MEITRACK P99G GPRS Protocol

Applicable Model: P99G

Change History

File Name	MEITRACK P99G GPRS Protocol	Created By	Kyle Lv
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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**

1.2 Tracker Command Format

$$<Data identifier><Data length>,<IMEI>,<Command type>,<Number of remaining cache records><Number of data packets><Data packet 1><Data packet 2>…….<*Checksum>\r\n

Example: $$d205,865789020991321,CCE,<0x00 0x00 0x00 0x00> <0x01 0x00> <0xA0 0x00 0x1B 0x00 0x06 0x01 0x01 0x05 0x00 0x06 0x00 0x07 0x16 0x15 0x01 0x1B 0x00 0x06 0x08 0x00 0x00 0x09 0x14 0x01 0x0A 0xE7 0x03 0x0B 0x00 0x00 0x19 0x8B 0x01 0x1A 0xE8 0x01 0x06 0x02 0x25 0x87 0x57 0x01 0x03 0xE3 0x60 0xCC 0x06 0x04 0x1D 0x3E 0x2D 0x20 0x0C 0x74 0x0D 0x00 0x00 0x0D 0xC7 0x54 0x03 0x00 0x1C 0x00 0x00 0x00 0x00 0x09 0x0E 0x0C 0xCC 0x01 0x01 0x00 0x45 0xA5 0x8D 0xD4 0xE9 0x01 0xBB 0xFF 0x1D 0x08 0x00 0x25 0x86 0xA7 0x0B 0x0A 0xDA 0xFF 0x1E 0x08 0x38 0x83 0x45 0xE1 0xA6 0x36 0xC7 0xFF 0x1F 0x08 0x8C 0x21 0x0A 0x78 0x30 0x56 0xC6 0xFF 0x20 0x08 0xF0 0xB4 0x29 0x8B 0x4B 0xDD 0xBF 0xFF 0x21 0x08 0x38 0x83 0x45 0xAD 0x89 0x72 0xBE 0xFF 0x22 0x08 0x00 0x25 0x68 0x60 0x1F 0x10 0xB9 0xFF 0x23 0x08 0x0A 0x18 0xD6 0x0B 0x15 0xAE 0xB8 0xFF 0x24 0x08 0x7C 0x03 0xC9 0x10 0xF9 0xB0 0xB8 0xFF>*51\r\n

Note:

- 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.)
- Symbols "<" and ">" will not be present in actual data, only for documentation purpose only.
- The size of a GPRS data packet is about 50–1046 bytes.

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.	d
Data length	Indicates the length of characters from the first comma (,) to \r\n. Decimal. Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Hexadecimal data packet*><**Checksum*>\r\n	205
IMEI	Indicates the tracker's IMEI number. The number type is ASCII. It has 15 digits generally.	865789020991321

Command type		Hexadecimal For details, see chapter 2 and chapter 3.	CCE
The following data is hexadecimal:			
Number of remaining cache records		0x00 0x00 0x00 0x00 4 bytes; hexadecimal; little-endian	0x00 0x00 0x00 0x00 The quantiy of remaining cache data is 0.
Number of data packets		Indicates the number of data packets that a piece of data includes. 2 bytes; hexadecimal; little-endian	0x01 0x00 There is 1 data packet.
Length of a data packet		2 bytes; hexadecimal; little-endian	0x A0 0x00 The length of a data packet is 160 bytes.
ID number of a data packet		2 bytes; hexadecimal; little-endian	0x1B 0x00 There are 27 ID numbers in this data packet.
Number of 1-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 1 byte.	0x07 There are 7 parameter ID numbers. 0x00: no parameter ID
Event code	Parameter ID: 0x01	For details, see section 1.3 "Event Code."	0x01 Indicate event code 1.
GPS positioning status	Parameter ID: 0x05	**0x01**: The GPS positioning is valid. **0x00**: The GPS positioning is invalid.	0x00 The GPS positioning is invalid.
Number of satellites	Parameter ID: 0x06	Indicates the number of received GPS satellites.	0x00 No GPS satellite is received.
GSM signal strength	Parameter ID: 0x07	Value: 0x00–0x31	0x16 The signal strength is 22.
Input port status	Parameter ID: 0x15	Status values of eight input ports Bits 0–7 correspond to status of input ports 1–8. Hexadecimal digits need to be converted to binary digits.	0x01 Status: Input inactive
Geo-fence number	Parameter ID: 0x1B	Only available by GPRS event code 20 or 21.	0x00 Indicate no geo-fence number.
Number of 2-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 2 bytes.	0x06 There are 6 parameter ID numbers.
Speed	Parameter ID: 0x08	Unit: km/h; little-endian	0x00 0x00 The speed is 0 km/h.
Driving direction	Parameter ID: 0x09	The unit is degree. When the value is **0**, the direction is north. Value: 0–359; little-endian	0x14 0x01 The driving direction is 276 degrees.
Horizontal	Parameter	Value: 5–999; unit: 1/10; little-endian	0xE7 0x03

