

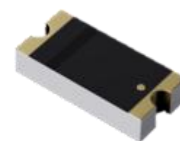
2.4 GHz Chip Antenna
For WiFi and Bluetooth

KH-5020-L52

5x2x1.2 mm

Applications

1. 2.4 GHz WiFi device
2. Bluetooth gadget
3. Zigbee device
4. ISM band equipment



Features

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

Description

The antenna is designed for superior performance, and can be widely used for wireless applications. 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	2400		2500	MHz
VSWR	1		2	
Efficiency	41		53	%
Peak Gain		5.0		dBi
Polarization		Linear		
Nominal Impedance		50		Ω

• Ta: +25±5°C

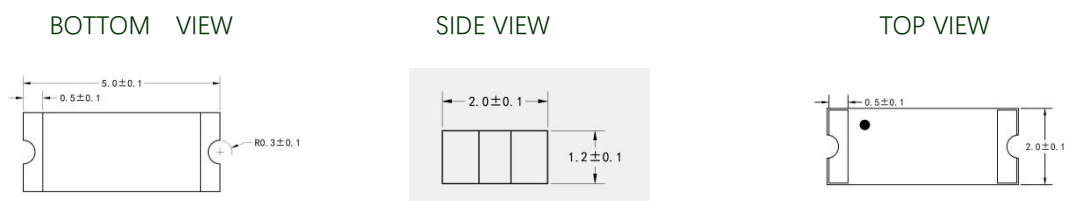
Mechanical Specification

Table 2. Mechanical Specification

Item	Min.	Type	Max.	Unit
Antenna Size		5*2* 1.2		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)

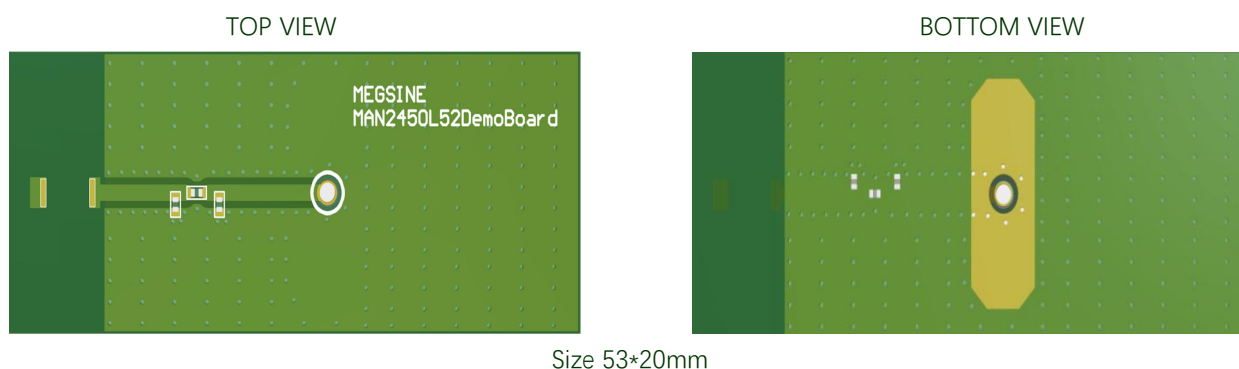


Figure 3. Antenna Layout (Unit: mm)

