FSS-NAV618D High Precision Integrated Navigation System

FSS-NAV618D Product Manual

Product Overview

FSS-NAV618D is a multi-sensor integrated navigation product based on industrial IMU platform and full system multi-frequency dual antenna RTK.NAV618D has a unique array IMU sensor built into the Forsence Company, which supports external odometer information to provide accurate, continuous and real-time posture and velocity location information in urban canyons, tunnel elevations and other scenarios. Provides records of RTK original observations combined with IMU sampling mechanism of space-time synchronization, which facilitates high-precision post-processing for users. Convenient and diverse ways to import differential data, supporting differential data from mobile phone Hotspots or external 4G modules.

Product Features

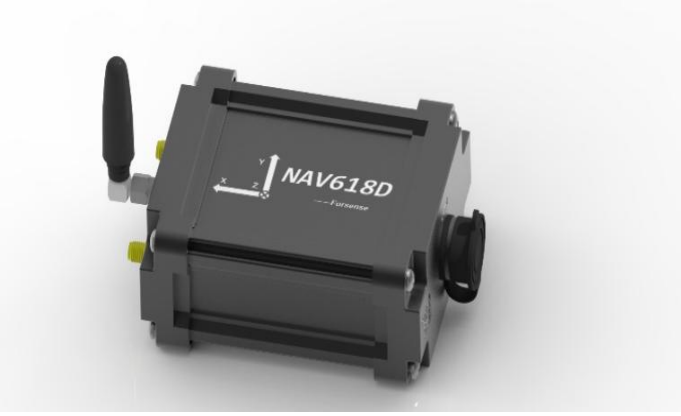
（1）Built-in system-wide multi-frequency point high precision RTK card
Support BDS B1/B2 +GPSL1/L2+GLONASS L1/ L2+Galileo E1/E5b.

（2）The built-in array IMU sensor provides real-time accurate posture, speed and location information through a complete combination of navigation algorithm and time-space synchronization mechanism.

（3）Support WIFI wireless configuration, import differential data, download logs.

（4）Supports the recording of RTK raw observations and calendars for post-processing and compatibility with IE post-processing software.

（5）Supports external milemeters.



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2. Serial Port Data Protocol

2.1 String Output

RS232-A port default output GPGGA, GPRMC, GPATT data, default baud rate 460800

2.1.1 GPGGA

The frame is used to output positioning results, positioning status, and so on.

Format example:

$GPGGA,014434.70,3817.13334637, N,12139.72994196, E,4,07,1.5,6.571, M,8.942, M,0.7,0016*79

The structure of the data frame and the field definitions are as follows：

$GPGGA,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,M,<10>,M,<11>,<12>*xx<CR><LF>

$GPGGA: Start guide and statement format description (GPS positioning data in this sentence);

<1> UTC Time, format hhmmss.sss;

<2> Latitude, the format is ddmm.mmmm(The first bit is zero and will be transferred as well);

<3> Latitude hemisphere, N or S(North or South latitude);

<4> Longitude, the format is dddmm.mmmm(The first bit is zero and will be transferred as well);

<5> Longitude hemisphere, E or W(East or West Meridians);

<6> GPS state,0 Initialization,1 Single point positioning,2 Code difference,4 Fixed Solution,5 Float solution;

<7> Use number of satellites, from 00 to 12(The first zero will also be transferred);

<8> HDOP-Horizontal Precision Factor,0.5 to 99.9,it is generally believed that the smaller the HDOP, the better the quality.

<9> Altitude,-9999.9 to 9999.9 meters;

M refers to unit meter

<10> Abnormal difference of geoid height,-9999.9 to 9999.9 meters;

M refers to unit meter

<11> Differential GPS data age(RTCM SC-104),number of seconds to set up the final RTCM transfer, empty if not differential positioning;

<12> Differential Reference Base Station Label, from 0000 to 1023 (The first 0 will also be transferred).

* Statement End Marker

xx XOR check for all ASCII codes from $ to *

<CR> Carriage return, end tag

<LF> Line Break, end tag

2.1.2 GPRMC

The frame is used to output information such as speed, date, positioning status, and so on.

Format example:

$GPRMC,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,<10>,<11>,<12>*hh

<1> UTC Time, hhmmss.sss (minutes, seconds, milliseconds) format

<2> Positioning Status, A=Effective positioning，V=Invalid positioning

<3> Latitude ddmm.mmmm (degrees) format (The previous 0 will also be transferred)

<4> Latitude Hemisphere N (Northern hemisphere) or S (Southern hemisphere)

<5> Longitude dddmm.mmmm (degrees) format (The previous 0 will also be transferred)

<6> Longitude Hemisphere E (East) or W (West)

<7> Ground rate (000.0-999.9 knots, the previous 0 will also be transferred)

<8> Ground course (000.0-359.9 degrees, with due north as reference, the previous 0 will also be transferred)

<9> UTC Date, ddmmyy (day, month, year) format

<10> Magnetic declination (000.0-180.0 degrees, front 0 will also be transferred)

<11> Magnetic declination direction, E (East) or W (West)

<12> Mode indication(NMEA0183 version 3.00 output only, A=Self-localization, D=Differential, E=Estimate, N=Invalid data)

*XOR sum of all characters after HH from $ to *

2.1.3 GPATT

Format example:

GPATT data is used to output attitude information for integrated navigation, including roll, pitch, heading, and IMU data

$GPATT,000011.700,-162.71,3.61,0.64,0,-0.0375,-0.0208,-0.0321,0.0637,0.2984,0.9527*4F

The structure of the data frame and the field definitions are as follows:

$GPATT,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,<10>,<11>*xx<CR><LF>

$GPATT: Start guide and statement format description:

<1> UTC Time, the format is hhmmss.sss;

<2> Roll angle, the format is dd.dd (in degrees),-180 - 180 degrees;

<3> Pitch angle, the format is dd.dd (in degrees),-90 - 90 degrees;

<4> Heading angle, the format is dd.dd (in degrees),0 - 360 degrees

<5> Posture Effectiveness

1:Indicates uninitialized integrated navigation, heading mode. At this time, the heading angle is the heading relative to the power-on time.

