

SPECIFICATION FOR APPROVAL

DATE: 2022.12.09

REV.: V1.0

CUSTOMER: Huida

PART NAME: HD540 pro External rubber rod
antenna

SUPPLIER P/N: N12-7253-R0A

Date: **Q'TY:** **Pcs**

CUSTOMER APPROVED BY		
ENGINEER R&D DEPT	BUSSINESS DEPT	APPROVED BY

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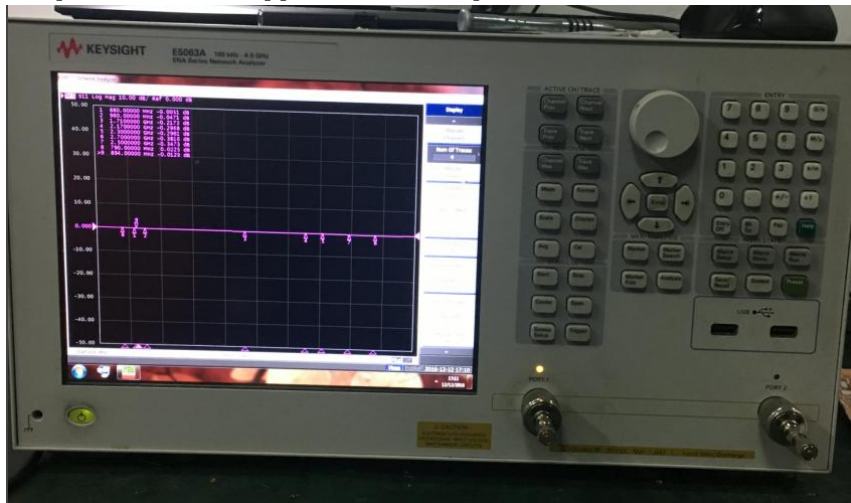
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1. RF Fixture Experiment

1.1 Test Setup

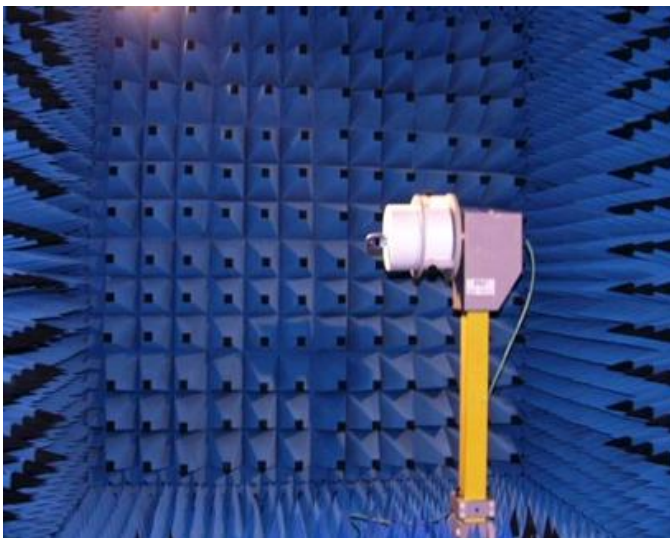
1.1.1 VNA Test Setup

VSWR and Return Loss measurements (S_{11}) were performed using an Keysight E5071C Network Analyzer. The isolation between antennas is also tested. The testing was performed with apparatus in free space.



