

四系统全频内置 RTK 天线 HX-COX035A

Four-system full-frequency built-in RTK antenna HX-COX035A



HX-COX035A 是新一代 BDS/GPS/GLONASS/Galileo/ QZSS 全系统全频高精度 RTK 天线。天线、定位模块、4G 模块和 MCU 集成一体设计，主要用精准农业、无人机及自主机器人等高精度导航定位领域。

HX-COX035A is a new generation of high-precision RTK antenna covering the entire system and frequency of BDS/GPS/GLONASS/Galileo/ QZSS. The antenna, positioning module, 4G module and MCU are integrated into one design, mainly used in high-precision navigation and positioning fields such as precision agriculture, unmanned aerial vehicles and autonomous robots.

稳定的相位中心 Stable phase center

HX-COX035A 天线单元增益高，方向图波束宽有更稳定的广角圆极化 (WACP) 性能，天线部分采用多馈点设计方案，实现相位中心与几何中心的重合，将天线对测量误差的影响降低到最小，从而确保更精确的定位精度。

The HX-COX035A antenna element features high gain and a more stable wide-angle circular polarization (WACP) performance in its pattern beam width. The antenna part adopts a multi-feed point design scheme to achieve the coincidence of the phase center and the geometric center, minimizing the influence of the antenna on measurement errors and ensuring more precise positioning accuracy.

关键特性 Key features

- 天线、定位模块、4G 模块一体化设计；
Integrated design of antenna, positioning module and 4G module
- 重量轻，≤150g；
Light weight, ≤150g;
- 支持 BDS/GPS/GLONASS/Galileo/ QZSS；
Supports BDS/GPS/GLONASS/Galileo/QZSS
- 稳定的相位中心确保了多系统卫星的跟踪；
A stable phase center ensures the tracking of multiple system satellites.
- 稳定的相位中心保证毫米级的定位精度；
A stable phase center ensures millimeter-level positioning accuracy
- 自带地磁传感器。
Hundred-belt geomagnetic sensor.

体积小 重量轻 Compact in size and light in weight

天线、定位模块、4G 模块和 MCU 一体化设计，天线整机尺寸为 $\Phi 136*25.8\text{mm}$ ，重量不到 150g。
The antenna, positioning module, 4G module and MCU are designed as an integrated unit. The overall dimensions of the antenna are $136*25.8\text{mm}$ in diameter and it weighs less than 150g.

在复杂环境中进行跟踪 Tracking in complex environments

HX-COX035A 天线能够在复杂环境下跟踪可见卫星，为定位提供更高的精度和可靠的数据。例如植保，树林，无人机巡逻，GIS 测量等操作。

The HX-COX035A antenna can track visible satellites in complex environments, providing higher accuracy and reliable data for positioning. For example, operations such as plant protection, forest management, drone patrol, and GIS measurement.

强大的抗干扰性能 Strong anti-interference performance

天线 LNA 具有出色的带外抑制性能，可以抑制无用的电磁波信号，避免接收机被其它无线通信系统干扰，有效降低了系统失锁的风险，如电网、通信基站、电台等电磁波干扰。

The antenna LNA has excellent out-of-band suppression performance, which can suppress useless electromagnetic wave signals, prevent the receiver from being interfered with by other wireless communication systems, and effectively reduce the risk of system loss of lock, such as electromagnetic wave interference from power grids, communication base stations, radio stations, etc.

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北斗星通旗下企业

Harxon

性能参数

Performance parameters

天线特性			Antenna characteristics		
频率范围 Frequency range	BDS B1I/B2I//B1C/B2a/B2b				
	GPS L1/L2/L5				
	GLONASS L1/L2				
	Galileo E1/E5a/E5b				
	QZSS L1/L2/				
Resistance and resistance 阻 抗	双 4G				
	WIFI/BT:支持 2.4G 和 5.8G 双频段				
	50 欧姆 50 ohms				
	极化方式				
	右旋圆极化 Right-hand circular polarization				
Antenna axis ratio 天线轴比	≤3dB				
Horizontal coverage Angle 水平面覆盖角度	360°				
Output standing wave 输出驻波	≤2.0				
Phase center error 相位中心误差	±2mm				
Maximum gain 最高增益	GSM 850 : -0.8dBi		EGSM900 : 0.2dBi		
	DCS1800 : 1dBi		PCS1900 : 0.4dBi		
	WCDMA B1 : -1.5dBi		WCDMA B2 : 0.9dBi		
	WCDMA B4 : 0.2dBi		WCDMA B5 : -0.9dBi		
	WCDMA B6 : -0.1dBi		WCDMA B8 : -0.5dBi		
	WCDMA B19 : -0.1dBi		LTE Band1 : 0.9dBi		
	LTE Band2 : -0.1dBi		LTE Band3 : 0.9dBi		
	LTE Band4 : 0.2dBi		LTE Band5 : 0dBi		
	LTE Band7 : 3.3dBi		LTE Band8 : -0.1dBi		
	LTE Band12 : 0.6dBi		LTE Band13 : 1.1dBi		
	LTE Band14 : 1.4dBi		LTE Band18 : -0.4dBi		
	LTE Band19 : 0dBi		LTE Band20 : 0.9dBi		

