

規 格 承 認 書  
SPECIFICATION FOR APPROVAL

客戶名稱：  
CUSTOMER:

客戶料號：  
CUSTOMER NO:

品 名  
PATR NAME::

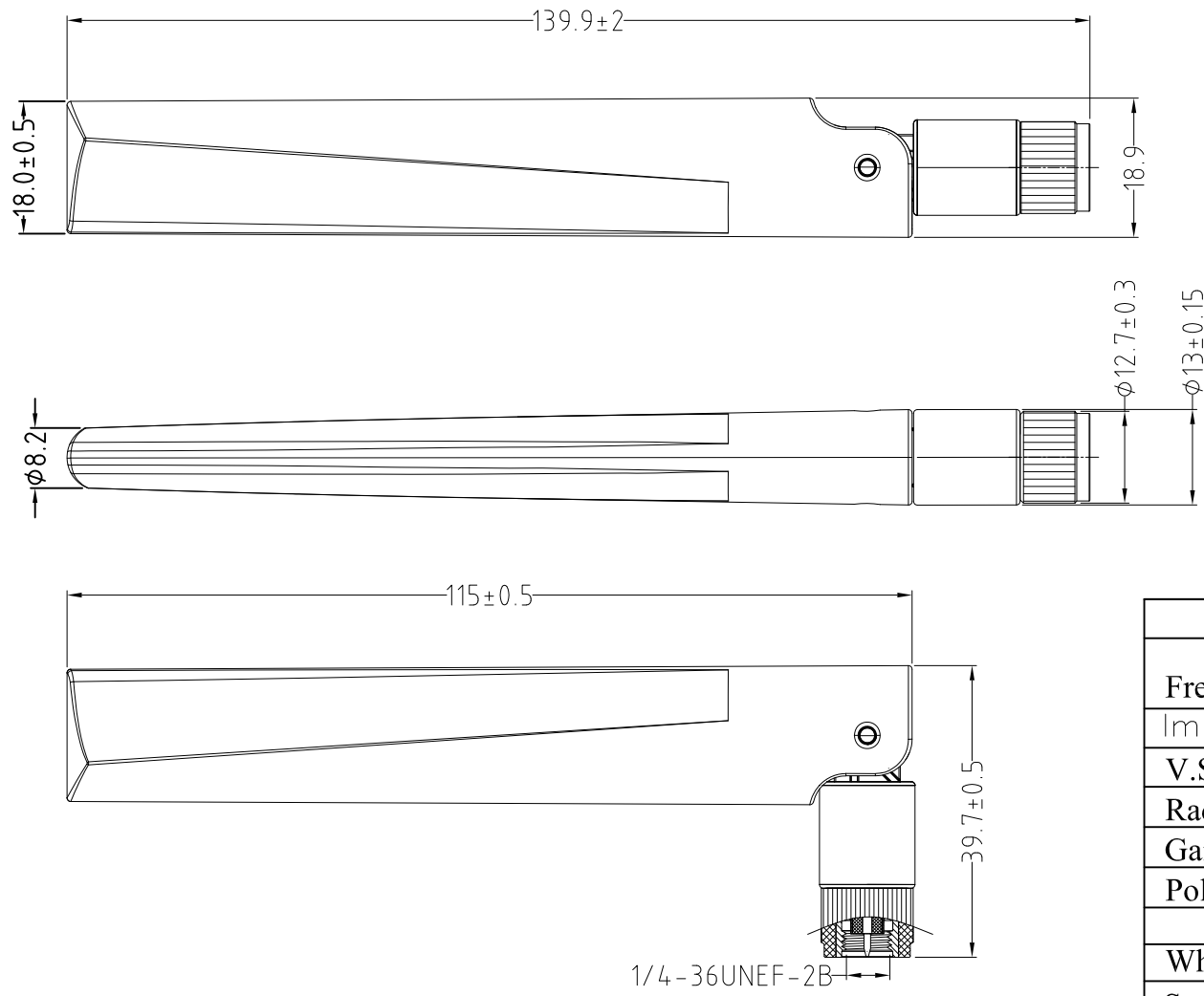
RS 料號  
RS NO: FRZ-ANT-SA78TEB133

SUPPLIER SIGNATURE (供方確認)		
APPROVAL	CHECK	DESIGN

CUSTOMER APPROVED BY (客戶確認)		
APPROVAL	CHIEF	SUPERVISOR

产 品 规 格 概 述  
Overview of product specification

Electrical properties	
Frequency	698~960MHZ 1710~2170MHZ 2300~2700MHZ
Impedance	50 ohm Nominal
Return Loss	-10 dBi
VSWR	3.0MAX
Gain	4DBi
Connector	SMA plug
Mechanical Properties	
Casing	ABS+PC
Operating Temp	-40 to +80
Antenna Color	Black



Electrical Properties	
Frequency Range	698~2700MHz
Impedance	50 Ω
V.S.W.R.	≤3.0
Radiation	Omni
Gain	3.5dbi
Polarization	Vertical
Mechanical Properties	
Whip	ABS
Standard Connector	SMA(Male)
Weight	- g(est)
Operating Temp	-40°~ +80°