1.1.4 Anechoic Chamber Test Setup

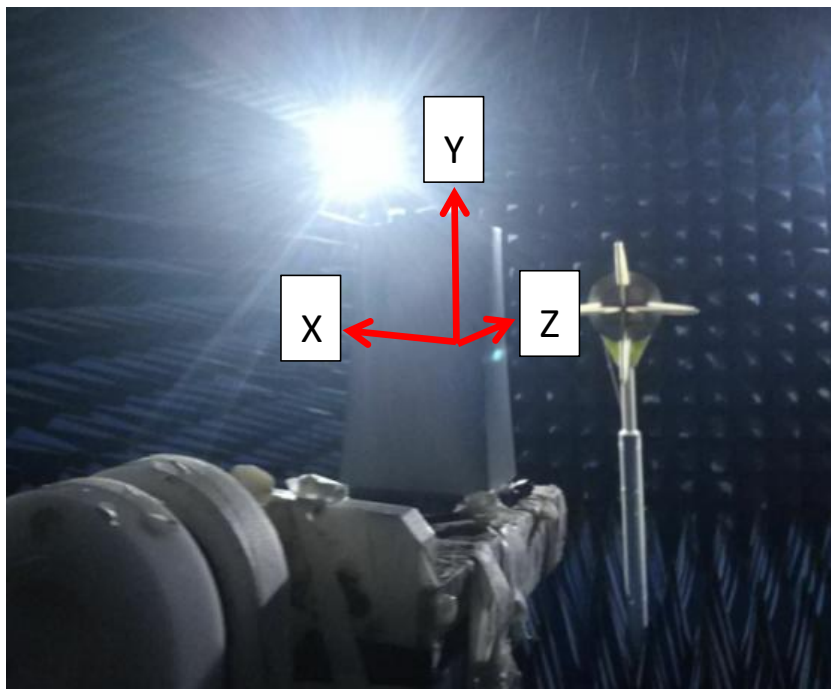
When we test Gain and Efficiency of the antenna, we will use the ETS 3D chamber. The chamber provides test frequency from 400MHz to 6GHz. The real test environment is showing as following picture



