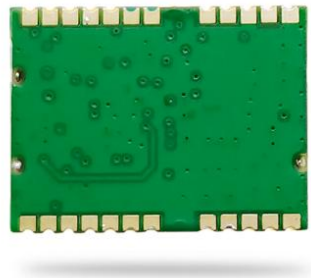
Accurate positioning

22°39'48.37"N 114°02'10.91"E

JS-TP 26-M

PRODUCT SPECIFICATION

Data Sheet



Contents

Change the revision history

Revise	Date	Revised content change	Comment on
V1.0	2022-05-12	First release	Wang Wei
V1.1	2022-05-30	Part of the parameter correction	Wang Wei
V1.2	2022-06-07	Add the common protocol and command statements	Wang Wei

1 Functional description

1.1 Overview

JS-T P 26-M, using multi-mode solutions, low power consumption and low cost, is a multi-mode dual-frequency (GPS, BDS, GLONASS, Galileo, QZSS and SBA S) positioning module, is developed to meet the requirements of a wide range of applications and end products. Based on the high-performance SOC position engine, this receiver provides excellent sensitivity and acquisition time, with interference suppression measures, and reliable positioning even under difficult signal conditions.

1.2 Product characteristics

Based on the high-performance GNSS SOC series

135 channels (L1:75, L5:60)*

The capture sensitivity was-148 dBm and the tracking sensitivity was-165 dBm

Up to 10Hz navigation update rate

Support for GPS, BDS, GLONASS, Galileo, QZSS, and SBAS

- support AGPS

Indoor and outdoor multidiameter detection and compensation

Integrated with 12 polytone active interference eliminators

Integrated TCXO, SAW, and RTC

Compact size (16.0mm x 12.2mm x 2.4mm±0.3mm), suitable for space-sensitive applications

Support for the standard NMEA 0183 V 3.01 / V4.10

Supports the 1 PPS output

* The number of channels in the wearable mode is L1:42 and L5:30

1.3 Performance

Parameter	Specifications
Constellation frequency point	■GPS L1CA L5 ■BDS B1I B2a ■Galileo E1B E1C E5a ■GLONASS L1OF ■QZSS L1CA L1SAIF L5 ■SBAS WAAS EGNOS MSAS GAGAN
sensitivity	Tracking sensitivity -165dBm Capture sensitivity -148dBm
First location time[1]	Cold start 24s Hot start 1s
The GNSS localization accuracy of [2]	Level 3G + B 1.0m (L1+L5);2.5m (L1) Vertical 2.25m
Time-pulse signal precision	1PPS 10ns
Speed accuracy[3]	0.05m/s
Operation limit[4]	The acceleration 4g The altitude 10000m Speed limit 100m/s
Time-pulse signal frequency	1Hz
Baud rate	4800-921600 bps (default 115200 bps)[5]
Maximum navigation update rate	10Hz (the default is 1Hz)

1 All the satellites are at-130 dBm

2 Open sky, 24 hr still, -130 dBm,> 6 SVs, CEP 50%

3 50%@30m / s runs dynamically

4 assuming an on-board 4g platform

5 Opening the debuglog needs to support a higher port rate of 230,400 bps or above

1.4 Agreement

protocol	type
NMEA 0183 V 3.01/V4.1	Input / output, ASCII

1.5 Antenna

The JS-TP 26-M module is designed to use passive and active antennas

Antenna type	specifications
Active antenna recommendation	Minimum gain 15 db (compensate for signal loss in RF cable) Maximum gain of 30 db Maximum noise value is 1.5 dB

1.6 Product application

- Automotive application
- Intelligent logistics scheduling
- Intelligent robot
- Urgent life saving
- Maritime navigation, and fleet management
- Drones &UAV
- Vehicle tracking and traffic management
- Individual travel and field exploration

