

Document	Global Top Custom-made Function Specification				
Author	Hector Su	Date	2012/10/15	Ver.	1.0



Global Top Custom-made Function Specification

tinkerforge V 1.0

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Version History

			History
Date	Rev.	Author	Description
2012/10/15	1.0	Hector Su	First Release

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1. Function Overview

1.1

It supports to output custom-made sentence for default setting. The format is shown in **Table 1**.

1.2

It supports **Last Position Retention** function. It means the GPS module still can output last coordinates (latitude and longitude) when lost GPS signal.

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Table 1 Custom-made Data Format

Name	Example	Units	Description
Preamble header	0x04 0x24	2 bytes	Preamble header
UTC Time	0x03	4 bytes	UTC Time (hhmmss.sss)
	0xDF	MSB to LSB	Example:064951.000*1000=64951000
	0x12		0x03DF13D8
	0xD8		
Date	0x00	4 bytes	Date (ddmmyy)
	0x01	MSB to LSB	Example:20101008 →81010 →
	0x3C		0x00013C72
	0x72		
Latitude	0x01	4 bytes	Latitude (in decimal degrees)
	0x60	MSB to LSB	Example:23.098572*(10^6)=23098572→0x01
	0x74		6074CC
	0xCC		
N/S Indicator	0x01	1 byte	0x01→North or 0x02 →South
Longitude	0x07	4 bytes	Longitude (in decimal degrees)
	0x2B	MSB to LSB	Example:120.284383*(10^6)=120284383 → 0x
	0x64		072B64DF
	0xDF		
E/W Indicator	0x01	1 byte	0x01→East or 0x02 →West
Fix Type	0x03	1 byte	0x01 →GPS No Fix
			0x02 →2D GPS Fix
			0x03 →3D GPS Fix

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Fix Mode	0x01	1 byte	0x00 →GPS No Fix
			0x01 →GPS Fix without DGPS mode
			0x02 → GPS Fix with DGPS mode
MSL Altitude	0x00	4 bytes	Antenna Altitude above/below
	0x00	MSB to LSB	mean-sea –level (meter)
	0x0F		Example:39.95 → 39.95*100=3995 →
	0x8B		0x00000F8B
Geoidal Separation	0x00	4 bytes	Geoidal Separation (meter)
	0x00	MSB to LSB	Example:8.35 → 8.35*100=835 →
	0x03	A	0x00000343
	0x43		
Course over ground	0x00	4 bytes	Course over ground (in degree)
	0x00	MSB to LSB	Example:58.16→58.16*100=5816→
	0x16		0x000016B8
	0xB8		
Speed over ground	0x00	4 bytes	Ground Speed (km/hr)
	0x00	MSB to LSB	Example:0.62 → 0.62*100=62 →
	0x00	>	0x0000003E
	0x3E		
Satellites in viewed	0x0A	1 byte	Number of satellite in viewed
Satellites in used	0x09	1 byte	Number of satellite in used
PDOP	0x00	2 bytes	Position Dilution of Precision
	0x86	MSB to LSB	Example:1.34 → 1.34*100=134→0x0086
HDOP	0x00	2 bytes	Horizontal Dilution of Precision
	0x55	MSB to LSB	Example:0.85 → 0.85*100=85→0x0055

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VDOP	0x00	2 bytes	Vertical Dilution of Precision
	0x69	MSB to LSB	Example:1.05 → 1.05*100=105→0x0069
EPE	0x01	2 bytes	Estimated position error (meter)
	0x0D	MSB to LSB	Example:2.69 → 2.69*100=269→ 0x010D
Asterisk	0x2A	1 byte	
Checksum	0x47	1 byte	(Note 2.1)
End Word	0x0D 0x0A	2 bytes	End of message termination (ASCII 13, ASCII 10)

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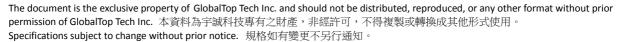


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2. Note

2.1

The checksum will be calculated by Xor all bytes between Preamble header and Asterisk.



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