



ShenZhen Huaxinwei communication technology
Co.,Ltd.

Antenna test report

Customer Name: TianRuiXiang

Project Name: L5523-39A

Designer: Zhang Jun

Date: 2023/09/06

The customer name		TianRuiXiang	Project Name	L5523-39A
NO.	project	Detailed above		
1	spectrum	GSM850/900/1800/1900+WCDMA-B2/4/5+LTE-B2/4/5/7//12/17/66/71/41+GPS/WIFI/BT		
2	Project type	The mobile phone		
3	Antenna space area			
4	Feed point type			
5	The sensitivity			
6	Type of antenna			
7	The length of the PCB board			
8	note	Debugging prototype		
RF		Zhang Jun	13430515055	hxw_xiaozhang@126.com

3

1、 Test system and test equipment

System Brand: MVG(SATIMO) measurement features: gain • pattern beamwidth cross polarization resolution sidelobe level 3D cavity reflectance at any polarization cavity reflectance (line or arc) antenna efficiency TRP, TIS, EIRP and EIS. Frequency band: StarLab 6 GHz - 650 MHz to 6 GHz

无线通信测试仪

射频单元

用于数据获取及处理的计算机

The object under test

Link antenna

MVG

WAG

TIS预计测量时间 (一个信道每隔30° 取样)

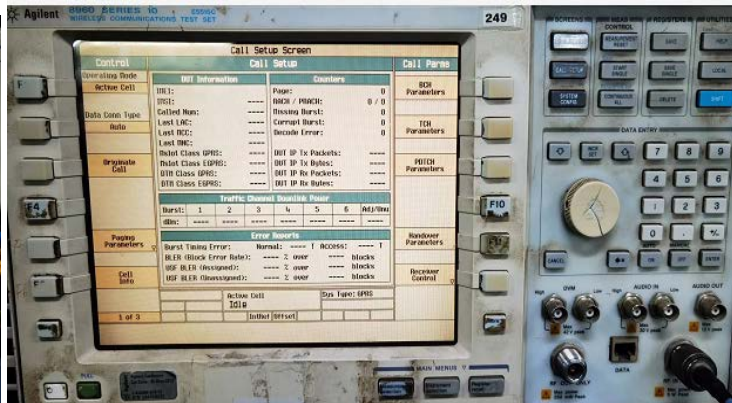
灵敏度算法 \ 标准	GSM GPRS EDGE	CDMA 1 x RTT 1 x EvDO	WCDMA HSDPA LTE FDD/TDD	Wi-Fi 802.11 a/b/g/n	CTIA 批准方法
RSSI模式+线性化+TIS补偿	8 min		10 min		是
EIS模式+TIS补偿		5 min		5 min	是 ²
快速CDMA		8 min			No
EIRP模式+TIS补偿				10 min	No

1、根据RTC
2、根据协议

TIS 3D方位切割强度图

TRP 3D方位切割强度图

Test Equipment

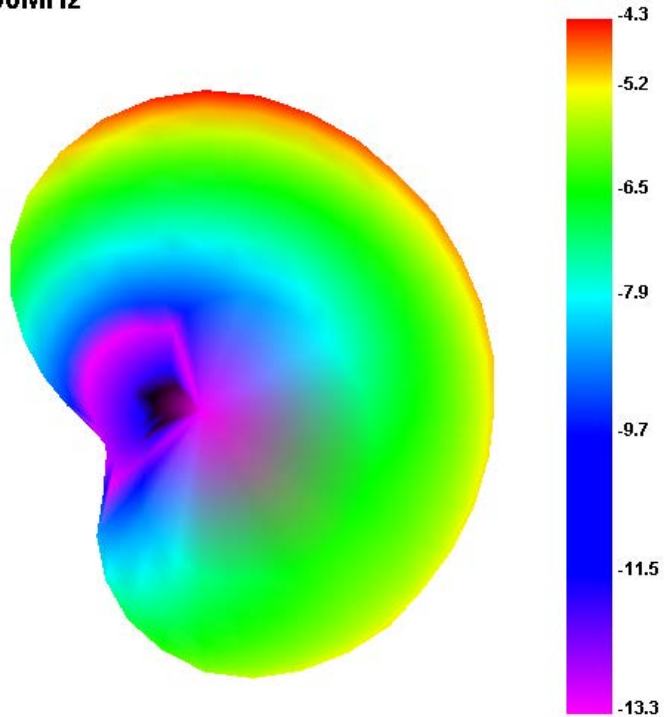


Efficient (2G+3G+4G+2. 4G-WiFi /BT)

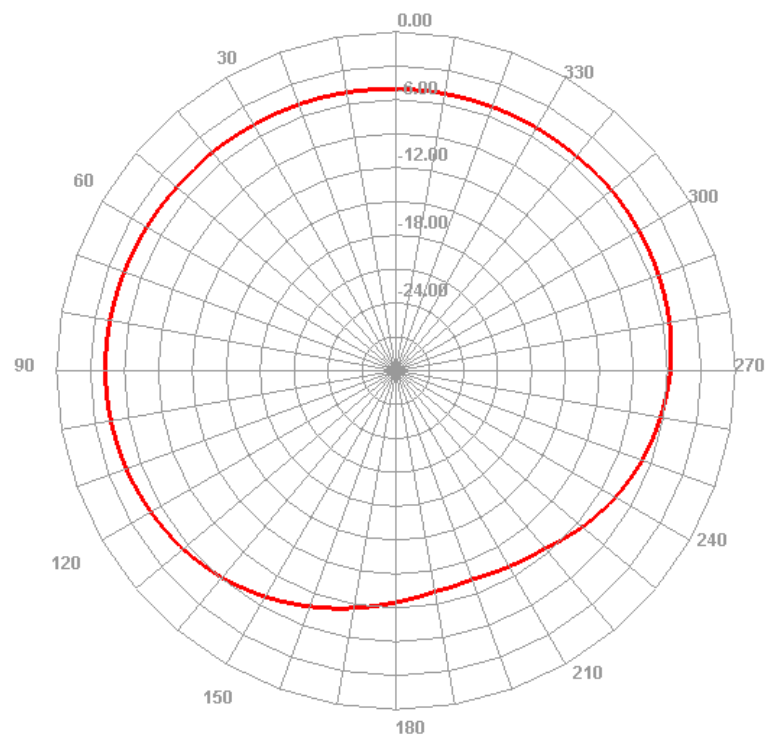
PEAK GAIN			
2G:	Frequency range	Effi %	Gaim dBi
GSM850	824~894Mhz	21.80	-0.71
GSM900	880~960Mhz	20.84	-1.05
DCS1800	1710~1880Mhz	28.62	0.63
PCS1900	1850~1990Mhz	30.81	0.81
3G:			
W2	1850~1990Mhz	30.81	0.81
W4	1710~2155Mhz	31.07	0.92
W5	824~894Mhz	21.80	-0.71
4G:			
LTE-B2	1850~1990Mhz	30.81	0.81
LTE-B4	1710~2155Mhz	31.07	0.92
LTE-B5	824~894Mhz	21.80	-0.71
LTE-B7	2500~2690Mhz	28.01	1.12
LTE-B12	698~746Mhz	19.03	-1.42
LTE-B17	704~746Mhz	19.03	-1.42
LTE-B71	617~697.9Mhz	20.38	-4.30
LTE-B66	1710~2170Mhz	31.08	0.92
LTE-B41	2500~2690Mhz	28.03	1.12
5G-WIFI	5150~5250Mhz	37.81	1.81
	5725~5850Mhz	37.16	1.91
2.4G-WIFI	2400~2500Mhz	42.52	1.37
BT	2400~2500Mhz	42.51	1.37
GPS	1575Mhz	38.73	0.43

