SPECIFICATION

Client Name:	Mindray
Antenna Name:	AP Dual-band Antenna
Model Number:	RD541802WW80-1
Revision:	R: C
ME:	Yu ming Cheng
RF:	Xiang dong Li
Approval:	Yan chao Zhou
Date:	August 19,2023

Customer Audit: _____

Manager Checked: _____

Date: _____

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REVISION AND UPDATES

Revision	Date	Change Notification	Description
R:A	2020.04.24	First Edition	
R:B	2021.08.20		Increase test Bandwidth
R:C	2023.08.19		Increase test Bandwidth

Contents

Chapter 1 Antenna description

1.1 Antenna description

Antenna name：AP Dual-band Antenna.

Model number：RD541802WW80-1.

1.2 Antenna picture

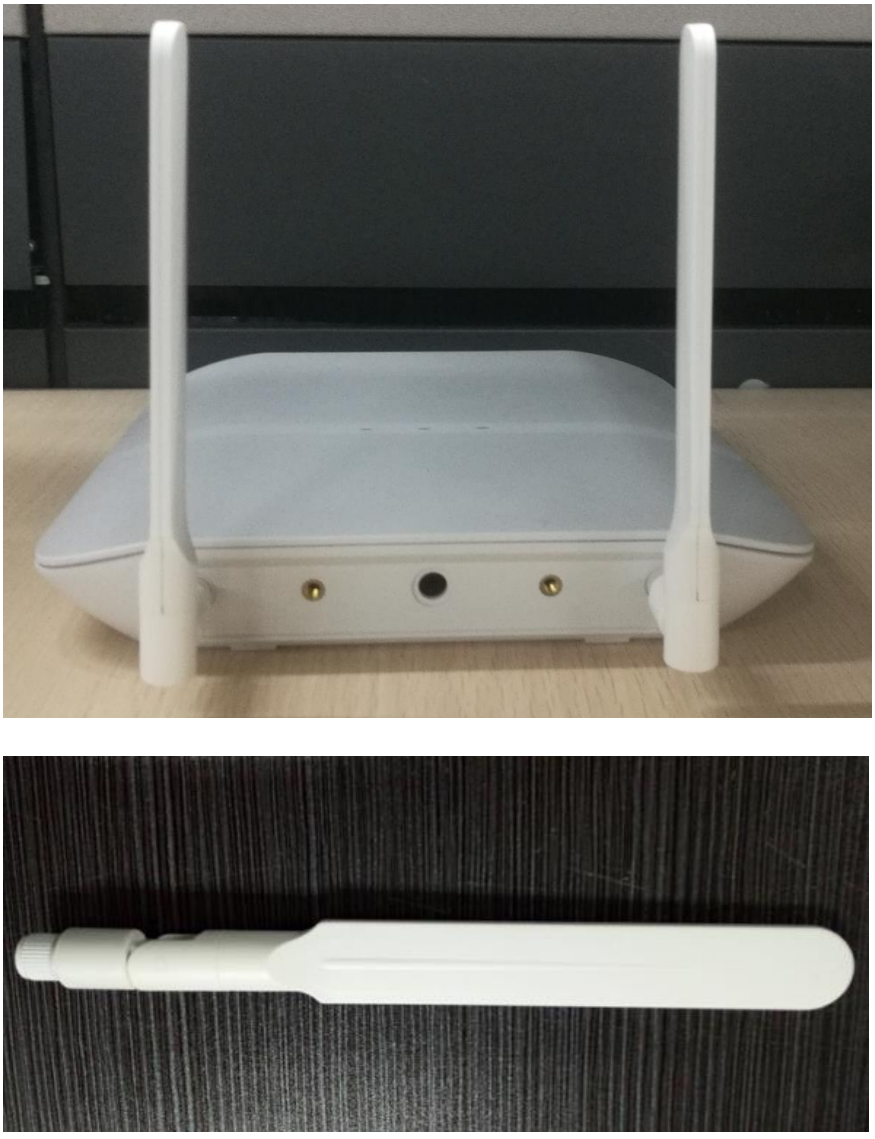


Figure 1　Antenna picture

Chapter 2 Antenna specification

2.1 Antenna specifications

Frequency (MHz)	608-630
Bandwidth(MHz)	22
VSWR	≤ 2.9
Return loss（dB)	≤ -6.5
Efficiency(%)	≥ 40
Peak gain (dBi)	≤ 2.1
Impedance (Ω)	50
Polarization	Linear
Isolation（dB）	≤ -15

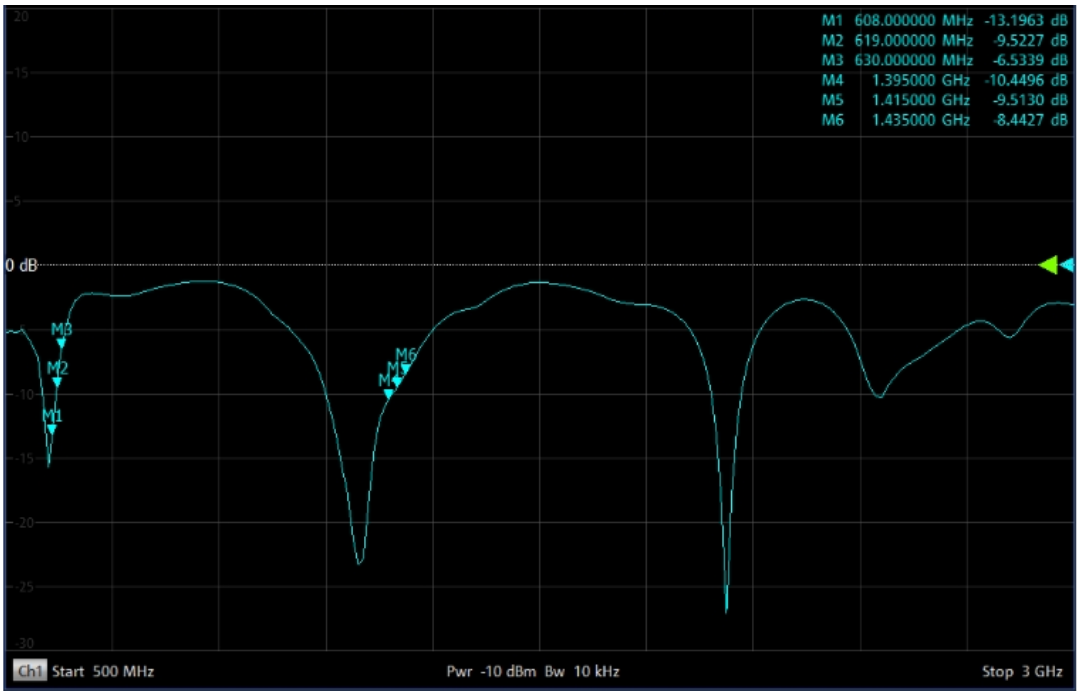
Frequency (MHz)	1395-1435
Bandwidth(MHz)	40
VSWR	≤ 2.3
Return loss（dB)	≤ -8.4
Efficiency(%)	≥ 38
Peak gain (dBi)	≤ 1.6
Impedance (Ω)	50
Polarization	Linear
Isolation（dB）	≤ -15

