

JS-N66RK57-3

Dual-band RTK positioning module

Data Sheet



Table of Contents

1 Function Description	4
1.1 Overview	4
1.2 Product Features	4
1.3 Performance Indicators	5
1.4 Protocol Description	6
1.5 Antenna	6
1.6 Product Applications	6
2 Pin Definitions	6
2.1 Pin Assignment	6
2.2 Magnetometer Description	7
2.3 Indicator Lights	7
3 Electrical Characteristics	8
4 Mechanical Dimensions	9
5 Interface Configuration Selection	9
5.1 Selection List	9
5.2 TTL Version	9
5.3 CAN Version	10

Version Update Notes

[illegible]

1 Function Description

1.1 Overview

JS-N66RK57-3 is a dual-frequency RTK positioning module based on BDS, GPS, GLONASS, Galileo, and QZSS. It adopts an advanced low-power design, providing ultra-low power consumption endurance without compromising performance. JS-N66RK57-3 features advanced multipath and anti-interference RF front-end algorithms, effectively addressing positioning deviations caused by multipath and resisting external interference signals. JS-N66RK57-3 has high performance and low power consumption characteristics, making it suitable for applications such as in-vehicle navigation, logistics scheduling, drones, and inspection robots.

1.2 Product Features

- Uses high-performance chips
- 200 tracking channels
- Supports SBAS
- Supports AGPS
- Supports standard NMEA 0183 protocol, differential data RTCM 3.X
- Compact size ($\Phi 66.00\text{mm} \times 21\text{mm} \pm 0.3\text{mm}$), lightweight <33g, suitable for relatively compact spaces
- Can be equipped with Magnetometer/Compass

1.3 Performance Indicators

Parameters	Details	
Receivable satellites	■GPS/QZSS: L1, L5 ■GLONASS: G1 ■Galileo: E1, E5 ■BDS: B1I, B1C, B2a, B2b, B2I ■IRNSS: L5	
Sensitivity	Cold start -148dBm	
	Hot Start & Reacquisition	-159dBm
	Tracking	-165dBm
First Fix Time ¹	Cold Start	28s
	Hot Start	1s
	AGPS	1.5s
Positioning Accuracy	Single Point Positioning	
	Horizontal Position Accuracy	1.0m CEP ²
	Vertical Accuracy	2.0m CEP ²
	RTK positioning	
	Horizontal Position Accuracy	1.0cm + 1ppm ³ CEP ²
Speed Accuracy	Vertical Accuracy	1.5cm + 1ppm ³ CEP ²
	0.1m/s CEP ²	
Application Limits	Maximum Acceleration ³	≤4g
	Maximum Speed	≤500m/s
	Maximum Height	20000m
Baud Rate	9600~921600bps(default 115200bps)	
Time synchronization accuracy	PPS output	<20ns (RMS)
Maximum update rate	10Hz (default 1Hz)	

1 All satellites at -130dBm

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

3 Assuming airborne ≤ 4g platform, g=9.8m/s²

1.4 Protocol Description

Agreement	Type
Data Format	NMEA-0183
Differential Data	RTCM 3.X
Proprietary Binary	Custom Binary

1.5 Antenna

JS-N66RK57-3Module design is compatible with passive antenna.

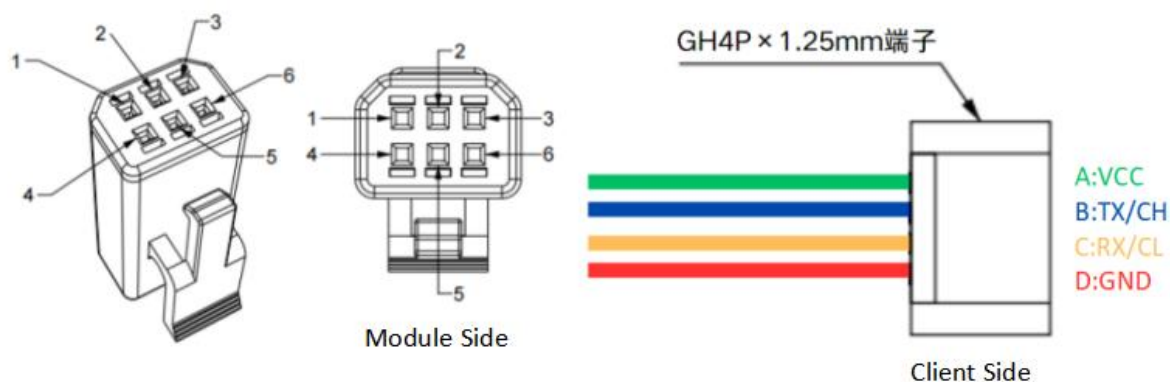
Type	Spec
Passive Ceramic Antenna	L1: 25*25*2mm L5: 36*36*2mm