dilution of precision (HDOP)	ID: 0x0A		The HDOP is 999.
Altitude	Parameter ID: 0x0B	Unit: meter; little-endian	0x00 0x00 The altitude is 0.
AD4	Parameter ID: 0x19	Battery analog <AD4>; little-endian Voltage formula of battery analog (AD4): AD4/100 Formula of battery percentage: (AD4/100 - 3.4)/0.8 x 100%	0x8B 0x01 Convert the digits to decimal digits. 395/100=3.95 The voltage is 3.95 V.
AD5	Parameter ID: 0x1A	External power analog <AD5>; little-endian Voltage formula of external power supply (AD5): AD5/100	0xE8 0x01 Convert the digits to decimal digits. 488/100=4.88 The voltage is 4.88 V.
Number of 4-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 4 bytes.	0x06 There are 6 parameter ID numbers. 0x00: no parameter ID
Latitude	Parameter ID: 0x02	Unit: millionth of a degree; little-endian	0x25 0x87 0x57 0x01 Convert the digits to decimal digits. The latitude is 22.513445 degrees.
Longitude	Parameter ID: 0x03	Unit: millionth of a degree; little-endian	0XE3 0x60 0xCC 0x06 Convert the digits to decimal digits. The longitude is 114.057443 degrees.
Date and time	Parameter ID: 0x04	4 bytes; little-endian; unit: second Start point: 1 January, 2000, 00:00:00 am.	0x1D 0x3E 0x2D 0x20 The value is 539835933 seconds.
Mileage	Parameter ID: 0x0C	Indicates the total mileage. Unit: meter; little-endian	0x74 0x00 0x00 0x00 The total mileage is 116 meters.
Run time	Parameter ID: 0x0D	Indicates the total time. Unit: second; little-endian	0xC7 0x54 0x03 0x00 The run time is 218311 seconds.
System flag	Parameter ID: 0x1C	Only available by GPRS event code 35. Bit 0: Whether to change the EEP2 parameter. When the value is **1**, the EEP2 parameter is changed. Bits 1–31: reserved	0x01 0x00 0x00 0x00 The device parameters are changed.

Number of *n*-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 8 bytes or 12 bytes. For details, see chapter 4 "Appendix 1: Parameter ID."	0x09 There are 9 parameter ID numbers. 0x00: no parameter ID
First WiFi info	Parameter ID: 0x1D	You can get WiFi data when there is no GPS signal and the WiFi function is enabled. <Data length><MAC><RSSI> Data length: indicates the length of MAC and RSSI; unit: byte; hexadecimal. MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	0x08 0x00 0x25 0x86 0xA7 0x0B 0x0A 0xDA 0xFF 0x08: The data length is 8 bytes. 0x00 0x25 0x86 0xA7 0x0B 0x0A: The MAC address is 00-25-86-A7-0B-0A. 0xDA 0xFF: The signal strength is -38 dbm.
Second WiFi info	Parameter ID: 0x1E	The description is the same as that of the first WiFi info.	0x08 0x38 0x83 0x45 0xE1 0xA6 0x36 0xC7 0xFF
Third WiFi info	Parameter ID: 0x1F	The description is the same as that of the first WiFi info.	0x08 0x8C 0x21 0x0A 0x78 0x30 0x56 0xC6 0xFF
Fourth WiFi info	Parameter ID: 0x20	The description is the same as that of the first WiFi info.	0x08 0xF0 0xB4 0x29 0x8B 0x4B 0xDD 0xBF 0xFF
Fifth WiFi info	Parameter ID: 0x21	The description is the same as that of the first WiFi info.	0x08 0x38 0x83 0x45 0xAD 0x89 0x72 0xBE 0xFF
Sixth WiFi info	Parameter ID: 0x22	The description is the same as that of the first WiFi info.	0x08 0x00 0x25 0x68 0x60 0x1F 0x10 0xB9 0xFF
Seventh WiFi info	Parameter ID: 0x23	The description is the same as that of the first WiFi info.	0x08 0x0A 0x18 0xD6 0x0B 0x15 0xAE 0xB8 0xFF
Eighth WiFi info	Parameter ID: 0x24	The description is the same as that of the first WiFi info.	0x08 0x7C 0x03 0xC9 0x10 0xF9 0xB0 0xB8 0xFF
Base station info	Parameter ID: 0x0E	<Data length><MCC><MNC><LAC><CELL_ID><RX_LEVEL> Data length: indicates the length of base station data; hexadecimal. MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	0x0C 0xCC 0x01 0x01 0x00 0x45 0xA5 0x8B 0xD4 0xE9 0x01 0xBB 0xFF 0x0C: The data length is 12 bytes. 0xCC 0x01: The MCC is 460. 0x01 0x00: The MNC is 01. 0x45 0xA5: The LAC is 42309. 0x8B 0xD4 0xE9 0x01: The cell ID is 32101515. 0xBB 0xFF: The signal strength is -69 dbm.
Base	Parameter	The description is the same as that of the base	

