# 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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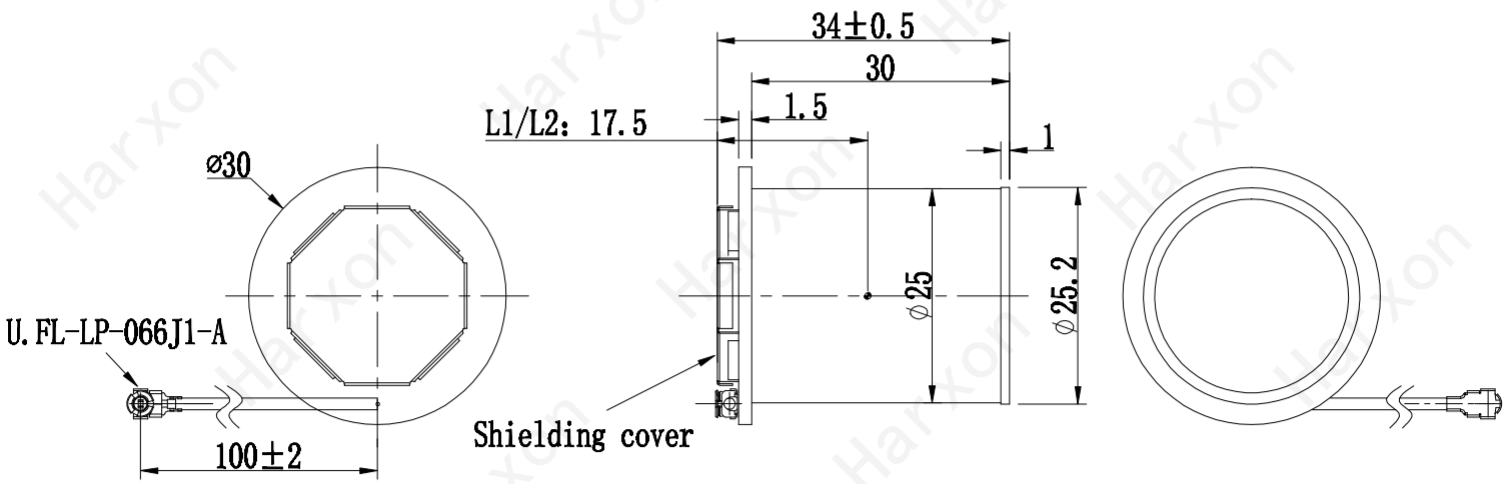
**Version 2** Specifications subject to change without notice.


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### Structure& Phase Center Drawing (mm)




BOTTOM VIEW SIDE VIEW TOP VIEW

Undeclared Tolerance:±0.3mm


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