SIM7500_SIM7600 Series_SAT_Application Note

LTE Module
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<tr>
<td>V2.00</td>
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1. Introduction

1.1 Purpose of the document

Based on module AT command manual, this document presents the AT command of SAT operation and application examples. This document can apply to SIM7500/SIM7600 series modules.

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

1.2 Related documents


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);
- SAT SIM Application Toolkit
- PIN Personal Identification Number
- PUK Personal Unlock Key
- SIM Subscriber Identity Module
- SMS Short Message Service
- SMS–SC Short Message Service – Service Center
- TA Terminal Adaptor; e.g. a data card (equal to DCE)
- TE Terminal Equipment; e.g. a computer (equal to DTE)
- UE User Equipment
- URC Unsolicited Result Code
- UMTS Universal Mobile Telecommunications System
- USIM Universal Subscriber Identity Module
- WCDMA Wideband Code Division Multiple Access
- ANDROID Android platform
- RIL Radio Interface Layer
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;
2. AT Command Examples

2.1 Initialization

Before SAT session, following AT sequence in the list is recommended. It is strongly recommended that the response timer value be modified to allow the required response data.

NOTE: The application must input correct SIM PIN if required. Otherwise the STK cannot be used.

<table>
<thead>
<tr>
<th>AT</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+STIN?</td>
<td>SAT Indication</td>
<td>Every time the SIM Application issues a Proactive Command, via the</td>
</tr>
<tr>
<td>AT+STGI?</td>
<td>Get SAT</td>
<td>Regularly this command is used upon receipt of an URC &quot;+STIN&quot; to</td>
</tr>
<tr>
<td>AT+STGR</td>
<td>SAT respond</td>
<td>The TA is expected to acknowledge the AT+STGI response with</td>
</tr>
<tr>
<td>AT+STKFMT</td>
<td>STK format</td>
<td>Decoded format or PDU format are supported, but only one can be</td>
</tr>
<tr>
<td>AT+STSM</td>
<td>Setup menu</td>
<td>To acquire the setup main menu info, PDU format only</td>
</tr>
<tr>
<td>AT+STENV</td>
<td>Envelope</td>
<td>Send envelope request to UIM chosen from main menu. PDU format</td>
</tr>
</tbody>
</table>

2.2 Decoded Format Command Example

2.2.1 Display Text

//Example of Display Text

AT+STIN?          
AT+STGI=21        //Text display in UCS2
AT+STGR=21

2.2.2 Get inkey

//Example of Get inkey

AT+STIN?               
AT+STGI=22           //Response will indicate the format input
AT+STGR=22,"Y"        //Refer to the response of AT+STGI=22, confirm
2.2.3 Get input

//Example of Get input

AT+STIN?
AT+STGI=23
AT+STGR=23,"88884444"
//If <rsp_format> is numer only:

2.2.4 Setup menu

//Example of Setup menu

AT+STIN?
AT+STGI=25
AT+STGR=25,1
OK
//Menu text display as UCS2. The first line is menu
title. Others are menu items.

2.2.5 Select item

//Example of Select item

AT+STIN?
AT+STGI=24
AT+STGR=24,1
//Items text display as UCS2. The first line is menu
title. After selected an item, different SIM/USIM cards

2.4 PDU Format Command Example

2.4.1 Send Envelope Command

//Example of Send Envelope command

AT+STIN?
//Setup main menu info got first before envelope
2.4.2 Select Item

//Example of Select Item

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+STGI=24</td>
<td>//Get the proactive command PDU info</td>
</tr>
<tr>
<td>AT+STGR=30,&quot;810301240002028281830100900&quot;</td>
<td>//User sends the result of “select item” operation.</td>
</tr>
<tr>
<td>+STIN: 81 (session end)</td>
<td>//Modem indicate session end</td>
</tr>
</tbody>
</table>

2.5 Android PDU Format Command Example

2.5.1 Android RIL Request or UNSOL Report of SAT

//Example of Android RIL Request or UNSOL Report of SAT

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT+STFMT=1</td>
<td>//1 as RAW format, 0 as decoded format; need to</td>
</tr>
<tr>
<td>AT+STSM?</td>
<td>//RIL received the setup main menu from modem,</td>
</tr>
<tr>
<td>AT++STENV=25,&quot;D30782020181900101&quot;</td>
<td>//Android framework issued the envelope</td>
</tr>
<tr>
<td>AT+STGI=24</td>
<td>//Modem response the envelope command with</td>
</tr>
<tr>
<td>AT+STGR=30,&quot;810301240002028281830100900&quot;</td>
<td>//Android framework response the proactive</td>
</tr>
</tbody>
</table>