

Hangzhou Hikvision Digital Technology Co., Ltd.

DS-K1T321MFW
Onboard Antenna Specification V1.0

Author	Hua Lina
Reviewer	
Approver	

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1. Antenna Characteristic Specification

This specification describes the physical characteristics and electrical performance of the following 2.4 GHz antennas.

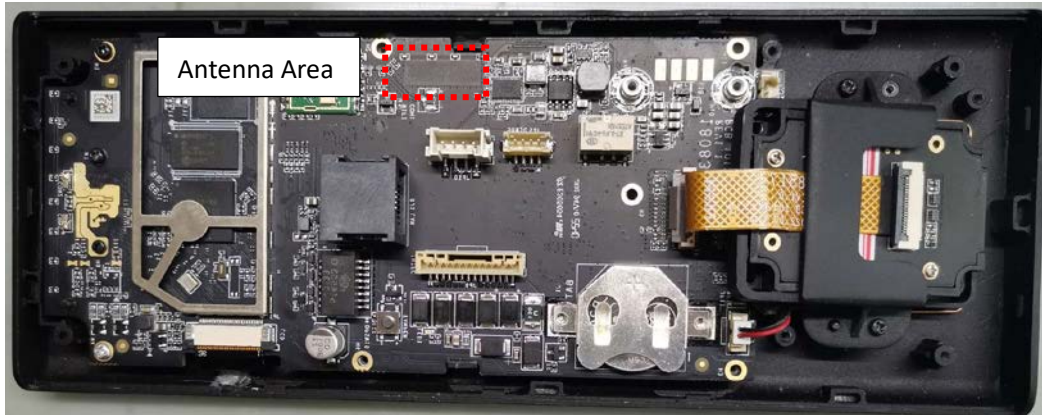


Figure 1. Antenna Actual Effect Picture

1.1 Antenna Structure

The antenna is mainly composed of on-board wiring on the PCB.

1.2 Antenna Technical Parameters and Interface

Design Specifications	Typical	Units
Form	On-board PCB	\
Frequency	2400-2500	MHz
Gain	High channel: 1.44	dBi
	Medium channel: 1.46	dBi
	Low channel: 1.61	dBi
Antenna Efficiency	44.2	%
VSWR	< 10	\
Polarization	Linear Polarization	\
Axial Ratio	\	\
Radiation pattern	Omnibearing	\
impedance	50	ohm
Power handling	33	dBm
Interface	\	\
Overall dimensions	15mm*6mm	\
Weight	\	\
Operation Temp.	-30-70	°C
Storing Temp.	-30-70	°C