2:Indicates that the combination navigation has completed its initialization and the state is in convergence.

3:Indicates that the combined navigation converges well.

6:Represents the mode of leveling.

<6> to <8>Gyro X,Y,Z Axis Angular Velocity Data, unit deg/s

<9> to <11>Accelerometer X,Y,Z Axis Angular Velocity Data, unit G

* Statement End Marker

xx XOR check for all ASCII codes from $ to *

<CR> Carriage return, end tag;

<LF> Line Break, end tag

2.1.4 GPYJ

Examples of formats:

GPYJ data used to output combined locations, speed, attitude, IMU data and various status information.

The structure of the data frame and the field definitions are as follows:

$GPATT,<1>,<2>,<3>,<4>,<5>,<6>,<7>,<8>,<9>,<10>,<11>*xx<CR><LF>

$GPYJ: Start guide and statement format description:

<1> UTC Time, the format is hhmmss.sss;

<2> Heading angle, the format is dd.dd (in degrees),0 - 360 degrees;

<3> Pitch angle, the format is dd.dd (in degrees),-90 - 90 degrees;

<4> Roll angle, the format is dd.dd (in degrees),-180 - 180 degrees;

<5> to <7>Gyro X, Y, Z Axis Angular Velocity Data, unit deg/s;

<8> to <10>Accelerometer X, Y, Z Axis Angular Velocity Data, unit G;

<11> Latitude, the format is dd.dd dd dd dd, in degrees;

<12> Longitude, the format is dd.dd dd dd dd, in degrees;

<13> Height, the format is mm.mmm, in meters;

<14> Northward velocity, unit m/s;

<15> Eastern speed, unit m/s;

<16> Toward speed, unit m/s;

<17> Ground speed, unit m/s;

<18> Main antenna star count;

<19> Secondary antenna stars;

<20> Status bits:

1:Indicates that the integrated navigation is not initialized and is in initial alignment

2:Indicates that the combined navigation has completed its initialization and is convergent

3:Indicates that the combined navigation converges well

6:Represents combined navigation dead reckoning mode

<21> Differential delay, unit is seconds;

<22> Reserve

* Statement End Marker

xx XOR check for all ASCII codes from $ to *

<CR> Carriage Return, end Mark

<LF> Line break, end tag

2.2 Binary Output

Supported Nowatai binary protocol outputs are:

BESTPOSB-Positioning data and positioning status.

PSRVELB-Speed data.

HEADINGB-Directed data and status.

INSPVAB-The combination of navigation posture, speed, position, and state bits supports a 100 Hz update rate.

IMUCORB-Triaxial angular velocity and acceleration data of the inertial navigation system.

3. CAN Data Protocol

3.1 Output Protocol

CAN baud rate 500k, standard frame.

3.1.1 IMU Original Value

The gyro data type is float and the unit is deg/s.

The accelerometer data type is float in G.

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x601 Standard Frame	X-axis angular velocity float type 0-7 data bits	X-axis angular velocity float type 8-15 data bits	X-axis angular velocity float type 16-23 data bits	X-axis angular velocity float type 24-31 data bits	Y-axis angular velocity float type 0-7 data bits	Y-axis angular velocity float type 8-15 data bits	Y-axis angular velocity float type 16-23 data bits	Y-axis angular velocity float type 24-31 data bits

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x602 Standard Frame	Z-axis angular velocity float type 0-7 data bits	Z-axis angular velocity float type 8-15 data bits	Z-axis angular velocity float type 16-23 data bits	Z-axis angular velocity float type 24-31 data bits	X-axis acceleration float type 0-7 data bits	X-axis acceleration float type 8-15 data bits	X-axis acceleration float type 16-23 data bits	X-axis acceleration float type 24-31 data bits

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x603 Standard Frame	Y-axis acceleration float type 0-7 data bits	Y-axis acceleration float type 8-15 data bits	Y-axis acceleration float type 16-23 data bits	Y-axis acceleration float type 24-31 data bits	Z-axis acceleration float type 0-7 data bits	Z-axis acceleration float type 8-15 data bits	Z-axis acceleration float type 16-23 data bits	Z-axis acceleration float type 24-31 data bits

3.1.2 Attitude

The attitude data type is int16 in deg*0.01.123 means 1.23 degrees.

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]		
0x604 Standard Frame	Roll angle Int16 Type 0-7 data bits	Roll angle Int16 Type 8-15 data bits	Pitch angle Int16 Type 0-7 data bits	Pitch angle Int16 Type 8-15 data bits	Heading angle Int16 Type 0-7 data bits	Heading angle Int16 Type 8-15 data bits		

3.1.3 Speed

The speed data type is int16 in cm/s

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x605 Standard Frame	Northward velocity Int16 Type 0-7 data bits	Northward velocity Int16 Type 8-15 data bits	Eastern Speed Int16 Type 0-7 data bits	Eastern Speed Int16 Type 8-15 data bits	Toward speed Int16 Type 0-7 data bits	Toward speed Int16 Type 8-15 data bits	Ground Speed Int16 Type 0-7 data bits	Ground Speed Int16 Type 8-15 data bits

3.1.4 Latitude and Longitude

Latitude and longitude data type is int32 in deg*1.0e-7. That is 310000000 represents 31.0000000 degrees.

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x606 Standard Frame	Latitude Int32 Type 0-7 data bits	Latitude Int32 Type 8-15 data bits	Latitude Int32 Type 16-23 data bits	Latitude Int32 Type 24-31 data bits	Longitude Int32 Type 0-7 data bits	Longitude Int32 Type 8-15 data bits	Longitude Int32 Type 16-23 data bits	Longitude Int32 Type 24-31 data bits

3.1.5 Height

The height data type is int32 in mm.