station 1	ID: 0x0F	station info.	
Base station 2	Parameter ID: 0x10	The description is the same as that of the base station info.	
Base station 3	Parameter ID: 0x11	The description is the same as that of the base station info.	
Base station 4	Parameter ID: 0x12	The description is the same as that of the base station info.	
Base station 5	Parameter ID: 0x13	The description is the same as that of the base station info.	
*		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*>,<*Hexadecimal data packet*><*Checksum*>\r\n	7A
\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 (At Most 16 Bytes)
1	**SOS Pressed**	SOS
2	**Input 2 Active**	In2 Active
3	**Input 3 Active**	In3 Active
17	**Low Battery**	Low Battery
19	**Speeding**	Speeding
20	**Enter Geo-fence**	Enter Fence N (N means the number of the fence)
21	**Exit Geo-fence**	Exit Fence N (N means the number of the fence)
24	**GPS Signal Lost**	GPS Signal Lost
25	**GPS Signal Recovery**	GPS Recovery
26	**Enter Sleep**	Enter Sleep
27	**Exit Sleep**	Exit Sleep
29	**Device Reboot**	Power On
31	**Heartbeat**	/
32	**Cornering**	Cornering
33	**Track By Distance**	Distance
34	**Reply Current (Passive)**	Now
35	**Track By Time Interval**	Interval
36	**Tow**	Tow

40	**Power Off**	Power Off
41	**Stop Moving**	Stop moving
42	**Start Moving**	Start Moving
70	**Reject Incoming Call**	/
71	**Get Location by Call**	/
72	**Auto Answer Incoming Call**	/
73	**Listen-in (Voice Monitoring)**	/
79	**Fall**	Fall

2 Command List

Command	Command Description
A10	Real-Time Location Query
A11	Setting a Heartbeat Packet Reporting Interval
A12	Tracking by Time Interval
A13	Setting the Cornering Report Function
A14	Tracking by Distance
A19	Waking the Device Up by Vibration
A21	Setting GPRS Parameters
A22	Setting the DNS Server IP Address
A23	Setting the Standby GPRS Server
A70	Reading All Authorized Phone Numbers
A71	Setting Authorized Phone Numbers
A72	Setting Listen-in Phone Numbers
A73	Setting a Smart Sleep Mode
A81	Setting APN Parameters
A82	Obtaining the UTC from the Server
A83	Setting the Maximum Working Time of the Woken GPS Module
A84	Setting the Unit of the GPRS Data Interval
A85	Setting a Positioning Mode
B05	Setting a Geo-Fence
B06	Deleting a Geo-Fence
B07	Setting the Speeding Alarm Function
B10	Setting the Towing Alarm Function
B31	Turning off the LED Indicator
B34	Setting a Log Interval
B35	Setting the SMS Time Zone
B36	Setting the GPRS Time Zone
B91	Setting SMS Event Characters
B99	Setting Event Authorization
C02	Notifying the Tracker of Sending an SMS
C03	Setting a GPRS Event Transmission Mode
CCE	Automatic Event Transmission
CCF	Deleting an Event in the Buffer
E91	Reading Device's Firmware Version and SN
F01	Restarting the GSM Module
F02	Restarting the GPS Module
F08	Setting the Mileage and Run Time
F09	Deleting SMS/GPRS Cache Data
F11	Restoring Initial Settings

