depends on the real size of the file transferred using FTP.

+CFTPPUT: DATA, 1024
…

+CFTPPUT: DATA, 1024
…

3) Module reports +CFTPGET: <result>

+CFTPPUT: 0

When the file name contains non-ASCII characters, user can add {non-ascii} in the beginning of the first parameter of AT+CFTPGET. Following is also an example for downloading the /pub/mydir/test1.txt to TE:

AT+CFTPGET={non-ascii}”2F7075622F6D796469722F74657374312E747874”

3.4 Timer values of FTP transferring

Following are the timer value setting for FTP transferring:

Timer	Value
Socket connect	2 minutes
FTP login timer	3 minutes
FTP transferring timer	3 hours
FTP logout timer	2 minutes

4. Unsolicited Result Code of FTP

Following is the unsolicited result code of +CFTPPUT, +CFTPPUTFILE, +CFTPGET, +CFTPGETFILE and +CME RROR:

Code of <err>	Description
201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	Not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter
214	Network error

5. FTP AT Command Samples

Set the parameters	**Comments**
AT+CFTPSERVER=”ftp.myserver.com” OK	Set the FTP server address
AT+CFTPPORT=21 OK	Set the FTP port
AT+CFTPUN=”myname” OK	Set the user name for the FTP server
AT+CFTPPW=”mypass” OK	Set the password for the FTP server
AT+CFTPMODE=1 OK	Set to use passive mode.
AT+CFTPTYPE=I OK	Set to use BINARY type to transfer.
Upload a file from local EFS to FTP server	Comments
AT+CGSOCKCONT=1,”IP”,”myapn” OK AT+CCFTPPUTFILE=”/mydir/test2.jpg”, 1 OK +CFTPPUTFILE: 0	Set the PDP context profile. Upload the C:\Picture\test2.jpg in EFS to FTP server as /mydir/test2.jpg. The ‘0’ in +CFTPPUTFILE means successful transfer. Other values mean transfer failure.
Download a file from FTP server to local EFS	Comments

AT+CGSOCKCONT=1,”IP”,”myapn” OK	Set the PDP context profile.
AT+CCFTPGETFILE=”/mydir/test2.jpg”, 1 OK +CFTPGETFILE: 0	Download /mydir/test2.jpg from FTP server to local EFS as C:\Picture\test2.jpg. The ‘0’ in +CFTPGETFILE means successful transfer. Other values mean transfer failure.
Upload a file from TE to FTP server	Comments
AT+CGSOCKCONT=1,”IP”,”myapn” OK	Set the PDP context profile.
AT+CCFTPPUT=”/mydir/test2.jpg” +CFTPPUT: BEGIN … <CTRL+Z> OK	Upload data from TE to FTP server as /mydir/test2.jpg.
Download a file from FTP server to TE	Comments
AT+CGSOCKCONT=1,”IP”,”myapn” OK	Set the PDP context profile.
AT+CCFTPGET=”/mydir/test2.jpg” OK +CFTPGET: DATA, 1024 … +CFTPGET:DATA, 1024 …	Download /mydir/test2.jpg from FTP server to TE. Every time when module receives data from FTP server, the +CFTPGET: DATA result will be reported.
+CFTPGETFILE: 0	The ‘0’ in +CFTPGETFILE means successful transfer. Other values mean transfer failure.

6. Conflict AT Commands

Following AT commands cannot be used with FTP AT commands together:

- TCP/IP Related AT Commands.
- MMS AT Commands
- GPS AT Commands

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