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]				
0x607 Standard Frame	Height Int32 Type 0-7 data bits	Height Int32 Type 8-15 data bits	Height Int32 Type 16-23 data bits	Height Int32 Type 24-31 data bits				

3.1.6 Locate Information

CAN-ID	Data[0]	Data[1]	Data[2]	Data[4]	Data[5]	Data[6]	Data[7]	Data[4]
0x608 Standard Frame	Positioning Status Uint8 type 0: Unlocated 1: Single point 2: Code Difference 4: Fixed Solution 5:Floating-point solution	Number of Satellites Uint8 type	Combined Navigation Status Uint8 type 0: uninitialized 1:Satellite Guidance Mode 2:Initialization of integrated navigation complete 3.Integrated Navigation FINE 4.Inertial Recursion					

3.2 Input Protocol

3.2.1 Odometer Data

The left and right wheel speed data type is int16 in cm/s.

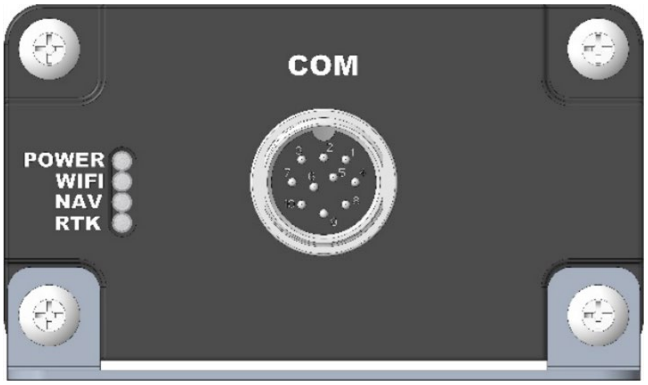
The steering wheel angle data type is int16 in deg*0.01.123 means 1.23deg.

CAN-ID	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x618 Standard Frame	Left wheel speed Int16 data type 0-7 data bits	Left wheel speed Int16 data type 8-15 data bits	Right wheel speed Int16 data type 0-7 data bits	Right wheel speed Int16 data type 8-15 data bits	Steering wheel angle Int16 data type 0-7 data bits	Steering wheel angle Int16 data type 8-15 data bits	Gear Uint8 data type 0: Neutral 1:Forward gear 2:Reversing gear 3:Parking gear	

4. Hardware Interface and Installation

4.1 User Interface

4.1.1 Front Panel Interface



The front panel has four LED lights to indicate the status; A COM port to connect the harness and a waterproof cover.

COM: Connect harness connection;

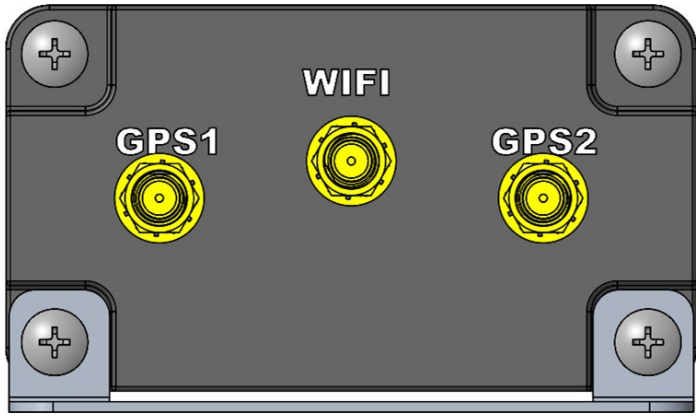
POWER: Power status indicator;

WIFI: WIFI status indicator;

NAV: Integrated Navigation Status Indicator;

RTK: RTK status indicator.

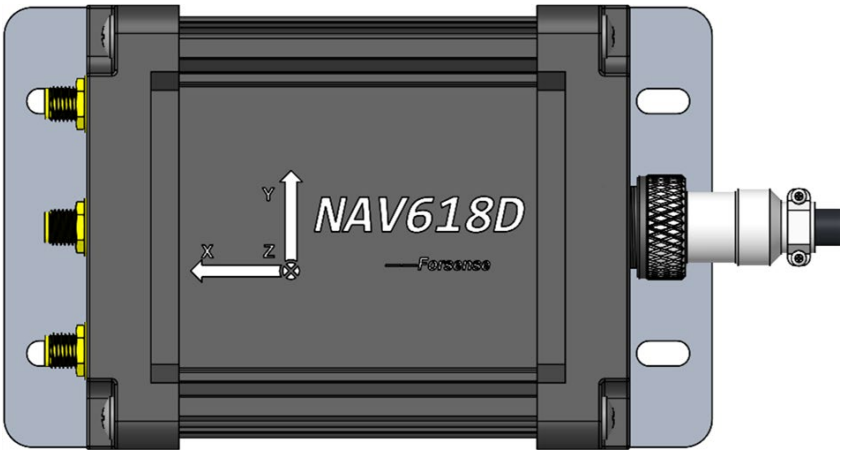
4.1.2 Rear Panel Interface



GPS1、GPS2: Connect GPS harness;

WIFI: Connect small pepper antenna.

4.1.3 Front Panel

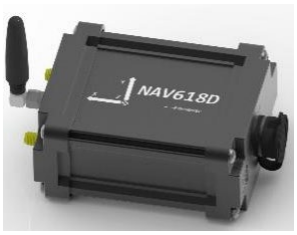


The product name NAV618D is labeled on the front and the X,Y,Z axes are labeled.

