

GNSS Chip Antenna

For L1/B1/E1/G1

KH-10031-C103

10.2x3.1x4 mm

Applications

1. Satellite communication
2. Navigation and position
3. For L1, B1, E1, G1

Features

1. Compact size
2. Omni-directional radiation
3. Tape & reel automatic mounting
4. RoHS compliance (Pb-Free)



Description

The is designed for GNSS Antenna. We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

Electrical Specification

Table 1. Electrical Specification

Item	Min.	Type	Max.	Unit
Frequency Range	1559		1605	MHz
VSWR	1.1		2	
Efficiency	63		80	%
Peak Gain		2.42		dBi
Polarization		Linear		
Nominal Impedance		50		Ω

• Ta: +25±5°C

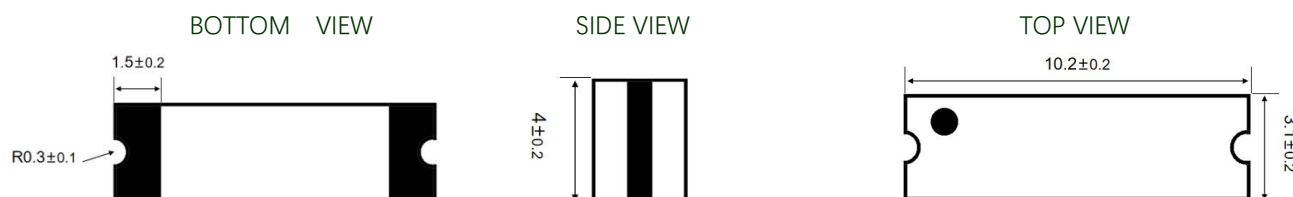
Mechanical Specification

Table 2. Mechanical Specification

Item	Min.	Type	Max.	Unit
Antenna Size		10.2*3.1* 4		Mm
Storage Temperature	-40		+85	°C
Operating temperature	-40		+85	°C

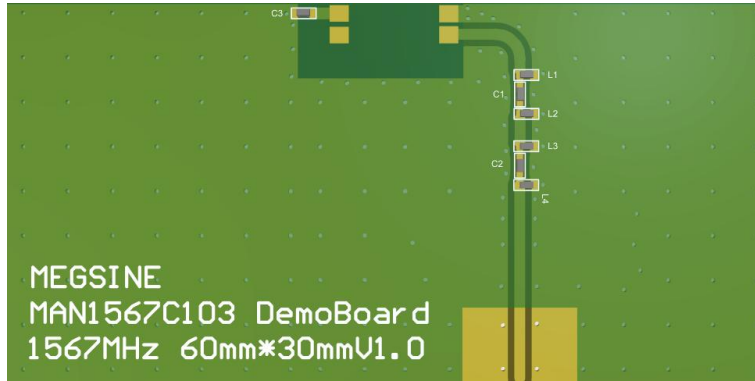
Outline Drawing

Figure 1. View (Unit: mm)



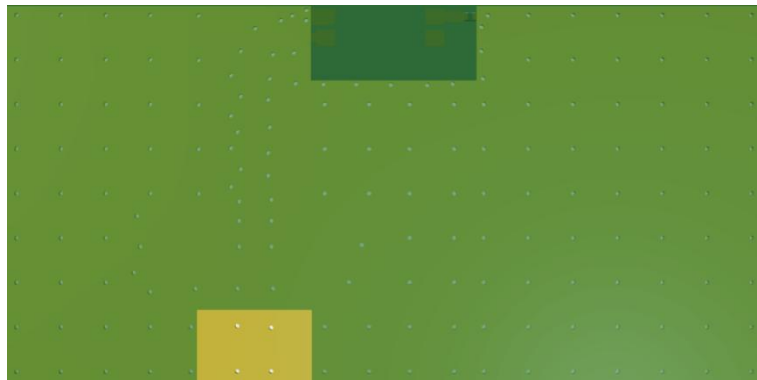
Recommend PCB Layout

Figure 2. PCB Layout (Unit: mm) TOP VIEW



Size 60*30mm

Figure 3. PCB Layout (Unit: mm) BOTTOM VIEW



Size 60*30mm

Figure 4. PCB Antenna Layout (Unit: mm)

