

SpeedO Protocol

Abstract

This document defines the data input and output protocols for the SpeedO product.

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1. Output Messages

1.1 Message description

1.2 Output PBSPD message

<i>Field</i>	<i>Type</i>	<i>Description</i>
Message ID	String	\$PBSPD
System Timestamp	Integer	Unit: ms
Mode of speed	Integer	0: invalid; Others: valid
Speed	Double	Unit: km/h
Distance	Double	Unit: km
Reserved		
checksum	*Hex	

1.3 Output PBATT message

<i>Field</i>	<i>Type</i>	<i>Description</i>
Message ID	String	\$PBSPD
System Timestamp	Integer	Unit: ms
Mode of attitude	Integer	0: invalid Bit 0: valid pitch and roll Bit 1: valid yaw
Roll	Double	Unit: degree
Pitch	Double	Unit: degree
Yaw	Double	Unit: degree
Reserved		
checksum	*Hex	

2. Input for Command

Input configuration commands are in hexadecimal format, fixed length of 8 bytes, unsigned, little-endian encoding.

- Restore factory setting

50 42 **E0** 01 00 81 81 00

- Query software version and configuration

50 42 **E3** 01 00 00 00 00

returns: \$PBCFG,FA,X,Y,Z,S,T

Where:

X: Data rate

Y: Fixed-axis configuration

Z: Carrier platform

S: Configured device speed limit (km/h)

T: Message configuration (corresponding to the E7 bits)

- Set solution rate

1Hz: 50 42 **E4** 01 00 80 80 00

10Hz: 50 42 **E4** 01 00 81 81 00

20Hz: 50 42 **E4** 01 00 82 82 00 (default)

- Force reboot

50 42 **E6** 01 00 81 81 00

Note: Wait a few seconds for the system to reboot; usage is not recommended

- Enable all messages

50 42 **E7** 01 00 80 80 00 (default)

- Disable single message

<i>Msg Name</i>	<i>Default</i>	Command
\$PBSPD	开	50 42 E7 02 00 80 01 81 00
\$PBATT	开	50 42 E7 02 00 80 02 82 00
\$PSNSR,21	开	50 42 E7 02 00 80 04 84 00
\$PSNSR,23	开	50 42 E7 02 00 80 08 88 00
\$PBLKEND	开	50 42 E7 02 00 80 10 90 00

- Set vehicle type

Subway: 50 42 **E9** 01 00 80 80 00 (default)

Train: 50 42 **E9** 01 00 81 81 00

- Baud rate

115200: 50 42 **EA** 01 00 80 80 00 (default)

230400: 50 42 **EA** 01 00 84 84 00

- Set speed limit

`$SETLMT,X,Flag,END$`

X: Speed limit, in km/h. Flag: 1 to save the speed limit parameter, 0 not to save.

Example: `$SETLMT,250,1,END$`

Clear Speed Limit:

`$CLRLMT,0,Flag,END$`

Flag: 1 to save the clearing, 0 not to save.

Example: `$CLRLMT,0,1,END$`

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