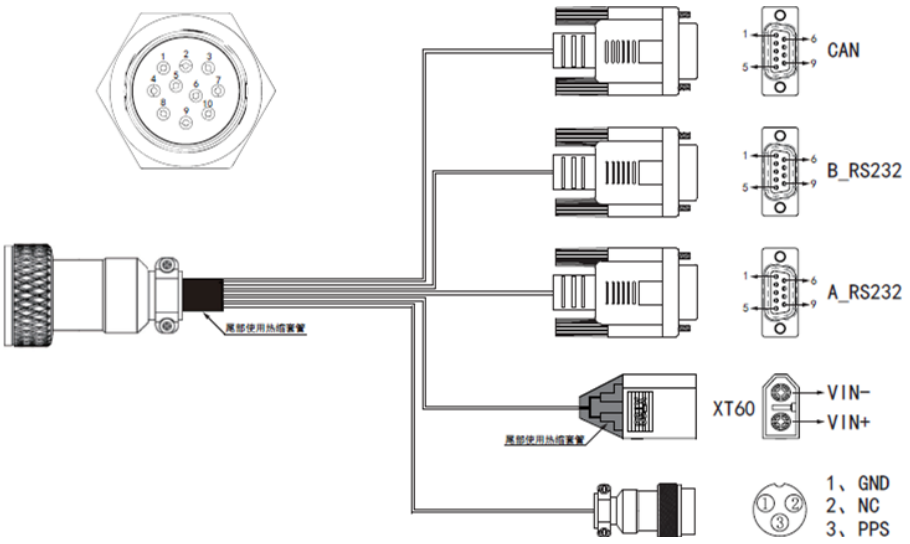
4.2 Parts

This chapter provides accessories information. Before installation begins, verify that the accessories used in the project conform to the specifications and standards.

4.2.1 Configuration List

Name	Describe	Photos
NAV618D	Host*1	
Data line	Airline plug line*1	
GNSS antenna	Four-star full-frequency measuring antenna*2	
GNSS antenna adapter	Transfer Line*2	
Suction cup + pillar	(Suction cup + pillar)*2	

4.2.2 Data Line Interface Definition



Aerial PIN Sequence	Definition	port
1	GND	Analogously/digitally
2	NC	Retain pin
3	PPS	RTK seconds pulse signal
4	TX1 232	A_RS232 Serial Port
5	RX1 232	
6	RX2 232	B_RS232 Serial Port
7	TX2 232	
8	CAN H	CAN BUS
9	CAN L	
10	VIN	Power input

(1) A_RS232: Output NEMA data, parameter can be set by upper computer, default baud rate 460800;

(2) B_RS232: Debugging serial port, monitoring differential data status, querying WIFI address, etc., default baud rate 115200;

(3) CAN: Output integrated navigation data, input mileage data, baud rate 500 Kbps;

(4) Power input: Input voltage range 9V to 32V,power W;

4.2.3 Accessory Equipment

(1) Power supply: Regular manufacturer adapters or batteries are recommended;

(2) Communication cable: DB9 Serial, CAN, etc.;

(3) Computer or industrial computer

4.2.4 Auxiliary Software

(1) Serial debugging tool: For data reading and storage

(2) Browser: Recommended use of Google browser or Microsoft IE browser

(3) Maps: Recommended use of Google Maps

4.3 Environmental Considerations

4.3.1 Temperature Range

Use temperature: - 40℃ to +75℃;

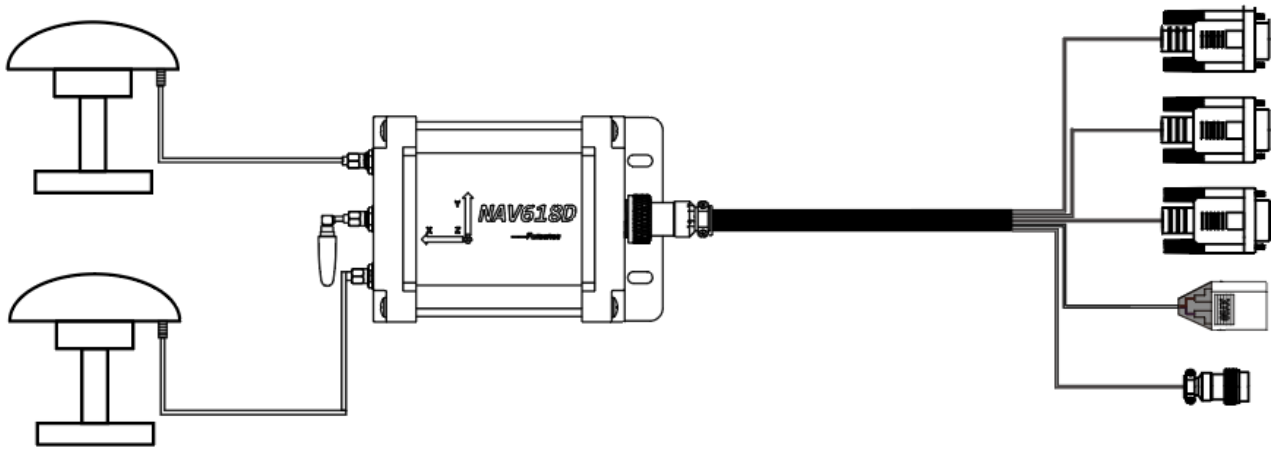
Storage temperature: - 40℃ to +85℃

4.3.2 Humidity Range

The receiver is designed for IP67 to be waterproof and dustproof, but the connection between the power supply is not waterproof and short circuit may occur. If the environment is wet, shield the power supply connection.

4.4 Installation Instructions

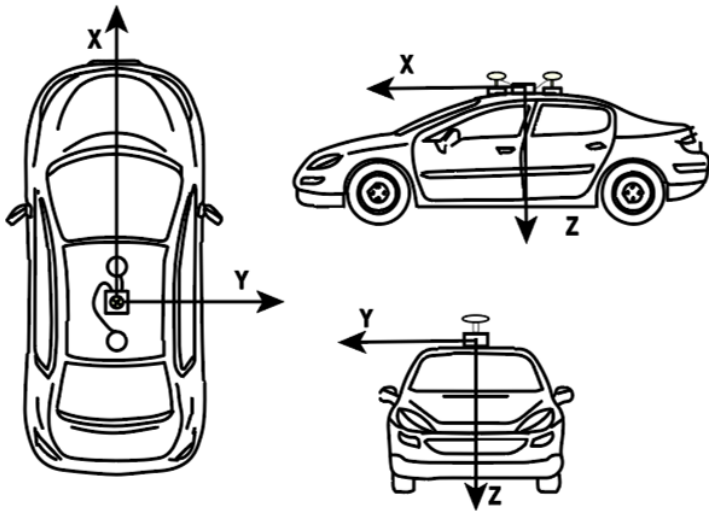
The NAV618D data cable is connected as shown in the following figure, including the device host, GNSS antenna, and aerial data cable.



