Application FAQ of WT901BLE

Bluetooth Issues:

1.The issue of Bluetooth connection

Answer:

Solution: Please have a reference with the manual of WT901BLE for Bluetooth connection

The reasons which make the connection failly:

1. The WT901BLE has been connected, and it could not be connected again(The blue flashlight means that the sensor has been connected). Closing the switch and re-open will be available for the reconnection of WT901BLE

2. The power of WT901BLE has been run out

3.The connection distance is too long which could not support.

2.Concerning the Bluetooth sensor, how long the Bluetooth sensor will go into the standby state.

Answer:

The Bluetooth sensor will go into the standby state directly after loss of connection.

3.What is the power concerning WT901BLE?

Answer:

3.3-5v

4.What is the default bandwidth and return rate? What is the maximum value concerning return rate and bandwidth?

The default bandwidth and return rate of WT901BLE, is 20Hz, 10Hz.

Default bandwidth: 20Hz
Default return rate: 10Hz

Bandwidth range: 5-256Hz.
Return rate: 0.2-50Hz.

5.What is the maximum distance concerning the Bluetooth connected with WT901BLE?

Answer:

50m, the most long-distance is 50m concerning Bluetooth 5.0

6.How to make the multiple connection for WT901BLE with BLE 5.0 adapter?

Answer:

The multiple-connected BLE 5.0 adapter supports for 4 pcs connection with WT901BLE on one PC.

7.How many pcs of WT901BLE support for multiple connections with PC?

Answer:

The multiple-connected BLE 5.0 adapter supports for 4 pcs connection with one PC.

8.Why the MiNiIMU has showed the baud rate of 115200 after changing with 9600?

Answer:

The baud rate of the Bluetooth sensor is 115200 default, and it could not be changed.

9.The Bluetooth indicator is under flash state but the connection is failed after pairing with PC software MiNiIMU.

Answer:

The Bluetooth connection with adapter on PC:

And install the drive CP2102 for the BLE 5.0 adapter.

It will generate the serial port No after Bluetooth pairing with PC.

Please choosing the serial port No on MiNiIMU, the data would be shown, and the indicator will be flesh all the time.

10.Is it available for running the WT901BLE in the surrounding of the iron ball?

Answer:

It does not support running in the surrounding of metal ball.
The metal ball will shield the Bluetooth signal which could not work directly.

You can have a reference with the sensor WT901SDCL which has been built-in the SD Card.

11.It does not show the parameters output of angle, gyroscope but raw data on the PC software MiNiIMU concerning BLE 5.0.

Answer:

1.The wrong value of baud rate (It should be 115200 default)

2.The wrong PC software MiNiIMU(It should be the BLE 5.0 MiNiIMU separately)

Common Issues:

1.What should I do if there is no data when the device connected with the PC software MiNiIMU?

Answer:

1. Checking the Bluetooth connection will correspond with the solution on the manual of WT901BLE.

2. Please install the drive followed by the manual.

3.Checking whether there is the output of "raw data" existed on MiNiIMU or not. If point 3 YES, please check the value of baud rate which corresponded with the available value.

2.The definition about 3 ,6 ,9 ,10 axis

Answer:

The 3 axis sensor means that the 3 axis accelerometer sensor, the X, Y angles are calculated by the value of acceleration.

The 6 axis sensor means the one integrated with 3 axis accelerometer and 3 axis gyroscope, the X, Y, Z angles are calculated by the values of acceleration and angular velocity.
(Note: The z-axis angle will exist the accumulative error due to the solution about integral calculation of gyroscope)

The 9 axis sensor means the one integrated with 3 axis accelerometer and 3 axis gyroscope and 3 axis magnetometer, the X, Y, Z angles are calculated by the values of acceleration, angular velocity and magnetic field.
(Note: The z-axis angle is calculated by the magnetic field. And it will be affected by the magnetic field surrounded)

The 10 axis sensor means the one integrated with 3 axis accelerometer, 3 axis gyroscope, 3 axis magnetometer and barometer.

3.The MiNiIMU could not run on PC

Answer:

It should be requested for the certain condition for running with MiNiIMU .

Please install the Microsoft .NET Framework 4 firstly, and the download link shows as below:

https://www.microsoft.com/zh-cn/download/details.aspx?id=17718

4.The standard about calibration of accelerometer

Answer:

Horizontal installtion:
The sensor should be under horizontal level for default installation.