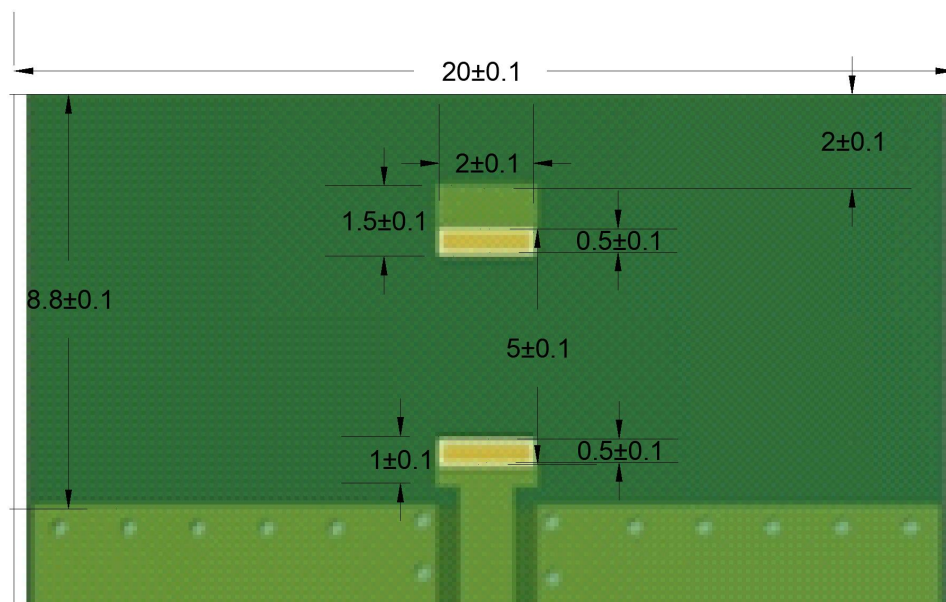


Figure 4. Matching Circuit (Unit: mm)