4.4.1 Vehicle Installation

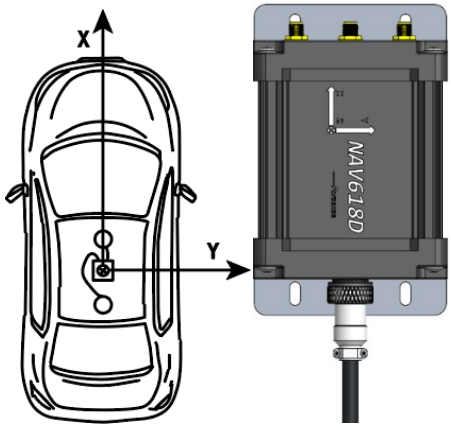
The GNSS antenna is screwed onto the strong magnetic suction cup and fixed in the center position of the test carrier. Place it as high as possible on the test carrier to ensure good GNSS signal reception. As shown in the following figure:

Note: For optimal performance, the distance between the GNSS main antenna and the device host, especially the horizontal distance, should be minimized.



4.4.2 Host Installation

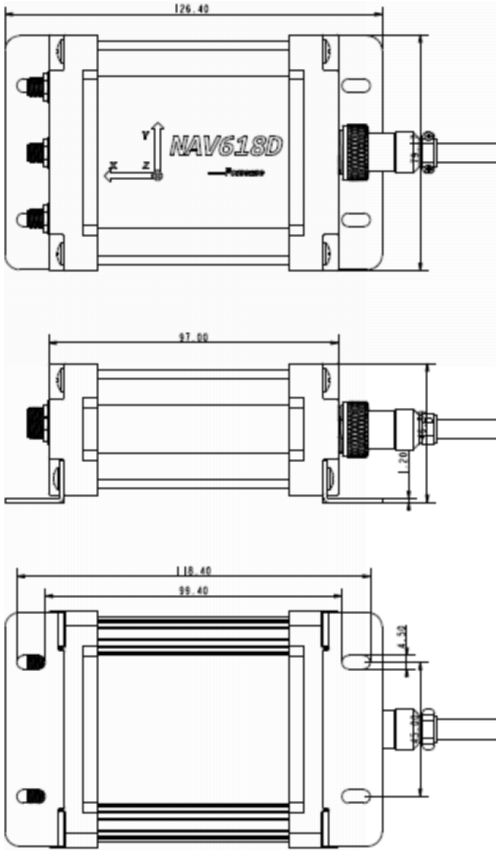
Install the NAV618D host on the carrier. As shown in the following figure, the coordinate system plane marked on the host plate is as parallel as possible to the carrier's measured datum and the X axis is parallel to the center axis of the carrier's forward direction.



Note: The host unit must be firmly connected to the tested carrier, the base of the host installation should be parallel to the datum of the tested carrier, and the Y axis indicated on the host plate must point in the same direction as the forward direction of the tested carrier.

4.4.3 Architecture Master Diagram

The size specifications are as follows:



5. Status Indication

NAV618D has three status LEDs, which are defined as follows:

All three lights flash at 1Hz: entering AP mode,NAV618D for external connection for host WIFI;

All three lights flash at the same time as the frequency of the click: SD card has insufficient usable space and needs to delete log;

（1）**Blue WIFI indicator:**

5Hz Flash: Indicates no connection to WIFI;

2Hz Slow Flash: Indicates a connection to WIFI without requesting ntrip data;

Always bright: Represents a request to ntrip data;

（2）**Green Navigation Result Indicator:**

No light: Indicates uninitialized composite navigation;

2Hz Slow Flash: Indicates that the combination navigation initialization is complete;

Always bright: Indicates good initial navigation convergence for integrated navigation;

（3）**Orange RTK Indicator:**

No light: Indicates that no RTK data was received;

5Hz Flash: Represents RTK single point solution;

2Hz Slow Flash: Represents a floating-point solution;

Always bright: Represents a fixed solution;

模式	灯状态指示	
电源指示灯		常亮
AP模式，NAV618为主机WIFI供外部连接		1Hz闪烁
SD卡空间不足，需要删除日志		滴滴哒闪烁
蓝色WIFI指示灯		
没有连接到WIFI		5Hz快闪
连接到WIFI，没有请求到ntrip数据		2Hz慢闪
请求到ntrip数据		常亮
绿色导航结果指示灯		
组合导航未初始化		不亮
组合导航初始化完成		2Hz慢闪
组合导航初始导航收敛良好		常亮
橙色RTK指示灯		
没有接收到RTK数据		不亮
RTK单点解		5Hz快闪
RTK浮点解		2Hz慢闪
RTK固定解		常亮

6. Simple Operation Instructions

6.1 Connect WIFI

The default mode is log download mode (AP mode) after power-on in WIFI mode. If RTK has signal (above single-point solution), it starts to connect to the differential server and exits log download mode.

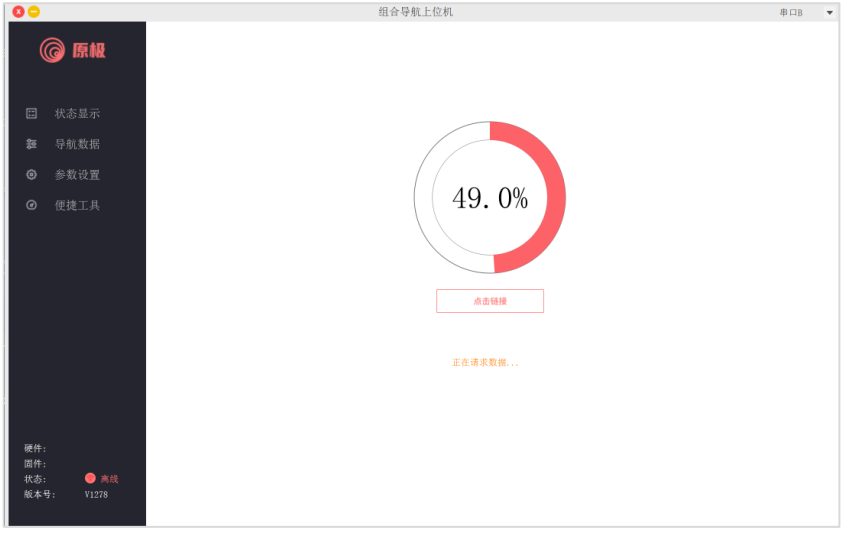
NAV618D can provide WIFI connection through mobile hotspots and routers. The WIFI accounts that the system connects by default are as follows:

Name: forsense

Password:12345678

6.2 Connect PC Upper Computer

Connect windows to the same LAN as NAV618D,open the PC software, click Connect, the software will automatically search for NAV618D in the LAN and establish a wireless connection.