3 Command Details

3.1 Real-Time Location Query – A10

GPRS Sending	A10
GPRS Reply	$$<*Data identifier*><*Data length*>,<IMEI>,<CCE>,<*Number of remaining cache records*><*Number of data packets*><*Data packet on event 34*><**Checksum*>\r\n
Description	**34**: indicates the GPRS command event code.
Example	
GPRS Sending	@@A25,865789020991321,A10*62\r\n
GPRS Reply	$$A118,865789020991321,CCE,<00 00 00 00 01 00 54 00 12 00 06 01 22 05 00 06 00 07 15 14 00 15 00 04 08 00 00 09 14 01 0A E7 03 0B 00 00 06 02 25 87 57 01 03 E3 60 CC 06 04 41 3A 2D 20 0C 74 0D 00 00 0D EC 50 03 00 1C 00 00 00 00 02 0E 0C CC 01 01 00 45 A5 8B D4 E9 01 01 FF 1D 08 00 25 86 A7 0B 0A D5 FF>*1D\r\n

3.2 Setting a Heartbeat Packet Reporting Interval – A11

GPRS Sending	A11,*Interval*
GPRS Reply	A11,OK
Description	The heartbeat packet function is used to keep the Transmission Control Protocol (TCP) connection open when the interval of scheduled GPRS reporting is long. Interval = 0: function disabled (default). Interval = [1…65535]: function enabled. Unit: minute. The heartbeat function is available only in conjunction with deep sleep mode. When the device enters deep sleep mode, heartbeat reports will be sent at the specified interval. Note: 1. The GPS positioning will be enabled first. If it cannot work normally, enable the WiFi positioning, which will take at most 5 seconds. If you want to obtain a hearbeat packet with valid positioning information, run the A83 command to enable the GPS module. 2. If the device is in LBS positioning mode, an event will be generated immediately.
Example	
GPRS Sending	@@S28,353358017784062,A11,10*FD\r\n
GPRS Reply	$$S28,353358017784062,A11,OK*FE\r\n *After the above command is run successfully, the tracker will send a GPRS heartbeat packet to the platform every 10 minutes in sleep mode.*

3.3 Tracking by Time Interval – A12

GPRS Sending	A12,*Interval*
GPRS Reply	A12,OK
Description	Unit: x10 seconds by default (changed by A84 command)

	Interval = 0: function disabled. The maximum time interval is 65535 x 10 seconds. 6 x 10 seconds are recommended.
Example	
GPRS Sending	@@V27,353358017784062,A12,6*D5\r\n
GPRS Reply	$$V28,353358017784062,A12,OK*02\r\n *After the above command is run successfully, the tracker will send a GPRS data packet to the platform every 1 minute.*

3.4 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. Recommended value: **30**.
Example	
GPRS Sending	@@X29,353358017784062,A13,120*37\r\n
GPRS Reply	$$X28,353358017784062,A13,OK*05\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 pakcet to the server.*

3.5 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.
Example	
GPRS Sending	@@D30,353358017784062,A14,1000*4A\r\n
GPRS Reply	$$D28,353358017784062,A14,OK*F2\r\n *After the above command is run successfully, if the driving distance reaches 1000m, the tracker will send a data packet to the server.*

3.6 Waking the Device Up by Vibration – A19

GPRS Sending	A19,X
GPRS Reply	A19,OK
Description	This function is used to determine whether the device will be woken up by vibration in deep mode.

	X = 0: The device will not be woken up by vibration. X = 1: The device will be woken up by vibration (default).
Example	
GPRS Sending	@@H27,353358017784062,A19,1*C9\r\n
GPRS Reply	$$H28,353358017784062,A19,OK*F8\r\n

3.7 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. Connection mode = 2: function enabled; use UDP 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. Note: 1. If you want to change a parameter (named **A**), the parameter before **A** cannot be empty. 2. If you do not want to change the parameters after **A**, no comma is required when you edit the command. 3. If you want to clear the parameters after **A**, commas are required when you edit the command. For example, if you want to change the IP address and port only, send **A21,1,192.168.1.1,8800**.
Example	
GPRS Sending	@@H48,353358017784062,A21,1,67.203.13.26,8800,,,*C9
GPRS Reply	$$H28,353358017784062,A21,OK*F4\r\n

3.8 Setting the DNS Server IP Address – A22

GPRS Sending	A22,*DNS server IP address*
GPRS Reply	A22,OK
Description	An incorrect DNS server IP address may lead to GPRS data reporting failures after the A21 command is used. Use the A22 command to set the DNS server IP address (confirm the IP address with your domain name provider.). Then use the A21 command to reset the domain name. DNS server IP address: a maximum of 16 bytes
Example	
GPRS Sending	@@K38,353358017784062,A22,75.127.67.90*FD\r\n
GPRS Reply	$$K28,353358017784062,A22,OK*F8\r\n

