



FTP HTTP AT Commands User Guide

AN_SIM900_FTP_HTTP_APP_V1.00



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VERSION HISTORY

Now document: SIM900 IP Application Note” Version 1.00

Version	Chapter	What is new
V1.00	NEW	

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1. INTRODUCTION

1.1 Scope of the document

This document describes how to use AT commands for FTP and HTTP function.

1.2 Related documents

[1] SIM900 AT Commands Set.

[2] SIM900_TCPIP

1.3 Conventions and abbreviations

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

2. AT commands

2.1 AT+SAPBR

AT+SAPBR	SIMCOM APPLICATION BEARER
Test command AT+SAPBR=?	Response +SAPBR: (0-4), (1-3), "ConParamTag", "ConParamValue" OK Parameters see Write Command
Write command AT+SAPBR =<cmd_type>,<cid> ,[<ConParamTag>,<ConParamValue>]	Response OK If<cmd_type> = 2 +SAPBR: <cid>,<Status>,<IP_Addr> OK If <cmd_type>=4 +SAPBR: <ConParamTag>,<ConParamValue> OK Unsolicited Result Code +SAPBR < cid >: DEACT
	Parameters < cmd_type > 0: close bearer 1: open bearer 2: query bearer 3: set bearer parameters 4: get bearer parameters < cid > bearer profile identifier <Status> 0: bearer is connecting 1: bearer is connected 2: bearer is closing 3: bearer is closed

	<p>< ConParamTag > bearer parameter</p> <table border="0"> <tr> <td>“CTYPE”</td><td>Type of Internet connection. Value refer to < ConParamValue_ConType></td></tr> <tr> <td>“APN”</td><td>Access point name string: maximum 50 characters</td></tr> <tr> <td>“USER”</td><td>User name string: maximum 50 characters</td></tr> <tr> <td>“PWD”</td><td>Password string: maximum 50 characters</td></tr> <tr> <td>“PHONENUM”</td><td>Phone number for CSD call</td></tr> <tr> <td>“RATE”</td><td>CSD connection rate. value refer to < ConParamValue_Rate ></td></tr> </table> <p>< ConParamValue > bearer paramer value</p> <p>< ConParamValue_ConType ></p> <table border="0"> <tr> <td>“CSD”</td><td>Circuit-switched data call.</td></tr> <tr> <td>“GPRS”</td><td>GPRS connection.</td></tr> </table> <p>< ConParamValue_Rate ></p> <table border="0"> <tr> <td>0:</td><td>2400</td></tr> <tr> <td>1:</td><td>4800</td></tr> <tr> <td><u>2</u>:</td><td>9600</td></tr> <tr> <td>3:</td><td>14400</td></tr> </table> <p><IP_Addr>: the IP address of bearer</p>	“CTYPE”	Type of Internet connection. Value refer to < ConParamValue_ConType >	“APN”	Access point name string: maximum 50 characters	“USER”	User name string: maximum 50 characters	“PWD”	Password string: maximum 50 characters	“PHONENUM”	Phone number for CSD call	“RATE”	CSD connection rate. value refer to < ConParamValue_Rate >	“CSD”	Circuit-switched data call.	“GPRS”	GPRS connection.	0:	2400	1:	4800	<u>2</u> :	9600	3:	14400
“CTYPE”	Type of Internet connection. Value refer to < ConParamValue_ConType >																								
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“USER”	User name string: maximum 50 characters																								
“PWD”	Password string: maximum 50 characters																								
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0:	2400																								
1:	4800																								
<u>2</u> :	9600																								
3:	14400																								
Reference	Note																								

2.2 HTTP AT Commands

2.2.1 AT+HTTPIPINIT

AT+HTTPINIT HTTP Service Initialize	
Test command AT+HTTPINIT=?	Response OK
Write command AT+HTTPINIT	Response OK

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	If error is related to ME functionality: ERROR
	Parameters
Reference	Note Before using HTTP service, HTTPINIT should be executed to initialize the HTTP stack firstly.

