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# **SIM800 Series\_IP\_Application Note\_V1.01**



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## Version History

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2013-08-01	1.00	New version	Hanjun.liu
2013-10-28	1.01	"AT+FTPRESET=20" change to "AT+FTPREST=20", chapter 3.15	Hanjun.liu

## Scope

This document presents the AT command of HTTP&FTP operation and application examples. This document can apply to SIM800 series modules, including SIM800, SIM800W, SIM800V, SIM800L and SIM800H.

# 1 Description

This chapter introduces the IP application features of SIM800 series modules

## 1.1 Features

- 1) SIM800 series modules support Hyper Text Transfer Protocol application. Which provides a mode to alternate of HTTP server. The basic application contains GET, POST, HEAD methods; it also supports proxy server, redirection, broken transfer resuming functions.
- 2) SIM800 series modules support File Transfer Protocol application. Which provides a mode to interact with FTP server. The basic application contains GET, PUT methods, it also supports broken transfer resuming function. PUT method supports APPE, STOR and other modes.

## 2 AT commands

Command	Description
AT+HTTPINIT	Initialize HTTP service
AT+HTTPTERM	Terminate HTTP service
AT+HTTPPARA	Set HTTP parameters value
AT+HTTPDATA	Input HTTP data
AT+HTTPACTION	Http method action
AT+HTTPREAD	Read the HTTP server response
AT+HTTPSCONT	Save HTTP application context
AT+HTTPSTATUS	Read HTTP status
AT+FTPPORT	Set FTP control port
AT+FTPMODE	Set active or passive FTP mode
AT+FTPTYPE	Set the type of data to be transferred
AT+FTPPUTOPT	Set FTP put type
AT+FTPCID	Set FTP bearer profile identifier
AT+FTPREST	Set resume broken download
AT+FTPSERV	Set FTP server address
AT+FTPUN	Set FTP user name
AT+FTPPW	Set FTP password
AT+FTPGETNAME	Set download file name
AT+FTPGETPATH	Set download file path
AT+FTPPUTNAME	Set upload file name
AT+FTPPUTPATH	Set upload file path
AT+FTPGET	Download file
AT+FTPPUT	Set upload file
AT+FTPSCONT	Save FTP application context
AT+FTPDELE	Delete specified file in FTP server
AT+FTPSIZE	Get the size of specified file in FTP server
AT+FTPSTATE	Get the FTP state
AT+FTPEXTPUT	Extend upload file
AT+FTPMKD	Make directory on the remote machine
AT+FTPTRMD	Remove directory on the remote machine
AT+FTPLIST	List contents of directory on the remote machine

### 3 Examples

In the “Grammar” columns of following tables, input of AT commands are in black, module return values are in blue.

#### 3.1. Bearer Configure

Grammar	Description
AT+SAPBR=3,1,"Contype","GPRS" OK AT+SAPBR=3,1,"APN","CMNET" OK	Configure bearer profile 1
AT+SAPBR=1,1 OK	To open a GPRS context.
AT+SAPBR=2,1 +SAPBR:1,1,"10.89.193.1" OK	To query the GPRS context.
AT+SAPBR=0,1 OK	To close a GPRS context.

#### 3.2. HTTP GET Method

Download data from HTTP server.

Grammar	Description
AT+HTTPIPINIT OK	Init HTTP service
AT+HTTTPARA = "CID",1 OK AT+HTTTPARA="URL","www.sim.com" OK	Set parameters for HTTP session
AT+HTTTPACTION=0 OK +HTTTPACTION: 0,200,1000	GET session start GET successfully
AT+HTTTPREAD +HTTTPREAD: 1000 ... OK	Read the data of HTTP server
AT+HTTTPTERM OK	Terminate HTTP service

### 3.3. HTTP POST Method

Upload data to HTTP server.

Grammar	Description
AT+HTTPINIT OK	Init HTTP service
AT+HTTTPARA = "CID",1 OK AT+HTTTPARA="URL","www.sim.com" OK	Set parameters for HTTP session
AT+HTTPDATA=100,10000 DOWNLOAD  ..... 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.  It is ready to receive data from UART, and DCD has been set to low.  All data has been received over, and DCD is set to high.
AT+HTTPACTION=1 OK +HTTPACTION: 1,200,0	POST session start  POST successfully
AT+HTTPTERM OK	Terminate HTTP service

### 3.4. HTTP HEAD Method

Get HTTP head information from HTTP server.

Grammar	Description
AT+HTTPINIT OK	Init HTTP service
AT+HTTTPARA = "CID",1 OK AT+HTTTPARA="URL","www.sim.com" OK	Set parameters for HTTP session
AT+HTTPACTION=2 OK +HTTPACTION: 2,200,0	HEAD session start  HEAD successfully
AT+HTTPTERM OK	Terminate HTTP service

### 3.5. Set Proxy HTTP Server

It provides the method to use proxy HTTP server.