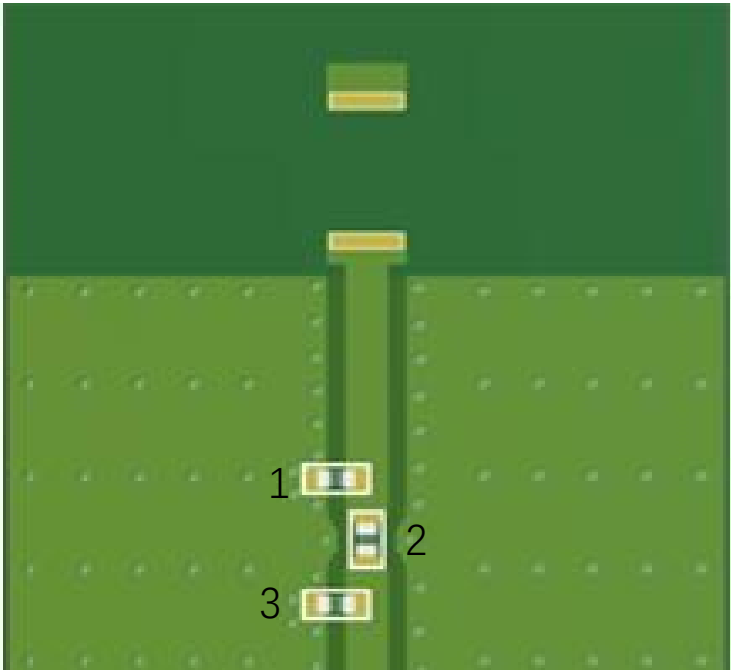


Table 3. Matching

Location	Description	Vendor
1	N/C	N/C
2	0Ω	MURATA
3	N/C	N/C

Typical Performance

Figure 5. VSWR

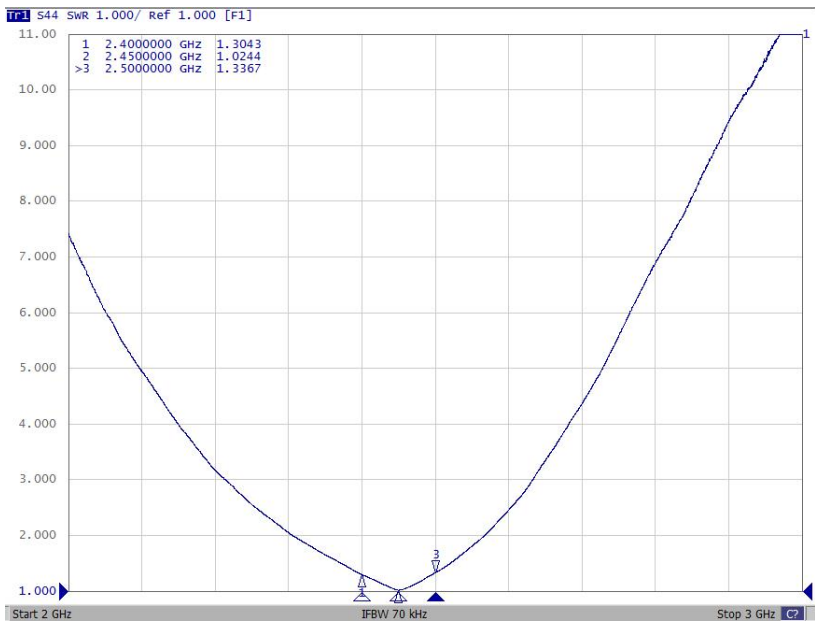
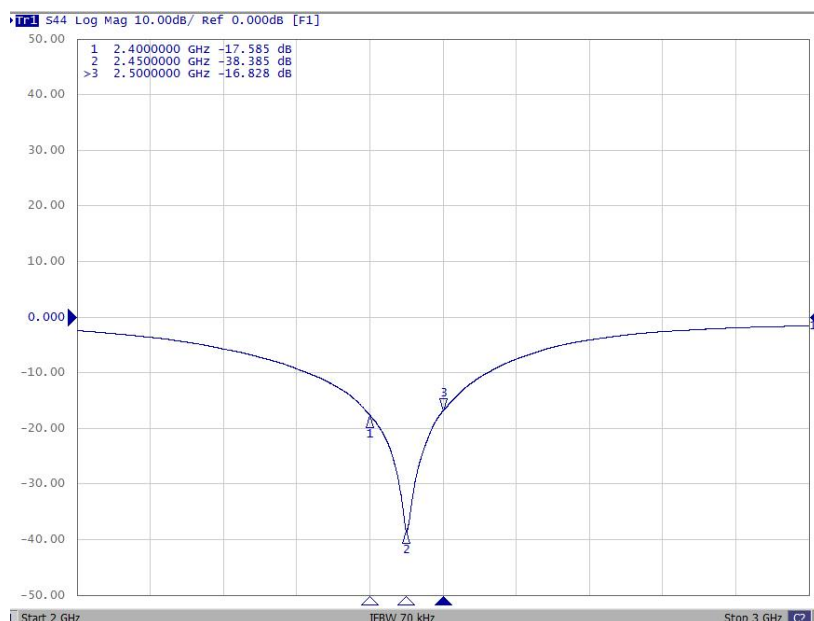
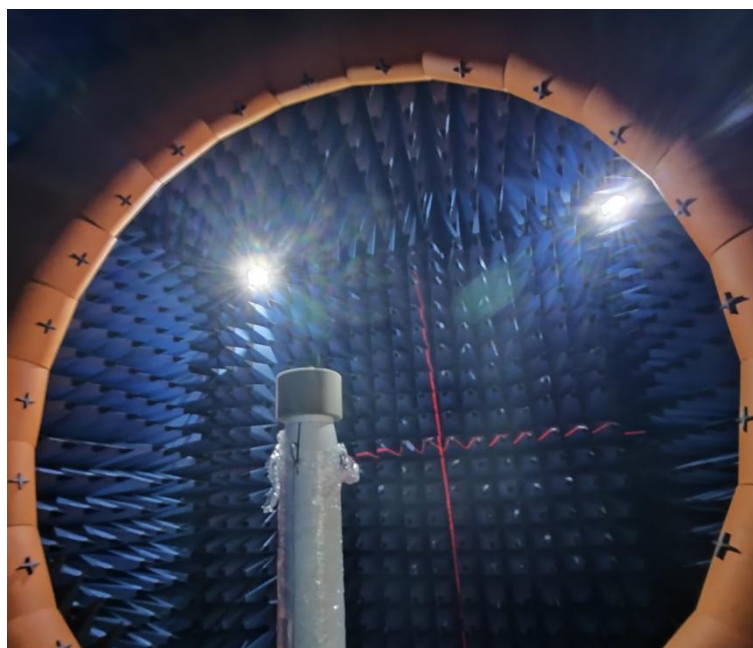


