D-Helix™ Antenna HX-CH7609A

Harxon Patented D-QHA Technology Inside

Harxon
a BDStar company

High Performance Helix Antenna for UAVs and Surveying

The Harxon HX-CH7609A is a high performance GNSS antenna designed for high precision positioning service and offers superior satellite signal tracking, including GPS, GLONASS, GALILEO, BeiDou, as well as L-Band correction service. It could be used for applications as surveying and mapping, and various UAVs operations as aerial photography, remote sensing, infrastructure inspection, traffic control, and public security.



HIGH PHASE CENTER STABILITY AND CONSISTENT PERFORMANCE

The HX-CH7609A helix antenna features a multi-point feeding technology that ensures a high phase center stability with centimeter level accuracy as well as adopts D-QHA technology for extraordinary 2.8dBi gain on the premise of a wider frequency band. Its high gain with ultralow signal loss, wide beam width for exceptional low elevation satellite tracking with symmetric radiation patterns effectively improve positioning accuracy even under challenge environments that has blockage.

STRONG ANTI-INTERFERENCE PERFORMANCE

The HX-CH7609A adopts advanced circuit layout and equips a robust pre-filtered LNA that features an excellent out-of-band interference rejection performance and restraints possible unwanted electromagnetic interference, providing reliable and stable GNSS signals and avoiding disconnection possibility when UAVs are flying in environments that have electromagnetic interference.

OPTIMIZED INSTALLTION FOR INTEGRATION

Weighting only 30.5g, the lightweight HX-CH7609A GNSS antenna has a compact dimension, with Φ43.6*H40.8mm only. It employs screws mounting at the bottom of the antenna for better steadiness. All these advantages makes it ideal for integrated design. It could significantly improve the overall reliability of the UAVs by reducing weight and increasing fly endurance.

KEY FEATURES

- Comprehensive GNSS support: GPS, GLONASS, Galileo, BeiDou, as well as L-Band correction service
- Centimeter phase center repeatability, high gain at low elevation
- Improved signal filtering and excellent multipath rejection
- lightweight, low profile facilitates easier integration

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PERFORMANCE

Signal Received

GPS	L1/L2/L5
GLONASS	L1/L2
GALILEO	E1/E5a/E5b
BDS	B1/B2/B3
QZSS	L1/L2/L5/L6
IRNSS	L5
SBAS	L1/L5
L-Band	

Nominal Impedance	50Ω
Polarization	RHCP
Axial Ratio	≤3dB

Gain RHCP(maximum)

1166-1278MHz 2.6dBi (@ Zenith)

1559-1612MHz 2.8dBi (@ Zenith)

L-Band 1.5dBi (@ Zenith)

Azimuth Coverage	360°(Omni-directional)
Output VSWR	≤2.0

LOW NOISE AMPLIFIER

LNA Gain	33±2dB
Noise Figure	≤2dB
Output VSWR	≤2.0

Out of Band Rejection

Upper Band:	<1400MHz>30dB
	<1450MHz>33dB
	>1700MHz>30dB
Lower Band:	<1000MHz>41dB
	<1100MHz>40dB
	<1130MHz>28dB

Passband Ripple	±2dB
Operation Voltage	+3.3V to +5V DC
Operation Current	≤55mA
Differential Propagation Delay	≤5ns

MECHANICAL

Dimensions	¢43.6*40.8mm
Connector	SMA-J
Weight	≤30.5g
Mounting	3-NO.3-48UNC screws fixed

ENVIRONMENTAL

Temperature

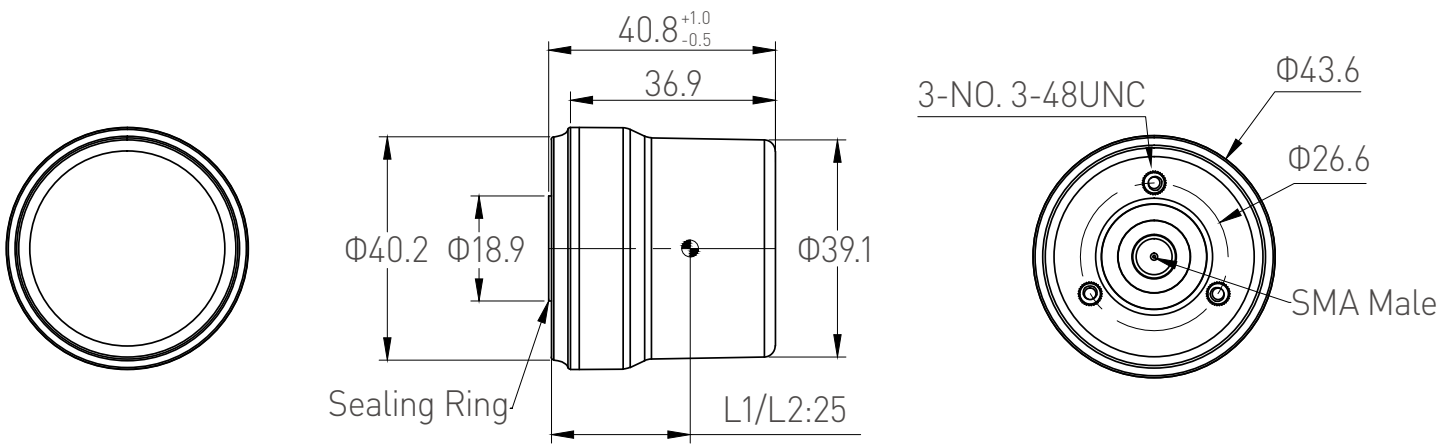
Operating	-40°C to +70°C
Storage	-55°C to +70°C

Humidity	95% non-condensing
Water/Dust Resistance	IP67

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Version 1 Specifications subject to change without notice.
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Printed in China
August 2020

Structure& Phase Center Drawing (mm)



TOP VIEW SIDE VIEW BOTTOM VIEW

Undeclared Tolerance:±0.3mm