

Hangzhou Hikvision Digital Technology Co., Ltd.

TCM407
Onboard Antenna Specification V1.0

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1. Antenna Characteristic Specification

This specification describes the physical characteristics and electrical performance of the following 433 MHz Bluetooth 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	430-435	MHz
Gain	High channel: -5	dBi
	Medium channel: -4	dBi
	Low channel: -5	dBi
Antenna Efficiency	4.65	%
VSWR	< 10	\
Polarization	Linear Polarization	\
Axial Ratio	\	\
Radiation pattern	Omnibearing	\
impedance	50	ohm
Power handling	33	dBm
Interface	\	\
Overall dimensions	5mm*2mm	\
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

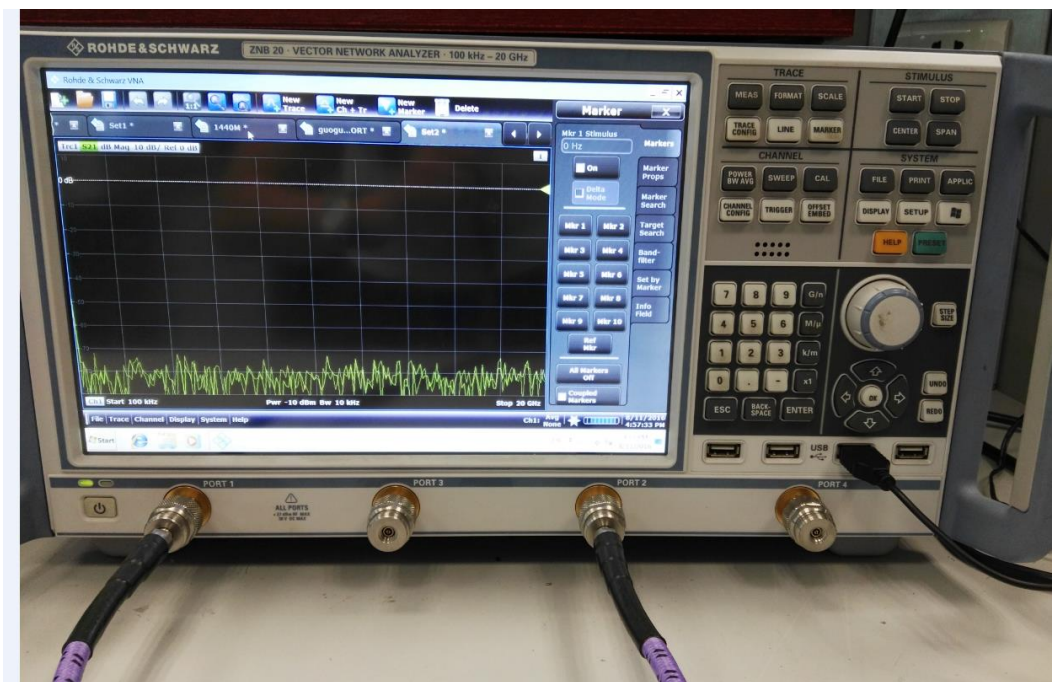


Figure 2.Vector Network Analyzer

2.2 Test Result

Return Loss (S11)

