Application FAQ of BWT61CL

Bluetooth Issues

1.The issue of bluetooth connection

Answer:

Solution: Please have a reference with the manual of BWT61CL for bluetooth connection

The reasons which make the connection failly:

1. The BWT61CL has been connected ,and it could not be connected again(The blue light means that the sensor has been connected).Closing the switch and re-open will be available for the reconnection of BWT61CL
2. The power of BWT61CL has been run out
3. It should be requested the password :1234 for bluetooth connection with Android App or PC via Bluetooth 2.0.
4. 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 detailed type of bluetooth chip concerning the BWT61CL ,BWT61CL.

Answer:

HC-06.

4.What is the storage of battery concerning BWT61CL?And how long could the sensor work under full power ?And how long it would recharge?

Answer:

260mAh.
It could work for 3 hours under full power.
It requests 3 hours of recharge.

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

Answer:

The default bandwidth and return rate of BWT61CL, is 20Hz, 10Hz.

Default bandwidth: 20Hz
Default return rate: 10Hz

Bandwidth range: 5-256Hz.
Return rate: 100Hz.

6.What is the maximum bluetooth wireless connected distance about BWT61CL?

Answer:

10m, the most long distance is 10m concerning Bluetooth 2.0

7.Why it does not show the serial No on MiNiIMU after inserting the HID adapter?

Answer:

The USB-HID adapter is free for drive

8.How to make the multiple connection for BWT61CL with USB-HID adapter?

Answer:

The USB-HID adapter should be connected with the detailed bluetooth sensor and make the operation of binding.

And it could be inserted on the serial port of PC one by one.

9.How many pcs of USB-HID adapter supports for multiple connection with BWT61CL?

Answer:

It has been successful under multiple connection with 10pcs of USB-HID adapter.

And the return rate would be 100Hz for all sensors.

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

Answer:

The baud rate of bluetooth sensor is 115200 defaultly, and it could not be changed.

11.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:

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

And one of the serial ports No would correspond.

Please choose the correct serial port No on MiNiIMU, the data would be shown, and the indicator will be light all the time.

12.Is it available for running the BWT61CL 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.

Common Issues

1. 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 the time go one

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

Answer:

1.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

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

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

3. 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 in 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.

4. 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

5. 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 USB-HID adapter on PC
3.Connected the sensor with USB-HID adapter automatically

6. Do I need to calibrate the module when I use it?

Answer:

It is required for the operation of calibration, The sensor would exist the effect of zero offset error after leaving the factory. the measurement would be correct after calibration.

7. Which program is the BWT61CL suitable for use?

Answer:

The BWT61CL is suitable for measuring the tilt angles of the device, concerning the pitch and roll of the device. Moreover, it could not measure the tilt angle of equipments which runs at a constant speed.
The BWT61CL does not integrate the magnetometer, and the angles will not be affected by the surrounding magnetic field.

8.How to make the vertical installation for BWT61CL.

Answer:

Position:
The Y-axis of BWT61CL should be upward the vertical direction

Config:
The install direction should be vertical on the config of MiNiIMU

9.How to modify the sample rate of BWT61CL.

Answer:

The baud rate of 115200 would correspond with 100Hz. (It could not be changed)

10. 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 wireless connection.

2. 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 115200 could be found in the corresponding datasheet)

d Checking whether the original data starting with code "55 50" If no, it should be changed under serial mode for data.

11.Why is not accurate concerning the angle of Z axis on BWT61CL?

Answer:

Concerning angles of X,Y axis
The angles concerning X axis and Y axis are calculated based on the gravity acceleration .There are gravity field filtering concerning X axis and Y axis. After correction processing by Kalman filter algorithm,It does not have the drift concerning X axis and Y axis angles.

Concerning angles of Z axis
The Z-axis does not drift in a static state, the Z-axis angle is calculated through the integration of angular velocity, due to lacking the observable filtering, there is a cumulative error of Z axis angle in the movement state.
The Z axis can be used for relative measurement in a short time.

12.Why is messy concerning the data of log file

Answer:

Please update the latest version for MiNiIMU

13.How to confirm that the BWT61CL has been online on MiNiIMU

Answer:

It means that the BWT61CL has been online on MiNiIMU if the angle Z could be configed as 0 after click the button " return zero of Z axis"

Note:
The data showed on MiNiIMU does not mean that the BWT61CL has been online on MiNiIMU

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

Answer：

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

15.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 for usage under different places

16. How to connect BWT61CL sensor with ecu? How to process and calibrate the data?

Answer:

Just connect BWT61CL to the serial port of ECU. The BWT61CL will send data out automatically. Calibration can be done with the reference of command table on our manual

17.How to send the command for setting of angle reference on MiNiIMU

Answer:

1. Please sending the unlock command : FF AA 69 88 B5
2. Sending the setting of angle reference command : FF AA 69 88 B5
3. Sending the saving command : FF AA 69 88 B5

18. Can BWT61CL offer the parameter output of quaternion?

Answer:

BWT61CL cannot offer the parameter output of quaternion

19.Why do the acceleration values of X,Y,Z showed as 0g,1g,2g.

Answer:

The wrong operation of calibration would happen the situatioin after steps as below:

When the BWT61CL is under horizontal level ,
change the install direction with vertical one,
make the calibration of acceleration ,
upward the vertical direction of Y axis.

How to solve the issue:
Place the BWT61CL module under horizontal level (chip should under face up), config the horizontal installation on config of direction, and make the step of calibration will be available for solving the issue

20.About the zero angle of Z axis.

Answer:

It will be saved on BWT61CL module forever after clicking the button “zero angle of Z axis”

21.The issue of drift concerning Z-axis

Answer:

Concerning X, Y-axis angles:
It does not have the issue of drift concerning X, Y-axis angles with the procession of Kalman Filter algorithm.

Concerning Z-axis angle:
It does not have the issue of drift concerning Z-axis angle under still state.
It has the issue of cumulative error concerning the Z-axis angle under moving state.

Note:
It could use the solution with Z axis angle of 9 axis sensors if it requests for long time measurement.
If could use the solution with Z axis angle of HWT101 if it just request the requirements of Z-axis measurement in a flat environment.

22.What about second development

Answer:

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

23.What are the differences in angle of Z-axis between 6 axis sensors and 9 axis sensors?

Answer:

6 Axis:

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

9 Axis:

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