Frequency (MHz)	407-439
Bandwidth(MHz)	32
VSWR	≤ 1.8
Return loss（dB)	≤ -11
Efficiency(%)	≥ 46
Peak gain (dBi)	≤ 2.85
Impedance (Ω)	50
Polarization	Linear
Isolation（dB）	≤ -10

Table 1 Specifications

2.2 Antenna Circuit Parameter Test

2.2.1 Return loss：



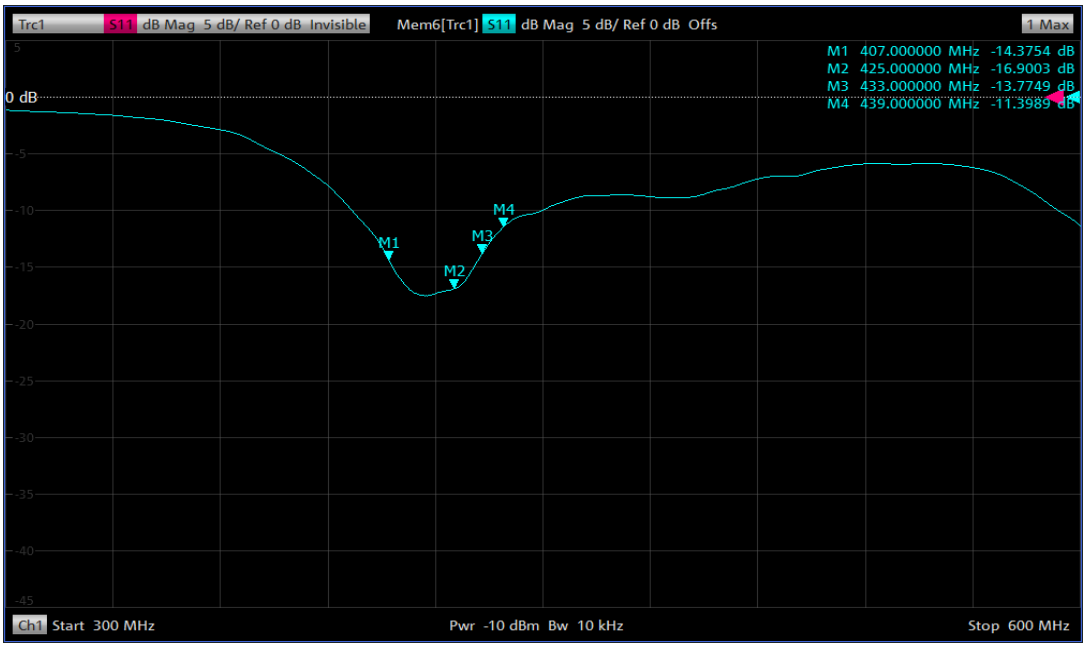


Figure 2 Return loss

2.2.2 VSWR：

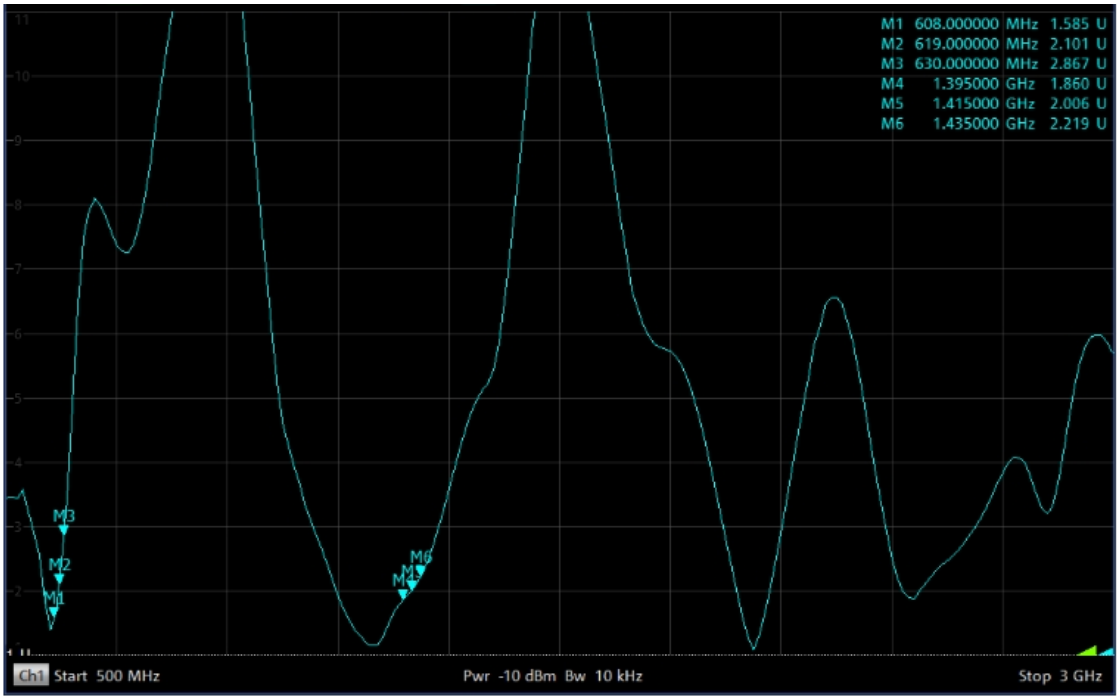
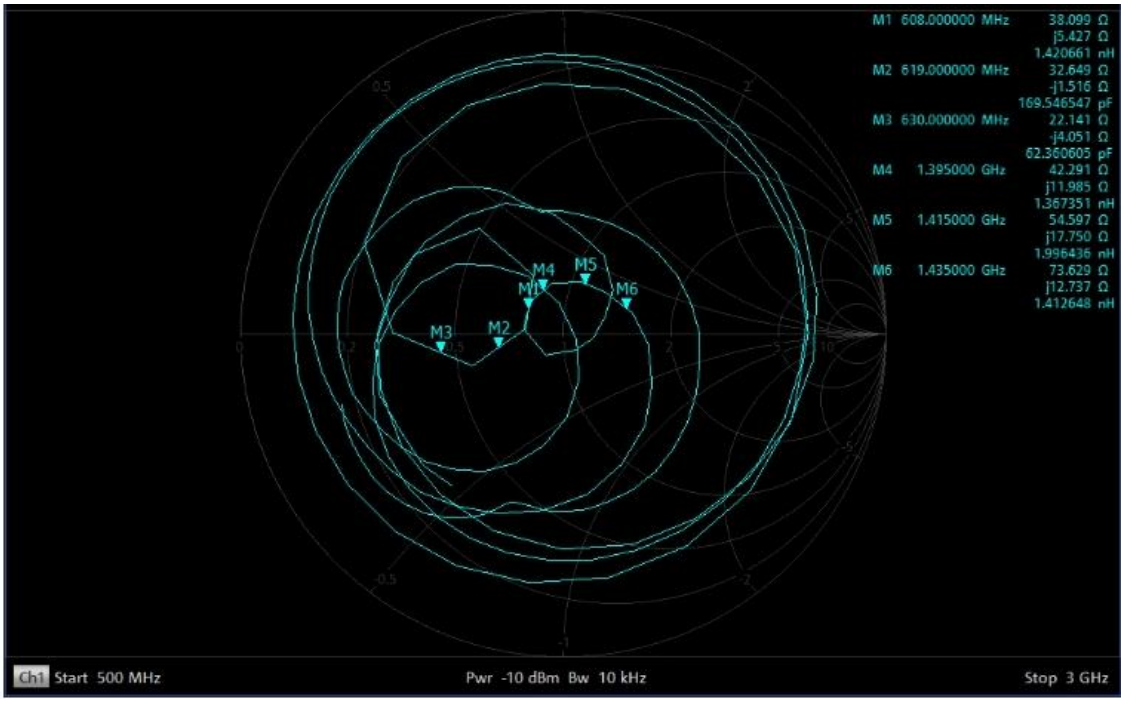