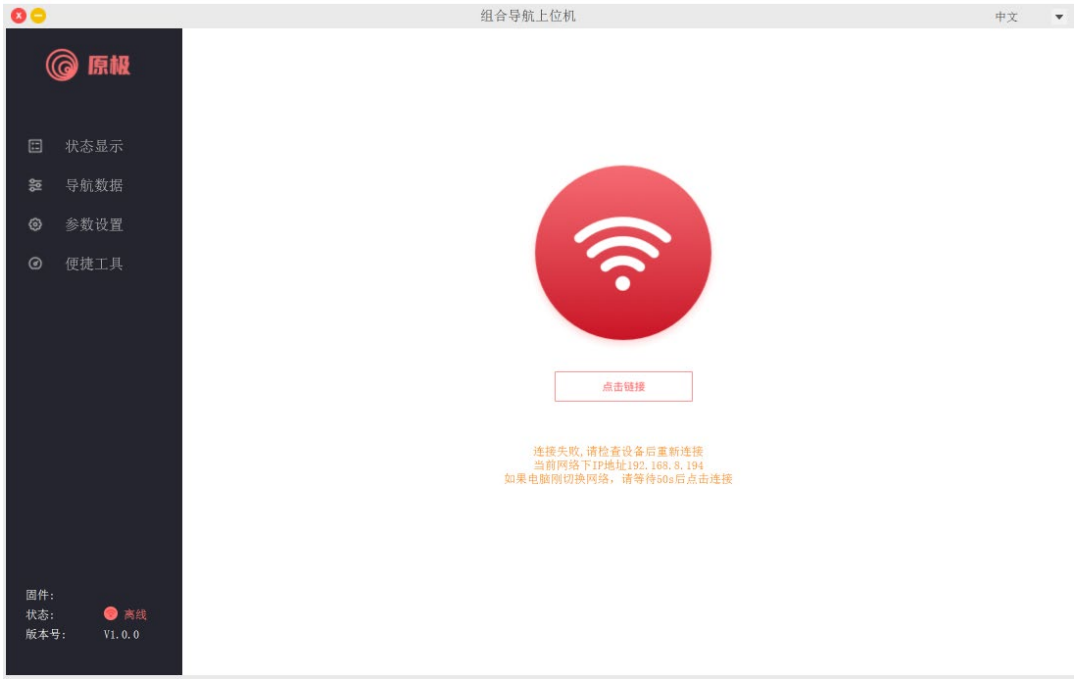


If the computer connection fails, the possible reason is:

（1）No hot spots turned on;

（2）The computer or NAV618 is not connected to the correct network;

（3）The computer has just connected to this network. It will take some time to identify the network. Please click Connect after switching the network for 50s;



6.3 Status Display

Enter the status display interface after successful connection. The status display includes:

（1）IMU,RTK, odometer, differential account, navigation accuracy, etc.；

（2）Network status, WIFI address；

（3）Firmware version number, hardware version, etc.；

（4）Main parameter display;

（5）SD card free space, number of files, current file name, etc.

6.4 Navigation Data

Navigation data includes information such as displaying IMU data, RTK data, posture, and odometer, which is refreshed twice per second.

If the computer is connected to the Internet, you can view the online map to get the driving track.

6.5 IMU Parameter Settings

The main functions are as follows:

Configurable serial output frequency,each option can be configured separately;

Configurable RTK installation deviation and installation deviation angle;

Configurable serial baud rate,filter (vibration suppression),CAN enablement,CAN parameters,etc.

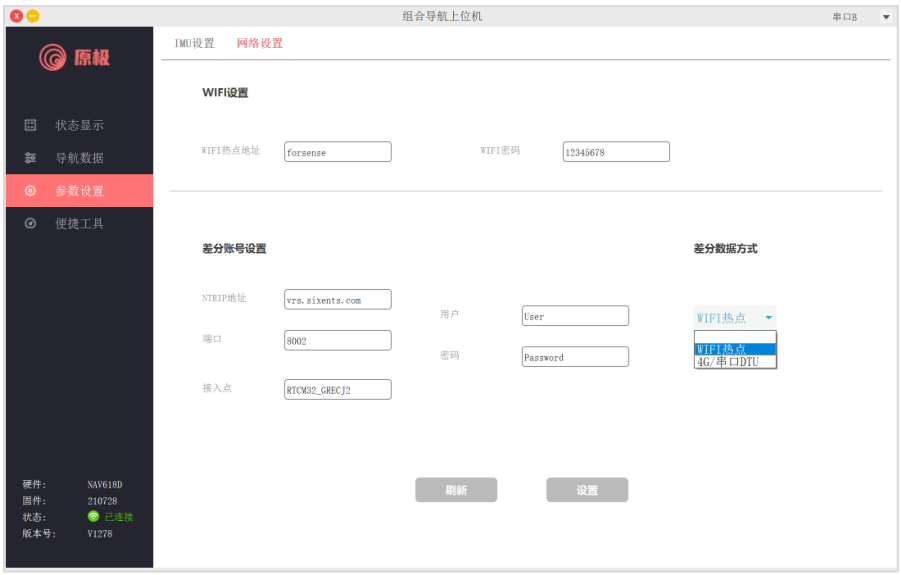
After setting the parameters, wait for the reminder parameters to be set successfully.

