MEITRACK P66 GPRS Protocol

Change History

File Name	MEITRACK P66 GPRS Protocol		
Project	P66	Creation Date Update Date	2018-03-30
Subproject	GPRS Protocol	Total Pages	18
Version	V1.2	Confidential	Internal Documentation

Contents

1 Command Format

1.1 GPRS Command Format

- GPRS command sent from the server to the tracker:
  @@<Data identifier><Data length>,<IMEI>,<Command type>,<Command><*Checksum>\r\n
- GPRS command sent from the tracker to the server:
  $$<Data identifier><Data length>,<IMEI>,<Command type>,<Command><*Checksum>\r\n

Note: Real-time data is in AAA format, while buffer data is in CCC format.

1.2 Tracker Command Format

Data has two formats: AAA and CCC.

Real-time data is in AAA format, which is as follows:

$$<Data identifier><Data length>,<IMEI>,AAA,<Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><Horizontal dilution of precision (HDOP)><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag><*Checksum>\r\n

Buffer data is in CCC format, which is as follows:

$$<Data identifier><Data length>,<IMEI>,CCC,<Protocol version><Longitude and latitude packet length><Number of remaining cache><Longitude and latitude packet 1>……<Longitude and latitude packet n><*Checksum>\r\n

Note:

1. A comma (,) is used to separate data characters. The character type is the American Standard Code for Information Interchange (ASCII). (Hexadecimal is represented as 0x2C.)
2. Symbols "<" and ">" will not be present in actual data, only for documentation purpose only.
3. Size of a GPRS data packet: 91–976 bytes.
4. Positioning data uploaded is in compession format: up to 18 records per a packet (n<=18). Under normal operation with good GSM reception, the tracker will transmit at least 1 record per a packet to the server. When the tracker recovers from poor GSM reception, it will send up to 18 records per a packet to the server. Upon confirmation of the server, it will continue to send the next 18 records or remaining records in a First In First Out (FIFO) sequence. The command format is as follows:
   <Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag>

Example 1: If a piece of real-time positioning data is generated, the data will be sent immediately. The data format is as follows:
$$<Data identifier><Data length>,<IMEI>,AAA,<Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag><*Checksum>\r\n

Example 2: If three pieces of cache data exist in the tracker, these data will be uploaded in CCC compression mode. The data format is as follows:

$$<Data identifier><Data length>,<IMEI>,CCC,<Protocol version><Longitude and latitude packet length><Number of remaining cache><Event code><Latitude><Longitude><Date and time><Positioning Status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag><Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag><Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag><*Checksum>\r\n

5. The server must respond to the tracker using the following command to confirm data receiving. Received data can be deleted and then continue to upload the remanings.

   The format of the server response command is as follows:

   @@<Data identifier><Data length>,<IMEI>,CCC,<Quantity of deleted data><*Checksum>\r\n

   Note: The data identifier in the reply command must be the same as that of the sending command. Otherwise, the command fails.

   For example, when the server makes a response that the tracker needs to delete three pieces of received data, the command format is as follows:

   @@<Data identifier><Data length>,<IMEI>,CCC,3<* Checksum>\r\n

Descriptions about GPRS packets from the tracker are as follows:

Parameter	Description	Example
@@	Indicates the GPRS data packet header sent from the server to the tracker. The header type is ASCII. (Hexadecimal is represented as 0x40.)	@@
$$	Indicates the GPRS data packet header sent from the tracker to the server. The header type is ASCII. (Hexadecimal is represented as 0x24.)	$$
Data identifier	Contains 1 byte. The type is the ASCII, and its value ranges from 0x41 to 0x7A.	Q
Data length	Indicates the length of characters from the first comma (,) to \r\n. Decimal. Example: $$<*Data identifier*><*Data length*>,<IMEI>,<*Command type*>,<*Command*><* *Checksum*>\r\n	970
IMEI	Indicates the tracker IMEI number. The number type is ASCII. It has 15 digits generally.	369800013220020
Command type	Hexadecimal 3 bytes For details, see chapter 2 and chapter 3.	CCC
Protocol version	Indicates the data compression protocol version. The default protocol version is 0x0102 (hexadecimal and little-endian).	0201
Longitude and latitude packet length	Contains 2 bytes and is hexadecimal and little-endian (default: 0x3400). The length of each longitude and latitude packet is 52.	34 00
Number of remaining	Indicates the total number of tracker GPRS cache, including the	54 00 00 00

