

# LH-1256AR-D Specification

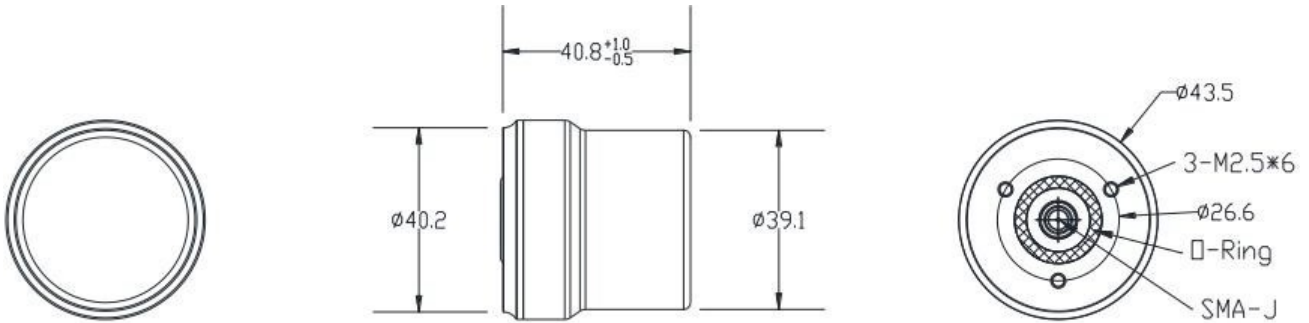


# High Performance multi-band Helix Antenna

LH-1256AR-D is an four constellations multi-band GNSS helix antenna for L1 ,L2 ,L5 and L-bands of GPS/QZSS, GLONASS, GALILEO, BEIDOU and IRNSS. This antenna's small size, light weight, and low power consumption make it ideal for applications requiring RTK-level positioning accuracy, such as autonomous vehicles, drone displays, aerial photography, high-precision mapping, remote sensing, traffic control, and public safety.

## 1. Technical specification

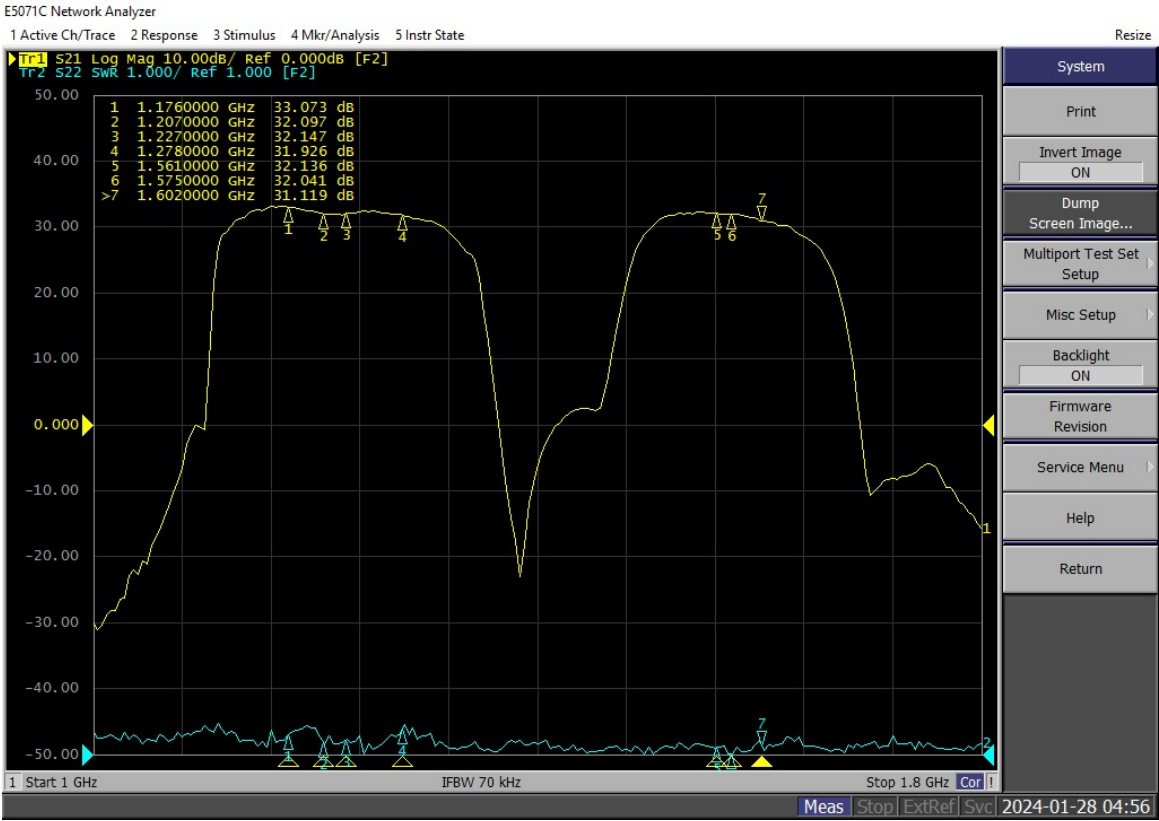
Antenna Specifications	
Frequency	GPS: L1, L2, L5 GLONASS: L1, L2, L3 GALILEO: E1, E5a, E5b, E6 BEIDOU: B1I, B1C, B2a, B2b, B3I NAVIC: L5 QZSS: L1, L2, L5, L6  L-Band: 1542±17MHz
Polarization	R.H.C.P
Gain (dBi)	≥2.5
Antenna AR (dB)	≤1.5
Port impedance (Ω)	50
VSWR	≤ 2
Electrical Specifications	
LNA Gain (dB)	30±3 (Typ. @25°C)
Noise figure (dB)	<1.5dB@25°C, Typ. (Pre-filter)
Operating voltage (VDC)	3 ~ 12V
Operating current (mA)	24 ± 3mA(3V), 31 ± 3mA(5V), Max 45mA(12V)
VSWR	≤1.8:1 typ. 2.0:1max
Structural Characteristics	
Connector type	SMA-J
Antenna Size (mm)	∅43.5 *40.8
Protection level	IP67
Weight	≤ 32 g
Environment Adaptation	
Operating temperature	-40 ~ 85 °C
Storage temperature	-40 ~ 85 °C
Relative humidit	95% couldn't condense