Efficient (617-697.9Hz)

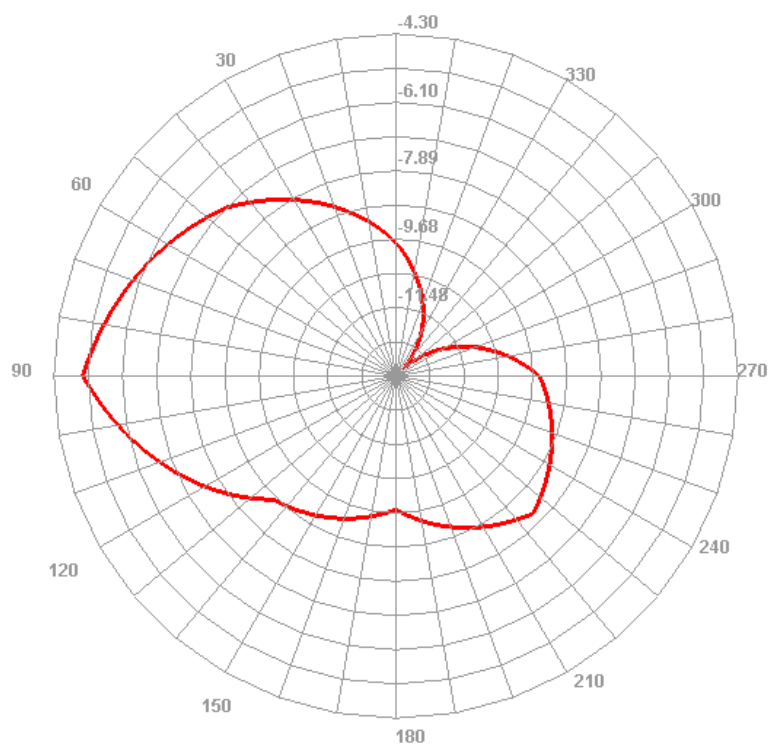
650.000MHz



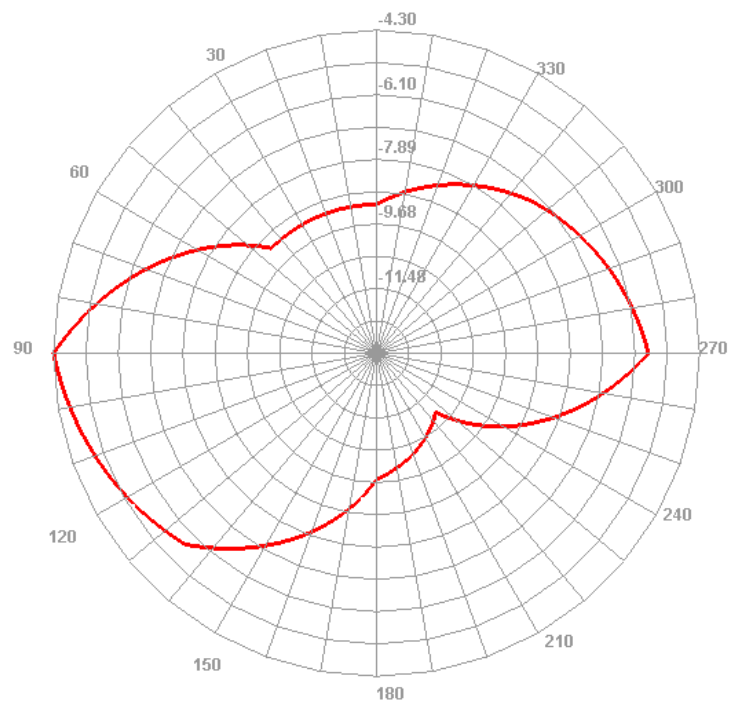
650.000MHz H



650.000MHz E1

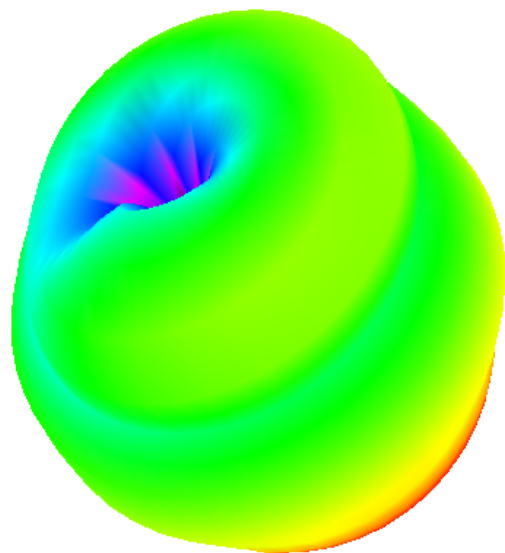


650.000MHz E2

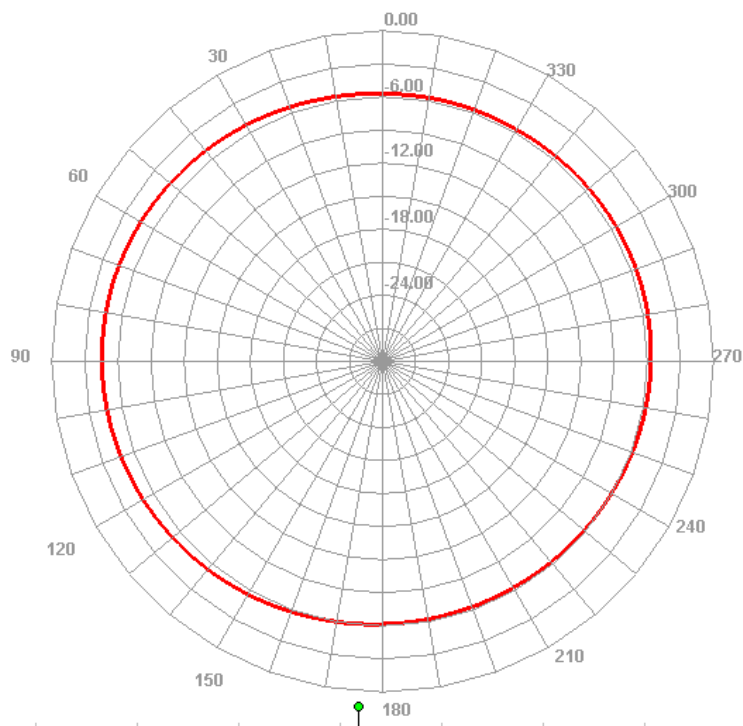