cache	number of cache data packets that are sent at the moment. If the tracker sends only one scheduled data packet, the number of remaining cache is 1. 4 bytes, hexadecimal, and little-endian	
Event code	1 byte and hexadecimal For details, see section 1.3 "Event Code."	1F That is, event 31
Latitude	Unit: millionth of a degree Hexadecimal 4 bytes Little-endian	0E 88 57 01 22513678 /1000000 = 22.513678°
Longitude	Unit: millionth of a degree Hexadecimal 4 bytes Little-endian	22 5F CC 06 114056994 /1000000 = 114.056994°
Date and time	Hexadecimal 4 bytes Little-endian Unit: second Calculate the date and time by the mktime mode. The start point is 0:00:00 on January 1, 2000.	F5 74 A4 19 That is, 430208245 seconds.
Positioning status	Indicates the GPS signal status. **01**= Valid **00** = Invalid 1 byte and hexadecimal	01 The GPS is valid.
Number of satellites	Indicates the number of received GPS satellites. Hexadecimal and 1 byte	05 Five GPS satellites are received.
GSM signal strength	Its value ranges from 0x00 to 0x1F (that is, 0 to 31) Hexadecimal and 1 byte	14 The signal strength is 20.
Speed	Unit: km/h Hexadecimal, 2 bytes, and little-endian	58 00 The speed is 88 km/h.
Direction	Indicates the driving direction. The unit is degree. When the value is **0**, the direction is north. The value ranges from 0 to 359. Hexadecimal, 2 bytes, and little-endian	2D 00 45 degree, indicating that the location is at northeast. 5A 00 90 degree, indicating that the location is at east.
HDOP	Unit: 1/10. The smaller the value is, the more the accuracy is. Hexadecimal, 2 bytes, and little-endian The value ranges from 0.5 to 99.9. When the accuracy value is **0**, the signal is invalid. 0.5–1: Perfect 2–3: Wonderful	12 00 18/10 = 1.8

	4–6: Good 7–8: Medium 9–20: Below average 21–99.9: Poor	
Altitude	Unit: m 2 bytes, hexadecimal, and little-endian	28 00 The altitude is 40m.
Mileage	Unit: meter Hexadecimal, 4 bytes, and little-endian Indicates the total mileage.	12 39 0C 00 The mileage is 801042m.
Run time	Unit: second Hexadecimal, 4 bytes, and little-endian Indicates the total time.	81 08 00 00 The run time is 2177 seconds.
Base station info	8 bytes and big-endian The base information includes: MCC|MNC|LAC|CI The MCC and MNC are hexadecimal, while the LAC and CI are decimal. Note: No base station information exists in a SMS.	CC 01 00 00 62 30 54 46 The base station information is 460|0|3062|4654.
I/O port status	2 bytes, hexadecimal, and big-endian Status values of eight input ports and eight output ports: Bit0 to Bit7 corresponds to status of output ports 1 to 8. Bit8 to Bit15 corresponds to status of input ports 1 to 8.	04 21 Equal to 0000 0100 0010 0001
Analog input value	6 bytes, hexadecimal, and little-endian Analog<AD1>|Battery analog<AD4>|External power analog<AD5> **Voltage formula of battery analog (AD4):** AD4/100 **Voltage formula of external power (AD5)** AD5/100	00 00 79 01 00 00 AD4/100 = 377/100 = 3.77 V
Geo-fence number	4 bytes, hexadecimal, and little-endian Only available for GPRS event code 21. The normal number is 0.	00 00 00 00
*	Separates commands from checksums. 1 byte and ASCII (Hexadecimal is represented as 0x2A)	*
Checksum	2 bytes. The parameter indicates the sum of all data (excluding the checksum and ending mark). It is a hexadecimal character. Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Command*><* *Checksum*>\r\n	5B
\r\n	2 bytes. The parameter is an ending character. The type is ASCII. (Hexadecimal value: 0x0d 0x0a)	\r\n