	LTE Band26 : -0.4dBi		LTE Band28 : 1.9dBi	
	LTE Band38 : 3.5dBi		LTE Band40 : 2.2dBi	
	LTE Band41 : 3.6dBi		LTE Band66 : 0.9dBi	
	LTE Band71 : -3.2dBi		GNSS : 5dBi	
	WIFI/BT:3.19dBi			

低噪声放大器指标			Low-noise amplifier specifications		
Gain 增益	23±2dB				
Noise coefficient 噪声系数	≤2dB				
Output standing waves 输出驻波	≤2.0				
In-band flatness 带内平坦度	±2dB				
Differential transmission delay 差分传输延迟	≤10ns				

整机参数			Overall machine parameters		
Positioning module 定位模块	UM960E				
4G module 4G 模块	EC25E / EC200				
MCU	GD32F303CGT6				
Working voltage 工作电压	5V				

结构特性			Structural characteristics		
Antenna size 天线尺寸	Ø136*25.8mm				
Weight 重量	≤150g				
Joint form 接头形式	2024WVS-2x07-LPXBR				
Installation method 安装方式	5 颗 M3 的螺钉安装Five M3 screws are installed				

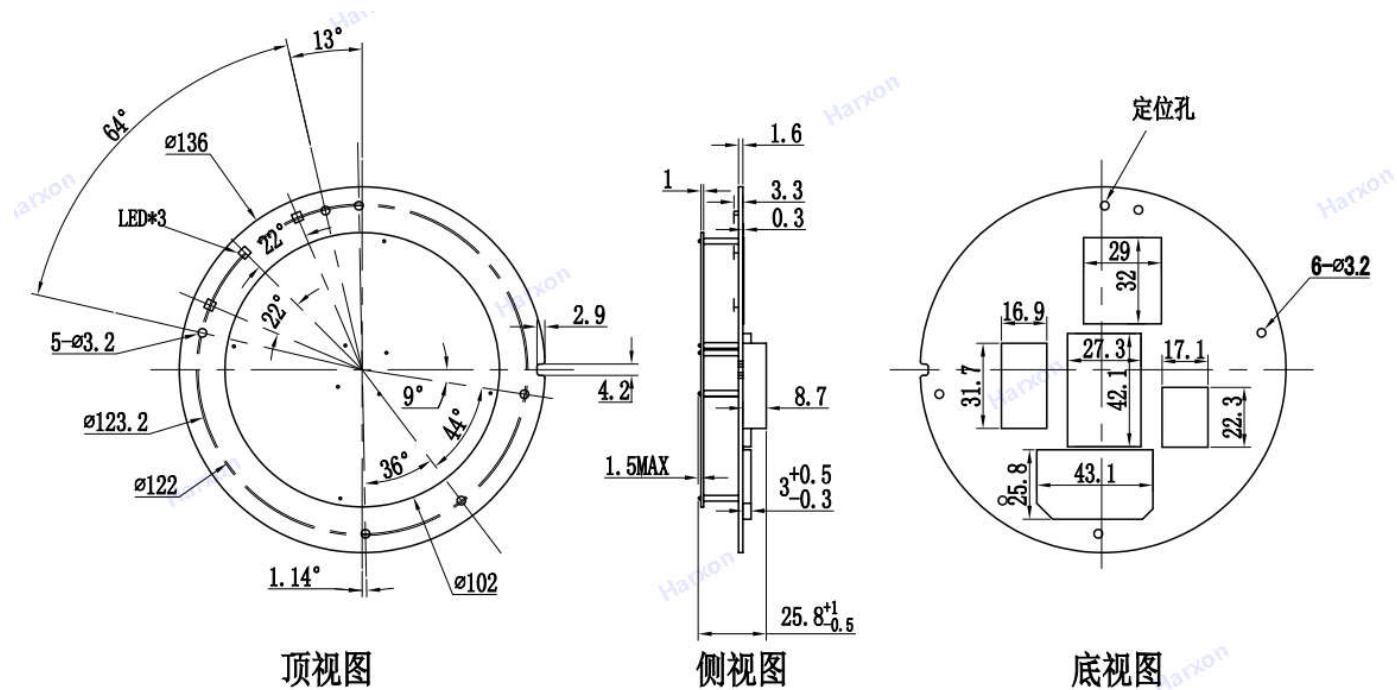
工作环境			Working environment		
Working temperature 工作温度	-40℃ ~ +85℃				
Storage temperature 存储温度	-40℃ ~ +105℃				
Humidity 湿 度	95% 不冷凝 95% non-condensing				

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产品三视图 Three views of the product



注：LED 位置预留，由实际需求决定是否上件贴片。
Note: The position of the LED is reserved. Whether to install the surface mount is determined by the actual demand.

