



DL25M9NQ





Dalang Communication Technology Co., Ltd Product specification sheet

Product Name:	GMOUSE
Product model:	DL25M9NQ
Version number:	V 1.0
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Shenzhen Dalang Communication Technology Co., Ltd

1 Product application scenarios

DL25M9NQ is a high-performance, low-power global navigation satellite system receiver module. The NEO-M9N chip supports multiple constellation systems, including GPS, GLONASS, Galileo, and Beidou, and can provide stable and high-precision positioning services in complex urban canyons, dense forests, or other environments with severe signal obstruction. This module has the ability to quickly locate and efficiently capture signals, and is suitable for various application scenarios that require high-precision positioning, such as drone navigation, autonomous driving, intelligent transportation systems, precision agriculture, and portable navigation devices. In addition, its compact size and low-power design make it ideal for integration into space constrained mobile devices while maintaining excellent performance. Whether for industrial applications or consumer products, this GNSS module can provide reliable location, velocity, and time information to meet diverse navigation needs. Refer to Figure 1 for details.



Figure 1 Product Application Scenarios

2 function

In this chapter, we will delve into and elaborate on the functions and working principles of DL25M9NQ, and explain in detail how it plays a key role in different applications, as follows:

- 1. Multi system integration:** supports multiple satellite navigation systems such as GPS and Beidou, enhances signal acquisition capabilities, and makes positioning more reliable.
- 2. Efficient start-up and tracking:** Fast cold and hot start-up speeds, able to quickly lock onto satellite signals, and stable tracking.
- 3. Strong anti-interference ability:** It can effectively resist interference in complex environments and maintain stable signal reception.
- 4. Low power design:** can reduce the overall energy consumption of the device, suitable for portable devices with battery life requirements.
- 5. Small size design:** The module has a compact size, making it easy to integrate into various devices that require high space, such as small drones, smart wearable devices, etc., providing convenience for the miniaturization and lightweight design of devices.
- 6. Built in magnetometer:** QMC5883L magnetometer for more accurate positioning.

3 Structural characteristics

In this chapter, we will delve into the design details of the product and present its appearance characteristics and precise interface definitions through detailed structural diagrams. This perspective aims to provide a comprehensive framework to deepen the understanding and cognition of product structure. Refer to Figure 2 and Table 1 for details.

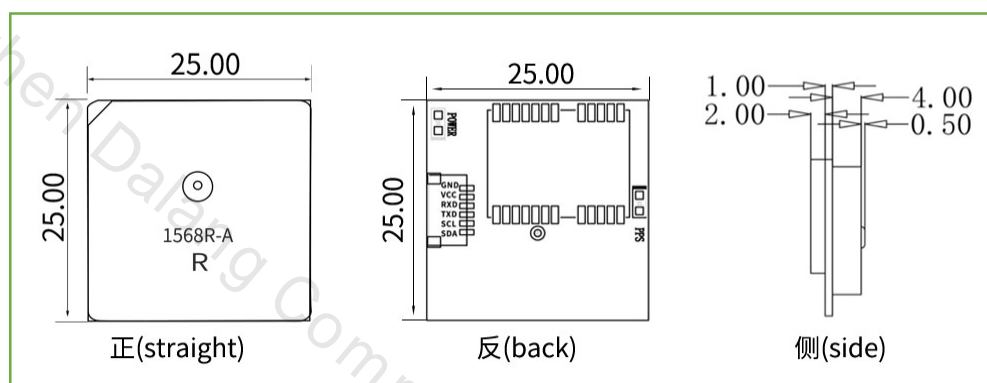


Figure 2 Dimensional drawing (unit: mm)

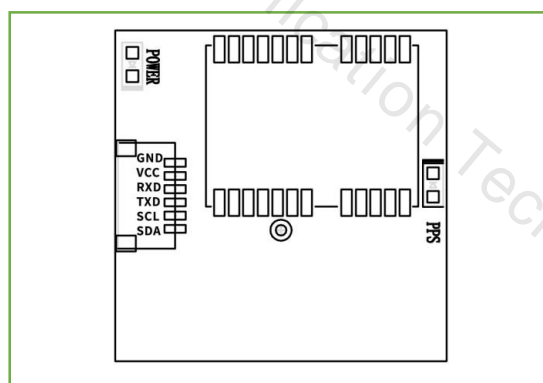


Table 1 Interface Definition

PIN name	Description
GND	grounding
VCC	The main power supply of the system has a supply voltage of 3.3V-5V and acurrent of approximately 45mA during operation
RXD	TTL interface data input
TXD	TTL interface data output
SCL	Serial clock - I2C master/slave clock
SDA	Serial Data - I2C Master/Slave Data

4 Specification parameters

In this chapter, we will provide a detailed list and explanation of the product chip characteristics, sensitivity, accuracy, working principle, and other technical details, as shown in Table 2.

