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## **SIM800 Series\_FS\_Application Note\_V1.03**



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## Version History

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2013-10-31	1.00	New version	Yong.lu
2014-06-30	1.01	Chapter 2.2,Modify the parameter description of AT+FSREAD Chapter 2.7,Add AT+FSMEM Chapter 2.8,Add AT+FSRENAME Chapter 2.9,Add AT+FSDRIVE Chapter 2.10,Add AT+FSMKDIR Chapter 2.11,Add AT+FSRMDIR	Yong.lu
2015-8-10	1.02	Scope, Add SIM808,SIM800C,SIM800A,SIM800F and SIM800C-DS Chapter 2.12,Add AT+FSHEX	Yong.lu
2016-11-17	1.03	Scope	Yong.lu

## Scope

This document presents the AT command of FS operation and application examples.  
This document can apply to SIM800 series modules with FS function.

## 1. FS Introduction

This chapter introduces the FS application features.

### 1.1 Features

Local storage space is mapped to the drive which can get by AT+FSDRIVE=0, the system will create User directory in local drive after first boot, and storage space of SD card is mapped to the drive which can get by AT+FSDRIVE=1.

As PCM interface and SD card interface is multiplexing function, shown as below table. At the first time to use SD card, customer must execute “AT+SD2PCM=0” and “AT&W”, then reboot the module by AT command or PWRKEY pin.

#### PCM and SD card multiplexing function:

Pin name	Pin number	Mode 0(default)	Mode 1	Mode 2	Mode 3
PCMCLK	29	PCMCLK	DISP_RSTB	MC3CM0	GPIO18
PCMOUT	30	PCMOUT	DISP_DI	MC3DA3	GPIO19
PCMSYNC	65	PCMSYNC	DISP_CEB	MC3CK	GPIO20
PCMIN	66	PCMIN	DISP_DA	MC3DA2	GPIO21
GPIO2	27	GPIO2	DISP_A0DA	MC3DA0	-
GPIO3	28	GPIO3	DISP_CLK	MC3DA1	-

## 2. AT Commands

SIM800 series FS AT command overview.

Command	Description
AT+FSCREATE	Create file
AT+FSREAD	Read file
AT+FSWRITE	Write file
AT+FSDEL	Delete file
AT+FSLS	List directories/files
AT+FSFSIZE	Get file size
AT+FSMEM	Get the size of available memory
AT+FSRENAME	Rename file
AT+FSDRIVE	Get drive
AT+FSMKDIR	Make new directory
AT+FSRMDIR	Delete directory
AT+FSHEX	Set character format of FS path or name

### 2.1 AT+FSCREATE Create File

AT+FSCREATE Create File	
Test Command	Response
AT+FSCREATE	<b>OK</b>
=?	or <b>ERROR</b>
Write Command	Response
AT+FSCREATE	<b>OK</b>
=<filename>	or <b>ERROR</b>
	Parameters <filename> String without double quotes, the length of the file name should be less than or equal to 64 characters
Reference	Note

### 2.2 AT+FSREAD Read File

#### AT+FSREAD Read File

Test Command <b>AT+FSREAD=?</b>	Response <b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSREAD=&lt;filename&gt;,&lt;mode&gt;,&lt;filesize&gt;,&lt;position&gt;</b>	Response <data> <b>OK</b> or <b>ERROR</b>
	<p>Parameters</p> <p>&lt;filename&gt; String without double quotes, the file should have already existed. The length of the file name should be less than or equal to 64 characters</p> <p>&lt;mode&gt; <b>0</b> Read data at the beginning of the file  <b>1</b> Read data at the &lt;position&gt; of the file</p> <p>&lt;filesize&gt; The size of the file that you want to read, the size should be less than or equal to 10240. If the &lt;filesize&gt; is more than the file real size, the &lt;filesize&gt; will be set to the file real size</p> <p>&lt;position&gt; The starting position that will be read in the file. The &lt;position&gt; should be less than the file size</p> <p>&lt;data&gt; The data which is read will be putted out by UART port</p>
Reference	Note When <mode> is <b>0</b> , <position> is invalid.

