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# FIBOCOM NL668 AT Commands

## User Manual\_HeartBeat

Version: V1.1.2

Date: 2019-11-19



## Applicability Type

No.	Type	Note
1	NL668-CN-00	NA
2	NL668-CN-01	NA
3	NL668-CN-02	NA
4	NL668-EAU-00	NA
5	NL668-EU-00	NA
6	NL668-EU-01	NA
7	NL668-AM-00	NA
8	NL668-AM-01	NA
9	NL668-JP-00	NA
10	NL668-JP-01	NA
11	NL668-LA-00	NA
12	NL668-EU-03	NA
13	NL661-EU-00	NA
14	NL668-CN-03	NA
15	NL668-CN-04	NA
16	NL668-CN-10	NA

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## Versions

Version	Date	Remarks
V1.0.0	2016-12-5	Initial version
V1.0.1	2017-03-09	Add TCP protocol type; Translate into English.
V1.0.2	2017-11-16	Change to new template
V1.1.0	2019-04-19	Change GTHBEN、GTHBEAT description and parameter explain.
V1.1.1	2019-07-04	Add Example
V1.1.2	2019-11-19	Add NL668-CN-10 serial

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# 1 Heart Beat Command

## 1.1 +GTHBEN Enable/Disable Heartbeat mechanism

### 1.1.1 Description

This command enable/disable heartbeat mechanism, It is supported that storage protection for power down.

### 1.1.2 Syntax

Command	Response/Action
+GTHBEN=<mode>[,<protocol>]	OK or +CME ERROR: <err>
+GTHBEN?	+GTHBEN: <mode>,<protocol>  OK or +CME ERROR: <err>
+GTHBEN=?	+GTHBEN: (list of supported <mode>s), (list of supported <protocol>s)  OK or +CME ERROR: <err>

### 1.1.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
No	Yes	Yes	Yes	< 1s

### 1.1.4 Defined Values

<mode>: integer type and range 0-1

mechanism enable

0 disable (Default)

1 enable.

<protocol>: integer type and range 0-1

Heartbeat protocol type

0: TCP

1: UDP (Default)

Notes:

Set the heartbeat parameter, then the heartbeat function is enabled, the mipcall return IP, can send the heartbeat package.

## 1.2 +GTHBEAT, Set Heartbeat parameter

### 1.2.1 Description

This command set destination IP, port, time interval, heartbeat data, socket id. can set GTHBEAT when GTHBEN disabled. Support storage protection for power down.

### 1.2.2 Syntax

Syntax	Response/Action
+GTHBEAT=<server_IP>,<port>,<time>,<data>[,<socket_id>]	OK or +CME ERROR: <err>
+GTHBEAT?	+GTHBEAT: <server_IP>,<port>,<time>,<data>,<socket_id>  OK or +CME ERROR: <err>
+GTHBEAT=?	+GTHBEAT: (<IP>),(list of supported <port>s),(list of supported <time>s),(data),(list of support <socket_id>s)  OK or +CME ERROR: <err>

### 1.2.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	Yes	Yes	Yes	< 1s

### 1.2.4 Defined Values

<server\_IP>: Destination server IP or hostname, string. The range of length is 1-64 bytes.

<port>: server port, int type, range 1-65535, default value is 1.

<time>: time interval between two adjacent heartbeat packet. int type, range 1-65535, default value is 10 seconds.

<data>: Heartbeat data that send to server, string encoded with 0-F hexadecimal digits, range 1-100 bytes.

<socket\_id>: Socket ID that used to send heartbeat data, int type, range 1-6, default value is 1. This parameter only

used for compatible with old products, in new product no practical significance.

## 1.3 +GTHBTIME, Set Reconnect time interval

### 1.3.1 Description

This command set consecutive reconnect time interval when network anomaly happened. Power-failure protection is supported, so heartbeat mechanism will take effect even if module reboot. When network anomaly happened, module will try to connect server with <time1>-<time6> set before. If it still can't connect to server after 6 times attempt, module will reconnect server with <time6> persistently.

### 1.3.2 Syntax

Command	Response/Action
+GTHBTIME[=<time1>[,<time2>[,<time3>[,<time4>[,<time5>[,<time6>]]]]]]]	OK or +CME ERROR: <err>
+ GTHBTIME?	+GTHBTIME: <time1>,<time2>,<time3>,<time4>,<time5>,<time6>  OK or +CME ERROR: <err>

### 1.3.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	Yes	Yes	Yes	< 1s

### 1.3.4 Defined Values

<time1>: The first attempt to connect to server after network anomaly happened, int type, rang 1-65535, default 2 minutes.

<time2>~<time6>:After fail to reconnect the server by <time 1> interval some times, module will try to reconnect server again by interval from <time2>-<time6>, int type, rang 1-65535,default 4,8,16,32,64 minutes for <time2>-<time6> respectively.

#### Notes:

No parmeter setting means all parameter values is reset to default values.

## 1.4 +GTFACHTIME, Set the time to detect module in FACH status

### 1.4.1 Description

This command set the time that detect module whether in FACH status or not. Module switch to FACH status when in sleep, it will send a heartbeat packet to server if it still in FACH status after the time we set with +GTFACHTIME.

Note: This command take effect only in WCDMA network.

### 1.4.2 Syntax

Command	Response/Action
+GTFACHTIME[=<fachtime>]	OK or +CME ERROR: <err>
+GTFACHTIME?	+GTFACHTIME: <fachtime>  OK or +CME ERROR: <err>

### 1.4.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	Yes	No	Yes	< 1s

### 1.4.4 Defined Values

<fachtime>:Set the time to detect module in FACH status, int type, rang 1-65535, default is 5 seconds.

Notes:

No parmeter setting means the parameter value is reset to default value

## 2 Example

### 2.1 +GTHBEAT

```
// Set Heartbeat parameter
AT+GTHBEAT="111.231.250.105",3555,10,"313235363839",1
OK
```

Note: Data is HEX Mode

## 2.2 +GTHBTIME

```
//Set reconnect time interval
AT+GTHBTIME=1,2,2,2,2
OK
```

## 2.3 +GTHBEN

```
//Query network status
AT+COPS?
+COPS: 0,0,"CHINA MOBILE",7
```

OK

```
//Active pdn context
AT+MIPCALL=1,"CMNET"
```

OK

```
+MIPCALL: 10.34.7.211
```

```
//Enable Heartbeat
```

```
AT+GTHBEN=1,0
```

OK

Note: After enable, you can view the received packets on the connected server.

```
//Disable Heartbeat
```

```
AT+GTHBEN=0,0
```

OK