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SIM800 Series_Software Upgrade _Application Note_V1.00

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Contents

Version History

Date	Version	Description of change	Author
2013-09-02	V1.00	New version	Yanhai.cheng

Scope

This manual mainly describes how to use the PC or external MCU to upgrade software of SIM800 series modules by serial port. This document can apply to SIM800 series modules, including SIM800, SIM800L and SIM800H.

1 Upgrade Process

This chapter introduces software upgrade process of SIM800 series modules. The picture below illustrates this upgrade process: Every time when module is powered on, it will start from the BOOT ROM. The following picture shows the upgrade process:

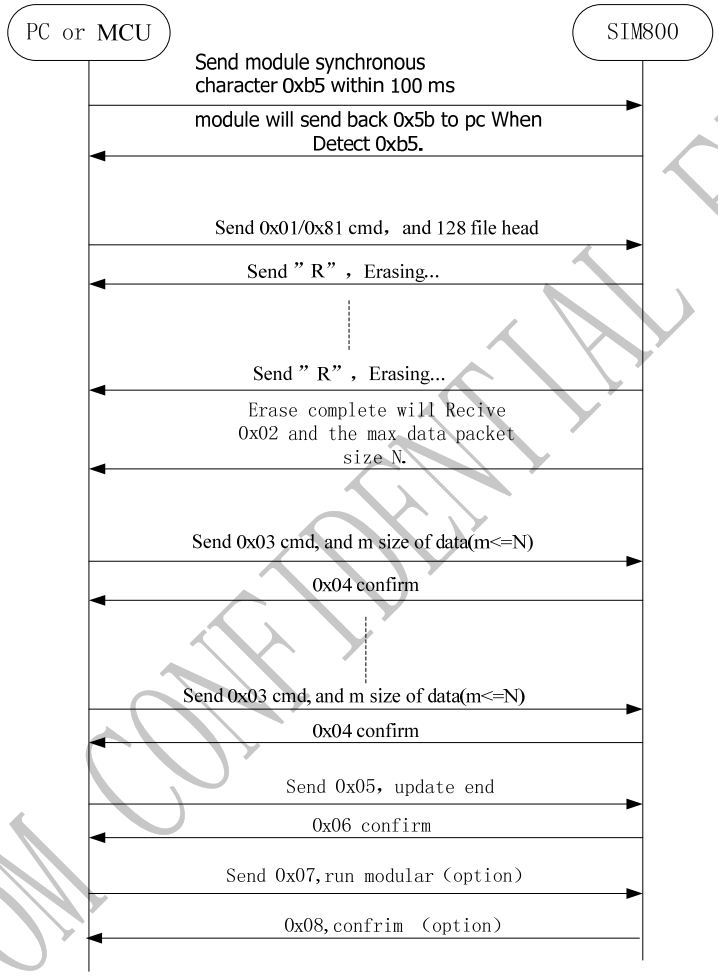

Figure 1: Upgrade process

1.1 Start Upgrade Process

1) Make sure the power supply of module is OK and module serial port is connected to the MAIN port.
2) Reset module, it will start from the BOOT ROM.

The serial port of the module must be set as follows:
115200bps, 8 bit, No parity bit, 1 stop bit, no flow control.

1.2 Synchronization Word Detection（0xB5）

When the module Bootloader program starts, if it receives the 0xb5 byte synchronization word within 100 ms, it will reply with a 0x5b byte word then the module go into the upgrade mode.

Within 100 ms, if the module does not receive 0xb5 synchronization word, the module will enter normal mode.

Note: in order to ensure the module receive synchronization byte 0xb5, send the bytes within 100 ms after power on.

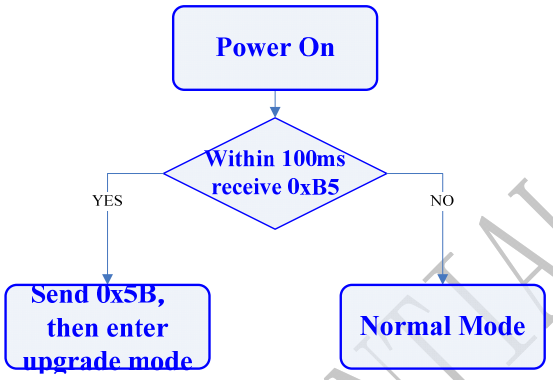

Figure 2：Waiting for synchronization word

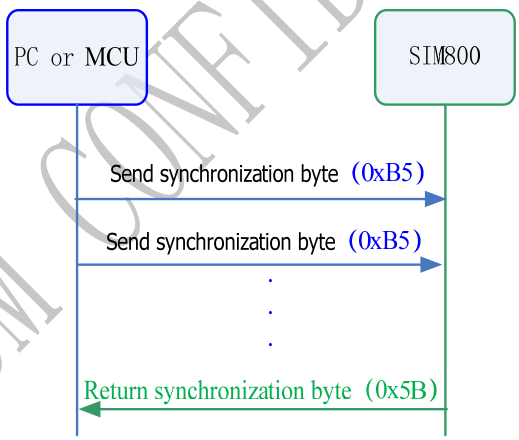

Figure 3：Synchronization word detection

1.3 Send Head Information (0x01/0x81)

Command word 0x01 means there is no need to erase the file system of the module, while 0x81 means it needs to erase the of file system of the module, Data head contains 128-byte information.

