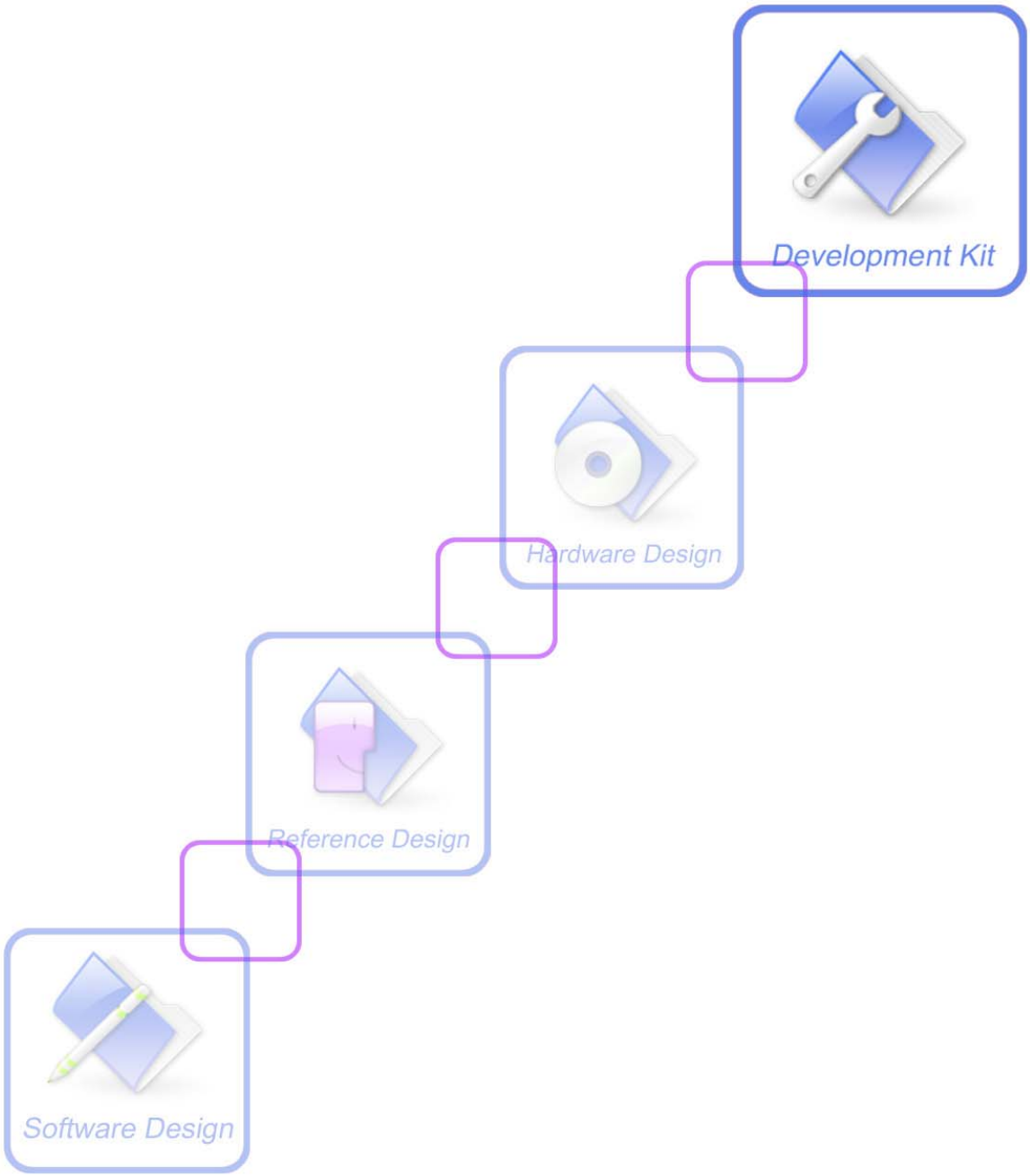
SIM900_IP_Application Note_V1.06



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VERSION HISTORY

Date	Version	Description of change	Author
2010-11-15	1.00	Origin	
2011-3-23	1.01	Added new chapter 3.7 to describes how to use FTP broken download resuming function.	Yang chen
2011-10-25	1.02	Added FTP DELE, FTP SIZE function.	Yangchen
2012-10-11	1.03	Added HTTPSTATUS, FTPLIST, FTPRMD, FTPMKD, FTPEXTPUT functions.	Hujie
2013-3-12	1.04	Modified a command spelling mistake in chapter 3.7.	Yangchen
2013-8-21	1.05	Added FTPEXTGET, FTPETGET, FTPETPUT function	Zhangyunduan
2013-12-12	1.05	Modified sample mistakes in chapter 2.3 and chapter 3.15: 1. “AT+HTTPACTION=1” was corrected to “AT+HTTPACTION=2”. 2. “+FTPPUT=1,80” was corrected to “+FTPPUT:1,80”	Yangchen
2014-04-11	1.06	3.11 Added a new function that the information of a certain file can be get by FTPLIST. 3.17 Added FTPRENAME method. 3.18 Added FTPMDTM method.	Yangchen

SCOPE

This document describes how to use the HTTP and FTP function of SIM900 through AT commands.
Examples are also given for reference. This document can be used for SIM900 serial modules, like SIM900, SIM900D, SIM900B and SIM900A.

This document is subject to change without notice at any time.

1. Bearer Configure

The bearer contexts of HTTP and FTP applications can be set or activated by SAPBR command.

1.1 Bearer Profile

Demonstration	Syntax	Expect Result
Configure bearer profile 1	AT+SAPBR=3,1,"Contype","GPRS" AT+SAPBR=3,1,"APN","CMNET"	OK OK
To open a GPRS context.	AT+SAPBR =1,1	OK
To query the GPRS context.	AT+SAPBR=2,1	+SAPBR: 1,1,"10.89.193.1" OK
To close a GPRS context.	AT+SAPBR =0,1	OK
GPRS context is released by network		+SAPBR 1: DEACT

2. HTTP Application

Hyper Text Transfer Protocol application provides a mode to alternate with HTTP server. The basic application contains GET, POST, HEAD methods; it also supports proxy server, redirection, and broken transfer resuming functions.

