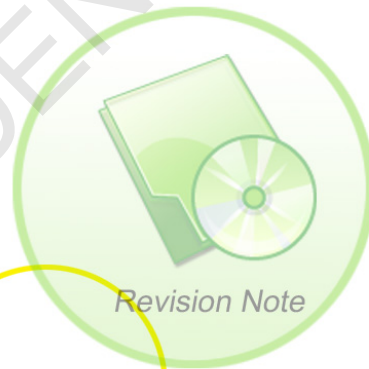




A company of SIM Tech

# **SIM800 Series\_NTP\_Application Note\_V1.02**



SIMCOM CONFIDENTIAL FILE

<b>Document Title</b>	SIM800 Series_NTP_Application Note
<b>Version</b>	1.02
<b>Date</b>	2016-11-17
<b>Status</b>	Release
<b>Document Control ID</b>	SIM800 Series_NTP_Application Note_V1.02

### 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

This document contains proprietary technical information which is the property of Shanghai SIMCom Wireless Solutions Ltd, copying of this document and giving it to others and the using or communication of the contents thereof, are forbidden without express authority. Offenders are liable to the payment of damages. All rights reserved in the event of grant of a patent or the registration of a utility model or design. All specification supplied herein are subject to change without notice at any time.

*Copyright © Shanghai SIMCom Wireless Solutions Ltd. 2016*

## Contents

<b>1. NTP Function .....</b>	<b>5</b>
1.1. SNTP Description .....	5
1.2. NTP AT Command .....	5
<b>2. AT Command .....</b>	<b>6</b>
2.1. AT+CNTPCID Set GPRS Bearer Profile's ID .....	6
2.2. AT+CNTP Synchronize Network Time .....	6
<b>3. Expamples.....</b>	<b>8</b>
3.1. Netwrok Time Synchronize.....	8
<b>Appendix.....</b>	<b>9</b>
A. Refated Documents.....	9
B. Terms and Abbreviations.....	9

## Version History

Date	Version	What is new	Author
2013-10-29	1.00	New version	Jumping
2014-06-30	1.01	Chapter Scope, Add projects	Jumping
		Chapter 3.1, Modify network time synchronization,; Add note.	Jumping
2016-11-17	1.02	Chapter Scope	Jumping

## Scope

This document presents the AT command of NTP operation and application examples. This document can apply to SIM800 series modules with NTP function.

## 1. NTP Function

Network Time Protocol (NTP) is used to make computer time synchronization protocol, which allows the computer to its server or clock source (such as quartz, GPS, etc.) do synchronization, it can provide high-precision time correction (LAN with standard deviation of less than 1 millisecond between, WAN tens of milliseconds), and can be accessed by way of confirmation encryption protocol to prevent malicious attacks

### 1.1. SNTP Description

SNTP: Simple Network Time Protocol.

SNTPV4 adapted from the NTP is mainly used to synchronize computer clocks in the Internet. SNTP for NTP function without full use of the situation. Compare previous NTP and SNTP versions, SNTPV4 introduction does not change the original NTP specification and implementation process, it is a further improvement of NTP support in a simple, stateless remote procedure calls to perform accurate and reliable mode of operation, which is similar to in the UDP / TIME protocol.

Currently SIM800 series modules only support SNTP function module.

### 1.2. NTPAT Command

There are a set of AT commands to support the NTP operation.

## 2. AT Command

SIM800 series modules provide NTP AT command as follows:

Command	Description
AT+CNTPCID	Set GPRS bearer profile's ID
AT+CNTP	Synchronise network time

### 2.1. AT+CNTPCID Set GPRS Bearer Profile's ID

AT+CNTPCID Set GPRS Bearer Profile's ID	
Test Command AT+CNTPCID=?	Response + CNTPCID: (range of supported <cid>s)  <b>OK</b>
	Parameters See Write Command
Read Command AT+CNTPCID?	Response + CNTPCID: <cid>  <b>OK</b>
	Parameters See Write Command
Write Command AT+CNTPCID=<cid>	Response <b>OK</b> If error is related to ME functionality: <b>ERROR</b>
	Parameters <cid> Bearer profile identifier, refer to AT+SAPBR
Reference	Note

### 2.2. AT+CNTP Synchronize Network Time

AT+CNTP Synchronize Network Time	
Test Command AT+CNTP=?	Response +CNTP: (length of <ntp server>, range of <time zone>)  <b>OK</b>
	Parameter See Write Command
Read Command AT+CNTP?	Response + CNTP: <ntp sever>,<time zone>

	<p><b>OK</b></p> <p>Parameter See Write Command</p>
<p>Write Command <b>AT+CNTP=&lt;ntp server&gt;[,&lt;time zone&gt;]</b></p>	<p>Response <b>OK</b></p> <p>Parameter  <b>&lt;ntp server&gt;</b> NTP server's url  <b>&lt;time zone&gt;</b> Local time zone, the range is (-47 to 48), in fact, time zone range (-12 to 12), but taking into account that some countries and regions will use half time zone, or even fourth time zone, so the entire extended four time zones X, so that when the time zone of the input integers are used, without the need for decimal. Time zone in front of the West if it is a negative number indicates the time zone.</p>
<p>Execution command <b>AT+CNTP</b></p>	<p>Response <b>OK</b></p> <p><b>+CNTP: &lt;code&gt;</b></p> <p>Parameter  <b>&lt;code&gt;</b>      1 Network time synchronization is successful                           61 Network Error                           62 DNS resolution error                           63 Connection Erro                           64 Service response error                           65 Service Response Timeout</p>
<p>Reference</p>	<p>Note</p> <ul style="list-style-type: none"> <li>● After successful synchronization time, you can use AT + CCLK to query local time.</li> </ul>

SIMCOM

### 3. Examples

There are some examples to explain how to use these commands.

In the "Grammar" columns of following tables, input of AT commands are in black, module return values are in blue.

#### 3.1. Network Time Synchronize

Grammar	Description
AT+SAPBR=3,1, "Contype", "GPRS" OK AT+SAPBR=3,1, "APN", "CMNET" OK	Configure bearer profile 1
AT+SAPBR=1,1 OK	To open a GPRS context.
AT+CNTPCID=1 OK	Set NTP Use bear profile 1
AT+CNTP="202.120.2.101",32 OK	Set NTP service url and local time zone <i>Note: Here's 32 actually represent 32/4=8, which means that eight East region, Beijing.</i>
AT+CNTP OK  +CNTP: 1	Start Sync Network Time
AT+CCLK? +CCLK: "13/09/11,20:23:25+32"  OK	Query local time Here's timezone may different with that in CNTP setting.



## Appendix

### A. Refated Documents

SN	Document name	Remark
[1]	SIM800 Series AT Command Manual	

### B. Terms and Abbreviations

Abbreviation	Description
EVB	Evaluation Board
NTP	Network Time Protocol
TE	Terminal Equipment
TA	Terminal Adapter
DTE	Data Terminal Equipment or plainly “the application” which is running on an embedded system
DCE	Data Communication Equipment or facsimile DCE(FAX modem, FAX board)
ME	Mobile Equipment
MS	Mobile Station

**Contact us:**

**Shanghai SIMCom Wireless Solutions Co.,Ltd.**

Address: Building A, SIM Technology Building, No. 633, Jinzhong Road, Shanghai, P. R. China  
200335

Tel: +86 21 3252 3300

Fax: +86 21 3252 3020

URL: [www.simcomm2m.com](http://www.simcomm2m.com)

SIMCOM CONFIDENTIAL FILE