Figure 3 VSWR

2.2.3 Smith Chart:



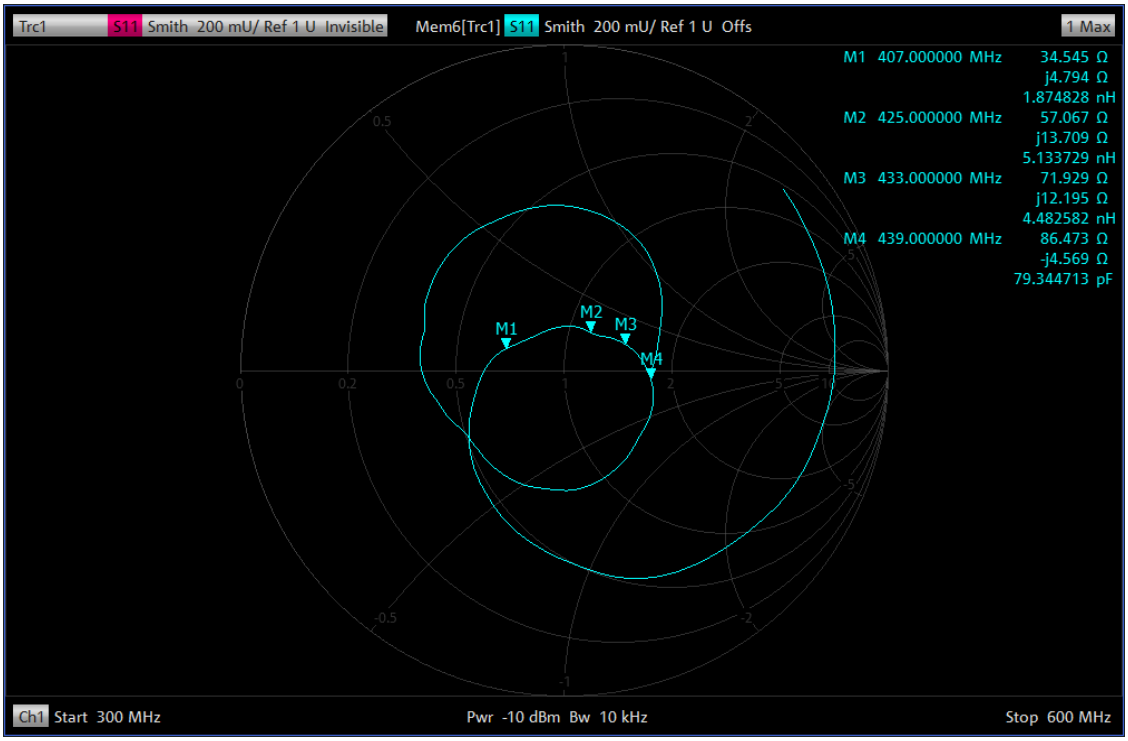
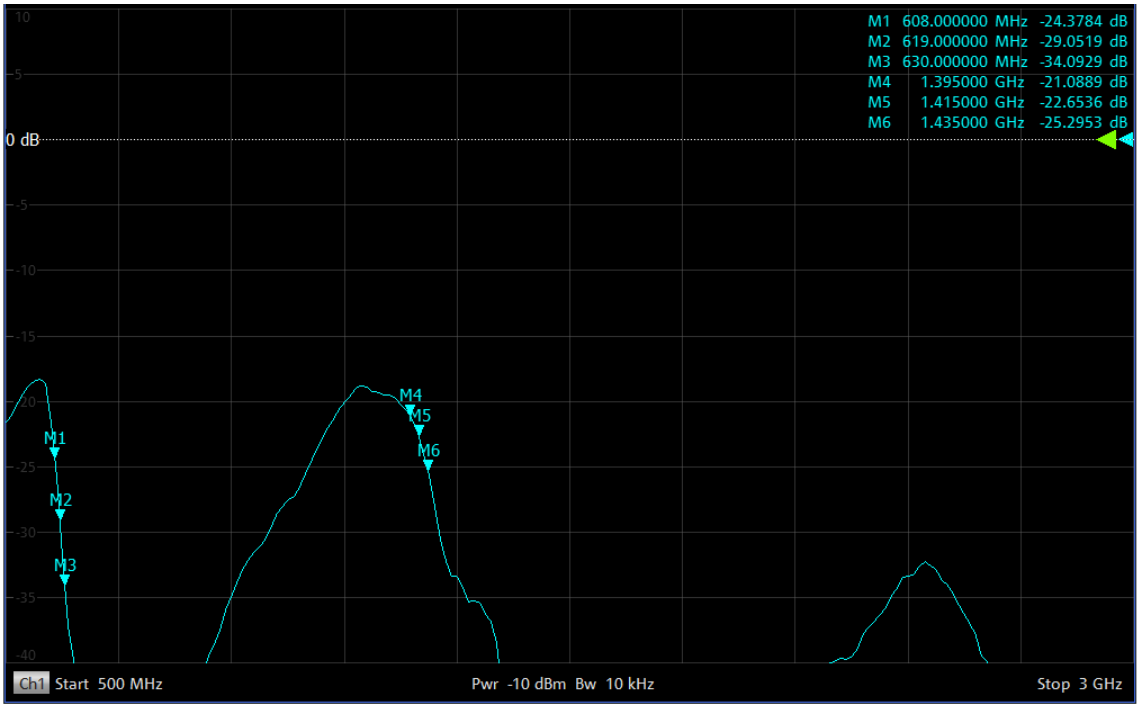


