WiT WTGAHRS2 10 Axis GPS Navigation Position Speed Tracker Sensor User Manual

Contents

WiT WTGAHRS2 10 Axis GPS Navigation Position Speed Tracker Sensor

Product Information

Specifications

- Device Name: WTGAHRS2
- Scientific Name: GPS IMU sensor
- Detects: acceleration, angular velocity, angle, magnetic field, and GPS data
- Measurement Accuracy: High
- Application Areas: AGV Truck, Platform Stability, Auto Safety System, 3D Virtual Reality, Industrial Control, Robot, Car Navigation, UAV, Truck-mounted Satellite Antenna Equipment

Product Usage Instructions

Introduction

The WTGAHRS2 is a multi-sensor device that detects acceleration, angular velocity, angle, magnetic field, and GPS data. It i designed for industrial retrofit applications such as condition monitoring and predictive maintenance. The device's robust housing and small outline make it suitable for various use cases. Smart algorithms can interpret the sensor data to address different requirements.

Warning Statement

Before using the WTGAHRS2, please take note of the following warnings:

- Do not apply more than 5 Volts across the sensor wiring of the main power supply to avoid permanent damage.
- GPS positioning should be operated outdoors.
- For proper instrument grounding, use WITMOTION with its original factory-made cable or accessories.
- Do not access the I2C interface unless for secondary developing projects or integration using WITMOTION's compiled sample code.

Use Instructions

To get started with the WTGAHRS2, refer to the following resources:

- **Tutorial Link**
- Google Drive Link to instructions

- **WITMOTION Youtube Channel WTGAHRS2 Playlist**
- If you need technical assistance or cannot find the required information, please contact our support team.

Connection Method

To connect the WTGAHRS2, follow these steps:

1. Ensure the device is powered off.
2. Connect the device to your computer using the provided cable or accessories.
3. Power on the device.

Software Connection

To establish a software connection with the WTGAHRS2, follow these steps:

1. Download the software and drivers from the provided link.
2. Refer to the quick-guide manual for detailed instructions on software installation.
3. Watch the teaching videos for further guidance.
4. If needed, use the common software with detailed instructions.
5. For advanced development, refer to the SDKSample Code and SDK Tutorial Documentation.
6. Familiarize yourself with the communication protocol to interact with the device programmatically.

FAQ

Q: Where can I find the software and driver downloads?

A: You can find the software and driver downloads on our website.

Q: What should I do if I encounter technical problems or cannot find the required information?

A: Please contact our support team for technical assistance.

Q: Can the WTGAHRS2 be used indoors?

A: The GPS positioning function of the WTGAHRS2 requires outdoor operation.

Tutorial Link

- Google Drive
- Link to instructions
- DEMO: WITMOTION Youtube Channel
- WTGAHRS2 Playlist

If you have technical problems or cannot find the information that you need in the provided documents, please contact our support team. Our engineering team is committed to providing the required support necessary to ensure that you are successful with the operation of our AHRS sensors.

Contact

Technical Support Contact Info

Application

- AGV Truck
- Platform Stability
- Auto Safety System
- 3D Virtual Reality
- Industrial Control
- Robot
- Car Navigation
- UAV
- Truck-mounted Satellite Antenna Equipment

Introduction

The WTGAHRS2 is a multi-sensor device detecting acceleration, angular velocity, angle, magnetic filed as well as GPS. The robust housing and the small outline makes it perfectly suitable for industrial retrofit applications such as condition monitoring and predictive maintenance. Configuring the device enables the customer to address a broad variety of use cases by interpreting the sensor data by smart algorithms.

WTGAHRS2's scientific name is GPS IMU sensor. A sensor measures 3-axis angle, angular velocity, acceleration, magnetic field and GPS data. Its strength lies in the algorithm which can calculate three-axis angle accurately.
WTGAHRS2 is employed where the highest measurement accuracy is required. It offers several advantages over competing sensor:

- Heated for best data availability: new WITMOTION patented zero-bias automatic detection calibration algorithm outperforms traditional accelerometer sensor
- High precision Roll Pitch Yaw (X Y Z axis) Acceleration + Angular Velocity + Angle + Magnetic Field output+GPS data
- Low cost of ownership: remote diagnostics and lifetime technical support by WITMOTION service team
- Developed tutorial: providing manual, datasheet, Demo video, free software for Windows computer, APP for Android smartphones , and sample code for MCU integration including Python, STM32, Arduino, Raspberry Pi, C++, communication protocol for project development
- WITMOTION sensors have been praised by thousands of engineers as a recommended attitude measurement solution

Warning S tatement

- Putting more than 5 Volt across the sensor wiring of the main power supply can lead to permanent damage to the sensor.
- GPS positioning requires to be operated outdoors
- For proper instrument grounding: use WITMOTION with its orig inal factory made cable or accessories

- Do not access the I2C interface.
- For secondary developing project or integration: use WITMOTION with its compiled sample code.

