

MEITRACK T622G-F9 Iridium Protocol

Applicable Model: T622G-F9,T622E-F9

Change History

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1 T622G-F9 Iridium Protocol Format Instruction

Depending on the mode selected, the device sends Iridium data at different times:

1. In iridium mode, it will send iridium data immediately when device start;
2. In GSM priority mode, the device will start sending data with the Iridium module when the GSM signal is lost for about 5 minutes, typically when the GSM module is still not available after a reboot.

In gsm mode ,device will send Meitrack CCE protocol, you can find it in another GPRS protocol document.

This document mainly describes the data structure of the Iridium protocol.

Below is a example raw data for reference:

```
01 00 33 01 00 1C 2A 8C EF 83 33 30 30 34 33 34 30 36 37 35 34 38 36 35 30 00 00 17 00 00 64 61 D5 12 02 00 11 23
2F 03 A0 FF F1 C8 5D 06 12 B3 F0 2B 00 00 00 48
```

The green part is the iridium server additional data, include information such as device IMEI, it's fixed 37 bytes package, the protocol details is in section 2.

The red part is the T622G-F9 data package, include the GPS information, it's unfixed data, the protocol details is in section 3.

2 Iridium Server Data Procotol

This part of the protocol is only useful for the GPS device T622G-F9 in terms of IMEI, so the other parameters can be ignored.

Descriptions about iridium packet from the iridium server is as follows:

Parameter	Description (length unit: bytes)	Example
Protocol Revision Number	Type: char length:1	0x01 Value 1
Overall Message Length	Type: unsigned short length:2	0x00 0x33 Value 51
MO Header IEI	Type: char length:1	0x01 Value 0x01
MO Header Length	Type: unsigned short length:2	0x00 0x1C Value 28
CDR Reference (Auto ID)	Type: unsigned integer length:4	0x2A 0x8C 0xEF 0x83 Value 713,879,427
IMEI	Type: char length:15	33 30 30 34 33 34 30 36 37 35 34 38 36 35 30 Value: 300434067548650
Session Status	Type:unsigned char length:1	0x00 Value 0(transfer OK)
MOMSN	Type: unsigned short length:2	0x00 0x17 Value 23

MTMSN	Type: unsigned short length:2	0x00 0x00 Value 0
Time of Session	Type: unsigned integer length:4	0x43 0xB5 0x39 0xE1 Value 1135950305 (12/30/05 13:45:05)
MO Payload IEI	Type: char length:1	0x02 Value 0x02
MO Payload Length	Type: unsigned short length:2 Which means the length of T622G-F9 data	0x00 0x11 Value 17

3 T622G-F9 Data Protocol

The GPS data parameters uploaded by the device are self-selecting as below picture.

Iridium Upload Information Select

CCA Upload Option
 GPRS Iridium Upload Head ACAC Upload Version 1

ID List

ID	Dynamic	Length	Describe
<input checked="" type="checkbox"/> 01	N	1	Event code
<input checked="" type="checkbox"/> 02	N	4	Latitude
<input checked="" type="checkbox"/> 03	N	4	Longitude
<input checked="" type="checkbox"/> 04	N	4	Date and time
<input checked="" type="checkbox"/> 05	N	1	GPS positioning status
<input type="checkbox"/> 06	N	1	Number of satellites
<input type="checkbox"/> 07	N	1	GSM signal strength
<input type="checkbox"/> 08	N	2	Speed
<input type="checkbox"/> 09	N	2	Driving direction

Select ID List

ID	Dynamic	Length	Describe
01	N	1	Event code
02	N	4	Latitude
03	N	4	Longitude
04	N	4	Date and time
05	N	1	GPS positioning status

Predict Size: 15

ex: event 35 23 57795701 7E5CCC06 D39C102B 01 C6

ex: event 37

Set

So the data structure is unfixed, first of all you need now the select ID list of the device.

All the description of the parameters as below:

Iridium satellite ID	Description	Data Examples	analysis
0X01 Event code	For details, see section "Event Code" Type: Byte	23	35 Event
0X02 Latitude	Unit: millionth of a degree; little-endian Type: SINT32	57 79 57 01	22.509911
0X03 Longitude	Unit: millionth of a degree; little-endian Type: SINT32	7E 5C CC 06	114.056318

0X04 Date and time	4 bytes; little-endian; unit: second Start point: 1 January, 2000, 00:00:00 am. Type: DWORD	D3 9C 10 2B	2022.11.23 08:56:51
0X05 GPS positioning status	0x01: The GPS positioning is valid. 0x00: The GPS positioning is invalid. Type: Byte	1	1
0X06 Number of satellites	Indicates the number of received GPS satellites. Type: Byte	4	4
0X07 GSM signal strength	Value: 0x00–0x31 Type: Byte	1A	26
0X08 speed	Unit: km/h; little-endian Type: WORD	00 00	0
0X09 Driving dirction	The unit is degree. When the value is 0, the direction is north. Value: 0–359; little-endian Type: WORD	5A 00	90°
0X0A HDOP	Value: 5–999; unit: 1/10; little-endian Type: WORD	05 00	0.5
0X0B Altitude	Unit: meter; little-endian Type: SINT16	00 00	0
0X0C Mileage	Indicates the total mileage. Unit: meter;	AA 00 00 00	170m

	little-endian Type: DWORD		
0X0D Run time	Indicates the total time. Unit: second; little-endian Type: DWORD	10 0E 00 00	3600
0X14 Output port status	Bit0 ~ Bit31 Corresponding to the state of output 1 to output 31 0 = inactivating 1 = activating Type: DWORD	01	OUT1 activation
0X15 input port status	Bit0 ~ Bit31 Corresponding to the state of input 1 to input 31 0 = inactivating 1 = activating Type: DWORD	01	IN1 activation
0X19 Battery voltage	Battery analog <AD4>; little-endian Voltage formula of battery analog (AD4): $AD4/100$ Formula of battery percentage: $(AD4/100 - 3.4)/0.8 \times 100\%$ Type: WORD	9A 01	4.1V
0X1A External power supply voltage	External power analog <AD5>; little-endian Voltage formula of external power supply	78 00	12V

	(AD5): AD5/100 Type: WORD		
0X1B Geo-fence number	Only available by GPRS event code 20 or 21. Type: Byte	1	1
0x25 RFID Number	This data is uploaded only when the 37 event is generated Data type: DWORD	0A 1A 00 00	6666
0x29 Percentage of oil content	little-endian Type: WORD	2E 0E	Indicates that the remaining oil is 36.30%
0xD8 Iridium signal strength	Value: 0x00–0x05 Type: Byte	05	5

for example:

23 D3 9C 10 2B 00 57 79 57 01 7E 5C CC 06 C7 //35 Event Examples

25 D3 9C 10 2B 00 57 79 57 01 7E 5C CC 06 01 00 00 01 25 0A 1A 00 00 00 C7 //37 Event Examples

4 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
9	Input 1 Inactive	In1 Inactive
10	Input 2 Inactive	Door Close
11	Input 3 Inactive	Ignition Off
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
39	Photo	(only for GPRS)
40	Power Off	Power Off
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
65	Press Input 1 (SOS) to Call	/
66	Press Input 2 to Call	/
67	Press Input 3 to Call	/
70	Reject Incoming Call	/
93	Mobileye Alert	/
129	Harsh Braking	Harsh Braking
130	Harsh Acceleration	Fast Accelerate

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