Figure 6. Return Loss



Radiation Pattern & Efficiency & Peak Gain

Figure 7. The Gain pattern is measured in FAR-field chamber



*Antenna performance will also change in different environments, it is recommended to consult the relevant technical personnel before use to confirm the layout to ensure good performance.

Table 4. Total Efficiency&Peak Gain

Item (MHz)	Efficiency (%)	Peak Gain (dBi)
2400	53	5
2410	51	4.7
2420	47	4.4
2430	45	4.2
2440	43	4
2450	43	4.1
2460	42	3.98
2470	41	3.95
2480	41	4.1
2490	42	4.3
2500	44	4.6

Figure 8. Total Efficiency

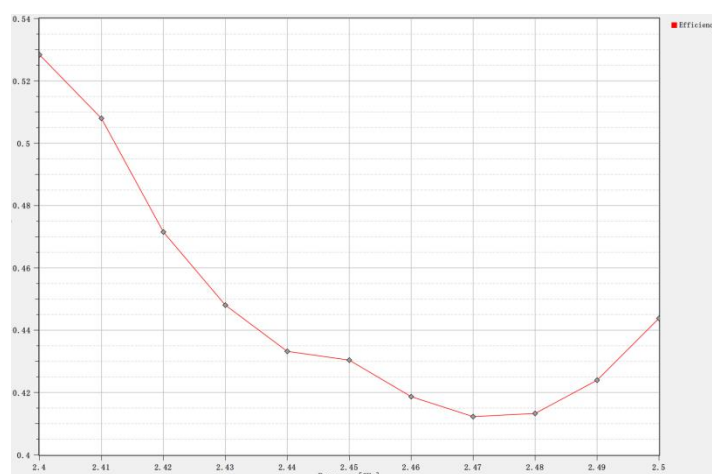
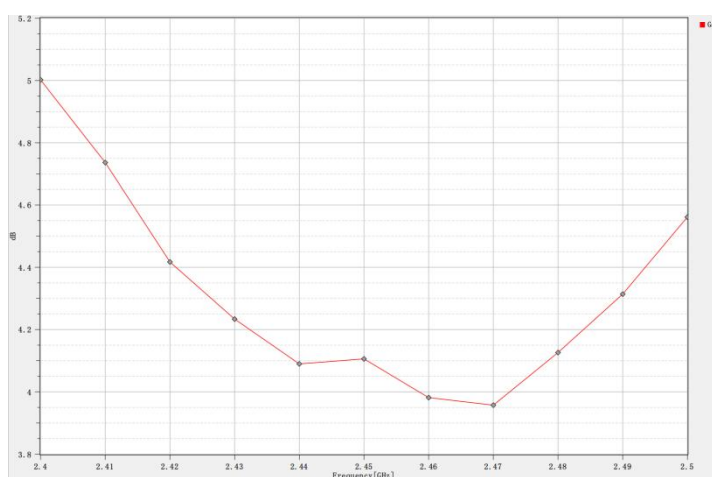