Efficient (698-746MHz)

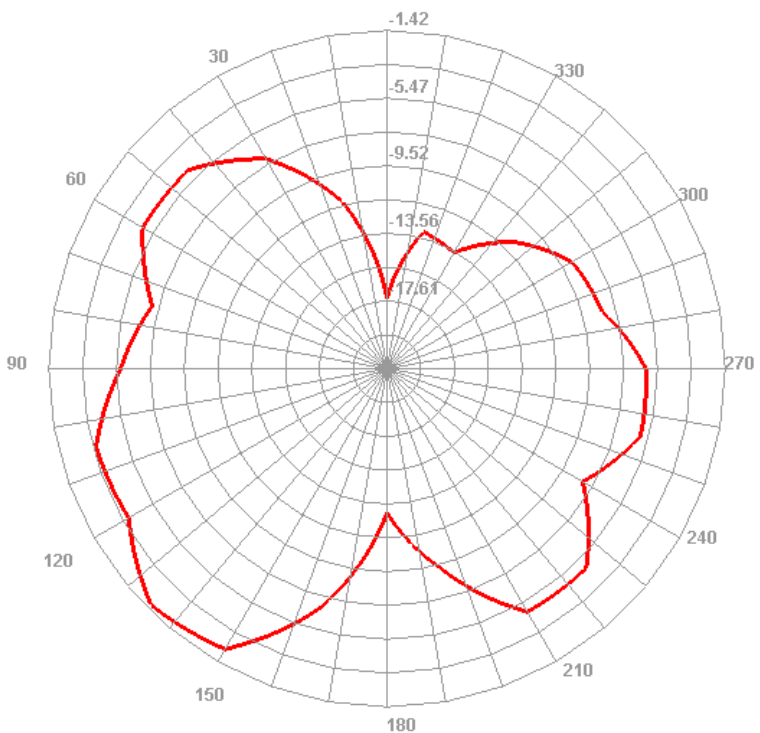
710.000MHz



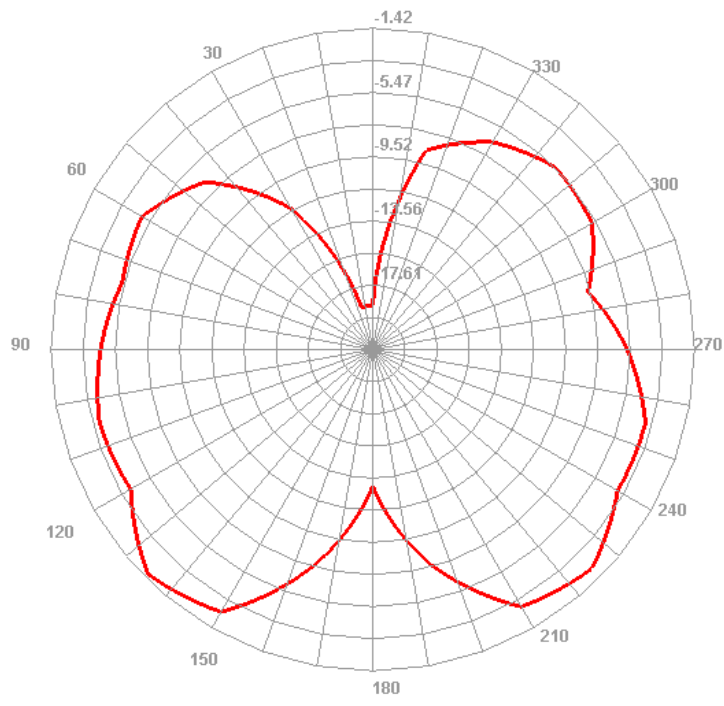
710.000MHz H



710.000MHz E1

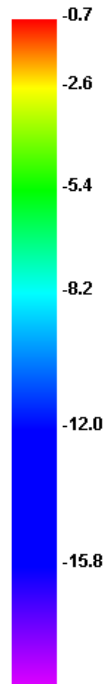
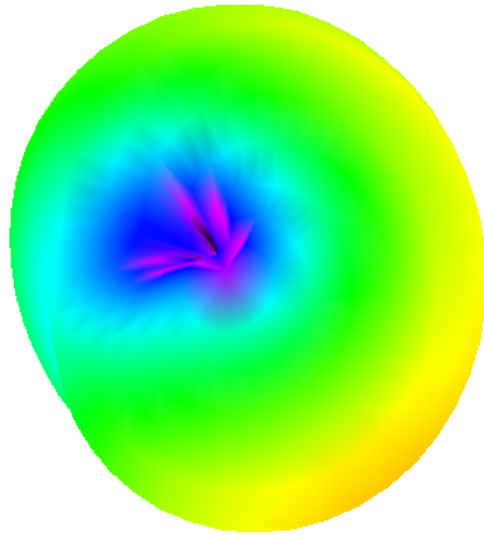


