



# **SIM7000 Series\_SAT\_Application Note\_V1.00**





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## Version History

Date	Version	What is new	Author
2018-04-12	1.00	New version	Rui.xu

## Scope

This document presents the AT command of SAT operation and application examples. This document can apply to SIM7000 series modules with SAT function.

# 1 Description

## 1.1 Overview

This document introduces STK application using STK AT interface. This is a compact application note, for detailed STK command interfaces, please refer to ATC document.

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## 2 AT commands

Command	Description
AT+STIN	Get Flash Data Buffer
AT+STGI	Get SAT information
AT+STGR	SAT Respond
AT+STK	STK Switch

For more detail introduction, please refer to SIM7000 Series\_AT Command Manual.

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### 3 Examples

#### 3.1 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.*

#### 3.2 Command Description

AT+STIN?	SAT Indication	Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive an indication. This indicates the type of Proactive Command issued. <b>AT+STGI</b> must then be used by the TA to request the parameters of the Proactive Command from the ME. Upon receiving the <b>+STGI</b> response from the ME, the TA must send <b>AT+STGR</b> to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.
AT+STGI?	Get SAT information	Regularly this command is used upon receipt of an URC <b>" +STIN"</b> to request the parameters of the Proactive Command. Then the TA is expected to acknowledge the <b>AT+STGI</b> response with <b>AT+STGR</b> to confirm that the Proactive Command has been executed. <b>AT+STGR</b> will also provide any user information, e.g. a selected menu item. The Proactive Command type value specifies to which <b>" +STIN"</b> the command is related.
AT+STGR	SAT respond	The TA is expected to acknowledge the <b>AT+STGI</b> response with <b>AT+STGR</b> to confirm that the Proactive Command has been executed. <b>AT+STGR</b> will also provide any user information, e.g. a selected menu item. Module will report URC for next command automatically after <b>AT+STGR</b> executed.

#### 3.3 Command Example

##### 3.3.1 Display Text

Output from phone	Response from accessory	Note
<b>Query current command:</b>		
AT+STIN?	+STIN: 21 OK	

View the detail of current command:		
AT+STGI=21	+STGI:21,0,0,10," 00540065007300740021" OK	Text display in UCS2.
Execute command:		
AT+STGR=21	OK +STIN: 25 (example)	

### 3.3.2 Get Inkey

Input command	Response	Note
Query current command:		
AT+STIN?	+STIN: 22 OK	
View the detail of current command:		
AT+STGI=22	+STGI:22,1,0,12,"0069006E007000750074003A" " OK	Response will indicate the format input information.
Input information:		
AT+STGR=22,"Y"	OK +STIN: 24 (example)	Refer to the response of AT+STGI=22, confirm the input format.

### 3.3.3 Get Input

Input command	Response	Note
Query current command:		
AT+STIN?	+STIN: 23 OK	
View the detail of current command:		
AT+STGI=23	+STGI:23,3,70,1,0,1,12,"0069006E007000750074 003A" OK	Response will indicate the format and min/max length of the input information.
AT+STGI=23	+STGI:23,2,20,1,0,1,12,"0069006E007000750074 003A" OK	
Input information:		
<i>If &lt;rsp_format&gt; is UCS2:</i> AT+STGR=23,"597D"	OK +STIN: 24 (example)	Refer to the response of AT+STGI=23, confirm the input format and min/max length.
<i>If &lt;rsp_format&gt; is numer only:</i>	OK +STIN: 24 (example)	



AT+STGR=23,"88 884444"		
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### 3.3.4 Set Up Menu

Input command	Response	Note
<b>Query current command:</b>		
AT+STIN?	+STIN: 25 OK	
<b>View the detail of current command:</b>		
AT+STGI=25	+STGI:25,0,0,8,"004D0065006E0075",4 +STGI:25,1,12,"004D0065006E007500200031" +STGI:25,2,12,"004D0065006E007500200032" +STGI:25,3,12,"004D0065006E007500200033" +STGI:25,4,12,"004D0065006E007500200034" OK	Menu text display as UCS2. The first line is menu title. Others are menu items.
<b>Select a submenu:</b>		
AT+STGR=25,1	OK +STIN: 24	After a submenu is selected, return +STIN: 24 usually. Then it should display the submenu information.

### 3.3.5 Select Item

Input command	Response	Note
<b>Query current command:</b>		
AT+STIN?	+STIN: 24 OK	
<b>View the detail of current command:</b>		
AT+STGI=24	+STGI:24,0,0,0,0,"00",5 +STGI:24,1,12,"004900740065006D00200031" +STGI:24,2,12,"004900740065006D00200032" +STGI:24,3,12,"004900740065006D00200033" +STGI:24,4,12,"004900740065006D00200034" +STGI:24,5,12,"004900740065006D00200035" OK	Items text display as UCS2. The first line is menu title. Title may be "00", it means no item title. Others are sub-items.
<b>Select a sub-item:</b>		
AT+STGR=24,1	OK +STIN: 23 (example)	After selected an item, different SIM/USIM cards will report different +STIN: command.

### 3.3.6 Send Short Message

Input command	Response	Note
<b>Query current command:</b>		
AT+STIN?	+STIN: 24 OK	Send short message is a sub-item in items. Select the specifically item, SAT should send SMS automatically.
<b>View the detail of current command:</b>		
AT+STGI=24	+STGI:24,0,0,0,0,"00",2 +STGI:24,1,24,"006E006500770020006D006500730073006100670065003A" +STGI:24,2,10,"00730065006E0064003A" OK	Items text display as UCS2.
<b>Select a sub-item:</b>		
AT+STGR=24,2	OK +STIN: 21	After selected the send message item, the short message will be sent, the report +STIN:21.

### 3.3.7 Make a Voice Call

Input command	Response	Note
<b>Query current command:</b>		
AT+STIN?	+STIN: 24 OK	Make a voice call is a sub-item in items. Select the specifically item, SAT should make a voice call.
<b>View the detail of current command:</b>		
AT+STGI=24	+STGI:24,0,0,0,0,"00",1 +STGI:24,1,20,"006D0061006B0065002000630061006C006C003A " OK	Items text display as UCS2.
<b>Select a sub-item:</b>		
AT+STGR=24,1	OK +STIN: 24 (example) VOICE CALL: BEGIN (URC)	After selected the make call item, AT port will report a URC, indicate the call begin. If want to hang up the call, must execute AT+CHUP.

## Appendix

### A. Related Documents

SN	Document name	Remark
[1]	SIM7000 Series_AT Command Manual	

### B. Terms and Abbreviations

Abbreviation	Description
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



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