

# **BW-GINS100 Series**

**Dual Antenna Intelligent Positioning Terminal**

## **Technical Manuals**

V1.3



## Introduction

BW-GINS100 is an intelligent module based on GNSS high-precision positioning technology and IoT communication technology, adopting high-precision MEMS IMU with built-in automatic compensation and filtering algorithm. It adopts unique integrated design with built-in GNSS full-band antenna receiving module, 4G IoT communication module, high-precision GNSS positioning board, high-precision posturing module and OTA online upgrade function. The board adopts excellent anti-electromagnetic interference design, compact and portable, beautiful and generous, can be applied to a variety of complex scenes, can be widely used in directional measurement and other fields.

## Main Feature

- RTK accuracy: Plane 0.8cm + 1ppm ;  
Elevation 1.5cm + 1ppm;
- PPP accuracy: Plane 25cm; Elevation 25cm;
- Orientation accuracy (0.6m baseline):  
 $\pm 0.5^\circ (1\sigma)$ ,  $\pm 1^\circ (2\sigma)$
- Interface support: TTL
- Main board size: L40\*W80\*H12.6 (mm)
- Power supply voltage: 5V DC
- Operating temperature: -40°C to +70°C

## Application

- Satellite tracking
- Petroleum geological exploration
- Optical rangefinders
- GPS-assisted navigation
- Cloud Platform Equipment
- Marine surveys
- Underwater navigation
- Mechanical controls

## Product Feature



### Electrical Index

Power voltage(V)	5V DC
Working Current (mA)	30mA (40mA max)
Operating Temperature (°C)	-40°C~+70°C
Storage Temperature (°C)	-55°C~+100°C



### Performance Index

RTK	Plane	0.8cm+1ppm
	Elevation	1.5cm+1ppm
ppp	Plane	25cm
	Elevation	25cm
	Convergence time	15-25min
First positioning time	cold start	<30s
	warm start	<15s
Maximum data rate	GNSS raw observations	20HZ
	GNSS RTK positioning	20HZ
	GNSS/INS solving	200HZ
	IMU raw data rate	200HZ
	Positioning information output	1HZ
Orientation accuracy	1σ	±0.5°
0.6m baseline	2σ	±1°