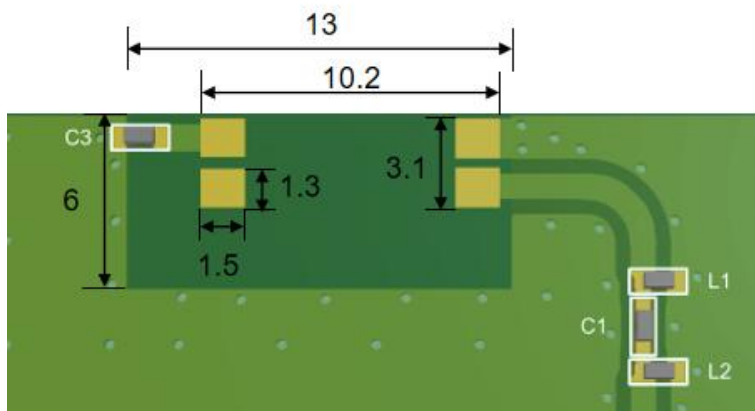


Figure 5. Matching Circuit (Unit: mm)

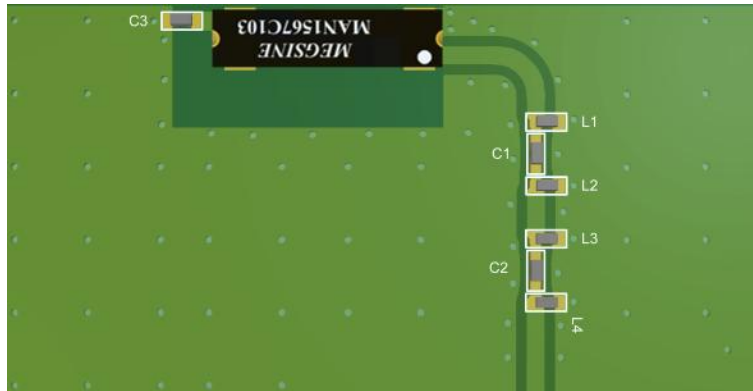


Table 3. Matching

Location	Description	Vendor
C1	1.6pf	MURATA
C2	0Ω	MURATA
C3	3pf	MURATA
L1	1.8pf	MURATA
L2	N/C	N/C
L3	N/C	N/C
L4	N/C	N/C

