MEITRACK T622G-F9 GPRS Protocol

Applicable Model: T622G-F9

Change History

File Name	MEITRACK T622G-F9 GPRS Protocol		
Project	T622G-F9	Creation Date Update Date	
Subproject	GPRS Protocol	Total Pages	43
Version	V1.0	Confidential	Internal Documentation

1 Command Format

1.1 GPRS Command Format

The GPRS command format is as follows:

GPRS command sent from the server to the tracker	@@<Data identifier><Data length>,<IMEI>,<Parameter table No.><Command type>,<Command content><*Checksum>\r\n
GPRS command sent from the tracker to the server	$$<Data identifier><Data length>,<IMEI>,<Event code>,<Command content/Error code><*Checksum>\r\n
Command description	

- **@@**: Indicates the packet header sent from the server to the tracker; contains 2 characters.
- **Data identifier**: Contains 1 byte; hexadecimal; its value ranges from 0x41 to 0x7A. The data identifier in the reply command must be the same as that of the sending command. Otherwise, the command fails.
- A comma (,) is used to separate data characters. The character type is the American Standard Code for Information Interchange (ASCII). (hexadecimal: 0x2C)
- **Data length**: Indicates the length of characters from the first comma (,) to \r\n. Decimal.
  Example: $$<Data   identifier><Data   length>,<IMEI>,<Command   type>,<Command content><*Checksum>\r\n
- **IMEI**: Indicates the tracker's IMEI number.
- **Parameter table No.**: **0** or null: All parameter tables need to be modified; **1**: The basic parameter table needs to be modified; **2**: Roaming parameter table 1 needs to be modified.
- **Command type**: Consists of letters and digits. For detail, see Chapter 3 "Command Details."
- Command content: no more than 1,024 bytes.
- *****: Separates commands from checksums. **Checksum**: hexadecimal; 2 bytes; indicates the sum of all data packets (excluding the checksum and ending mark).
  Example: $$<Data   identifier><Data   length>,<IMEI>,<Command   type>,<Command content><*Checksum>\r\n
- **\r\n**: Contains 2 bytes. The parameter is an ending character. The type is ASCII. (Hexadecimal: 0x0d 0x0a)
- **$$**: Indicates the packet header sent from the tracker to the server; 2 bytes; hexadecimal: 0x24 0x24.

Multiple commands are separated by a comma (,). If commands are null, keep commas (,).

1.2 Tracker Command Format

The data format is as follows:

$$<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

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.)	0x40 0x40
$$	Indicates the GPRS data packet header sent from the tracker to the server. The header type is ASCII.	0x24 0x24

		(Hexadecimal is represented as 0x24.)	
Data identifier		Contains 1 byte. The type is the ASCII, and its value ranges from 0x41 to 0x7A.	0x5A
Data length		Indicates the length of characters from the first comma 2C to OA. Decimal. Example:　　　　$$<Data identifier><Data length>,<IMEI>,<Command type>,<Hexadecimal data packet><*Checksum>\r\n	0x35 0x36 0x33
IMEI		Indicates the tracker's IMEI number. The number type is ASCII. It has 15 digits generally.	0x38 0x36 0x36 0x38 0x35 0x34 0x30 0x33 0x36 0x35 0x31 0x36 0x34 0x35 0x31 ASCII：866854036516451
Command type		Hexadecimal For details, see chapter 2 and chapter 3.	0x43 0x43 0x45 ASCII：CCE
The following data is hexadecimal:			
Number of remaining cache records		0x03 0x00 0x00 0x00 4 bytes; hexadecimal; little-endian	0x03 0x00 0x00 0x00 The quantiy of remaining cache data is 3.
Number of data packets		Indicates the number of data packets that a piece of data includes. 2 bytes; hexadecimal; little-endian	0x03 0x00 There is 3 data packet.
Location data 1 total length: AF 00;　　The total length of the current location data is 175 bytes.			
Length of a data packet		2 bytes; hexadecimal; little-endian	0xAF 0x00 The length of a data packet is 175 bytes.
ID number of a data packet		2 bytes; hexadecimal; little-endian	0x33 0x00 There are 51 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.	0x18 There are 24 parameter ID numbers. 0x00: no parameter ID
Parameter ID：0x01	Event code	For details, see section "1.3 Event Code" Type：Byte	0x23 Event code 35
Parameter ID：0x05	GPS positioning status	**0x01**: The GPS positioning is valid. **0x00**: The GPS positioning is invalid. Type：Byte	0x01 The GPS positioning is valid.
Parameter ID：0x06	Number of satellites	Indicates the number of received GPS satellites. Type：Byte	0x0B Number of GPS satellites:11
Parameter ID：0x07	GSM signal strength	Value: 0x00–0x31 Type：Byte	0x0B The signal strength is 11.
Parameter	output port status	Status values of eight output ports	0x00