Figure 4 Smith Chart

2.2.4 Isolation：



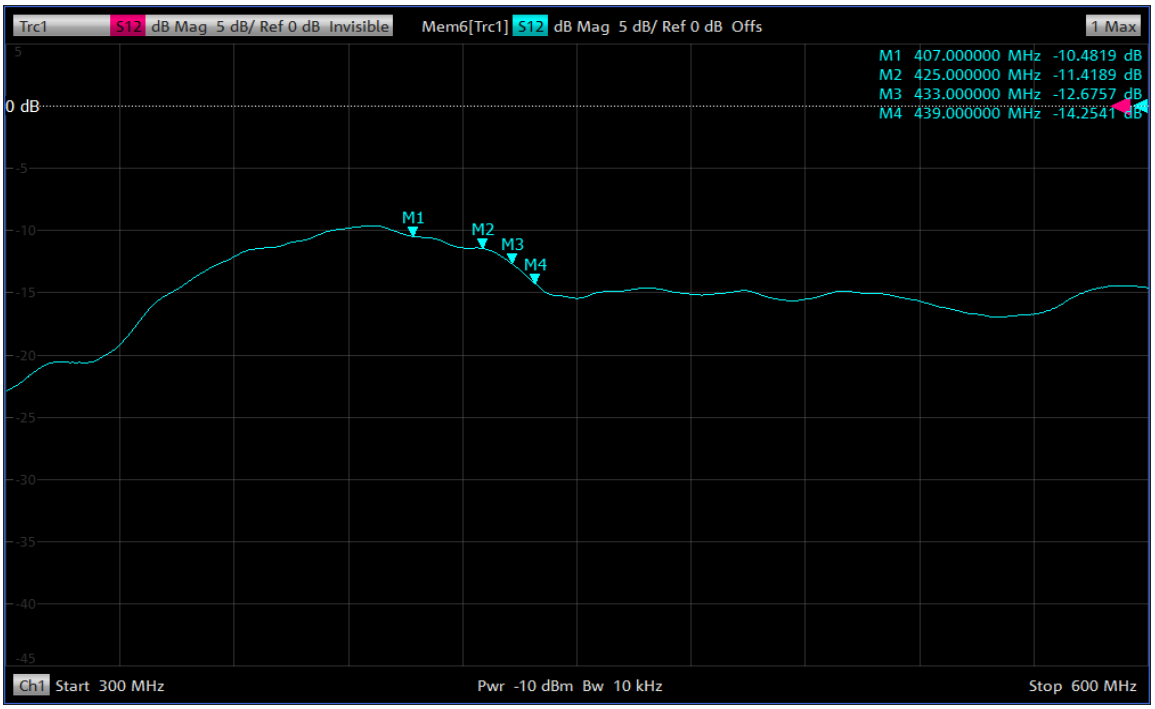


Figure 5 Isolation

2.3 Radiation pattern

2.3.1 Test Pictures

Figure 6 Antenna Device in chamber

2.3.2 3D Radiation pattern

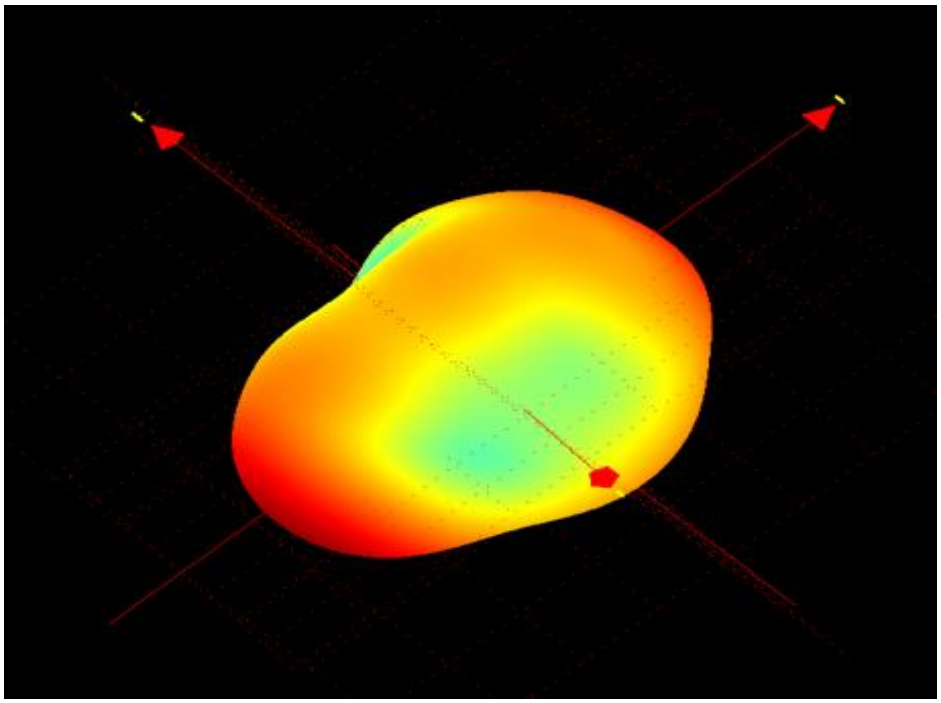


Figure 7 608M 3D radiation pattern

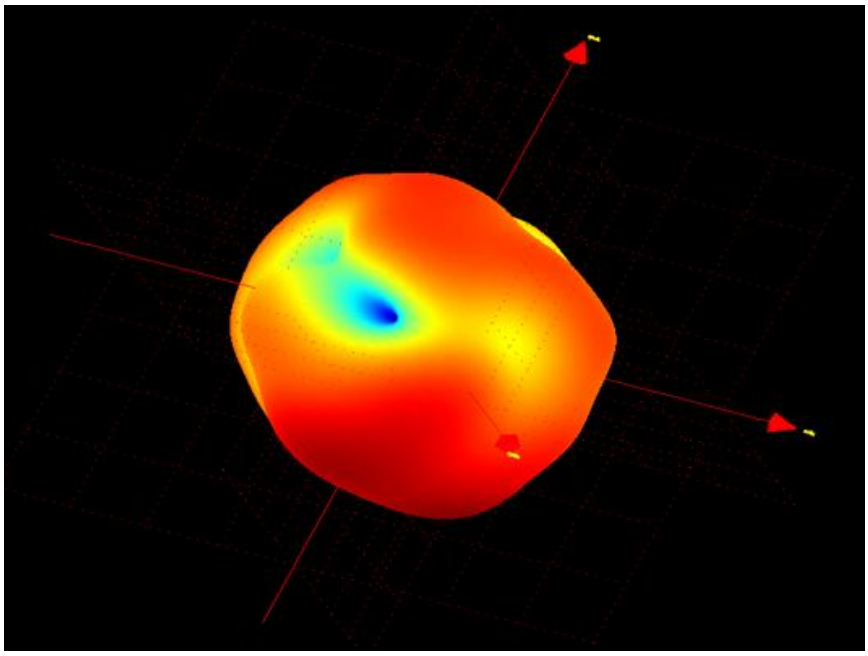


Figure 8　1.4G 3D radiation pattern

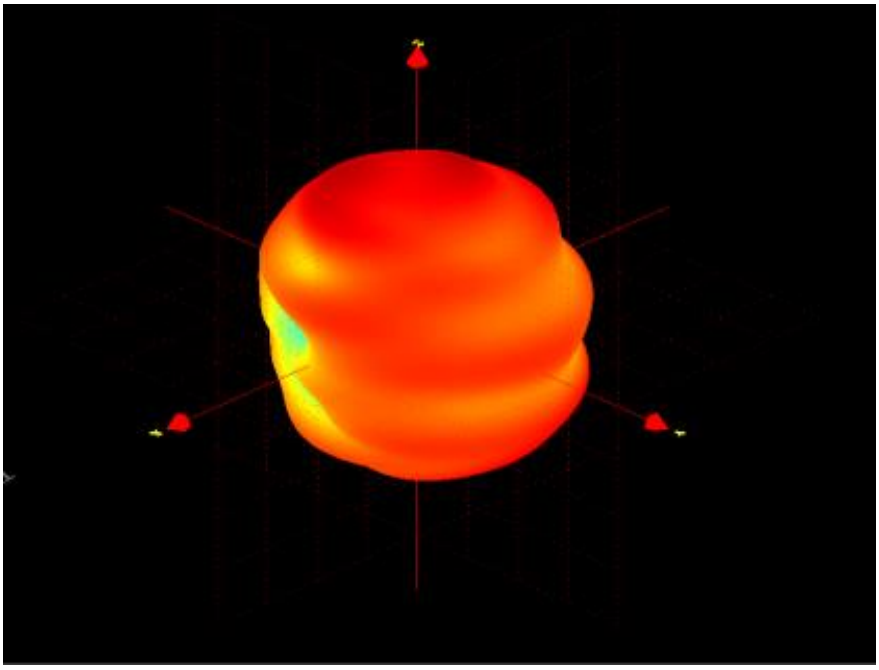


Figure 9　433M 3D radiation pattern

2.3.3 2D Radiation pattern

Theta=90°， 608M radiation pattern：

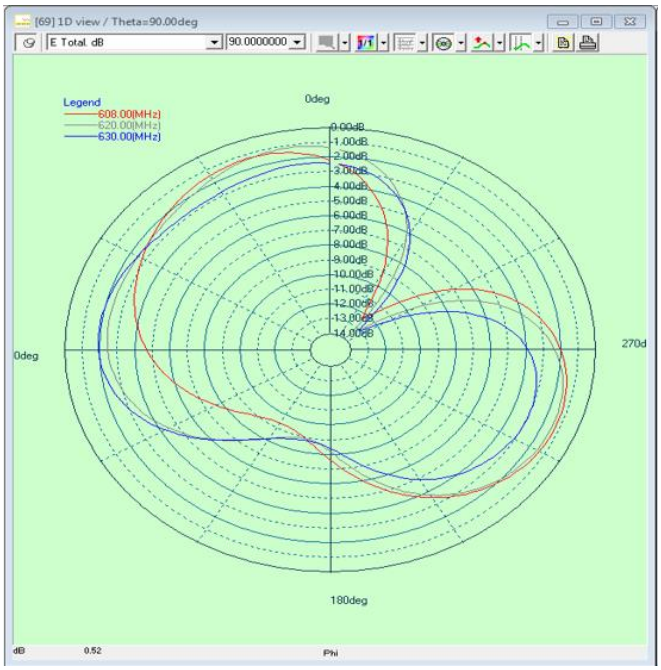


Figure 10 608M Theta=90° radiation pattern

Phi=90°， 608M radiation pattern：

