SIMCom

a SUNSEA AIOT company

SIM7080 Series_FOTA_Application Note

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Simplify Communication
www.simcom.com

About Document

Document Information

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Revision	Date	Owner	Status / Comments
1.00	Nov 26, 2019	Xiangning.meng	First Release
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Related Documents

[1] SIM7080 Series_AT Command Manual_V1.02

This document applies to the following products:

Name	Type	Size (mm)	Comments
SIM7080G	CAT-M/NB	17.6*15.7 *2.3	N/A
SIM7070G/SIM7070E	CAT-M/NB/EGPRS	24*24*2.4	N/A
SIM7070G-NG	NB/EGPRS	24*24*2.4	N/A
SIM7090G	CAT-M/NB	14.8*12.8*2.0	N/A

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Contents

1 Purpose of this document

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

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

2 Introduction

FOTA is the abbreviation of firmware upgrade Over the Air.

FOTA provides a way which allows device to update the core firmware over the air. Considering the specialty and variety of modern usage, SIMCom refines the whole FOTA procedure, customers can use ATC interface provided by SIM7080 series, and accomplish SIM7080 series Firmware upgrading according to their own condition.

SIMCom defines following upgrading process:

Fota Sever

A SIMCom supports delta firmware file.

IP Network

SIM7080

MCU

Customer work
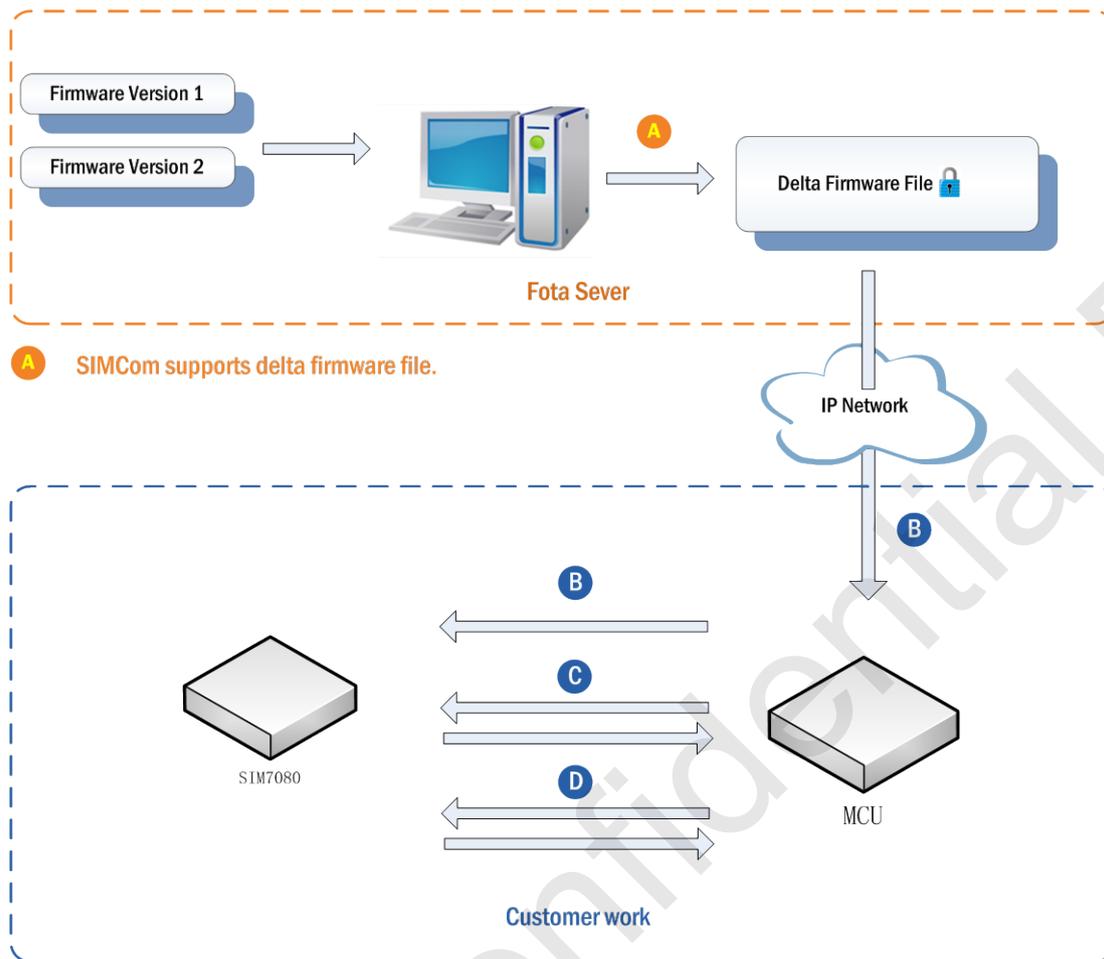
B SIM7080 gets the delta firmware file through http.

