MEITRACK K211G GPRS Protocol

Applicable Model: K211G

Change History

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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: 0x24 0x24 0x44 0x31 0x31 0x32 0x2C 0x38 0x36 0x38 0x39 0x39 0x38 0x30 0x33 0x30 0x30 0x30 0x33 0x36 0x30 0x38 0x2C 0x43 0x43 0x45 0x2C 0x00 0x00 0x00 0x00 0x01 0x00 0x4E 0x00 0x12 0x00 0x05 0x01 0x23 0x05 0x01 0x06 0x07 0x07 0x16 0x1B 0x00 0x06 0x08 0x00 0x00 0x09 0x17 0x01 0x0A 0x19 0x00 0x0B 0x17 0x00 0x19 0x7C 0x01 0x1A 0x00 0x00 0x06 0x02 0xD2 0x87 0x57 0x01 0x03 0x5B 0x5F 0xCC 0x06 0x04 0x16 0xB3 0x72 0x23 0x0C 0x35 0x4B 0x00 0x00 0x0D 0x7B 0x88 0x00 0x00 0x1C 0x01 0x00 0x00 0x00 0x01 0x0E 0x0C 0xCC 0x01 0x01 0x00 0x45 0xA5 0x8B 0xD4 0xE9 0x01 0x00 0x00 0x2A 0x32 0x32 0x0D 0x0A

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.)	Hexadecimal：0x24 0x24 ASCII：@@
$$	Indicates the GPRS data packet header sent from the tracker to the server. The header type is ASCII. (Hexadecimal is represented as 0x24.)	Hexadecimal：0x24 0x24 ASCII：$$
Data identifier	Contains 1 byte. The type is the ASCII, and its value ranges from 0x41 to 0x7A.	Hexadecimal：0x44 ASCII：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	Hexadecimal：0x31 0x31 0x32 ASCII：112
IMEI	Indicates the tracker's IMEI number. The number type is ASCII. It has 15 digits generally.	Hexadecimal：0x38 0x36 0x38 0x39 0x39 0x38 0x30 0x33 0x30 0x30 0x30 0x33 0x36 0x30 0x38 ASCII：838998030003608
Command type	Hexadecimal	Hexadecimal：0x43 0x43 0x45

		For details, see chapter 2 and chapter 3.	ASCII：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	0x4E 0x00 The length of a data packet is 78 bytes.
ID number of a data packet		2 bytes; hexadecimal; little-endian	0x12 0x00 There are 18 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.	0x05 There are 5 parameter ID numbers. 0x00: no parameter ID
Event code	Parameter ID: 0x01	For details, see section 1.3 "Event Code." Data type: BYTE	0x23 Indicate event code 35.
GPS positioning status	Parameter ID: 0x05	**0x01**: The GPS positioning is valid. **0x00**: The GPS positioning is invalid. Data type: BYTE	0x01 The GPS positioning is valid.
Number of satellites	Parameter ID: 0x06	Indicates the number of received GPS satellites. Data type: BYTE	0x07 Number of satellities is 7.
GSM signal strength	Parameter ID: 0x07	Value: 0x00–0x31 Data type: BYTE	0x16 The signal strength is 22.
Geo-fence number	Parameter ID: 0x1B	Only available by GPRS event code 20 or 21. Data type: BYTE	0x00 Indicate no geo-fence number.
Lock state	Parameter ID: 0x47	The status of the lock, 2 bytes =00: unknown state =01: unlock state =02: locked state =03: shear line state Data type: BYTE	0x01 Indicate unknown state of the lock
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 Data type: WORD	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	0x17 0x01 The driving direction is 279 degrees.

