

Configuration parameters

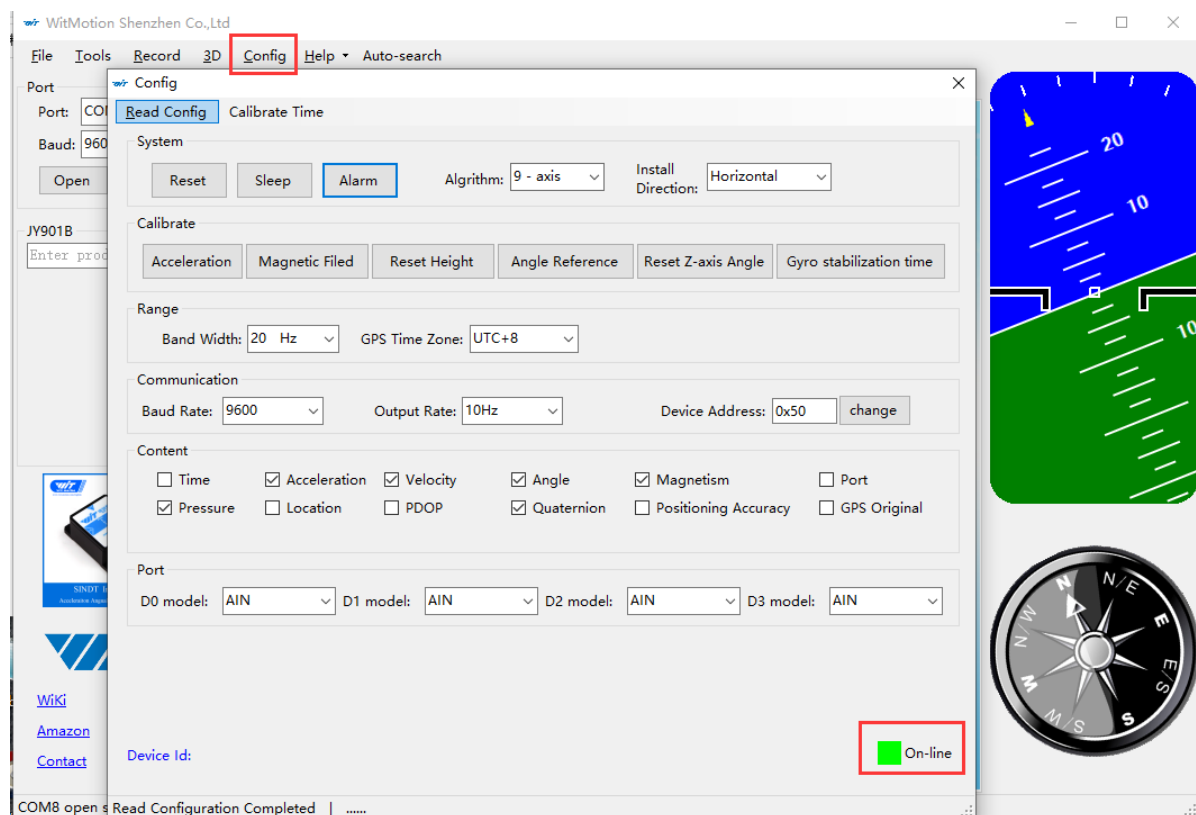
Configuration parameters

1. Explanation of configuration interface

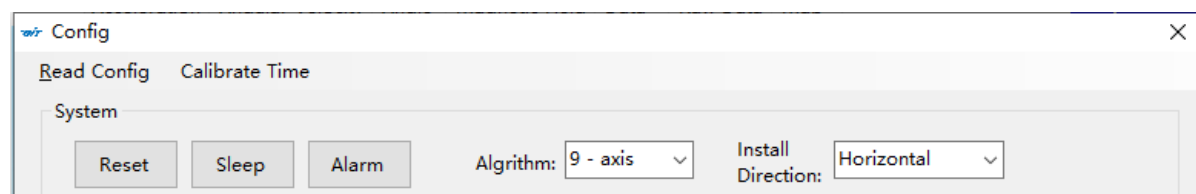
Before performing the following operations, please confirm that the IMU module has been connected to the PC host computer software.