6.6 Network Parameter Settings

WIFI Settings: You can set the WIFI hotspot name and password. The default name is forsense. Be careful to use the English name when setting a new address. Restart after WIFI settings take effect.

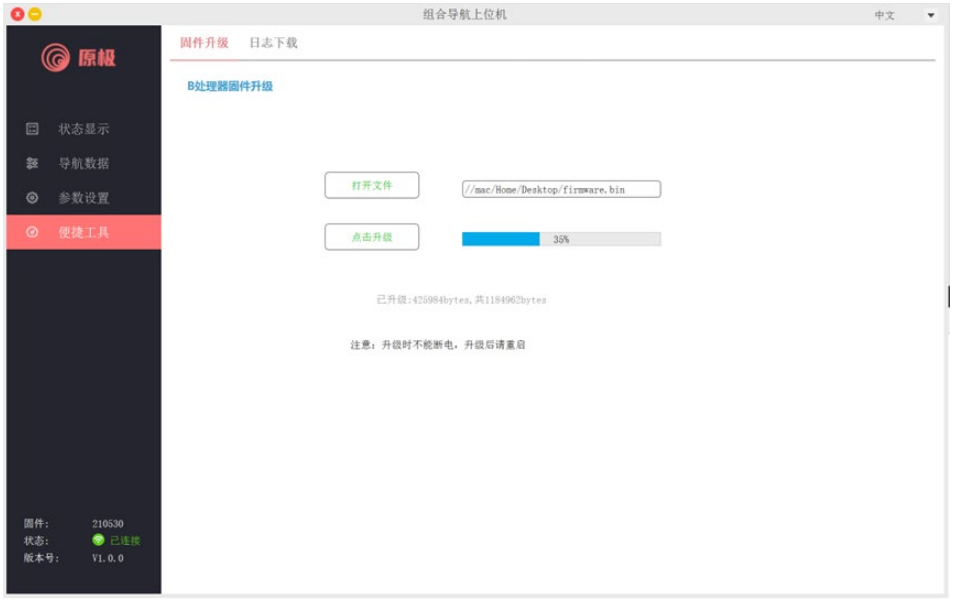
Differential Service Settings: NTRIP server address, account, etc. can be set.

Differential data mode: supports WIFI hot spot mode and serial port import differential data mode.



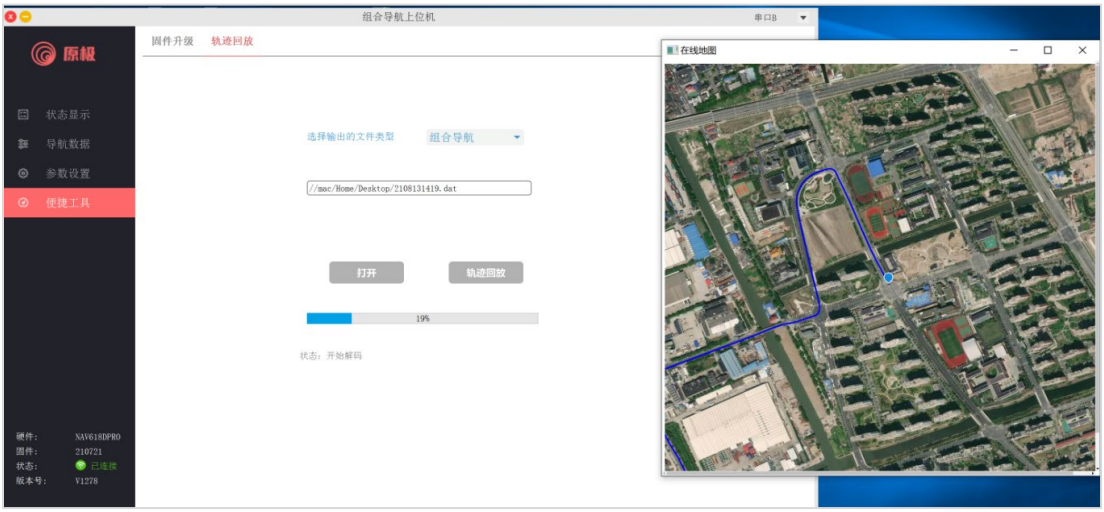
6.7 Firmware update

This firmware upgrade only includes a wireless upgrade application processor.Upgrade of navigation processor requires serial port upgrade, using separate upgrade software.



6.8 Log Playback

You can download the log using the method described in section 6.9 and view the track using the log playback function.



6.9 Log Download

The integrated navigation system stores three files at the same time, which are the combined navigation data, RTK raw data and base station data.

Using the FTP software FileZilla, you can download logs from the integrated navigation system.

When GPS is not positioned, the system is always in AP mode, and after GPS single point solution becomes hot spot mode to connect mobile phone/router.

Logs can be downloaded in AP mode and connected to a hotspot named forsense-xxxx by WIFI.

Settings for FTP tools:

(1) Open the file - > Site Manager.

(2) IP address: 192.168.4.1.

Port: FTP default 21;

