

LH-1256AR-E Specification



1. Introduction

The LH-1256AR-E is a compact and lightweight four-constellation multi-band GNSS helix antenna, supporting L1, L2, L5, and L-bands of GPS/QZSS, GLONASS, GALILEO, BEIDOU systems. This antenna is designed to deliver reliable and accurate GNSS reception across multiple satellite systems, making it versatile for diverse operational needs in challenging environments.

2. Features

- Built-in multi-stage filter and low-noise amplifier, with good out-of-band suppression and strong anti-interference ability, ensuring normal operation in harsh electromagnetic environments.
- High Gain and outstanding reception at low elevation. Meet the current needs for multi-system compatibility and high-precision measurement.
- Small Profile, easy to install
- IP67 Weather Proof Housing, Ideal for harsh environments, excellent low noise figure.

3. Application

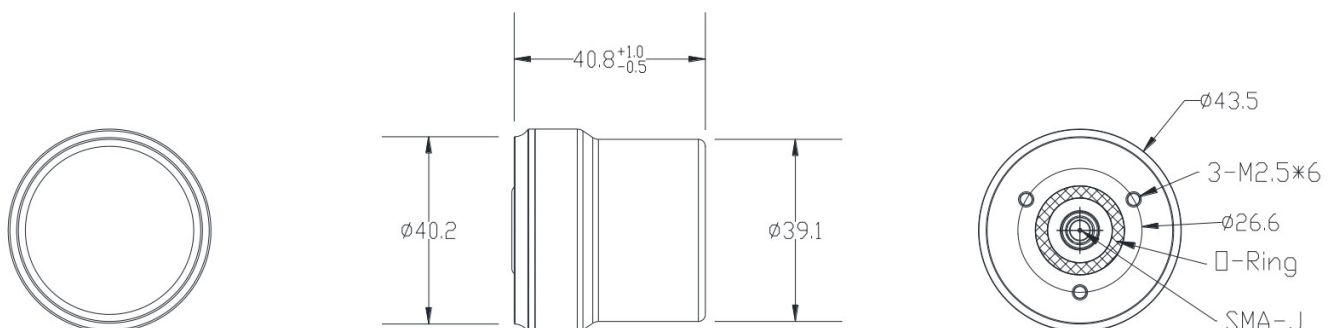
It can be widely used in UAV, micro RTK, handheld equipment and other fields with strict requirements on weight and volume.

4. Technical specification

Antenna Specifications	
Frequency range (MHz)	GPS: L1, L2, L5 GLONASS: L1, L2, L3 GALILEO: E1, E5a, E5b, E6 BEIDOU: B1I, B1C, B2a, B2b, B3I NAVIC: L5 QZSS: L1, L2, L5, L6 L-Band: 1525 - 1559 MHz
Gain (dBi)	≥2.5
Antenna AR (dB)	≤1.5
VSWR	≤2
Azimuth Coverage	360°

Polarization	Right-hand circular polarization
Port impedance (Ω)	50
Electrical Specifications	
LNA Gain (dB)	39 $\pm$ 3
Noise figure (dB)	≤ 1.5 @25°C, Typ.
Group Delay Variation	≤ 5 ns
Operating voltage (VDC)	3.0-12.0 Recommend 3.3V or 5.0V
Operating current (mA)	≤ 45
VSWR	≤ 2
Structural Characteristics	
Connector type	SMA Male
Antenna size (mm)	$\Phi 43.5 \times 40.8$
Antenna weight (g)	≤ 30
Degree of protection	IP67
Environmental Characteristics	
Operating temperature ($^{\circ}\text{C}$)	-40~85
Storage temperature ($^{\circ}\text{C}$)	-45~85
Relative humidity	95% not condensing