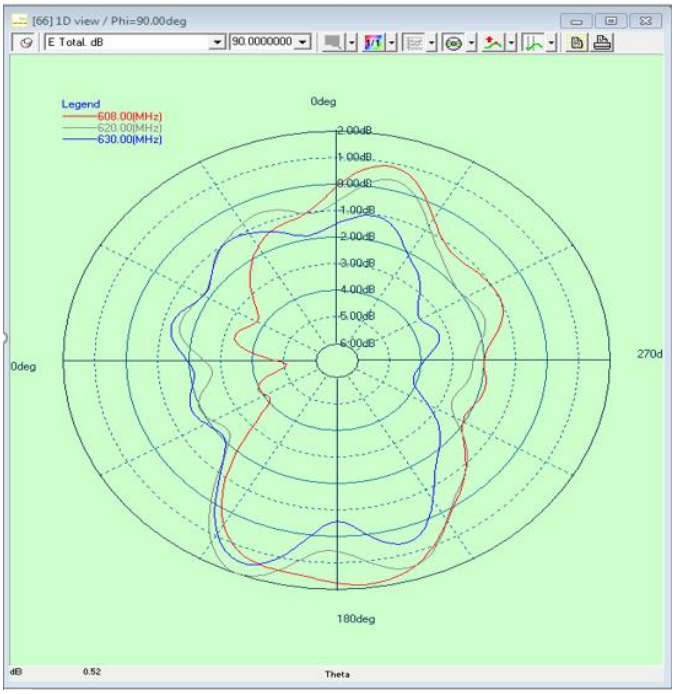


Figure 11 608M Phi=90° radiation pattern

Phi=0°, 608M radiation pattern：

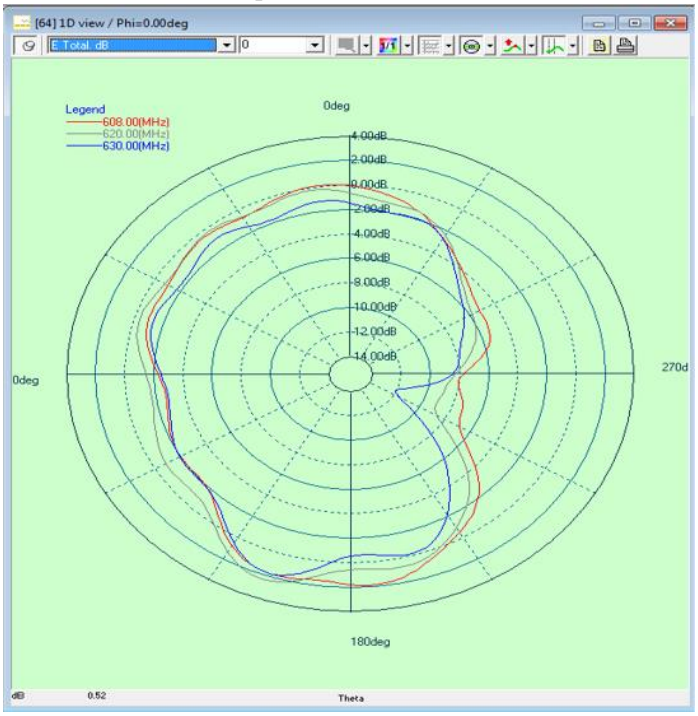


Figure 12 608M Phi=0° radiation pattern

Theta=90°, 1.4G radiation pattern：

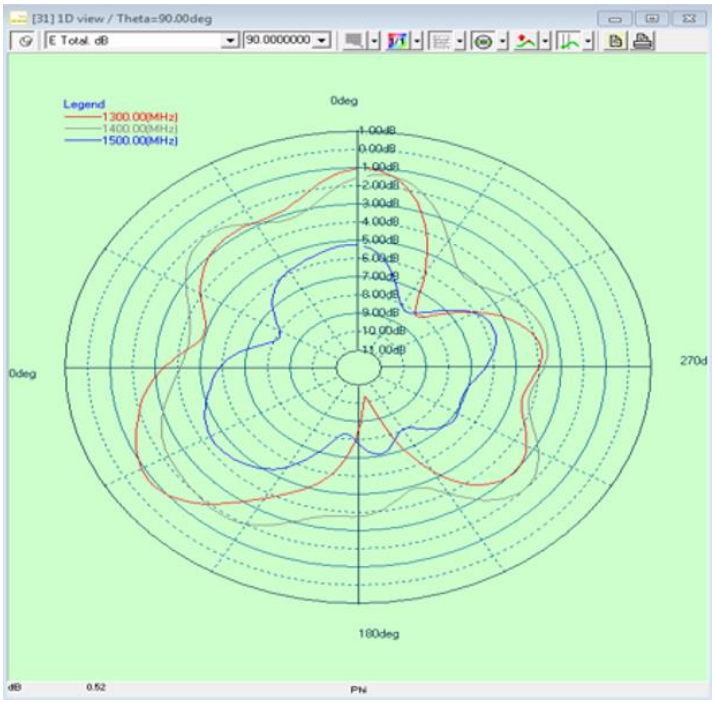


Figure 13 1.4G Theta=90° radiation pattern

Phi=90°， 1.4G radiation pattern：

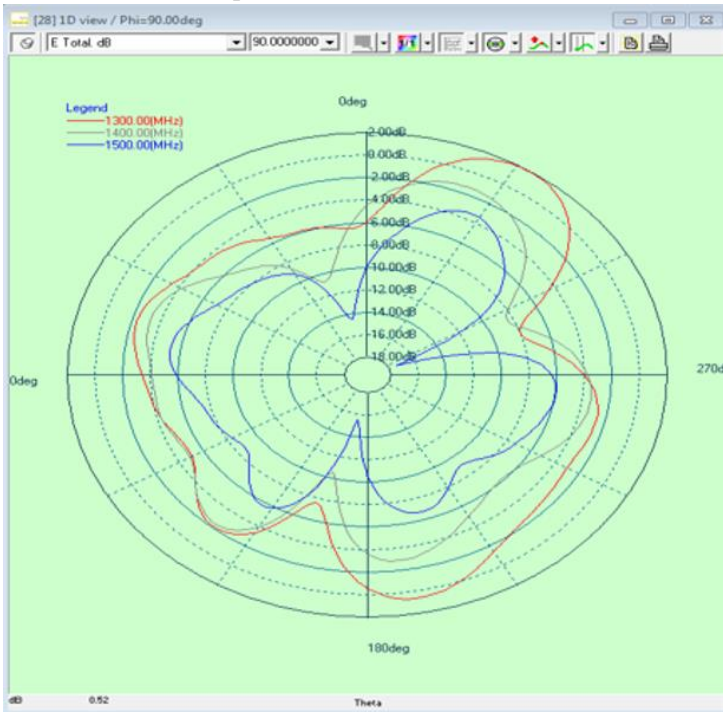


Figure 14 1.4G Phi=90° radiation pattern

Phi=0°， 1.4G radiation pattern：

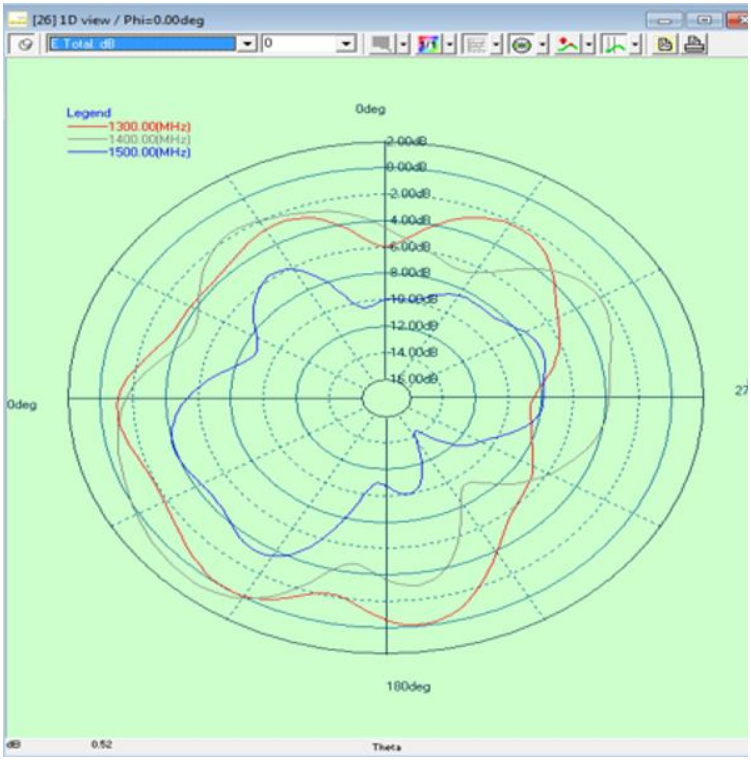


Figure 15 1.4G Phi=0° radiation pattern

Theta=90°， 433M radiation pattern：

