GPRS Protocol

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>,<Event code>,<(-)Latitude>,<(-)Longitude>,<Date and time>,<Positioning status>,<Number of satellites>,<GSM signal strength>,<Speed>,<Direction>,<Horizontal positioning accuracy>,<Altitude>,<Mileage>,<Run time>,<Base station info>,<I/O port status>,<Analog input value>,<RFID>/<Picture name>/<Geo-fence number>/<Temperature sensor No./<Assisted event info>,<Customized data>,<Protocol version>,<Fuel percentage>,<Temperature sensor 1 value|Temperature sensor 2 value|……Temperature sensor n value><*Checksum>\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.)
- Do not use special characters such as < and > in a command.
- All multi-byte data complies with the following sequence: High bytes are prior to low bytes.
- The size of a GPRS data packet is about 160 bytes.

Descriptions about GPRS packets from the tracker are as follows:

Parameter	Description	Example
@@	Indicates the GPRS data packet header from the server to the tracker. The header type is ASCII. (Hexadecimal is represented as 0x40.)	@@
$$	Indicates the GPRS data packet header from the tracker to the server. The header type is ASCII. (Hexadecimal is represented as 0x24.)	$$
Data identifier	Has one 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	25
IMEI	Indicates the tracker IMEI number. The number type is ASCII. It has 15 digits generally.	353358017784062
Command type	Hexadecimal For details, see chapter 2 and chapter 3.	AAA
Event code	Decimal For details, see section 1.3 "Event Code."	1
Latitude (-)yy.dddddd	Unit: degree Decimal	22.756325 -23.256438

	When a minus (-) exists, the tracker is in the southern hemisphere. When no minus (-) exists, the tracker is in the northern hemisphere. **yy** indicates the degree. **dddddd** indicates the decimal part.	
Longitude (-)xxx.dddddd	Unit: degree Decimal When a minus (-) exists, the tracker is in the western hemisphere. When no minus (-) exists, the tracker is in the eastern hemisphere. **xxx** indicates the degree. **dddddd** indicates the decimal part.	114.752146 -114.821453
Date and time yymmddHHMMSS	**yy** indicates year. **mm** indicates month. **dd** indicates date. **HH** indicates hour. **MM** indicates minute. **SS** indicates second. Decimal	091221102631
Positioning status	Indicates the GPS signal status. **A** = Valid **V** = Invalid	A
Number of satellites	Indicates the number of received GPS satellites. Decimal	5
GSM signal strength	Value: 0–31 Decimal	12
Speed	Unit: km/h Decimal	58
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. Decimal	45 90
Horizontal positioning accuracy	The value ranges from 0.5 to 99.9. The smaller the value is, the more the accuracy is. Decimal When the accuracy value is **0**, the signal is invalid. 1 Perfect 2–3 Wonderful 4–6 Good 7–8 Medium 9–20 Below average 21–50 Poor	5
Altitude	Unit: meter Decimal	118
Mileage	Unit: meter Decimal	564870

		The value is the accumulative mileage value. The maximum value is 4294967295m. If the value exceeds the maximum value, the value is automatically cleared.	
Run time		Unit: second Decimal The value is the accumulative duration value. The maximum value is 4294967295 seconds. If the value exceeds the maximum value, the value is automatically cleared.	2546321
Base station info		The base station information includes: MCC|MNC|LAC|CI The MCC and MNC are decimal, while the LAC and CI are hexadecimal. Note: Base station information in an SMS is empty.	460|0|E166|A08B
I/O port status		Hexadecimal 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.	0421 (hexadecimal) = 0000 0100 0010 0001
Analog input value		Separated by |. Hexadecimal AD1|AD2|AD3|Battery analog|External power analog Note: Analog input values in an SMS report are empty. **Voltage formula of analog AD (AD1, AD2, and AD3):** MVT340/MVT380: (AD x 6)/1024 T1/T3/MVT600/MVT800/MVT100: (AD x 3.3 x 2)/4096 T322X/T333/T355: AD/100 **Voltage formula of battery analog (AD4):** MVT340/MVT380: (AD4 x 3 x 2)/1024 MT90/T1/T3/MVT100/MVT600/MVT800/TC68S: (AD4 x 3.3 x 2)/4096 T311/T322X/T333/T355: AD4/100 **Voltage formula of external power supply (AD5):** MVT340/MVT380: (AD5 x 3 x 16)/1024 T1/T3/MVT100/MVT600/MVT800/TC68S: (AD5 x 3.3 x 16)/4096 T311/T322X/T333/T355: AD5/100	123|456|235|1456|222 (Hexadecimal)
Assisted event info	Geo-fence number	32-bit unsigned Only available by GPRS event code 20 or 21.	02 00 00 00 (indicates geo-fence 2)
	Time spent of this trip	32-bit unsigned Unit: second Indicates the driving duration between engine start and engine stop. Value: 0–4294967295 Only available by GPRS event code 145.	E0 04 00 00 (indicates 1248 seconds)