2.1 HTTP GET Method

Download data from HTTP server

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1	OK
	AT+HTTPPARA=“URL”,“www.sim.com”	OK
GET session start	AT+HTTPACTION=0	OK
GET successfully		+HTTPACTION:0,200,1000
Read the data of HTTP server	AT+HTTPREAD	+HTTPREAD: 1000 …. *//output the data to uart* OK
Terminate http service	AT+HTTPTERM	OK

2.2 HTTP POST Method

Upload data to HTTP server

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1	OK
	AT+HTTPPARA=“URL”,“www.sim.com”	OK

POST the data whose size is 100 Bytes and the maximum latency time for inputting is 10000 ms. It is recommended to set the latency time long enough to allow downloading all the data.	AT+HTTPDATA=100,10000	DOWNLOAD …… *//It is ready to receive data from uart, and DCD has been set to low.* OK *//All data has been received over, and DCD is set to high.*
POST session start	AT+HTTPACTION=1	OK
POST successfully		+HTTPACTION:1,200,0
Terminate http service	AT+HTTPTERM	OK

2.3 HTTP HEAD Method

Get HTTP head information from HTTP server

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1 AT+HTTPPARA=“URL”,“www.sim.com”	OK OK
HEAD session start	AT+HTTPACTION=2	OK
HEAD successfully		+HTTPACTION:2,200,0
Terminate http service	AT+HTTPTERM	OK

2.4 Set Proxy HTTP Server

It provides the method to use proxy HTTP server.

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1 AT+HTTPPARA=“URL”,“www.sim.com”	OK OK

Set proxy server IP address	AT+HTTPPARA=“PROIP”,“10.0.0.172”	OK
Set proxy server port	AT+HTTPPARA = “PROPORT”,80	OK
GET session start	AT+HTTPACTION=0	OK
GET successfully		+HTTPACTION:0,200,1000
Read the data of HTTP server	AT+HTTPREAD	+HTTPREAD: 1000 …. *//output the data to uart* OK
Terminate http service	AT+HTTPTERM	OK

2.5 Set HTTP Redirection Parameter

It provides the method to use HTTP redirection function.