Grammar	Description
AT+HTTPIPINIT OK	Init HTTP service
AT+HTTTPARA = "CID",1 OK AT+HTTTPARA="URL","www.sim.com" OK	Set parameters for HTTP session
AT+HTTTPARA="PROIP","10.0.0.172" OK	Set proxy server IP address
AT+HTTTPARA = "PROPORT",80 OK	Set proxy server port
AT+HTTTPACTION=0 OK +HTTTPACTION: 0,200,1000	GET session start  GET successfully
AT+HTTTPREAD +HTTTPREAD: 1000 .... OK	Read the data of HTTP server. <i>Output the data to UART</i>
AT+HTTTPTERM OK	Terminate HTTP service

### 3.6. Set HTTP Redirection Parameter

It provides the method to use HTTP redirection function.

Grammar	Description
AT+HTTPIPINIT OK	Init HTTP service
AT+HTTTPARA = "CID",1 OK	Set parameters for HTTP session
AT+HTTTPARA = "REDIR",1 OK	Set the redirection parameter
AT+HTTTPARA="URL","www.sim.com/a bcde" OK	Set the URL
AT+HTTTPACTION=0 OK +HTTTPACTION: 0,200,1000	GET session start  GET successfully

AT+HTTPREAD +HTTPREAD: 1000 .... OK	Read the response of HTTP server <i>Output the data to UART</i>
AT+HTTPTERM OK	Terminate HTTP service

### 3.7. Set HTTP Download Break Point Parameter

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

Grammar	Description
AT+HTTPINIT OK	Init HTTP service
AT+HTTPPARA = "CID",1 OK	Set parameters for HTTP session
AT+HTTPPARA = "URL","HTTP://www.sim.com/img/sim_lo go_jr_1003_38.gif" OK	Set the URL, the size of gif is 16384 bytes
AT+HTTPPARA = "BREAK",2000 OK	Set the break point
AT+HTTPACTION=0 OK +HTTPACTION: 0, 200,14384	GET session start, get data from 2000 to 16384 GET successfully
AT+HTTPREAD +HTTPREAD: 14384 .... OK	Read the data of HTTP server <i>Output the data to UART</i>
AT+HTTPTERM OK	Terminate HTTP service

### 3.8. Get HTTP Current Status

Grammar	Description
AT+HTTPINIT OK	Init HTTP service
AT+HTTPPARA = "CID",1 OK	Set parameters for HTTP session
AT+HTTPPARA = "URL","www.baidu.com" OK	Set the URL

AT+HTTPACTION = 0 OK	Get session start
AT+HTTPSTATUS? +HTTPSTATUS: GET,1,1440,7915 OK +HTTPACTION: 0, 200,9335	The status of getting session is in progress  GET successfully
AT+HTTPSTATUS? +HTTPSTATUS: GET,0,0,0 OK	The status of getting session is over
AT+HTTPACTION = 1 OK	POST session start
AT+HTTPSTATUS? +HTTPSTATUS: POST,2,1440,608 OK +HTTPACTION: 1,200,0	The status of posting session is in progress  POST successfully
AT+HTTPSTATUS? +HTTPSTATUS: POST,0,0,0 OK	The status of posting session is over
AT+HTTPTERM OK	Terminate HTTP service

### 3.9. FTP GET Method

Download data from FTP server

Grammar	Description
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="/"	Set parameters for FTP session.
AT+FTPGET=1 OK	Open the FTP get session.

+FTPGET: 1,1	Data are available.
AT+FTPGET=2,1024 +FTPGET: 2,50 01234567890123456789012345678901234 567890123456789 OK	Request to read 1024 bytes, but Only 50 bytes are now available.
AT+FTPGET=2,1024 +FTPGET: 2,0  OK +FTPGET: 1,1	Request to read 1024 bytes again. No byte is now available, but it is not the end of session.  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.
AT+FTPGET=2,1024 +FTPGET: 2,1024 01234567890123456789012345678901234 5678901234567890.....1234 OK +FTPGET:1,0	Request to read 1024 bytes. 1024 bytes are now available.  Data transfer finished. The connection to the FTP server is closed.

### 3.10. FTP PUT Method

Upload data to FTP server.

Grammar	Description
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	Set parameters for FTP session.
AT+FTPPUT =1 OK	Open the FTP put session.
+FTPPUT: 1,1,1360	FTP session is ready for uploading. 1360 is the max length of data which can be sent at a time. It depends on the network status.

AT+FTPPUT=2,100 +FTPPUT: 2,100 ..... OK +FTPPUT: 1,1,1360	Client requests to send 100 bytes. Response indicates that user must input 100 bytes for transferring now. <i>It is ready to receive data from UART , and DCD has been set to low.</i> <i>All data has been received over, and DCD is set to high.</i> URC indicates that the FTP session is ready to transfer more data.
AT+FTPPUT=2,0 OK +FTPPUT: 1,0	No more data will be uploaded, the FTP session will be closed. Data transfer is finished. The connection to the FTP server is closed.

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.

### 3.11. FTP Time out

Time out occurs during FTP session because of different reasons.

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

### 3.12. FTP Error

Error occurs during FTP applications because of wrong parameter setting.