2 Pound definition

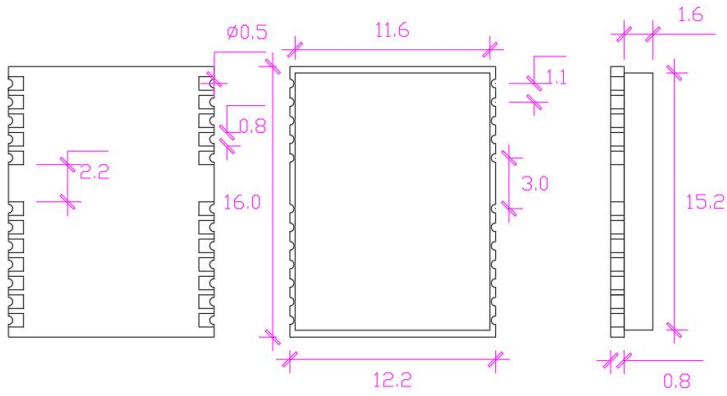
2.1 Pin definition

No.	name	I/O	description
1,2,4,5,6,7,14,15	RESERVED	-	obligate
3	TIMEPULSE	O	1PPS output
8	RESET_N	I	Reset restart (low level activation, left open when unused)
9	VCC_RF	P	Antenna Power Supply (3.3V)
10,12,13,24	GND	G	the earth
11	RF_IN	I	GNSS signal input
16	RXD 1	I	empty
17	T XD 1	O	empty
18	SDA	I/O	I^2C data
19	SCL	O	I^2C clock
20	T XD 0	O	The UART _ TTL data output
21	RXD 0	I	The UART _ TTL data input
22	VBAT	P	Backup power pin (for hot start) (1.62-3.63V)
23	VCC	P	Module main power supply (input)

3 Electrical specifications

Parameter	symbol	minimum	typical case	maximum	unit
supply voltage	VCC	2.8	3.3	3.6	V
Average power current	catch	33@3.3V	35@3.3V	38@3.3V	mA
	follow the tracks of	32@3.3V	33@3.3V	36@3.3V	mA
standby battery			0.07		F
Standby battery current	I_BCKP		11@3.3V		uA
Digital input / output voltage	Div	2.8		3.6	V
storage temperature	Tstg	-40		105	°C
working temperature	T opr	-40		85	°C
humidity				95	%