Use Instructions

Hit the hyperlink direct to the document or download center:

- Software and driver download
- Q uick guide Manual
- T eaching Video
- Common Software with detailed instructions
- S DK Sample Code
- S DK Tutorial Documentation
- Communication Pro tocol

Use Instructions with PC

Connection Method

PC software is only compatible with Windows system.

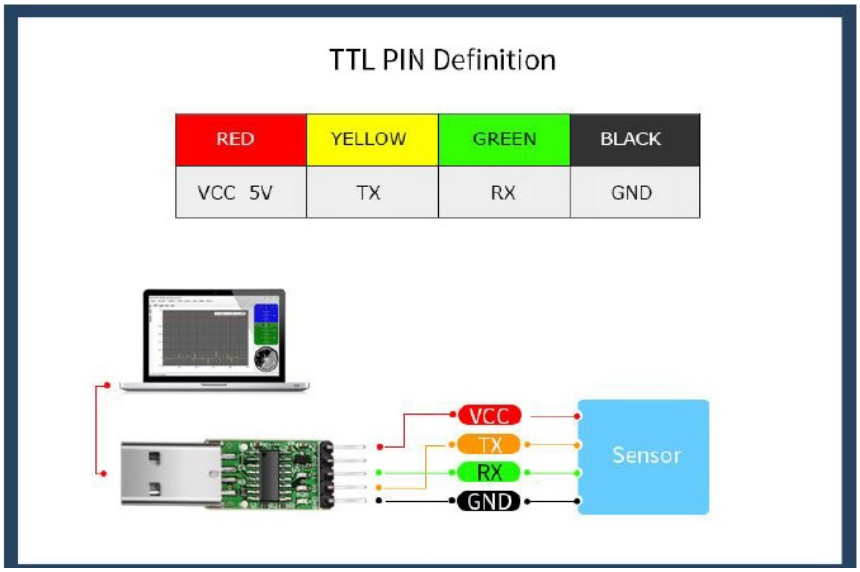
Link to WTGAHRS2s demo video

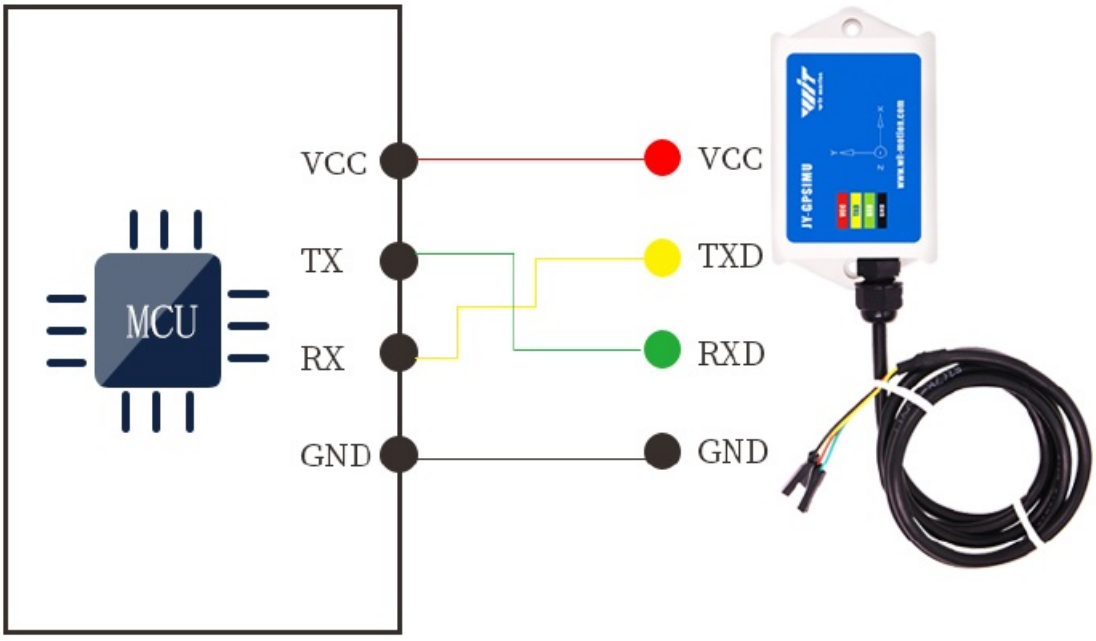
Software C onnection

Step 1. C onnect the sensor with a serial converter
PIN Connection:

- VCC -5V
- TX -RX
- RX -TX
- GND -GND

(When connecting with computer, VCC 5V is recommended.)

