GPS Tracker
GB429 - Protocol Document

Supported Protocol - **TCP / IP**

Types of Packets	Packet ID	Description
Mapping Packet	1	Packet for mapping IMEI and ICCID on server for smooth SIM management and reducing SIM mapping human errors. This packet is sent once on device power up.
Tracking Packet	2	Packet for live location & alerts tracking, sent as per configured interval

Mapping Packet					
$,1,862631032208018,89811000221529677 05F,*76\r\n					
S No	**Field**	**Description**	**Format**	**Size**	**Example**
1	Start Character	Indicates start of packet	$	1 Byte	$
2	Packet ID	Unique ID of this packet	1	1 Byte	1
3	IMEI	Unique id of device	15 Digit Number	15 Bytes	862631032208018
4	ICCID	ICCID of SIM inserted in device	18 to 22 Digit Code	18 - 22 Bytes	8981100022152967705F
5	End Character	Indicates end of packet	*	1 Byte	*
6	Checksum	XOR checksum of packet from $ to *	CC	2 Bytes	76
7	New Line Char	"\r\n"	\r\n	2 Bytes	\r\n

Tracking Packet					
$,2,1.0.3,5,00000010,11000000,L,860269069164762,PB-10-JN-5669,1,05072025,135141,30.889275,N,75.858414,E,21.1,357.54,17,250.587,1.54,0.81,1.3,45,INDairtel,9,31,1,404,02,1E97,DC5812,0,7.70,4.20,0,0,O,1,1,0,0,0.000,0.045,0,0,0,0,0,0,0,3,1,55,00000000,00000000,*0C\r\n					
S No	**Field**	**Description**	**Format**	**Max. Bytes**	**Example**
1	Start Character	Indicates start of packet	$	1	$
2	Packet ID	Unique ID of this packet	2	1	2
3	Firmware Version	Firmware version in device	x.x.x	5	1.0.0
4	Firmware ID	Unique ID for firmware in device	Number from 0 to 999	5	1 13 101
5	Alert Byte 1	8 Digit binary for 8 types of alert notification, it supports multiple alerts in same packet. Refer Alert byte table for more details	8 Digit	8	00000000 10000010
6	Alert Byte 2	8 Digit binary for 8 types of alert notification, it supports multiple alerts in same packet. Refer Alert byte table for more details	8 Digit	8	00000010 00000000
7	Packet Status	L=Live or H=History	Single Alphabet	1	L

8	IMEI	Unique id of device	15 Digit Number	15	862631032208018
9	Vehicle Registration Number	Mapped vehicle registration number	Alpha-numeric	15	DL01PC9821
10	GNSS Status	0 = Unfix 1 = Fix	Single Digit (0 or 1)	1	1
11	Date	Date value received from GNSS in GMT 0	DDMMYYYY	8	24032018 For 24-mar-2018
12	Time	Time value received from GNSS in GMT 0	hhmmss	6	060122 For 06:01:22 am 180122 For 06:01:22 pm
13	Latitude	Latitude value in decimal degree (6 places after decimal)	Floating point number upto 6 decimal place	9	28.125478 1.254687
14	Latitude Direction	Latitude direction, value will be either N or S, N = North, S = South	Single Alphabet	1	N
15	Longitude	Longitude value in decimal degree (6 places after decimal)	Floating point number upto 6 decimal place	10	1.254698 24.565365 105.365478
16	Longitude Direction	Longitude direction, value will be either E or W, E = East, W = West	Single Alphabet	1	E
17	Speed	Speed of Vehicle as Calculated by GPS module in VLT. (in km/hr) (Upto One Decimal places)	Floating point number upto 1 decimal place	5	0.0 5.2 15.5

					100.3
18	Heading	Course over ground in degrees (Upto two Decimal places)	Floating point number upto 2 decimal place	6	10.20 185.32
19	No of Satellites	No of satellites used for GNSS fix	decimal number	2	5 18
20	Altitude	Height above mean sea level in meters, max: 100000m (Upto 1 Decimal place)	Floating point number upto 1 decimal place	8	754.2
21	PDOP	Positional dilution of precision, max: 99.0 (upto 1 decimal place)	Floating point number upto 1 decimal place	4	1.0 10.3
22	HDOP	Horizontal Dilution of Precision, max: 99.0 (upto 1 decimal place)	Floating point number upto 1 decimal place	4	0.4 13.4
23	Odometer	Total distance traveled till date in Km	Floating point number upto 1 decimal place	9	0.1 15265.3
24	TTFF	Time To First Fix after Restart for GNSS	Numeric	9	21
25	Network Operator Name	Name of current network operator in device	Alphanumeric	30	Airtel Vi India
26	Network Type	Type of active network in device 0 - NONE 1 - GSM 2 - GPRS 3 - EDGE 4 - WCDMA 5 - HSDPA 6 - HSUPA	1 Digit Numeric	1	2 9