4 Mechanical specifications

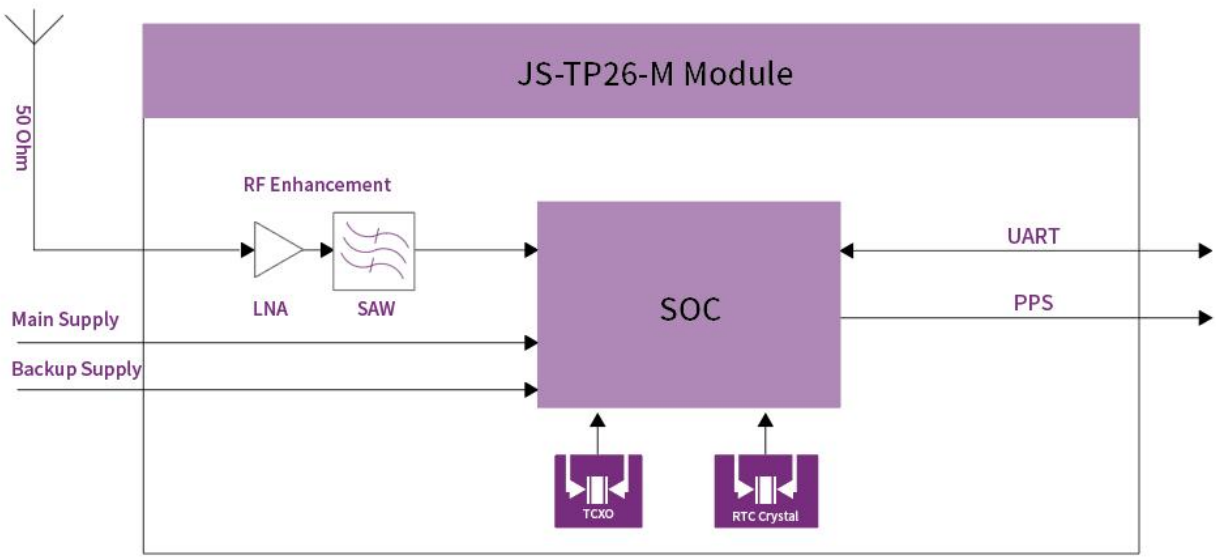


Unit: mm Size error: ± 0.3mm

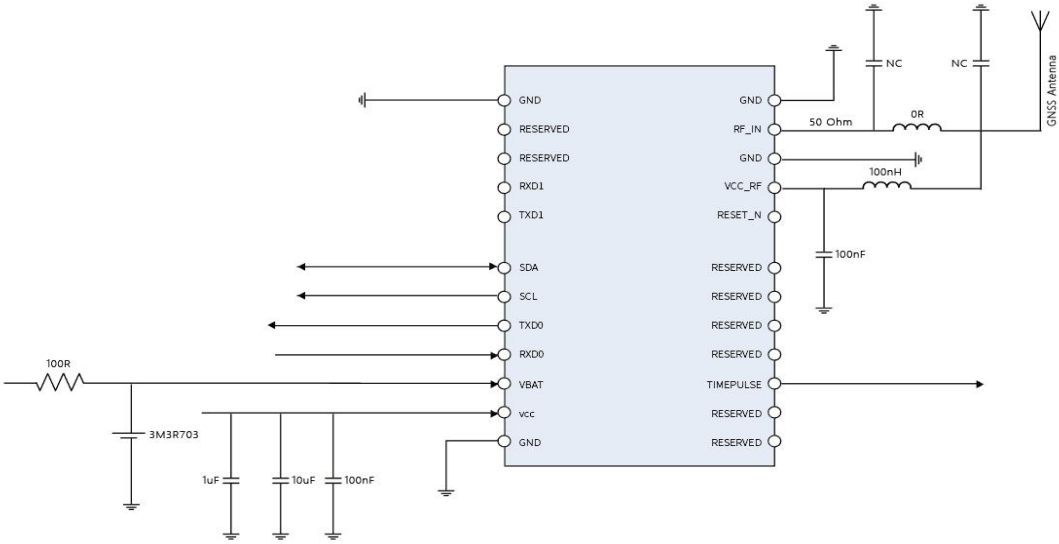
5 Interface configuration selection

5.1 Interface description

5.1.1 Block diagram



5.1.2 Application circuits



6 ROHS

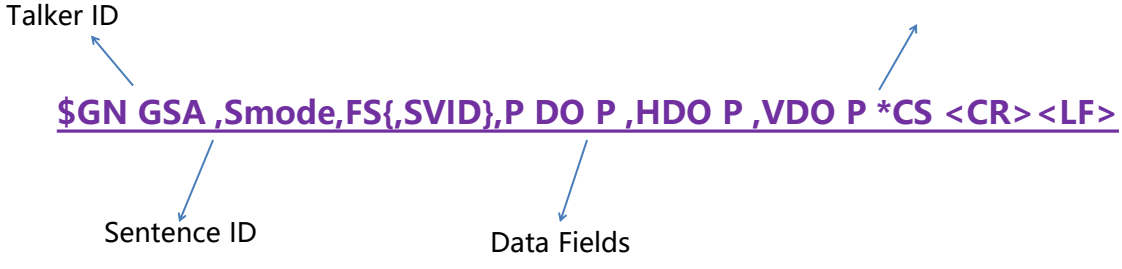
This product meets the RoHS standards

7 NMEA

This module supports the National Marine Electronics Association (NMEA) messaging based on NMEA 0183 v3.01/v4.10. The following sections show the structure of the NMEA protocol messages and the corresponding common standard message format.

7.1 The NMEA protocol

Generally, NMEA messages start with $ characters, followed by talker ID, sentence ID, data fields and checksum, and then end with '<CR>' '<LF>', as shown in the figure below.



NMEA protocol details

parameter	length of string	description
lead code	1	$
Talker ID	2	Suitable for various GNSS configurations, such as GP / GL / GA / GB / GN
Sentence ID	3	Field description, such as GGA / GSA / GSV / RMC
Data Field	~	Must insert a comma before each data field to help the decoder process Data Field
*	1	The asterisk * marks the end of the Data Field
Checksum	2	Checksum of the data between the lead code and *
CR, LF	2	Both bytes are used to identify the end of the packet

Talker ID description

Talker ID	description
GP	GPS
GL	GLONASS
GA	Galileo
GB*	Beidou
GI*	NavIC
GN	Multi-GNSS

* NMEA v3.01/v4.10 No defined BDS / NavICTalker ID。GB / GI Defined only in NMEA v4.11.