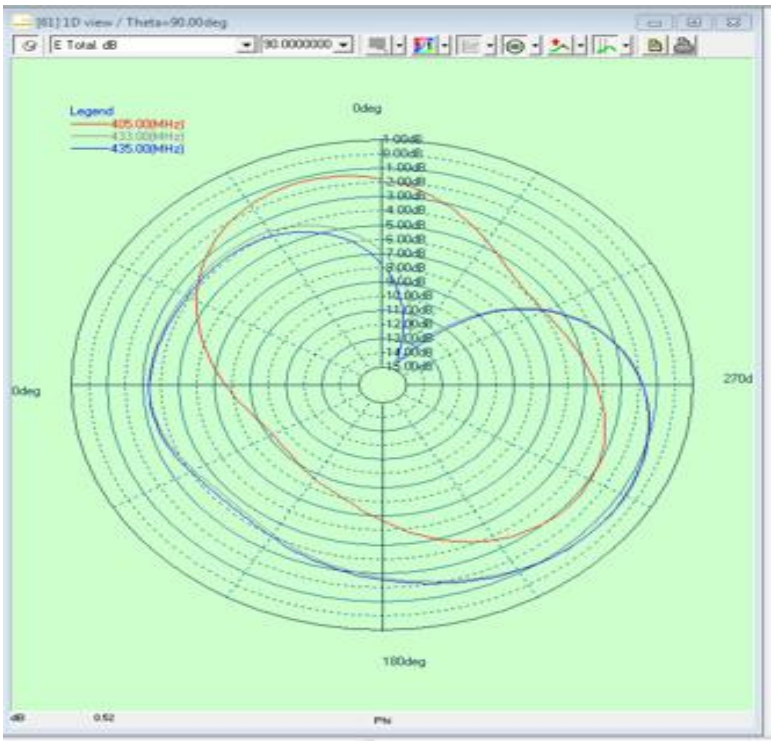


Figure 16 433M Theta=90° radiation pattern

Phi=90°， 433M radiation pattern：

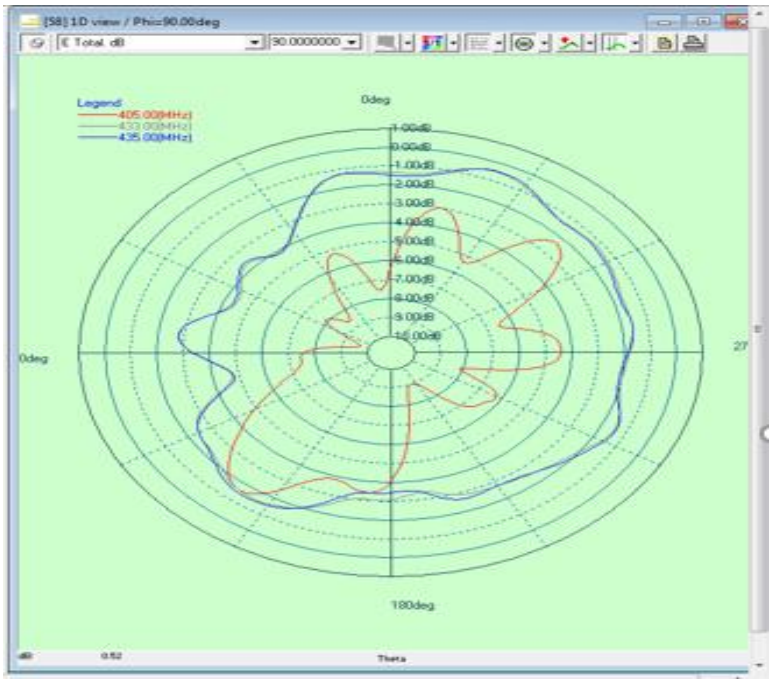


Figure 17 433M Phi=90° radiation pattern

Phi=0°, 433M radiation pattern：

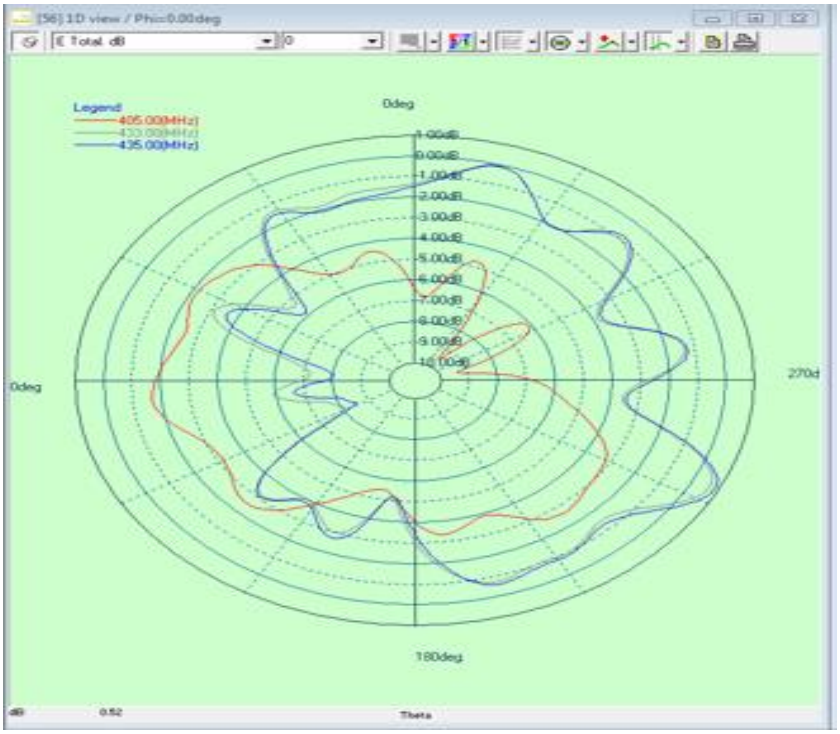


Figure 18 433M Phi=0° radiation pattern

2.4 Efficiency and Gain test data

Frequency（MHz）	Efficiency（%）	Efficiency（dB）	Gain（dBi）
608	55%	-2.59	2.03
610	54%	-2.69	1.9
612	52%	-2.80	1.77
614	50%	-2.97	1.52
616	48%	-3.15	1.43
618	47%	-3.26	1.39
620	45%	-3.49	1.46
622	44%	-3.57	1.54
624	43%	-3.62	1.59
626	42%	-3.74	1.65
628	41%	-3.87	1.78
630	40%	-3.94	1.85
1395	51%	-2.94	1.57
1400	49%	-3.07	1.35
1405	48%	-3.23	1.03
1410	47%	-3.3	0.89
1415	46%	-3.39	0.7
1420	43%	-3.62	0.51
1425	42%	-3.73	0.29
1430	41%	-3.94	0.16
1435	38%	-4.22	-0.07

Frequency（MHz）	Efficiency（%）	Efficiency（dB）	Gain（dBi）
407	57.61%	-2.40	2.60
409	57.53%	-2.40	2.53
411	57.06%	-2.44	2.44
413	56.27%	-2.50	2.50
415	55.35%	-2.57	2.54
417	54.50%	-2.64	2.58
419	53.81%	-2.69	2.60
421	53.54%	-2.71	2.62
423	53.20%	-2.74	2.63
425	52.56%	-2.79	2.65
427	51.21%	-2.91	2.64
429	48.77%	-3.12	2.61
431	46.39%	-3.34	2.57
433	47.96%	-3.19	2.52
435	51.74%	-2.86	2.60
437	54.04%	-2.67	2.77
439	55.08%	-2.59	2.85