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1	OK
Set the redirection parameter	AT+HTTPPARA = “REDIR”,1	OK
Set the URL	AT+HTTPPARA=“URL”,“www.sim.com/abcde”	OK
GET session start	AT+HTTPACTION=0	OK
GET successfully		+HTTPACTION:0,200,1000
Read the response of HTTP server	AT+HTTPREAD	+HTTPREAD: 1000 …. *//output the data to uart* OK
Terminate http service	AT+HTTPTERM	OK

2.6 Set HTTP Download Break Point Parameter

It provides the method to use HTTP broken download resuming function.

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA= “CID”,1	OK
Set the URL, the size of gif is 16384 bytes	AT+HTTPPARA=“URL”,“ http://www.sim.com/img/sim_logo_jr_1003_38.gif”	OK
Set the break point	AT+HTTPPARA = “BREAK”,2000	OK
GET session start, get data from 2000 to 16384	AT+HTTPACTION=0	OK
GET successfully		+HTTPACTION:0, 200,14384
Read the data of the HTTP server	AT+HTTPREAD	+HTTPREAD: 14384 …. *//output the data to uart* OK
Terminate http service	AT+HTTPTERM	OK

2.7 Get HTTP Current Status

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTPPARA = “CID”,1 AT+HTTPPARA=“URL”,“www.baidu.com”	OK OK
GET session start	AT+HTTPACTION=0	OK
The status of getting session is in progress	AT+HTTPSTATUS?	+HTTPSTATUS: GET,1,1440,7915 OK
GET successfully		+HTTPACTION:0,200,9355
The status of getting session is	AT+ HTTPSTATUS?	+HTTPSTATUS: GET,0,0,0

over		OK
POST session start	AT+HTTPACTION=1	OK
The status of posting session is in progress	AT+ HTTPSTATUS?	+HTTPSTATUS: POST,2,1440,608 OK
POST successfully		+HTTPACTION:1,200,0
The status of posting session is over	AT+ HTTPSTATUS?	+HTTPSTATUS: POST,0,0,0 OK
Terminate http service	AT+HTTPTERM	OK

3. FTP Application

File Transfer Protocol application provides a mode to interact with a remote machine. The basic application contains GET, PUT methods, which also supports broken transfer resuming function. PUT method supports APPE, STOR and other modes.

3.1 FTP GET Method

Download data from the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPGETNAME="1K.txt" AT+FTPGETPATH="/"	OK OK OK OK OK OK
Open the FTP get session.	AT+FTPGET=1	OK
Data are available.		+FTPGET:1,1
Request to read 1024 bytes, but Only 50 bytes are now available.	AT+FTPGET=2,1024	+FTPGET:2,50 01234567890123456789012345678901234567890 OK
Request to read 1024 bytes again. No byte is now available, but it is not the end of session.	AT+FTPGET=2,1024	+FTPGET:2,0 OK
If the module receives data but user does not input “AT+FTPGET=2,<reqlength>”		+FTPGET:1,1

to read data, “+FTPGE T:1,1” will be shown again in a certain time.		
Request to read 1024 bytes. 1024 bytes are now available.	AT+FTPGET=2,1024	+FTPGET:2,1024 01234567890123456789012345678901234567890…..1234 OK
Data transfer finished. The connection to the FTP server is closed.		+FTPGET:1,0

3.2 FTP PUT Method

Upload data to the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPPUTNAME="1K.txt" AT+FTPPUTPATH="/"	OK OK OK OK OK OK
Open the FTP put session.	AT+ FTPPUT =1	OK
FTP session is ready for uploading. 1280 is the max length of data which can be sent at a time. It depends on the network status.		+FTPPUT:1,1,1280
Client requests to send 100 bytes. Response indicates that user must input 100 bytes for transferring now.	AT+FTPPUT=2,100	+FTPPUT:2,100 …… *//It is ready to receive data from uart, and DCD has been set to low.* OK *//All data has been received over, and DCD is set to high.*

URC indicates that the FTP session is ready to transfer more data.		+FTPPUT:1,1,1280
No more data will be uploaded; the FTP session will be closed.	AT+FTPPUT=2,0	OK
Data transfer is finished. The connection to the remote machine is closed.		+FTPPUT:1,0

During FTP session, different failure may occur because of bad network environment or other reasons. Some common failure includes timeout failure and wrong password failure.