Sentence ID description

Sentence ID	description
GGA	Receiver positioning data
GLL	Latitude and longitude, along with temporal localization and state
GSA	Accuracy factor (DOP) and effective satellites
GSV	Visible satellite information
RMC	Minimum specific GNSS data is recommended
VTG	Ground heading and ground speed
ZDA	The GNSS date and time

Different GNSS system Talker ID display (for NMEA 0183 v3.01)

<table>
<tr><th>Talker ID</th><th>GPS only</th><th>GLONASS only</th><th>Galileo only</th><th>BDS only</th><th>NavIC only</th><th>Multi-GNSS GPS+GLO+GAL+BDS+NavIC</th></tr>
<tr><td>GGA</td><td rowspan="7">GP</td><td rowspan="7">GL</td><td rowspan="7">GA</td><td rowspan="7">GB*</td><td rowspan="7">GI*</td><td rowspan="5">GN</td></tr>
<tr><td>GLL</td></tr>
<tr><td>RMC</td></tr>
<tr><td>VTG</td></tr>
<tr><td>ZDA</td></tr>
<tr><td>GSA**</td><td rowspan="2">GP+GL+GA+GB+GI</td></tr>
<tr><td>GSV</td></tr>
</table>

Different GNSS system Talker ID display (for NMEA 0183 v4.10)

<table>
<tr><th>Talker ID</th><th>GPS only</th><th>GLONASS only</th><th>Galileo only</th><th>BDS only</th><th>NavIC only</th><th>Multi-GNSS GPS+GLO+GAL+BDS+NavIC</th></tr>
<tr><td>GGA</td><td rowspan="7">GP</td><td rowspan="7">GL</td><td rowspan="7">GA</td><td rowspan="7">GB*</td><td rowspan="7">GI*</td><td rowspan="6">GN</td></tr>
<tr><td>GLL</td></tr>
<tr><td>RMC</td></tr>
<tr><td>VTG</td></tr>
<tr><td>ZDA</td></tr>
<tr><td>GSA**</td></tr>
<tr><td>GSV</td><td>GP+GL+GA+GB+GI</td></tr>
</table>

* NMEA v3.01/v4.10 does not define BDS / NavIC Talker ID. GB / GI is defined only in NMEA v4.11.

The difference between NMEA 0183 v3.01 and v4.10 of ** Talker ID is the GSA.

7.2 Standard Information

The standard NMEA message is a GGA / GLL / GSA / GSV / RM C/V TG / ZDA. The definitions of satellite ID, system ID and signal ID in the NMEA statements are shown in the following below. Below are the details of these messages based on NMEA 0183 v4.10.

7.2.1 GGA

Fixed of time, location and associated data. The output location will be affected by the selected benchmark.

The default data is for WGS 84.

$--GGA,hhmmss.sss,ll.llll,a,yyy.yyyy,a,x,xx,x.xx,x.x,M,x.x,M,x.x,xxxx*hh<CR><LF>

No.	form	description
1	hhmmss.sss	UTC time
2	ll.llll,a	latitude N/S
3	yyy.yyyy,a	longitude E/W
4	x	GNSS qualitative index
5	xx	The number of satellites being used, may differ from the number seen
6	x.xx	Horizontal precision factor
7	x.x,M	Average sea level (geoid) in M
8	x.x,M	Geoid separation in M
9	x.x	Differential GPS data age period
10	xxxx	Differential Reference Station ID, 0000-1023

7.2.2 GLL

Location time and location status.

$--GLL,ll.llll,a,yyy.yyyy,a,hhmmss.sss,A,a*hh<CR><LF>

No.	form	description
1	ll.llll,a	latitude N/S
2	yyy.yyyy,a	longitude E/W
3	hhmmss.sss	UTC time
4	A	Status A = valid data, and V = invalid data
5	a	Position the status indication. A= autonomous mode, V= estimated mode (inferred), N= invalid, D= differential mode

7.2.3 GSA

Precision diffusion factor (DOP) and effective satellites.