Typical Performance

Figure 6. VSWR

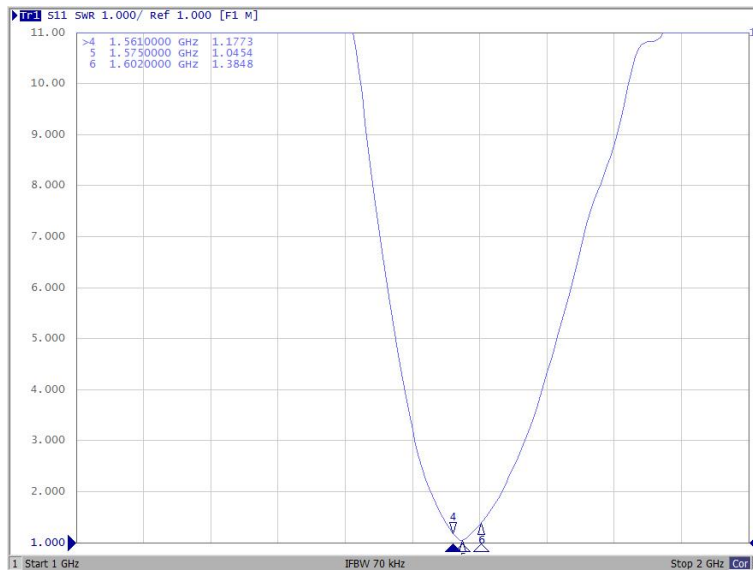
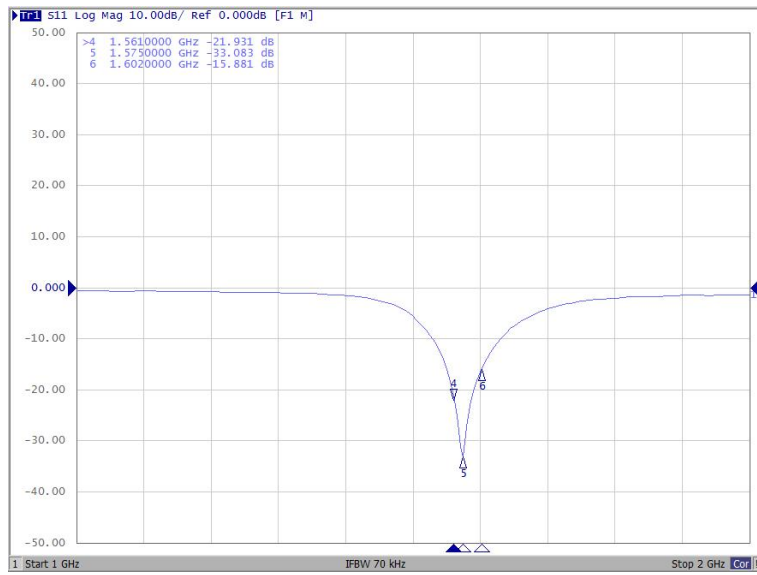


Figure 7. Return Loss



Radiation Pattern & Efficiency & Peak Gain

Figure 8. The Gain pattern is measured in FAR-field chamber

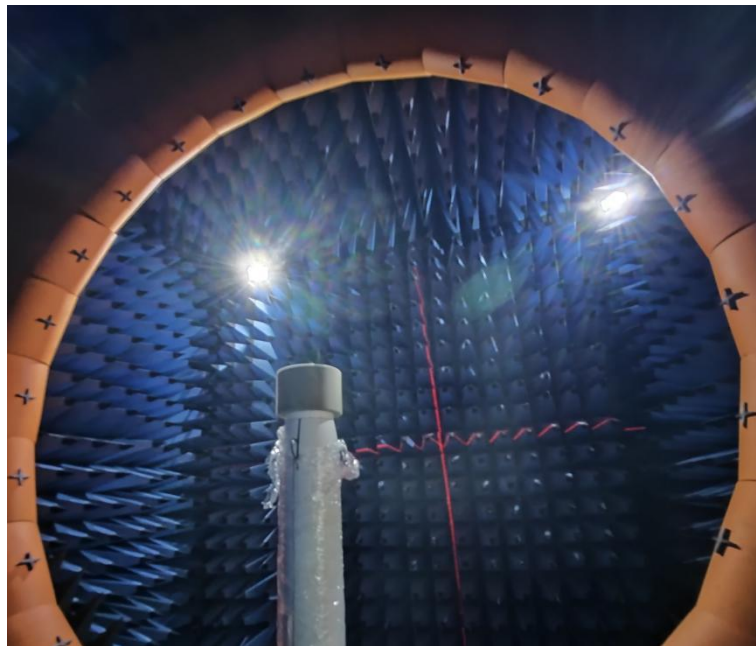


Table 4. Total Efficiency&Peak Gain

Item (MHz)	Efficiency (%)	Peak Gain (dBi)	Avg gain (dB)
1500	33	-0.90	-4.78
1510	41	0.39	-3.87
1520	51	1.26	-2.95
1530	62	1.73	-2.11
1540	71	1.89	-1.49
1550	78	2.12	-1.09
1560	80	2.37	-0.98
1570	76	2.42	-1.19
1572	75	2.36	-1.21
1575	72	2.31	-1.42
1577	71	2.31	-1.46
1580	72	2.35	-1.41
1585	71	2.07	-1.66
1590	68	1.99	-1.65
1595	68	1.90	-1.69
1600	65	1.49	-1.85
1605	64	1.49	-1.95
1610	64	1.22	-1.95

*Antenna performance can also vary across different demo boards and in different environments. It is recommended to consult the relevant technical personnel to confirm the layout before use to ensure optimal performance.