1. Explanation of configuration interface

Click 'Config' on the menu bar, a window will pop up, check the status in the lower right corner, it must be 'On-line' to be correct, if 'Off-line' appears, it means that the IMU module is not connected.



1.系统



Reset: restore the configuration data of the IMU module to the default.

Sleep: Put the IMU module into sleep mode, click again to exit sleep mode.

Alarm: Through the upper computer alarm setting, the following pins can be set as the alarm status output port. Take the following settings as an example. In normal state, the output of 4 ports is low level (0V). When the angle value of X and Y axis is greater than the maximum value of 10° or less than the minimum value of -10°, the corresponding port outputs high and low level

alarms. . Click Write to take effect.

Alarm

X Angle

☒ Enable

Min(°): -10.00 Port: D3

Max(°): 10.00 Port: D2

Y Angle

☒ Enable

Min(°): -10.00 Port: SDA

Max(°): 10.00 Port: SCL

Confirm time(ms): 0

The alarm signal is triggered after the signal exceeds the threshold value for a confirm time.

Hold time(ms): 0

The alarm signal will last for at least a hold time once it is triggered.

Alarm Level: 1

This item define the alarm level when alarm signal is triggered.

Write **Read**

Algorithm:

Select 6 - axes, and only read the data of the accelerometer and gyroscope to calculate the attitude angle.

Select 9 - axes, add the magnetometer data to the fusion solution attitude, please calibrate the magnetometer data of the IMU module before use. The Z-axis angle under the nine-axis algorithm is an absolute angle, with the Local cartesian coordinates coordinate system(ENU) , and cannot be returned to 0 relatively. When it rotates to 0 degrees, the direction of the Y-axis is the north.

Installation direction: horizontal installation and vertical installation. The default installation direction of the module is horizontal installation. When the module needs to be placed vertically, vertical installation can be used.

2. Calibration

Calibrate

Acceleration Magnetic Filed Reset Height Angle Reference Reset Z-axis Angle Gyro stabilization time

Acceleration: Calibrate the accelerometer.

Magnetic Field: Calibrate the magnetic field.

Reset Height: Calibrate the height.

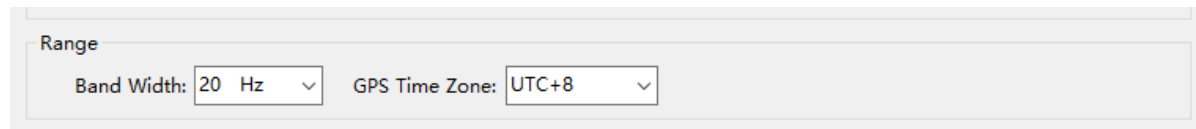
Reset Z axis angle: only valid for six axes, set the relative heading angle to zero.

Angle Reference: Use the current pose as a reference.

Gyro stabilization time: Gyroscope auto-calibration switch.

For the specific calibration method, please refer to the next chapter "Calibrating the IMU Module".

3. Range



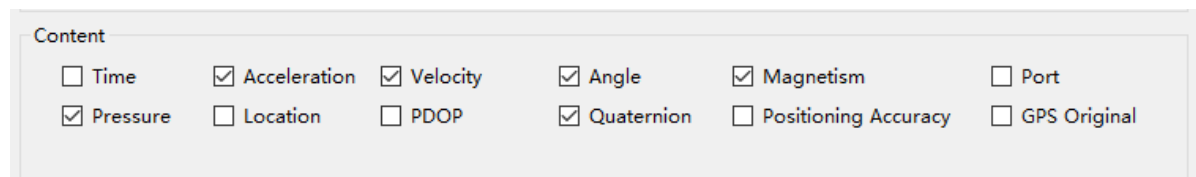
Range

Band Width: 20 Hz GPS Time Zone: UTC+8

Band Width: Set the bandwidth for reading raw data, the default is 20Hz.

