

D1 PCB WiFi Antenna Specification

1. Document Information

Project	Content	Remarks
Specification Version	V1.0	
Product Model	D1	
Prepared by	Zhou Junmin	
Preparation Date	2025-12-1	
Reviewed by	Chen Dan	
Review Date	2025-12-3	
Effective Date	2026-1-1	

2. Product Overview

This product is an integrated WiFi antenna drawn on a PCB circuit board, using an inverted-F structure design, integrated on the surface of the PCB board, requiring no additional external antenna. It features small size, low cost, convenient installation, and good consistency. It is suitable for small electronic devices requiring WiFi wireless communication, supports [802.11b/g/n/ac/ax, etc.] WiFi protocols, and meets the device's wireless data transmission needs.

Core purpose: To provide a stable WiFi wireless connection for the target device, enabling functions such as data transmission and reception, network access, etc., and adapting to 2.4GHz band WiFi communication scenarios.

3. Electrical Specifications

3.1 Operating Frequency Range

Band Type	Operating Frequency Range
2.4GHz Band	2400-2500MHz

3.2 Gain

At the center frequency, gain: 2.89dBi

Test condition: 25°C room temperature

3.3 Standing Wave Ratio (VSWR)

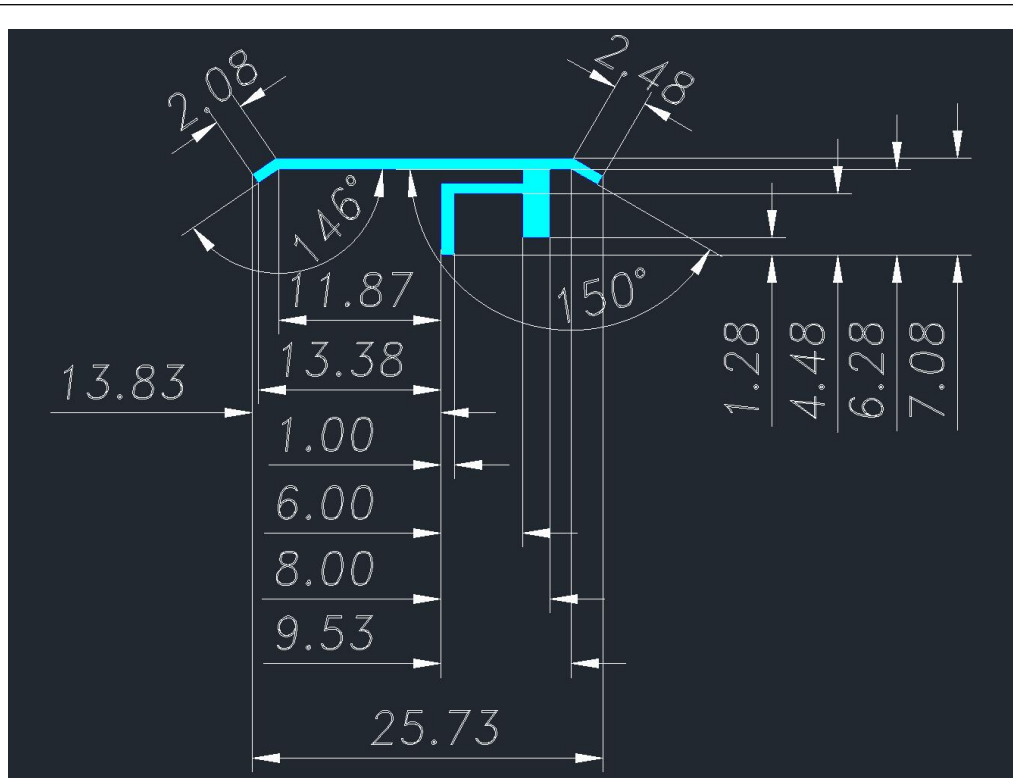
Within the operating frequency band, standing wave ratio: ≤ 2

3.4 Input Impedance

Standard input impedance: 50 Ω

4. Mechanical Specifications

4.1 PCB Dimensions and Antenna Layout	Specifications	Remarks
PCB Thickness	1.0mm	
PCB Area Occupied by Antenna	25.73mm ×7.08mm	Including radiator, feeder, and grounding area