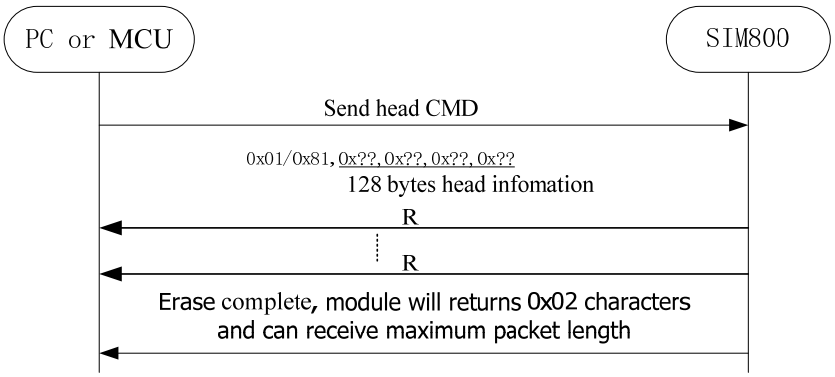

Figure 4：Send head information

1.4 Upgrade ROM_VIVA File to the Module (0x03)

To upgrade ROM_VIVA file to the module, the frame should include four parts: the frame head (0x03), 4-bytes data frame length (maximum length is no more than 512 bytes), data fields and 4-bytes data checksum. Checksum calculation method is as following: add all data bytes of the number, the value of last 4 bytes of the number is the checksum.

The frame format is as follows:

CMD	Fram Length	Data Field	Checksum
0x03	4bytes，Low byte in the front	data frame	4bytes，Low byte in the front

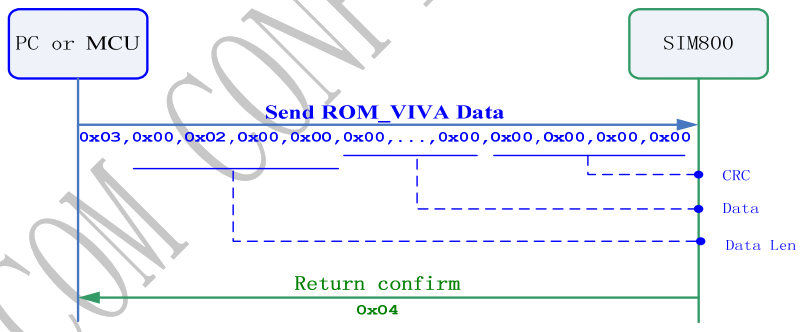

Figure 5：Upgrade ROM_VIVA file

1.5 Command Summary

CMD	Describtion	Direction
0xB5	Sync byte	PC->MODULE
0x5B	Sync byte confirm	MODULE->PC
0x01/0x81	Send info head	PC->MODULE
0x02	Info head confirm	MODULE->PC

0x03	Send update data	PC->MODULE
0x04	Update data confirm	MODULE->PC
‘P’	Write flash fail	MODULE->PC
‘C’	Checksum error	MODULE->PC
‘R’	Erasing	MODULE->PC
‘E’	Erase error	MODULE->PC
‘S’	File size error	MODULE->PC
0x07	reset module	PC->MODULE
0x08	Reset module confirm	MODULE ->PC

2 Linux Source Code

SIMCom offers SIM800 upgrade Linux source code mtkdownload, as well as the binaries compiled by Ubuntun 11.10 64 - bit system. Customer can run it directly under this system, in other Linux systems, or client MCU system, users need to recompile the source code and run their own code.

2.1 Compile the Source Code on Linux System

Run the following commands to complete the compiler directly.
gcc -o mtkdownload mtkdownload.c

2.2 Run on the Linux System

Run the following commands directly.
./mtkdownload <com> ROM_VIVA <format>

2.3 Command Line Parameters

<com>:1,2,3,4,100
Represent the:COM1,COM2,COM3,COM4 and the USB2Serial
ROM_VIVA filename to upgrade
< format > parameter Y or N
Indicate whether or not format file system.
for example：
./mtkdownload 100 ROM_VIVA Y
Indicate to upgrade SIM800 ROM_VIVA file, and format the file system by the USB serial port.

Appendix

A Related Documents

SN	Document name	Remark
[1]	SIM800 Series_AT Command Manual	
[2]		

B Terms and Abbreviations

Abbreviation	Description
GPRS	General Packet Radio Service
IP	Internet Protocol
EMAIL	Electronic Mail
SMTP	Simple Mail Transfer Protocol
POP3	Post Office Protocol 3

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