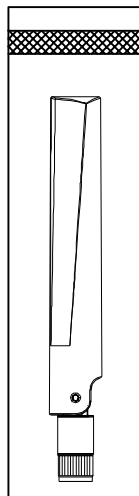
BOM				
NO	Name	Material	Finish	QTY
1	Top	ABS	BLACK	1
2	Bottom	ABS	BLACK	1
3	RG 178 Coaxial cable	FEP	Brown	1
4	SMA Male	Brass	NI	1
5	SMA COVER	POM	BLACK	1
6	PCB Antenna	FR4	BLACK	1

THIRD ANGLE PROJECTION  Tolerance .X ±0.1 .XX ±0.05 .x ±1°	DRAWN BY	li	MATERIAL:	
	CHECKED BY		FINISH:	BLACK
	APPROVED BY	King	UNIT:	mm
	DATE:	20.3.31	SCALE:	1/1

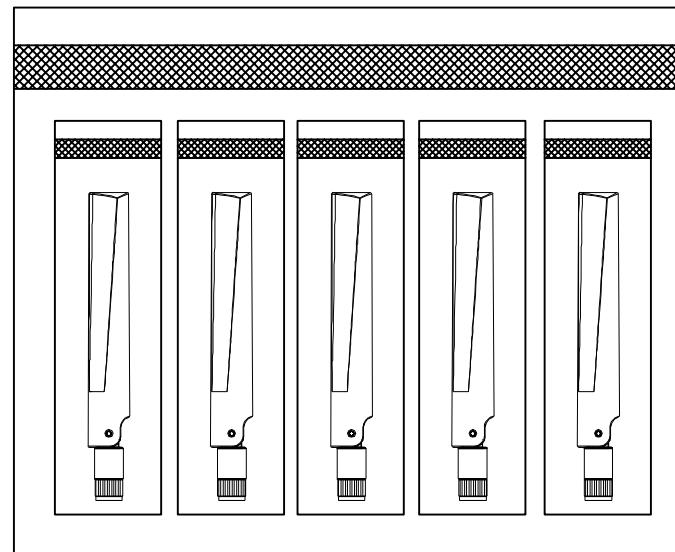
PART NO:	D139.C1.0.999
TITLE:	4G LTE Antenna


**RUNSHUN**  
 Dongguan Run Shun /www.rsantenna.com

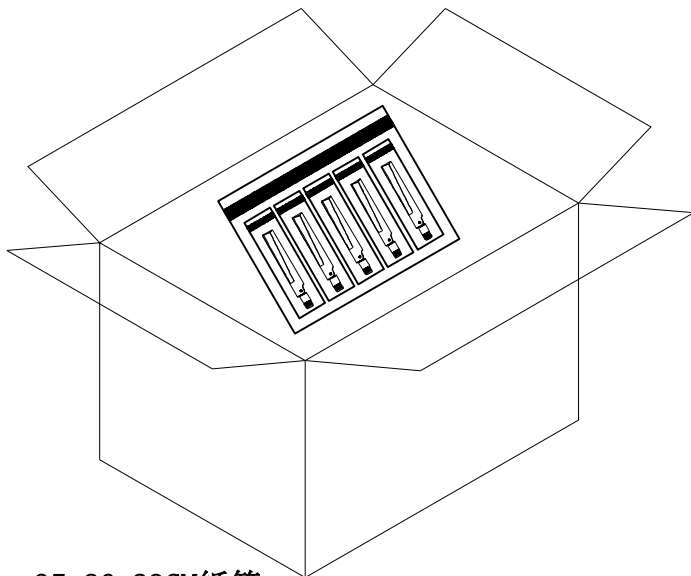
4G Antenna



1PCS /PE  
BAG(4\*19CM)



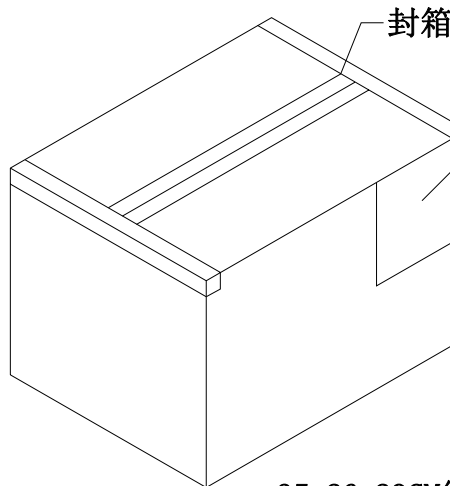
100PCS /PE BAG(33\*33CM)