2.2.2 AT+HTTPTERM

AT+HTTPTERM	HTTP Service Terminate
Test command AT+HTTPTERM=?	Response OK
Write command AT+HTTPTERM	Response OK If error is related to ME functionality: ERROR
	Parameters
Reference	Note

2.2.3 AT+HTTTPARA

AT+HTTTPARA	SET HTTP Parameters
Test command AT+HTTTPARA=?	Response +HTTTPARA: "HTTPParamTag"," HTTPParmValue" OK
	Parameters
Write command AT+HTTTPARA=< HTTPParamTag>,< HTTPParmValue>	Response OK

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HTTPParamValue >	<p>If error is related to ME functionality:</p> <p>ERROR</p> <p>Parameters</p> <p>< HTTPParamTag > HTTP Parameter</p> <p>“CID” (Mandatory Parameter) bearer profile identifier refer to AT+SAPBR</p> <p>“URL” (Mandatory Parameter) HTTP client URL "http://server'/path':tcpPort' " "server": FQDN or IP-address "path": path of file or directory "tcpPort": If parameter is omitted, the service connects to HTTP default port 80. Refer to "IETF-RFC 2616".</p> <p>“UA” The user agent string must be set by the application to identify the mobile. Usually operation system and software version info is set with this browser identifier.</p> <p>“PROIP” The IP address of HTTP proxy server</p> <p>“PROPORT” The port of HTTP proxy server</p> <p>“REDIR” This flag controls the redirection mechanism of the SIM900 acting as HTTP client (numeric). If the flag is set (1) the client automatically sends a new HTTP request if the server answers with a redirect code (range 30x). Default value is 0 (no redirection).</p> <p>“BREAK” Parameter for HTTP method "GET". Get partly data range, breakPoint to the end. Note: Not all the HTTP Server support <BREAK> parameter</p> <p>< HTTPParamValue > HTTP Parameter value . Type and supported content depend on related parameters < HTTPParamTag >.</p>
Read command AT+HTTPPARA?	Response + HTTPPARA: < HTTPParamTag >,< HTTPParamValue > OK Parameters
Reference	Note

2.2.4 AT+HTTPDATA

AT+HTTPDATA	HTTP DATA WRITE
Test command AT+HTTPDATA=?	Response +HTTPDATA: (1-60416), (1000-120000) OK
	Parameters
Write command AT+HTTPDATA=<size>,<time>	Response DOWNLOAD OK If error is related to ME functionality: +CME ERROR: <err>
	Parameters <size> Size in bytes for the data which is put by the command of "POST". <time> Maximum time in milliseconds for inputting data.
Reference	Note It is strongly recommended to set the time as long as enough to input all data and that the real size of the downloaded file is no more than the value of <size>.

2.2.5 AT+HTTPACTION

AT+HTTPACTION	HTTP method Action
Test command AT+HTTPACTION=?	Response +HTTPACTION: (0-2) OK
Write command AT+HTTPACTION=<Method>	Response OK If error is related to ME functionality: +CME ERROR: <err> Unsolicited Result Code +HTTPACTION: <Method>< StatusCode >,<DataLen>

Parameter

< Method > HTTP method specification:

0: GET

1: POST

2: HEAD

<StatusCode> HTTP status code responded by remote server, its identifier refer to HTTP1.1(RFC2616)

100 Continue

101 Switching Protocols

200 OK

201 Created

202 Accepted

203 Non-Authoritative Information

204 No Content

205 Reset Content

206 Partial Content

300 Multiple Choices

301 Moved Permanently

302 Found

303 See Other

304 Not Modified

305 Use Proxy

307 Temporary Redirect

400 Bad Request

401 Unauthorized

402 Payment Required

403 Forbidden

404 Not Found

405 Method Not Allowed

406 Not Acceptable

407 Proxy Authentication Required

408 Request Time-out

409 Conflict

410 Gone

411 Length Required

412 Precondition Failed

413 Request Entity Too Large

414 Request-URI Too Large

415 Unsupported Media Type

416 Requested range not satisfiable

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	417 Expectation Failed 500 Internal Server Error 501 Not Implemented 502 Bad Gateway 503 Service Unavailable 504 Gateway Time-out 505 HTTP Version not supported 600 Not HTTP PDU 601 Network Error 602 No memory 603 DNS Error 604 Stack Busy <DataLen> the length of data got
Reference	Note

2.2.6 AT+HTTPREAD

AT+HTTPREAD	Read the HTTP server response
Execution command AT+HTTPREAD	Response +HTTPREAD <data> OK Read all the data response by AT+HTTPACTION=0 or AT+HTTPDATA If error is related to ME functionality: +CME ERROR: <err>
Write command AT+ HTTPREAD =<start_address><byte_size>	Response +HTTPREAD: <date_len> <data> OK Read part of the data response by AT+HTTPACTION=0 or AT+HTTPDATA If the value of <byte_size> is bigger than the received data size, data will only return actually data size. If error is related to ME functionality: +CME ERROR: <err>

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	Parameters
	<data> The data of HTTP server response by AT+ HTTPACTION=0
	<start_address> The starting point for data output
	<byte_size> The length for data output
Test command AT+HTTPREAD=?	Response +HTTPREAD: (1- 318976), (1- 318976)
	OK
Reference	Note The execution is used to send the HTTP server response to UART or the data ready to POST the server.

