



Anti-Jamming Antenna JM005

Harxon
a *BDStar* company

JM005 is an assured positioning solution that protects your systems from radio frequency interference and jamming. It combines an anti-jamming antenna array and a GNSS antenna element into a marine-hardened enclosure. It can mitigate intentional or unintentional interference and jamming effects, ensuring the GNSS receiver continues to operate correctly. With low power consumption (9W), lightweight (800g), and compact dimensions (~100*H73mm), this product is available for rapid deployment and ensures future compatibility, ideal for a wide range of marine vessels.



● Integrated Multi-Element Anti-Jamming Antenna

The Anti-Jamming Antenna JM005 features a 4-element B1L1E1 anti-jamming antenna array on the periphery and a full-band GNSS antenna element at its center. The central GNSS antenna supports GPS, BDS, Galileo, and GLONASS, providing RTK-level precision positioning in jamming-free environments. When jamming arises, the GNSS antenna is disrupted and unable to function, JM005 will automatically switch to anti-jamming mode and activate the anti-jamming antenna array to provide anti-jamming and positioning. This product effectively handles complex environments with intentional and unintentional jamming, automatically switching between anti-jamming and non-anti-jamming modes.

● Superior Anti-Jamming Capabilities

This product can handle interference from four B1L1E1 signal sources. For single interference source, the suppression capability is no less than 100dB; for three interference sources, the suppression capability is no less than 90dB. JM005 consistently provides stable and reliable satellite signals to the receiver for positioning calculations, without needing prior knowledge of the interference conditions.

● Improved Out-of-Band Suppression

JM005 is equipped with a 10W burn-out resistant chip, which extends lifespan and enhances reliability in challenging environments. It's also equipped with multi-stage pre-filters that mitigate out-of-band signals and prevent GNSS antenna saturation, providing a one two punch to jamming and radio frequency noise, which ensures stable operation in complex electromagnetic conditions.

● Robust and Durable Structure

JM005 features an integrated antenna design with IP67 waterproof and dustproof capabilities, ensuring core components are fully sealed. The rugged glass reinforced plastic antenna radome, and the aluminum alloy base provide exceptional shock and vibration resistance; a special anti-corrosion coating is employed for long-term marine use. The built-in lightning protection and effective overvoltage protection enhance the overall antenna safety. Flexible mounting options, including surface mount and pole mount, are offered to accommodate customers' requirements.

KEY FEATURES

- 4-element B1L1E1 anti-jamming antenna array combined with full-band GNSS antenna element
- Designed with multi-stage pre-filters, effectively suppressing out-of-band noise
- Enhanced lightning protection: 3KA (8/20us) and overvoltage protection: 9~40V
- Equipped with 10W burn-out resistant chip
- Integrated antenna design with rugged anti-shock & anti-vibration housing, IP67 waterproof and dustproof
- Utilizing special anti-corrosion coating, suitable for marine applications
- Flexible mounting options: surface mount and pole mount



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ANTENNA PERFORMANCE

Antenna Elements

4-Element B1L1E1 Anti-Jamming Antenna Array + Full-Band GNSS Antenna Element (GPS L1/L2, BDS B1/B2b, Galileo E1/E5, GLONASS L1/L2)

Isolation Co-Frequency Unit Antenna: ≥ -10 dB

Peak Gain 2dBic

VSWR ≤ 2.0

Impedance 50 Ω

Polarization

Central Element: Right-Hand Circular Polarization
Peripheral Elements: Linear Polarization

SYSTEM PERFORMANCE

Operation Voltage DC 9-40V

Operation Current
Each Channel < 120 mA
(Antenna Array Elements: < 100 mA)

Power Consumption 9W

Number of Jamming Sources 3

Signal-to-Interference Ratio
Single Element: 100dB; Triple Element: 90dB;

MECHANICAL

Color Grey-White

Dimensions
 ~ 100 *H73mm
(Excluding connectors, accessories, and tolerances)

Weight 800g

Antenna Cover

Radome: Glass-reinforced plastic;
Base: Aluminum alloy;
Surface Coating: Marine-grade paint