GPS Time Zone: Set the GPS time zone. It is only valid when the GPS module is connected.

4. Content



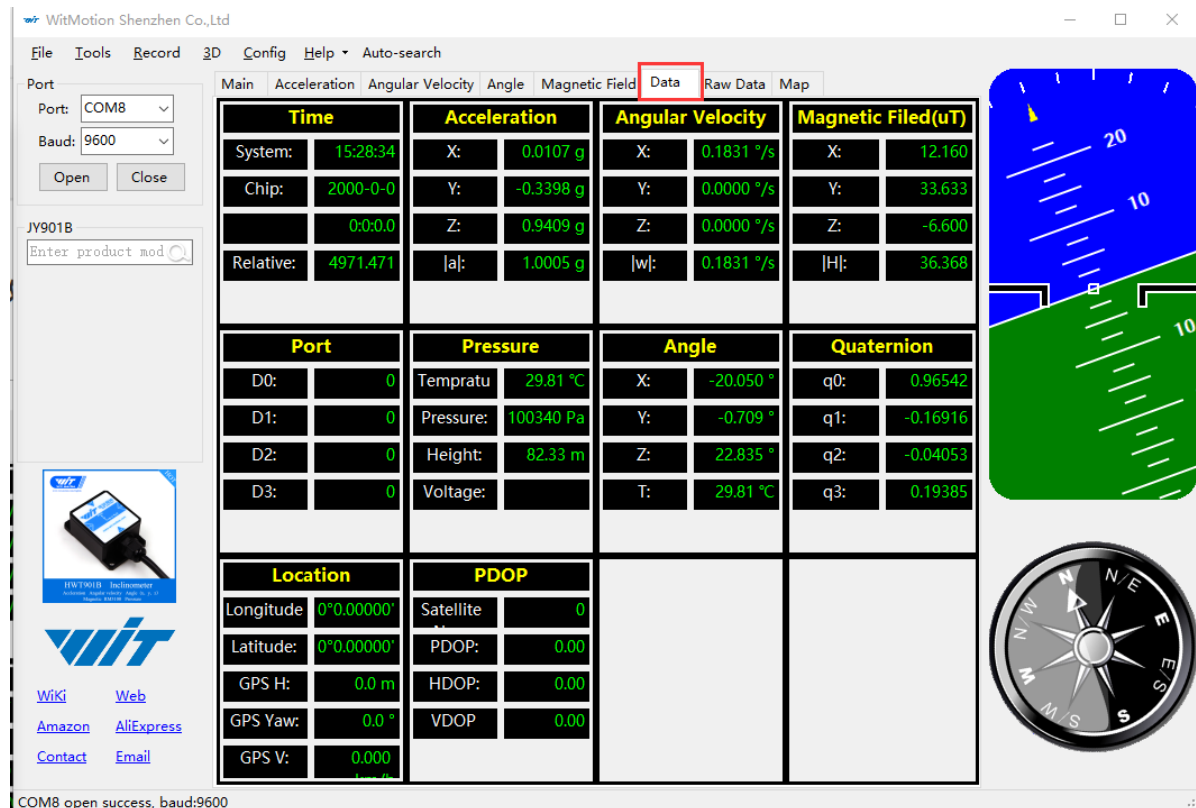
Content

☐ Time ☒ Acceleration ☒ Velocity ☒ Angle ☒ Magnetism ☐ Port
☒ Pressure ☐ Location ☐ PDOP ☒ Quaternion ☐ Positioning Accuracy ☐ GPS Original

Set the content of the serial port output. You can view the protocol file analysis data for the serial port output content.