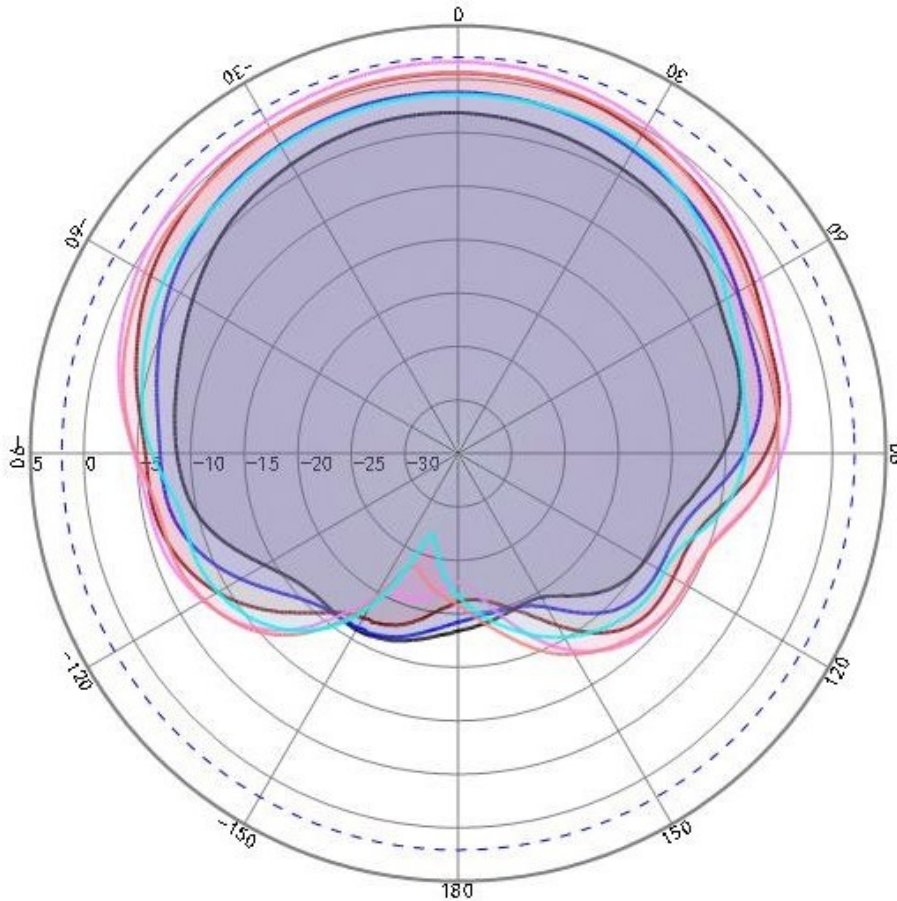
5. Size Unit:mm (Tolerance ± 0.3 MM)