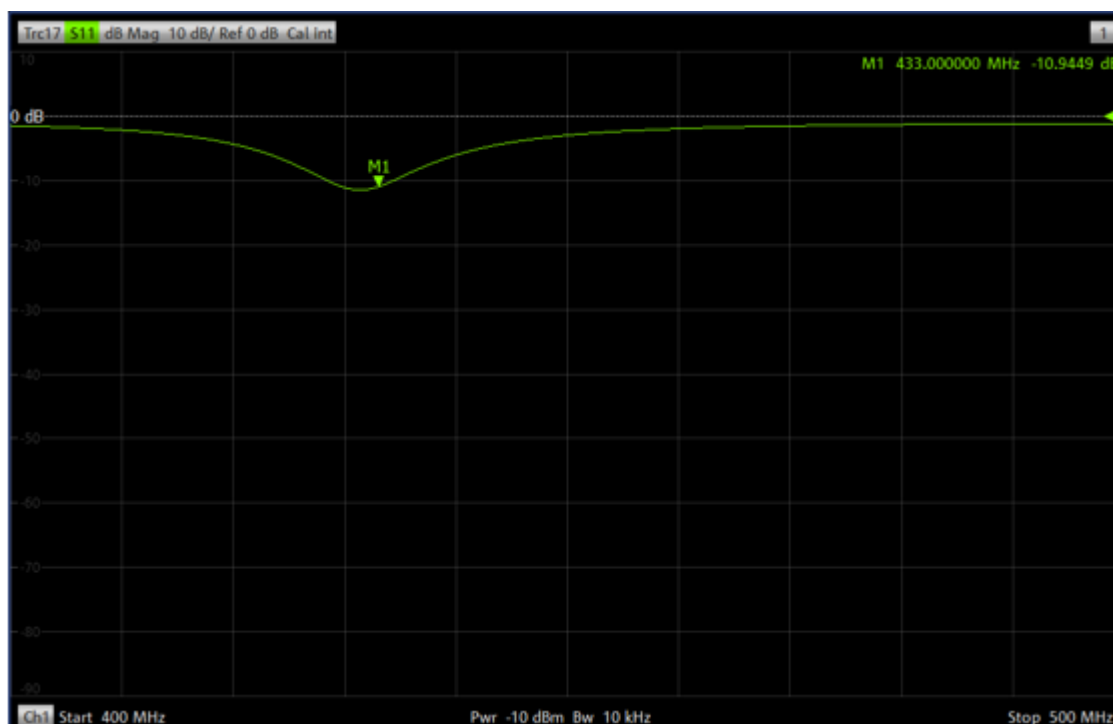


Figure 4.Return Loss

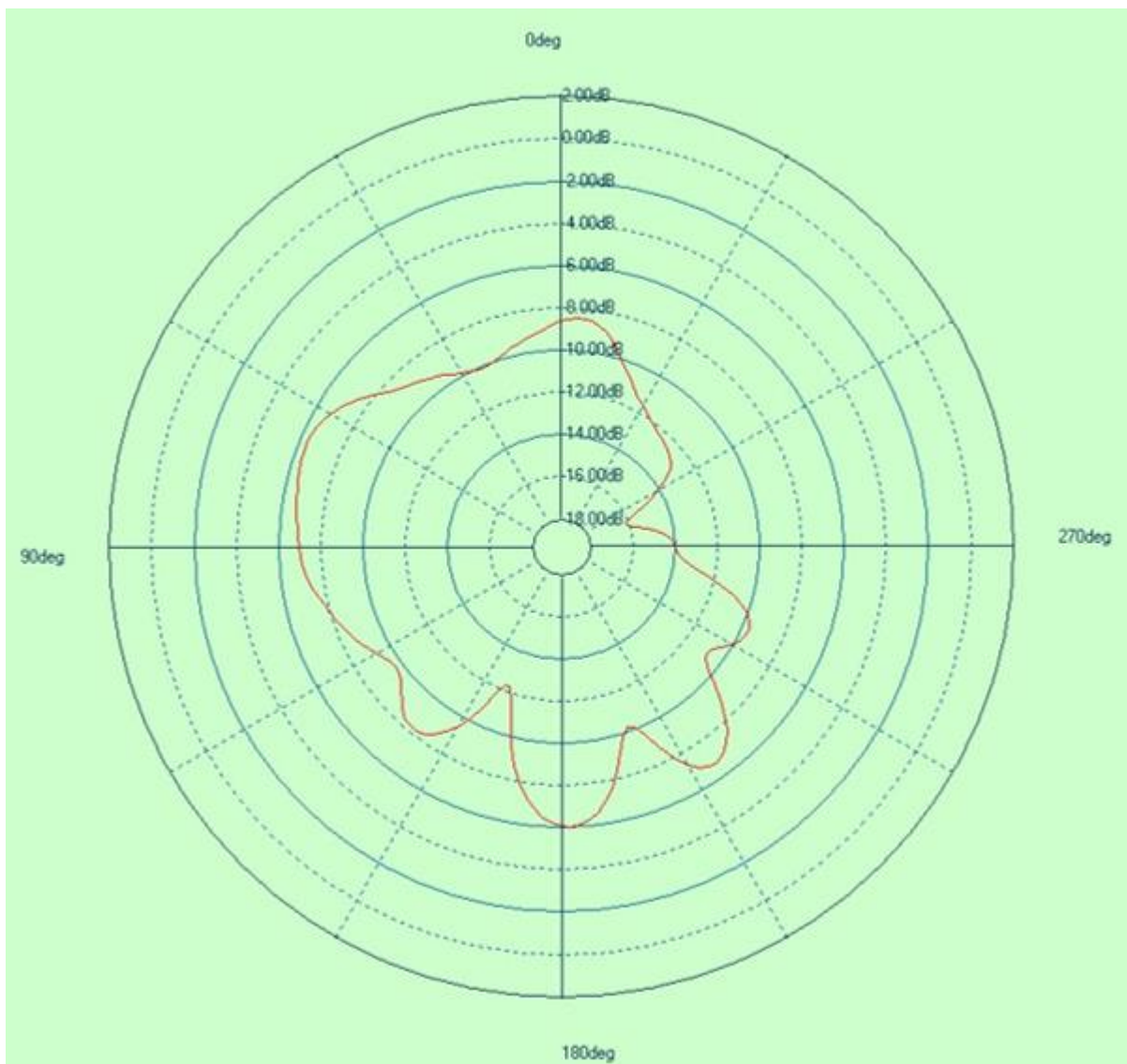
The yellow curve in the figure above shows that the antenna syntony is realized well, and the resistance condition matches well.

