D-Helix™ Antenna HX-CU7005A

Harxon Patented D-QHA Technology Inside

Harxon
a BDStar company

High Performance Embedded Helix Antenna with L-Band

The Harxon HX-CU7005A embedded helix antenna is designed for high precision positioning service and offers superior satellite signal tracking, including GPS, GLONASS, GALILEO, BeiDou, as well as L-Band correction service. Its centimeter level positioning accuracy makes it ideal to be integrated into applications as surveying and mapping, and various UAVs operations as aerial photography, remote sensing, infrastructure inspection, traffic control, and public security.

ADVANCED PATENTED D-QHA TECHNOLOGY

The HX-CU7005A antenna adopts patented D-QHA technology for stable performance of wide-angle circular polarization (WACP), which ensures exceptional low elevation satellite tracking while maintaining high gain and providing reliable signal tracking. This consistent performance makes it an ideal option for UAVs even under challenging environments.

HIGH PHASE CENTER STABILITY AND CONSISTENT PERFORMANCE

The HX-CU7005A antenna features a multi-point feeding technology that ensures a high phase center stability with centimeter level accuracy. Its high gain with ultralow signal loss, wide beam width for exceptional low elevation satellite tracking with symmetric radiation patterns effectively improve positioning accuracy.

COMPACT DESIGN WITH LOW POWER CONSUMPTION

Weighting only 10g, the lightweight HX-CU7005A embedded helix antenna has a compact dimension, with Φ30*H34mm only. It's also a low power consumption antenna that could prolongs fly endurance of the UAVs. All these advantages significantly improve the overall reliability of the UAVs and could be easily integrated into flying solutions.

KEY FEATURES

- Comprehensive GNSS support: GPS, GLONASS, Galileo, BeiDou, as well as L-Band correction service
- Patented D-QHA technology ensures reliable signal tracking
- Centimeter phase center repeatability
- Improved signal filtering and excellent multipath rejection
- Low power consumption, lightweight, 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 2.4dBi (@ Zenith)

1559-1612MHz 2.5dBi (@ Zenith)

L-Band 1.0dBi (@ 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 +12V DC
Operation Current	≤55mA
Differential Propagation Delay	≤5ns

MECHANICAL

Dimensions	¢30*34mm
Connector	U.FL-LP-066J1-A
Weight	≤10g
Mounting	PCB compression

ENVIRONMENTAL

Temperature

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

Humidity	95% non-condensing

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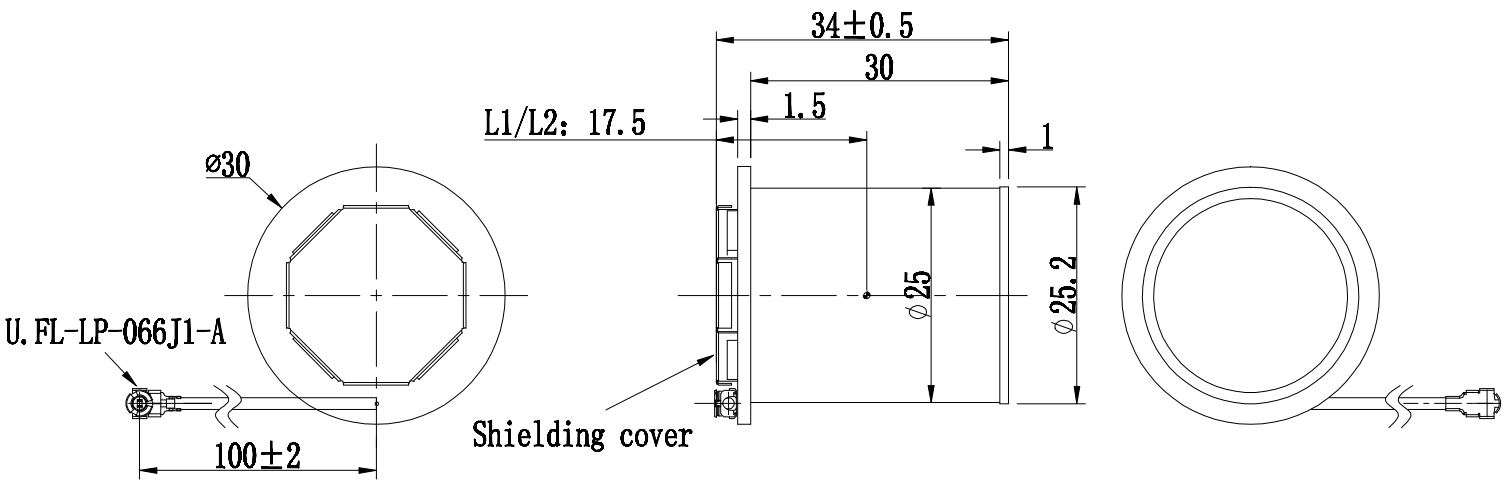
Structure& Phase Center Drawing (mm)



BOTTOM VIEW SIDE VIEW TOP VIEW

Undeclared Tolerance:±0.3mm