



司南导航

QinNav
钦天导航

PRODUCT SPECIFICATION

产品规范

适用于 For

AH323-A7 GNSS + LoRa 二合一天线
AH323-A7 GNSS + LoRa Antenna



REVISION HISTORY / 修订历史

Revision/版本	Modification/更改	Date/日期
1.0	New Release / 新发	2023/09/06

DIRETORY / 目录

REVISION HISTORY / 修订历史 2

DIRETORY / 目录 3

1. Introduction / 简介 4

 1.1. Product Characteristics / 产品特性 4

2. AH323-A7 Product Size / AH323-A7 尺寸 6

3. Product labels / 产品标签 7

Figures

Figure 1. AH323-A7 Product Photo / AH323-A7 实物图 6

Figure 2. AH323-A7 Dimension View / AH323-A7 三视图 6

Figure 3. Label / 标签 7

Tables

Table 1. Product Characteristics / 产品特性 4

1. Introduction / 简介

AH323-A7 is a full-band, full-system two-in-one (GNSS+LoRa) antenna, the antenna has the characteristics of high gain, mini size, high sensitivity, multi-system compatibility and high reliability, it can effectively meet the needs of users. Used with GNSS high-precision module and LoRa module, it can be widely applied to lawn mowers, surveying and mapping, precision agriculture and some other fields.

AH323-A7是一款内置全系统全频GNSS+LoRa的二合一天线，该天线具有高增益、小型化、高灵敏度、多系统兼容及高可靠性等特点，可有效满足用户的使用需求。配合GNSS高精度模块+LoRa模块使用，可广泛应用于割草机、测量测绘及精准农业等领域。

1.1. Product Characteristics / 产品特性

Table 1. Product Characteristics / 产品特性

Characteristics	AH323-A7	
GNSS	BDS	B1/B2/B3
	GPS	L1/L2/L5/L-Band
	Galileo	E1/E5a/E5b/E6
	GLONASS	G1/G2/G3
	QZSS	L1/L2/L5/L6
	IRNSS	L5
	SBAS	L1/L5
LoRa	902MHz~928MHz	
Polarization Mode 极化方式	GNSS 天线:右旋圆极化 GNSS antenna: Right-Handed Circular Polarization 电台天线:垂直极化 Radio antenna: Vertical Polarization	
Horizontal Coverage 水平面覆盖范围	0° ~ 360°	
Port Impedance 端口阻抗	50Ω	
Maximum Gain 最大增益	GNSS: 5dBi LoRa: 0.5dBi	

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Antenna Axis Ratio 天线轴比		≤ 3.0 dB
Voltage Standing Wave Ratios 电压驻波比		≤ 2.0
Phase Center Error 相位中心误差		± 2 mm
LNA Gain LNA增益		L2: 20 dB ± 2 dB L1: 20 dB ± 2 dB
In-band Flatness 带内平坦度		± 2 dB
Noise Figure 噪声系数		≤ 2.0 dB
Differential Transmission Delay 差分传输延迟		≤ 5 ns
Electrical 电气特性	Voltage 供电电压	+ 3.3 V ~ + 12 V DC
	Electricity 供电电流	≤ 45 mA
Environmental 环境要求	Operating Temperature 工作温度	-40°C ~ +85°C
	Storage Temperature 储存温度	-55°C ~ +85°C
Hardware Interface 硬件接口		GNSS: MMCX-JW LoRa: IPEX
Physical 物理参数	Size 尺寸	Φ122mm*27.6mm

LORA天线 (900)		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
902	-0.5	36%
903	-0.43	36%
904	-0.28	37%
905	-0.15	38%
906	-0.04	40%
907	0.03	41%
908	0.09	43%
909	0.15	44%
910	0.21	44%
911	0.27	44%
912	0.33	44%
913	0.38	43%
914	0.44	44%
915	0.49	44%
916	0.5	45%
917	0.5	46%
918	0.5	47%
919	0.47	46%
920	0.42	45%
921	0.37	44%
922	0.31	43%
923	0.23	42%
924	0.17	41%
925	0.1	41%
926	0.01	41%
927	-0.09	41%
928	-0.16	40%
929	-0.28	39%
930	-0.45	37%

2. AH323-A7 Product Size / AH323-A7 尺寸

In this section, product photo, three-side views and the dimension of AH323-A7 is provided for customers' further hardware design and installation.

本节提供了AH323-A7的实物图，三视图和对应的物理尺寸，便于用户进一步系统硬件设计和安装。

Figure 1. AH323-A7 Product Photo / AH323-A7 实物图

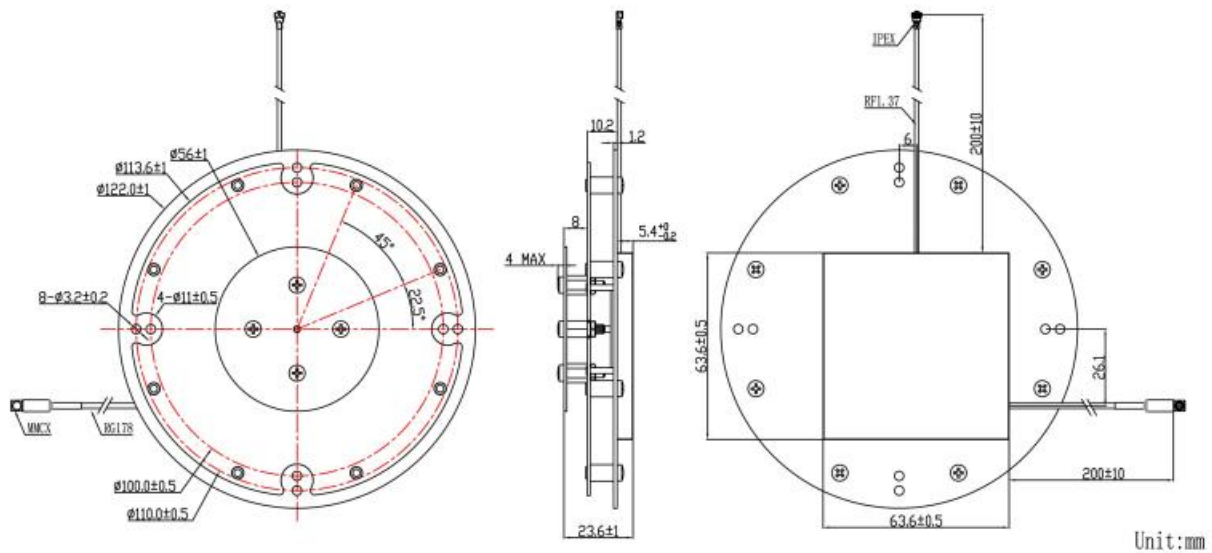


Figure 2. AH323-A7 Dimension View / AH323-A7 三视图

Unmarked dimensional tolerance $\pm 0.3\text{mm}$ / 未标注尺寸公差 $\pm 0.3\text{mm}$

3. Product labels / 产品标签

Label size: 30*15mm

标签尺寸: 30*15mm



Figure 3. Label / 标签

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