Figure 9. Peak Gain



Packaging and Ordering Information

Figure 10. Packaging Information

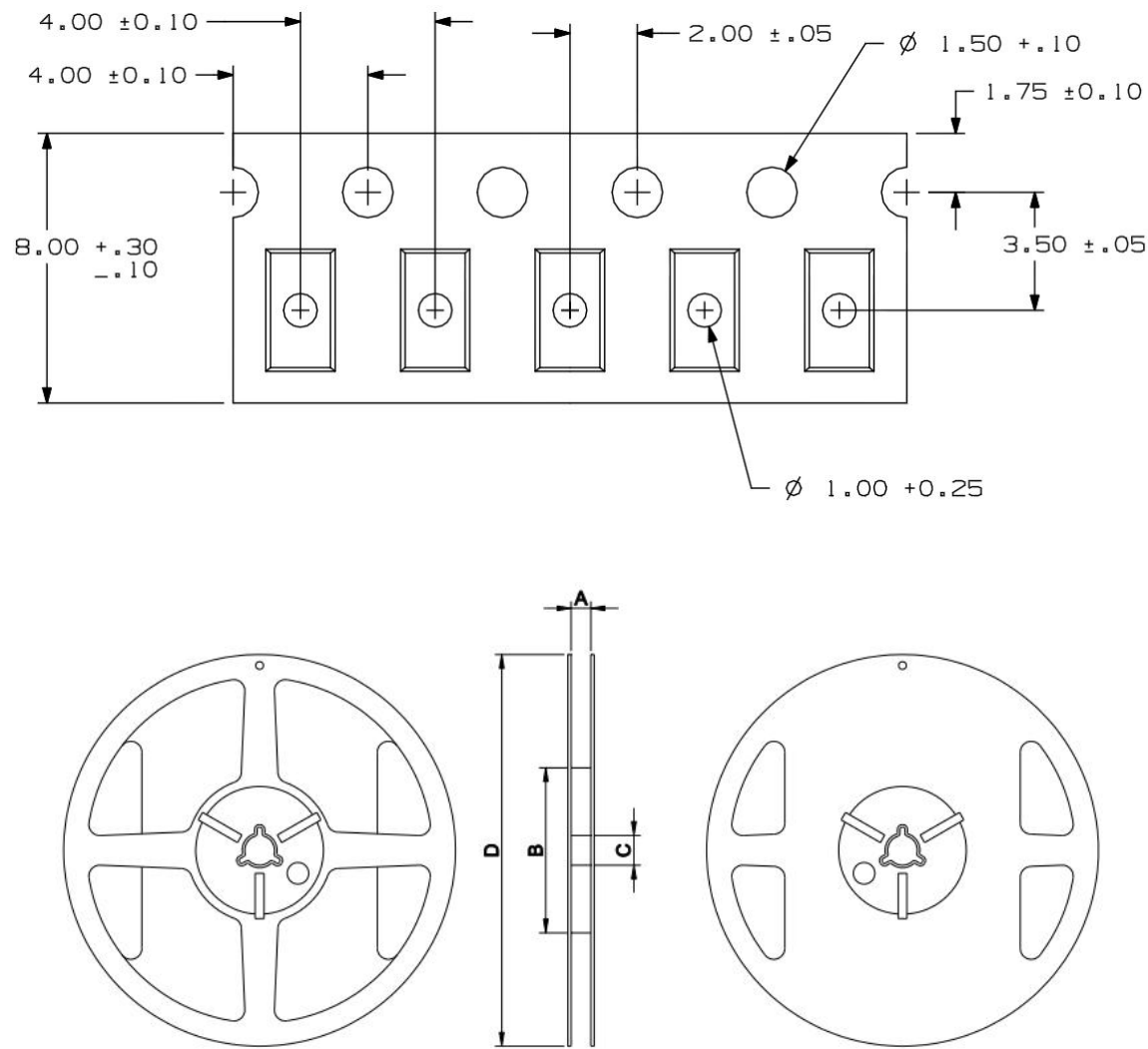


Table 5. Packaging and Shipping

Device	Packaging	Reel	Shipping
	SMD	7"	2500/Reel

Revision	Description	Date
Rev0	Preliminary	2025/6/20