35\*26\*29CM紙箱

材質:K=K

紙箱內套入防水袋, 放入一紙板  
成品整理整齊, 並排放入紙箱內  
每箱裝入800PCS, 頂層放入2包干燥劑一張隔板




35\*26\*29CM紙箱

上層放入一紙板  
貼上相對應標籤  
成品800PCS天线,  
裝入一箱  
工字型封箱  
貼標籤

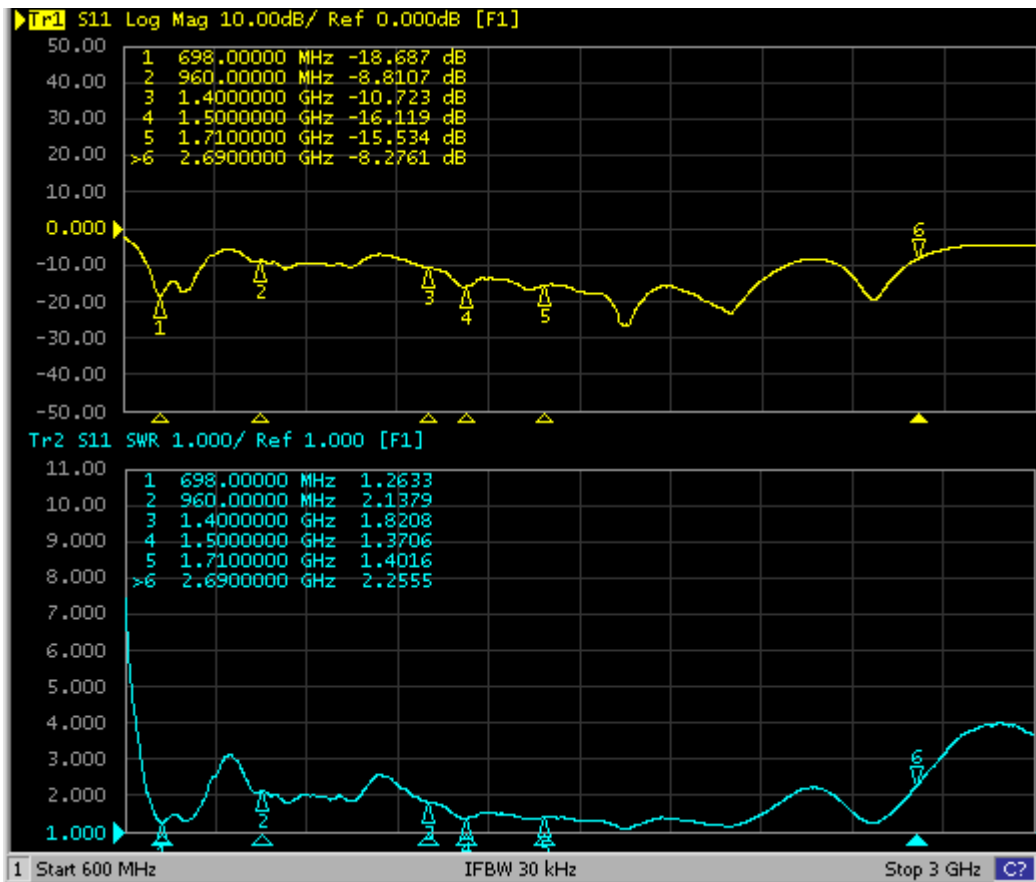
THIRD ANGLE PROJECTION 	DRAWN BY	li	MATERIAL:		PART NO:	FRZ-ANT-SA78TEB133
	CHECKED BY		FINISH:		TITLE:	外置天線包裝圖
Tolerance .X ±0.1 .XX ±0.05 .x ±1°	APPROVED BY	King	UNIT:	mm	<b>RUNSHUN</b> Dongguan Run Shun Technology CO., Ltd	
	DATE:	20.5.19	SCALE:	1/1		

# Specification

## 1. Specification

<b>Sample Photo</b>	
	
<b>A. Electrical Characteristics</b>	
<b>Frequency</b>	<b>704~2700 MHz</b>
<b>V.S.W.R.</b>	<b>&lt;= 3.0</b> <b>The data is tested without cable</b>
<b>Peak Gain</b>	<b>704-960MHz      Typ. -1.0dBi</b> <b>1447.9-1510.9MHz   Typ. +1.0dBi</b> <b>1710-2170MHz      Typ. +2.0dBi</b> <b>2500-2690MHz      Typ. +2.3dBi</b> <b>≤ 3dBi @ 704~2700MHz</b>
<b>Impedance</b>	<b>50 Ohm</b>
<b>B. Material &amp; Mechanical Characteristics</b>	
<b>Material of Radiator</b>	<b>PCB</b>
<b>Material of Plastic</b>	<b>ABS</b>
<b>Cable Type</b>	<b>N/A</b>
<b>Connector Type</b>	<b>SMA Male</b>
<b>C. Environmental</b>	
<b>Operation Temperature</b>	<b>- 40 °C ~ + 65 °C</b>
<b>Storage Temperature</b>	<b>- 40 °C ~ + 80 °C</b>
<b>Antenna Color Storage life</b>	<b>&lt;= 2 year</b>

### 3. Antenna - S Parameter Test Data



#### 4. Antenna – Peak Gain and Radiation Pattern Test Data

Frequency (MHz)	703	718	733	748	816.5	817.5	830	842.5	846.5
TRP (dBm)	-1.42	-1.22	-1.02	-1.06	-2.55	-2.75	-3.05	-3.12	-3.21
Peak EIRP (dBm)	2.24	2.49	2.67	2.56	1.38	1.25	1.11	1.19	1.17
E-Total Peak Gain(dBi)	2.24	2.49	2.67	2.56	1.38	1.25	1.11	1.19	1.17
Directivity (dBi)	3.65	3.71	3.69	3.62	3.93	4.00	4.17	4.31	4.39
Efficiency (%)	72.17	75.53	79.15	78.32	55.54	53.15	49.49	48.72	47.71