2. Antenna Test Conditions

2.1 Test Equipment

Antenna Vector Network Analyzer ROHDE&SCHWARZ ZNB 20

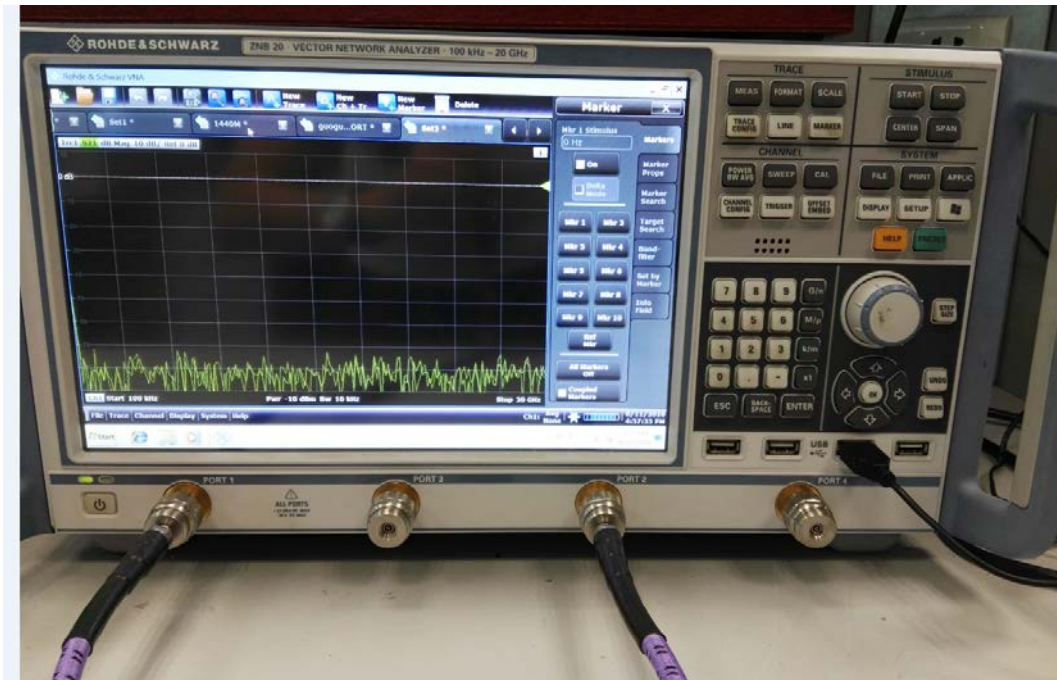


Figure 2.Vector Network Analyzer

2.2 Test Result

Return Loss (S11)

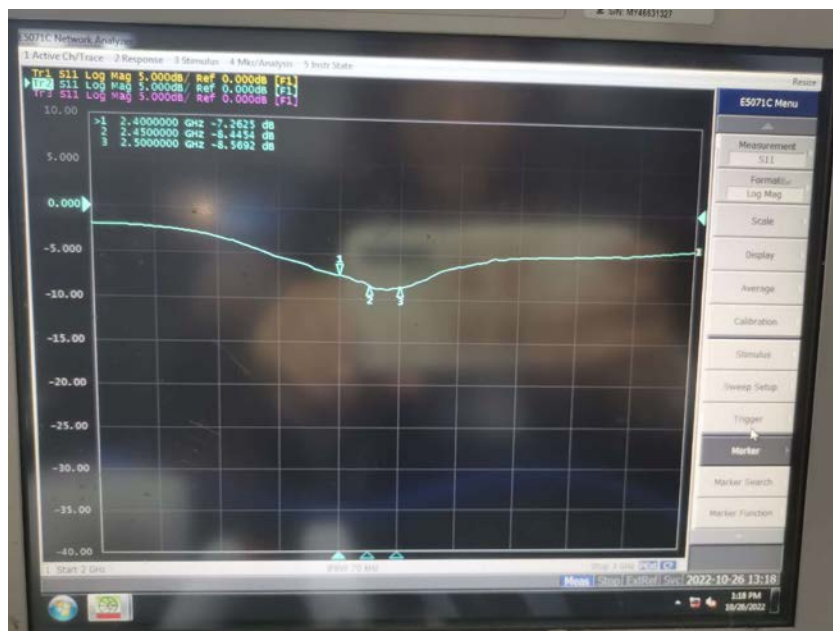


Figure 4.Return Loss

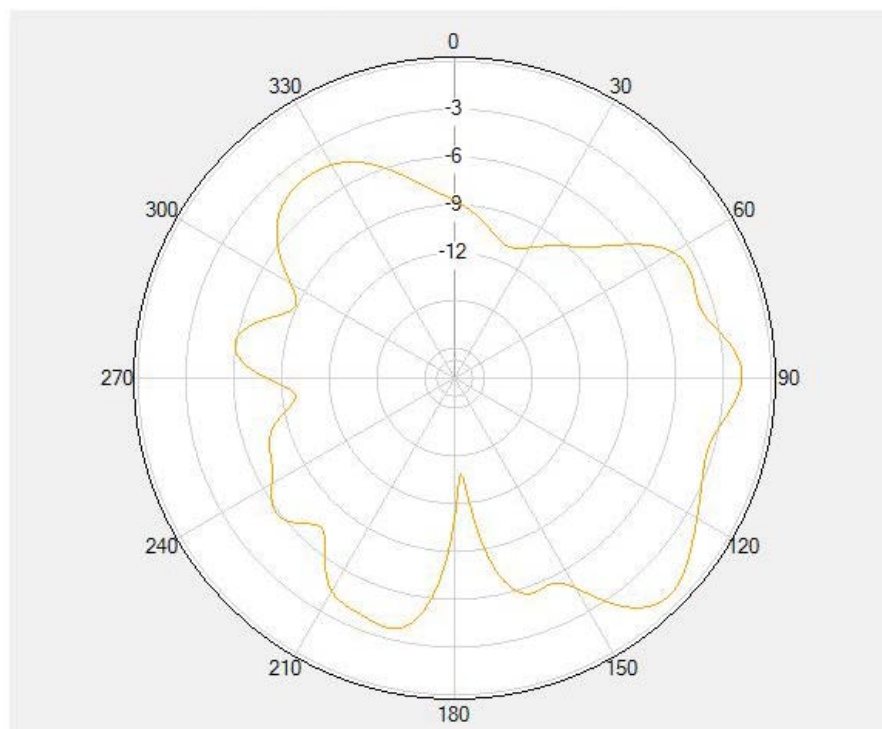
The blue curve in the figure above shows that the antenna syntony is realized well, and the resistance condition matches well.