1.3 Event Code

Event Code	Event	Default SMS Header (Max 16 Bytes)	Default GPRS Flag	Default SMS Flag
1	**SOS Pressed**	SOS	Y	Y

17	**Low Battery**	Low Battery	Y	N
19	**Speeding**	Speeding	Y	N
20	**Enter Geo-fence**	Enter Fence	Y	N
21	**Exit Geo-fence**	Exit Fence	Y	N
24	**GPS Signal Lost**	GPS Signal Lost	N	N
25	**GPS Signal Recovery**	GPS Recovery	N	N
26	**Enter Sleep**	Enter sleep	N	N
27	**Exit Sleep**	Exit sleep	N	N
29	**Device Reboot**	Turn on	Y	N
31	**Heartbeat**	(Only available for GPRS)	Y	N
32	**Cornering**	Cornering	Y	N
33	**Track By Distance**	Distance	Y	N
34	**Reply Current (Passive)**	Now	A/A	A/A
35	**Track By Time Interval**	Interval	A/A	A/A
40	**Power Off**	Power Off	Y	N

Note:

1. Data in the above figure is the default settings before delivery.
2. **Y** indicates that a parameter is set. **N** indicates that a parameter is not set. **N/A** indicates that a parameter is unavailable or reserved. **A/A** indicates that a parameter cannot be changed and will be always showed.

2 Command Details

2.1 Real-Time Location Query – A10

GPRS Sending	A10
GPRS Reply	AAA,34,(-)*Latitude*,(-)*Longitude*,*Date and time*,*Positioning status*,*Number of satellites*,*GSM signal strength*,*Speed*,*Direction*,*HDOP*,*Altitude*,*Mileage*,*Run time*,*Base station info*,*I/O port status*,*Analog input value*
Description	**34**: indicates the GPRS command event code. For more information about the event flag, see section 1.3 "Event Code." Note: The A10 command is an exception to a standard reply. Upon reception, the tracker will reply an AAA report to the server, rather than a standard reply of **A10,OK**.
Example	
GPRS Sending	@@u25,369800014040182,A10*7E\r\n
GPRS Reply	$$u125,369800014040182,AAA,34,22.514820,114.052942,140428022549,A,5,22,0,0,17,59,380,147,460|1|252f|3e02,0200,000c|||01a1|0000*bf\r\n

2.2 Tracking by Time Interval – A12

GPRS Sending	A12,*Interval*,*No. of times*
GPRS Reply	A12,OK
Description	Unit: x10 seconds Interval = 0: function disabled. The maximum time interval is 65535 x 10 seconds. No. of times = 0: uninterrupted data reporting (used in the platform). No. of times = [1…65535]: won't stop reporting until the number of reporting times reaches the preset value. *Note:* *1. The data uploading interval is 1 minute by default.* *2. Data is uploaded in CCC format. For details, see section 1.2 "*Tracker Command Format*."*
Example	
GPRS Sending	@@A29,369800014040182,A12,6,0*0E\r\n
GPRS Reply	$$A28,369800014040182,A12,OK*dd\r\n *After the above command is run successfully, the tracker will send the following GPRS data packet to the platform every 1 minute (data format: see the example in section 1.2).* $$U86,369800013320014,CCC, 02 01 34 00 01 00 00 00 **23** 41 87 57 01 9B 5F CC 06 EA 3E 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 05 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 *A4\r\n

2.3 Setting the Cornering Report Function – A13

GPRS Sending	A13,*Angle*
GPRS Reply	A13,OK
Description	When the driving angle exceeds the preset value, the tracker will send a GPRS data packet with location information to the server, which ensures a smoother route on the platform. Angle = 0: function disabled (default). Angle = [1…359]: function enabled.
Example	
GPRS Sending	@@u29,369800014040182,A13,120*44\r\n
GPRS Reply	$$u28,369800014040182,A13,OK*12\r\n *After the above command is run successfully, if the cornering angle is greater than 120 degree, the tracker will send a GPRS data packet about the cornering report (event code 32) to the server.*