Note: After checking "GPS original", the module only outputs GPS original information, and other data will not be output.

View the corresponding data in 'Data' in the menu bar.



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File Tools Record 3D Config Help Auto-search

Port: COM8 Baud: 9600 [Open] [Close]

JY901B Enter product mod

COM8 open success, baud:9600

Main Acceleration Angular Velocity Angle Magnetic Field **Data** Raw Data Map

Time		Acceleration		Angular Velocity		Magnetic Filed(uT)	
System:	15:28:34	X:	0.0107 g	X:	0.1831 °/s	X:	12.160
Chip:	2000-0-0	Y:	-0.3398 g	Y:	0.0000 °/s	Y:	33.633
	0:0:0.0	Z:	0.9409 g	Z:	0.0000 °/s	Z:	-6.600
Relative:	4971.471	a :	1.0005 g	w :	0.1831 °/s	H :	36.368

Port		Pressure		Angle		Quaternion	
D0:	0	Tempratu	29.81 °C	X:	-20.050 °	q0:	0.96542
D1:	0	Pressure:	100340 Pa	Y:	-0.709 °	q1:	-0.16916
D2:	0	Height:	82.33 m	Z:	22.835 °	q2:	-0.04053
D3:	0	Voltage:		T:	29.81 °C	q3:	0.19385

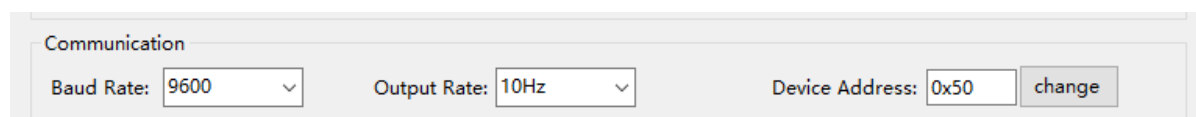
Location		PDOP	
Longitude	0°0.00000'	Satellite	0
Latitude:	0°0.00000'	PDOP:	0.00
GPS H:	0.0 m	HDOP:	0.00
GPS Yaw:	0.0 °	VDOP:	0.00
GPS V:	0.000		

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Map

Compass

5. Communication



Communication

Baud Rate: 9600 Output Rate: 10Hz Device Address: 0x50 [change]

Communication Rate: serial communication rate, the default is 9600, and other baud rates (4800~921600) can be selected.

Output Rate: The rate at which the serial port returns data, the default is 10Hz, and it can be modified to 0.2Hz~200Hz. 10HZ refers to 10 data packets sent back in 1S, and 1 data packet sent back by default is 11 bytes.

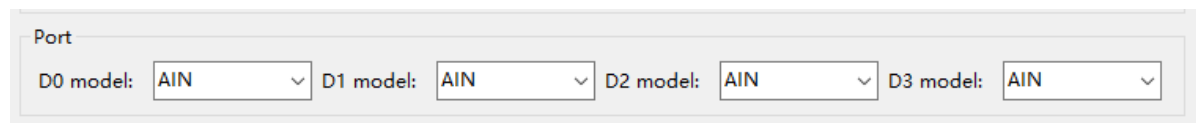
Note: 'Single' cannot be selected, which will cause the automatic monitoring device function to fail to connect.

Note: If you need a return rate of 200HZ, you can only check three quantities, such as "Acceleration", "Velocity", "Angle".

Note: If there is a lot of returned content and the baud rate of the communication is low, it may not be able to transmit so much data. At this time, the module will automatically reduce the frequency and output at the maximum allowable output rate. To put it simply, if the return rate is high, the baud rate should also be set higher, generally 115200.

Device Address: IIC device address, the default 0x50 does not need to be modified.

6.port



Set the external expansion interface mode, there are four modes in total, just keep the default, no need to modify.

AIN: analog input

DIN: digital input

DOH: output high level

DOL: output low level