710.000MHz E2

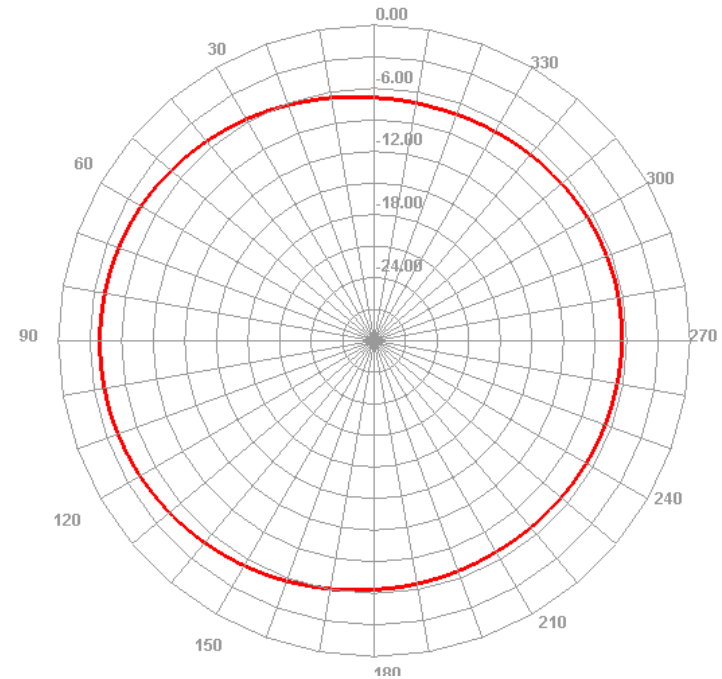


Efficient (824-894MHz)

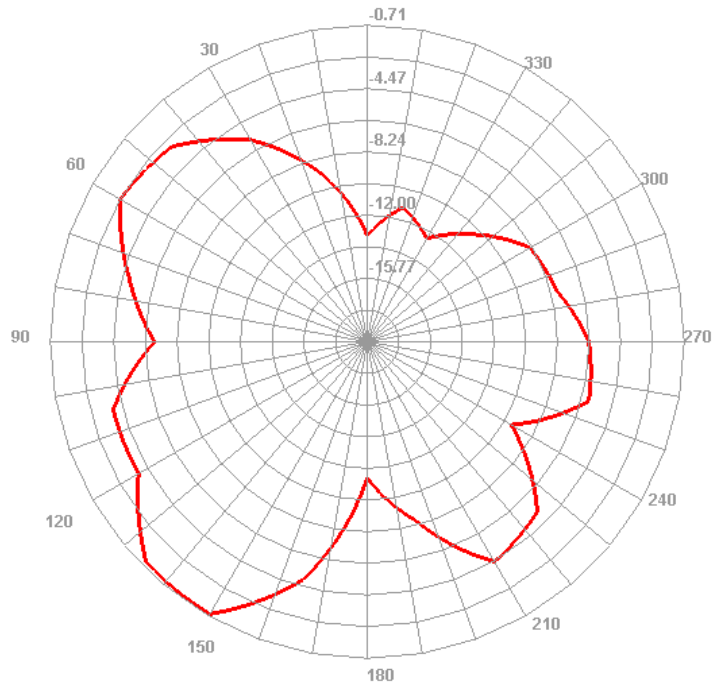
830.000MHz



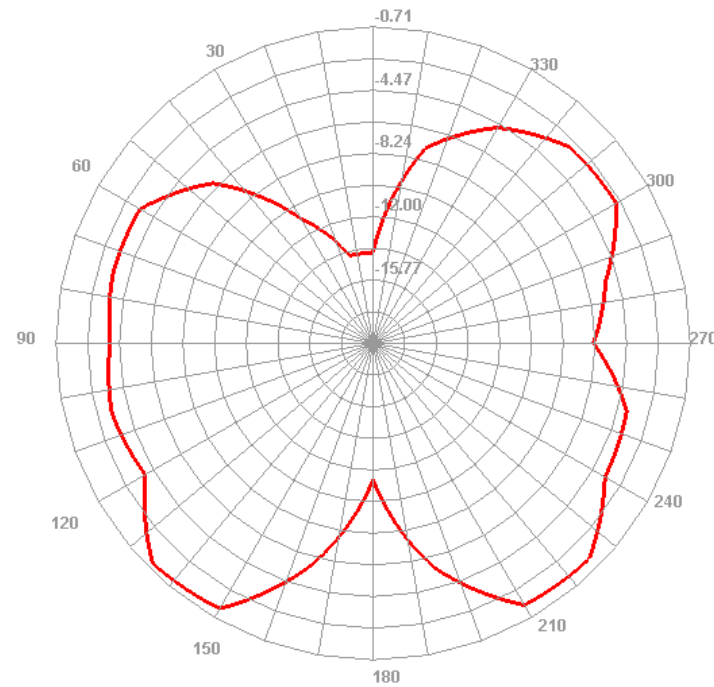
830.000MHz H



830.000MHz E1

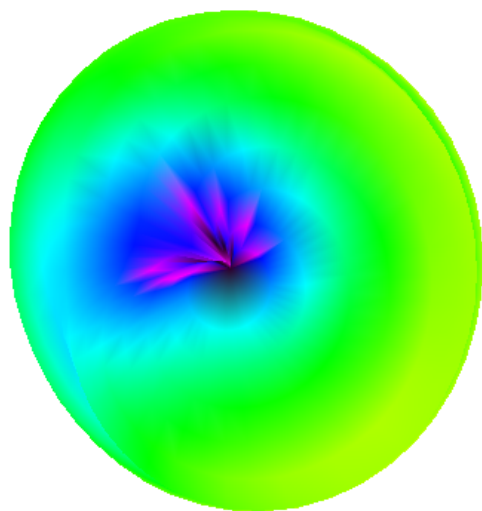


830.000MHz E2

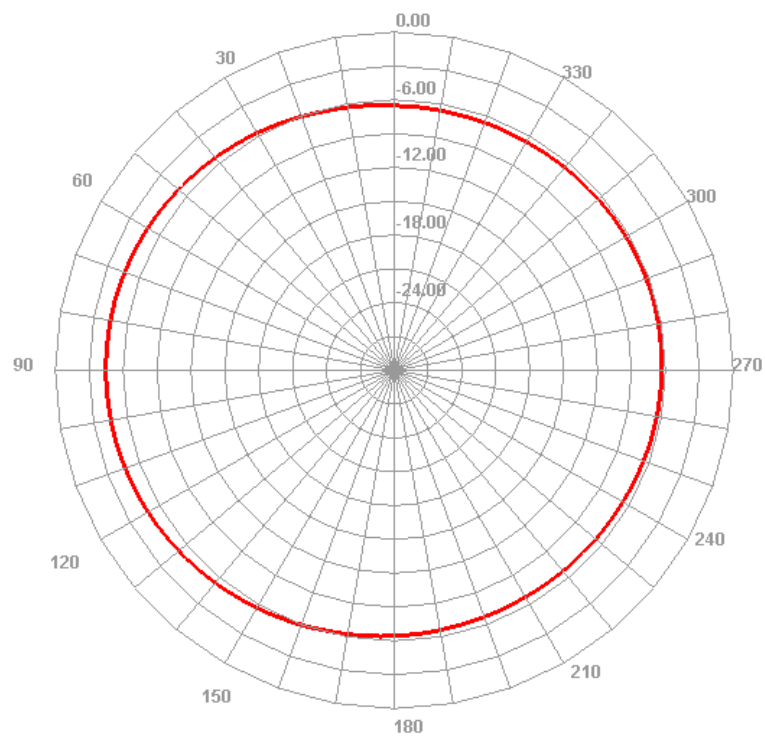


Efficient (880-960MHz)