		Data type: WORD	
Horizontal dilution of precision (HDOP)	Parameter ID: 0x0A	Value: 5–999; unit: 1/10; little-endian Data type: WORD	0x19 0x00 The HDOP is 25.
Altitude	Parameter ID: 0x0B	Unit: meter; little-endian Data type: SINT16	0x17 0x00 The altitude is 23.
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% Data type: WORD	0x7C 0x01 Convert the digits to decimal digits. 380/100=3.80 The voltage is 3.80 V.
AD5	Parameter ID: 0x1A	External power analog <AD5>; little-endian Voltage formula of external power supply (AD5): AD5/100 Data type: WORD	0x00 0x00 Indicates that no external power is connected.
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 Data type: SINT21	0xD2 0x87 0x57 0x01 Convert the digits to decimal digits. The latitude is 22.513618 degrees.
Longitude	Parameter ID: 0x03	Unit: millionth of a degree; little-endian Data type: SINT21	0x5B 0x5F 0xCC 0x06 Convert the digits to decimal digits. The longitude is 114. 057051 degrees.
Date and time	Parameter ID: 0x04	4 bytes; little-endian; unit: second Start point: 1 January, 2000, 00:00:00 am. Data type: WORD	0x16 0xB3 0x72 0x23 The value is 594719510 seconds.
Mileage	Parameter ID: 0x0C	Indicates the total mileage. Unit: meter; little-endian Data type: WORD	0x35 0x4B 0x00 0x00 The total mileage is 19253 meters.
Run time	Parameter ID: 0x0D	Indicates the total time. Unit: second; little-endian Data type: WORD	0x7B 0x88 0x00 0x00 The run time is 34393 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.	0x01 0x00 0x00 0x00 The device parameters are changed.

		Bits 1–31: reserved Data type: WORD	
RFID number	Parameter ID: 0x25	Description：IC ID card number, little-endian Only available by GPRS event code 37. Data type: WORD	D7 9D D1 00 The RFID number is 13737431
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."	0x01 There are 1 parameter ID numbers. 0x00: no parameter ID
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. Data type: STRUCT	0x0C 0xCC 0x01 0x01 0x00 0x45 0xA5 0x8B 0xD4 0xE9 0x01 0xBB 0xFF 0x0C：the data length is 12 bytes 0xCC 0x01：MCC is 460 0x01 0x00：MNC is 01 0x45 0xA5：LAC is 42309 0x8B 0xD4 0xE9 0x01：CELL_ID is 32101515 0xBB 0xFF：Signal strength is 69dbm
Lock information	Parameter ID: 0x38	<ID_Len><AlarmStatus><ID> ID_Len: the ID length, 1 byte AlarmStatus: alarm information, 1 byte =01: leave container trailer (T399G) alert =02: unlock alarm =03: locked alarm =04: shear line alarm =05: tear open shell alarm =06：unlock fail alarm =07：lock fail alarm ID：the lock ID of the current alarm, 16 bytes; Only available by GPRS event code 112. Data type: STRUCT	0x11 0x02 0x38 0x36 0x38 0x39 0x39 0x38 0x30 0x33 0x30 0x30 0x30 0x33 0x36 0x30 0x38 0x00 0x11: data length is 17 bytes 0x02: unlock alarm 0x38 0x36 0x38 0x39 0x39 0x38 0x30 0x33 0x30 0x30 0x30 0x33 0x36 0x30 0x38 0x00: lock OD
*		Separates commands from checksums. 1 byte and ASCII (Hexadecimal is represented as 0x2A)	0x2A
Checksum		2 bytes. The parameter indicates the sum of all data (excluding the checksum and ending mark). It is a hexadecimal character.	0x30 0x30

	Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Hexadecimal data packet*><*Checksum*>\r\n	
\r\n	2 bytes. The parameter is an ending character. The type is ASCII. (Hexadecimal value: 0x0d 0x0a)	0xOD 0xOA

1.3 Event Code

Event Code	Event	Default SMS Header (At Most 16 Bytes)
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
37	**RFID**	/
41	**Stop Moving**	Stop moving
42	**Start Moving**	Start Moving
112	**Container lock alarm**	/
138	**Speed Recovery**	Speed Recovery

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
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A70	Reading All Authorized Phone Numbers
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B05	Setting a Geo-Fence
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B34	Setting a Log Interval
B35	Setting the SMS Time Zone
B36	Setting the GPRS Time Zone
B91	Setting SMS Event Characters
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C02	Notifying the Tracker of Sending an SMS
C03	Setting a GPRS Event Transmission Mode
C77	Disabling the Power-off Function of the Power Button
CCE	Automatic Event Transmission
CCF	Deleting an Event in the Buffer
DAF	Setting the sensitivity level of vibration sensor
DB0	Setting the automatic authorization time of swiping the RFID card
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
F22	Changing super password