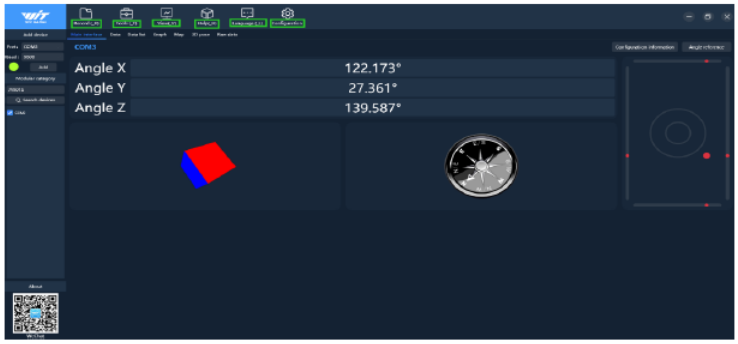




Software Introduction

Software function introduction

P s You can check the functions of the software menu from the link.



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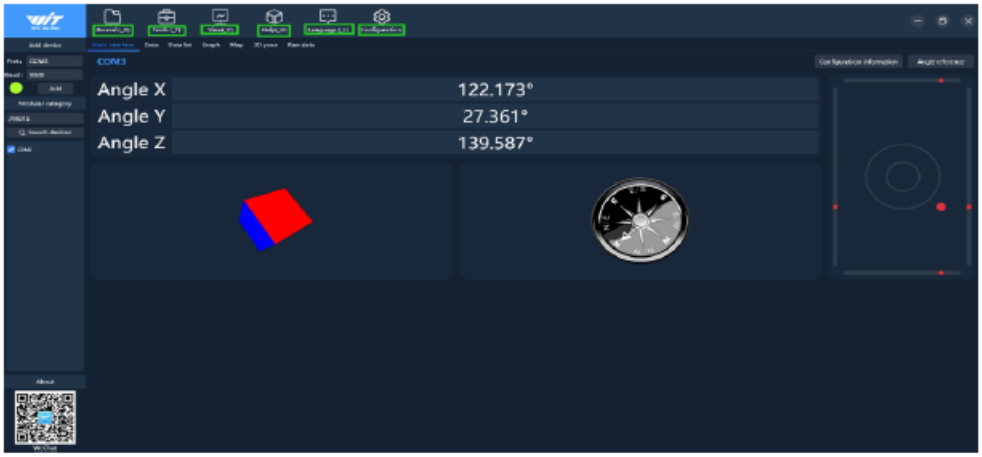

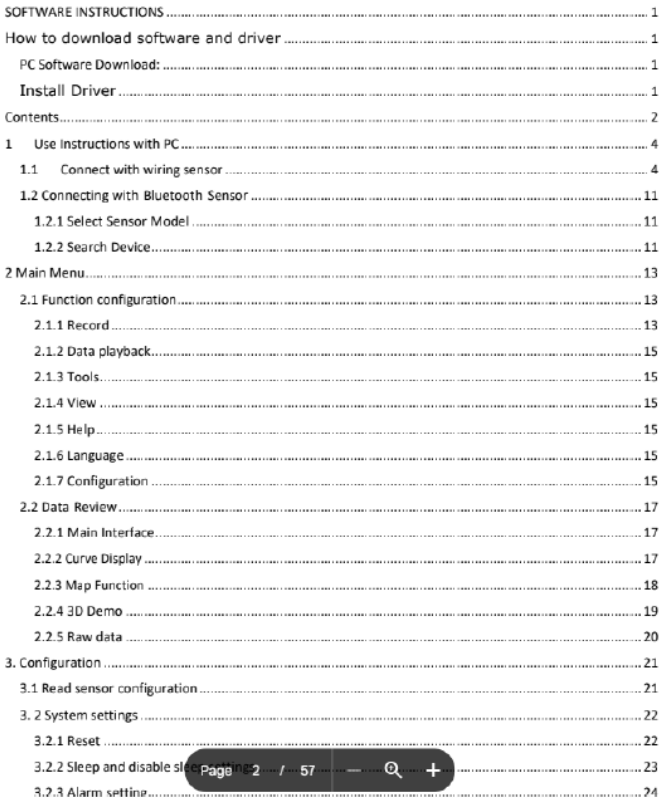

- WTGAHRS2|
- manual v23-0712
- www.wit-motion.com

Documents / Resources

	WiT WTGAHRS2 10 Axis GPS Navigation Position Speed Tracker Sensor [pdf] User Manua | WTGAHRS2 10 Axis GPS Navigation Position Speed Tracker Sensor, WTGAHRS2, 10 Axis GPS Navigation Position Speed Tracker Sensor, GPS Navigation Position Speed Tracker Sensor, Navigation Position Speed Tracker Sensor, Position Speed Tracker Sensor, Speed Tracker Sensor, Tracker Sensor, Sensor

References

- Hukseflux | #1 in solar radiation & heat flux measurement
- Accelerometer, Gyroscope, 6050 Mpu, Ahrs Sensor, Mpu-6050 Supplier
- SDK - WITMOTION SDK
- STM32_SDK Quick Start - WITMOTION SDK
- User Manual