C MCU requires SIM7080 to update by sending AT commands.

D MCU read the update status by AT commands.

3 AT Commands for FOTA

This chapter describes AT commands related to FOTA.

3.1　AT+CFOTA　　FOTA Operation

AT+CFOTA FOTA Operation	
Write Command **AT+CFOTA=<mod**	Response **OK**

e>	If error is related to ME functionality: **+CME ERROR: <err>**

	Parameters
	<mode>
	    1 Format the data area to be written, it is mandatory for writing data
	    0 Clean the flag

Read Command **AT+CFOTA?**	Response **+CFOTA:<status>** **OK**

	Parameters
	<status>
	    1 The module is updating.
	    6 The module updates successfully
	    7 The module updating fails
	    8 Clean the flag

4 FOTA samples

4.1 SIMCom supports delta firmware file

When customer needs to upgrade the onsite SIM7080 series Firmware from Version A to Version B, they can send the upgrade requirement to SIMCom via their module provider. SIMCom will provide related delta firmware file according to the information of Version A and Version B provided by customer. The size of the delta firmware file depends on the difference of Version A and Version B.

4.2 The module gets the delta firmware file from IP network

Customers usually use MCU to connect with SIM7080 series, therefore customer's MCU needs to get the delta firmware file first. This procedure is diversified, it may be by GPRS，or other methods. If GPRS method is used, customers can consider using HTTP to download delta firmware file from the customer's server.

If MCU acquires delta firmware file by GPRS method, customer may start a session via SMS or other methods.

Here SIMCom provides an example to acquire delta firmware file by using SIM7080 series HTTP function:

AT Command	Response	Description
AT+CNACT=1,1	OK	Open GPRS session.

AT+HTTPTOFS="http://112.	OK	Open the HTTP get session.
74.93.163:12345/V1___V2		
/update.zip","/fota/update	+HTTPTOFS: 200,109285	
.zip"		

4.3 MCU requires the module to update by sending AT commands

After writing the delta firmware file into SIM7080 series flash memory successfully, MCU should send instruction to module by AT command to start the update. Once getting the instruction, the module will automatically reset itself and then enter FOTA upgrading process. After upgrading finished, the module will restart again automatically.

AT Command	Response	Description
AT+CFOTA=1	OK	Set the flag bit for FOTA update, and reset module automatically.
	+CFOTA: "Start to update" +CFOTA: "Updating",0 …… +CFOTA: "Update successfully, please wait for reset" Or +CFOTA: "Update failed, please wait for reset"	The module enters into FOTA upgrading process, which will last several minutes.

4.4 MCU read the update status by AT commands

If upgrading process is finished, the module will restart again automatically. Customer can use AT command to inquire the update result.

AT Command	Response	Description
AT+CFOTA?	+CFOTA: 6	Inquire the update result by command CFOTA.
	OK	6 means updated and succeeded; 7 means updated but failed.
AT+GMR	Revision:1951B02SIM7080G	Inquire the firmware version by AT+GMR.
	OK	

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