ID：0x14		Bits 0–7 correspond to status of output ports 1–8. Hexadecimal digits need to be converted to binary digits. Type：Byte	Status: output inactive
Parameter ID：0x15	Input port status	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. Type：Byte	0x00 Status: Input inactive
Parameter ID：0x1B	Geo-fence number	Only available by GPRS event code 20 or 21. Type：Byte	0x00 Indicate no geo-fence number.
ParameterI ID：0x27	Temperature number	Temperature sensor No.(Event 50 & 51) Type：Byte	0x07 Indicates temperature sensor 7.
ParameterI ID：0x93	Clutch switch	01：pedal pressed 00：pedal released Type：Byte	0x00
ParameterI ID：0x94	Tachograph performance	01:Performance analysis 00:Normal performance Type：Byte	0x00
ParameterI ID：0x95	Parking Brake Switch	01:Parking brake set 00:Parking brake not set Type：Byte	0x00
ParameterI ID：0x96	Cruise control	01:switched on 00:switched off Type：Byte	0x00
ParameterI ID：0x97	Accelerator pedal position(%)	Single-byte hexadecimal data Type：Byte	0x14 Accelerator pedal:20%
ParameterI ID：0x9D	CANBus Fuel level(%)	Single-byte hexadecimal data Type：Byte	0x23
ParameterI ID：0x9E	Actual engine torque(%)	Single-byte hexadecimal data Type：SIN8	0x12
ParameterI ID：0xA1	Load at current speed(%)	Single-byte hexadecimal data Type：Byte	0x12
Number of 2-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 2 bytes.	0x10 There are 16 parameter ID numbers.

Parameter ID：0x08	Speed	Unit: km/h; little-endian Type：WORD	0x00 0x00 The speed is 0 km/h.
Parameter ID：0x09	Driving direction	The unit is degree. When the value is **0**, the direction is north. Value: 0–359; little-endian Type：WORD	0x12 0x01 The driving direction is 274 degrees.
Parameter ID：0x0A	Horizontal dilution of precision (HDOP)	Value: 5–999; unit: 1/10; little-endian Type：WORD	0x07 0x00 The HDOP is 7.
Parameter ID：0x0B	Altitude	Unit: meter; little-endian Type：SINT16	0x1C 0x00 The altitude is 28.
Parameter ID：0x16	AD1	Battery analog <AD1>; little-endian Voltage formula (AD1): AD1/100 Type：WORD	0xA7 0x01 Convert the digits to decimal digits. 423/100=4.23 The voltage is 4.23V.
ParameterI ID：0x17	AD2	Battery analog <AD2>; little-endian Voltage formula (AD2): AD1/100 Type：WORD	0x00 0x00
ParameterI ID：0x18	AD3	Battery analog <AD3>; little-endian Voltage formula (AD3): AD1/100 Type：WORD	0x00 0x00
Parameter ID：0x19	AD4	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% Type：WORD	0x9A 0x01 Convert the digits to decimal digits. 410/100=4.10 The voltage is 4.10V.
Parameter ID：0x1A	AD5	External power analog <AD5>; little-endian Voltage formula of external power supply (AD5): AD5/100 Type：WORD	0x04 0x05 Convert the digits to decimal digits. 1284/100=12.84 The voltage is 12.84 V.
ParameterI ID：0x29	Fuel level(%)	little-endian Type：WORD	0x7A 0x0D Convert the digits to decimal digits：3450 Fuel level :34.50%
ParameterI ID：0x41	AD6	External power analog <AD6>; little-endian Voltage formula of external power supply (AD6): AD6/100 Type：WORD	0x00 0x00
ParameterI ID：0X43	SD card status	1st byte: 01 = SD card 02 = Flash 2nd byte:	