6. Electrical Characteristics

6.1 Radiation Pattern & Axial Ratio

- L2 Vertical

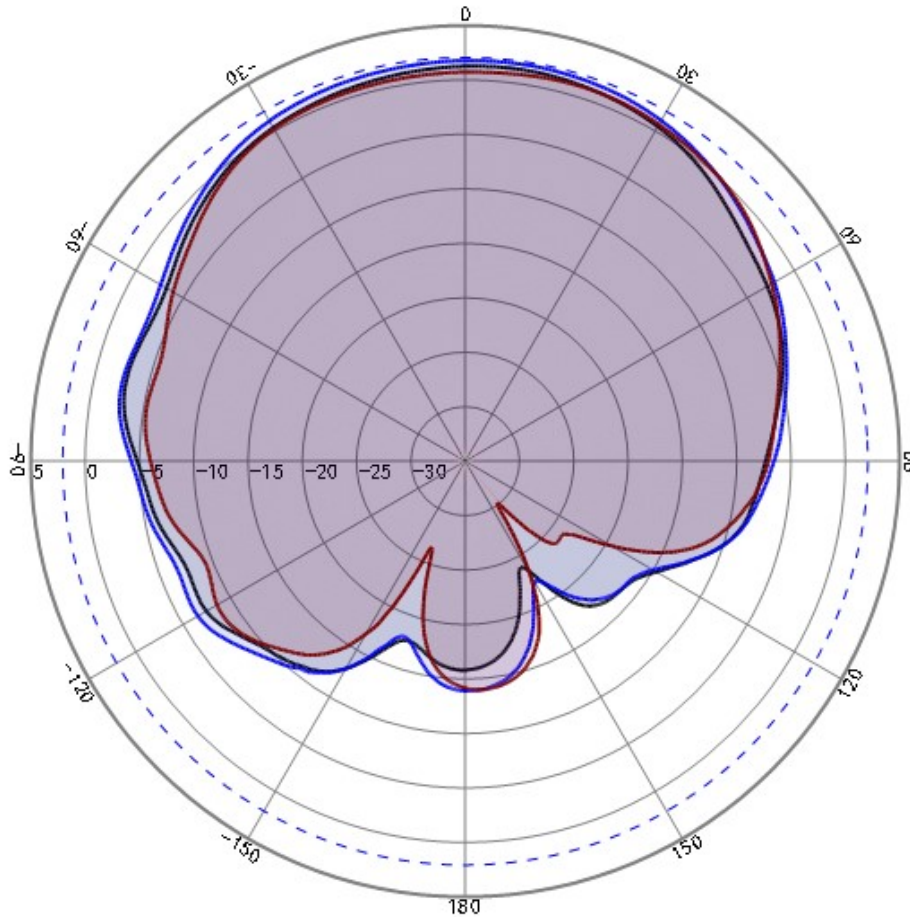


Passive antenna vertical plane pattern@L2

Chart 1 : Passive antenna gain and beam width@L2

Freq(MHz)	Polarization	Peak Gain(dBi)	HPBW(3dB) (deg)
1176	RHCP	-1.3	112
1192	RHCP	0.6	109
1207	RHCP	2.3	114
1227	RHCP	3.1	108
1246	RHCP	2.4	107
1268	RHCP	0.5	119

- L1 Vertical ($\phi=0$) :