1.6 Product Applications

- Drone applications
- Intelligent logistics scheduling
- Unmanned driving
- Precision agriculture and positioning services
- Measurement and surveying
- Autonomous robots
- On-board equipment applications
- Precision control

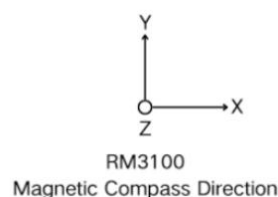
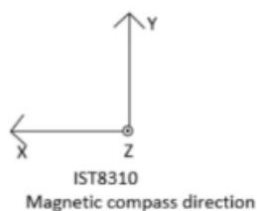
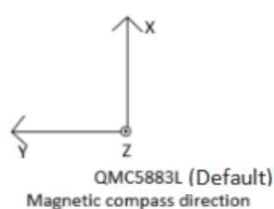
2 Pin Definitions

2.1 Pin Assignment



Serial number	Name	Color	Input/Output	Description
1	SDA	NC	Input/Output	IIC Data
2, C	RX/CL	Orange	Input	GNSS receiving data (default TTL, CAN optional)
3, B	TX/CH	Blue	Output	GNSS sending data (default TTL, CAN optional)
4	SCL	NC	Input	IIC clock
5, A	VCC	Green	Input	GNSS power supply 3.5-12.0V, Typical 5V
6, D	GND	Red	-	Ground

2.2 Geomagnetic Description



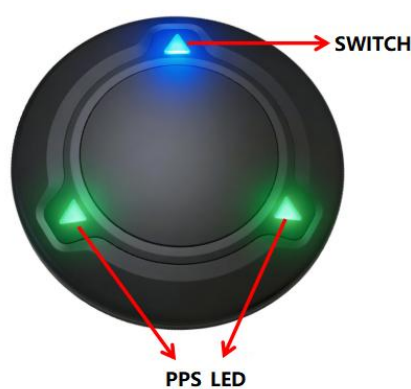
Note: Magnetometer model optional

Magnetometer model is QMC5883L (default), QMC5883L_MS_ADDRESS 0x0D

Magnetometer model is IST8310, IST8310_MS_ADDRESS 0x0F

Magnetometer model is RM3100, RM3100_MS_ADDRESS 0x20

2.3 Indicator Lights



Name	LED Color	Description
SWITCH	Blue	Safety Switch Button: When SWITCH is pressed, the buzzer responds with sound, the LED lights up with blue light, and the module starts working (no default configuration, needs to be customized by customers)
PPS_LED	Green	Second Pulse Indicator: Before positioning, it stays on; after positioning, it flashes once per second

3 Electrical Characteristics

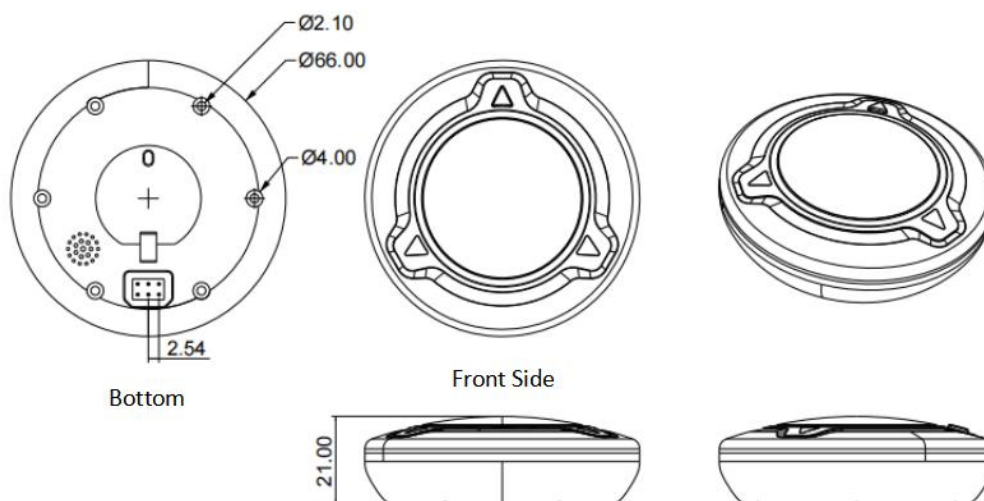
Parameters	Symbol	Minimum	Typical	Maximum	Unit
Power Supply Voltage Range	VCC	3.5	5	12	V
Operating Current*	Lopr	47@5V	55@5V	60@5V	mA
Backup Battery Voltage	V_BACK	1.8	3.3	3.6	V
Backup Battery Current	I_BCKP		14uA@3.3V		uA
Backup Battery Capacity	C		0.033		F
Operating Temperature ¹	Topr	-40	-	85	°C
Farad capacitor ²	Tstg	-25		60	°C
Storage temperature	Tstg	-40	-	85	°C
Humidity	RH	-	Non-condensing	95	% rh