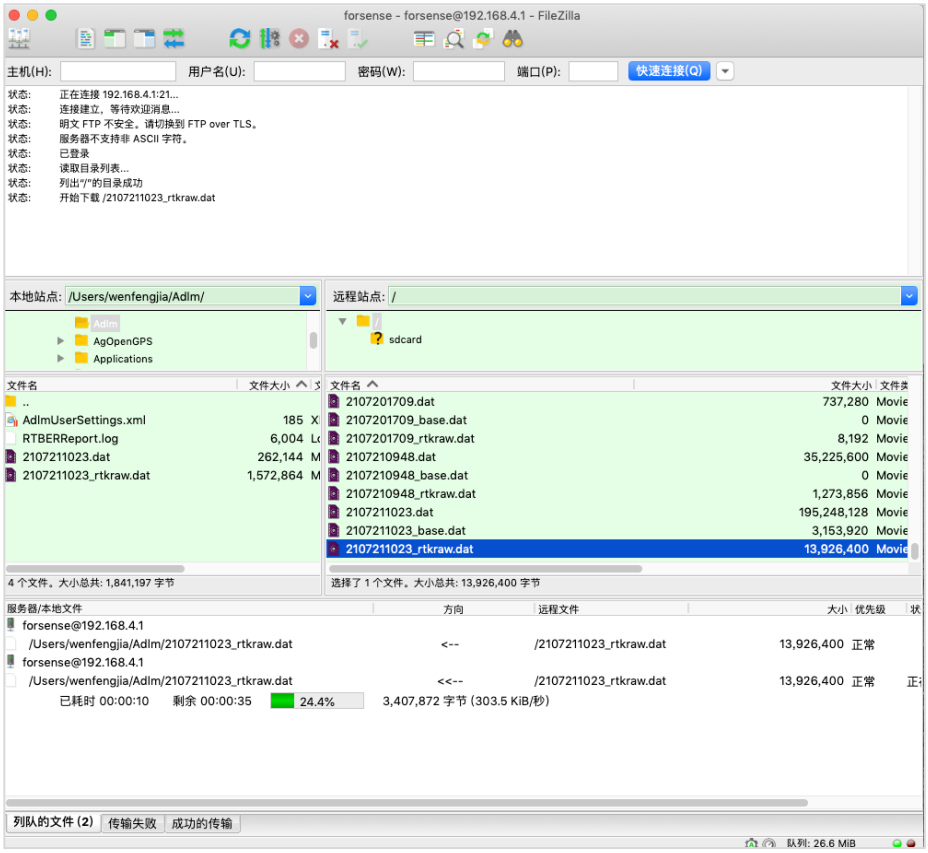
Encryption: Select clear text FTP only;

User: forsense;

Password: 12345678;

On the Transport Settings page, check to show that the number of concurrent connections is 1.

When you open it, you can see a file named Date.dat that contains combined navigation data and NEMA data. By Date_The file named base.dat contains the base station data; By Date_The file named rtkraw.dat contains the raw RTK data.


forsense - forsense@192.168.4.1 - FileZilla
主机(H):
用户名(U):
密码(W):
端口(P):
快速连接(Q)
状态: 正在连接 192.168.4.1:21...
状态: 连接建立，等待欢迎消息...
状态: 明文 FTP 不安全。请切换到 FTP over TLS。
状态: 服务器不支持非 ASCII 字符。
状态: 已登录
状态: 读取目录列表...
状态: 列出"/"的目录成功
状态: 开始下载 /2107211023_rtkraw.dat
本地站点: /Users/wenfengjia/Adlm/
远程站点: /
Adlm
AgOpenGPS
Applications
sdcard
文件名 文件大小
..
AdlmUserSettings.xml 185
RTBERReport.log 6,004
2107211023.dat 262,144
2107211023_rtkraw.dat 1,572,864
4 个文件。大小总共: 1,841,197 字节
文件名 文件大小
2107201709.dat 737,280
2107201709_base.dat 0
2107201709_rtkraw.dat 8,192
2107210948.dat 35,225,600
2107210948_base.dat 0
2107210948_rtkraw.dat 1,273,856
2107211023.dat 195,248,128
2107211023_base.dat 3,153,920
2107211023_rtkraw.dat 13,926,400
选择了 1 个文件。大小总共: 13,926,400 字节
服务器/本地文件 方向 远程文件 大小 优先级
forsense@192.168.4.1
/Users/wenfengjia/Adlm/2107211023_rtkraw.dat <-- /2107211023_rtkraw.dat 13,926,400 正常
forsense@192.168.4.1
/Users/wenfengjia/Adlm/2107211023_rtkraw.dat <<-- /2107211023_rtkraw.dat 13,926,400 正常
已耗时 00:00:10 剩余 00:00:35 24.4% 3,407,872 字节 (303.5 KiB/秒)
列队的文件 (2) 传输失败 成功的传输
队列: 26.6 MiB

7. Frequently Asked Questions

1) What is the forward sign when installing the device?

There is a coordinate of the XYZ axis on the device, with the X axis pointing forward for the device.

2) Which of GNSS1 and GNSS2 is the main antenna?

GNSS1 is the main antenna and GNSS2 is the secondary antenna.

3) When testing, do I need a network to view online maps?

Viewing online maps requires a network.

4) Differential data mode, what should I pay attention to after switching on the 4G/Serial DTU mode?

Open the 4G/Serial DTU and connect the Serial DTU from Serial B.

5) The device is not positioned for a long time?

Check to see if the differential account has expired.

6) Differential data mode, after switching on 4G/Serial DTU mode, do you need to turn on mobile phone hotspots?

4G/Serial DTU mode does not require turning on phone hotspots.

7) Differential data mode, what should I pay attention to after turning on the WIFI hot spot mode?

The hot spot needs to be turned on by the mobile phone to provide differential data to the device. The hot spot name and password of the mobile phone need to be consistent with the parameter adjustment software "WIFI Settings".

8) What parameters need to be set before testing?

Differential account and RTK installation deviation need to be set.

9) Connect parameter adjustment software, which serial port?

Use B-RS232 serial port.

10) Turn on the hotspot, the name and password are correct, what happens when the device can't connect to the hotspot?

The device is not positioned, the default is AP mode when it is not positioned. After the card is positioned, it will cut to WIFI mode. When it is in WIFI mode, the device will automatically connect to hot spots.

11) What is the AP mode?

Log download mode.

12) NAV618D, what is the CAN BUS baud rate?

500K.

13) What is the baud rate of NAV618D serial A-RS232 and B-RS232?

Serial A-RS232 baud rate 460800;Serial B-RS232 baud rate 115200.

14) Connect parameter adjustment software, differential data method, WIFI hot spot, no differential data, positioning status has been "1". What's wrong?

This mode needs to be confirmed, the phone hotspot is turned on, the hotspot name is "forsense" password "12345678".

8. Version History

Version Number	Release time	Edit History
V1.0	June 18, 2021	First Generation Manual Official Release
V1.1	September 03, 2021	Version Update