4.2 Material Requirements

4.2.1 PCB substrate: FR-4

4.2.2 Copper foil material: oxygen-free copper, copper foil thickness: 1oz

4.2.3 Solder mask: black

4.2.4 Silkscreen layer: white

5. Environmental Specifications

5.1 Operating Temperature Range

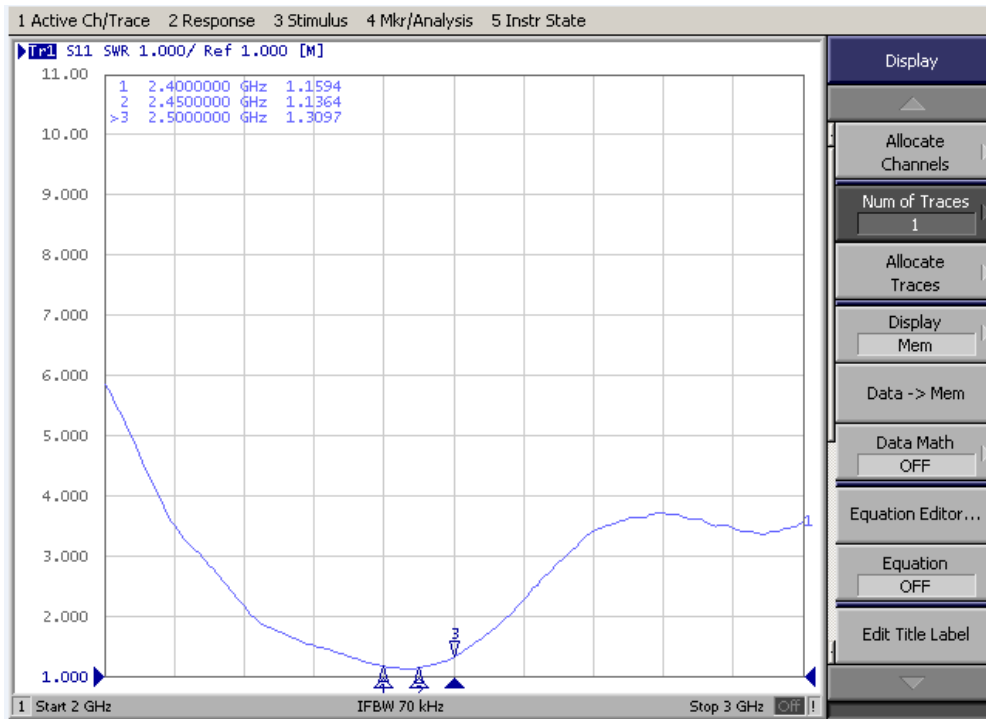
Operating Temperature: -40°C ~+85°C

5.2 Relative Humidity

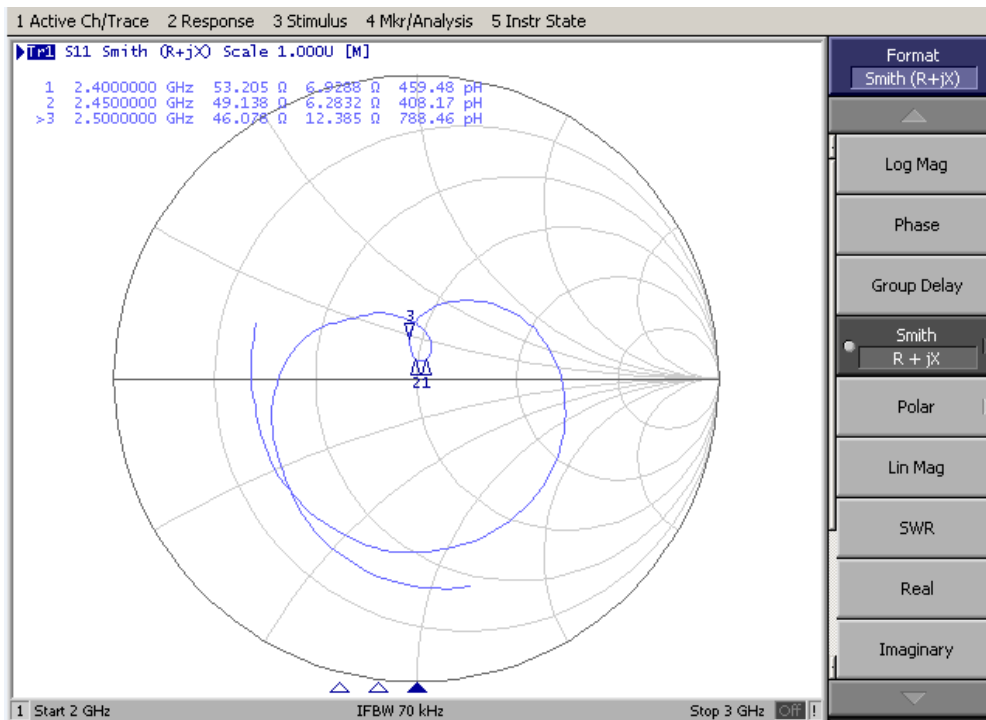
Operating relative humidity: 30% ~ 85% (non-condensing)