3.3 FTP Time Out

Time out occurs during FTP session because of different reasons.

Demonstration	Syntax	Expect Result
Open the FTP Get session.	AT+ FTPGET =1	OK
If the status of the network is poor, it may be time out. The connection to the remote machine is closed.		+FTPGET:1,64
Open the FTP Get session.	AT+ FTPGET =1	OK
Data are available.		+FTPGET:1,1
If customer does not use “AT+FTPGET=2,<reqlength>” to read data, “+FTPGE T:1,1” will be shown again in a certain time.		+FTPGET:1,1 …….. +FTPGET:1,1
If the user does not read data for a long time, the session will time out. The connection to the remote machine will be closed.		+FTPGET:1,64

3.4 FTP Error

Error occurs during FTP applications because of wrong parameter setting.

Demonstration	Syntax	Expect Result
Set wrong password	AT+FTPPW="3214567"	OK
Open the FTP Get session	AT+ FTPGET =1	OK
FTP session password error. The connection to the remote machine is closed.		+FTPPUT:1,72
Note: Other errors, you can refer to “AT+FTPGET” command in SIM900 ATC document.		

3.5 FTP Operation Error

Error occurs during FTP applications because of wrong operation.

Demonstration	Syntax	Expect Result
Open the FTP Get session.	AT+ FTPGET =1	OK
The parameter of “get file name” is empty. It shows ftp operation error.		+FTPPUT:1,66
Open the FTP PUT session.	AT+ FTPPUT =1	OK
Open the FTP PUT session again. Show ftp operation error.	AT+ FTPPUT =1	OK +FTPPUT:1,66

3.6 FTP READ and WRITE Error

Error occurs before FTP applications because of operating in wrong state.

Demonstration	Syntax	Expect Result
Open the FTP Get session.	AT+ FTPGET =1	OK
Read data before “+FTPGET:1,1” is shown.	AT+FTPGET=2,1000	ERROR
Data are available		+FTPGET:1,1
Read data after “+FTPGET:1,1” is shown.	AT+ FTPGET =1	+FTPGET:2,50 01234567890123456789012345678901 23456789 OK

Data transfer finished. The connection to the remote machine is closed.		+FTPGET:1,0
Read data after FTP session is stopped.	AT+FTPGET=2,1000	ERROR
Open the FTP PUT session.	AT+ FTPPUT =1	OK
Write data before "+FTPPUT:1,1,1280" is shown.	AT+FTPPUT=2,1000	ERROR
FTP session is ready for uploading.		+FTPPUT:1,1,1280
Write data after "+FTPPUT:1,1,1280" is shown.	AT+FTPPUT=2,100	+FTPPUT:2,100 …… OK
No more data to be uploaded; the FTP session will be closed.	AT+FTPPUT=2,0	OK
Write data after FTP session is stopped.	AT+ FTPPUT=2,100	ERROR

3.7 Set FTP Download Break Point Parameter

It provides the method to use FTP broken download resuming function.