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.
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. 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 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

3.9 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

3.10 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

3.11 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

3.12 Setting a Smart Sleep Mode – A73

GPRS Sending	0000,A73,Sleep level
GPRS Reply	A73,OK
Description	When the sleep level is 0, the sleep mode is disabled (default). When the sleep level is 1, the tracker enters the normal sleep mode. The WCDMA/GSM module always works, andthe 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. When the sleep level is 2, the tracker enters deep sleep mode. If no event (RFID, shear line, vibration, incoming calls, orSMSs) is triggered after five minutes, the GPS module will stop and the WCDMA/GSM and MCU modules will enter sleep mode. Once an event is triggered, the GPS, WCDMA, GSM, and MCU modules will be woken up. When the sleep level is 3, the tracker enters deep sleep mode. If no event (RFID, shear line ， vibration) is triggered after five minutes, the GPS and WCDMA/GSM module will stop and the MCU modules will enter sleep mode. Once an event is triggered, the GPS, WCDMA/ GSM, and MCU modules will be woken up.
Example	
GPRS Sending	@@W27,353358017784062,A73,2*D9\r\n
GPRS Reply	$$W28,353358017784062,A73,OK*0A\r\n

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

GPRS Sending	A83,X
GPRS Reply	A83,OK
Description	X: indicates the maximum working time of the GPS module woken up by heartbeat packet. Decimal; value range: 0–255; unit: minute. X = 0 (default): After the GPS module is woken up by heartbeat packet, it does not work and the GPS is invalid.
Example	
GPRS Sending	@@W27,353358017784062,A83,1*D9\r\n
GPRS Reply	$$W28,353358017784062,A83,OK*0B\r\n

3.14 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.*

3.15 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.*

3.16 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.*

3.17 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.*

3.18 Setting a Polygonal Geo-Fence – B11

GPRS Sending	B11,*Geo-fence number*,*Latitude 1*,*Longitude 1*,*Latitude 2*,*Longitude 2*...*Latitude N*,*Longitude N*,*Enter Geo-fence alert*,*Exit Geo-fence alert*
GPRS Reply	B11,OK
Description	Geo-fence number: The parameter value ranges from **1** to **8**. (The maximum value varies depending on customization projects.) Latitude: accurate to 6 digits after the decimal point. For example, 22.512517 or -22.512517. Longitude: accurate to 6 digits after the decimal point. For example, 114.057200 or -114.057200. Enter Geo-fence alert: The parameter value is **0** or **1**. ● **0**: An alert will not be generated when the tracker enters the geo-fence. ● **1**: An alert will be generated when the tracker enters the geo-fence. Exit Geo-fence alert: The parameter value is **0** or **1**. ● **0**: An alert will not be generated when the tracker exits the geo-fence. ● **1**: An alert will be generated when the tracker exits the geo-fence. If the command only cotains the parameter **Geo-fence number**, related geo-fences will be deleted.
Example	
GPRS Sending	@@I94,353358017784062,B11,1,22.526922,114.052695,22.526946,114.056232,22.523720,114.053521,1,1*D5\r\n
GPRS Reply	$$I28,353358017784062,B11,OK*F5\r\n

3.19 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

3.20 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).*

3.21 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).*

3.22 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.*

3.23 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

3.24 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

3.25 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

3.26 Disabling the Power-off Function of the Power Button – C77

GPRS Sending	C77,X
GPRS Reply	C77,OK
Description	X = 1: You can turn off the device by power button. X = 0: You cannot turn off the device by power button.
Example	
GPRS Sending	@@f27, 353358017784062, C77, 0*E1\r\n
GPRS Reply	$$f28, 353358017784062, C77, OK*14\r\n

3.27 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.

3.28 Authorizing an iButton Key/RFID Card – D10

GPRS Sending	D10,iButton(1),iButton(2),…,iButton(n)
GPRS Reply	D10,OK
Description	iButton (n): indicates the authorized iButton ID number. The value ranges from 1 to 4294967295. Decimal.