		00 = normal 01 = can't detect 02 = initialization error 03 = r/w error Type: WORD	
ParameterI ID: 0x91	Vehicle speed (from tachograph)(KM/H)	Double-byte hexadecimal data little-endian Type: WORD	0x15 0x00 Convert the digits to decimal digits: 21 Vehicle speed :21 KM/H
ParameterI ID: 0x92	Vehicle speed (wheel based)(KM/H)	Double-byte hexadecimal data little-endian Type: WORD	0x15 0x00 Convert the digits to decimal digits: 21 Vehicle speed :21 KM/H
ParameterI ID: 0x99	Engine speed(rpm)	Double-byte hexadecimal data little-endian Type: WORD	0x12 0x04 Convert the digits to decimal digits: 1042 Engine speed:1042 rpm
ParameterI ID: 0x9C	Engine coolant temperature(deg C)	Double-byte hexadecimal data little-endian Type: SINTT16	0x32 0x00 Convert the digits to decimal digits: 50 Engine coolant temperature :50 ℃
ParameterI ID: 0x9F	Ambient Air Temperature(deg C)	Double-byte hexadecimal data little-endian Type: SINT16	0x28 0x00 Convert the digits to decimal digits: 40 Ambient Air Temperature :40 ℃
ParameterI ID: 0xFE25	A84 input status	Bit0~Bit11 refers to A84 box's IN1~IN12 0 = active 1 = inactive Type: WORD	
ParameterI ID: 0xFE26	A84 AD1	Type: WORD	
ParameterI ID: 0xFE27	A84 AD2	Type: WORD	
ParameterI ID: 0xFE28	A84 AD3	Type: WORD	
ParameterI ID: 0xFE29	A84 AD4	Type: WORD	
ParameterI ID: 0xFE2C	Continental tire pressure sensor alarm	1st byte: Tire ID 2nd byte: 01 = Leak	

		02 = Low battery	
		04 = Low pressure	
		08 = High pressure	
		Type：WORD	
Number of 4-byte parameter ID		Value: 0x00–0xFF A parameter ID corresponds to a value of 4 bytes.	0x07 There are 7 parameter ID numbers. 0x00: no parameter ID
Parameter ID：0x02	Latitude	Unit: millionth of a degree; little-endian Type：SINT32	0xC3 0x87 0x57 0x01 Convert the digits to decimal digits. The latitude is 22.513603degrees.
Parameter ID：0x03	Longitude	Unit: millionth of a degree; little-endian Type：SINT32	0xCD 0x5F 0xCC 0x06 Convert the digits to decimal digits. The longitude is 114.057165 degrees.
Parameter ID：0x04	Date and time	4 bytes; little-endian; unit: second Start point: 1 January, 2000, 00:00:00 am. Type：DWORD	0x7F 0xC7 0x61 0x22 The value is 576833407 seconds.
Parameter ID：0x0C	Mileage	Indicates the total mileage. Unit: meter; little-endian Type：DWORD	0x01 0x00 0x00 0x00 The total mileage is 1 meters.
Parameter ID：0x0D	Run time	Indicates the total time. Unit: second; little-endian Type：DWORD	0x72 0x0F 0x00 0x00 The run time is 3954 seconds.
Parameter ID：0x1C	System flag	Bit8: FMS state 0 = Not connected FMS 1 = connected FMS Bit9: Whether support FMS function 0 = not supported FMS 1 = supported FMS Type：DWORD	0x00 0x00 0x03 0x00 Binary: 0000 0000 0000 0000 0000 0011 0000 0000
ParameterI ID：0x42	Input Status	Bit0 ~ Bit31 Corresponding to the state of input 1 to input 31 0 = inactivating 1 = activating Type：DWORD	0x00 0x00 0x00 0x04 binary :0000 0000 0000 0000 0000 0000 0000 0100 input 3 is active
ParameterI ID：0x98	Total fuel used(L)	little-endian Type：DWORD	0x01 0x02 0x00 0x00 Convert the digits to decimal digits:513 Total fuel used(L):513 L