Demonstration	Syntax	Expect Result
Open the FTP Get session.	AT+ FTPGET =1	OK
Data are available.		+FTPGET:1,1
Get data from the remote machine.	AT+ FTPGET = 2,1024	+FTPGET:2,29 wodeceshijieguo,zhgeshigeshia OK
Data transfer finished. The connection to the remote machine is closed.		+FTPGET:1,0
Set the broken point.	AT+FTPREST=20	OK
Open the FTP Get session.	AT+ FTPGET =1	OK
Data are available.		+FTPGET:1,1

Get the data begin from the broken point.	AT+ FTPGET = 2,1024	+FTPGET:2,9 shigeshia OK
Data transfer is finished. The connection to the remote machine is closed.		+FTPGET:1,0

3.8 FTP DELE Method

Delete the specified file on the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK
	AT+FTPSERV="116.228.221.52"	OK
	AT+FTPUN="sim.cs1"	OK
	AT+FTPPW="******"	OK
	AT+FTPGETNAME="1K.txt"	OK
	AT+FTPGETPATH="/"	OK
Open the FTP DELE session.	AT+ FTPDELE =1	OK
Delete file finished. The connection to the remote machine is closed.		+FTPDELE:1,0

3.9 FTP SIZE Method

Get the size of specified file on the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK
	AT+FTPSERV="116.228.221.52"	OK
	AT+FTPUN="sim.cs1"	OK
	AT+FTPPW="******"	OK
	AT+FTPGETNAME="1K.txt"	OK

	AT+FTPGETPATH="/"	OK
Open the FTP SIZE session.	AT+ FTPSIZE =1	OK
Get the size of file finished. The connection to the remote machine is closed.		+ FTPSIZE:1,0,1024

3.10 FTP MKD and RMD Method

Make and remove directory on the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPGETPATH="/test"	OK OK OK OK OK
Open the FTP session.	AT+ FTPMKD	OK
The directory “test” is made on the remote machine		+ FTPMKD:1,0
Open the FTP session.	AT+ FTPRMD	OK
The directory “test” is removed from the remote machine		+FTPRMD:1,0

Note: Not all the SIM900 series modules support this command.

3.11 FTP List Session

List contents of remote directory or get the information of a certain file on the remote machine.

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52"	OK OK

	AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPGETPATH="/ "	OK OK OK
Open the FTP session.	AT+FTPLIST=1	OK
Data are available.		+FTPLIST:1,1
Request to read 1024 bytes, but only 126 bytes are now available.	AT+FTPLIST=2,1024	+FTPLIST:2,126 total 0 drw-rw-rw- 1 user group 0 Oct 12 14:58 . drw-rw-rw- 1 user group 0 Oct 12 14:58 .. OK
Data transfer finished. The connection to the remote machine is closed.		+FTPLIST:1,0
Get the information of a certain file “1K.txt”	AT+FTPGETPATH="/1K.txt "	OK
Open the FTP session.	AT+FTPLIST=1	OK
Data are available.		+FTPLIST:1,1
Request to read 1024 bytes, in fact only 78 bytes are now available.	AT+FTPLIST=2,1024	+FTPLIST:2,78 -rw-rw---- 1 zhangkun simcom 8807854 Mar 19 13:31 /1K.txt OK //Returns information of the file “1K.txt”
Data transfer finished. The connection to the remote machine is closed.		+FTPLIST:1,0

Note: Not all the SIM900 series modules support this command.

3.12 FTP Extend PUT Method

Extend Upload data to the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPPUTNAME="1K.txt" AT+FTPPUTPATH="/"	OK OK OK OK OK OK
Set FTP to extend put method.	AT+FTPEXTPUT=1	OK
Client requests to send 1024 bytes. Response indicates that user must input 1024 bytes for transferring. It is saved in the module.	AT+FTPEXTPUT=2,0,1024,10000	+FTPEXTPUT:0,1024 …… *//It is ready to receive data from uart, and DCD has been set to low.* OK *//All data has been received over, and DCD is set to high.*
Open the FTP PUT session. Waiting for the module to upload the data to the remote machine.	AT+ FTPPUT =1	OK
Data transfer is finished. The connection to the remote machine is closed.		+FTPPUT:1,0

Set FTP to normal put method.	AT+FTPEXTPUT=0	OK

Note: Not all the SIM900 series modules support this command.