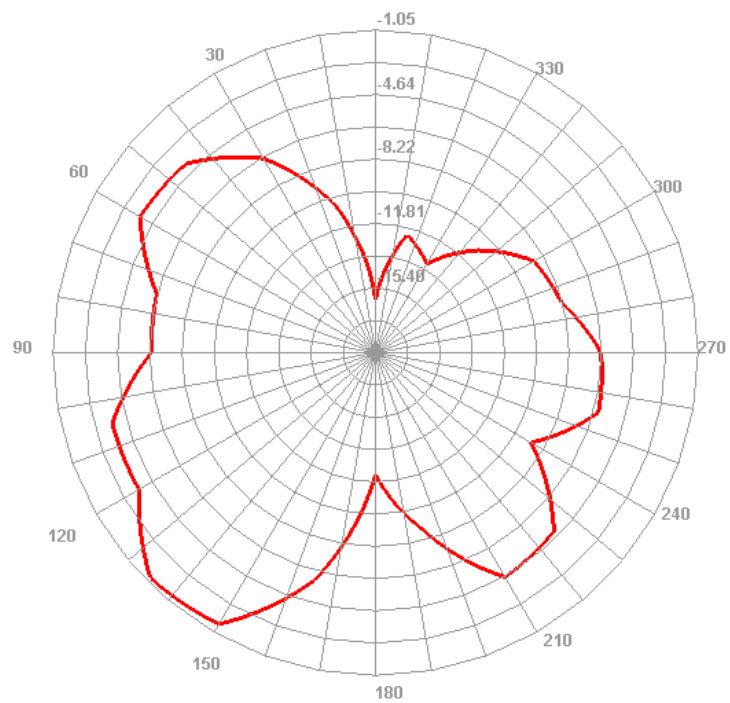
900.000MHz



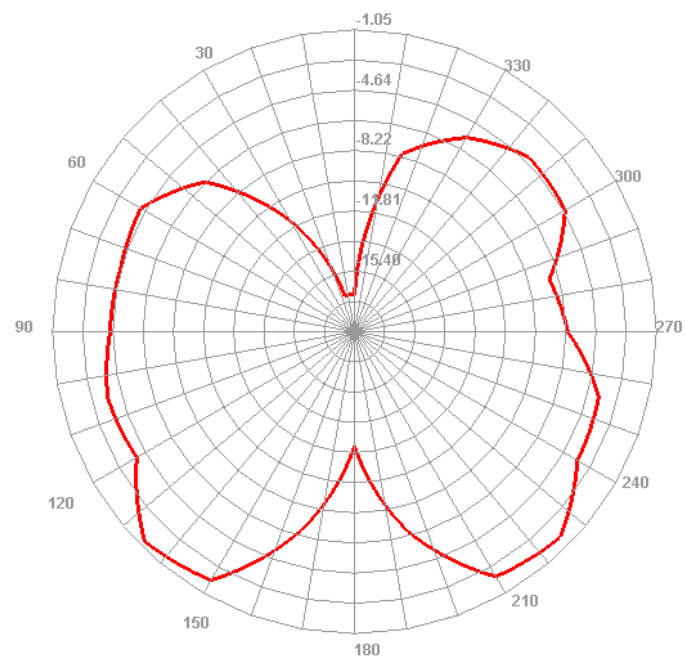
900.000MHz H



900.000MHz E1

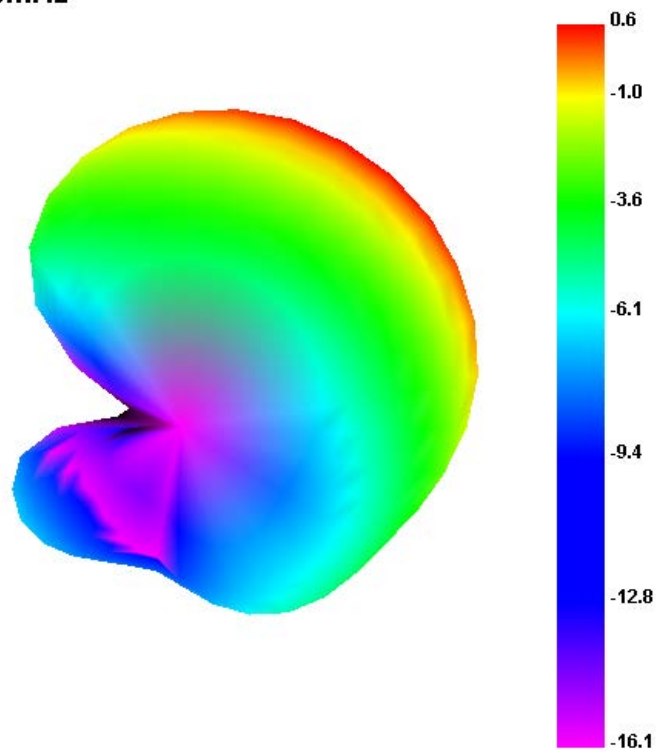


900.000MHz E2

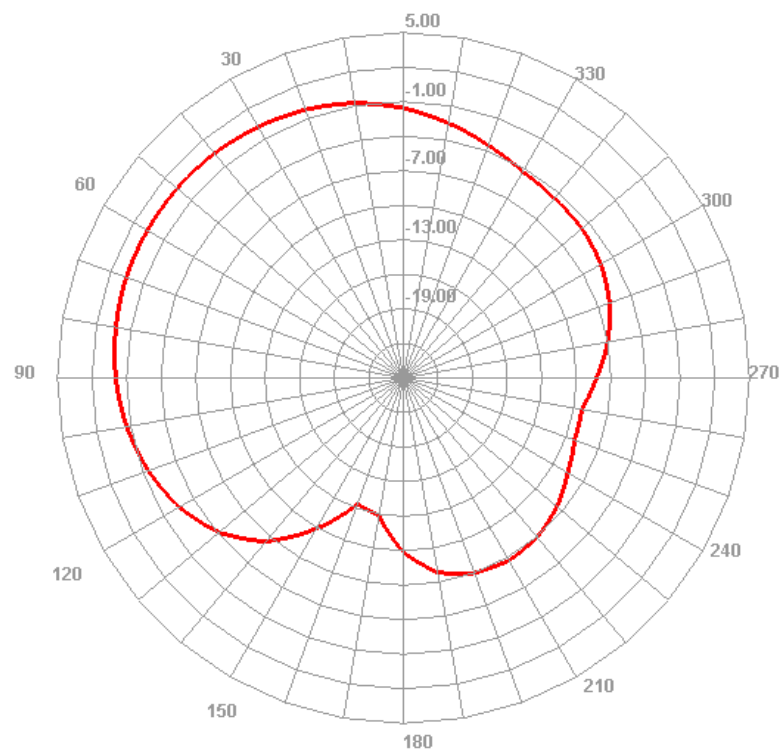