2.4 Tracking by Distance – A14

GPRS Sending	A14,*Distance*
GPRS Reply	A14,OK
Description	Distance = 0: function disabled (default). Distance = [1…65535]: function enabled. Unit: meter. Note: When both the GPRS time interval and distance tracking functions are enabled, the "first reach first report" rule will be applied. For example, set the time interval to 6 x 10 seconds and distance to 200 meters. If the road is clear, a distance data packet will be reported first; if there is heavy traffic on the road, a time interval data packet will be reported first. Then both the time interval and distance counters will be reset to 0.
Example	
GPRS Sending	@@Z30,369800014040182,A14,1000*50\r\n
GPRS Reply	$$Z28,369800014040182,A14,OK*f8\r\n *After the above command is run successfully, if the driving distance reaches 1000m, the tracker will send a GPRS data packet about GPRS distance tracking (event code 33) to the server.*

2.5 3D-Shake Wake Up – A19

GPRS Sending	A19,*Enable/Disable 3D-shake wake up flag*
GPRS Reply	A19,OK
Description	When wakeup is not required in the sleep mode, *Enable/Disable 3D-shake wake up flag* is set to **0**. When vibration and wakeup are required in the deep sleep mode, *Enable/Disable 3D-shake wake up flag* is set to **1**. The default value is **1**.

Example	
GPRS Sending	@@H55,369800014040182,A19,1*6B\r\n
GPRS Reply	$$H55,369800014040182,A19,OK*E4\r\n

2.6 Setting GPRS Parameters – A21

GPRS Sending	A21,*Connection mode*,*IP address*,*Port*,*APN*,*APN user name*,*APN password*
GPRS Reply	A21,OK
Description	Connection mode = 0: function disabled. Connection mode = 1: function enabled; use TCP/IP reporting mode. IP address: IP address or domain name. A maximum of 32 bytes are supported. Port: a maximum of 5 digits. APN/APN user name/APN password: a maximum of 32 bytes respectively. If no user name and password are required, leave them blank.
Example	
GPRS Sending	@@H55,369800014040182,A21,1,server.meigps.com,8800,CMNET,,*8B\r\n
GPRS Reply	$$H28,369800014040182,A21,OK*E4\r\n

2.7 Reading All Authorized Phone Numbers – A70

GPRS Sending	A70
GPRS Reply	A70,*Authorized phone number 1*,*Authorized phone number 2*, *Authorized phone number 3*
Description	Read all authorized phone numbers.
Applicable Model	P66
Example	
GPRS Sending	@@K25,369800014040182,A70*5A\r\n
GPRS Reply	$$K61,369800014040182,A70,13811111111,13811112222,13811113333*1e\r\n

2.8 Setting Authorized Phone Numbers – A71

GPRS Sending	A71,*Phone number 1*,*Phone number 2*,*Phone number 3*
GPRS Reply	A71,OK
Description	Phone number: A phone number has a maximum of 16 bytes. If no phone numbers are set, leave them blank. Phone numbers are empty by default. After you set phone numbers, some events will be set by default. When an event is generated, the tracker will send an SMS report to phone numbers. These events includes: SOS Pressed, Speeding, Enter Geo-fence, and Exit Geo-fence. When the SOS button is pressed, the tracker will dial phone numbers 1, 2, and 3 in sequence. The tracker stops dialing when a phone number responds.
Applicable Model	P66
Example	

GPRS Sending	@@p61,369800014040182,A71,13811111111,13811112222,13811113333*7C\r\n
GPRS Reply	$$p28,369800014040182,A71,OK*11\r\n

2.9 Setting APN Parameters – A81

GPRS Sending	A81,APN,APN-USNAME,APN-PASSWD
GPRS Reply	A81,OK
Description	APN: max 32 bytes APN-USNAME: indicates the APN user name; max 32 bytes APN-PASSWD: indicates the APN password; max 32 bytes For example: "0000,A81,CMNET,," indicates that the APN is CMNET, and the user name and password are blank. Note: You must enter a complete command (3 commas are a must). If there is a parameter after a comma, it means that the parameter is changed. If not, the parameter set before is cleared.
Applicable Model	P66
Example	
GPRS Sending	@@X41,369800013220016,A81,CMNET,NAME,0000*65\r\n
GPRS Reply	$$X28,369800013220016,A81,OK*ee\r\n

