D-Helix™ Antenna HX-CH7018A

Harxon Patented D-QHA Technology Inside

Harxon
a BDStar company

HX-CH7018A Embedded Helix Antenna with L-Band

The Harxon HX-CH7018A embedded helix antenna is designed for high precision positioning and offers superior satellite signal tracking, including GPS, GLONASS, GALILEO, and Beidou as well as L-Band correction service. Its RTK level positioning accuracy makes it ideal to be integrated into application as surveying and mapping, and various UAVs operations as aerial photography, remote sensing, infrastructure inspection, traffic control, and public security.



ADVANCED D-QHA TECHNOLOGY FOR CONSISTENT PERFORMANCE

The HX-CH7018A antenna features a multi-point feeding technology that ensures a high phase center stability for outstanding positioning accuracy. Meanwhile, adopting advanced patented D-QHA technology and covering a wider frequency band, HX-CH7018A achieves extraordinary 2.8dBi gain for reliable and consistent performance. Its high gain with ultralow signal loss, wide beam width for exceptional low elevation satellite tracking with symmetric radiation patterns delivers consistent performance even under challenge environments that has serious blockage.

STRONG ANTI-INTERFERENCE PERFORMANCE

The HX-CH7018A optimizes 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 GNSS signals for easy integration into positioning solutions.

SMALL FORM FACTOR, LIGHT WEIGHT, DESIGNED FOR INTEGRATION

Weighting only 8g, the lightweight HX-CH7018A embedded antenna has a compact dimension, withΦ44*H28mm only, making it ideal to be integrated into UAVs. It reduces the overall weight of UAVs as well as increases 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
- 8g, small form factor 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

MECHANICAL

Dimensions	¢44*28mm
Connector	IPEX Female
Weight	≤8g
Mounting	4x M2 Screws

ENVIRONMENTAL

Temperature	
Operating	-40°C to +70°C
Storage	-55°C to +70°C
Humidity	95% non-condensing

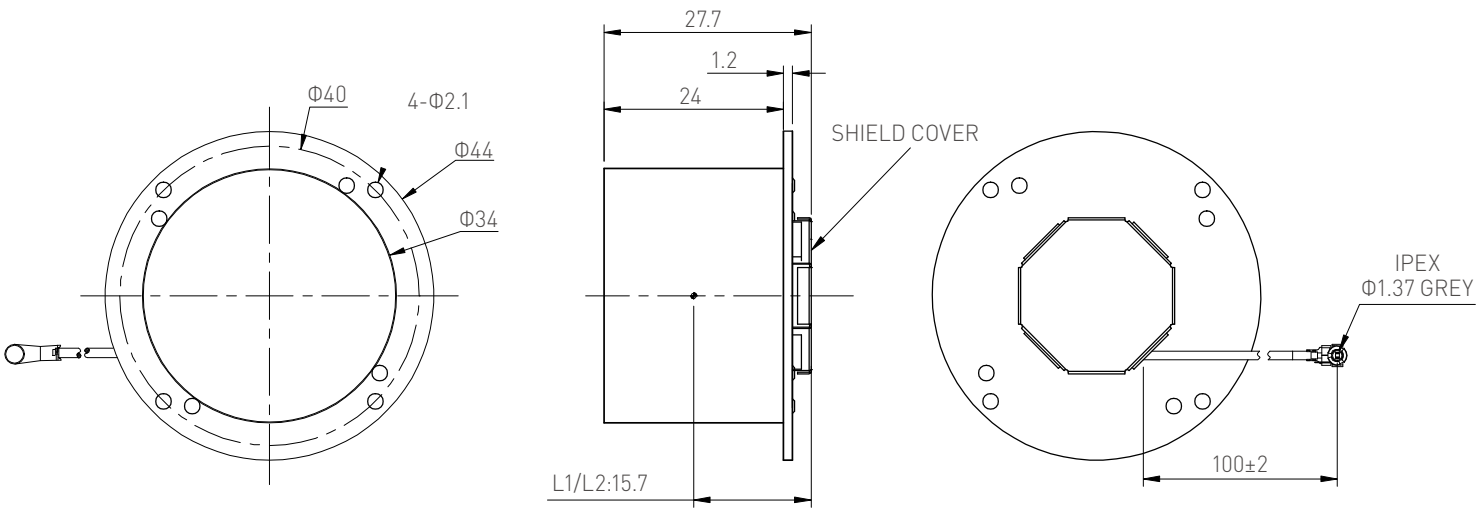
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Version 1 Specifications subject to change without notice.

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Printed in China
August 2020

Structure& Phase Center Drawing (mm)



TOP VIEW SIDE VIEW BOTTOM VIEW

Undeclared tolerance:±0.3mm