**2. Size Unit:mm (Tolerance  $\pm 0.3\text{MM}$ )**

### 3. LNA Test Result

#### 3.1 LNA Gain

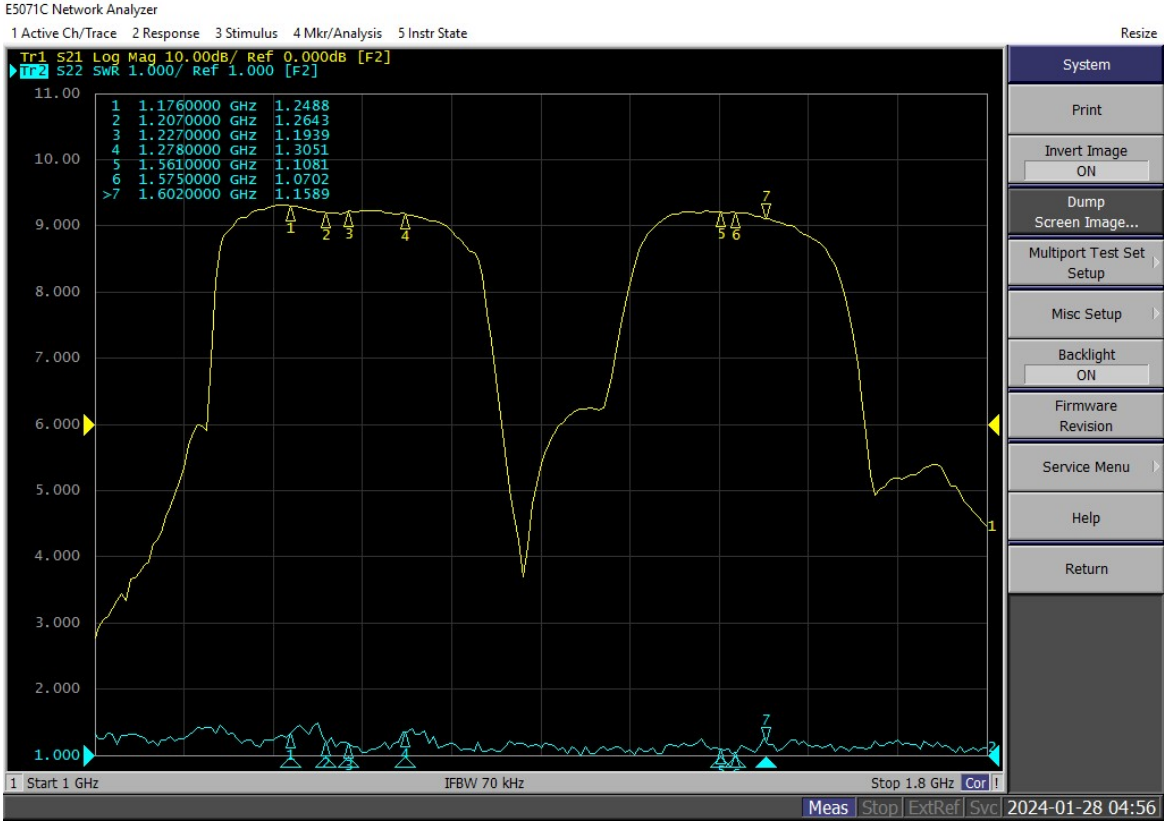
Frequency : 1176-1278MHz  
1540-1602MHz



Frequency (MHz)	Gain (dB)	Current (mA)
1176	33.0	30
1227	32.1	
1278	31.9	
1540	33.0	
1561	32.1	
1575	32.0	
1602	31.1	

3.2 LNA V.S.W.R

Frequency : 1176-1278MHz  
1540-1602MHz



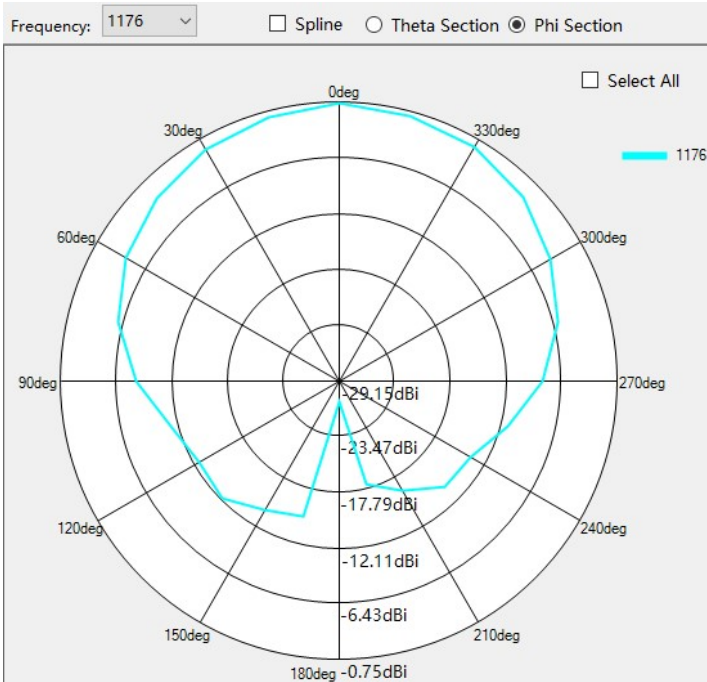
Frequency (MHz)	VSWR
1176	1.24
1227	1.19
1278	1.30
1540	1.12
1561	1.10
1575	1.07
1602	1.15