2.10 Setting a Geo-Fence – B05

GPRS Sending	B05,*Geo-fence number*,*Latitude*,*Longitude*,*Radius*,*IN Geo-fence alarm*,*OUT Geo-fence alarm*
GPRS Reply	B05,OK
Description	Geo-fence number: 1–8. A maximum of eight geo-fences can be set. Latitude: latitude of the geo-fence center; decimal; accurate to 6 digits after the decimal point. If there are only 4 digits after the decimal point, add two digits 0. Otherwise, the command cannot be used successfully. Longitude: longitude of the geo-fence center; decimal; accurate to 6 digits after the decimal point. If there are only 4 digits after the decimal point, add two digits 0. Otherwise, the command cannot be used successfully. Radius: The value ranges from 1 to 4294967295. The unit is meter. IN Geo-fence alarm = 0: function disabled. IN Geo-fence alarm = 1: function enabled. OUT Geo-fence alarm = 0: function disabled. OUT Geo-fence alarm = 1: function enabled.
Example	
GPRS Sending	@@n57,369800013220016,B05,1,22.513701,114.056915,1000,1,1*99\r\n
GPRS Reply	$$n28,369800013220016,B05,OK*08\r\n *If the tracker enters or exits the geo-fence (latitude: 22.513701; longitude: 114.079882; radius: 1000m), it will send a GPRS data packet about the in or out geo-fence alarm to the server.*

2.11 Deleting a Geo-Fence – B06

GPRS Sending	B06,*Geo-fence number*
GPRS Reply	B06,OK
Description	Geo-fence number: 1–8. Only one geo-fence can be deleted each time by SMS or GPRS command.
Example	
GPRS Sending	@@s27,369800013220016,B06,1*DC\r\n
GPRS Reply	$$s28,369800013220016,B06,OK*0e\r\n *After the above command is run successfully, the first geo-fence will be deleted.*

2.12 Setting the Speeding Alarm Function – B07

GPRS Sending	B07,*Driving speed*
GPRS Reply	B07,OK
Description	Driving speed = 0: function disabled (default). Driving speed = [1…255]: function enabled. Unit: km/h. When the driving speed reaches the preset value, a speeding alarm will be generated.
Example	
GPRS Sending	@@W28,369800013220016,B07,60*F7\r\n
GPRS Reply	$$W28,369800013220016,B07,OK*f3\r\n *After the above command is run successfully, if the tracker driving speed reaches 60 km/h, it will send a GPRS data packet (event code 19) about the speeding alarm to the server.*

2.13 Setting the SMS Time Zone – B35

GPRS Sending	B35,*SMS minute*
GPRS Reply	B35,OK
Description	The default time zone of the tracker is GMT 0. You can run the B35 command to change the SMS report time zone to the local time zone. The SMS report time zone is different from the GPRS data packet time zone. When **SMS minute** is **0**, the time zone is **GMT 0**. When **SMS minute** is a value ranging from -720 to 780, set time zones.
Example	
GPRS Sending	@@O29,369800013220016,B35,480*27\r\n
GPRS Reply	$$O28,369800013220016,B35,OK*EC\r\n *After the above command is run successfully, the tracker SMS time zone is changed to UTC+08:00 (China time zone).*

2.14 Setting the GPRS Time Zone – B36

GPRS Sending	B36,*GPRS minute*
GPRS Reply	B36,OK
Description	When **GPRS minute** is **0**, the time zone is **GMT 0** (default). The MS02 can automatically detect the user time zone, so that the GPRS time zone does not need to be changed. Otherwise, inaccurate data occurs. When **GPRS minute** is a value ranging from -720 to 780, set time zones.
Example	
GPRS Sending	@@P29,369800013220016,B36,480*29\r\n
GPRS Reply	$$P28,369800013220016,B36,OK*EE\r\n *After the above command is run successfully, the GPRS time zone is changed to UTC+08:00 (China time zone).*

2.15 Setting SMS Event Characters – B91

GPRS Sending	B91,*Event code*,*SMS header*
GPRS Reply	B91,OK
Description	Event code: See section 1.3 "Event Code." SMS header: at most 16 bytes. See section 1.3 "Event Code." Note: only English characters can be sent.
Example	
GPRS Sending	@@t42,369800013220016,B91,2,input2 active*24\r\n
GPRS Reply	$$t28,369800013220016,B91,OK*14\r\n