Frequency (MHz)	882.5	902.5	907.5	912.5	927	943	960
TRP (dBm)	-3.33	-3.28	-3.34	-3.25	-3.02	-2.96	-2.96
Peak EIRP (dBm)	1.33	1.60	1.53	1.67	1.97	2.08	2.11
E-Total Peak Gain(dBi)	1.33	1.60	1.53	1.67	1.97	2.08	2.11
Directivity (dBi)	4.66	4.88	4.87	4.92	4.99	5.04	5.07
Efficiency (%)	46.45	46.98	46.39	47.30	49.87	50.62	50.63

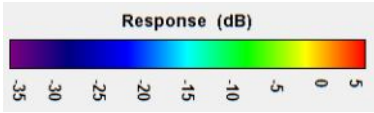
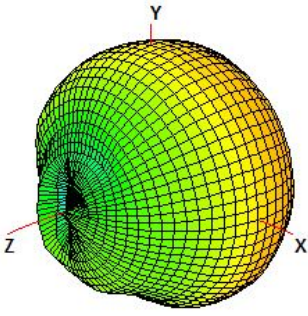
Frequency (MHz)	1430.4	1445.4	1450.4	1460.4	1575	1712.5	1747.4	1764.9	1782.4
TRP (dBm)	-3.53	-3.42	-3.43	-3.27	-2.71	-1.99	-1.65	-1.49	-1.53
Peak EIRP (dBm)	0.83	1.06	1.05	1.36	1.69	3.06	3.42	3.70	3.59
E-Total Peak Gain(dBi)	0.83	1.06	1.05	1.36	1.69	3.06	3.42	3.70	3.59
Directivity (dBi)	4.36	4.48	4.48	4.62	4.40	5.05	5.07	5.18	5.11
Efficiency (%)	44.37	45.45	45.38	47.13	53.62	63.23	68.36	71.02	70.34

Frequency (MHz)	1920	1922.5	1940	1950	1955	1960	1970	1977.5
TRP (dBm)	-1.30	-1.29	-1.46	-1.42	-1.50	-1.43	-1.59	-1.72
Peak EIRP (dBm)	3.93	3.87	3.86	3.68	3.71	3.78	3.38	3.16
E-Total Peak Gain(dBi)	3.93	3.87	3.86	3.68	3.71	3.78	3.38	3.16
Directivity (dBi)	5.23	5.16	5.31	5.10	5.22	5.21	4.97	4.88
Efficiency (%)	74.22	74.37	71.53	72.11	70.72	71.96	69.27	67.37

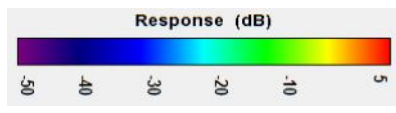
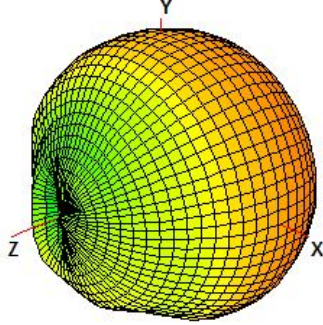
Frequency (MHz)	2501	2550	2595	2640	2685
TRP (dBm)	-1.20	-1.55	-1.38	-1.77	-1.84
Peak EIRP (dBm)	2.40	2.07	2.16	1.36	0.96
E-Total Peak Gain(dBi)	2.40	2.07	2.16	1.36	0.96
Directivity (dBi)	3.60	3.62	3.54	3.13	2.80
Efficiency (%)	75.91	69.95	72.80	66.54	65.51



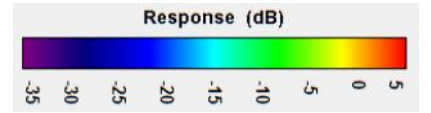
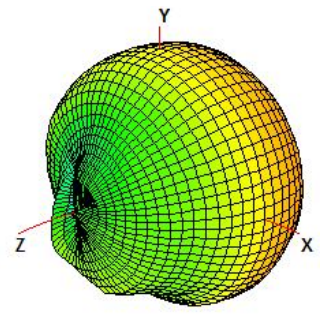
703MHz



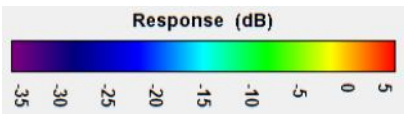
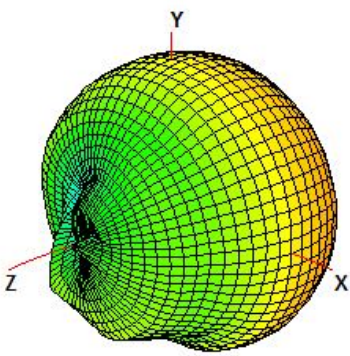
718MHz



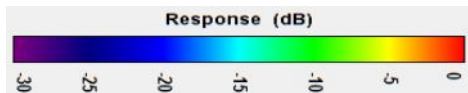
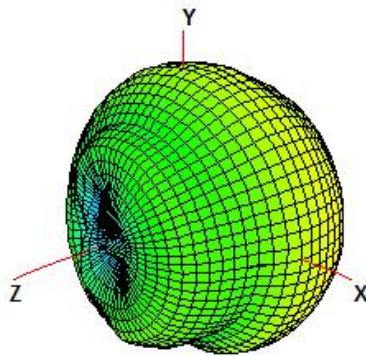
733MHz