## 2.3 AT+FSWRITE Write File

<b>AT+FSWRITE</b> Write File	
Test Command <b>AT+FSWRITE=?</b>	Response <b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSWRITE=&lt;filename&gt;,&lt;mode&gt;,&lt;filesize&gt;,&lt;inputtime&gt;</b>	Response > <b>OK</b> or <b>ERROR</b> or <b>TimeOut</b>

	<p>Parameters</p> <p>&lt;filename&gt; String without double quotes, the file should have already existed. The length of the file name should be less than or equal to 64 characters.</p> <p>&lt;mode&gt;</p> <ul style="list-style-type: none"> <li><b>0</b> Write data at the beginning of the file</li> <li><b>1</b> Write data at the end of the file</li> </ul> <p>&lt;filesize&gt; The size of the file that you want to write, the size should be less than or equal to 10240.</p> <p>&lt;inputtime&gt; User should write file in the &lt;inputtime&gt; period, otherwise the operation of writing to the file fails. Unit is second.</p>
Reference	Note

## 2.4 AT+FSDEL Delete File

AT+FSDEL Delete File	
Test Command <b>AT+FSDEL=?</b>	Response <b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSDEL=&lt;filename&gt;</b>	Response <b>OK</b> or <b>ERROR</b>
	<p>Parameters</p> <p>&lt;filename&gt; String without double quotes, the file should have already existed. The length of the file name should be less than or equal to 64 characters</p>
Reference	Note

## 2.5 AT+FSLs List Directories/Files

AT+FSLs List Directories/Files	
Test Command <b>AT+FSLs=?</b>	Response <b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSLs=&lt;filepath&gt;</b>	Response <b>&lt;list of subdirectories/files&gt;</b>  <b>OK</b>

	<p>or</p> <p><b>ERROR</b></p>
	<p>Parameters</p> <p>&lt;filepath&gt; String without double quotes, directory for selection. The length of the directory name should be less than or equal to 64 characters.</p> <p>The string format such as C:\, the directory must have “\”</p>
Reference	<p>Note</p> <p>If the last character of the result string is “\”, this means that it is a directory, otherwise, it is a file.</p>

## 2.6 AT+FSFSIZE Get File Size

<b>AT+FSFSIZE Get File Size</b>	
Test Command <b>AT+FSFSIZE =?</b>	<p>Response</p> <p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p>
Write Command <b>AT+FSFSIZE= &lt;filename&gt;</b>	<p>Response</p> <p>+FSFSIZE: &lt;n&gt;</p> <p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p>
	<p>Parameters</p> <p>&lt;filename&gt; String without double quotes, the file should have already existed. The length of the file name should be less than or equal to 64 characters</p> <p>&lt;n&gt; The file size</p>
Reference	<p>Note</p>

## 2.7 AT+FSMEM Get the Size of Available Memory

<b>AT+FSMEM Get the Size of Available Memory</b>	
Test Command <b>AT+FSMEM =?</b>	<p>Response</p> <p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p>
Execution Command <b>AT+FSMEM</b>	<p>Response</p> <p>If SD card exist:</p> <p>+FSMEM: &lt;local_drive&gt;:&lt;local_size&gt;bytes, &lt;sd_drive&gt;:&lt;sd_size&gt;bytes</p>

	<p><b>OK</b></p> <p>or</p> <p>If SD card doesn't exist:</p> <p>+FSMEM: &lt;local_drive&gt;:&lt;local_size&gt;bytes</p>
	<p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p> <p>Parameters</p> <p>&lt;local_drive&gt; Local drive</p> <p>&lt;sd_drive&gt; SD card drive</p> <p>&lt;local_size&gt; The free space of local storage</p> <p>&lt;sd_size&gt; The free space of SD card</p>
Reference	<p>Note</p> <p>&lt;local_drive&gt; is got by AT+FSDRIVE=0 or</p> <p>&lt;sd_drive&gt; is got by AT+FSDRIVE=1.</p>

## 2.8 AT+FSRENAME Rename File

<b>AT+FSRENAME Rename File</b>	
Test Command <b>AT+FSRENAM</b> <b>E =?</b>	<p>Response</p> <p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p>
Write Command <b>AT+FSRENAM</b> <b>E=&lt;old_name&gt;,&lt;new_name&gt;</b>	<p>Response</p> <p><b>OK</b></p> <p>or</p> <p><b>ERROR</b></p> <p>Parameters</p> <p>&lt;old_name&gt; Old name of specified file, string without double quotes, the file should have already existed. The length of the file name should be less than or equal to 64 characters</p> <p>&lt;new_name&gt; New name of specified file, string without double quotes. The length of the file name should be less than or equal to 64 characters</p>
Reference	<p>Note</p> <p>The file name must be full path name.</p>

## 2.9 AT+FSDRIVE Get Drive

<b>AT+FSDRIVE Get Drive</b>	
Test Command <b>AT+FSDRIVE</b>	Response <b>+FSDRIVE: (0-1)</b>