### 4. Antenna Test Results

#### 4.1 Pattern & Axis Ratio

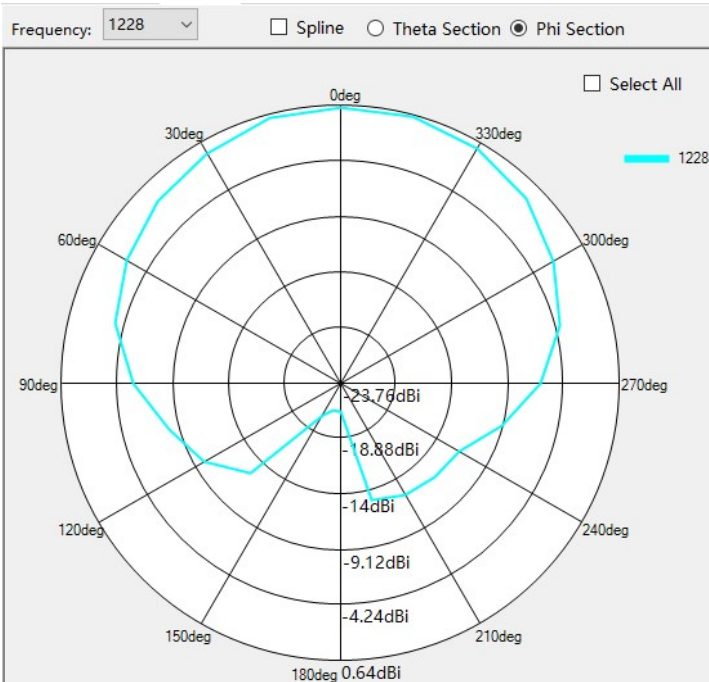
Frequency : 1176 MHz

Pattern



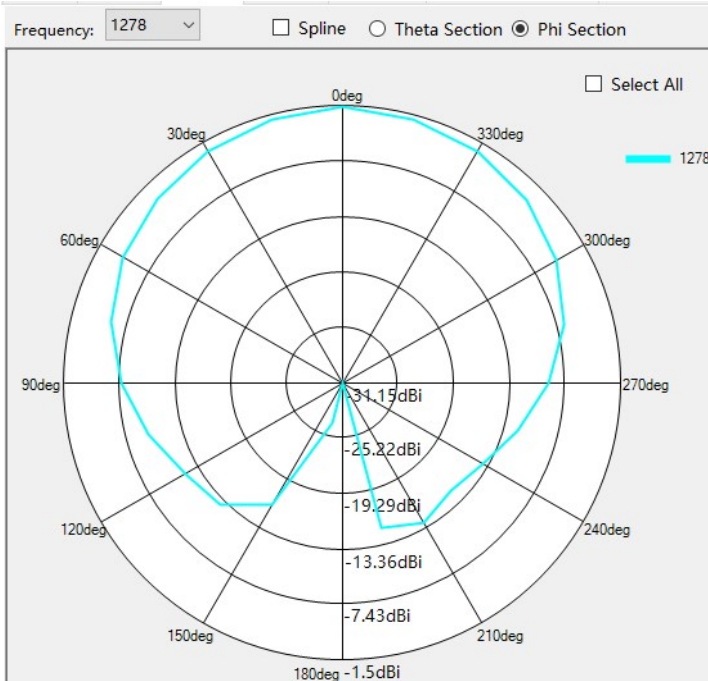
Frequency : 1227 MHz

Pattern



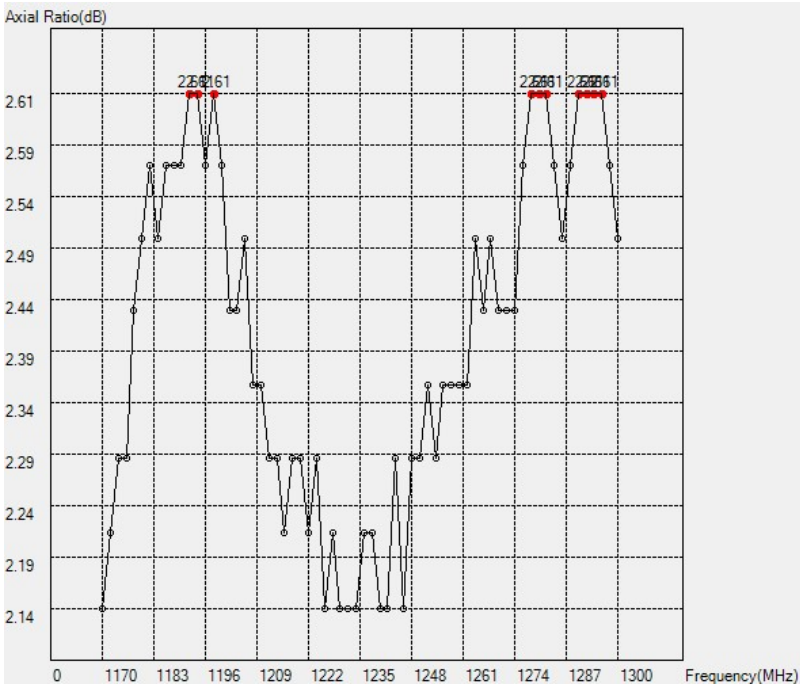
Frequency : 1278 MHz

Pattern



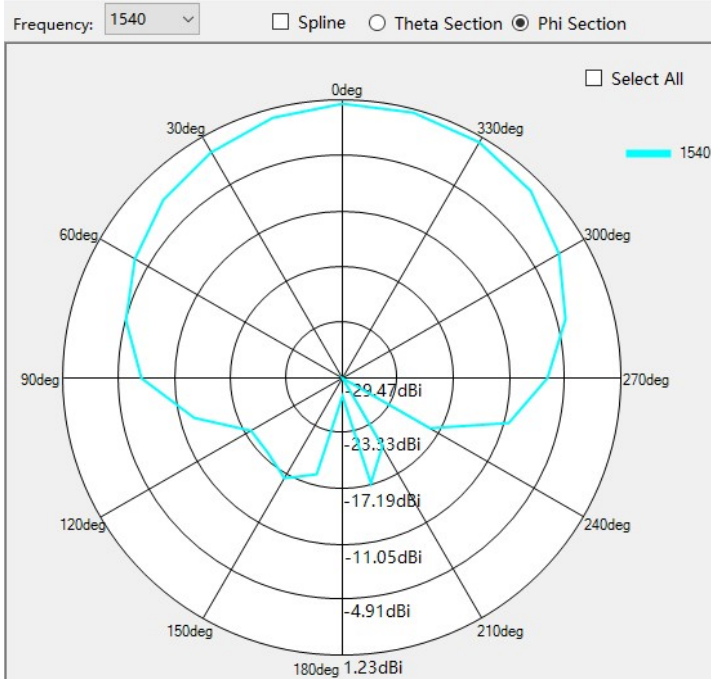
Frequency : 1176-1278 MHz

Axis Ratio



Frequency : 1540 MHz

Pattern



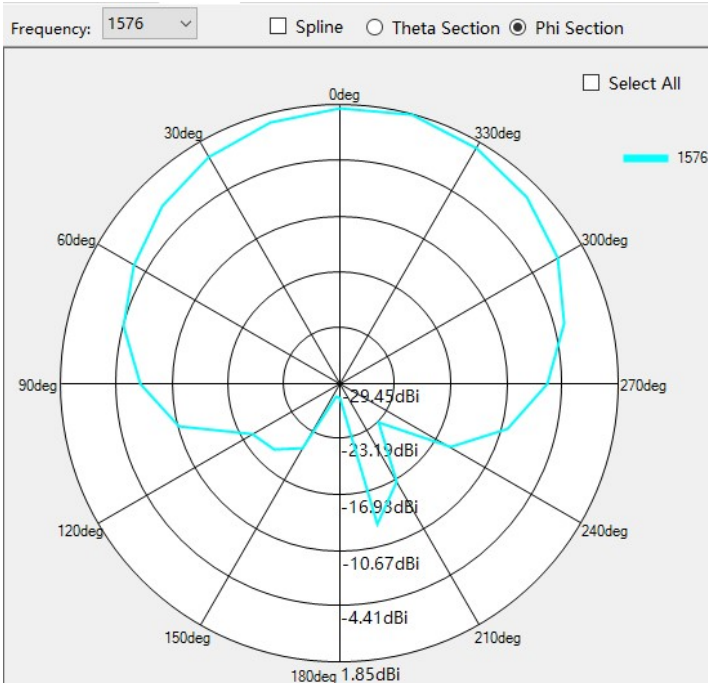
Frequency : 1561 MHz

Pattern





Frequency : 1575 MHz  
Pattern



Frequency : 1602 MHz  
Pattern



Frequency : 1540-1602 MHz

Axis Ratio



4.2 Antenna Gain

Frequency : 1176-1278 MHz

1540-1602 MHz

Frequency (MHz)	Gain (dBi)
1176	0.75
1227	2.27
1278	0.36
1540	1.23
1561	2.72
1575	2.89
1602	1.31

## 5. Document change list

### Revision 1.0

- First release on June 06, 2024.

### Revision 1.1 (November 4, 2024).

- Added section 3 & 4.