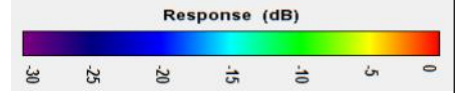
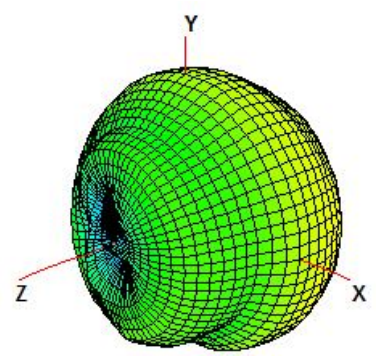
748MHz



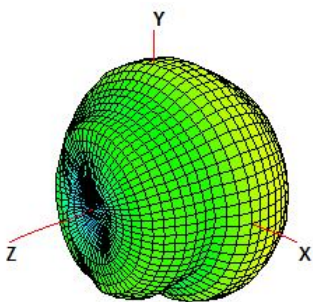
816.5MHz



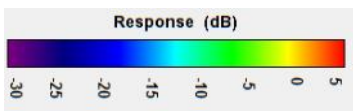
817.5MHz



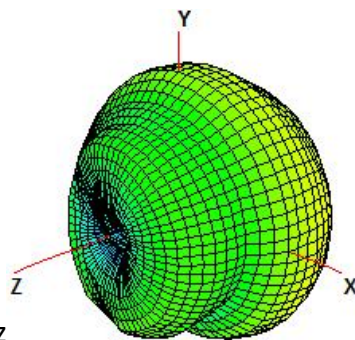
830



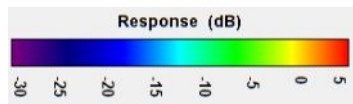
MHz



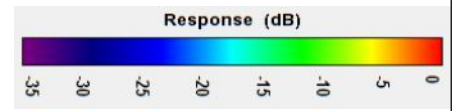
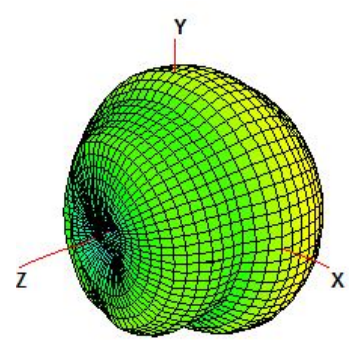
842.5



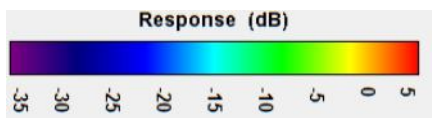
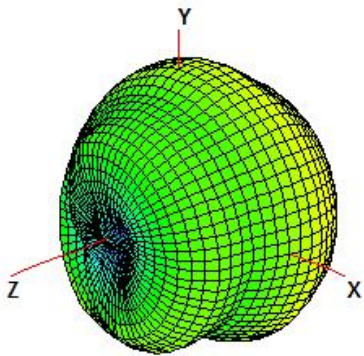
MHz



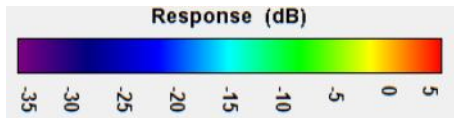
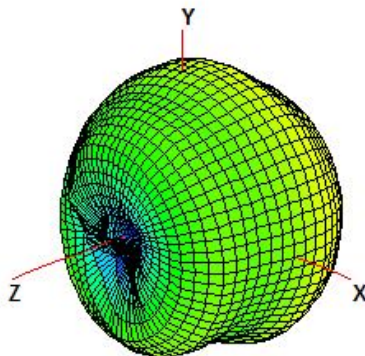
846.5 MHz



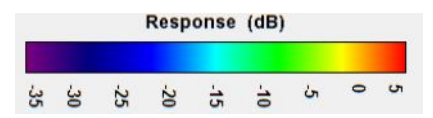
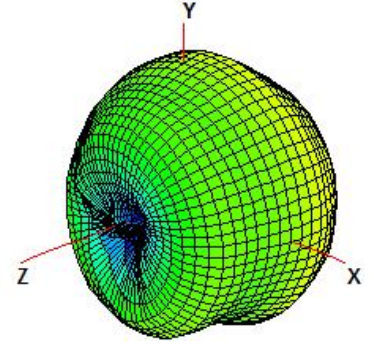
882.5MHz



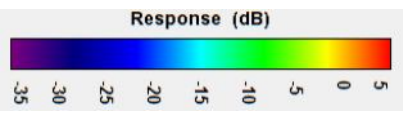
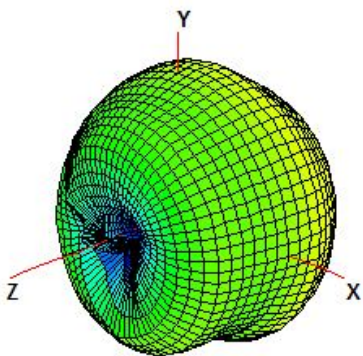
902.5MHz