3.9 Setting the Standby GPRS Server – A23

GPRS Sending	A23,*IP address*,*Port*
GPRS Reply	A23,OK
Description	IP address: a maximum of 32 bytes Port: a maximum of 5 digits When the tracker fails to send data to the active server set by command A21, data is automatically sent to the standby server to prevent data loss.
Example	
GPRS Sending	@@S43,353358017784062,A23,67.203.13.26,8800*F0
GPRS Reply	$$S28,353358017784062,A23,OK*01\r\n

3.10 Reading All Authorized Phone Numbers – A70

GPRS Sending	A70
GPRS Reply	A70,*SOS phone number 1*,*SOS phone number 2*,*SOS phone number 3*,*Listen-in phone number 1*,*Listen-in phone number 2*
Description	Read all authorized phone numbers.
Example	
GPRS Sending	@@T25, 353358017784062,A70*93\r\n
GPRS Reply	$$T85,353358017784062,A70,13811111111,13822222222,13833333333,13844444444,13855555555*21\r\n

3.11 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. Phone number 1/2/3: SOS phone number. When you call the tracker by using the phone number, you will receive SMS notification about the location, geo-fence alarm and low power alarm. 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.
Example	
GPRS Sending	@@U61,353358017784062,A71,13811111111,13822222222,13833333333*7D\r\n
GPRS Reply	$$U28,353358017784062,A71,OK*06\r\n

3.12 Setting Listen-in Phone Numbers – A72

GPRS Sending	A72,*Listen-in phone number 1*,*Listen-in phone number 2*
GPRS Reply	A72,OK

Description	When you call the tracker by using authorized listen-in phone numbers, the tracker will answer the call automatically and enter the listen-in state. In this way, the tracker will not make any sound. A maximum of two phone numbers can be set. Each phone number has a maximum of 16 digits. If no phone numbers are set, leave them blank. Phone numbers are empty by default. If no phone numbers are set and commas are remained, phone numbers set before will be deleted.
Example	
GPRS Sending	@@V49,353358017784062,A72,13844444444,13855555555*55\r\n
GPRS Reply	$$V28,353358017784062,A72,OK*08\r\n

3.13 Setting a Smart Sleep Mode – A73

GPRS Sending	A73,*Sleep level*
GPRS Reply	A73,OK
Description	Set the automatic smart sleep mode when the tracker is idle. Sleep level = 0: function disabled (default). Sleep level = 1: normal sleep. The GSM module always works, and the GPS module occasionally enters the sleep mode. The tracker works 25% longer in the normal sleep mode than that in the normal working mode. This mode is not recommended for short interval tracking; this will affect the route precision. Sleep level = 2: deep sleep. If no event is triggered after five minutes, the GPS/WiFi module will stop working and the GSM module will enter sleep mode. Once an event is triggered, the GPS/WiFi and GSM modules will be woken up. A heartbeat event will be triggered only in the deep sleep mode, which will be uploaded every one hour by default. Triggering events include: SOS alarm, low internal/external battery, external power status, towing alarm, (button) changes on any input port, vibration, incoming call, SMS receiving, call, and heartbeat event. Note: In any condition, you can use an SMS or a GPRS command to disable the sleep mode, and then the tracker exits the sleep mode and returns back to the normal working mode.
Example	
GPRS Sending	@@W27,353358017784062,A73,2*D9\r\n
GPRS Reply	$$W28,353358017784062,A73,OK*0A\r\n

3.14 Setting APN Parameters – A81

GPRS Sending	A81,APN,APN_NAME,APN_PW
GPRS Reply	A81,OK
Description	APN: indicates the Access Point Name (APN); at most 32 characters. APN_NAME: indicates the APN user name; at most 32 characters.

	APN_PW: indicates the APN password; at most 32 characters.
Example	
GPRS Sending	@@W33,353358017784062,A81,CMNET,,*72\r\n
GPRS Reply	$$W28,353358017784062,A81,OK*09\r\n

3.15 Obtaining the UTC from the Server – A82

GPRS Sending	A82,X
GPRS Reply	A82,TIME
Description	X = 1: Obtain the Coordinated Universal Time (UTC) from the server. Time: indicates the UTC sent from the server; decimal. For example, **160419093630** indicates that the UTC is 19 April, 2016, 09:36:30 am. Note: The device will confirm whether to obtain the UTC from the server at the interval of 12 hours.
Example	
GPRS Sending	@@W27,353358017784062,A82,1*D8\r\n
GPRS Reply	$$W38,353358017784062,A82,170119093630*D9\r\n