Grammar	Description
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AT+FTPPW="3214567" OK	Set wrong password
AT+FTPGET=1 OK +FTPGET: 1,72	Open the FTP Get session  FTP session password error. The connection to the FTP server is closed.
<i>Note: Other errors, you can refer to “AT+FTPGET” command in 《SIM800 Series AT Command Manual》</i>	

### 3.13. FTP Operation Error

Error occurs during FTP applications because of wrong operating.

Grammar	Description
AT+FTPGET=1 OK +FTPGET: 1,64	Open the FTP Get session.  The parameter of “get file name” is empty. It shows ftp operation error.
AT+FTPPUT=1 OK	Open the FTP PUT session.
AT+FTPPUT=1 OK +FTPPUT: 1,66	Open the FTP PUT session again. Show ftp operation error.

### 3.14. FTP READ and WRITE Error

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

Grammar	Description
AT+FTPGET=1 OK	Open the FTP Get session.
AT+FTPGET=2,1000 ERROR +FTPGET: 1,1	Read data before “+FTPGET:1,1” is shown.  Data are available
AT+FTPGET=2,1000 +FTPGET: 2,50 01234567890123456789012345678901234 567890123456789 OK +FTPGET: 1,0	Read data after “+FTPGET: 1,1” is shown.  Data transfer finished. The connection to the FTP server is closed.
AT+FTPGET=2,1000 ERROR	Read data after FTP session is stopped.

AT+FTPPUT=1 OK	Open the FTP PUT session.
AT+FTPPUT=2,1000 ERROR +FTPPUT: 1,1,1280	Write data before “+FTPPUT: 1,1,1280” is shown. FTP session is ready for uploading.
AT+FTPPUT=2,100 +FTPPUT: 2,100 ..... OK	Write data after “+FTPPUT: 1,1,1280” is shown.
AT+FTPPUT=2,0 OK	No more data will be uploaded, the FTP session will be closed.
AT+FTPPUT=2,100 ERROR	Write data after FTP session is stopped.

### 3.15. Set FTP Download Break Point Parameter

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

Grammar	Description
AT+FTPGET=1 OK +FTPGET: 1,1	Open the FTP Get session.  Data are available.
AT+FTPGET = 2,1024 +FTPGET: 2,29 wodeceshijieguo,zhgeshigeshia OK +FTPGET: 1,0	Get data of FTP server.  Data transfer finished. The connection to the FTP server is closed.
AT+FTPREST=20 OK	Set the broken point.
AT+FTPGET =1 OK +FTPGET: 1,1	Open the FTP Get session.  Data are available.
AT+FTPGET = 2,1024 +FTPGET: 2,9 shigeshia OK +FTPGET: 1,0	Get the data begin from the broken point.  Data transfer is finished. The connection to the FTP server is closed.

### 3.16. FTP DELE Method

Delete the specified file in FTP server.

Grammar	Description
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="/"	Set parameters for FTP session.
AT+FTPDELE OK +FTPDELE: 1,0	Open the FTP DELE session.  Delete file finished. The connection to the FTP server is closed.

### 3.17. FTP SIZE Method

Get the size of specified file in FTP server.

Grammar	Description
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="/"	Set parameters for FTP session.
AT+FTPSIZE OK +FTPSIZE: 1,0,1024	Open the FTP SIZE session.  Get the size of file finished. The connection to the FTP server is closed.

### 3.18. FTP MKD and RMD Method

Make and remove directory on the remote machine.

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

### 3.19. FTP LIST Session

List contents of remote directory.

Grammar	Description
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="/"	Set parameters for FTP session.
AT+FTPLIST=1 OK +FTPLIST: 1,1	Open the FTP session.  Data are available

<pre>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</pre>	<p>Request to read 1024 bytes, but only 126 bytes are now available</p>
<pre>+FTPLIST: 1,0</pre>	<p>Data transfer finished. The connection to the remote machine is closed</p>

### 3.20. FTP Extend PUT Method

Extend Upload data to the remote machine.

Grammar	Description
<pre>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</pre>	<p>Set parameters for FTP session.</p>
<pre>AT+FTPEXTPUT=1 OK</pre>	<p>Open the FTP session.</p>
<pre>AT+FTPEXTPUT=2,0,1024,10000 +FTPEXTPUT: 0,1024 ..... OK</pre>	<p>Client requests to send 1024 bytes. Response indicates that user must input 1024 bytes for transferring. It is saved in the module. <i>It is ready to receive data from UART, and DCD has been set to low.</i> <i>All data has been received over, and DCD is set to high.</i></p>
<pre>AT+FTPPUT=1 OK +FTPPUT: 1,0</pre>	<p>Open the FTP PUT session. Waiting for the module to upload the data to the remote machine. Data transfer finished. The connection to the remote machine is closed</p>

AT+FTPEXTPUT=0

Set FTP to normal put method

OK

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## Appendix

### A. Related Documents

SN	Document name	Remark
[1]	SIM800 Series_AT Command Manual	

### B. Terms and Abbreviations

Abbreviation	Description
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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