Antenna Efficiency

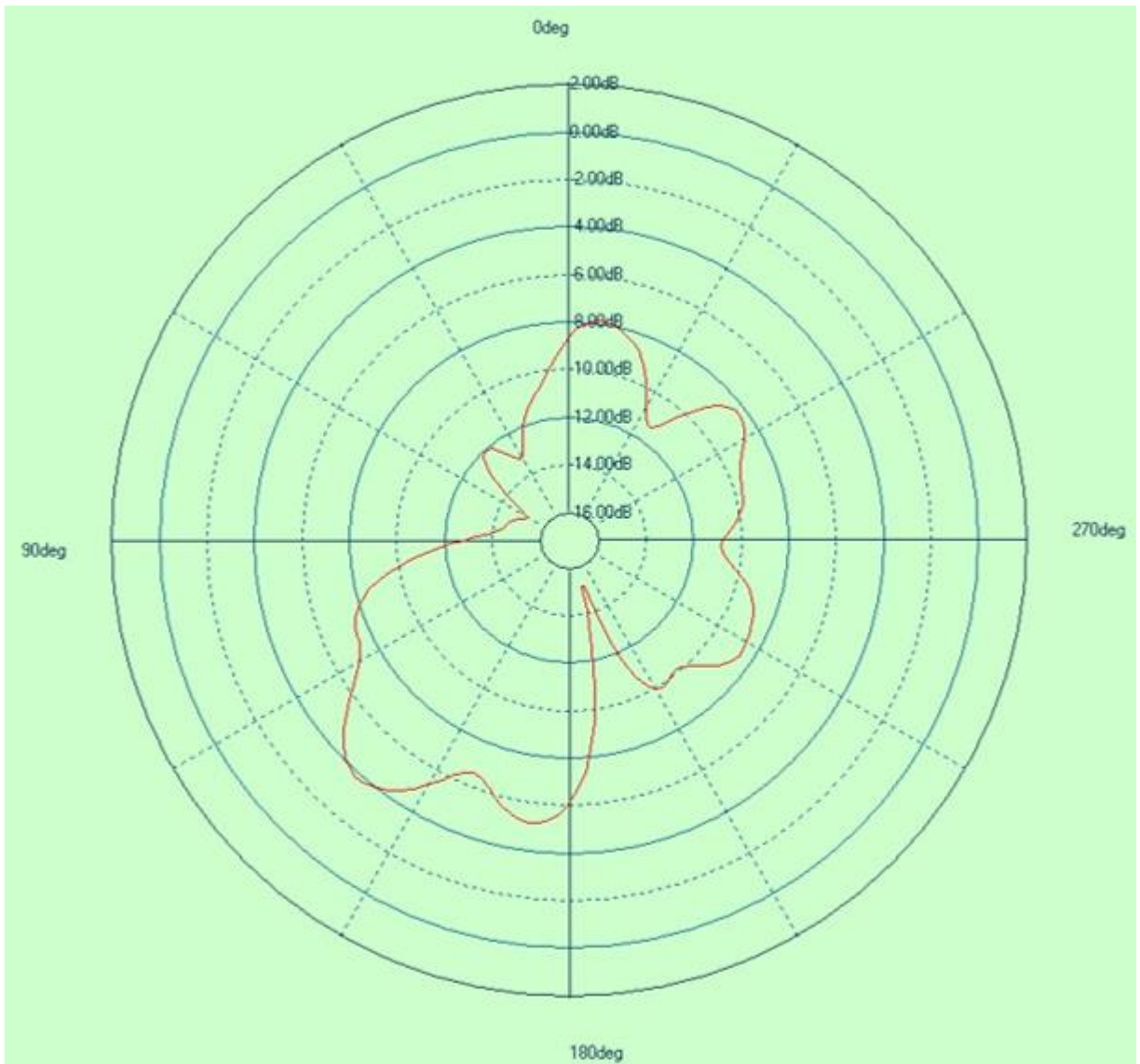
Frequency /MHz	Efficiency /%
430	4.37
431	4.64
432	4.66
433	4.67
434	4.54
435	4.51