=?	<b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSDRIVE=&lt;n&gt;</b>	Response <b>+FSDRIVE: &lt;drive&gt;</b>  <b>OK</b> or <b>ERROR</b>
	Parameters <n> <b>0</b> Local drive <b>1</b> SD card drive <drive>    A-G
Reference	Note

## 2.10 AT+FSMKDIR Make New Directory

<b>AT+FSMKDIR</b> Make New Directory	
Test Command <b>AT+FSMKDIR</b> =?	Response <b>OK</b> or <b>ERROR</b>
Write Command <b>AT+FSMKDIR=&lt;dir_name&gt;</b>	Response <b>OK</b> or <b>ERROR</b>
	Parameters <dir_name> String without double quotes. The length of the dir name should be less than or equal to 64 characters.
Reference	Note

## 2.11 AT+FSRMDIR Delete Directory

<b>AT+FSRMDIR</b> Delete Directory	
Test Command <b>AT+FSRMDIR=</b> ?	Response <b>OK</b> or <b>ERROR</b>
Write Command	Response

<b>AT+FSRMDIR=</b> <b>&lt;dir_name&gt;</b>	<b>OK</b> or <b>ERROR</b>
	Parameters <b>&lt;dir_name&gt;</b> String without double quotes, the dir should have already existed. The length of the dir name should be less than or equal to 64 characters
Reference	Note

## 2.12 AT+FSHEX Set Character Format of FS Path or Name

<b>AT+FSHEX Set Character Format of FS Path or Name</b>	
Test Command <b>AT+FSHEX=?</b>	Response <b>+FSHEX: (0-1)</b>  <b>OK</b>
	Parameter See Write Command
Read Command <b>AT+FSHEX?</b>	Response <b>+FSHEX: &lt;n&gt;</b>  <b>OK</b>
	Parameters See Write Command
Write Command <b>AT+FSHEX=&lt;n&gt;</b>	Response <b>OK</b>  Parameters <b>&lt;n&gt;</b> <b>0</b> The character format of the file patch or name is ASCII <b>1</b> The character format of the file patch or name is UTF-8
Parameter Saving Mode	AT&W_SAVE
Reference	Note The command is only for the character format of file patch or file name.

### 3 Examples

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

Grammar	Description
AT+SD2PCM=0 <b>OK</b>	SD mode is valid
AT&W <b>OK</b>	
AT+CFUN=1,1 <b>OK</b>	In this example, reboot the module by AT command, customer can reboot the module by PWRKEY pin instead of AT command
AT+FSDRIVE=1 +FSDRIVE: E  <b>OK</b>	Get SD card drive
AT+FSLS=E:\ Images\ Audio\  <b>OK</b>	
AT+FSCREATE=E:\test.txt <b>OK</b>	Create test.txt
AT+FSLS=E:\ Images\ Audio\ test.txt  <b>OK</b>	
AT+FSFSIZE=E:\test.txt +FSFSIZE: 20  <b>OK</b>	
AT+FSREAD=E:\test.txt,0,100,1 asdfghjkloiytedfttg <b>OK</b>	
AT+FSWRITE=E:\test.txt,0,2,10 >  <b>OK</b>	Write "cc" at the beginning of the file

AT+FSREAD=E:\test.txt,0,100,0 ccdfghjkloiytedfttg OK	The first two characters is "cc"
AT+FSREAD=E:\test.txt,1,100,2 dfghjkloiytedfttg OK	The offset of reading position is 2
AT+FSMEM +FSMEM: C:1024bytes,E:49152bytes  OK	
AT+FSLS=E:\ test1.txt  OK	
AT+FSMKDIR=E:\media OK	Make media directory
AT+FSRENAME=E:\test1.txt,E:\test2.txt OK	Rename test1.txt
AT+FSLS=E:\ test2.txt media\	Delete media directory
OK	
AT+FSRMDIR=E:\media OK	
AT+FSLS=E:\ test2.txt  OK	
AT+FSHEX=0 OK	The file path or file name is ASCII format
AT+FSLS=C:\ User\	
OK	The file path or file name is UTF-8 format  "433A5C" is UTF-8 format, converts to ASCII is "C:\ " "557365725C" is UTF-8 format, converts to ASCII is "User\""

## Appendix

### A Related Documents

SN	Document name	Remark
[1]	SIM800 Series_AT Command Manual	

### B Terms and Abbreviations

Abbreviation	Description

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