BC35-G&BC28&BC95 R2.0 CMDMP Application Note

NB-IoT Module Series

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About the Document

History

Revision	Date	Author	Description
1.0	2018-09-17	Gary TANG/ Evan WU/ Arnold ZHAO	Initial

Contents

Table Index

1 Introduction

China Mobile Device Management Platform (CMDMP) is used to manage terminal devices, collect terminal device information and to handle events and alerts of terminal devices. For detailed CMDMP-relevant information, please contact China Mobile.

This document mainly introduces how to use AT commands to configure the parameters related to the access to CMDMP.

NOTE

Only BC35-G, BC28 and BC95 R2.0 with firmware version ended with "*_ONT*" support the communication with CMDMP.

2 CMDMP Related AT Command

2.1. AT+DMPCONFIG   CMDMP Access Configuration Command

The command is used to configure and query the access information of CMDMP. CMDMP server IP address has to be obtained by domain name resolution or manually configured with **<type>=1**. If the obtaining by domain resolution fails, the default CMDMP server IP address 117.161.2.41 will be used.

The read command is used to query the parameters currently used by the module, which may not be identical to the saved configuration information. Only the first four characters of the private key is shown.

The write command is used to save or erase configure information. All the saved configuration information will take effect after reboot.

Please refer to *Chapter 3* for possible <err> values.

AT+DMPCONFIG CMDMP Access Configuration Command	
Test Command **AT+DMPCONFIG=?**	Response **+DMPCONFIG: <type>[,[<parameter1>][,[<parameter2>][,<parameter3>[,<parameter4>]]]]** **OK**
Read Command **AT+DMPCONFIG?**	Response **+DMPCONFIG:0,<dmMode>** **+DMPCONFIG:1,[<serverIp>],[<serverPort>],<updatePeriod>** **+DMPCONFIG:2,<appkey>,<password>,<ifType>,<tmIMEl>** **OK**
Write Command **AT+DMPCONFIG=<type>,<parameter1>[,<parameter2>[,<parameter3>]]**	Response **[<type>,<parameter1>[,<parameter2>[,<parameter3>]]]** **OK** If there is any error, response:

	ERROR Or **+CME ERROR: \<err>**

Parameter

\<type>	Configure type.
	0 Configure CMDMP accessing state
	1 Configure CMDMP server address and the update period
	2 Configure DM app key, private key, interface type and terminal IMEI
	3 Configure PLMN
	4 Query saved configure information from the flash
	5 Erase saved configure information from the flash
	6 Query CMDMP accessing state

\< type >	\<parameter1>	\<parameter2>	\<parameter3>	\<parameter4>
0	\<dmMode>			
1	[\<serverIp>]	[\<serverPort>]	\<updatePeriod>	
2	\<appkey>	\<password>	\<ifType>	\<tmIMEI>
3	\<plmn>	\<plmn>	\<plmn>	
4	\<queryOpt>			
5	\<eraseOpt>			
6	\<dmstate>			

\<dmMode>	CMDMP accessing state
	0 Disable accessing to CMDMP
	<u>1</u> Enable accessing to CMDMP
\<serverIp>	CMDMP server IP address
\<serverPort>	CMDMP Server port. The default server port is 5683
\<updatePeriod>	Update period. Range: 300-4294966. Unit: seconds. Default update period: 86400s
\<appkey>	App key. In write command, it should be marked with double quotation
\<password>	Private key. In write command, it should be marked with double quotation
\<ifType>	Interface type
	<u>0</u> Interface
	1 Linux
	2 Android
\<tmIMEI>	Terminal device IMEI, whose length should be 15-17 bytes
\<plmn>	PLMN value
\<queryOpt>	Options of saved configuration information query
	0 Query saved CMDMP accessing state
	1 Query saved CMDMP server IP address, port and the update period
	2 Query saved app key, private key, interface type and terminal IMEI
	3 Query saved PLMN
\<eraseOpt>	Options of erasing saved configuration information
	0 Erase saved CMDMP accessing state

	1	Erase saved CMDMP server IP address, port and the update period
	2	Erase saved app key, private key, interface type and terminal IMEI
	3	Erase saved PLMN
	4	Erase all above saved information
<dmstate>		CMDMP accessing state
	0	DMP_INITIAL_STATE
	4	DMP_CONNECT_SUCCESS
	5	DMP_CONNECT_FAILED
	6	DMP_REG_SUCCESS
	7	DMP_REG_FAILED
	8	DMP_REG_TIMEOUT
	9	DMP_LIFETIME_TIMEOUT
	11	DMP_UPDATE_SUCCESS
	12	DMP_UPDATE_FAILED
	13	DMP_UPDATE_TIMEOUT

NOTE

The description here is strictly apply to BC35-G and BC28 OneNET firmware, but there are some differences of BC95 R2.0 OneNET firmware:

- The default update period is 900s.
- If the update period need changing, the parameter **<serverIp>** and **<serverPort>** cannot be omitted.