	Vehicle stealing trigger source	32-bit unsigned Trigger code of a vhecle stealing event Flag generated by event 58	01 00 00 00
	Average driving speed	32-bit unsigned Unit: km/h Average driving speed = Mileage of a trip/Time Only available by GPRS event code 145.	7B 00 00 00 (indicates 123 km/h)
	Max speed per hour	32-bit unsigned Unit: km/h Only available by GPRS event code 145.	C9 00 00 00 (indicates the 201 km/h)
	Mileage of a trip	32-bit unsigned Unit: meter When data contains FF, the mileage of a trip does not exist. Only available by GPRS event code 145.	66 1F B8 F2 (indicates 4072152934m)
RFID		Indicates the IC card identity code. Hexadecimal Only available by GPRS event code 37.	42770680 (hexadecimal)
Picture name		Only available by GPRS event code 39.	0918101221_C2E03
Temperature sensor No.		The temperature sensor No. is set by command C40. Format: two hexadecimal characters Note: The number is only available by event code 50 or 51.	08 (indicates temperature sensor 8)
Customized data		Reserved A separator still exists.	
Protocol version		Decimal 1–50: Used for all general Meitrack protocols. 50–99: Used for OBD. When the protocol is compatible with the old tracker, the value is empty or is 0 by default.	1
Fuel percentage		Format: four hexadecimal characters. A high byte indicates the integer bit of the percentage. A low byte indicates the decimal of the percentage. When the fuel sensor type is **0**, the sensor is not connected and the value is empty.	241E (indicates the fuel percentage is 36.30%.)
Temperature sensor No. and value		Format: six hexadecimal characters. The highest byte is the sensor No. The middle byte is the integer of temperature (-127 to +127). The lowest byte is the decimal part of temperature.	011A09|021A15|061E20 (indicates three temperature sensors. Their numbers are 1, 2, and 6, and temperature is 26.09°C, 26.21°C, and 30.32°C respectively.)
*		Separates commands from checksums. One byte and ASCII (Hexadecimal is represented as 0x2A)	*
Checksum		Two bytes. The parameter indicates the sum of all data packets	BE

	(excluding the checksum and ending mark). It is a hexadecimal character. Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Command*><**Checksum*>\r\n	
\r\n	Two bytes. The parameter is an ending character. The type is ASCII. (Hexadecimal is represented as 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**	Ignition On: MVT100&MVT340&T322X Door Open: MVT380&MVT600&T1&MVT800&T333&T3 In2 Active: Other models
3	**Input 3 Active**	Ignition On: MVT600&T1&T333 &T3 Door Open: MVT800&T322X In3 Active: other models
4	**Input 4 Active**	Ignition On: MVT380&MVT800 In4 Active: other models
5	**Input 5 Active**	In5 Active
9	**Input 1 Inactive**	In1 Inactive
10	**Input 2 Inactive**	Ignition Off: MVT100&MVT340&T322X Door Close: MVT380&MVT600&T1&MVT800&T333&T3 In2 Inactive: other models
11	**Input 3 Inactive**	Ignition Off: MVT600&T1&T333&T3 Door Close: MVT800&T322X In3 Inactive: other models
12	**Input 4 Inactive**	Ignition Off: MVT380&MVT800 In4 Inactive: other models
13	**Input 5 Inactive**	In5 Inactive: other models
17	**Low Battery**	Low Battery
18	**Low External Battery**	Low Ext-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)
22	**External Battery On**	Ext-Battery On Tracker connected: TC68S
23	**External Battery Cut**	Ext-Battery Cut Tracker removed: TC68S
24	**Lose GPS Signal**	Lose GPS Signal
25	**GPS Signal Recovery**	GPS Recovery
26	**Enter Sleep**	Enter Sleep

27	**Exit Sleep**	Exit Sleep
28	**GPS Antenna Cut**	GPS Antenna Cut
29	**Device Reboot**	Power On
31	**Heartbeat**	/
32	**Heading Change**	Heading Change
33	**Distance Interval Tracking**	Distance
34	**Reply Current (Passive)**	Now
35	**Time Interval Tracking**	Interval
36	**Tow**	Tow
37	**RFID**	(only for GPRS)
39	**Picture**	(only for GPRS)
40	**Power Off**	Power Off
41	**Stop Moving**	Stop moving
42	**Start Moving**	Start Moving
44	**GSM Jammed**	GSM Jammed
50	**Temperature High**	Temp High
51	**Temperature Low**	Temp Low
52	**Fuel Fulled**	Fuel Full
53	**Fuel Empty**	Fuel Empty
54	**Fuel Stolen**	Fuel Steal
56	**Armed**	Armed
57	**Disarmed**	Disarmed
58	**Stealing**	Stealing
63	**GSM No Jamming**	GSM No Jamming
65	**Press Input 1 (SOS) to Call**	/
66	**Press Input 2 to Call**	/
67	**Press Input 3 to Call**	/
68	**Press Input 4 to Call**	/
69	**Press Input 5 to Call**	/
70	**Reject Incoming Call**	/
71	**Get Location by Call**	/
72	**Auto Answer Incoming Call**	/
73	**Listen-in (Voice Monitoring)**	/
79	**Fall**	Fall
80	**Install**	Install
81	**Drop Off**	Drop Off
139	**Maintenance Notice**	Maintenance