	A maximum of 50 iButton keys can be authorized at a time.
Example	
GPRS Sending	@@f43,353358017784062,D10,13737431,13737461*17\r\n
GPRS Reply	$$f28,353358017784062,D10,OK*13\r\n

3.29 Authorizing iButton Keys/RFID Cards in Batches – D11

GPRS Sending	D11,*iButton start number*,n
GPRS Reply	D11,OK
Description	iButton start number: The value ranges from 1 to 4294967295. Decimal. n: indicates the number of batch-authorized iButton keys. Decimal. The maximum value is **128**.
Example	
GPRS Sending	@@e36,353358017784062,D11,13737431,1*AA\r\n
GPRS Reply	$$e28,353358017784062,D11,OK*13\r\n

3.30 Checking iButton/RFID Authorization – D12

GPRS Sending	D12,iButton
GPRS Reply	D12,n
Description	iButton: ranges from 1 to 4294967295. Decimal. n: When **n** is **0**, the iButton key is not authorized.
Example	
GPRS Sending	@@C34,353358017784062,D12,13737431*2A\r\n
GPRS Reply	$$C27,353358017784062,D12,0*87\r\n

3.31 Reading an Authorized iButton Key – D13

GPRS Sending	D13,*iButton packet start number*
GPRS Reply	D13,*Number of iButton packets*,*Current iButton packet number*,iButton (1)iButton (2)…iButton(n)
Description	iButton packet start number: indicates the start sequence number of the iButton packet. The minimum value is **0**. For example, when the value is **0**, you can obtain the package list from the first iButton packet. When the value is **4**, you obtain the package list from the fifth iButton packet. Number of iButton packets: indicates the number of authorized iButton packets. One iButton packet contains a maximum of 100 iButton IDnumbers. The minimum value is **0**. iButton (n): has eight hexadecimal characters.
Example	
GPRS Sending	@@w27,353358017784062,D13,0*F4\r\n
GPRS Reply	The example cannot be displayed because of hexadecimal characters.

3.32 Deleting an Authorized iButton Key – D14

GPRS Sending	D14,iButton(1),iButton(2),…,iButton(n)
GPRS Reply	D14,OK
Description	iButton (n): indicates the iButton ID to be deleted. The value ranges from 1 to 4294967295. Decimal. A maximum of 50 iButton keys can be deleted at a time. One SMS (including protocols) cannot exceed 140 bytes.
Example	
GPRS Sending	@@Q34,353358017784062,D14,13723455*3B\r\n
GPRS Reply	$$Q28,353358017784062,D14,OK*02\r\n

3.33 Deleting Authorized iButton Keys in Batches – D15

GPRS Sending	D15,*iButton start number*,n
GPRS Reply	D15,OK
Description	iButton start number: ranges from 1 to 4294967295. Decimal. n: indicates the number of iButton keys to be deleted in batches. Decimal. The maximum value is **128**. When the start number is a value ranging from 1 to 4294967295 and **n** is greater than or equal to 65536, all authorized numbers will be deleted.
Example	
GPRS Sending	@@K36,353358017784062,D15,13723455,3*97\r\n
GPRS Reply	$$K28,353358017784062,D15,OK*FD\r\n

3.34 Checking the Checksum of the Authorized iButton ID Database – D16

GPRS Sending	D16
GPRS Reply	D15,XOR
Description	This command is used to check whether the existing authorized iButton ID database is consistent with that recorded in the server. When the tracker receives the D16 command, the XOR result of all authorized iButton ID numbers is regarded as the database checksum for responding. After the server receives the checksum, compare with the XOR result of all authorized iButton ID numbers recorded in the server. If the result is the same, the existing authorized iButton ID database is consistent with that recorded in the server. Otherwise, data errors occur in the authorized iButton ID database.
Example	
GPRS Sending	@@u25,353358017784062,D16*97\r\n
GPRS Reply	$$u28,353358017784062,D16,18*F7\r\n

3.35 Container lock control (open/close command) – D82

GPRS Sending	D82,X
GPRS Reply	D82, lock state
Description	X=0: locked X=1: unlocked Send command without parameter means reading the lock state. 0: locked, 1: unlock, 2: shear line, 3: lock exception, 4: parameter error
Example	
GPRS Sending	@@u27,353358017784062,D82,0*F8\r\n
GPRS Reply	$$u28,353358017784062,D82,0*2B\r\n

