# FIBOCOM FG150 & FM150 Series AT Commands_GNSS

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## Application Type

| No. | Product Model | Description |
|-----|---------------|-------------|
| 1 | FG150 Series | NA |
| 2 | FM150 Series | NA |

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## Change History

| Version | Author | Reviewer | Approver | Update Date | Remarks |
|---------|--------|----------|----------|-------------|---------|
| V1.0.3 | Jin Yong | Shu Min | Zhu Hongquan | 2020-06-22 | Added + GTGPSCERT and Modified +GTGPSCFG |
| V1.0.2 | Jin Yong | Shu Min | Zhu Hongquan | 2019-12-16 | Modified NMEA Statement GBXXX to BDXXX |
| V1.0.1 | Jin Yong | Shu Min | Zhu Hongquan | 2019-11-27 | Modified +GTGPSCFG |
| V1.0.0 | Jin Yong | Shu Min | Zhu Hongquan | 2019-09-26 | Initial version |

# Contents

# 1    GPS command

## 1.1    Global Geographic Information

### 1.1.1  +GTGPSPOWER, Control GNSS Power

#### 1.1.1.1    Description

This command is used to control GNSS module power.

#### 1.1.1.2    Syntax

| Command | Response/Action |
|---|---|
| +GTGPSPOWER=<mode> | OK<br>Or<br>ERROR |
| +GTGPSPOWER? | +GTGPSPOWER: <mode><br><br>OK |
| +GTGPSPOWER=? | +GTGPSPOWER: (list of supported <mode>s)<br><br>OK |

#### 1.1.1.3    Attributes

| Pin Restricted | Persistent | Sync Mode | Effect Immediately | Time of Duration |
|---|---|---|---|---|
| No | No | Yes | Yes | < 1s |

#### 1.1.1.4    Defined Values

<mode>: int type, range 0,1.

    0: power off GNSS module(default)

    1: power on GNSS module

### 1.1.2  +GTGPS, Read GNSS Navigation information

#### 1.1.2.1    Description

This command is used to read GNSS navigation information.

### 1.1.2.2 Syntax

| Command | Response/Action |
|---|---|
| +GTGPS[=<item>] | +GTGPS: GNSS navigation information of <item>s<br><br>OK<br>or<br>+GTGPS: all GNSS navigation information<br><br>OK<br>or<br>ERROR |
| +GTGPS? | +GTGPS: all GNSS navigation information<br><br>OK<br>or<br>ERROR |
| +GTGPS=? | +GTGPS: <item>list<br><br>OK |

### 1.1.2.3 Attributes

| Pin Restricted | Persistent | Sync Mode | Effect Immediately | Time of Duration |
|---|---|---|---|---|
| No | No | Yes | Yes | < 1s |

### 1.1.2.4 Defined Values

<item>: string type.

"RMC": Get RMC sentence

"GGA": Get GGA sentence

"GSA": Get GSA sentence

"GSV": Get GSV sentence

Note：

1. The output of navigation information is affected by the <value> in the satellite configuration (when x = 2) in the AT + GTGPSCFG instruction

2. The "RMC" statement contains GPRMC (when GPS is selected), BDRMC (when Beidou is selected), and GARMC (when Galileo is selected).

The "GGA" statement contains GPGGA (when GPS is selected), BDGGA (when Beidou is selected), and GAGGA (when Galileo is selected).

The "GSA" statement contains GPGSA (when GPS is selected), BDGSA (when Beidou is selected), GAGSA (when Galileo is selected), and PQGSA (when QZSS is selected).

The "GSV" statement contains GPGSV (when GPS is selected), BDGSV (when Beidou is selected), GAGSV (when GALILEO is selected), GLGSV (when GLONASS is selected), and PQGSA (when QZSS is selected).

# 1.1.3  +GTGPSEPO, Set GPS Operation Mode

## 1.1.3.1  Description

This command is used to set the operation mode of GPS.

## 1.1.3.2  Syntax

| Command | Description |
|---|---|
| +GTGPSEPO=<mode> | OK<br>or<br>ERROR |
| +GTGPSEPO? | +GTGPSEPO: <mode><br><br>OK |
| +GTGPSEPO=? | +GTGPSEPO: (list of supported <mode>s)<br><br>OK |

## 1.1.3.3  Attributes

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

## 1.1.3.4  Defined Values

<mode>: int type and range 0,1.

　　　0: Disable AGPS function(default).

　　　1: Enable AGPS MSB mode function.

　　　2: Enable AGPS MSA mode function.

# 1.1.4  +GTAGPSSERV, Set AGPS Server

This command is used to set AGPS server.

### 1.1.4.1 Syntax

| Command | Description |
|---------|-------------|
| +GTAGPSSERV=<IP/URL>,<port> | OK<br><br>or<br><br>ERROR |
| +GTAGPSSERV? | +GTAGPSSERV: <IP/URL>,<port><br><br><br>OK |
| +GTAGPSSERV=? | +GTAGPSSERV: (<IP/URL>),(list of supported <port>s)<br><br><br>OK |

### 1.1.4.2 Attributes

| Pin Restricted | Persistent | Sync Mode | Effect Immediately | Time of Duration |
|----------------|------------|-----------|--------------------|------------------|
| No | Yes | Yes | No | < 1s |

### 1.1.4.3 Defined Values

<IP/URL>: string type, the ip or domain from where to download AGPS data.