Efficient (1710–1880MHz)

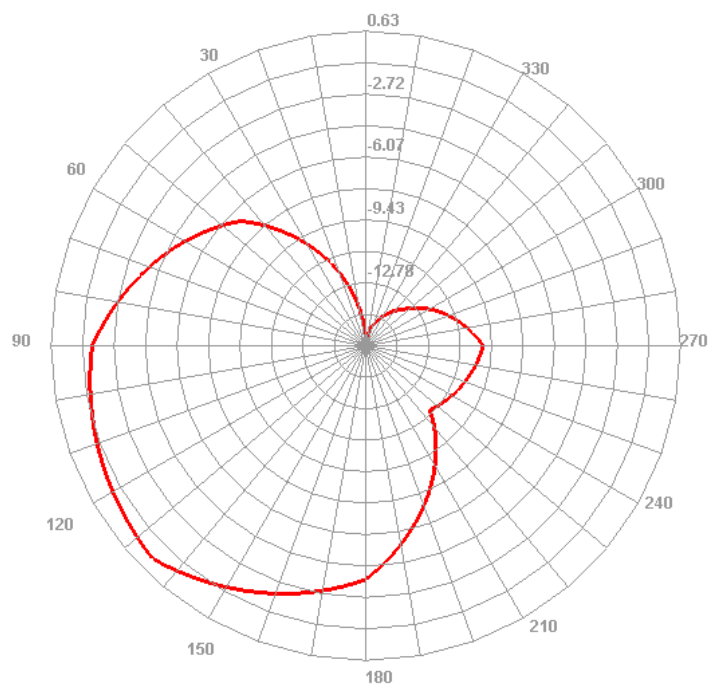
1820.000MHz



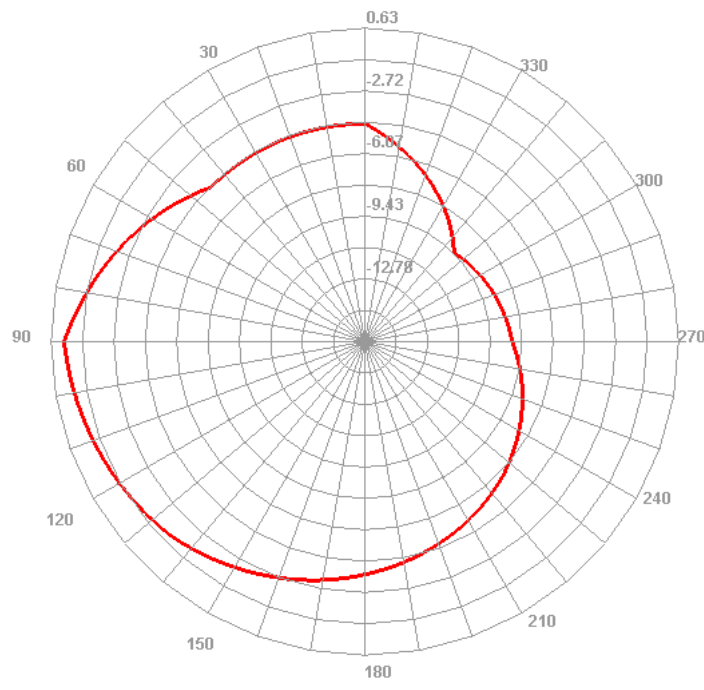
1820.000MHz H



1820.000MHz E1

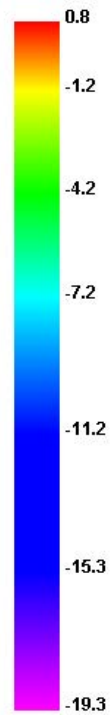
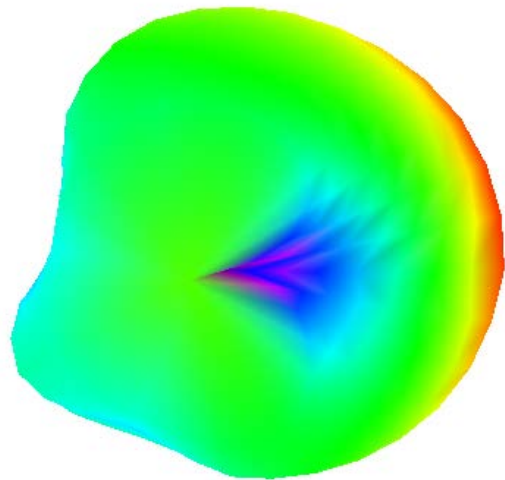


