SIM800 Series_FM _Application Note

GPRS Module

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About Document

Version History

Version	Date	Owner	What is new
1.00	2013-10-18	Yong.lu	New version
1.01	2014-06-30	Yong.lu	Chapter 1.1,Modify note Chapter 2.1,Modify AT+FMOPEN Chapter 2.7,Add AT+FMVALID
1.02	2016-11-17	Yong.lu	Scope
1.03	2020-06-15	Yizhe.Tan /Wenjie.Lai	Change the style

Scope

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

Contents

1 Introduction

1.1 Purpose of the document

Based on module AT command manual, this document will introduce FM application process.

Developers could understand and develop application quickly and efficiently based on this document.

1.2 Related documents

[1] SIM800 Series_AT Command Manual

1.3 Conventions and abbreviations

Abbreviation	Description
FM	Frequency Modulation Radio

2 FM Introduction

This chapter introduces the FM application features of SIM800 series modules.

2.1 Features

FM is frequency modulation radio. The frequency range is limited from 875 to 1080 (87.5MHZ-108.0MHZ). It supports auto search channel.

NOTE

When playing FM, if there is an incoming call or outgoing call, FM will be shut off automatically; when incoming call or outgoing call is finished, FM will be resumed automatically at the last frequency only there is one call exist.

3 AT commands

SIM800 series FM AT command overview.

AT Command	Description
AT+FMOPEN	Open FM
AT+FMCLOSE	Close FM
AT+FMFREQ	Set FM Frequency
AT+FMVOLUME	Set FM Volume
AT+FMSCAN	Auto Search Channel
AT+FMSIGNAL	Query Signal Level
AT+FMVALID	Check Frequency Valid

3.1 AT+FMOPEN Open FM

AT+FMOPEN Open FM	
Test Command AT+FMOPEN=?	Response **+FMOPEN: (0-1)** **OK** Parameter See Write Command
Test Command AT+FMOPEN?	Response **+FMOPEN: <status>,<device>** **OK** Parameter See Write Command If the status is 0, the default device is 0, but the device is meaningless.
Write Command AT+FMOPEN=<device>[<freq>]	Response **OK** or **ERROR** Parameter **<status>** **0** FM is closed **1** FM is opened **<device>** **0** Main audio channel

	1 Aux audio channel **<freq>** **875-1080** The FM frequency. The range is limited from 875 to 1080 (87.5 MHz - 108.0 MHz)
Reference	Note

3.2 AT+FMCLOSE Close FM

AT+FMCLOSE Close FM	
Execution Command **AT+FMCLOSE**	Response **OK** or **ERROR**
Reference	Note

3.3 AT+FMFREQ Set FM Frequency

AT+FMFREQ Set FM Frequency	
Test Command **AT+FMFREQ=?**	Response **+FMFREQ: (875-1080)** **OK** Parameter See Write Command
Read Command **AT+FMFREQ?**	Response **+FMFREQ: <freq>** **OK** Parameter See Write Command
Write Command **AT+FMFREQ=<freq>**	Response **OK** or **ERROR** Parameter **<freq>** **875-1080** The FM frequency. The range is limited from 875 to 1080 (87.5 MHz - 108.0 MHz)
Reference	Note FM must have been opened.

3.4 AT+FMVOLUME Set FM Volume

AT+FMVOLUME Set FM Volume	
Test Command **AT+FMVOLUME=?**	Response **+FMVOLUME: (0-6)** **OK** Parameter See Write Command
Read Command **AT+FMVOLUME?**	Response **+FMVOLUME: <value>** **OK** Parameter See Write Command
Write Command **AT+FMVOLUME=<value>**	Response **OK** or **ERROR** Parameter **<value>** **0-6** volume level
Reference	Note

3.5 AT+FMSCAN Auto Search Channel

AT+FMSCAN Auto Search Channel	
Execution Command **AT+FMSCAN**	Response **[<channel>** **[<CR><LF> < channel >** …**]]** **OK** Parameter **<channel>** auto search channel
Reference	Note FM must have been opened.

3.6 AT+FMSIGNAL Query Signal Level

AT+FMSIGNAL Query Signal Level	
Write Command AT+FMSIGNAL=<freq>	Response **+FMSIGNAL: freq**[**<freq>**]:**<level>** **OK** Parameter **<freq> 875-1080** The FM frequency. The range is limited from 875 to 1080 (87.5 MHz - 108.0 MHz) **<level> 0-112** Signal Level
Reference	Note FM must have been opened.

3.7 AT+FMVALID Check Frequency Valid

AT+FMVALID Check Frequency Valid	
Write Command AT+FMVALID=<freq>	Response **+FMVALID: freq**[**<freq>**]:**<valid>** **OK** Parameter **<freq> 875-1080** The FM frequency. The range is limited from 875 to 1080 (87.5 MHz - 108.0 MHz) **< valid > 0 <freq>** is not valid **1 <freq>** is valid
Reference	Note FM must have been opened.

4 FM Examples

```
//Examples of FM
AT+FMOPEN=1                          // Open FM. FM data would be outputted through aux audio channel

OK
AT+FMVOLUME=6                        // Set FM volume
OK
AT+FMSCAN                            // Auto search FM channel
948

950

952

954

956

962

968

OK
AT+FMFREQ=948                        // Set FM channel at 94.8MHZ
OK
AT+FMSIGNAL=948                      // Query 94.8MHZ signal level
+FMSIGNAL: freq[948]:32

OK
AT+FMVALID=948
+FMVALID: freq[948]:1

OK
AT+FMCLOSE                           // Close FM
OK
```