

JS-168BWP-R

Standard Precision G-Mouse GNSS Receiver

Data Sheet



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Revision History

Version	Date	Change Description / Modifications	Modified By
V1.0	2025-11.26	Initial Release	HJX

1. Function Description

1.1 Overview

The JS-168BWP-R utilizes a multi-mode single-frequency solution, featuring low power consumption and low cost. It is a positioning module for multiple satellite navigation systems (GPS, BDS, GLONASS), designed to meet the requirements of various applications and end products needing positioning. Based on a high-performance chip SOC positioning engine, this module offers outstanding sensitivity and signal acquisition speed. It also incorporates anti-interference measures, enabling reliable positioning even in challenging signal environments.

1.2 Product Features

- Based on high-performance GNSS SOC series
- Supports up to 210 PRN (Pseudo-Random Noise) channels
- 24 tracking channels and 72 acquisition channels
- Cold start acquisition sensitivity: -148dBm, Tracking sensitivity: -162dBm
- Navigation update rate up to 5Hz (5 updates per second)
- Supports GPS+BDS or GPS+GLONASS combined positioning modes
- Supports AGPS (Assisted GPS)
- Integrated TCXO, LNA, SAW filter, and RTC
- Compact size (50.2mm x 39.2mm x 19.2mm±0.3mm), suitable for space-sensitive applications
- Supports standard NMEA 0183 V4.0 protocol with backward compatibility

1.3 Performance Metrics

Parameters	Description
Constellation Frequency	■GPS L1C/A ■SBAS L1C/A ■QZSS L1C/A ■GLONASS L1 ■BDS B1I ■Galileo E1B/C
Sensitivity	Tracking & Navigation -162dBm Re-acquisition -156dBm Cold Start -148dBm
Time To First Fix (TTFF) ¹	Cold Start 36s Warm Start 35s Hot Start 1s
Horizontal Position Accuracy	Autonomous (Standalone) Mode: 2.5m CEP ²
PPS Accuracy	RMS <30ns
Velocity Accuracy	0.1 m/s
Operational Limits	Maximum Acceleration ≤4g
	Maximum Velocity ≤515m/s
	Maximum Altitude 18000m
PPS Update Rate	1Hz
Baud Rate	9600bps (default 9600bps)
Maximum Update Rate	5Hz (default 1Hz)

✋1 All satellites are at -130dBm

✋2 CEP 50%, 24-hour static, -130dBm, ≥12 satellites used

✋3 Applicable for airborne scenarios with platform acceleration ≤4g

1.4 Protocol Description

Output Data Format	Type
NMEA 0183 V4.0	Input/output, ASCII

1.5 Model Selection List

Model No,	Chip Version	GNSS Configuration
JS-168BWP-R	ROM	GPS+BDS or GPS+GLONASS

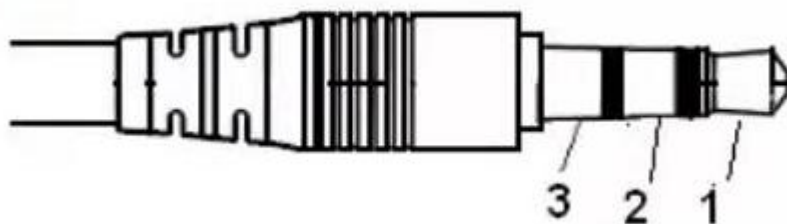
1.6 Antenna

Antenna Type	Parameter
Passive Antenna Type	25.0*25.0*4.0mm

1.7 Product Applications

- Automotive Navigation Systems
- Marine Navigation, Fleet Management
- Personnel Location & Safety
- Intelligent Logistics Dispatch
- Vehicle Location & Location-Based Services (LBS)
- Outdoor Sports Positioning Equipment
- Shared Electric Scooter/Bicycle Tracking
- Pet Tracking and Location

2. Pin Definitions



No.	Name	I/O	Description
1	VCC	I	Power Supply 3.3V-5V
2	TXD	O	Outputs GNSS positioning data
3	GND	G	Ground

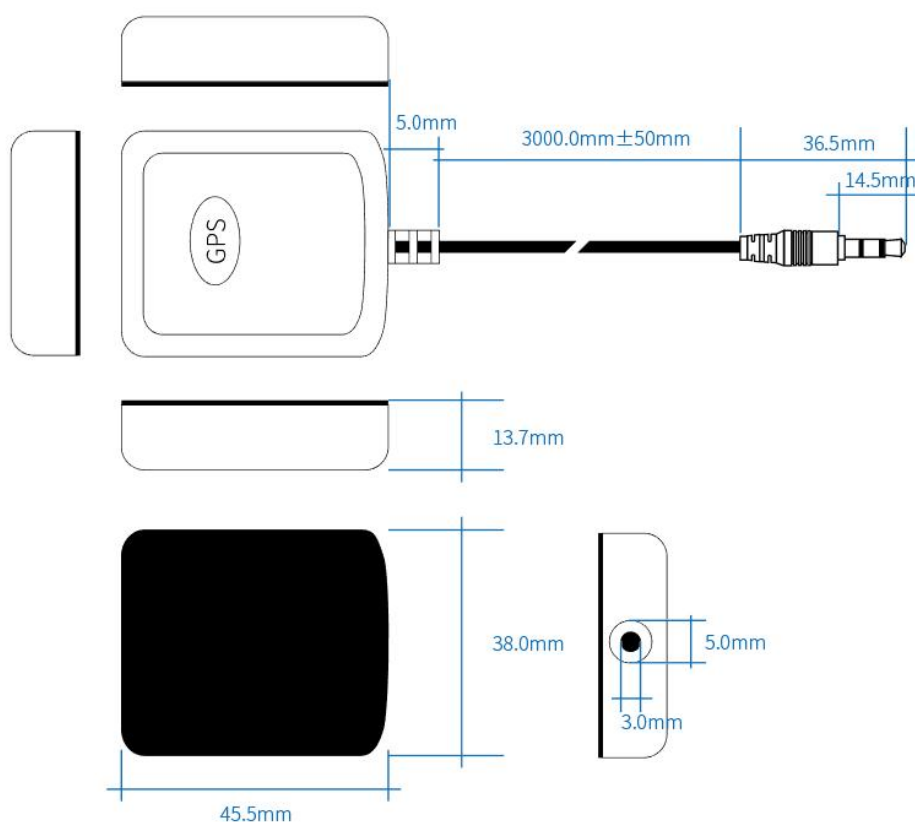
3. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Supply Voltage	VCC	3.3	5	5	V
Average Supply Current	Acquisition	28@3.3V	32@3.3V	35@3.3V	mA
	Tracking	25@3.3V	28@3.3V	33@3.3V	mA