ParameterI ID：0x9A	Total engine hours(h)	After converting to decimal, divide by 10 to get the true value. little-endian Type：DWORD	0x12 0x34 0x00 0x01 Convert the digits to decimal digits:16790546 Total engine hours(h):1679054.6 h
ParameterI ID：0x9B	High resolution vehicle distance(m)	little-endian Type：DWORD	0x11 0x22 0x00 0x00 Convert the digits to decimal digits:8712 High resolution vehicle distance(m):8712 m
ParameterI ID：0xA0	High Resolution Engine Total Fuel Used(L)	After converting to decimal, divide by 1000 to get the true value. little-endian Type：DWORD	0x12 0x00 0x01 0x00 Convert the digits to decimal digits:65554 High Resolution Engine Total Fuel Used(L):65.554 L
ParameterI ID：0xA2	Engine Fuel Rate(L/H)	After converting to decimal, divide by 100 to get the true value. little-endian Type：DWORD	0x12 0x00 0x02 0x00 Convert the digits to decimal digits:131090 Engine Fuel Rate(L/H):1310.90 L/H
ParameterI ID：0xA3	Axle weight(kg)	After converting to decimal, divide by 10 to get the true value. little-endian Type：DWORD	0x12 0x34 0x00 0x00 Convert the digits to decimal digits:13330 Axle weight(kg):1333.0 kg
ParameterI ID：0xA4	Service distance(km)	little-endian Type：SINT32	0x22 0x30 0x00 0x00 Convert the digits to decimal digits:12322 Service distance(km):12322 km
ParameterI ID：0xA5	Instantaneous Fuel Economy	After converting to decimal, divide by 1000 to get the true value. little-endian Type：DWORD	0x12 0x56 0x00 0x00 Convert the digits to decimal digits:22034 Instantaneous Fuel Economy :22.034 KM/H
Number of *n*-byte parameter ID		Value: 0x00–0xFF The following data is not in a fixed order, please view the type according to the parameter ID.	0x04 There are 4 parameter ID numbers. 0x00: no parameter ID
Parameter ID：0x0E	base station information	Data length：0x0C Type：STRUCT	0xCC 0x01 0x01 0x00 0x2F 0x25 0xF9 0x3B 0x00 0x00 0x00 0x00 MCC:0x01CC:460， MNC:0x0001:1，

			LAC:0x252F CELL_ID:0x00003BF9，RX_LEVEL:0
ParameterI ID：0X44	Photo name	32 Type：STRUCT	
*		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. Example: _$$<Data identifier><Data length>,<IMEI>,<Command type>,<Hexadecimal data packet><*Checksum>\r\n_	0x30 0x36 ASCII:06
\r\n		2 bytes. The parameter is an ending character. The type is ASCII. (Hexadecimal value: 0x0d 0x0a)	0x0D 0x0A

1.3 Event Code

Event Code	Event	Default SMS Header (At Most 16 Bytes)
1	**SOS Pressed**	SOS
2	**Input 2 Active**	Door Open
3	**Input 3 Active**	Ignition On
4	**Input 4 Active**	In4 Active
5	**Input 5 Active**	In5 Active
6	**Input 6 Active**	In6 Active
7	**Input 7 Active**	In7 Active
8	**Input 8 Active**	In8 Active
9	**Input 1 Inactive**	In1 Inactive
10	**Input 2 Inactive**	Door Close
11	**Input 3 Inactive**	Ignition Off
12	**Input 4 Inactive**	In4 Inactive
13	**Input 5 Inactive**	In5 Inactive
14	**Input 6 Inactive**	In6 Inactive
15	**Input 7 Inactive**	In7 Inactive
16	**Input 8 Inactive**	In8 Inactive
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

23	External Battery Cut	Ext-Battery Cut
24	GPS Signal Lost	GPS Signal Lost
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	Cornering	Cornering
33	Track By Distance	Distance
34	Reply Current (Passive)	Now
35	Track By Time Interval	Interval
36	Tow	Tow
37	Swipe Card	
41	Stop Moving	Stop moving
42	Start Moving	Start Moving
50	Temperature High	Temp High
51	Temperature Low	Temp Low
52	Full Fuel	Full Fuel
53	Low Fuel	Low Fuel
54	Fuel Theft	Fuel Theft
70	Reject Incoming Call	/
72	Auto Answer Incoming Call	/
82	Refuelling	Refuelling
83	Ult-Sensor Drop	Ult-Sensor Drop
118	Input 9 Active	In9 Active
119	Input 9 Inactive	In9 Inactive
129	Harsh Braking	Harsh Braking
130	Harsh Acceleration	Fast Accelerate
133	Idle Overtime	Idle Overtime
134	Idle Recovery	Idle Recovery
135	Fatigue Driving	Fatigue Driving
136	Enough Rest after Fatigue Driving	Enough Rest
138	Speed Recovery	Speed Recovery