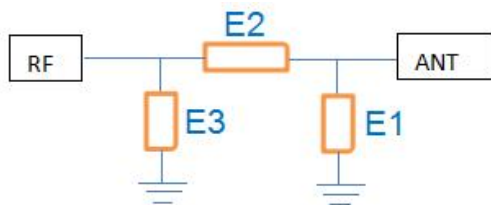


1.2 UE configuration

1.2.1 Antenna location pictures



1.2.2 RF matching for different antennas

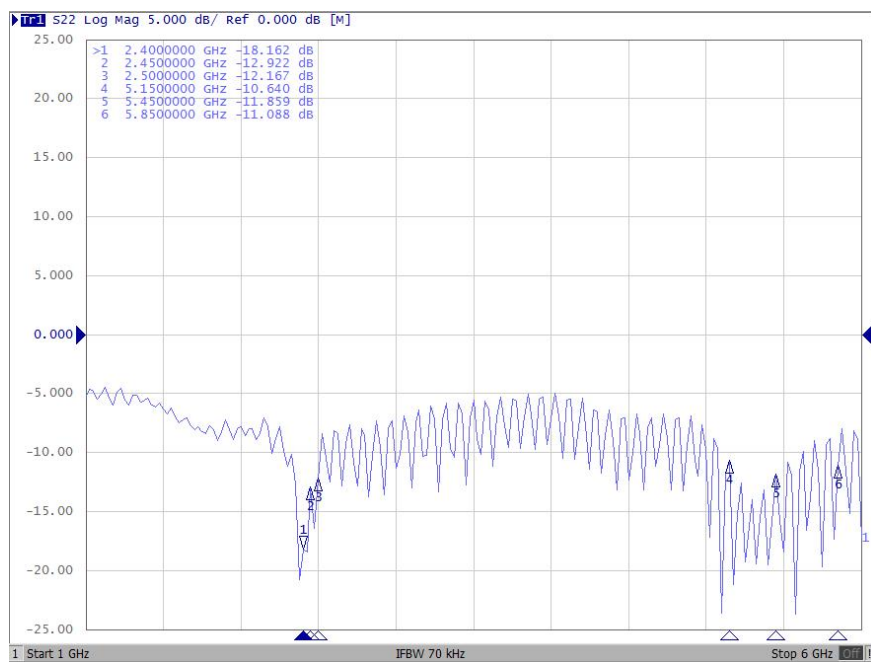


E1(0201)	NA
E2(0201)	0 ohm
E3(0201)	NA

2. Test Result

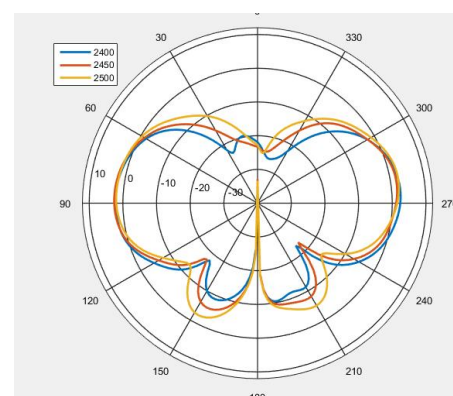
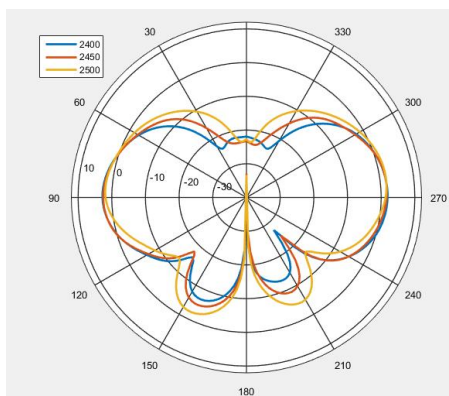
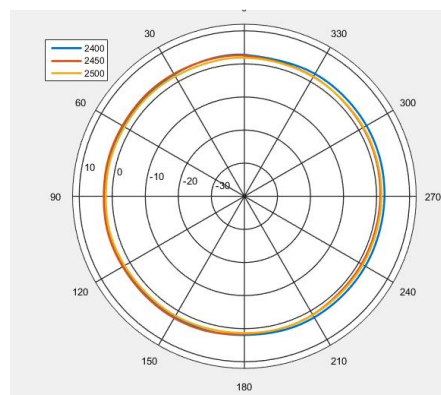
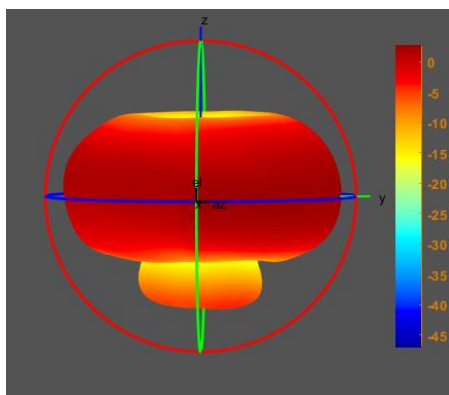
2.2 Passive Test Result(S parameters)

S11

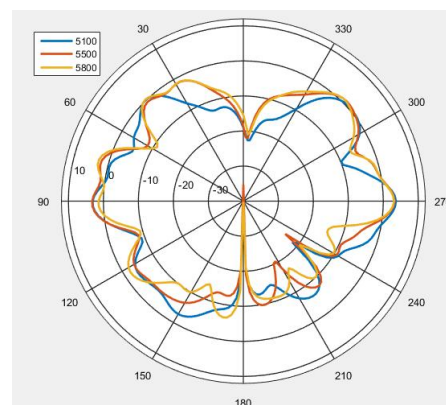
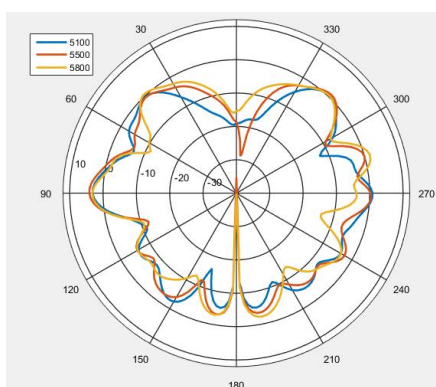
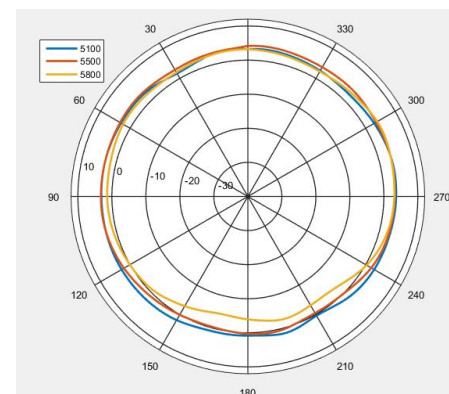
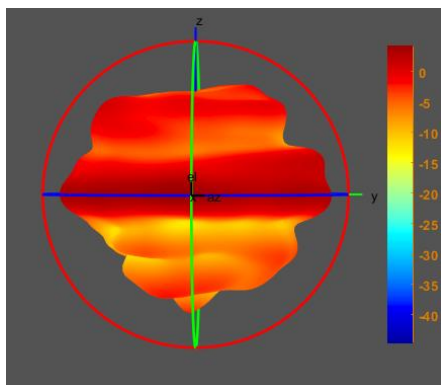


