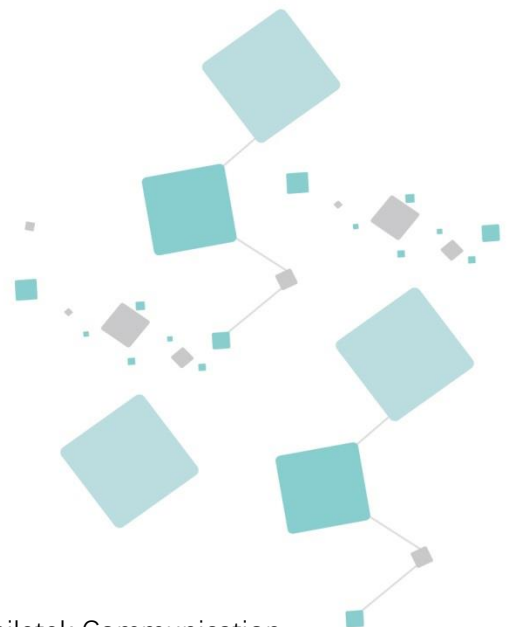


# L506 GNSS AT Command Description

LTE Modules

Version : V1.0

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## Version History

Date	Version	Description of change	Author
2017-07-07	V1.0	Initial Version	Linda

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## 1 Summary

Introduce the GNSS AT commands of L506.

## 2 Application example

### 2.1 Start or stop GPS

```
AT+CGPSNMEA=8191      //set NMEA output
AT+CGPSINFOCFG=2       //set the interval
AT+CGPS=1              //start GPS function
OK
AT+CGPS=0              //stop GPS function
```

### 2.2 Download XTRA Assistant file

```
AT+CGPSXD=0            //download XTRA Assistant file
+CGPSXD:1              //start to download XTRA file
+CGPSXD:2              //download success
```

### 2.3 LBS function

```
AT+GTPOS=1             //connect the LBS server
OK
CONNECT OK            //connect success
AT+GTPOS=2             //get position from LBS
+GTPOS:104.0553231,30.5497824
OK
AT+GTPOS=0            //close the connection
OK
```

### 2.4 Hot start and cold start

```
AT+CGPSHOT             //Hot start GPS
OK
AT+CGPSCOLD            //cold start GPS
OK
```

### 2.5 Set output port and GNSS mode

```
AT+CGPSNMEATYPE=2     //Output GPS data from all active port
OK
```

### 3 AT command description

#### 3.1 AT+CGPSDEL

This command is used to delete GPS information. After input this command, GPS will execute a cold start. This command only can be used when GPS is off.

Example:

```
AT+ CGPSDEL          //Delete the GPS information
OK
```

#### 3.2 AT+CGPS=<on/off>[,<mode>]

Start/Stop GPS function.

AT+ CGPS=	start/stop GPS position session.
<on/off>[,<mode>]	parameters:
	<on/off>:
	0 – stop GPS session
	1 – start GPS session
	<mode>:
	ignore - Standalone mode
	1 – standalone mode
	2 – UE-based mode
	3 – UE-assisted mode
	attention:
	UE-based and UE-assisted mode depend on URL (AT+CGPSURL) and certificate (AT+CGPSSSL). when UE-based mode failed, will switch to Standalone mode.(if CGPSMSB=1)

#### 3.3 AT+CGPSCOLD

Cold start GPS

Example:

```
AT+ CGPCOLD=?
OK
AT+ CGPCOLD
OK
```

#### 3.4 AT+CGPSHOT

Hot start GPS

Example:

```
AT+ CGPSHOT=?
OK
AT+ CGPSHOT
OK
```

### 3.5 AT+CGPSXD=<server>

AT+CGPSXD=<server>	<p>This command is to download the GPS XTRA assistant file from network by http protocol. Module will download the latest assistant file form server and write the file into gpsone engine.</p> <p>parameters:</p> <p>&lt; server&gt;:</p> <ul style="list-style-type: none"> <li>0 - xtra server 1</li> <li>1 - xtra server 2</li> <li>2 - xtra server 3</li> </ul> <p>status:</p> <ul style="list-style-type: none"> <li>1 start download xtra file</li> <li>2 download xtra file successful</li> </ul> <p>return:</p> <p>OK</p> <p>ERROR</p> <p>+CGPSXD:server</p>
--------------------	---

Example:

```

AT+CGPSXD=0           //download XTRA Assistant file
+CGPSXD:1             //start to download XTRA file
+CGPSXD:2             //success
  
```

### 3.6 AT+GTPOS=<mode>

AT+GTPOS = <mode>	<p>The command is used to retrieve information base station positioning the command is used to retrieve information base station positioning. ( not support CDMA network)</p> <p>&lt;mode&gt;</p> <ul style="list-style-type: none"> <li>0 - Close the base station positioning function</li> <li>1 - Open the base station positioning function</li> <li>2 - Get the base station positioning function</li> </ul> <p>Responses</p> <p>OK</p> <p>CONNECT OK</p> <p>CONNECT FAILED</p> <p>ERROR</p>
----------------------	--

Example:

```

AT+GTPOS=1           //connect the LBS server
OK
CONNECT OK           //connect success
AT+GTPOS=2           //get position from LBS
+GTPOS:104.0553231,30.5497824
  
```

OK

AT+GTPOS=0 //close the connection

OK

### 3.7 AT+CGPSINFO=<time>

Get current GPS position information.