Manufacturer: Guangdong Hongding Intelligent Technology Co., Ltd.
 Manufacturer's address 401, 4F, Hongshi Electronics Dinghu Industrial Center, Intersection of Baoding Road and Taozhou Road, Guicheng Street, Dinghu District, Zhaoqing, Guangdong, China

SWR



Smith

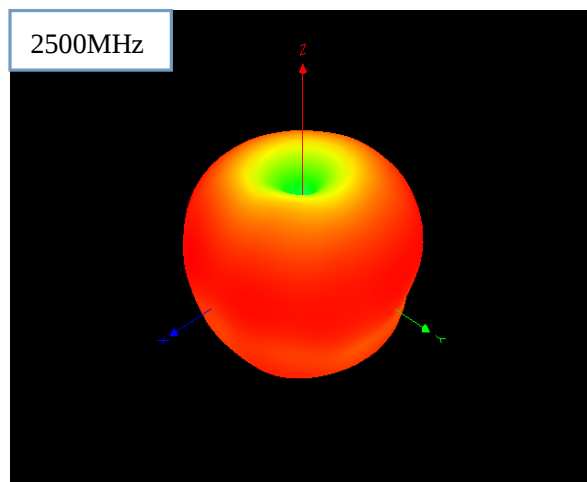
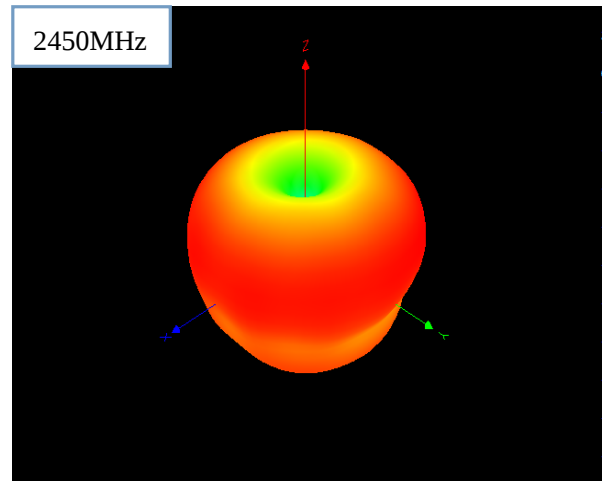
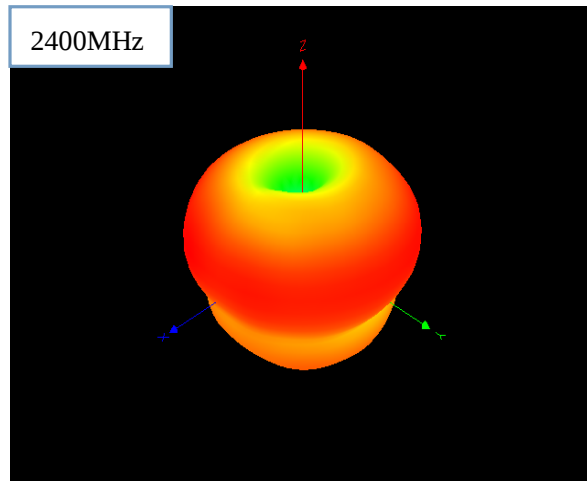


Efficiency&Gain

Freq (MHz)	Effi (%)	Gain (dBi)
2400	78.11	2.89
2410	72.92	2.42
2420	70.83	2.26
2430	70.92	2.13
2440	74.66	2.50
2450	73.87	2.62
2460	73.71	2.59
2470	78.62	2.46
2480	79.16	2.52
2490	73.55	2.03
2500	71.22	2.03

Direction map (3D map)

Patten



Direction map (2D diagram)

Patten