3.36 Container lock locking mechanism (select locking method) – D83

GPRS Sending	D83,*X*
GPRS Reply	D83,OK
Description	X=0: auto locked (Default) X=1: swip RFID locked Send command withot parameter means reading the lock method.
Example	
GPRS Sending	@@u27,353358017784062,D83,0*F9\r\n
GPRS Reply	$$u28,353358017784062,D83,OK*2C\r\n

3.37 Setting the sensitivity level of vibration sensor – DAF

GPRS Sending	DAF,*X*
GPRS Reply	DAF,OK
Description	X: ranges from 1(default) to 10. Decimal. The higher the level is, the easier it is for the device to be woken up. Send command without parameter means reading the sensitivity level
Example	
GPRS Sending	@@u27,353358017784062,DAF,2*F9\r\n
GPRS Reply	$$u28,353358017784062,DAF,OK*2C\r\n

3.38 Setting the automatic authorization time of swiping the RFID card– DB0

GPRS Sending	D83,*X*
GPRS Reply	D83,OK
Description	X: ranges from 1 to 10000. Decimal , Unit: seconds Within the automatic authorization period of swiping the card, swiping any RFID card will be automatically authorized, after the end of the automatic authorization period, the working state will be back to normal.

	Send command withot parameter means reading the remaining time .
Example	
GPRS Sending	@@u27, 353358017784062, DBO, 100*F9\r\n
GPRS Reply	$$u28, 353358017784062, DBO, OK*2C\r\n

3.39 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

3.40 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

3.41 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

3.42 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

3.43 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

3.44 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

3.45 Changing Super Password – F22

GPRS Sending	AAAAAA,F22,BBBBBB
GPRS Reply	F22,OK
Description	Need to enter super password before setting IP and port in MM. Super passwords support all SMS commands. And A21/D10/D11/D14/D15/D82/DB0/F22 commands only support super password, not SMS password. The default super password is 666888. The length is 6 digits. AAAAAA is the original super password, BBBBBB is the new password Note:Please make sure to remember the super password, and the super password cannot be quested and reset to the original value, once you forget the password, it will not be able to recover.
Example	

GPRS Sending	@@\39, 353358017784062, 666888, F22, 123456*7C\r\n
GPRS Reply	$$\28, 353358017784062, F22, OK*0D\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	
0X02	Latitude	Unit: 1 degree per million.	SINT32	4	
0X03	Longitude	Unit: 1 degree per million.	SINT32	4	
0X04	Date and time	Value: second. Start point: 1 January, 2000, 00:00:00 am.	DWORD	4	
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	
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	
0X0C	Mileage	Unit: meter Indicates the total mileage.	DWORD	4	
0X0D	Run time	Unit: second Indicates the total time.	DWORD	4	
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	Only upload when have data

0X19	AD4	Battery analog <AD4>	WORD	2	
0X1A	AD5	External power analog <AD5>	WORD	2	
0X1B	Geo-fence number	Only available by GPRS event code 20 or 21.	BYTE	1	
0X1C	System flag	Unit: millionth of a degree	DWORD	4	
0X25	RFID	D7 9D D1 00 Description：IC ID card number, little-endian Only available by GPRS event code 37.	DWORD	4	
0X38	Lock info	<ID_Len><AlarmStatus><ID> ID_Len: the ID length, 1 byte AlarmStatus: alarm information, 1 byte =01: leave container trailer (T399G) alert =02: unlock alarm =03: locked alarm =04: shear line alarm =05: tear open shell alarm =06：unlock fail alarm =07：lock fail alarm ID：the lock ID of the current alarm, 16 bytes; Only available by GPRS event code 112. Data type: STRUCT	STRUCT		
0X47	Lock state	The status of the lock =00: unknown state =01: unlock state =02: locked state =03: shear line state	BYTE	1	
0XFE	Extended parameter ID	B. When the first byte of ID is 0XFE, it means that the ID is an extension ID, and the actual ID is represented by the first and second bytes.When both the first and second bytes of the ID are 0XFE, this ID is actually represented by the first, second, and third bytes.For example: received 0Xfe 0x01 represents ID:255;0XFE 0X02 stands for ID:256 and so on: seconds, which is the time cumulative value			

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 If no data is generated, leave the parameter blank.	Little-endian
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.