Figure 9. Total Efficiency

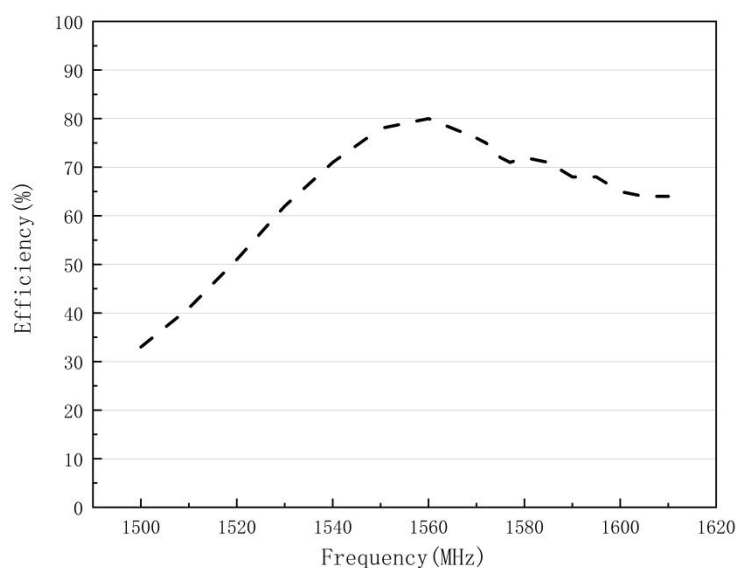


Figure 10. Peak Gain

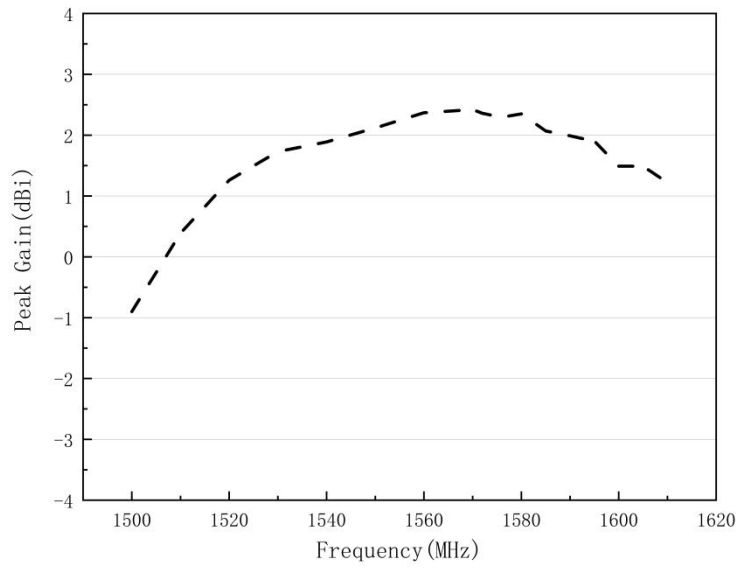
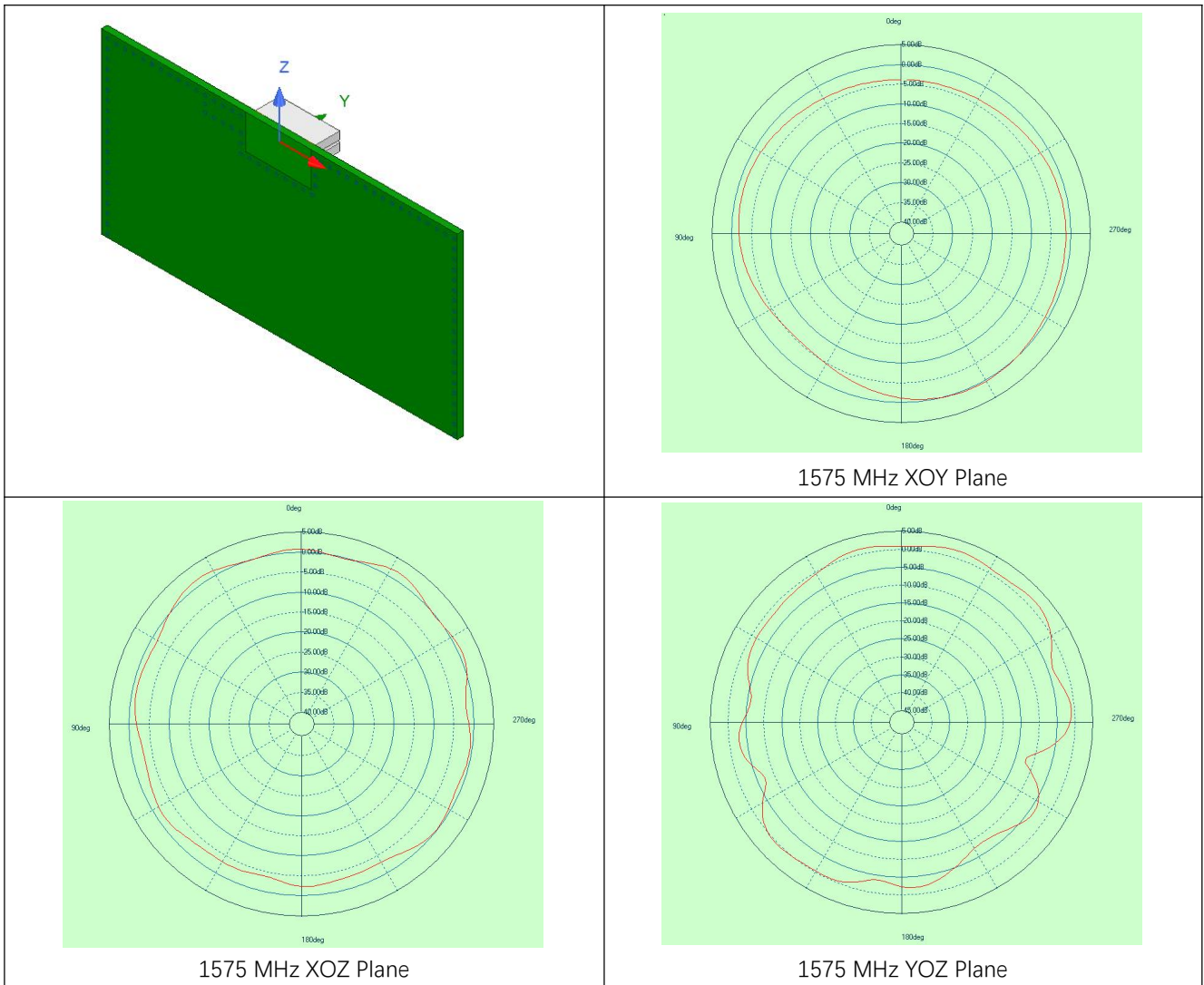