Backup Battery Voltage	V_BCKP	1.65	3.3	3.6	V
Backup Battery Current	I_BCKP		8uA@3.3V		uA
Storage Temperature	Tstg	-40		85	°C
Operating Temperature	Topr	-40		85	°C
Farad capacitors ²	Tstg	-25		60	°C
Humidity				95	%

4. Mechanical Specifications

4.1 Dimensions

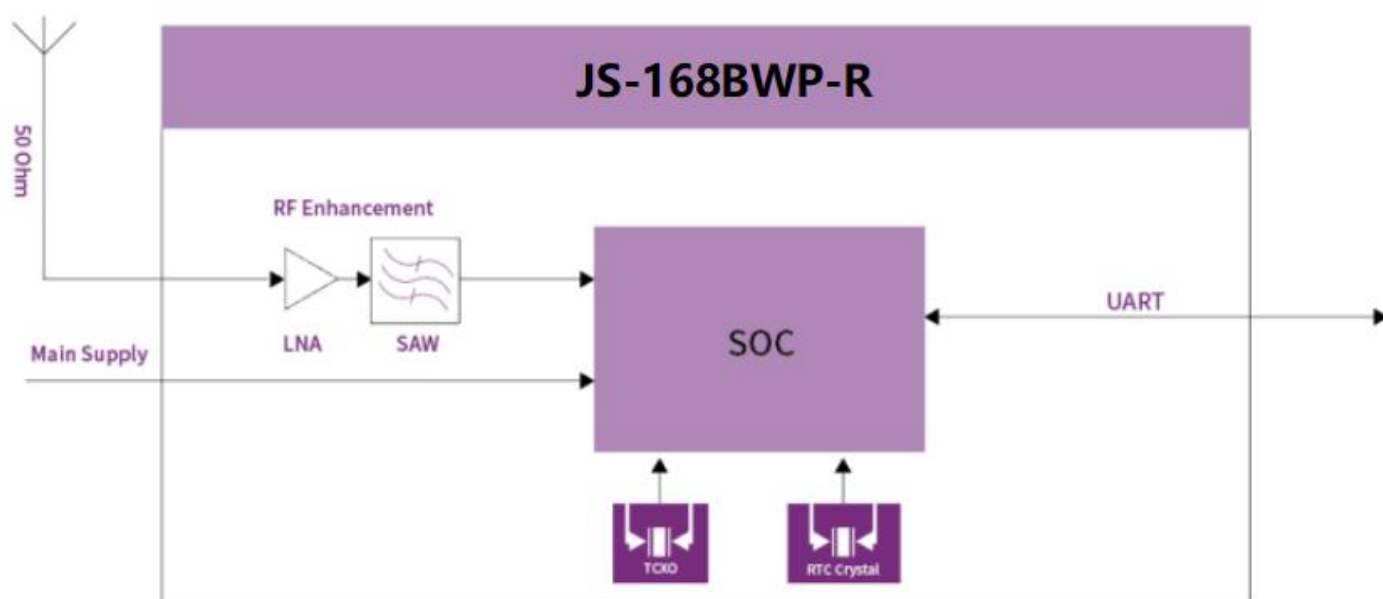


UNIT: mm, Tolerance: ±0.3mm

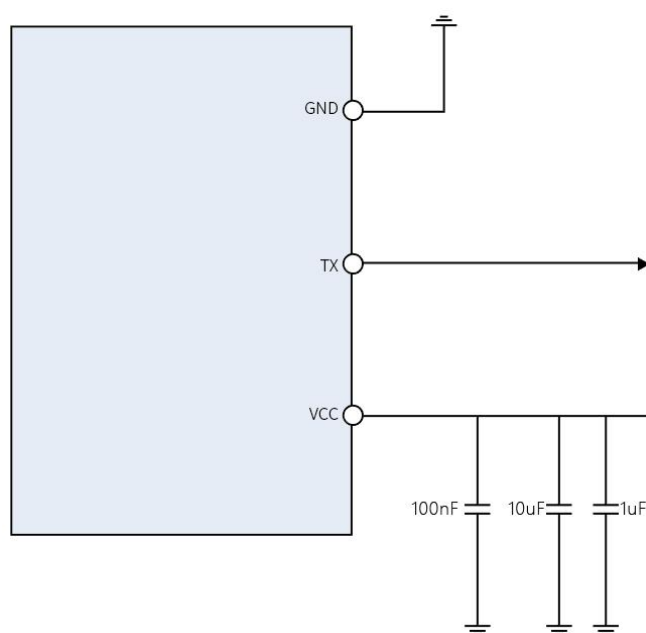
4.2 Product Image



5. Block Diagram



6. Application Circuit



7. RoHS

This product complies with RoHS standards.