$--GSA,a,x ,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx,xx ,x.xx ,x.xx ,x.xx ,h*hh<CR><LF>

No.	form	description
1	a	Mode: M = manual, forced 2D or 3D mode; A = automatic, allowing 2D / 3D automatic switching
2	x	Mode: 1 = unavailable, 2 = 2D, 3 = 3D
3	xx	Satellite number for positioning, this field shows a total of 12 available satellite numbers, only 12 when more than 12, and less than 12 insufficient areas (refer toThe Satellite ID in the NMEA sentence)
4	x.xx	PDOP
5	x.xx	HDOP
6	x.xx	VDOP
7	h	GNSS System ID (1: GPS, 2: GLONASS, 3: Galileo, 4: Beidou, 6: NavIC) (support NMEA v4.10 format only, refer to the system, signal ID in NMEA sentence)

7.2.4 GSV

Number of GNSS satellites, PRN, elevation, azimuth, and signal-to-noise ratio observed.

$--GSV,x ,x ,xx ,xx,xx,xxx,xx,……..,xx,xx,xxx,xx ,h*hh<CR><LF>

No.	form	description
1	x	Total number of statements
2	x	Current statement number
3	xx	Total number of visual satellites
4	xx	Satellite number
5	xx	Angation, maximum 90°
6	xxx	Azimuth, 000 to 359°
7	xx	Signal-to-noise ratio (C / No)0099 dB-Hz, null without tracking
8	h	Signal ID (support NMEA v4.10 format only, refer to the system and signal ID in NMEA sentence)

7.2.5 RMC

Recommended minimum specific GNSS data, namely location, SOG, COG, and time.

$--RMC,hhmmss.sss,A,ll.llll,a ,yyy.yyyy,a ,x.xx ,x.xx ,xxxxxx ,x.x,a ,a,a*hh<CR><LF>

No.	form	description
1	hhmmss.sss	UTC time
2	A	State A = autonomous mode, V = invalid, and D = difference mode
3	ll.llll,a	latitude N/S
4	yyy.yyyy,a	longitude E/W
5	x.xx	Ground speed, unit: section
6	x.xx	True course, unit: degree
7	xxxxxx	Date (ddmmyy)
8	x.x,a	Magnetic angle, unit: degree. Magnetic bias direction: E-east, W-west. Fixed to empty
9	a	status bar. A= autonomous mode, V= estimated mode (inferred), N= invalid, D= differential mode
10	a	Navigation status (NMEA v4.10 format supported only)

7.2.6 VTG

Ground heading (COG) and ground speed (SOG) information.

$--VTG,x.xx,T ,x.xx,M,x.xx,N,x.xx,K,a*hh<CR><LF>

No.	form	description
1	x.xx	Beijing, unit: degree (000-359°)
2	T	True North indicates, fixed to T
3	x.xx	Beijing in degrees (000-359°)
4	M	Magnetic north, fixed to M
5	x.xx	Ground speed in Section (Section 000-999)
6	N	Speed unit segment, fixed to N = nautical / h
7	x.xx	Ground-facing speed (000-999 km / h)
8	K	Speed units, fixed at K= km / h
9	a	Position the mode status. A= autonomous mode, V= estimated mode (inferred), N= invalid, D= differential mode

7.2.7 ZDA

The GNSS time and date.

$ --ZDA,hhmmss.sss,xx ,xx ,xxxx ,xx ,xx *hh<CR><LF>

No.	form	description
1	hhmmss.sss	UTC time, hhmmss (time division and second) format
2	xx	UTC date, from 01 to 31
3	xx	UTC date, 01 to Dec
4	xxxx	The UTC date, the year
5	xx	Current time, and hours
6	xx	Current time, minutes

The Satellite ID in the NMEA sentences

Constellation	PRN numbers	Satellite ID (AIROHA)	Satellite ID (NMEA 0183 v4.10)
GPS	1-32	1-32	1-32
SBAS	120-138	33-51	33-64
GLONASS	1-24	65-88	65-99
Galileo	1-36	1-36	1-36
Beidou	1-63	1-63	N/A
QZSS	193-199	193-199	N/A
NavIC	1-14	1-14	N/A