Vertical installation:
The Y-axis of the sensor should be upward if you choose the vertical installation.

5.How to create the custom App for reading data from sensor

Answer:

Please have a reference with the communication protocol of sensor which concerning the reading data and config of commands for custom App.

6. What should I do if there is no data when the device connected with the PC software?

Answer:

1. It should be confirmed that there are no issues with the Bluetooth connection.

2. If there is no problem with point 1, then it is necessary for checking the operation on the MiNiIMU

a Confirming the correct serial port No has been generated after installing the corresponded drive of the convert module.

b Checking the communication protocol of PC software correspond with the usage sensor

c It should be required for selecting the correct serial port No and the correct baud rate (The default baud rate could be found in the corresponding datasheet)

7. Why the sensor could not be searched on MiNiIMU?

Answer:

The function of the automatic searching device would be invalid if the other serial ports have been occupied. Closing the other serial ports for opening the corresponded serial port automatically

Notice that choice with the available baud rate and the corresponded serial port.

Close the tip of the searching box and you can open the serial port corresponded with the sensor manually.

8.Why is messy concerning the data of log file

Answer:

Please update the latest version for MiNiIMU

9. Definition of rotation axis

Answer:

It is defined by the right-hand rule concerning the definition of the axis rotation. the direction of the axis would correspond with the thumb of right-hand points to. The bending direction of the four fingers is the direction of rotation around this axis after the four fingers make a fist.

The definition of three axial directions have been shown in the datasheet.

10. Why is incorrect about the parameter value of record time by PC Software MiNiIMU?

Answer:

This is the issue of resolution on the laptop. The resolution of time is 0.1 seconds on PC. For example, The duration of time is 0.05 seconds if the sample rate of the sensor is 20Hz, and that is why the parameter of record time will be shown repeatedly. The data sample will be output with a certain duration but we check the defeat time on file of txt.
We can choose the output of parameter time on config if it is requested

11. Does the module could offer displacement and speed?

Answer:

It is not recommended to use due to the certain error of accuracy, the calculated error data will be a large one as time go on

12. The blue screen problem and the mouse jump randomly?

Answer:

The steps of operation should be as below:

1. Open the MiNiIMU
2. Insert the BLE5.0 Adapter
3. Install the Drive CP2102
4. Connected the sensor with PC

13. Why is there 1g of acceleration concerning the Z-axis ?

Answer：

There is 1 g of acceleration data concerning gravity after placing horizontally

14.Does it should be calibrated again for usage?

Answer:

Yes. There is a bias error when production of AHRS sensors, it should be calibrated concerning acceleration and magnetometer for usage under different places

15.What is the purpose concerning calibration of the magnetic field.

Answer:

It could reduce the affect of magnetic field surrounded.

16.It requests the output of yaw angle under the surrounding of the motor.

Answer:

It could not be done under the 9 axis sensor, you can have a try with the HWT101 module or HWT101DT.

17.The record file shows that the repeated data under the sample rate of 50Hz

Answer:

Please config the higher value for the parameter of bandwidth

18.Why the angle value of the Z-axis is not correct?

Answer:

1.The direction of the Z-axis is based on the calibration of geomagnetism for the parameter yaw value
And it could not be affected by the other magnetic material.
What types of surroundings would exist the affect concerning calibration of geomagnetism?

Such as the motor, stainless steel, strong alternate current(AC),iron, which could be magnetized by the material of surrounding easily. But it will be available if it exist the aluminum and copper in the surrounding.

2. Here is a solution could confirm the sensor has been affected by the surrounding.
The parameter of |H| which means the magnetic field of sensor should not be larger than 300 if it does not be affected by surrounding.

3. If points 1, and 2 could be ignored, we could make the calibration of the magnetometer for correcting the angle of the Z-axis. You can follow the videos and manuals concerning sensor for the idea of calibration of the magnetic field.

19.What is the meaning of parameter Quaternion?

Answer:

The value of quaternion is designed for the calculation concerning the parameter of Euler angles.

20.What about second development

Answer:

The second development is concerning the functions of sensor which based on the requirements and applications of IMU data,it does not support for the firmware development of sensor.

21.What are the differences about angle of Z axis between 6 axis sensors and 9 axis sensors?

Answer:

6 Axis:

The z axis of angle will returned to zero after power on second time.

9 Axis:

The angle of z axis will keep the previous data even though after power on second time.