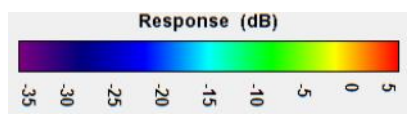
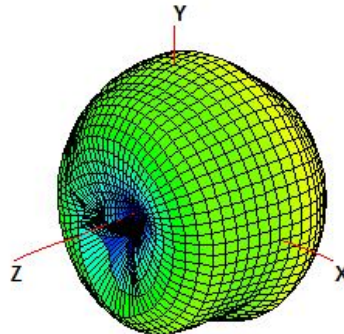
907.5MHz



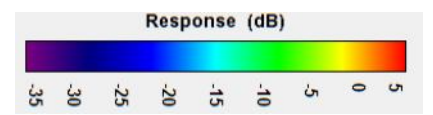
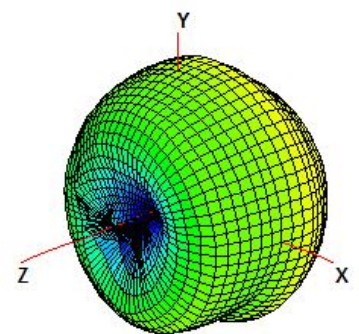
912.5 MHz



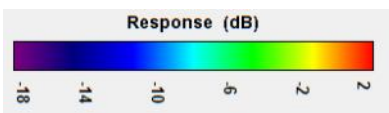
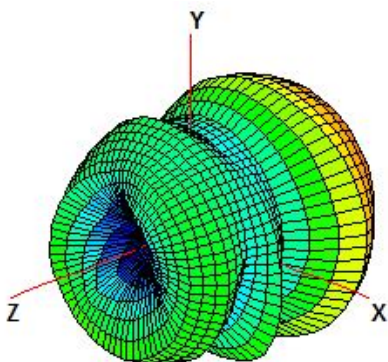
927 MHz



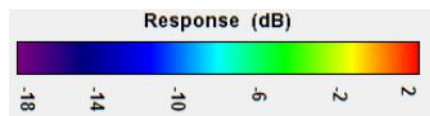
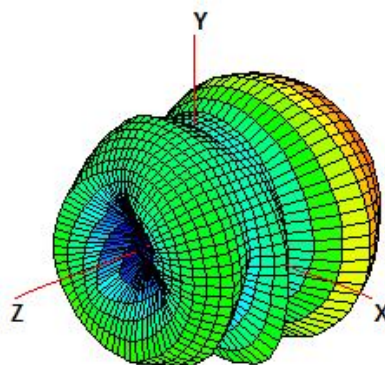
943 MHz



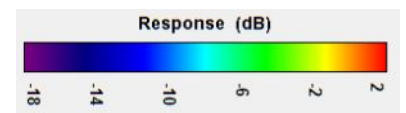
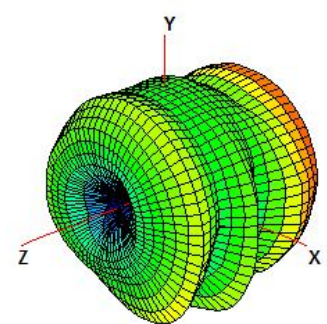
1450.4MHz



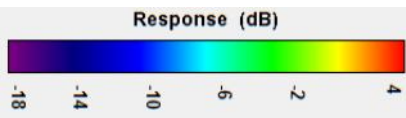
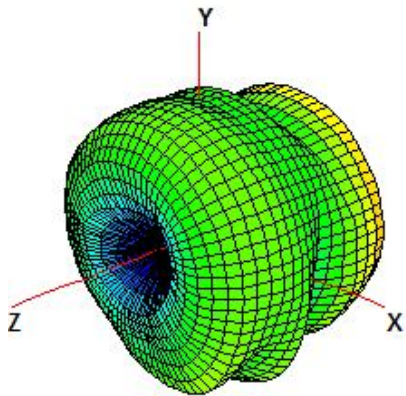
1460.4 MHz



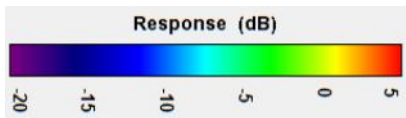
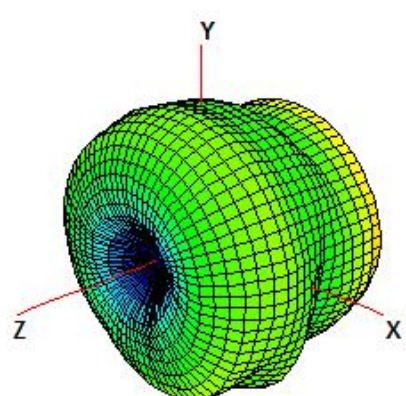
1575MHz



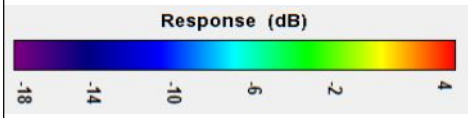
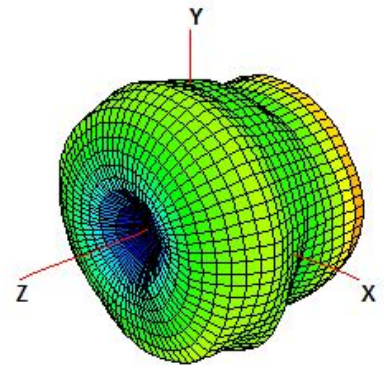
1712.5MHz



