SIM7500_SIM7600 Series_SAT_Application Note

LTE Module

SIMCom Wireless Solutions Limited

Building B, SIM Technology Building, No.633, Jinzhong Road

Changning District, Shanghai P.R. China

Tel: 86-21-31575100

support@simcom.com

www.simcom.com

Document Title:	SIM7500_SIM7600 Series_SAT_Application Note
Version:	2.00
Date:	2020.8.6
Status:	Released

GENERAL NOTES

SIMCOM OFFERS THIS INFORMATION AS A SERVICE TO ITS CUSTOMERS, TO SUPPORT APPLICATION AND ENGINEERING EFFORTS THAT USE THE PRODUCTS DESIGNED BY SIMCOM. THE INFORMATION PROVIDED IS BASED UPON REQUIREMENTS SPECIFICALLY PROVIDED TO SIMCOM BY THE CUSTOMERS. SIMCOM HAS NOT UNDERTAKEN ANY INDEPENDENT SEARCH FOR ADDITIONAL RELEVANT INFORMATION, INCLUDING ANY INFORMATION THAT MAY BE IN THE CUSTOMER'S POSSESSION. FURTHERMORE, SYSTEM VALIDATION OF THIS PRODUCT DESIGNED BY SIMCOM WITHIN A LARGER ELECTRONIC SYSTEM REMAINS THE RESPONSIBILITY OF THE CUSTOMER OR THE CUSTOMER'S SYSTEM INTEGRATOR. ALL SPECIFICATIONS SUPPLIED HEREIN ARE SUBJECT TO CHANGE.

COPYRIGHT

SIMCom Wireless Solutions Limited
Building B, SIM Technology Building, No.633 Jinzhong Road, Changning District, Shanghai P.R. China
Tel: +86 21 31575100
Email: simcom@simcom.com

For more information, please visit:
https://www.simcom.com/download/list-863-en.html

For technical support, or to report documentation errors, please visit:
https://www.simcom.com/ask/ or email to: support@simcom.com

About Document

Version History

Version	Date	Owner	What is new
V2.00	2020.8.6	Wenjie.Lai	Update the format

Contents

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] SIM7600 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);
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.

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

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                          //Response will indicate the format and min/max
AT+STGR=23,"88884444"               //Refer to the response of AT+STGI=23, confirm
//If<rsp_format> is numer only:
```

2.2.4 Setup menu

```
//Example of Setup menu

AT+STIN?
AT+STGI=25                          //Menu text display as UCS2. The first line is menu
AT+STGR=25,1
OK                                  //After a submenu is selected, return +STIN: 24
```

2.2.5 Select item

```
//Example of Select item

AT+STIN?
AT+STGI=24                          //Items text display as UCS2. The first line is menu
AT+STGR=24,1                        //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
```

AT+STENV=25,"D30782020181900101"	//Send the envelope command t o modem
+STIN: 24 *(proactive command select a sub-item*	

2.4.2 Select Item

//Example of Select Item	
AT+STGI=24	//Get the proactive command PDU info
AT+STGR=30,"810301240002028281830100900	//User sends the result of “select item” operation.
+STIN: 81 *(session end)*	//Modem indicate session end

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	
AT+STFMT=1	//1 as RAW format, 0 as decoded format; need to
AT+STSM?	//RIL received the setup main menu from modem,
AT++STENV=25,"D30782020181900101"	//Android framework issued the envelope
AT+STGI=24	//Modem response the envelope command with
AT+STGR=30,"810301240002028281830100900	//Android framework response the proactive