3.16 Setting the Maximum Working Time of the Woken GPS Module – A83

GPRS Sending	A83,X
GPRS Reply	A83,OK
Description	X: decimal; value: 0–255; default value: 0; unit: minute X = 0: The GPS module does not work and a heartbeat event will be generated. X = [1…255]: The GPS module will work for *X* minutes. If the working time exceeds the preset time, a heartbeat event with invalid GPS will be generated.
Example	
GPRS Sending	@@W27,353358017784062,A83,1*D9\r\n
GPRS Reply	$$W28,353358017784062,A83,OK*0B\r\n

3.17 Setting the Unit of the GPRS Data Interval – A84

GPRS Sending	A84,X
GPRS Reply	A84,OK
Description	Use this command to set the unit of the GPRS data interval. X: decimal; value: 1–255; unit: second; default value: 10 seconds
Example	
GPRS Sending	@@W27,353358017784062,A84,1*DA\r\n
GPRS Reply	$$W28,353358017784062,A84,OK*0C\r\n

3.18 Setting a Positioning Mode – A85

GPRS Sending	A85,X
GPRS Reply	A85,OK
Description	X: decimal; value: 0–3 X = 0: GPS + LBS positioning X = 1: WiFi + LBS positioning X = 2: GPS + WiFi + LBS positioning (The WiFi positioning function will be enabled automatically only after the function is set in advance and the GPS is invalid.) X = 3: LBS positioning
Example	
GPRS Sending	@@W27,353358017784062,A85,1*DB\r\n
GPRS Reply	$$W28,353358017784062,A85,OK*0D\r\n

3.19 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	@@H57,353358017784062,B05,1,22.913191,114.079882,1000,0,1*96\r\n
GPRS Reply	$$H28,353358017784062,B05,OK*F7\r\n *When the tracker exits the geo-fence (latitude: 22.913191; longitude: 114.079882; radiu: 1000m), it will send a GPRS data packet to the server.*

3.20 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	@@J27,353358017784062,B06,1*C8\r\n
GPRS Reply	$$J28,353358017784062,B06,OK*FA\r\n *After the above command is run successfully, the first geo-fence will be deleted.*

3.21 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	@@P28,353358017784062,B07,60*05\r\n
GPRS Reply	$$P28,353358017784062,B07,OK*01\r\n *When the tracker driving speed reaches 60 km/h, it will send a GPRS data packet to the server.*

3.22 Setting the Towing Alarm Function – B10

GPRS Sending	B10,*Vibration duration*,*Idling time*
GPRS Reply	B10,OK
Description	Vibration duration = 0: function disabled (default). Vibration duration = [1…255]: function enabled. Unit: second. Idling time: The unit is minute. The default value is **2**. Idling time = 0: The power-saving mode will be disabled. Idling time = [1…255]: When the idling time exceeds the preset value, the power-saving mode will be enabled.
Example	
GPRS Sending	@@I27,353358017784062,B10,3*6E\r\n
GPRS Reply	$$I28,353358017784062,B10,OK*9E\r\n *When the tracker vibrates for more than three consecutive seconds, it will send a GPRS data packet to the server.*

3.23 Turning off the LED Indicator – B31

GPRS Sending	B31,AB
GPRS Reply	B31,OK
Description	When A is **0**, the tracker's indicator is turned on (default). You can query the device's running status according to the indicator status. When A is **1**, the tracker's indicator is turned off. B = 0: The buzzer's sound will be enabled (default).

	B = 1: The buzzer's sound will be disabled.
Example	
GPRS Sending	@@J28,353358017784062,B31,10*F7\r\n
GPRS Reply	$$J28,353358017784062,B31,OK*F8\r\n

3.24 Setting a Log Interval – B34

GPRS Sending	B34,*Log interval*
GPRS Reply	B34,OK
Description	Set the interval for recording data to device's memory when the GPS signal is valid. Recorded logs can only be read by Meitrack Manager software. Log interval = 0: function disabled (default). Log interval = [1…65535]: function enabled. Unit: second.
Example	
GPRS Sending	@@N28,353358017784062,B34,60*03\r\n
GPRS Reply	$$N28,353358017784062,B34,OK*FF\r\n

3.25 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 time zone of an SMS report 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	@@O29,353358017784062,B35,480*3C\r\n
GPRS Reply	$$O28,353358017784062,B35,OK*01\r\n *After the above command is run successfully, the tracker SMS time zone is changed to UTC+08:00 (China time zone).*