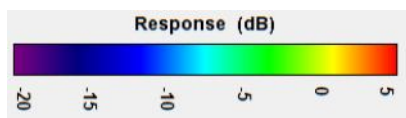
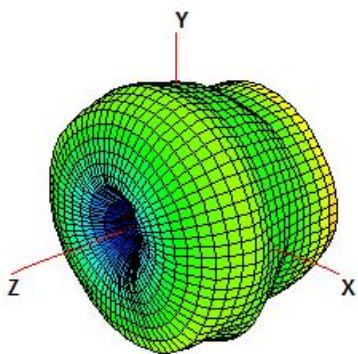
1747.4MHz



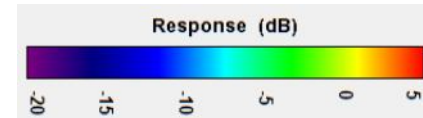
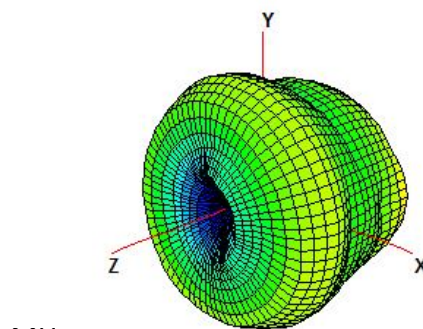
1764.9  
MHz



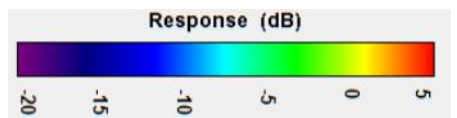
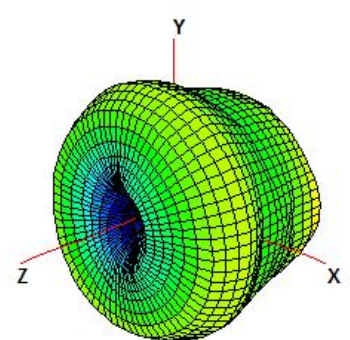
1782.4MHz