System / signal ID in the NMEA sentences

constellation	System ID (AIROHA)	Signal ID (AIROHA)	System ID (NMEA 0183 v4.10)	Signal ID (NMEA 0183 v4.10)
GPS L1C/A	1	1	1	1
GPS L5Q	1	8	1	8
GLONASS L1	2	1	2	1
GalileoE1-BC	3	7	3	7
Galileo E5a	3	1	3	1
Beidou B1I	4*	1*		
Beidou B2a	4*	4*		
NavIC L5	6*	1*		

* Beidou / NavIC is not defined in NMEA v4.10

8 Common instruction switch

Because the verification code of each instruction is different, other configuration instructions not given in the following common configuration should be applied before sending the instruction.

Control table of the response results sent by the commands				
data format	$PAIR001,<Command_ID >,<Result >*CS<CR><LF>			
explain	Command_ID: Command / message type is the confirmation response			
	Result: The results of command execution 0,1,2,3,4,5 are as follows			
●	0	Order issued successfully		
●	1	Indicates that the command is being processed and waits for the result		
●	2	Failed to send command		
●	3	Represents that the command ID is not supported		
●	4	Command parameter error (out of range / some parameters missing / inspection and error)		
●	5	The MNL server is busy.You can try again soon		
Note: Above is the response result of the command. This command is sent automatically sent by the GNSS system. Do not send it directly to the GNSS system				
POWER_ON/POWER_OFF				
1	$PAIR002*38\r\n	POWER _ ON (Please send this command before using any location service)		
Return after sending the instruction$PAIR001,002,1 * 38 \ r \ n ==> The power-on process is running.please wait $PAIR001,002,0 * 39 \ r \ n ==> boot successfully				
2	$PAIR003*39	POWER _ OFF (Location service is not available after this command)		
Return after sending the instruction$PAIR001,003,1 * 39 \ r \ n ==> The power-down process is running.please wait $PAIR001,003,0 * 38 \ r \ n ==> Successful shutdown				
hold-over command				
1	$PAIR513*3D\r\n	Save the current configuration from RTC RAM to flash		
Return after sending the instruction$PAIR001,003,1*39\r\n ==> Success				
Note: If the module is in multi-Hz output, send $PAIR003 * 39 \ r \ n to the system POWER _ OFF before executing the command, not at 1Hz				
Support constellation configuration				
data format	$PAIR066,<GPS_Enabled>,<GLONASS_Enabled>,<Galileo_Enabled>,<BeiDou_Enabled>,<QZSS_Enabled>,<NavIC_Enabled>*CS			
instance	$PAIR066,1,1,1,1,1,0*3B			
explain	'0' disabled (not search satellite); '1' enabled (search satellite)			
	Directive (sent)	**outgoing message**	**explain**	
1	$PAIR066,1,1,1,1,1,0*3B \r\n	GPS+GLONASS+Galileo+BDS+QZSS	L1 frequency supported Constellation combination configuration	
2	$PAIR066,1,0,0,0,0,0*3B \r\n	GPS		
3	$PAIR066,1,1,0,0,0,0*3A \r\n	GPS+GLONASS		
4	$PAIR066,1,0,1,0,0,0*3A \r\n	GPS+Galileo		

5	$PAIR066,1,0,0,1,0,0*3A \r\n	GPS+BDS	
6	$PAIR066,1,0,1,1,1,0*3A\r\n	GPS+Galileo+BDS+QZSS	L1 + L5 frequency support Constellation combination configuration
7	$PAIR066,1,1,1,1,0,0*3A\r\n	GPS+GLONASS+Galileo+BDS	
Return after sending the instruction $PAIR001,066,0*3B \r\n ==> Success			