2.16 Setting a GPRS Event Flag – B92

GPRS Sending	B92,*GPRS event flag*
GPRS Reply	B92,OK
Description	Set one or multiple GPRS event flags. For more information about event flags, see section 1.3 "Event Code." GPRS event flag: 16 hexadecimal strings (64 bits). High bit: indicates the 64th event flag (bit 63). Low bit: indicates 1st event (SOS) flag (bit 0).
Example	
GPRS Sending	@@t42,369800013220016,B92,0380000FD9DF0707*24\r\n
GPRS Reply	$$t28,369800013220016,B92,OK*14\r\n

2.17 Reading a GPRS Event Flag – B93

GPRS Sending	B93
GPRS Reply	B93,*GPRS event code flag*

Description	Read a GPRS event code flag.
Example	
GPRS Sending	@@M25,369800013220016,B93*5D\r\n
GPRS Reply	$$M42,369800013220016,B93,0380000fd9df0707*46\r\n

2.18 Setting Event Authorization – B99

GPRS Sending	B99,<SMS>/<0>,*<Phone number location>*/*<Authorized phone number>*,*<Operation code>*, [*Event code 1*]……[*Event code n*] B99,<CALL>/<1>,*<Phone number location>*/*<Authorized phone number>*,*<Operation code>*, [*Event code 1*]……[*Event code n*] B99,<GPRS>/<2>,*<Operation code>*, [*Event code 1*]……[*Event code n*] B99,<BUZZER>/<4>,*<Operation code>*, [*Event code 1*]……[*Event code n*].
GPRS Reply	B99,<SMS>/<0>,*<Phone number location>*,*<Authorized phone number>*, [*Event code 1*]……[*Event code n*] B99,<CALL>/<1>,*<Phone number location>*,*<Authorized phone number>*, [*Event code 1*]……[*Event code n*] B99,<GPRS>/<2>,[*Event code 1*]……[*Event code n*] B99,<BUZZER>/<4>,[*Event code 1*]……[*Event code n*]
Description	Fields SMS, CALL, GPRS, and BUZZER can be presented by 0–4 in decimal string. Operation codes GET, SET, ADD, and DEL can be presented by 0–3 in decimal string. These characters are not case-sensitive. Note: Ensure that an authorized phone number is set by using the A71 command or the parameter configuration tool before the B99 command is used to set the SMS/CALL event code. The tracker compares the authorized phone number issued by B99 with the authorized phone number (excluding +86 characters) of the tracker. If the phone numbers are the same, the new event code will be stored. If the phone numbers are inconsistent, an error SMS will be sent.
Applicable Model	P66
Example	
GPRS Sending	@@B34,863070010825791,B99,gprs,get*BC\r\n
GPRS Reply	$$B33,863070010825791,B99,1,17,18*B5\r\n

2.19 Setting the Data Compression Format – CCC

GPRS Sending	CCC,*<Protocol version><Longitude and latitude packet length><Number of remaining cache><Longitude and latitude packet 1>……<Longitude and latitude packet n>*
Description	The command format of a longitude and latitude packet is as follows: *<Longitude and latitude packet length><Number of remaining cache><Event code><Latitude><Longitude><Date and time><Positioning status><Number of satellites><GSM signal strength><Speed><Direction><HDOP><Altitude><Mileage><Total time><Base station info><I/O port status><Analog input value><Geo-fence number/System flag>*.

	When an event is generated, the tracker will report the event to the server. After receiving the data packet in CCC format, the server needs to confirm the information. Then it can upload the subsequent data continuously. The format of the command replied is as follows: @@<Data identifier><Data length>,<IMEI>,CCC,<Quantity of deleted data><*Checksum>\r\n For details, see section 1.2 "Tracker Command Format." Note: 1. Symbols "<" and ">" will not be present in actual data, only for documentation purpose only. 2. Size of a GPRS data packet: 91–976 bytes. 3. Positioning data uploaded is in compession format: up to 18 records per a packet (n<=18). Under normal operation with good GSM reception, the tracker will transmit at least 1 record per a packet to the server. When the tracker recovers from poor GSM reception, it will send up to 18 records per a packet to the server. Upon confirmation of the server, it will continue to send the next 18 records or remaining records in a First In First Out (FIFO) sequence.
Applicable Model	P66
Example	
GPRS Reply	*When scheduled event 35 is generated, the tracker will sent the following information to the server:* $$U86,369800013320014,CCC,020134000100000023418757019B5FCC06EA3E3C1A010A1F000000000900370099C1080005AB0E00CC0100009227890E02001300A801000000000000*A4\r\n