1920



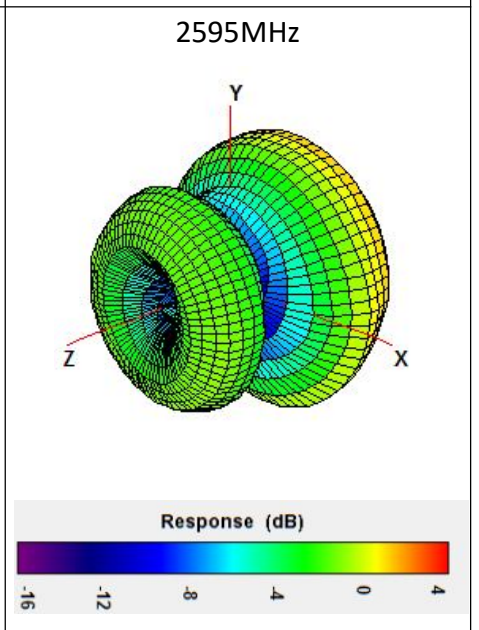
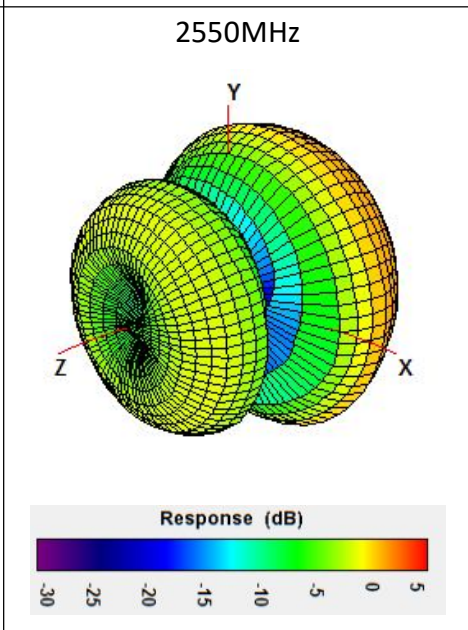
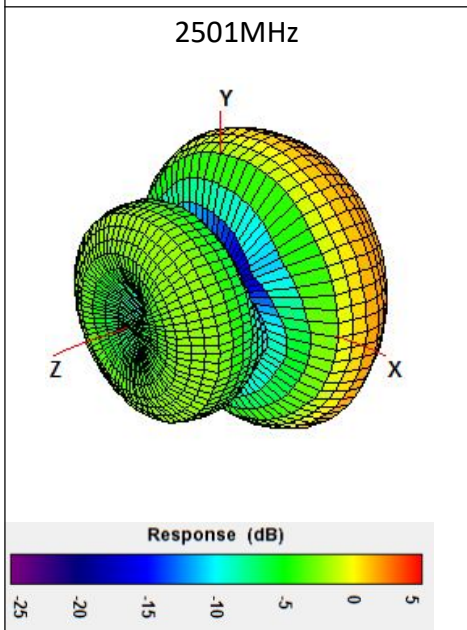
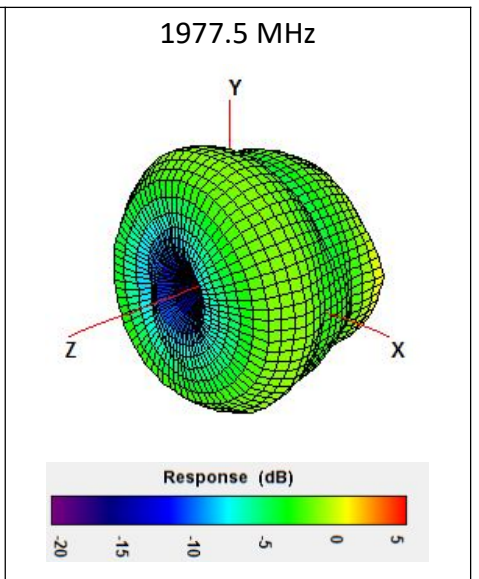
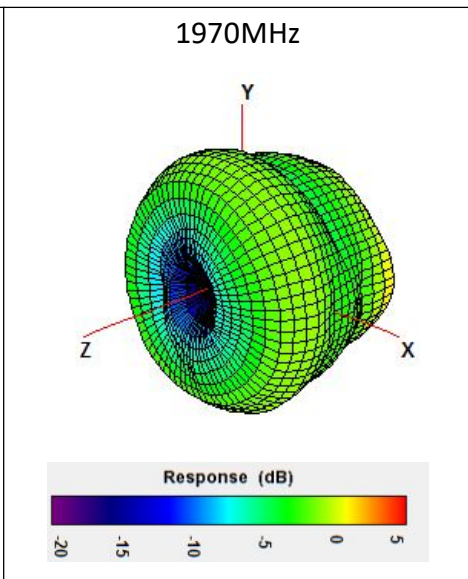
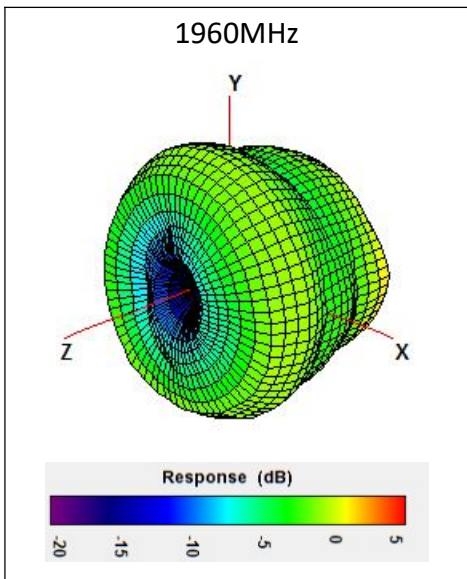
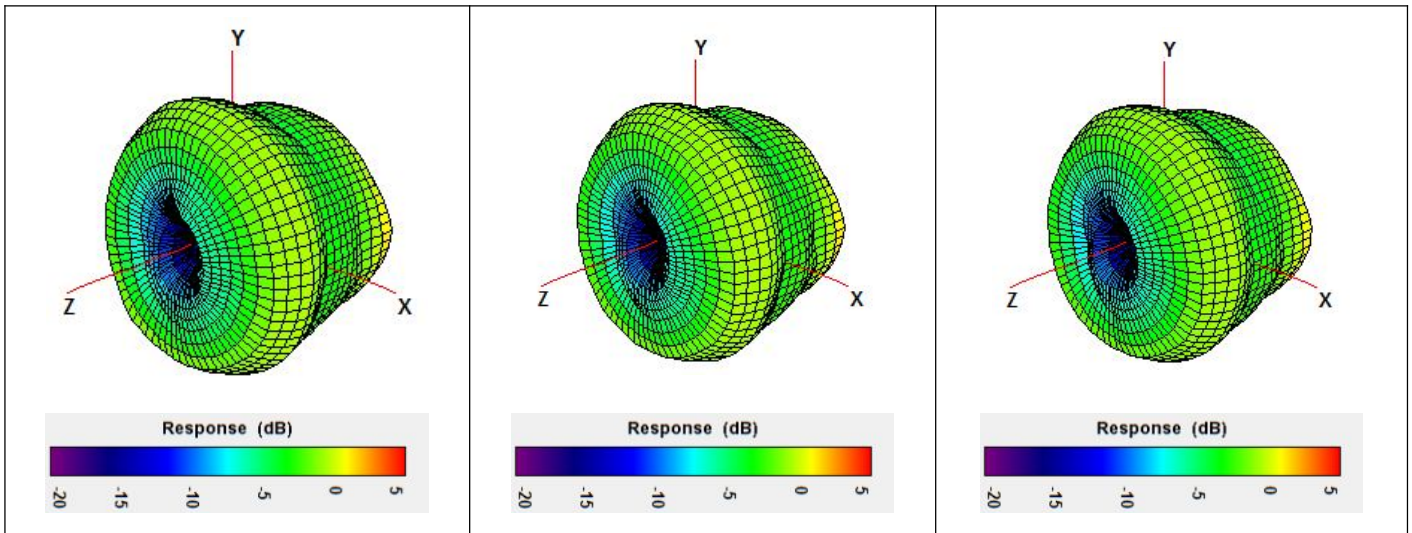
1922.5 MHz



1940 MHz

1950MHz

1955MHz



2640 MHz

2685 MHz

