



惠州硕贝德无线科技股份有限公司

Huizhou Speed Wireless Technology Co.,Ltd

Specifications For 6350 indoor unit WiFi antenna

Customer/ Project	6350 indoor unit WiFi antenna		Frequency Band	2400-2500MHz	
SCT P/N	F-0Y-31-0106-001-00		Version	V2.0	
Date	2022.11.2				
SPEED					
Checked by	RF	ZXX	Designed by	RF	ZWH
	ME	XL		ME	SML
	QC		Remark		
Customer					
Date					
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	ME				
Remark					

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修订记录

Date	Revision version	Change Description	Author
2022.09.05	V1.0	Initial version	ZWH
2022.09.20	V2.0	Optimization antenna Version	ZWH

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1 Project Overview

This document is the specifications of the 6350 indoor unit WiFi antenna. The antenna solution is to make LDS wiring on the outside of the exterior surface bracket. The installation position is shown in Figure 1 :



Figure 1 Antenna picture

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2 Antenna Specification

Antenna Form	PCB+Cable
Working Bands	2400~2500MHz
Peak Gain	1.47dbi
Efficency	>20%
VSWR	<3
Impedance	50ohm
Polarization	Linear polarization
A/R	N/A
Radiation Pattern	Omnidirectional
Feed Mode	Pin
power capacity	33dBm
Size(L*W*H)	58mm*30mm*4.3mm
Weight	N/A
Operating temperature	-30 °C to +80 °C
Storage temperature	-30 °C to +80 °C

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3 Test Environment

The measuring equipment for antenna return loss, voltage standing wave ratio and isolation is Keysight E5071C vector network analyzer. As shown below:



Figure 2 Keysight E5071C vector network analyzer

The efficiency, gain, and pattern of the antenna are all tested in a dark room at Satimo, France. The darkroom uses 64 probes to electronically scan the antenna's radiation performance, collect data, and then analyze and organize it through a computer, which can provide antenna testing in the 400MHz to 8.5GHz frequency.



Figure3 Satimo Darkroom

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4 Test Results

4.1 VSWR

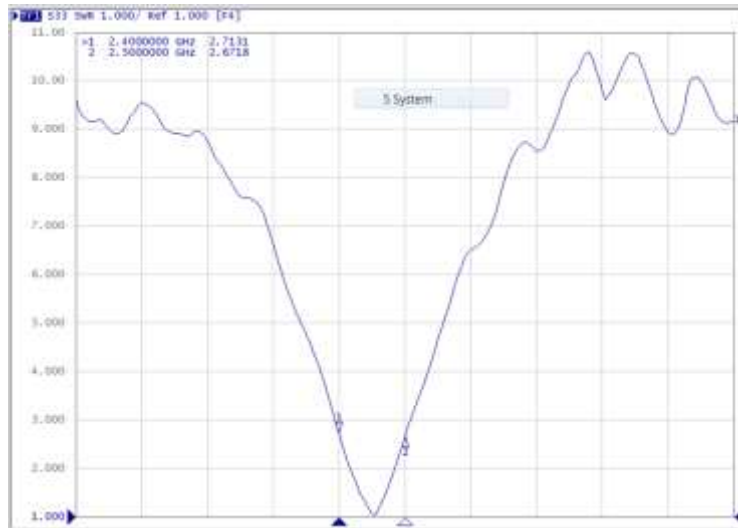


Figure 4 VSWR

4.2 Passive Efficiency and Gain

Frequency	Efficiency	Gain . dB
2400	28%	0.98
2410	31%	1.08
2420	34%	1.12
2430	35%	1.28
2440	37%	1.47
2450	36%	1.30
2460	35%	1.29
2470	33%	1.22
2480	30%	1.18
2490	27%	0.89
2500	24%	0.43