Example

```
//Query current configure information.
AT+DMPCONFIG?
+DMPCONFIG: 0,1
+DMPCONFIG: 1,117.161.2.7,5683,420
+DMPCONFIG: 2,M100000089,95Go****,1,863703030822519


OK


//Disable accessing to CMDMP.
AT+DMPCONFIG=0,0
OK


//Query saved CMDMP accessing state.
AT+DMPCONFIG=4,0
0,0


OK


//Set CMDMP server IP address, port and the update period.
```

AT+DMPCONFIG=1,117.161.2.7,5683,420

OK

//Query saved CMDMP server IP address, port and the update period.
AT+DMPCONFIG=4,1
1,117.161.2.7,5683,420

OK

//Set the update period without CMDMP server IP address or port (Only applies to BC35-G and BC28)
AT+DMPCONFIG=1, , ,300
OK

//Query saved CMDMP server IP address, port and the update period.
AT+DMPCONFIG=4,1
1, , ,300

OK

//Set the app key, private key, interface type and terminal IMEI.
AT+DMPCONFIG=2,"M100000089","77GaaTUi33nUK05ha528888QFbk0Y38M",1,863703030822519
OK

//Query saved app key, private key, interface type and terminal IMEI.
AT+DMPCONFIG=4,2
2,M100000089,77Ga**,1,863703030822519**

OK

//Add one PLMN.
AT+DMPCONFIG=3,46004
OK

//Query saved PLMN.
AT+DMPCONFIG=4,3
3,46004

OK

//Add three PLMN.
AT+DMPCONFIG=3,46005,46008,46009
OK

//Query saved PLMN.

AT+DMPCONFIG=4,3

3,46005,46008,46009

OK

//Erase saved PLMN.
AT+DMPCONFIG=5,3
OK

//Erase all saved information.
AT+DMPCONFIG=5,4
OK

//Query CMDMP accessing state
AT+DMPCONFIG=6
6,6   //Registered successfully.

OK

AT+DMPCONFIG=6
6,11   //Updated successfully.

OK

3 Error Codes

This chapter introduces the error codes related to BC35-G, BC28 and BC95 R2.0.

The error codes listed in the following two tables are compliant with the 3GPP specifications. Customers can refer to *3GPP TS 27.007 V13.5.0, sub-clause 9.2* for all possible **<err>** values.

Table 1: General Errors (27.007)

Code of <err>	Description
3	Operation not allowed
4	Operation not supported
23	Memory failure
30	No network service
50	Incorrect parameters
51	Command implemented but currently disabled
52	Command aborted by user
159	Uplink busy/flow control

Table 2: General Errors (27.005)

Code of <err>	Description
300	ME failure
301	SMS service of ME reserved
302	Operation not allowed
303	Operation not supported
304	Invalid PDU mode parameter

305	Invalid text mode parameter
310	USIM not inserted
311	USIM PIN required
312	PH-USIM PIN required
313	USIM failure
314	USIM busy
315	USIM wrong
316	USIM PUK required
317	USIM PIN2 required
318	USIM PUK2 required
320	Memory failure
321	Invalid memory index
322	Memory full
330	SMSC address unknown
331	No network service
332	Network timeout
340	No +CNMA acknowledgement expected
500	Unknown error

NOTE

AT+CMEE=<n> command disables (<n>=0) or enables (<n>=1) the use of final result code "**+CME ERROR:<err>**". If **<n>** keeps the default value "0", the error response will be **ERROR**; if **<n>** is set to 1, the error response will be **+CME ERROR: <err>**.

4 Appendix A References

Table 3: Terms and Abbreviations

Abbreviation	Description
ME	Mobile Equipment
NB-IoT	Narrow Band Internet of Things
CMDMP	China Mobile Device Management Platform
DM	Device Management
PLMN	Public Land Mobile Network