*Using the CAN protocol, the current increases by approximately 8mA; due to the internal capacitor in the product, an inrush current will occur at power-up. In actual application scenarios, it is necessary to assess and confirm the impact of the inrush current on the voltage drop in the system.

¹ The current temperature range is the operating temperature range without a capacitor.

² When the operating environment temperature is below -25°C or above 60°C, the hot boot function cannot be activated.

4 Mechanical Dimensions



Unit: mm, Tolerance: $\pm 0.3\text{mm}$

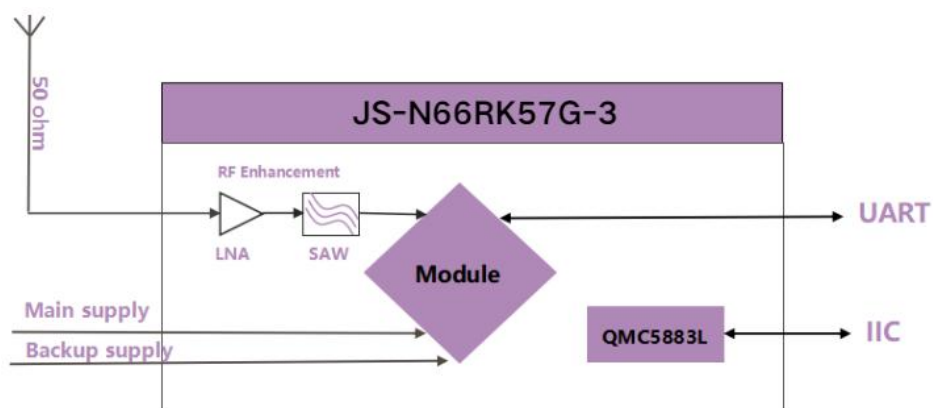
5 Interface Configuration Selection

5.1 Selection List

NAME	TTL	CAN (MCU)	Geomagnetism
JS- N66RK57-3	√	-	-
JS- N66RK57C-3	-	√	-
JS- N66RK57G-3	√	-	√
JS- N66RK57CG-3	-	√	√

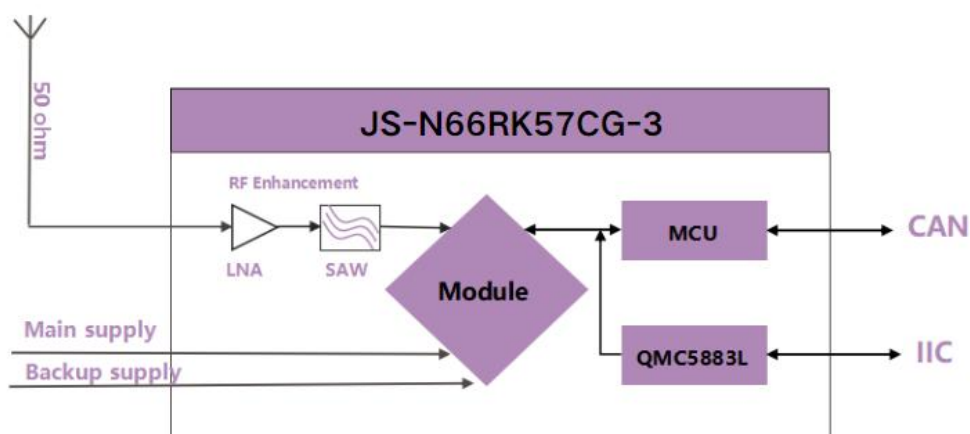
5.2 TTL Version

JS-N66RK57G -3 default equipped with compass, not equipped with MCU, IIC communication method is used for data transmission between compass and the module; JS-N66 RK57 -2 communicates with the host using TTL by default.



5.3 CAN Version

JS-N66 RK57CG -3 default equipped with compass and MCU, the MCU CAN output compass data and GNSS data via CAN protocol.



6RoHS

This product complies with RoHS standards.