Close the NMEA, the statement instruction

1	$PAIR062,0,0*3E \r\n	Close the GGA statement
2	$PAIR062,1,0*3F\r\n	Close the GLL statement
3	$PAIR062,2,0*3C\r\n	Close the GSA statement
4	$PAIR062,3,0*3D\r\n	Close the GSV statement
5	$PAIR062,4,0*3A\r\n	Close the RMC statement
6	$PAIR062,5,0*3B\r\n	Close the VTG statement
7	$PAIR062,6,0*38\r\n	Close the ZDA statement
Return after sending the instruction $PAIR001,062,0*3F \r\n ==> Success		

Open the NMEA, the statement instruction

1	$PAIR062,0,1*3F\r\n	Open the GGA statement
2	$PAIR062,1,1*3E\r\n	Open the GLL statement
3	$PAIR062,2,1*3D\r\n	Open the GSA statement
4	$PAIR062,3,1*3C\r\n	Open the GSV statement
5	$PAIR062,4,1*3B\r\n	Open the RMC statement
6	$PAIR062,5,1*3A\r\n	Open the VTG statement
7	$PAIR062,6,1*39\r\n	Open the ZDA statement
Return after sending the instruction $PAIR001,062,0*3F \r\n ==> Success		

Set navigation mode

form	$PAIR080,<CmdType>*CS<CR><LF>	
instance	$PAIR080,1 * 2F \ r \ n ==> Enter the fitness mode	
1	$PAIR080,0*2E \r\n	Ordinary mode
2	$PAIR080,1*2F \r\n	Fitness Mode (for activities of running and walking <5 m/s)
3	$PAIR080,4*2A \r\n	Still mode (not supported by this module)
4	$PAIR080,5*2B \r\n	Drone mode (such as hover, cruise, etc.)
5	$PAIR080,7*29\r\n	Swimming mode
6	$PAIR080,9*27\r\n	Bike mode (not supported by this module)
Return after sending the instruction $PAIR001,080,0*33\r\n ==> Success		
Note: If ULP (ultra-low power) is enabled, setting to non-fitness mode will fail		

Static drift settings

form	$PAIR070,<Speed_threshold >*CS<CR><LF>	
1	$PAIR070,0*21\r\n	Static drift is set to 0 dm/s (default)
2	$PAIR070,1*20\r\n	The static drift was set to 1 dm / s
3	$PAIR070,4*25\r\n	The static drift was set to 4 dm / s

4	$PAIR070,10*10\r\n	The static drift was set to 10 dm / s
5	$PAIR070,20*13\r\n	The static drift was set to 20 dm / s
explain:<Speed_threshold> is 1 dm/s ~ 20 dm / s (1 dm/s = 0.1m/s) **Return after sending the instruction** $PAIR001,070,0*3C \r\n ==> Success		
Query the static drift speed threshold		
1	$PAIR071*3C\r\n	Static drift speed threshold query instruction
Return after sending the instruction $PAIR001,071,0*3D \r\n ==> Success $PAIR071,0.4 * 3A \ r \ n ==> Static drift velocity threshold of 0.4 m/s (threshold minimum 0.1 m/s, maximum 2.0m / s)		
Hot and cold start setting instructions		
1	$PAIR004*3E \r\n	warm boot
2	$PAIR005*3F\r\n	Warm start
3	$PAIR006*3C\r\n	cold boot
Statement output frequency setting		
form	$PAIR062, <NMEA Type>, <Output Frequency> * CS <CR> <LF>	
instance	$PAIR062,0,3 * 3D \ r \ n output 1 GGA statement in 3 seconds	
NMEA type	0=GGA、1=GLL、2=GSA、3=GSV、4=RMC、5=VTG、6=ZDA、7=GRS、8=GST	
output frequency	0= no output, 1= 1 second / time, 2= 2 seconds / time, 5= 5 seconds / time, and so on, (0- -20 can be set, the default is 1 second / time)	
1	$PAIR062,0,1*3F\r\n	1 second output 1 time GGA statement- -1Hz
2	$PAIR062,1,1*3E\r\n	1 second output 1 time GLL statement- -1Hz
3	$PAIR062,2,1*3D\r\n	1 second output 1 GSA statement- -1Hz
4	$PAIR062,3,1*3C\r\n	1 second output 1 time GSV statement- -1Hz
5	$PAIR062,4,1*3B\r\n	1 second output 1 time RMC statement- -1Hz
6	$PAIR062,5,1*3A\r\n	1 second output 1 time VTG statement- -1Hz
7	$PAIR062,6,1*39\r\n	1 second output 1 time ZDA statement- -1Hz
8	$PAIR062,7,1*38\r\n	1 second output 1 time GRS statement- -1Hz
9	$PAIR062,8,1*37\r\n	1 second output 1 time GST statement- -1Hz
10	$PAIR062,3,2*3F\r\n	2 seconds to output 1 time GSV statement- -0.5Hz
11	$PAIR062,3,5*38\r\n	5 seconds to output 1 time GSV statement- -0.2Hz
Set less than 1000 ms output (range: 100 to 1000 ms). GGA and RMC statements apply only		
1	$PAIR050,1000*12\r\n	1 second output 1 time GGA and RMC statement- -1Hz
2	$PAIR050,500*26\r\n	1 second output 2 times GGA and RMC statements- -2Hz
3	$PAIR050,200*21\r\n	1 second output 5 times GGA and RMC statement- -5Hz
4	$PAIR050,100*22\r\n	1 second output 10 GGA with RMC statements- -10Hz
Note: In case the multi-Hz output is configured, send $PAIR003 * 39 (close GNSS) before sending the saving instruction, and configure one or more output statement		
Set up the NMEA, and set up the output format		
form	$PAIR100, <NMEA> <Proprietary> * CS <CR> <LF>	
instance	$PAIR100,1,0*3A \r\n ==> ASCII NMEA v4.1, does not output proprietary statements	