产品标签 Product label

标签尺寸：15*30mm。标签内容形式如下图所示，其中 S/N 码需按程序文件和实际情况编写，下图仅示意。
Label size: 15*30mm. The form of the label content is shown in the following figure. Among them, the S/N code needs to be written according to the program file and the actual situation. The following figure is only for illustration.



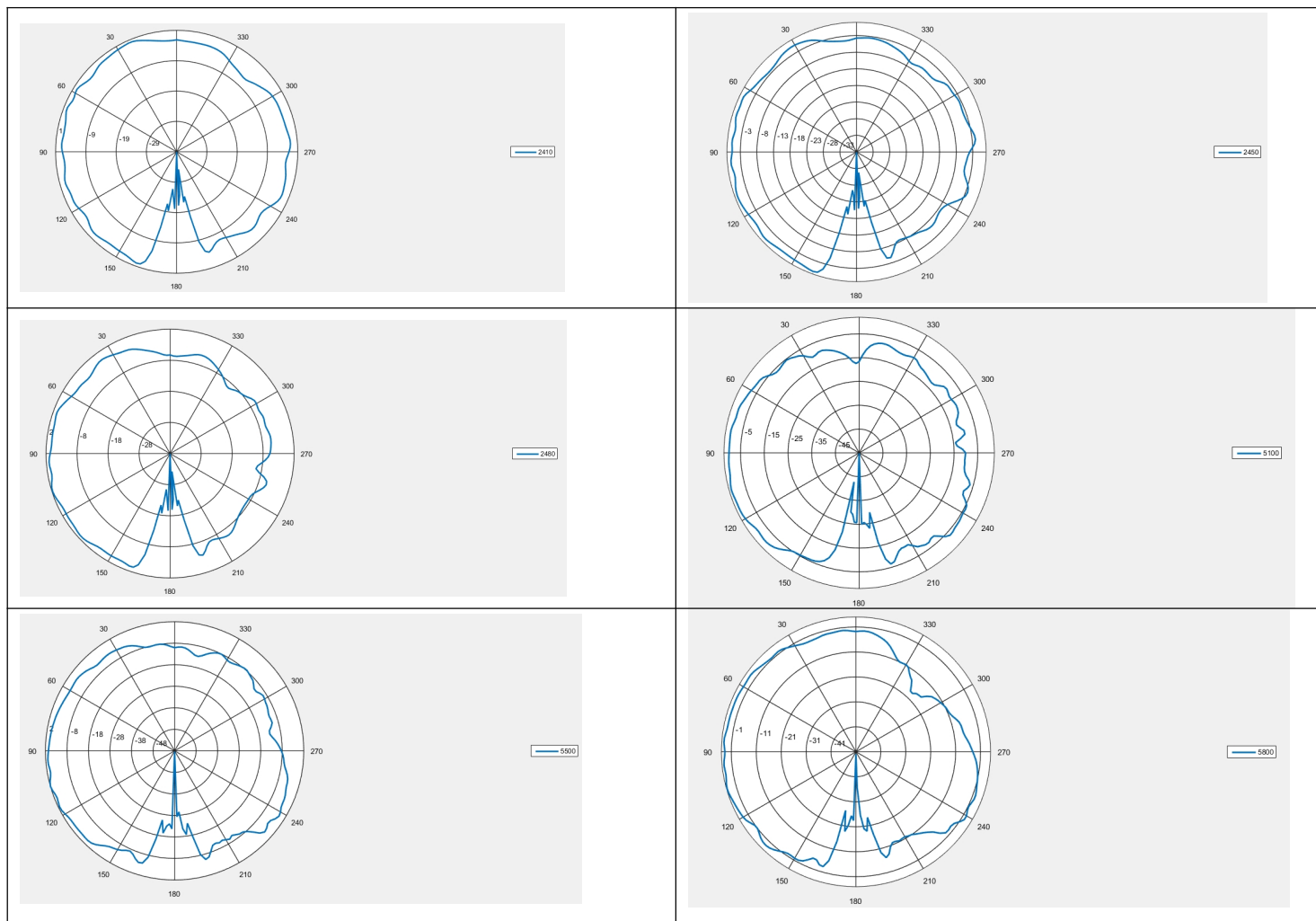
WIFI/BT 测试数据 WIFI/BT test data

频率(MHz)	2420	2440	2460	2480	5100	5200	5300	5400	5500	5600	5700	5800
增益 (dBi)	2.48	3.12	3.19	2.94	3.21	3.02	2.95	2.82	2.63	2.64	2.72	2.78
效率 (%)	45.4	40.9	40.8	43.3	38.0	45.1	49.3	43.2	44.3	42.6	44.3	43.6

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The four-system full-frequency built-in RTK antenna



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