Antenna Efficiency

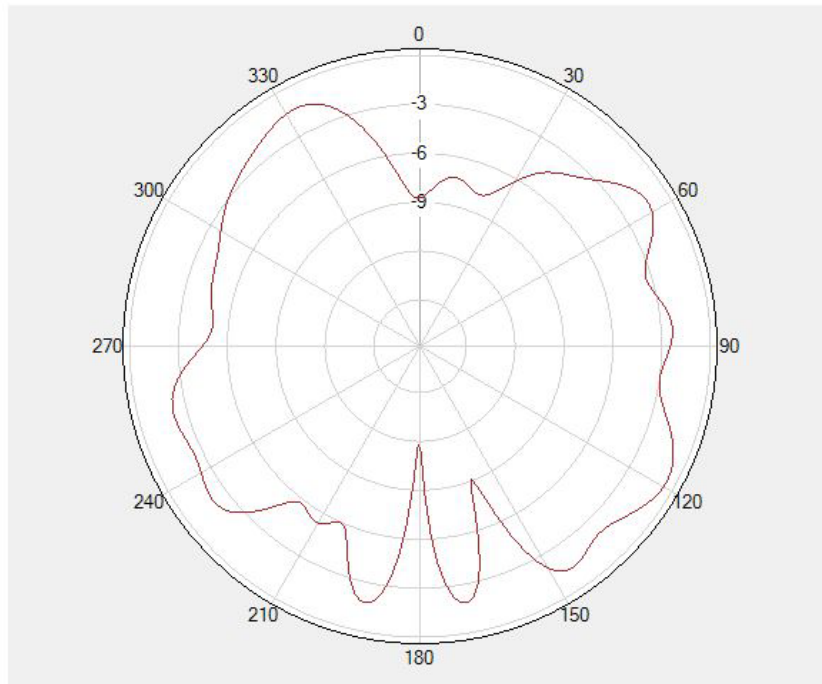
Frequency /MHz	Efficiency /%
2400	40.94
2410	43.30
2420	44.44
2430	45.72
2440	46.58
2450	45.14
2460	44.93
2470	44.50
2480	43.98
2490	43.14
2500	43.57

Antenna 2D Radiation Pattern

2400MHz:



Phi=0 deg

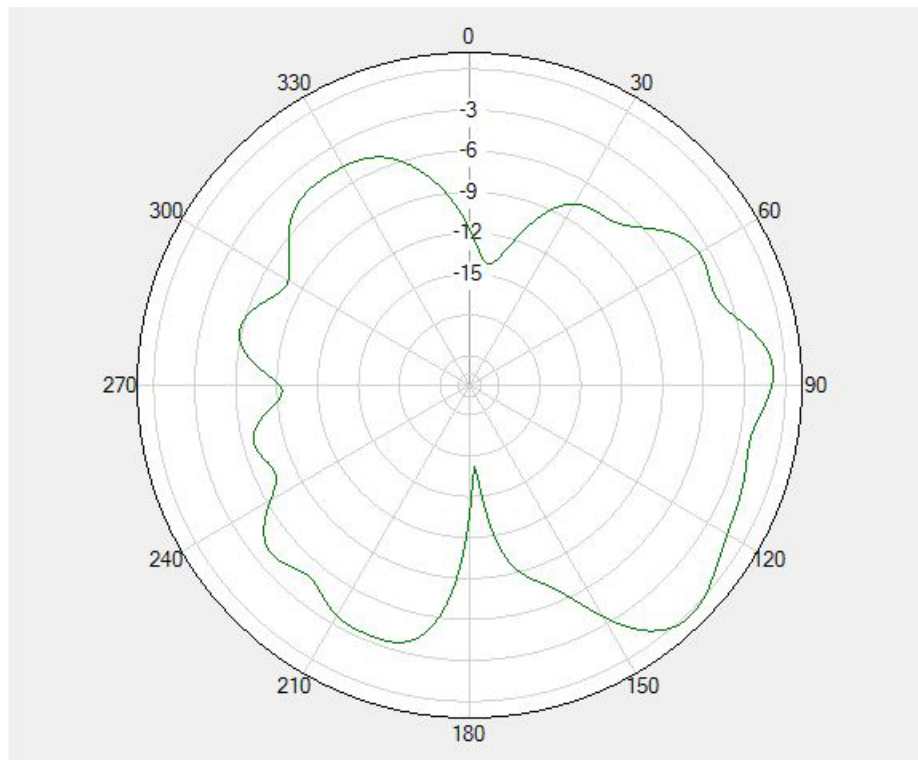


Phi=90 deg

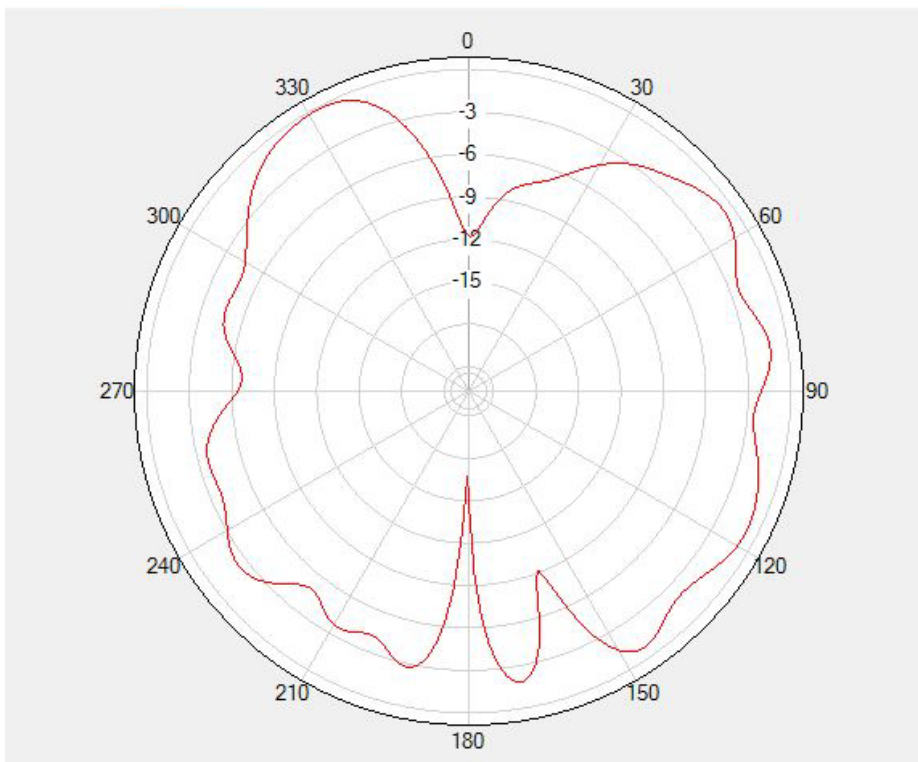


Theta=90 deg

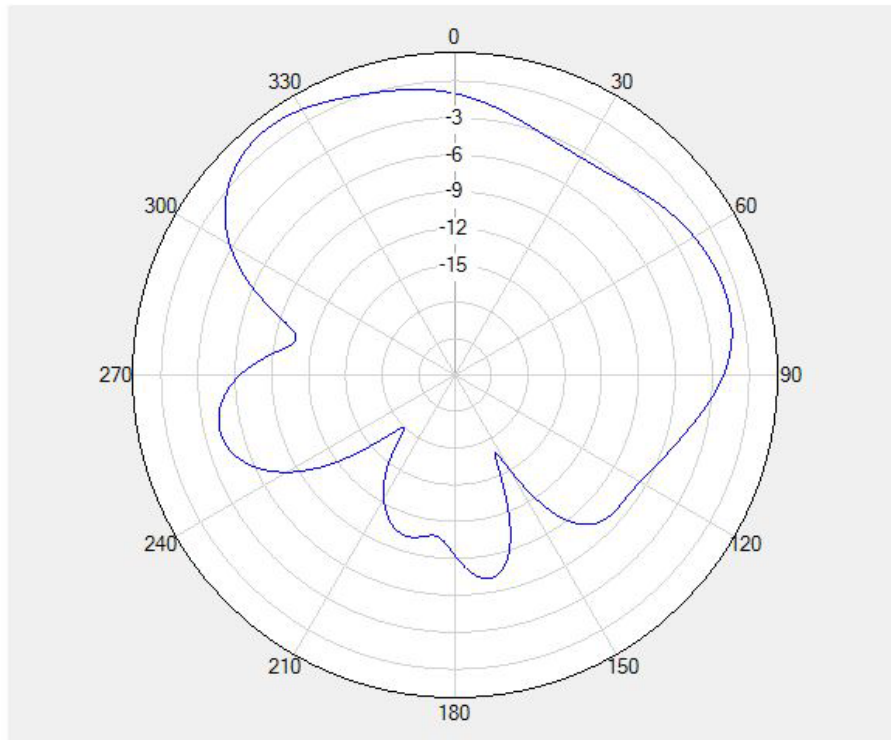
2450MHz:



Phi=0 deg

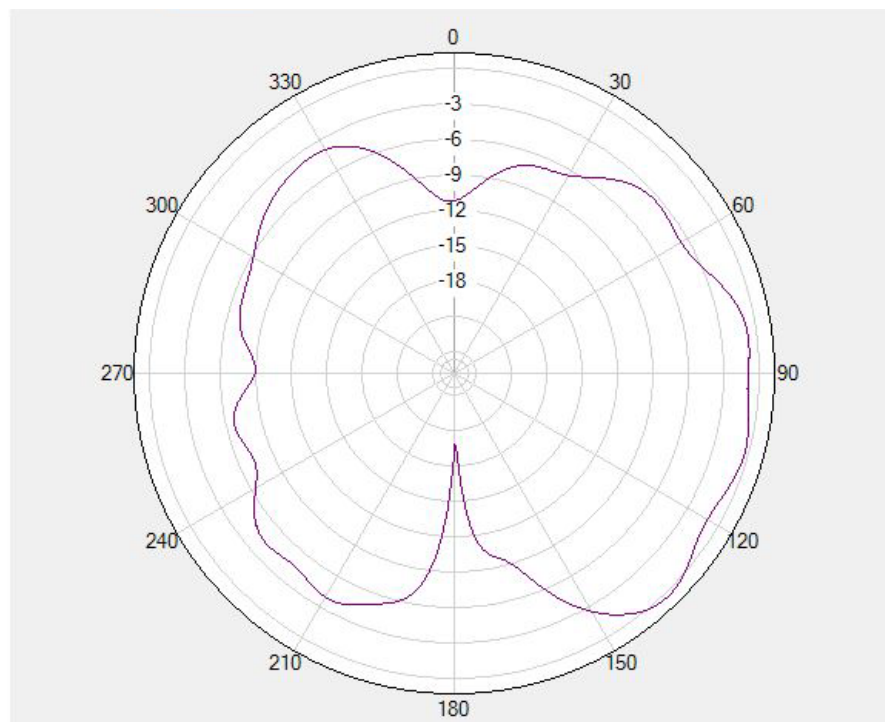


Phi=90 deg

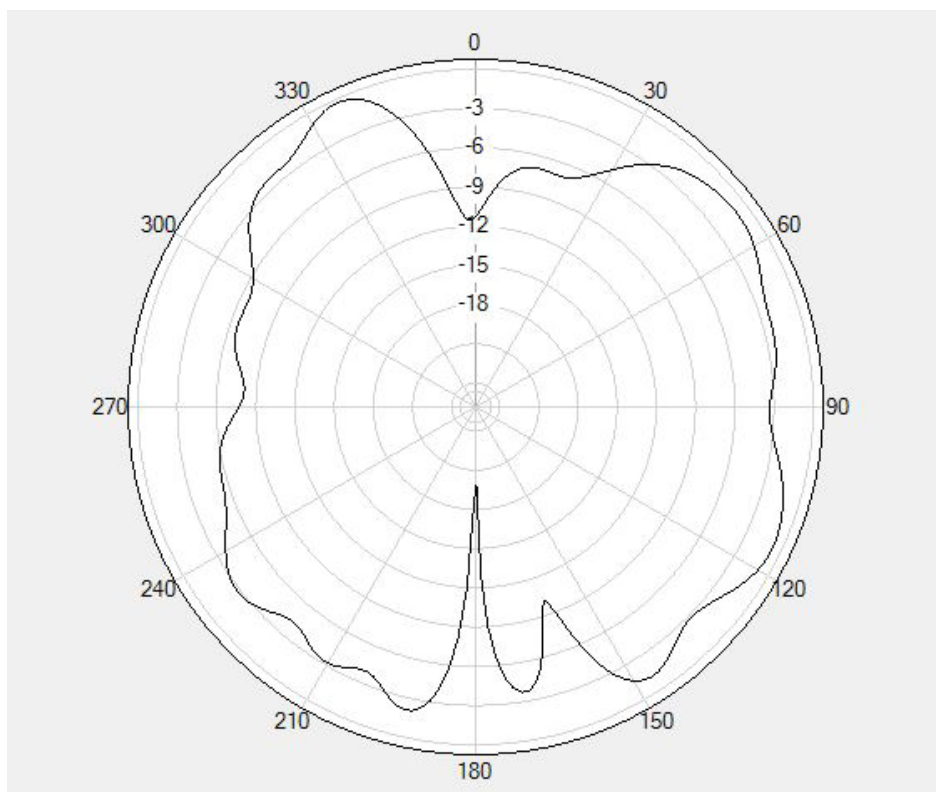


Theta=90 deg

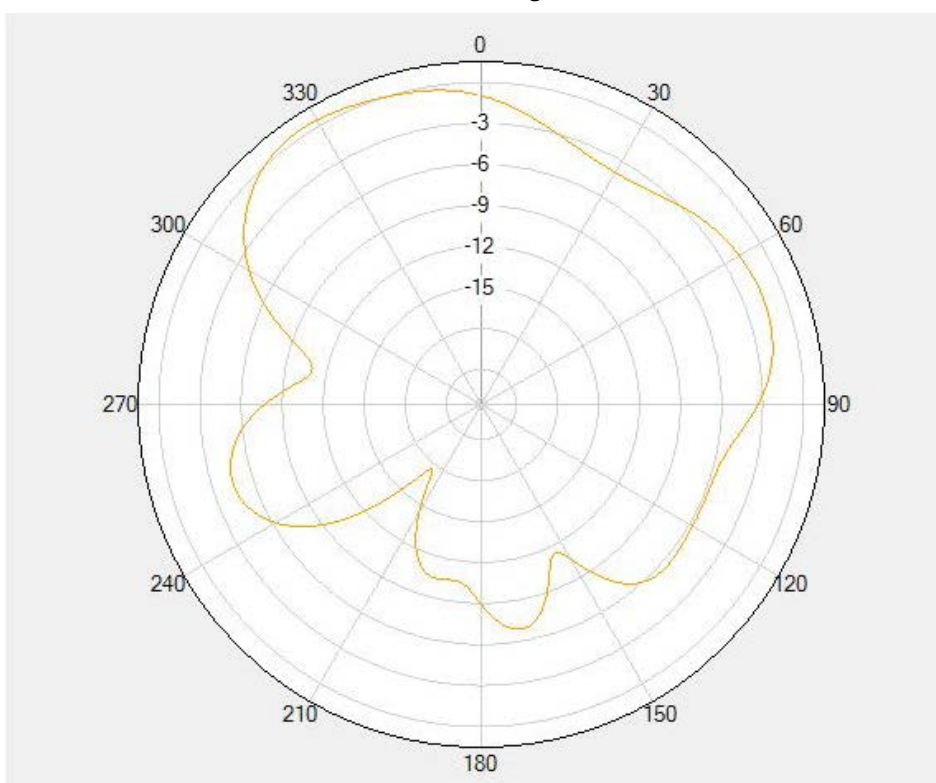
2500MHz:



Phi=0 deg



Phi=90 deg



Theta=90 deg

Revision History

Revision	Content	Date	Author
V1.0	First Edition	October. 26, 2022	Hua Lina