Mounting

Surface Mount (4-M3 screw mount)
Pole Mount (5/8" -11 pole mount)

Connector

RF Signal: TNC-K
Power Supply + Control Signal: ZLN.2F.316.-
CLL-2B Socket

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature $-40^{\circ}\sim+70^{\circ}$

Storage Temperature $-45^{\circ}\sim+85^{\circ}$

Waterproof Rating IP67

Salt Spray Test
Conducted for 28 days using neutral salt spray

Mechanical Shock Test ≤ 50 g

Quality Level Industrial Grade

Product Certification RoHS

Localization Rate 100%

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CIRCUIT PERFORMANCE

LNA Gain@B1/L1/L2 (High Precision Positioning)

Anti-Jamming Antenna Array: 20 ± 1 dB

GNSS Antenna: 36 ± 2 dB

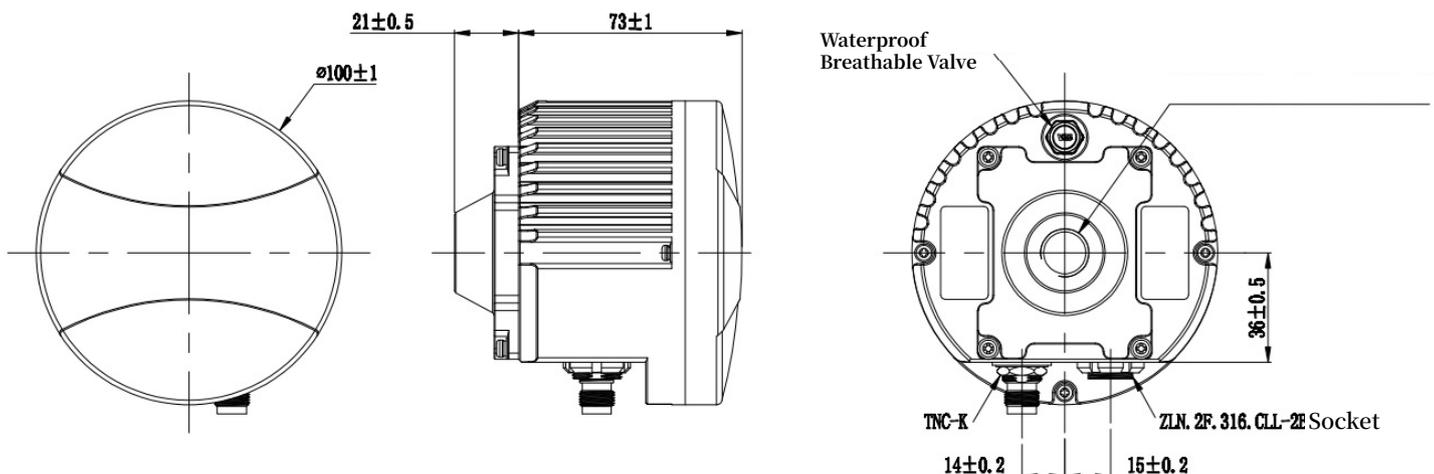
VSWR ≤ 2.0

Out-of-Band Rejection @50M: 40dB

Noise Figure ≤ 2 dB

Burnout Resistance ~ 10 W

Structure Drawing (mm)



TOP VIEW

SIDE VIEW

BOTTOM VIEW



PIN Definition

Pin Number	Definition Description	Remarks
1	VCC	9~32V
2	VCC	9~32V
3	GND	Ground
4	GND	Ground
5	RS422 RX-	RS422 Receive
6	RS422 RX+	RS422 Receive
7	RS422 TX-	RS422 Transmit
8	RS422 TX+	RS422 Transmit
9~16	NC	Not Connect

Accessories

The 5/8" -11 pole mount accessory is an optional choice which shall be purchased separately. The default mounting for anti-jamming GNSS antenna is 4-M3 screw mount. The illustration of the 5/8" -11 pole mount accessory is shown below.