1820.000MHz E2

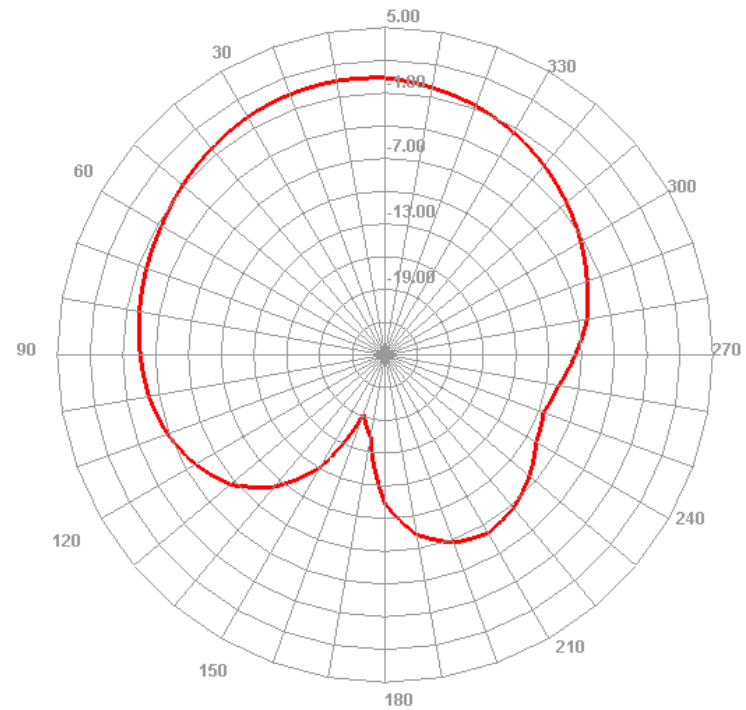


Efficient (1710-1990MHz)

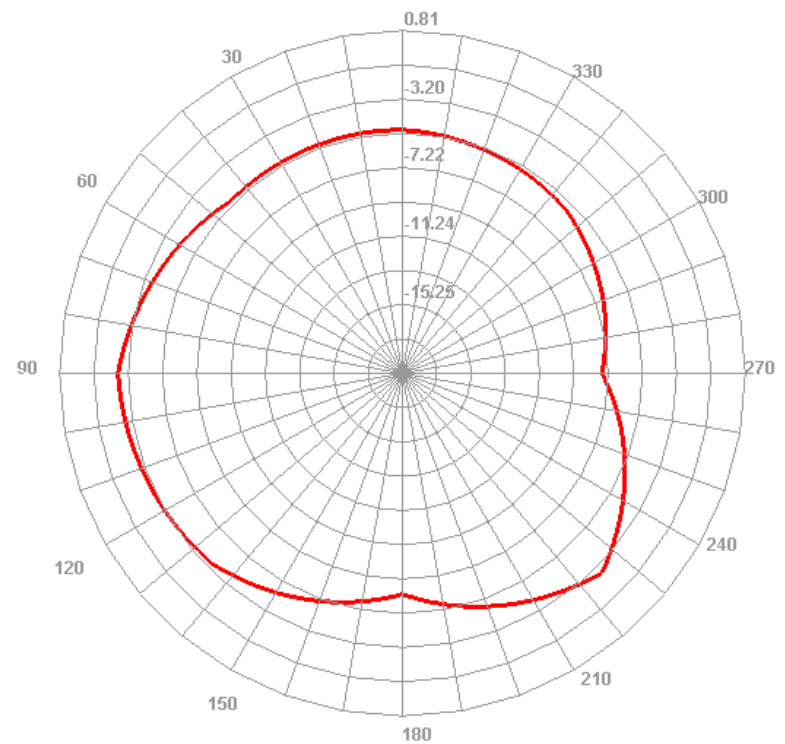
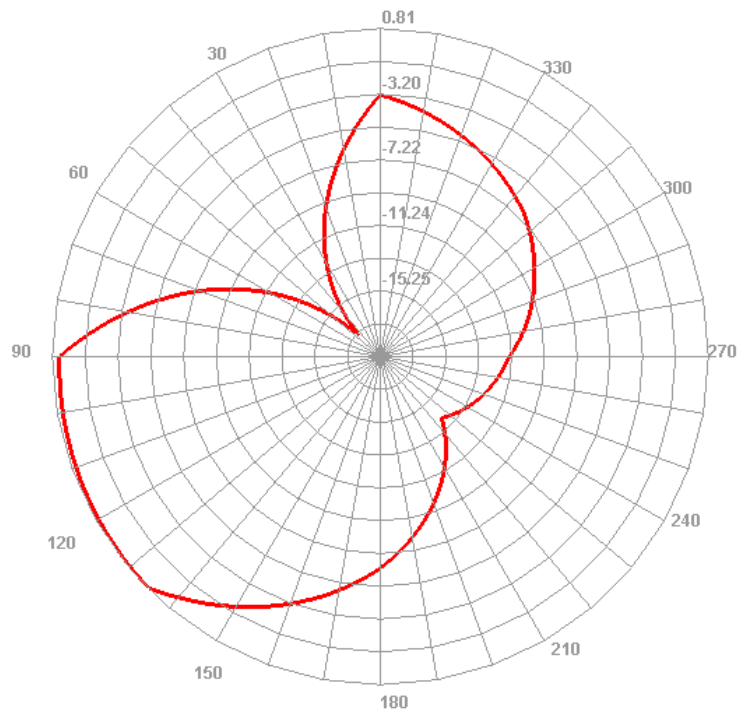
1920.000MHz



1920.000MHz H

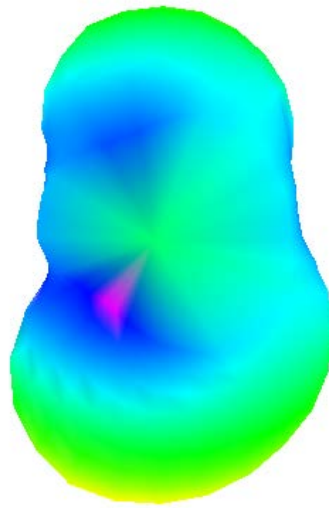


1920.000MHz E1

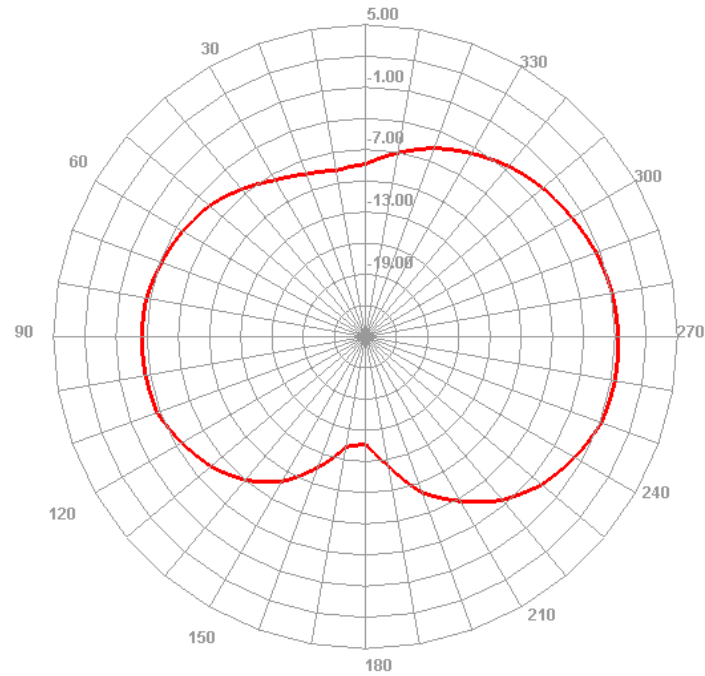


Efficient (1920-2170MHz)

