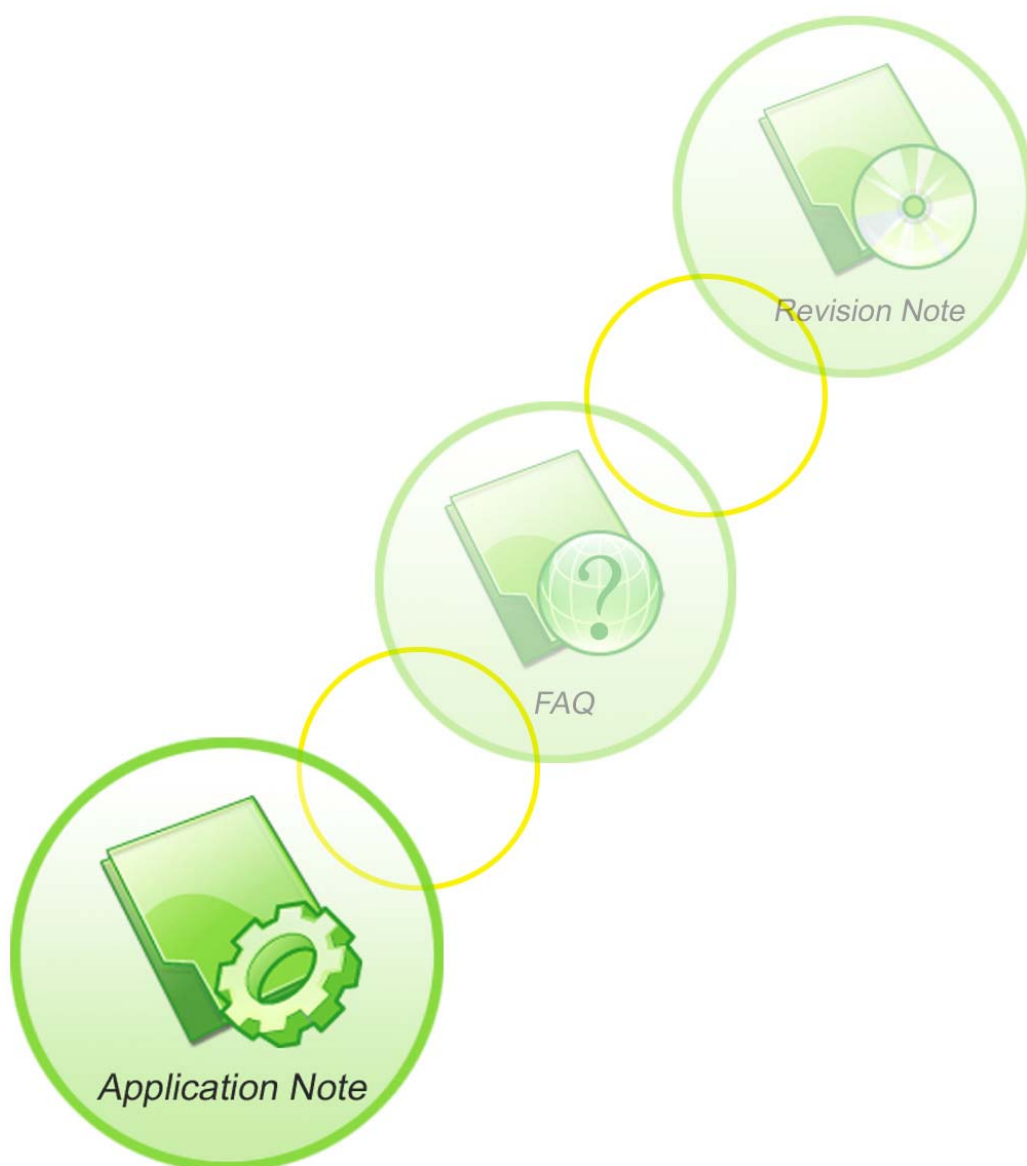




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SIM800 Series_NTP_Application Note_V1.01



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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

Scope

This document presents the AT command of NTP operation and application examples. This document can apply to SIM800 series modules, including SIM800L, SIM800H, SIM800, SIM800-WB64, SIM800G and SIM808.

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. NTP AT 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	Synthesize 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) OK Parameters See Write Command
Read Command AT+CNTPCID?	Response + CNTPCID: <cid> OK Parameters See Write Command
Write Command AT+CNTPCID=<cid>	Response OK If error is related to ME functionality: ERROR Parameters <cid> bearer profile identifier, refer to AT+SAPBR
Reference	

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>) OK Parameter See Write Command
Read Command AT+CNTP?	Response + CNTP: <ntp sever>,<time zone>

	OK
	Parameter See Write Command
Write Command AT+CNTTP=<ntp server>[,<time zone>]	Response OK
	Parameter <ntp server> NTP server's url <time zone> 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.
Execution command AT+CNTTP	Response OK
	+CNTTP: <code> Parameter <code> 1 Network time synchronization is successful 61 Network Error 62 DNS resolution error 63 Connection Error 64 service response error 65 Service Response Timeout
Reference	After successful synchronization time, you can use AT + CCLK to query local time

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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

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