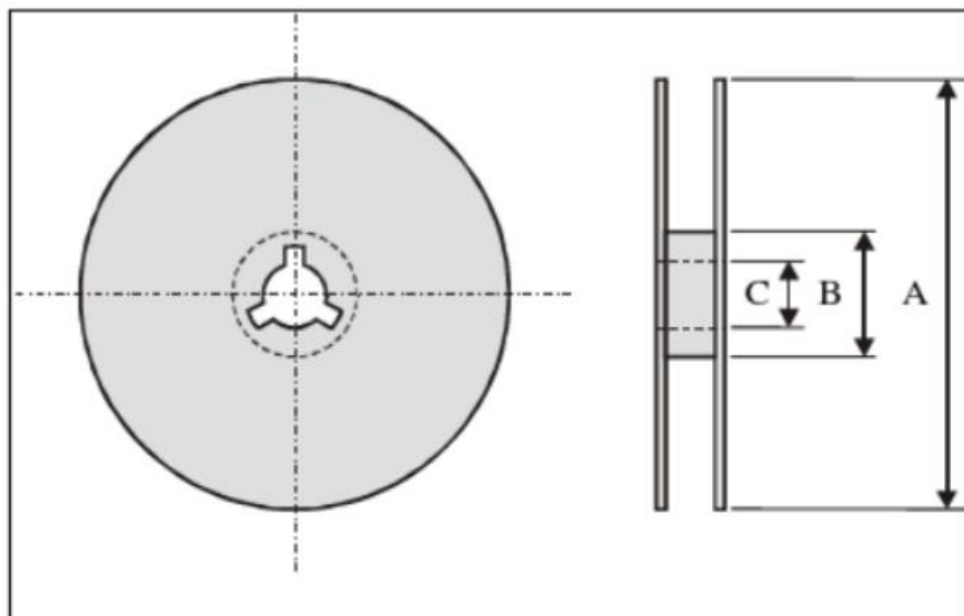
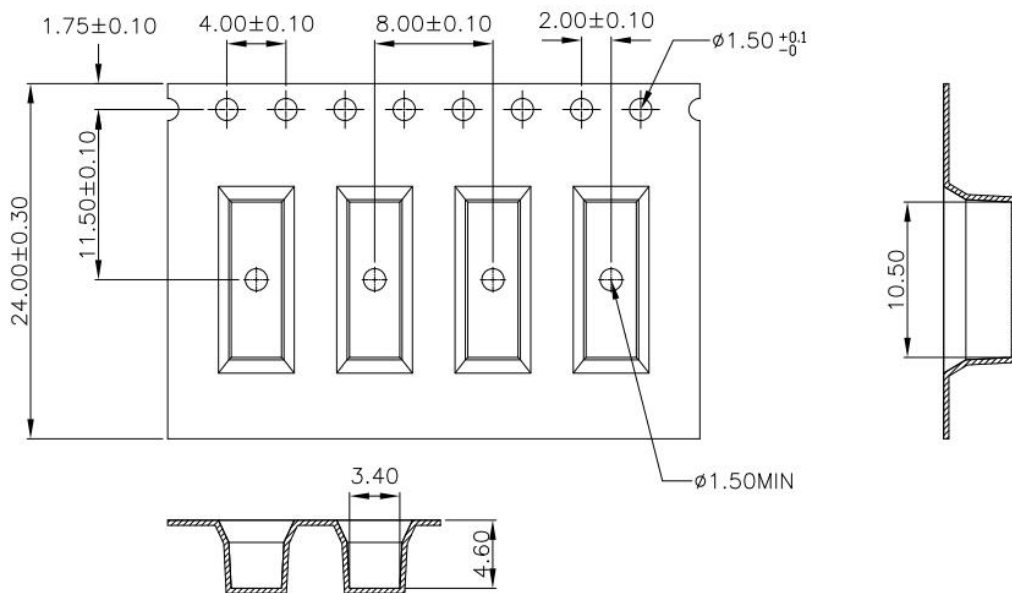


Figure 11. Radiation Pattern



Packaging and Ordering Information

Figure 12. Packaging Information



Index	A	B	C
Dimension(mm)	330	100	13.5

Table 5. Packaging and Shipping

Device	Packaging	Reel	Shipping
	SMD	13"	1500/Reel

Revision	Description	Date
Rev0	Preliminary	2024/12/25