Table 2 Product Specification Parameters

Specification parameters			
Chip characteristics	1	chip	UBX-NEO-M9N
	2	Channel	92
	3	Operating Frequency	GPS L1 C/A QZSS L1 C/A/S GLONASS L1OF BeiDou B1I Galileo E1 B/C SBAS L1 C/A (WAAS, EGNOS, MSAS, GAGAN)
	4	Time pulse frequency	0.25 Hz to 10 Hz (default 1Hz)
	5	Time pulse signal accuracy	RMS: 30ns 99% : 60ns
	6	Horizontal position accuracy	1.5m CEP (with SBAS) 2.5m CEP (without SBAS)
	7	Start Time	Cold start: 26s Hot start: 1s Re capture:< 1s
	8	sensitivity	Tracking:-167 dBm Re capture:-160 dBm Cold start:-148 dBm Hot start:-159 dBm
	9	speed accuracy	0.05m/s
	10	Baud rate	38400bps (default) [Optional: 4800-921600]

	11	Output Protocol	NMEA-0183
	12	Output level	TTL
	13	Extreme working state	Gravity acceleration limit: 4g
			Height limit: 80,000m
Speed limit: 500m/s			
Antenna characteristics	1	Antenna specifications	25*25*4
	2	Maximum gain	2.5dBi
	3	Polarization mode	RHCP
	4	figure	$\leq 0.8\text{dB}$
	5	LNA gain	L1: $20\pm 2\text{dB}$
Working characteristics	1	working voltage	3V-5.5V DC (Typical value: 5.0v)
	2	power consumption	$< 100\text{mW @}5\text{V}$
	3	size	25*25*7.5mm
	4	weight	13g
	5	joint	SH1.0mm 6pin
	6	operation temperature	$-35^{\circ}\text{C}-75^{\circ}\text{C}$
	7	storage temperature	$-40^{\circ}\text{C}-85^{\circ}\text{C}$
Magnetometer	1	magnetometer	QMC5883L

5 Product physical picture

In this chapter, we will present real-life photos of the product, as shown in Figure 3. Through these pictures, you can see our products from different angles and details. We believe that through authentic display, we can better convey the value and philosophy of the product, thereby enhancing your trust and satisfaction with the product.

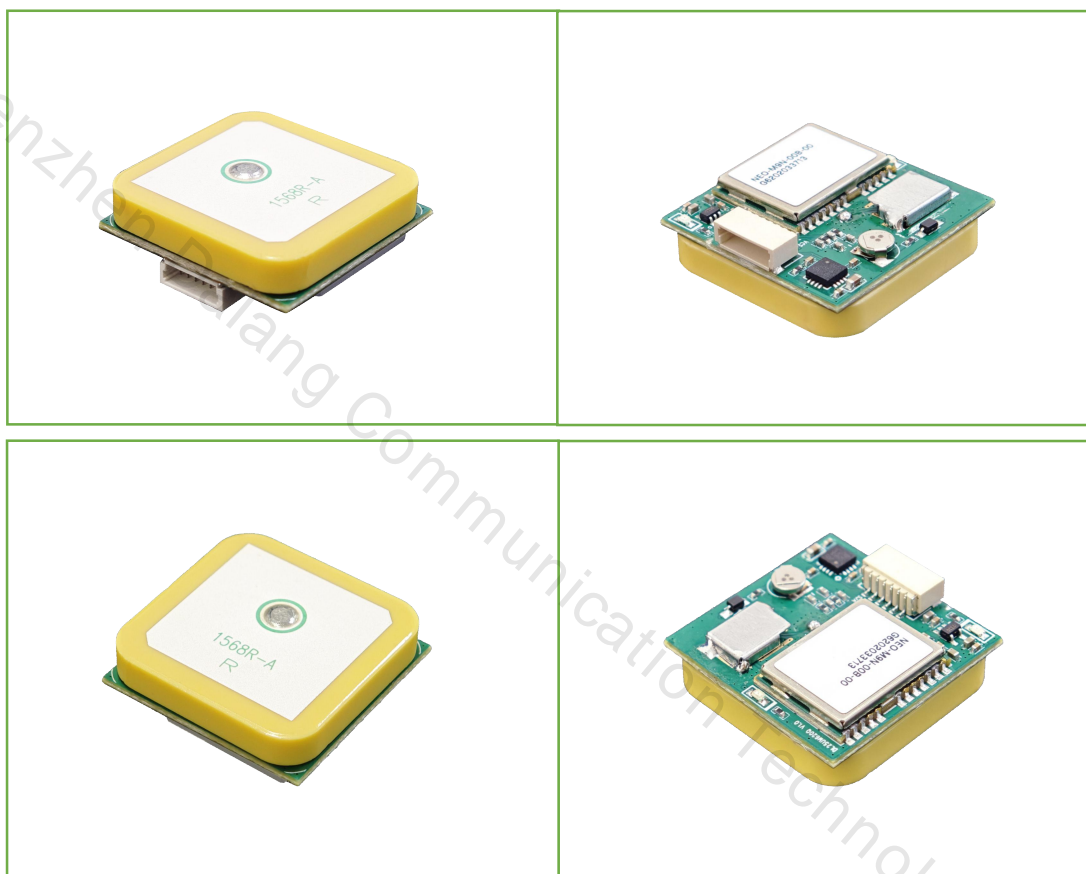


图 3 产品实物图