A76XX Series_ FOTA_ Application Note

LTE Module

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About Document

Version History

Version	Date	Owner	What is new
V1.00	2020.8.25	Guocheng.lu	New version
	2020.9.2	Guocheng.lu	Modify 1.4
	2020.9.11	Guocheng.lu	Add AT+LFOTA
V1.01	2021.11.8	Wenjie.lai	Scope description is updated
V1.02	2022.5.24	Chunyan.yang	Organize format

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Scope

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. This document applies to A1803S Series, A1603 Series, A1601 Series.

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Contents

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1 Introduction

1.1 Purpose of the document

This document describes how to use the FOTA service to update the firmware on CAT1 modules of A76XX Series.

1.2 Related documents

[1] A76XX Series_AT Command Manual

1.3 Conventions and abbreviations

In this document, the GSM engines are referred to as following term:
ME (Mobile Equipment);
MS (Mobile Station);
TA (Terminal Adapter);
DCE (Data Communication Equipment) or facsimile DCE (FAX modem, FAX board);

In application, controlling device controls the GSM engine by sending AT Command via its serial interface.
The controlling device at the other end of the serial line is referred to as following term:
TE (Terminal Equipment);
DTE (Data Terminal Equipment) or plainly "the application" which is running on an embedded system;

Other Conventions:
PDP(Packet Data Protocol);
FTP(File Transfer Protocol);
SSL(Secure Sockets Layer);
TLS(Transport Layer Security);
FOTA(Firmware Over The Air)

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1.4 The process of Using AT+CFOTA AT Commands

Step 1: Ensure network is available before performing FOTA related operations.
Step 2: Configure the parameter of PDP context by AT+CGDCONT if in GSM network.
Step 3: Put the fota package provided by SIMCom to the HTTP or FTP server.
Step 4: Configure the parameter of FOTA service by AT+CFOTA which are using for enabling FOTA function, connecting the server and download upgrade package.

1.5 The process of Using AT+LFOTA AT Commands

Step 1: Download the package to the module by AT+LFOTA.
Step 2: Start fota by AT+CRESET.

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2 AT Command for FOTA

2.1 Overview of AT Command for FOTA

Command	Description
AT+CFOTA	Start FOTA Service
AT+LFOTA	Start Local FOTA Service

NOTE

• Currently, only CAT1 modules support at commands for FOTA.
• AT+CSCFOTA is available for both CAT1 and CAT4 modules, but the detailed description is different. For CAT4 modules' users, please refer to Chapter 23 for more details about SCFOTA.

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3 Example

Before all FOTA related operations, we should ensure the following:
Ensure network is available:

```
AT+CSQ
+CSQ: 23,0

OK
AT+CREG?
+CREG: 0,1

OK
AT+CGREG?
+CGREG: 0,1

OK
AT+CPSI?
+CPSI:
LTE,Online,460-00,0x333C,39589680,308,EUT
RAN-BAND3,1350,5,0,0,54,0,22

OK
                                        //In WCDMA/GSM,you need to continue to execute the following instructions
AT+CGDCONT=cid,”ip”,”APN”
OK
AT+CGACT=1,cid
OK
AT+CGACT?
+CGACT: 1,1

OK
```

3.1 FOTA Service of FTP

```
AT+CFOTA=0,0,"183.230.174.137:6047/fbf_dfota.bin",simcom,simcom
OK
```

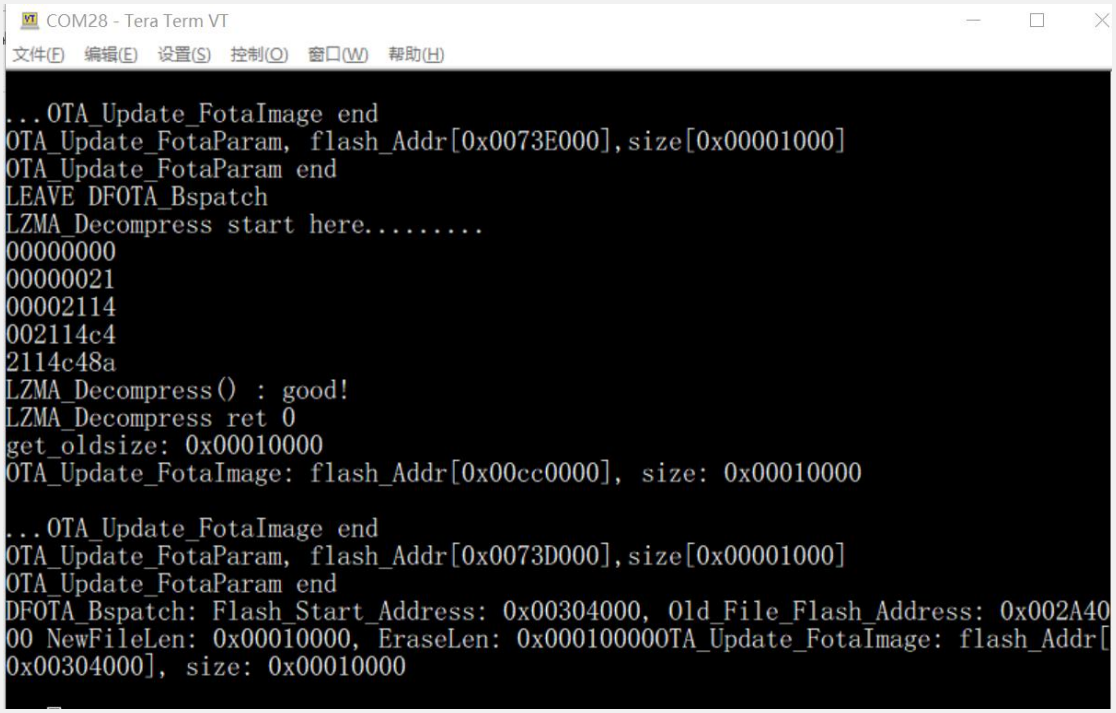
3.2 FOTA Service of HTTP

```
AT+CFOTA=0,1," 183.230.174.137:6022/bin/fbf_dfota.bin",simcom,simcom
OK
```

NOTE

When the command returns to OK, the download of differential packets begins.

After downloading, the system will restart automatically, and the serial port log will print the status of FOTA upgrade as shown in the figure.



After the upgrade is completed, it will restart automatically again and enter the upgraded system. Then the all upgrade complete.

3.3 FOTA Service Locally

```
AT+LFOTA=0,3892224
```

```
OK
AT+LFOTA=1,3892224
>
OK
AT+LFOTA?
OK
+LFOTA: 1
AT+CRESET
OK
```

NOTE

1. File size must be set correctly. Can not send any bytes to current channel when data transferring.
2. If failed, could restart by AT+LFOTA=0,<SIZE> and AT+LFOTA=1,<SIZE>.
3. If UART is used for LFOTA, please make sure that the delay time between each 256 byte reach to at least 50ms.
   If sending file crash happened, please restart module and increase the delay time between each 256 byte reach to at least 50ms, and then try to send file again.

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