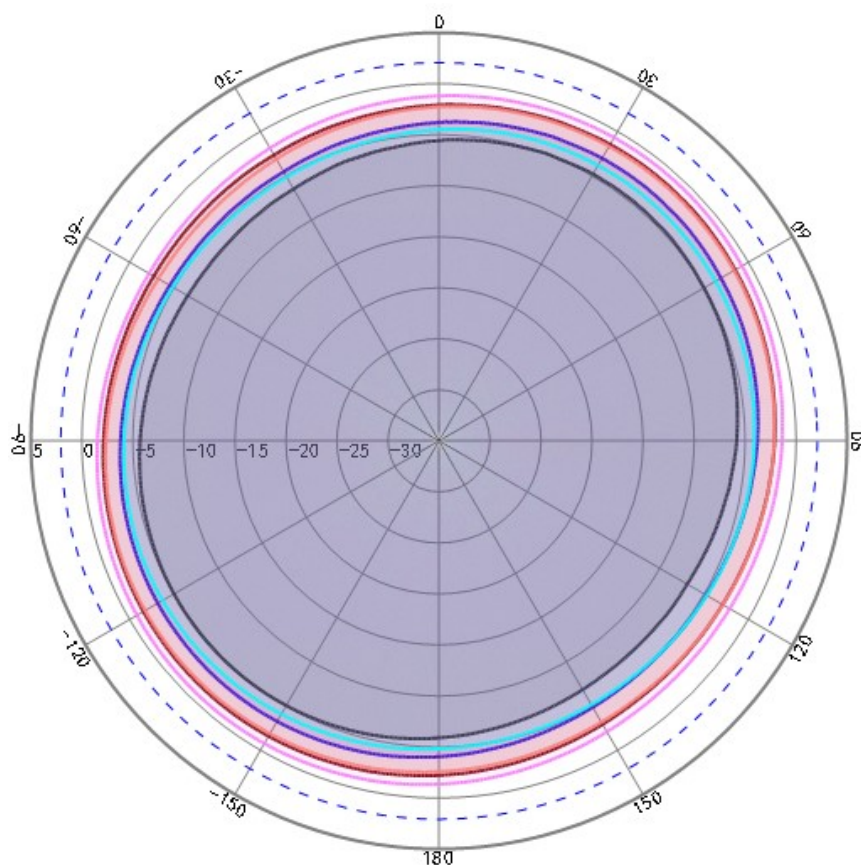


Passive antenna vertical plane pattern@L1

Chart 2 : Passive gain and beam width@L1

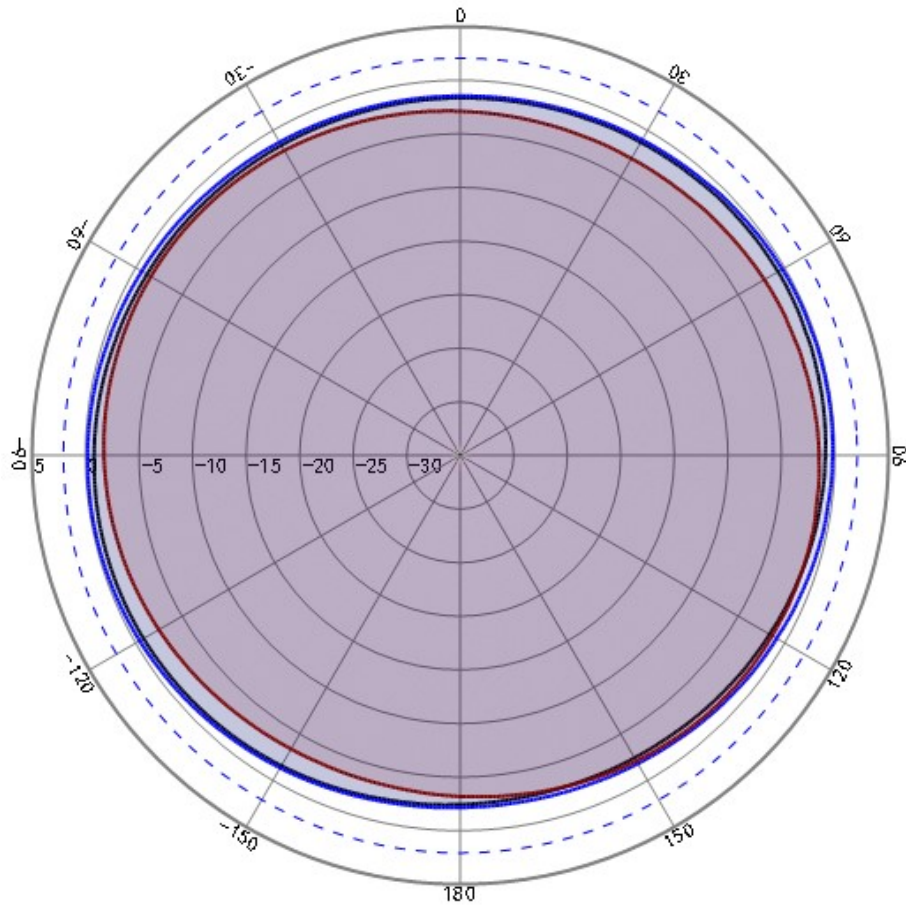
Freq(MHz)	Polarization	Peak Gain(dBi)	HPBW(3dB) (deg)
1561	RHCP	2.6	108
1575	RHCP	2.9	107
1602	RHCP	2.9	94

- Radiation pattern in horizontal plane :