2.20 Reading Device's Firmware Version and SN – E91

GPRS Sending	E91
GPRS Reply	E91,*Version*,*SN*
Description	Read the tracker's firmware version and SN.
Example	
GPRS Sending	@@f25,369800013220016,E91*77\r\n
GPRS Reply	$$f44,369800013220016,E91,CV207,43232220013*fd\r\n

2.21 Clearing the Mileage and Run Time – F06

GPRS Sending	F06,*Number*
GPRS Reply	F06,OK
Description	When the number is **1**, the mileage is cleared. When the number is **2**, the run time is cleared. When the number is **3**, the mileage and run time are cleared.
Example	

GPRS Sending	@@L27,369800013220016,F06,1*B9\r\n
GPRS Reply	$$L28,369800013220016,F06,OK*eb\r\n

2.22 Setting the Mileage and Run Time – F08

GPRS Sending	F08,*Run time*,*Mileage*
GPRS Reply	F08,OK
Description	Run time: ● Value range: [0…4294967295] ● Decimal ● Unit: second If you do not want to set the parameter, leave it blank. Mileage: ● Value range: [0…4294967295] ● Decimal ● Unit: meter If you do not want to set the parameter, leave it blank.
Example	
GPRS Sending	@@n36,369800013220016,F08,3600,10000*92\r\n
GPRS Reply	$$n28,369800013220016,F08,OK*0f\r\n

2.23 Deleting SMS/GPRS Cache Data – F09

GPRS Sending	F09,*Number*
GPRS Reply	F09,OK
Description	If the number is **1**, SMS cache data to be sent is deleted. If the number is **2**, GPRS cache data to be sent is deleted. If the number is **3**, SMS and GPRS cache data to be sent is deleted.
Example	
GPRS Sending	@@T27,369800013220016,F09,3*C6\r\n
GPRS Reply	$$T28,369800013220016,F09,OK*f6\r\n

2.24 Restoring Initial Settings – F11

GPRS Sending	F11
GPRS Reply	F11,OK
Description	Restore initial settings except the SMS password.
Example	
GPRS Sending	@@G25,369800013220016,F11*51\r\n
GPRS Reply	$$G28,369800013220016,F11,OK*E2\r\n

If you have any questions, do not hesitate to email us at info@meitrack.com.

Appendix

Examples for scheduled data and cache data reporting:

a) The tracker sends a piece of scheduled data:

$$U86,369800013320014,CCC, 02 01 34 00 01 00 00 00 23 41 87 57 01 9B 5F CC 06 EA 3E 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 05 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 ***A4\r\n**

The server replies the following information after receiving the above data:

@@U27,369800013320014,CCC,1*DE\r\n

b) The tracker sends 6 pieces of cache data:

$$V346,369800013320014,CCC, 02 01 34 00 06 00 00 00 23 41 87 57 01 9B 5F CC 06 EA 3E 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 05 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 23 41 87 57 01 9B 5F CC 06 08 3F 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 23 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 1F 41 87 57 01 9B 5F CC 06 26 3F 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 41 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 23 41 87 57 01 9B 5F CC 06 26 3F 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 41 AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 23 41 87 57 01 9B 5F CC 06 44 3F 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 5F AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00 23 41 87 57 01 9B 5F CC 06 63 3F 3C 1A 01 0A 1F 00 00 00 00 09 00 37 00 99 C1 08 00 7D AB 0E 00 CC 01 00 00 92 27 89 0E 02 00 13 00 A8 01 00 00 00 00 00 00***65\r\n**

The server replies the following information after receiving the above data:

@@V27,369800013320014,CCC,6*E4\r\n