3.13 FTP Extend GET Method

Extend Download data to the local flash

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPGETNAME="1K.txt" AT+FTPGETPATH="/"	OK OK OK OK OK OK
Set FTP to extend get method and request to get the file data.	AT+FTPEXTGET=1	OK
Data transfer is finished. The connection to the remote machine is closed.		+FTPEXTGET:1,0
Save the data to the local flash.	AT+FTPEXTGET=2, "1K.txt"	OK
Successfully saved, a total of 1024 bytes		+FTPEXTGET:2,1024
Read the downloaded data.	AT+FTPEXTGET=3,0,100	+FTPEXTGET:100 0123456…. OK
Set FTP to normal get method.	AT+FTPEXTGET=0	OK

Note: Not all the SIM900 series modules support this command.

3.14 FTP ETGET Method

Download data from the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK
	AT+FTPSERV="116.228.221.52"	OK
	AT+FTPUN="sim.cs1"	OK
	AT+FTPPW="******"	OK
	AT+FTPGETNAME="1K.txt"	OK
	AT+FTPGETPATH="/"	OK
Open the ftp etget session	AT+FTPETGET=1	OK
Enter data transfer mode		+FTPETGET:1,1
Data transfer finished. The connection to the remote machine is closed.		012345678901234567890 123456789012345678901 234567890…..1234 <ETX> *//To notify the user that all data transfer has been finished, switch from data mode to command mode.* +FTPETGET:1,0

Note: Not all the SIM900 series modules support this command.

3.15 FTP ETPUT Method

Upload data to the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK
	AT+FTPSERV="116.228.221.52"	OK

	AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPPUTNAME="1K.txt" AT+FTPPUTPATH="/"	OK OK OK OK
Open the ftp etput session	AT+FTPETPUT=1	OK
FTP session is ready for uploading.		+FTPETPUT:1,1
Client requests to send data. Response indicates that user must input data for transferring now.	AT+FTPETPUT=2	+FTPETPUT:2,1 …… *//It is ready to receive data from uart, and DCD has been set to low.* <ETX> *//To notify the module that all data has been sent, switch from data mode to command mode* OK *//All data has been received over, and DCD is set to high.*
Data transfer finished. The connection to the remote machine is closed.		+FTPETPUT:1,0

Note: Not all the SIM900 series modules support this command.

3.16 FTP QUIT Method

Close the connection to the remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK

	AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPPUTNAME="1K.txt" AT+FTPPUTPATH="/"	OK OK OK OK OK
Open the ftp etput session	AT+FTPPUT=1	OK
Quit FTP session	AT+FTPQUIT	OK
The connection to the remote machine is closed.		+FTPPUT:1,80

Note: Not all the SIM900 series modules support this command.

3.17 FTP Rename Method

Rename the specified file of remote machine

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1 AT+FTPSERV="116.228.221.52" AT+FTPUN="sim.cs1" AT+FTPPW="******" AT+FTPGETPATH="/" AT+FTPGETNAME="1K.txt" //The old file name is "1K.txt" AT+FTPPUTNAME="1.txt" //The new file name is “1.txt”	OK OK OK OK OK OK OK
Execute rename function	AT+FTPRENAME //Rename the file "1K.txt" to "1.txt".	OK
Rename action succeed.		+FTPLIST:1,0 //The file was renamed successfully

Note: Not all the SIM900 series modules support this command.

3.18 FTP MDTM Method

Get the last modification timestamp of specified file on the remote machine.

Demonstration	Syntax	Expect Result
Set parameters for FTP session.	AT+FTPCID=1	OK
	AT+FTPSERV="116.228.221.52"	OK
	AT+FTPUN="sim.cs1"	OK
	AT+FTPPW="******"	OK
	AT+FTPGETNAME="1K.txt"	OK
	AT+FTPGETPATH="/"	OK
Get the last modification timestamp.	AT+FTPMDTM	OK
Return the timestamp successfully.		+FTPMDTM:1,0,20140409060951

Note: Not all the SIM900 series modules support this command.

Appendix

A. Related Documents

SN	Document name	Remark
[1]	*SIM900 AT Commands*	SIM900_ATC_V1.09

B. Conventions and Abbreviations

FTP	File Transfer Protocol
HTTP	Hypertext Transfer Protocol
APN	Access Point Name
GPRS	General Packet Radio Service
PDP	Packet Data Protocol

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