		7 - HSPA+ 8 - TDD LTE 9 - FDD LTE			
27	Network Signal Strength	0 - 31 Signal Strength 99 - Unknown	2 Digits Numeric	2	9 31 99
28	Network Registration Status	0 - Not Reqistered, Not Searching 1 - Registered, Home 2 - Not Registered, Searching 3 - Registration Denied 4 - Unknown 5 - Registered, Roaming	1 Digit Numeric	1	1 5
29	MCC	Mobile Country Code (serving) 0-999	Numeric	3	404
30	MNC	Mobile Network Code (serving) 0-999	Numeric	3	10
31	LAC/TAC	for GSM, Location Area Code (serving) 0 to FFFF For LTE, Tracking Area Code (serving) 0 to FFFF	Alphanumeric	4	FF45 0
32	Cell ID	GSM Cell ID (serving) 0-0FFFFFFF	Alphanumeric	8	5D6F
33	Main Battery Status	0 - Disconnected 1 - Connected	1 Digit Numeric	1	1

34	Main Battery Voltage	Main Battery Voltage Reading	Floating point number upto 2 decimal place	6	12.15 100.05
35	Internal Battery Voltage	Internal Battery Voltage Reading	Floating point number upto 2 decimal place	5	3.68 4.15
36	Internal Battery Status	0 - Battery Full 1 - Charging On 2 - Battery Low	1 Digit Numeric	1	1
37	Device Power Source	0 - Main Battery 1 - Internal Battery	1 Digit Numeric	1	0
38	Device Cover Status	O - Open C - Closed	1 character	1	C
39	Ignition Status	0 - Ignition Off 1 - Ignition On	1 Digit Numeric	1	1
40	Movement Status	0 - Stationary 1 - Moving	1 Digit Numeric	1	1
41	Digital Input 1	0 - Low 1 - High	1 Digit Numeric	1	1
42	Digital Input 2	0 - Low 1 - High	1 Digit Numeric	1	0
43	Analog Input 1	Voltage Reading on Analog Input 1 (0.000 to 50.000V)	Floating point number upto 3 decimal place	6	12.365
44	Analog Input 2	Voltage Reading on Analog Input 2 (0.000 to 50.000V)	Floating point number upto 3 decimal place	6	0.561
45	Digital Out	0 - Off 1 - On	1 Digit Numeric	1	1
46	RFID Tag ID	Tag ID in Ascii Hex from 0 to FFFFFFFFFFFF	Ascii Hex	16	0 234567895F4D FFFFFFFFFFFFFF

47	Bluetooth Status	0 - Off 1 - BT On, Not Connected 2 - BT On, Connected 3 - BLE On, Not Connected 4 - BLE On, Connected	1 Digit Numeric	1	4
48	Fuel Level	Fuel level in litres (0.0 - 999999.9)	Floating point number upto 1 decimal place	7	152
49	Fuel Sensor Angle	Fuel sensor tilt angle	numeric	3	10
50	Fuel Sensor Temperature	Temperature value from fuel sensor	numeric	3	30
51	Fuel Sensor Battery Voltage	Battery voltage level in fuel sensor	Floating point number upto 1 decimal place	3	3.8
52	Device Reset Cause	1 - Reset Button 2 - Option Byte Load Reset 3 - Power Reset 4 - Software Reset 5 - Watchdog Reset 6 - Watchdog Reset 7 - Low Power Reset	1 Digit Numeric	1	1 3 4
53	Configuration Update Count	Number of times configuration updated (0 to 9999)	Numeric	4	0 10 9999
54	Frame Number	Sequence Number of the packet (1 to 999999)	Numeric	6	1 989876
55	Health Byte 1	8 Digit value for 8 types of health parameters. Refer	8 Digit	8	00000000 10900210

		Health byte table for more details			
56	Health Byte 2	8 Digit value for 8 types of health parameters. Refer Health byte table for more details	8 Digit	8	00000510 90008000
57	End Character	Indicates end of packet	*	1	*
58	Checksum	XOR checksum of packet from $ to *	CC	2	23 3F 0E
59	New Line Char	"\r\n"	\r\n	2	\r\n

Alerts	Bit Number	Value	Alert Byte Number
Main Power Disconnection	1	0 - No Alert 1 - Alert	**Alert Byte 1**
Connected Back to Main Power	2		
Internal Battery Low	3		
Low Battery Removed	4		
Ignition Turned ON	5		
Ignition Turned OFF	6		
Device Cover Open	7		
Harsh Braking	8		
Rash Turn	1	0 - No Alert 1 - Alert	**Alert Byte 2**
Harsh Acceleration	2		
Crash Detection	3		
RFID Tag Detected	4		
Overspeed	5		
Reserved	6		

Reserved	7		
Reserved	8		

Health Parameter	Bit Number	Value	Health Byte Number
Flash Read Error	1	0 to 9 0 - No Error >0 - Error	**Health Byte 1**
Flash Write Error	2		
Accelerometer Error	3		
CAN Error	4		
GNSS Error	5		
GSM Error	6		
SIM Error	7		
Bluetooth Error	8		
Server Connection Error	1	0 to 9 0 - No Error >0 - Error	**Health Byte 2**
Server Ack Error	2		
Flash Space Error	3		
Configuration Update Error	4		
Reserved	5		
Reserved	6		
Reserved	7		
Reserved	8		