3D

2.4G



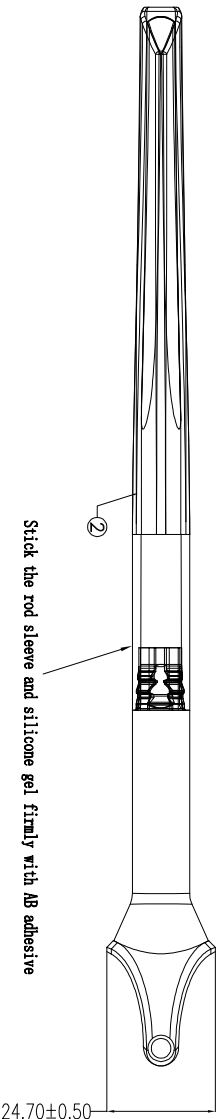
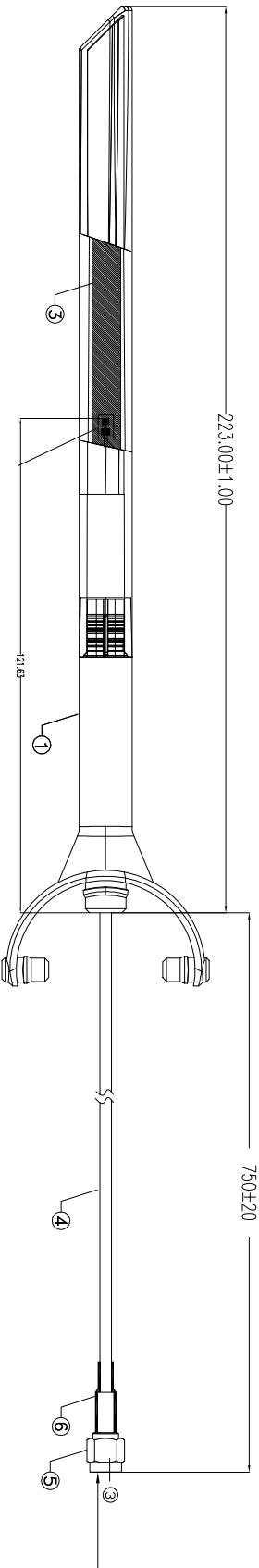
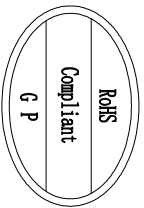
5G



Efficiency

Freq (MHz)	Effi (%)	Gain (dBi)
2400	47.80	2.90
2410	45.55	2.93
2420	48.77	3.05
2430	48.57	3.15
2440	48.82	3.34
2450	49.84	3.19
2460	51.55	3.18
2470	48.53	3.16
2480	46.68	3.02
2490	49.93	3.03
2500	49.22	2.99

Freq (MHz)	Effi (%)	Gain (dBi)
5100	42.20	2.84
5200	43.06	3.27
5300	40.13	2.87
5400	44.23	3.08
5500	40.43	3.04
5600	43.85	3.31
5700	45.06	2.84
5800	44.28	2.90



- remark: remarks; comment
1. Marked with "*" as the key size, the unmarked tolerance size is tested according to ± 0.15
 2. Please refer to the drawing if the dimensions are not marked.
 3. RoHS compliant
 4. Shipping method: Single shipment

Shenzhen free technology Co., LTD

No.	Name	Material	Color	Treatment	Amount	Remark
6	heat shrink tubing	EVA	yellow		1	
5	SMA	RP-SMA	yellow		1	
4	RF cable	RG174	black		1	
3	PCB	FR4	black		1	
2	stem casing	ABS	black		1	
1	top base	Silica gel, hardness 50°	black		1	

Shenzhen free technology Co., LTD											
		Third Angle		Project	S540 PRO		Date		2022.12.9		
0~10		±0.2		○		PartName	External antenna 1		Designed by		
10~18		±0.5		◎		Part No.	NI2-7253-R0A		Checked by	MD	tianjin
18~30		±0.8		⊥		Material	N/A			RF	maohuitao
30~40		±1.0		∠					Approved by		
40~		±2.0		Angle	±0.5°	dwg No.			Unit	mm	Scale
Location		N/A							1:1	Rev	A

Rev	Description	Date	Remark
1	New drawing		

Product packaging specification

date: 2021.10.16

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