Freq(MHz)	Circularity(dB)
1176	1.2
1192	1.0
1207	0.9
1227	0.8
1246	0.9
1268	0.8

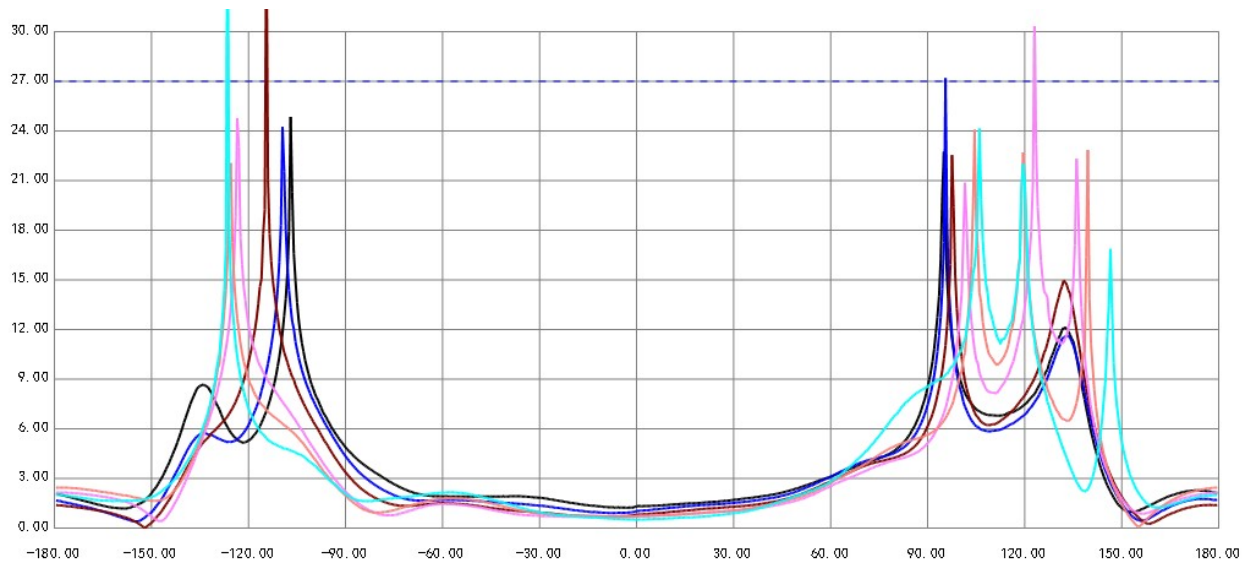
Passive gain out-of-roundness @L2



Freq(MHz)	Circularity(dB)
1561	1.2
1575	1.2
1602	1.2

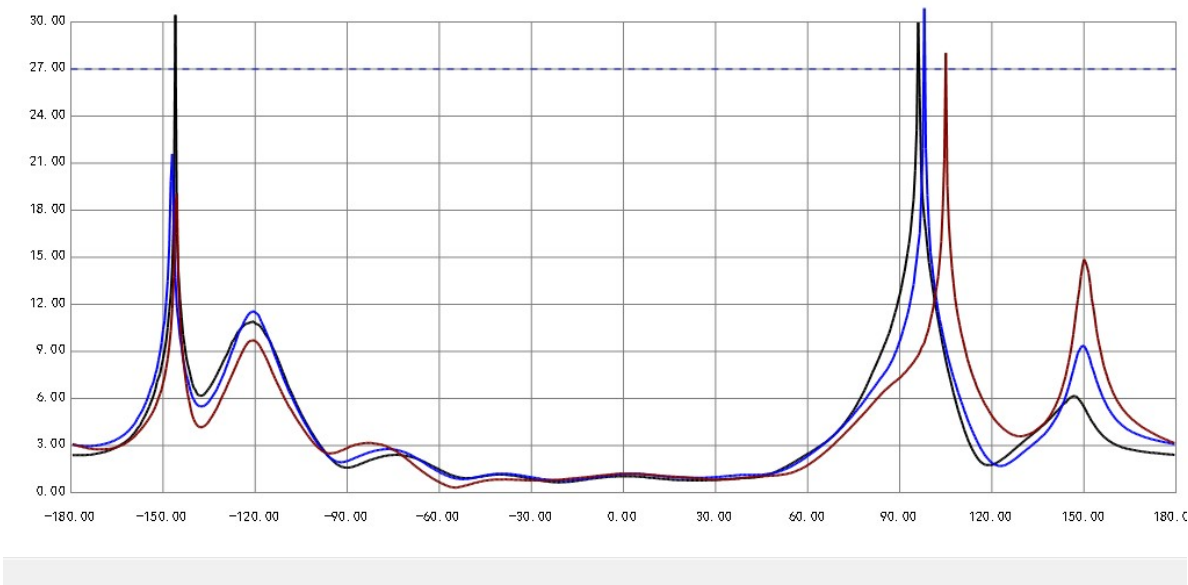
Passive gain out-of-roundness @L1

● Axial Ratio



Freq(MHz)	@Zentth(dB)
1176	1.3
1192	1.0
1207	0.8
1227	0.7
1246	0.7
1268	0.5

AR@L2



Freq(MHz)	@Zentth(dB)
1561	1.0
1575	1.1
1602	1.2

AR@L1

6.2 LNA Gain & V.S.W.R.