2.3 FTP AT Commands

2.3.1 AT+ FTPPORT

AT+FTPPORT	SET FTP CONTROL PORT
Test command AT+FTPPORT =?	Response OK
	Parameters
Write command AT+FTPPORT =<value>	Response OK
	If error is related to ME functionality: ERROR
	Parameters <value> The value of FTP Control port, from 1 to 65535. Default value is 21

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Read command AT+ FTPPORT?	Response +FTPPORT: < value >
	OK
	Parameters See Write Command
Reference	Note Numbers above 65535 are illegal as the port identification fields are 16 bits long in the TCP header.

2.3.2 AT+ FTPMODE

AT+FTPMODE	SET FTP ACTIVE OR PASSIVE MODE
Test command AT+FTPMODE =?	Response OK
	Parameters
Write command AT+FTPMODE =<value>	Response OK If error is related to ME functionality: ERROR
	Parameters <value> 0 : Ftp active mode 1 : Ftp passive mode Default value is 1
Read command AT+FTPMODE?	Response +FTPMODE: < value > OK
	Parameters See Write Command
Reference	Note

2.3.3 AT+FTPTYPE

AT+FTPTYPE SET THE TYPE OF DATA TO BE TRANSFERRED	
Test command AT+FTPTYPE=?	Response
	OK
	Parameters
Write command AT+FTPTYPE=<value>	Response
	OK If error is related to ME functionality: ERROR
	Parameters <value> "A" : for FTP ASCII sessions "T" : for FTP Binary sessions Default value is "T"
Read command AT+FTPTYPE?	Response
	+FTPTYPE: < value > OK
	Parameters See Write Command
Reference	Note When this value is set to A, all the data sent by the stack to the FTP server is made of 7 bits characters (NVT-ASCII: the MSB is set to 0). As a consequence binary data containing 8 bits characters will be corrupted during the transfer if the FTPTYPE is set to A.

2.3.4 AT+FTPPUTOPT

AT+FTPPUTOPT SET FTP PUT TYPE	
Test command AT+FTPPUTOPT=?	Response
	OK
	Parameters

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Write command AT+FTPPUTOPT =<value>	Response OK If error is related to ME functionality: ERROR Parameters <value> “APPE”: for append file “STOU”: for store unique file “STOR”: for store file Default value is “STOR”
Read command AT+FTPPUTOPT?	Response +FTPPUTOPT: < value > OK Parameters See Write Command
Reference	Note

2.3.5 AT+FTPCID

AT+FTPCID	SET FTP BEARER PROFILE IDENTIFIER
Test command AT+FTPCID=?	Response OK Parameters
Write command AT+FTPCID=<value>	Response OK If error is related to ME functionality: ERROR Parameters <value> bearer profile identifier refer to AT+SAPBR
Read command AT+FTPCID?	Response +FTPCID: < value >

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	OK
	Parameters See Write Command
Reference	Note

2.3.6 AT+FTPREST

AT+FTPREST	RESUME BROKEN DOWNLOADS
Test command AT+ FTPREST =?	Response OK Parameters
Write command AT+FTPREST=<value>	Response OK If error is related to ME functionality: ERROR Parameters <value> broken point to be resumed
Read command AT+ FTPREST?	Response + FTPREST: < value > OK Parameters See Write Command
Reference	Note

2.3.7 AT+FTPSERV

AT+FTPSERV SET FTP SERVER ADDRESS	
Test command AT+FTPSERV=?	Response
	OK
	Parameters
Write command AT+FTPSERV=<value>	Response
	OK If error is related to ME functionality: ERROR
	Parameters <value> 32-bit number in dotted-decimal notation (i.e. xxx.xxx.xxx.xxx) or alphanumeric ASCII text string up to 49 characters if DNS is available
Read command AT+FTPSERV?	Response +FTPSERV: < value >
	OK
	Parameters See Write Command
Reference	Note

2.3.8 AT+FTPUN

AT+FTPUN SET FTP USER NAME	
Test command AT+FTPUN=?	Response
	OK
	Parameters

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Write command AT+FTPUN=<value> >	Response OK
	If error is related to ME functionality: ERROR
	Parameters <value> Alphanumeric ASCII text string up to 49 characters.
Read command AT+FTPUN?	Response +FTPUN: < value >
	OK
	Parameters See Write Command
Reference	Note