3.26 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 MS03 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	@@P29,353358017784062,B36,480*3E\r\n

GPRS Reply	$$P28,353358017784062,B36,OK*03\r\n *After the above command is run successfully, the GPRS time zone is changed to UTC+08:00 (China time zone).*

3.27 Setting SMS Event Characters – B91

GPRS Sending	B91,*SMS event code*,*SMS header*
GPRS Reply	B91,OK
Description	Header: a maximum of 16 bytes
Example	
GPRS Sending	@@R31,353358017784062,B91,1,SOS*F0\r\n
GPRS Reply	$$R28,353358017784062,B91,OK*06\r\n *After you press the SOS button (input 1), the tracker will send an alarm SMS whose header is SOS to a preset authorized phone number.*

3.28 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,<CAMERA>/<3>,<*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,<CAMERA>/<3>,[*Event code 1*]……[*Event code n*] B99,<BUZZER>/<4>,[*Event code 1*]……[*Event code n*]
Description	Fields SMS, CALL, GPRS, CAMERA, 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.
Example	
GPRS Sending	@@B34,863070010825791,B99,gprs,get*BC\r\n

GPRS Reply	$$B33,863070010825791,B99,1,17,18*B5\r\n

3.29 Notifying the Tracker of Sending an SMS – C02

GPRS Sending	C02, X,*Phone number*,*Content*
GPRS Reply	C02,OK
Description	Used for the platform to notify the tracker of sending an SMS to a mobile phone. X = 0: in TEXT mode X = 1: in Unicode mode Phone number: a maximum of 16 digits Content: a maximum of 140 characters After receiving the message, the tracker sends Content information to specified phone numbers.
Example	
GPRS Sending	@@f47,353358017784062,C02,0,15360853789,Meitrack*B1\r\n
GPRS Reply	$$f28,353358017784062,C02,OK*13\r\n

3.30 Setting a GPRS Event Transmission Mode – C03

GPRS Sending	C03, X
GPRS Reply	C03,OK
Description	X = 0: automatic event report (default; CCE command) X = 1: Before another event can be transmitted, existing event reports need to be confirmed and deleted on the server by the CFF command.
Example	
GPRS Sending	@@f27,353358017784062,C03,0*E1\r\n
GPRS Reply	$$f28,353358017784062,C03,OK*14\r\n

3.31 Deleting an Event in the Buffer – CFF

GPRS Sending	CFF,*Quantity of deleted data*
GPRS Reply	CFF,*CFF data packet*
Description	Quantity of deleted data: hexadecimal. In general, the number is 1. The data identifiers from the device and server must be consistent. Otherwise, data will not be deleted from the device. If data is transmitted in CFF format, send **CFF,FFFF** command to delete all cache records and ensure that the data packet number sent from the server is consistent with that sent from the device. When the GPRS connection mode is UDP, send the CFF command to confirm that the server has received the data.

3.32 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	@@W25,353358017784062,E91*7D\r\n
GPRS Reply	$$W38,353358017784062,FWV1.00,12345678*1C\r\n

3.33 Restarting the GSM Module – F01

GPRS Sending	F01
GPRS Reply	F01,OK
Description	Restart the GSM module.
Example	
GPRS Sending	@@j25,353358017784062,F01*88\r\n
GPRS Reply	$$j28,353358017784062,F01,OK*19\r\n

3.34 Restarting the GPS Module – F02

GPRS Sending	F02
GPRS Reply	F02,OK
Description	Restart the GPS module.
Example	
GPRS Sending	@@Z25,353358017784062,F02*79\r\n
GPRS Reply	$$Z28,353358017784062,F02,OK*0A\r\n

3.35 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	@@D40,353358017784062,F08,0,4825000*51\r\n
GPRS Reply	$$D28,353358017784062,F08,OK*FA\r\n

3.36 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	@@E27,353358017784062,F09,1*CA\r\n
GPRS Reply	$$E28,353358017784062,F09,OK*FC\r\n

3.37 Restoring Initial Settings – F11

GPRS Sending	F11
GPRS Reply	F11,OK
Description	Restore initial settings except the SMS password.
Example	
GPRS Sending	@@[25,353358017784062,F11*7A\r\n
GPRS Reply	$$[28,353358017784062,F11,OK*0B\r\n