Antenna 2D Radiation Pattern

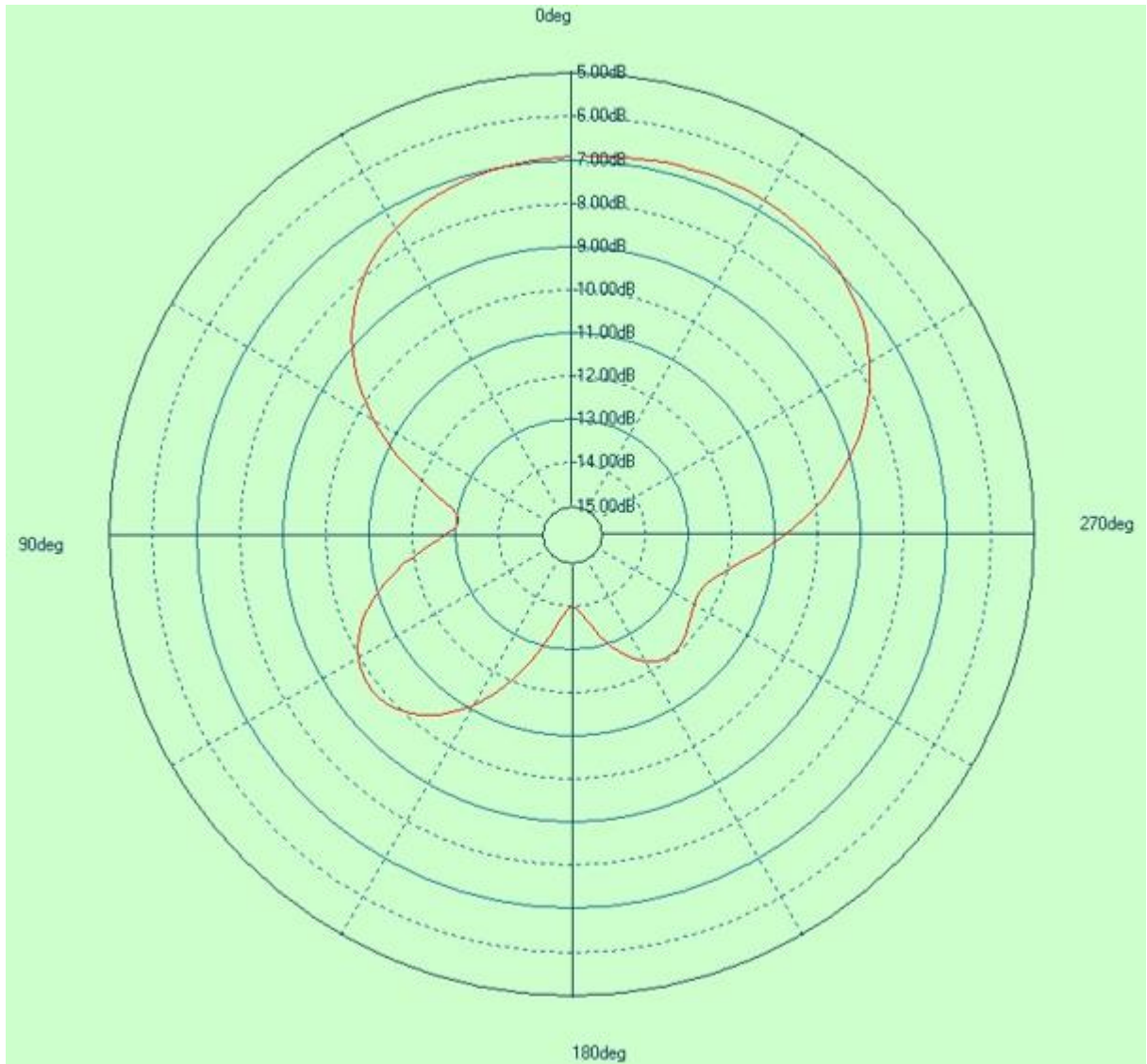
433MHz:



Phi=0 deg



Phi=90 deg



Theta=90 deg

Revision History

Revision	Content	Date	Author
V1.0	First Edition	May. 9, 2022	Weng Ting