2.3.8 AT+FTPPW

AT+FTPPW	SET FTP PASSWORD
Test command AT+FTPPW =?	Response OK
	Parameters
Write command AT+FTPPW =<value>	Response OK
	If error is related to ME functionality: ERROR
	Parameters <value> Alphanumeric ASCII text string up to 49 characters.
Read command AT+FTPPW?	Response +FTPPW: < value >
	OK

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	Parameters See Write Command
Reference	Note

2.3.9 AT+ FTPGETNAME

AT+FTPGETNAME SET DOWNLOAD FILE NAME	
Test command AT+FTPGETNAME=?	Response OK
	Parameters
Write command AT+FTPGETNAME=<value>	Response OK If error is related to ME functionality: ERROR
	Parameters <value> Alphanumeric ASCII text string up to 99 characters
Read command AT+FTPGETNAME?	Response + FTPGETNAME: < value > OK
	Parameters See Write Command
Reference	Note

2.3.10 AT+FTPGETPATH

AT+FTPGETPATH SET DOWNLOAD FILE PATH	
Test command AT+FTPGETPATH =?	Response OK
	Parameters
Write command AT+FTPGETPATH =<value>	Response OK
	If error is related to ME functionality: ERROR
Read command AT+FTPGETPATH ?	Parameters <value> Alphanumeric ASCII text string up to 99 characters
	Response +FTPGETPATH: < value > OK
	Parameters See Write Command
Reference	Note

2.3.11 AT+FTPPUTNAME

AT+FTPPUTNAME SET UPLOAD FILE NAME	
Test command AT+FTPPUTNAME E=?	Response OK
	Parameters

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Write command AT+FTPPUTNAM E =<value>	Response OK If error is related to ME functionality: ERROR Parameters <value> Alphanumeric ASCII text string up to 99 characters
Read command AT+FTPPUTNAM E?	Response +FTPPUTNAME: < value > OK Parameters See Write Command
Reference	Note

2.3.12 AT+FTPPUTPATH

AT+FTPPUTPATH	SET UPLOAD FILE PATH
Test command AT+FTPPUTPATH =?	Response OK Parameters
Write command AT+FTPPUTPATH =<value>	Response OK If error is related to ME functionality: ERROR Parameters <value> Alphanumeric ASCII text string up to 99 characters

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Read command AT+FTPPUTPATH ?	Response +FTPPUTPATH: < value > OK Parameters See Write Command
Reference	Note

2.3.13 AT+FTPGET

AT+FTPGET SET DOWNLOAD FILE	
Test command AT+FTPGET =?	Response OK Parameters
Write command AT+FTPGET =<mode>,[< reqlength>]	Response If mode is 1, it is a successful FTP get session: OK +FTPGET:1,1 If data transfer finished: +FTPGET:1,0 If mode is 1, it is a failed FTP get session: OK +FTPGET:1,<error> If mode is 2: +FTPGET:2,<cnflength> 012345678... OK If error is related to ME functionality: ERROR

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	<p>Parameters</p> <p>< mode> 1: for open FTP get session 2: for read FTP download data.</p> <p><reqlength> Requested number of data bytes (1-1460)to be read</p> <p><cnflength> Confirmed number of data bytes to be read, which may be less than <length>. 0 indicates that no data can be read.</p> <p><error>61 Net error 62 DNS error 63 connect error 64 timeout 65 server error 66 operation not allow 70 replay error 71 user error 72 password error 73 type error 74 rest error 75 passive error 76 active error 77 operate error 78 upload error 79 download error</p>
Reference	<p>Note</p> <p>When “+FTPGET:1,1” is shown, then user can use AT+FTPGET:2,<reqlength> to read data. If the module still has unread data, “+FTPGET:1,1” will be shown again in a certain time.</p>

2.3.14 AT+FTPPUT

AT+FTPPUT SET UPLOAD FILE	
Test command AT+FTPPUT=?	<p>Response</p> <p>OK</p>
	Parameters