<port>: int type and rang 1-65535s, AGPS server port.

## 1.1.5 +GTGPSCFG, GNSS/A-GNSS Configure

### 1.1.5.1 Description

This command is used to configure the parameters of GNSS/A-GNSS.

### 1.1.5.2 Syntax

| Command | Description |
|---------|-------------|
| +GTGPSCFG=<x>,<value > | OK<br>or<br>ERROR |
| +GTGPSCFG? | +GTGPSCFG:<br><br>+GTGPSCFG: 0,<value><br><br>+GTGPSCFG: 1,<value><br><br>+GTGPSCFG: 2,<value><br><br>+GTGPSCFG: 3,<value> |

| Command | Description |
|---|---|
| | OK |
| +GTGPSCFG=? | +GTGPSCFG: <br><br>+GTGPSCFG: (<x>),(list of supported <version>s)<br><br><br>OK |

## 1.1.5.3 Attributes

| Pin Restricted | Persistent | Sync Mode | Effect Immediately | Time of Duration |
|---|---|---|---|---|
| No | Yes | Yes | No | < 1s |

## 1.1.5.4 Defined Values

<x>:int type.

> 0: supl version.

> 1: xtra enable/disable. (Currently not supported)

> 2: satellite switch.

> 3: enable/disable supl certificate.

<value>:int type.

> supl version:

> > 0: SUPL1.0.

> > 1: SUPL2.0 (default).

> xtra enable/disable:

> > 0: disable XTRA function. (default).

> > 1: enable XTRA function.

> satellite switch:

> > 0: Satellite Positioning Combination GPS + GLONASS.

> > NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GLGSV.

> > 1: Satellite Positioning Combination GPS + BeiDou.

> > NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA,

BDGGA.

> > 2: Satellite Positioning Combination GPS + GALILEO.

> > NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GARMC, GAGSV, GAGSA,

GAGGA.

> > 3: Satellite Positioning Combination GPS + QZSS.

> > NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, PQGSV, PQGSA.

4: Satellite Positioning Combination GPS + BeiDou + GALILEO.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GARMC, GAGSV, GAGSA, GAGGA.

5: Satellite Positioning Combination GPS + BeiDou + GLONASS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GLGSV.

6: Satellite Positioning Combination GPS + BeiDou + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, PQGSV, PQGSA.

7: Satellite Positioning Combination GPS + GLONASS + GALILEO.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GLGSV, GARMC, GAGSV, GAGSA, GAGGA.

8: Satellite Positioning Combination GPS + GALILEO + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GARMC, GAGSV, GAGSA, GAGGA, PQGSV, PQGSA.

9: Satellite Positioning Combination GPS + GLONASS + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GLGSV, PQGSV, PQGSA.

10: Satellite Positioning Combination GPS + BeiDou + GALILEO + GLONASS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GARMC, GAGSV, GAGSA, GAGGA, GLGSV.

11: Satellite Positioning Combination GPS + BeiDou + GLONASS + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GLGSV, PQGSV, PQGSA.

12: Satellite Positioning Combination GPS + BeiDou + GALILEO + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GARMC, GAGSV, GAGSA, GAGGA, PQGSV, PQGSA.

13: Satellite Positioning Combination GPS + GALILEO + GLONASS + QZSS.

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, GARMC, GAGSV, GAGSA, GAGGA, GLGSV , PQGSV, PQGSA.


14: Satellite Positioning Combination GPS + BeiDou + GALILEO + GLONASS + QZSS. (default)

NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA, BDRMC, BDGSV, BDGSA, BDGGA, GARMC, GAGSV, GAGSA, GAGGA, GLGSV , PQGSV, PQGSA.

15: Satellite Positioning Combination GPS.

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NMEA output contains: GPRMC, GPGSV, GPGSA, GPGGA.

enable/disable supl certificate:

0: disable supl certificate. (default).

1: enable supl certificate

## 1.1.6 +GTGPSCERT, Import and delete SUPL certificates

This command is used to Import or delete SUPL certificates. certificate must be in .der format.

### 1.1.6.1 Syntax

| Command | Description |
|---|---|
| +GTGPSCERT=<oper ation>,<num>,[<length >] | ><DATA><br>OK<br>or<br>ERROR |
| +GTGPSCERT? | +GTGPSCERT: <num><br><br>OK<br>e.g.<br>+GTGPSCERT: 1<br>+GTGPSCERT: 2 |
| +GTGPSCERT =? | +GTGPSCERT: (<operation>),(<num>)[,(length)]<br><br>OK |

### 1.1.6.2 Attributes

| Pin Restricted | Persistent | Sync Mode | Effect Immediately | Time of Duration |
|---|---|---|---|---|
| No | Yes | Yes | No | < 1s |

### 1.1.6.3 Defined Values

<operation>:int type.

0: detale supl certificates operation.

1: import supl certificates operation.

< num >: int type and rang 1-9, serial number of certificate.

[<length>]:int type and rang 1-2000, certificate size in bytes. If delete a certificate, leave this parameter

blank.

<DATA>: any data.