NMEA pattern	0= NMEA, 1=ASCII NMEA v4.1 (default), 2=ASCII NMEA v3.0	
proprietary mode	0= No output of a proprietary statement (by default), 1= Output proprietary statements	
1	$PAIR100,1,0*3A \r\n	Output ASCII NMEA v4.1 and does not output proprietary statements
2	$PAIR100,2,0*39\r\n	Output ASCII NMEA v3.0, which does not output proprietary statements
3	$PAIR100,0,1*3A \r\n	Outputs the proprietary statements, not the NMEA statements

Query the NMEA, the output format

form	$PAIR101, <NMEA> <Proprietary> * CS <CR> <LF>	
instance	Send $PAIR101 * 3A \ r \ n to return $PAIR101,0,1 * 3B==> Disable NMEA output, enable proprietary statements	
NMEA pattern	0= NMEA, 1=ASCII NMEA v4.1 (default), 2=ASCII NMEA v3.0	
proprietary mode	0= output no proprietary statement (default), 1= output proprietary statement, 2= enable proprietary statement and output before NMEA	
1	$PAIR101*3A\r\n	NMEA output format query instructions

Set the Porter rate

1	$PAIR864,0,0,9600*13\r\n	Support for 9,600 bps
2	$PAIR864,0,0,38400*23\r\n	Supports of 38,400 bps
3	$PAIR864,0,0,57600*28\r\n	Supports of 57,600 bps
4	$PAIR864,0,0,115200*1B\r\n	Supports the 1,15,200 bps
5	$PAIR864,0,0,230400*19\r\n	Supports the 2,30,400 bps
6	$PAIR864,0,0,460800*16\r\n	Supports the 4,60,800 bps
7	$PAIR864,0,0,921600*10\r\n	Supports the 921,600 bps
8	$PAIR864,0,0,3000000*2F\r\n	Support 3000000 bps
Note: After modifying the port port rate, you need to restart the device. Changes will take effect upon a reboot.		

Baud rate query instruction

1	$PAIR865,0,0*31\r\n	Port baud rate query

Restore default settings

1	$PAIR514*3A\r\n	Clear the current configuration and restore the default settings
Description: Send $PAIR003 * 39 \ r \ n ==> POWER _ OFF		
2	$PAIR007*3D\r\n	Clear the system / user configuration

Sleep pattern

1	$PAIR382,0*2F\r\n	Unlock sleep mode
2	$PAIR382,1*2E\r\n	Lock sleep mode (the system will not be dormant)
explain: **Return after sending the instruction**$PAIR001,382,0*32\r\n ==> Success		