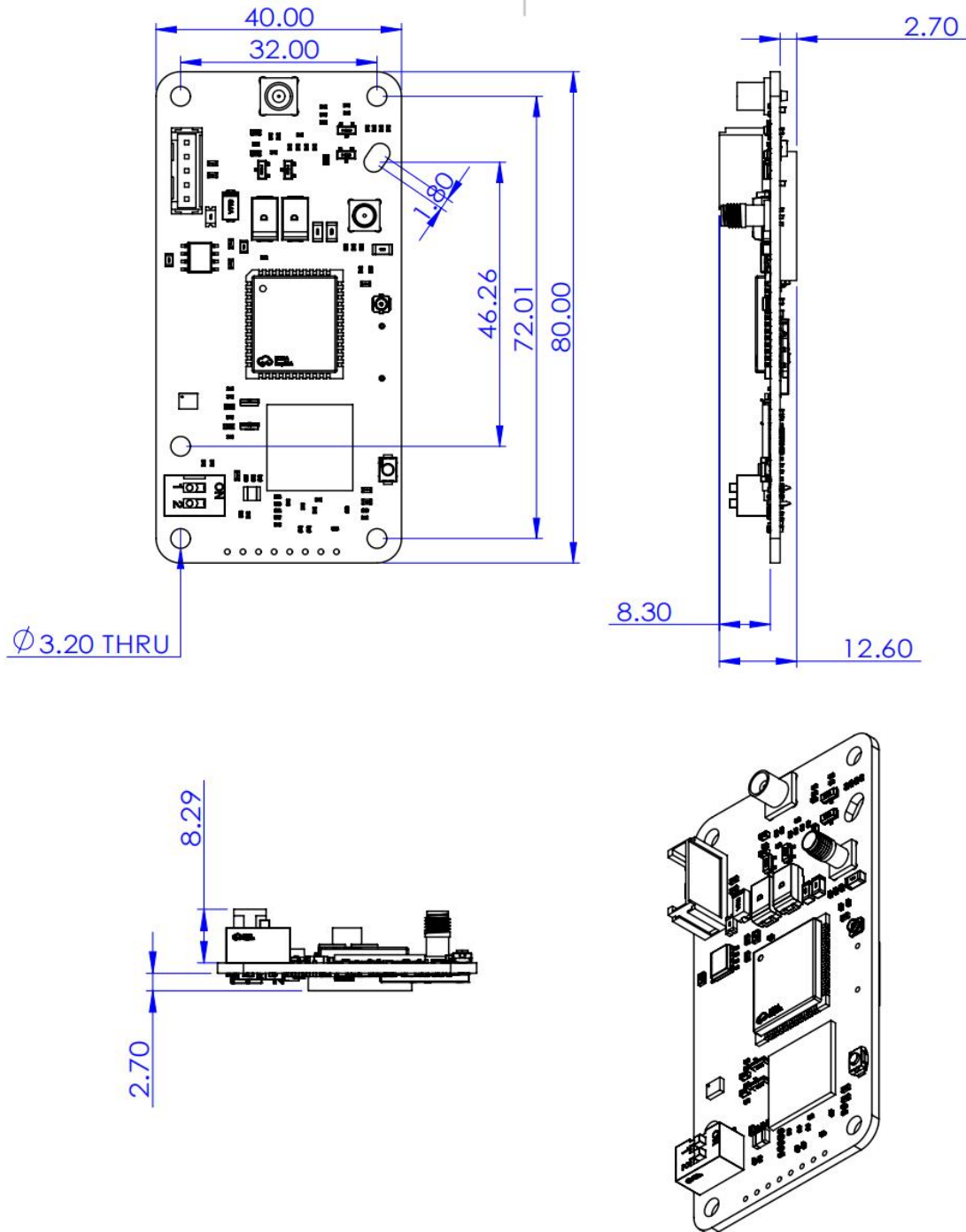


### Mechanical Index

Connector	Motherboard Interface 1x5-bit, 2mm Pitch Pin Connector
4G-RTK antenna interface	I-PEX 20279 (MHF)
GNSS main antenna interface	SSMA Female connector
GNSS slave antenna	MCX Female connector
Mounting	Four M3 screws (unthreaded)



## Motherboard Dimensions



## Accessory List

Serial	Name	Quantity
1	GNSS main antenna, SMA Female to SSMA Male Adaptor	1
2	GNSS slave antenna with SMA/MCX-KJ adapter	1
3	4G antenna and adapter cable	1
4	SIM card	1
5	Signal output cable with pins VCC, GND, TX, RX	1

## Instructions for use

1. Installation of SIM, install the SIM card in the corresponding slot
2. Installation of the conversion connector, the bare board is marked with master and slave antenna female connector, according to the interface type in accordance with the completion can be
3. To install the antenna, simply connect the antenna to the adapter connector
4. Install the 4G antenna and use the 4G antenna connection cable to connect the 4G antenna to the 4G

## Instruction Description

- **Setting the baud rate**
  - CONFIG COM1 115200 Set the baud rate to 115200
- **Setting the output frequency** (currently supports two output frequencies)
  - INSPVAB COM1 0.05 20HZ Output
  - INSPVAB COM1 1 1HZ Output
- **Stop output**
  - UNLOG
- **Save Settings**
  - SAVECONFIG After setting the corresponding configuration, you need to save the settings, otherwise revert to the original state after reboot.
- **Set Qianxun CORS account**
  - \$CFG,NRTIP,XXXXX,XXXXX\* XXXXXis the corresponding account number and password
  - \$CFG,NRTIP, , \* Delete the corresponding account and password
- **4G Card Related Enquiry**
  - \$ZJCX,4G,SIM\* Query 4G SIM status
  - \$ZJCX,4G,NET\* Query 4G network status
  - \$ZJCX,4G,TRAFFIC\* Query 4G signal status
  - \$ZJCX,4G,CSQ\* Check 4G signal strength
  - \$ZJCX,4G,SIM,CCID\* Query SIM card number

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