4 Appendix 1: Parameter ID

Parameter ID	Parameter	Data Analysis	Data Type	Data Length (Byte)	Remarks
0x01	Event code	For details, see section 1.3 "Event Code."	BYTE	1	
0x05	GPS positioning status	**01**: The GPS positioning is valid. **00**: The GPS positioning is invalid.	BYTE	1	
0x06	Number of satellites	Indicates the number of received GPS satellites.	BYTE	1	
0x07	GSM signal strength	Value: 0–31	BYTE	1	
0x14	Output port status	Status values of eight output ports Bits 0–7 correspond to status of output ports 1–8.	BYTE	1	
0x15	Input port status	Status values of eight input ports Bits 0–7 correspond to status of input ports 1–8.	BYTE	1	

0x1B	Geo-fence number	Only available by GPRS event code 20 or 21.	BYTE	1	
0x08	Speed	Unit: km/h	WORD	2	
0x09	Driving direction	The unit is degree. When the value is **0**, the direction is north. Value: 0–359	WORD	2	
0x0A	HDOP	Value: 5–999; unit: 1/10	WORD	2	
0x0B	Altitude	Unit: meter	SINT16	2	
0x16	AD1	Analog 1<AD1>	WORD	2	
0x17	AD2	Analog 2<AD2>	WORD	2	
0x18	AD3	Analog 3<AD3>	WORD	2	
0x19	AD4	Battery analog <AD4>	WORD	2	
0x1A	AD5	External power analog <AD5>	WORD	2	
0x02	Latitude	Unit: millionth of a degree	SINT32	4	
0x03	Longitude	Unit: millionth of a degree	SINT32	4	
0x04	Date and time	Unit: second Start point: 1 January, 2000, 00:00:00 am.	DWORD	4	
0x0C	Mileage	Indicates the total mileage. Unit: meter	DWORD	4	
0x0D	Run time	Indicates the total time. Unit: second	DWORD	4	
0x1C	System flag	Only available by GPRS event code 35. Bit 0: Whether to change the EEP2 parameter. When the value is **1**, the EEP2 parameter is changed. Bit 1: indicates ACC status. When the value is **1**, the ACC is on. Bit 2: indicates anti-theft status. When the value is **1**, the device is in the arming mode. Bit 3: vibration flag. When the value is **1**, the device is vibrating. Bit 4: moving flag. When the value is **1**, the device is moving. Bit 5: whether to connect the external power supply. When the value is **1**, the external power supply is connected. Bit 6: Whether the device is charging. When the value is **1**, the device is charging. Bit 7: Whether to enable the sleep mode. When the value is **1**, the sleep mode is enabled. Bit 8: Whether to connect the FMS. When the	DWORD	4	

		value is **1**, the FMS is connected. Bit 9: Whether to enable the FMS function. When the value is **1**, the function is enabled. Bits 10–31: reserved			
0x1D	First WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x1E	Second WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x1F	Third WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x20	Fourth WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x21	Fifth WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x22	Sixth WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x23	Seventh WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.

0x24	Eighth WiFi info	<MAC><RSSI> MAC: indicates the WiFi MAC address; 6 bytes. RSSI: indicates the WiFi signal strength; 2 signed bytes; little-endian.	STRUCT	8	Upload data when its value is valid.
0x0E	Base station info	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.
0x0F	Base station 1	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.
0x10	Base station 2	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.

0x11	Base station 3	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.
0x12	Base station 4	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.
0x13	Base station 5	<MCC><MNC><LAC><CELL_ID><RX_LEVEL> MCC: indicates Mobile Country Code; 16-bit unsigned; little-endian. MNC: indicates Mobile Network Code; 16-bit unsigned; little-endian. LAC: indicates Location Area Code; 16-bit unsigned; little-endian. CELL_ID: indicates the cell ID; 32-bit unsigned; little-endian. RX_LEVEL: indicates the signal strength; 16-bit signed; little-endian.	STRUCT	12	Upload data when its value is valid.

5 Appendix 2: Data Type

Data Type	Description	Transmission Rule
BYTE	Unsigned; 1 byte (8 bits)	The data is transmitted as a stream of bytes.
WORD	Unsigned; 2 bytes (16 bits)	Little-endian
DWORD	Unsigned; 4 bytes (32 bits)	Little-endian
BYTE[n]	*n* bytes	The data is transmitted as a stream of bytes.
BCD[n]	BCD-8421 encoding; *n* bytes	The data is transmitted as a stream of bytes.
STRING	GBK encoding	Little-endian

	If no data is generated, leave the parameter blank.	
SINT8	Signed; 1 byte	The data is transmitted as a stream of bytes.
SINT16	Signed; 2 bytes	Little-endian
SINT32	Signed; 4 bytes	Little-endian
STRUCT	Depend on data descriptions.	Transmit data based on a struct.

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