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4.3 Antenna 2D pattern

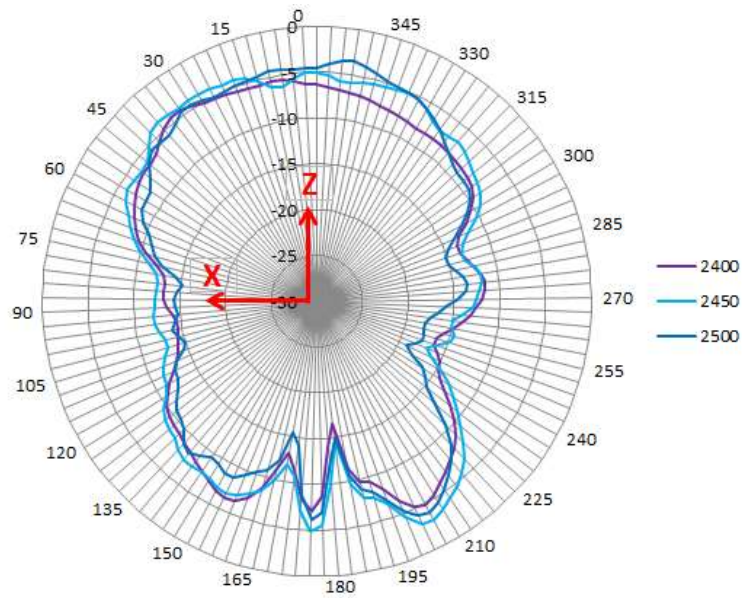


图 5 $\Phi = 0^\circ$

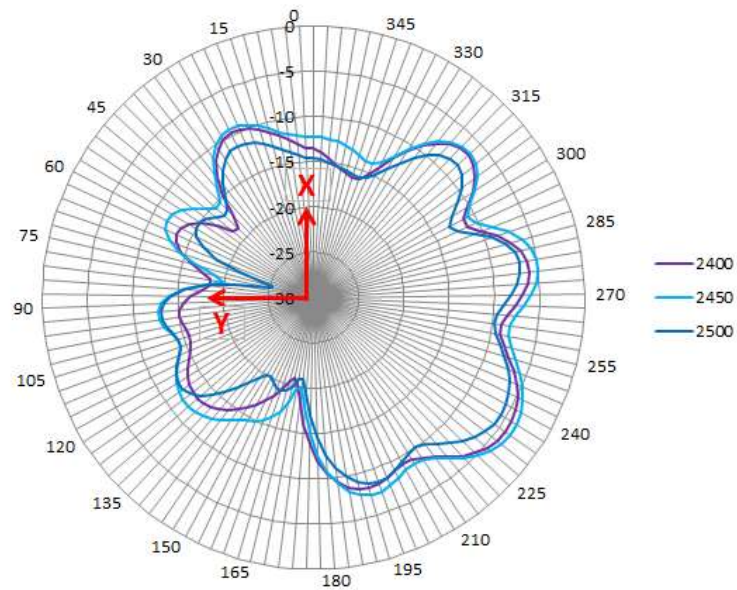


图 6 $\Theta = 90^\circ$

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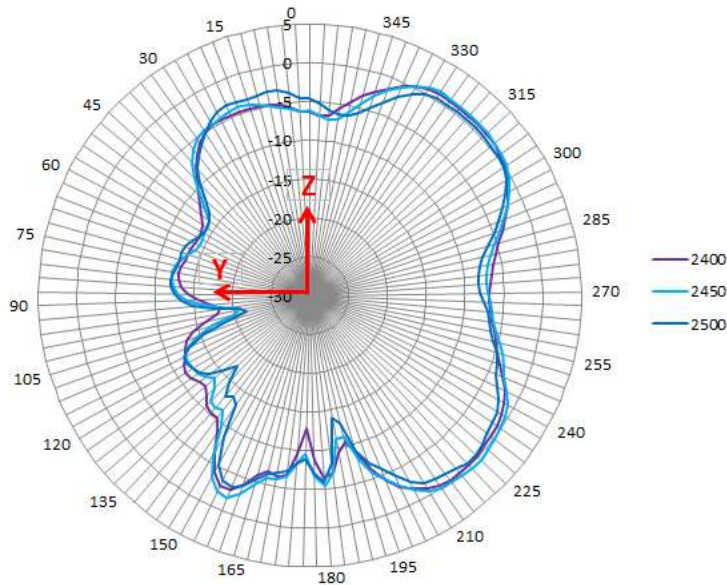


图 7 Phi = 90°

5 Structure Diagram

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C	<p>Notes: 1. The key dimensions is marked "*". Undefined dimensions tolerance accord with the tolerance table, and undeclared dimensions refer to 3d file. 2. The products shall be clean and free from oil stains, scratches, deformation, damage, etc. 3. Conform to the requirements of "Toxic and hazardous substances in products management standards" (including but not limited to the EU rohs 2.0).</p>				C																																										
D	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Title</td> <td>BAB0148_ANT_ASM</td> <td>DRW.</td> <td>Creation</td> <td>Date</td> <td>22/11/2</td> </tr> <tr> <td>Project</td> <td>BAB0148</td> <td>CHK.</td> <td></td> <td>Date</td> <td></td> </tr> <tr> <td>P/N</td> <td>F-0Y-31-0106-001-00</td> <td>APP.</td> <td></td> <td>Date</td> <td></td> </tr> <tr> <td>Material</td> <td>BOM</td> <td>REV.</td> <td>S01</td> <td>G/W</td> <td>N/A</td> </tr> <tr> <td>Scale</td> <td>1:1</td> <td colspan="2">Dimensions in mm</td> <td colspan="2">All rights strictly reserved.</td> </tr> <tr> <td>Sheet</td> <td>1 / 1</td> <td colspan="4" style="text-align: center;"> </td> </tr> <tr> <td>Size</td> <td>A4</td> <td colspan="4"></td> </tr> </table>				Title	BAB0148_ANT_ASM	DRW.	Creation	Date	22/11/2	Project	BAB0148	CHK.		Date		P/N	F-0Y-31-0106-001-00	APP.		Date		Material	BOM	REV.	S01	G/W	N/A	Scale	1:1	Dimensions in mm		All rights strictly reserved.		Sheet	1 / 1					Size	A4					D
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