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<p>Write command</p> <p>AT+FTPPUT</p> <p>=<mode>,[<reqlength>]</p>	<p>Response</p> <p>If mode is 1, it is a successful FTP get session:</p> <p>OK</p> <p>+FTPPUT:1,1,<maxlength></p> <p>If mode is 1, it is a failed FTP get session:</p> <p>OK</p> <p>+FTPPUT:1,<error></p> <p>If mode is 2 and <reqlength> is not 0</p> <p>+FTPPUT:2,<cnflength></p> <p>..... //Input data</p> <p>OK</p> <p>If mode is 2 and <reqlength> is 0, response OK, and FTP session will be closed</p> <p>OK</p> <p>If data transfer finished.</p> <p>+FTPPUT:1,0</p> <p>If error is related to ME functionality:</p> <p>ERROR</p> <p>Parameters</p> <p>< mode> 1: for open FTP put session</p> <p> 2: for write FTP upload data.</p> <p><reqlength> Requested number of data bytes(0-<maxlength>) to be transmitted</p> <p><cnflength> Confirmed number of data bytes to be transmitted</p> <p><maxlength>The max length of data can be sent at one time. It depends on the network status.</p> <p><error> see AT+FTPGET</p>
<p>Reference</p>	<p>Note</p> <p>When “+FTPPUT:1,1,<maxlength>” is shown, then use AT+FTPPUT=2,<reqlength> to write data.</p>

3. Examples

3.1 Bearer profile

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Demonstration	Syntax	Expect Result
Configure bearer profile 1	AT+SAPBR=3,1,"Contype","GPRS"	OK
	AT+SAPBR=3,1,"APN","CMNET"	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

3.2 HTTP GET method

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

3.3 HTTP POST method

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK

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Set parameters for HTTP session	AT+HTTTPARA = "CID",1	OK
	AT+HTTTPARA="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 download all the data in the latency time.	AT+HTTTPDATA=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

3.4 HTTP HEAD method

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

3.5 Set Proxy HTTP Server

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK

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Set parameters for HTTP session	AT+HTTTPARA = "CID",1	OK
	AT+HTTTPARA="URL","www.sim.com"	OK
Set proxy server IP address	AT+HTTTPARA="PROIP","10.0.0.172"	OK
Set proxy server port	AT+HTTTPARA = "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

3.6 Set HTTP Redirection Parameter

Demonstration	Syntax	Expect Result
Init http service	AT+HTTPINIT	OK
Set parameters for HTTP session	AT+HTTTPARA = "CID",1	OK
Set the redirection parameter	AT+HTTTPARA = "REDIR",1	OK
Set the wrong URL	AT+HTTTPARA="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

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3.7 Set HTTP Download Break Point Parameter

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_j r_1003_38.gif"	OK
Set the wrong URL	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 HTTP server	AT+HTTPREAD	+HTTPREAD: 14384 //output the data to uart OK
Terminate http service	AT+HTTPTERM	OK

3.8 FTP GET

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 get session	AT+FTPGET=1	OK
Data are available		+FTPGET:1,1

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Request to read 1024 bytes, but Only 50 bytes are now available.	AT+FTPGET=2,1024	+FTPGET:2,50 0123456789012345678901234 5678901234567890123456789 0 OK
Request to read 1024 bytes again. 0 bytes are 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 do not input "AT+FTPGET:2, <reqlength>" to read data, "+FTPGET:1,1" will be shown again in a certain time.		+FTPGET:1,1
Request to read 1024 bytes. 1024 bytes are now available.	AT+FTPGET=2,1024	+FTPGET:2,1024 0123456789012345678901234 5678901234567890123456789 0.....1234 OK
Data transfer finished. The connection to the FTP server is closed.		+FTPGET:1,0

3.9 FTP PUT

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+FTPPUTNAME="1K.txt"	OK
	AT+FTPPUTPATH="/"	OK

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Open the FTP put session	AT+FTPPUT=1	OK
FTP session is ready for upload. 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 will 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 finished. The connection to the FTP server is closed.		+FTPPUT:1,0

3.10 FTP TIME OUT

Demonstration	Syntax	Expect Result
Open the FTP Get session	AT+FTPGET=1	OK
If the status of the network is poor, may be time out. The connection to the FTP server is closed		+FTPGET:1,64
Open the FTP Get session	AT+FTPGET=1	OK
Data are available		+FTPGET:1,1
If costumer do 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

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If the user do not read data for a long time , the session will time out. The connection to the FTP server is closed.		+FTPGET:1,64
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3.11 FTP ERROR

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 FTP server is closed		+FTPPUT:1,72
Note : Another error ,you can see AT+FTPGET		

3.12 FTP OPERATION ERROR

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

3.13 FTP READ AND WRITE ERROR

Demonstration	Syntax	Expect Result
Open the FTP Get session.	AT+ FTPGET =1	OK

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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 0123456789012345678901234 5678901234567890123456789 0 OK
Data transfer finished. The connection to the FTP server 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 upload		+FTPPUT:1,1,1280
Write data after “+FTPPUT:1,1,1280” is shown	AT+FTPPUT=2,100	+FTPPUT:2,100 OK
No more data will 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

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