Table 3　Antenna Efficiency and Gain test data

Chapter 3 Drawings

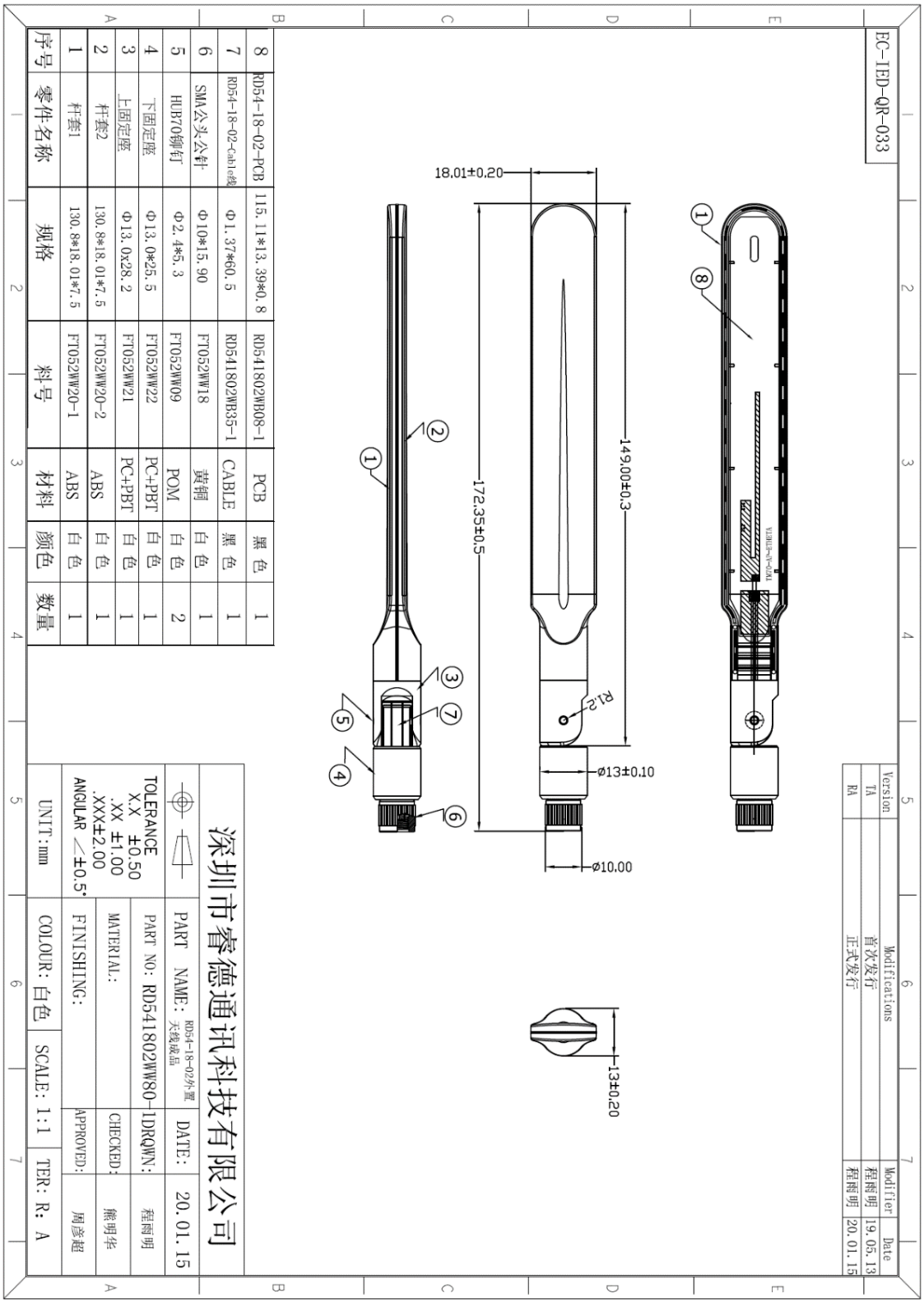


Figure 19 AP antenna structure drawing

Chapter 4 Packaging specifications

Shenzhen Rui De communication Technology Co., LTD

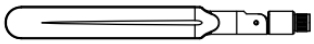
Packing practice

client: mindray	Package name: AP External Antenna (white)	Packing number:RD541802WW80-1	Package version: R:A

Packaging details

Make no	Brand name	Gauge lattice	Dosage
P002	PE bags	240*360mm	1/50
	Bin tag	50*70mm	1/50
C001	ROHS Label	30*20mm	1/50
C002	Shipping label	50*70mm	1/300
B018	Carton	325*215*210mm	1/300

Packaging product illustration



Job step

1. Prepare the required packing materials and place them in a favorable working position
2. According to RD541802WW80-1 packaging specification: Pack 1PCS into 225*30MM Open pocket, 10PCS/1 bundle. Put 5 bundles into a PE bag, a total of 50PCS. Attach C001(ROHS) label to the upper right corner of each PE bag, and attach the material label to the middle of the PE wear.
3. Place 6 bags in each carton (B018), a total of 300PCS. After filling the box, seal the box with sellotine tape, label the side of the box (B018), C002, fill in the total quantity.
4. Before the packaging personnel are required to work, they must carefully review the quantity of products per box (B018).Prevent short shipment

The delivery tag

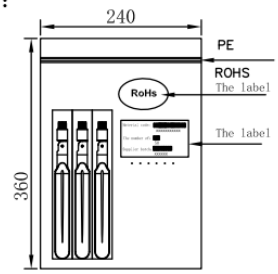
现品票标签			
客　户			
客户P/O		客户P/N	
规格型号		物料名称	
物料编码		数　量	
出厂日期		批　次	
供 应 商			
备注：（空）		品质检验：	

Matters needing attention

1. Operators must wear gloves to operate.
2. Pay attention to the quantity of packing, do not pack more or less. Mantissa must be specified.
3. Cartons should not be piled too high to prevent deformation under heavy pressure.

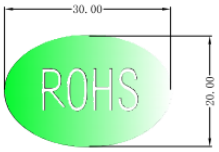
An illustrative

PE size:

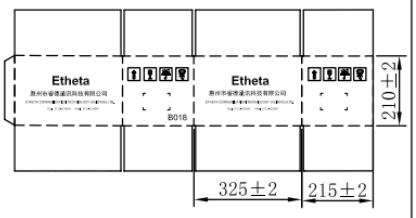


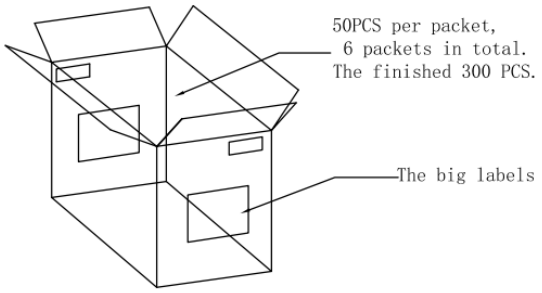
Packing :10PCS/ bundle, total 5 bundles, 50PCS/ bag.

ROHS The label:



Carton size:





Nuclear quasi	audit	making	Day period
Yanchao Zhou	Minghua Xiong	Yuming Cheng	April 22, 2020

Figure 20　AP Packaging specification for external antenna