AT+CGPSINFO = <time>	<p>Get current GPS position information.</p> <p>parameters: &lt;time&gt;: Range is (0-255) seconds, report the GPS information every time seconds. When time is 0, cancel reporting.</p> <p>return: OK ERROR</p> <p>Information report every time seconds is: +CGPSINFO:&lt;lat&gt;,&lt;N/S&gt;,&lt;log&gt;,&lt;E/W&gt;,&lt;date&gt;,&lt;UTC time&gt;,&lt;alt&gt;,&lt;speed&gt;,&lt;course&gt;,&lt;time&gt; OK</p> <p>Among: &lt;lat&gt; Latitude of current position. &lt;N/S&gt; N/S Indicator, N=north or S=south &lt;log&gt; Longitude of current position. &lt;E/W&gt; E/W Indicator, E=east or W=west &lt;date&gt; Date. Output format is ddmmyyyy &lt;UTC time&gt; UTC Time. Output format is hhmmss.ss &lt;alt&gt; MSL Altitude. Unit is meters &lt;speed&gt; Speed Over Ground. Unit is knots &lt;course&gt; Course. Degrees</p>
Examples	<p>AT+CGPSINFO? +CGPSINFO:5 OK AT+CGPSINFO=3 OK</p>



### 3.8 AT+CGPSNMEA=<nmea>

This command is to configure NMEA output. The default value of <nmea> is 63.

AT+CGPSNMEA = <nmea>	<p>This command is to configure NMEA output sentences which are generated by the gpsOne engine when position data is available.</p> <p>parameters: &lt; nmea &gt;:</p> <p>Each bit enables an NMEA sentence output as follows:</p> <p>Bit 0 – GPGGA (global positioning system fix data)</p> <p>Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data)</p> <p>Bit 2 – GPGSV (GPS satellites in view)</p> <p>Bit 3 – GPGSA (GPS DOP and active satellites)</p> <p>Bit 4 – GPVTG (track made good and ground speed)</p> <p>Bit 5 – PQXFI (Global Positioning System Extended Fix Data.)</p> <p>Bit 6 – GLGSV (GLONASS satellites in view GLONASS fixes only)</p> <p>Bit 7 – GNGSA (DOP and GLONASS satellites; GPS+GLONASS or GLONASS-only fixes. Contains DOP information for all active satellites, but other information is GLONASS-only)</p> <p>Bit 8 – GNGNS (fix data for GNSS receivers; output for GPS-only, GLONASS-only, hybrid GLONASS+GPS fixes, or even AFLT fixes)</p> <p>Bit 9 – PQGSA (bds qzss DOP and active satellites)</p> <p>Bit 10 – PQGSV (bds qzss satellites in view)</p> <p>Bit 11 – GPGLL (Geographic Position – Latitude/Longitude)</p> <p>Bit 12 – GPZDA (Time &amp; Date – UTC, Day, Month, Year and Local Time Zone)</p> <p>return: OK ERROR</p>
-------------------------	--

Example:

```
AT+CGPSNMEA=8191
```

```
OK
```

### 3.9 AT+CGPSMD=<mo>

This command specifies if the Mobile-Originated(MO) GPS session should use the control plane session or user plane session . Default value is user plane.

AT+CGPSMD=<mo>	<p>This command specifies if the Mobile-Originated (MO) GPS session should use the control plane session or user plane session. Default value is user plane.Only can be used when gps is off.</p> <p>parameters: &lt; mo &gt;:</p> <p>0 - control plane 1 - user plane</p> <p>return: OK</p>
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Examples	<pre>AT+CGPSMD=1 OK</pre>
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### 3.10 AT+CGPSURL

This command is used to set AGPS default server URL. It can't save, when reboot URL will restore to default value.

<pre>AT+CGPSURL= &lt;URL&gt;</pre>	<p>This command is used to set AGPS server URL. Can not save, when reboot url will restore to default</p> <p>parameters:</p> <p>&lt;URL&gt;:</p> <p>AGPS server URL. It needs double quotation marks</p> <p>return:</p> <p>OK</p> <p>ERROR</p>
Examples	<pre>AT+CGPSURL=? OK AT+CGPSURL="211.151.53.216:7275" OK</pre>

### 3.11 AT+CGPSSSL=<ssl>

This command is used to select transport security, used certificate or not. The certificate get from local carrier. If the AGPS server doesn't need certificate, execute AT+CGPSSSL=0.

<pre>AT+CGPSSSL=&lt;SSL&gt;</pre>	<p>This command is used to select transport security, used certificate or not. The certificate gets from local carrier. If the AGPS server doesn't need certificate, execute AT+CGPSSSL=0, only can be used when gps is off</p> <p>parameters:</p> <p>&lt;SSL&gt;:</p> <p>0 disable SSL</p> <p>1 enable SSL</p> <p>return:</p> <p>OK</p> <p>ERROR</p>
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