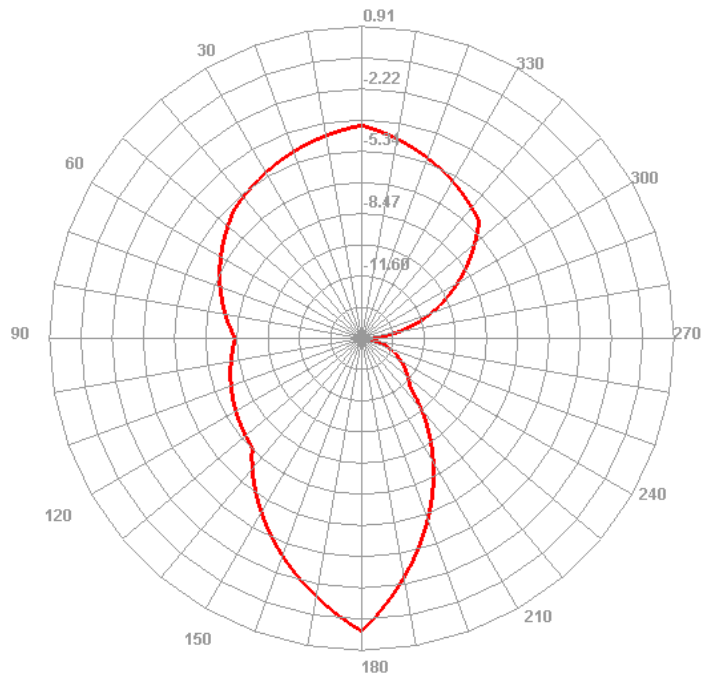
2010.000MHz



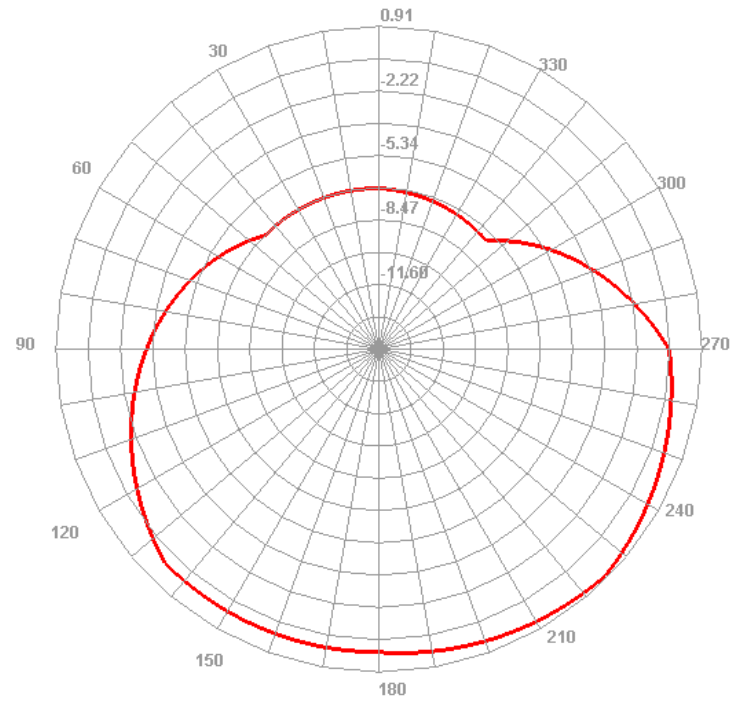
2010.000MHz H



2010.000MHz E1

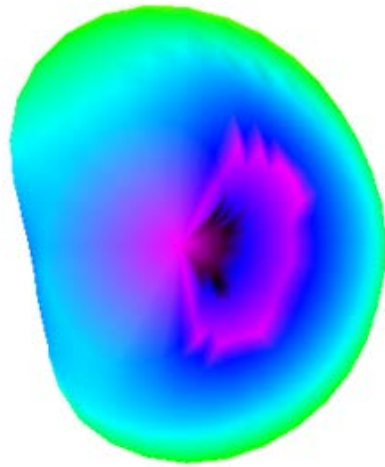


2010.000MHz E2

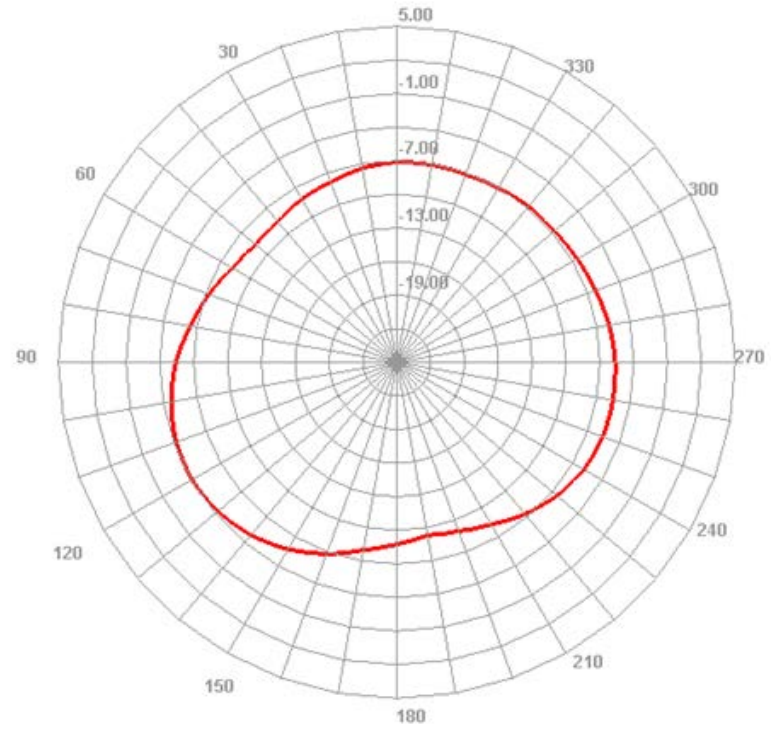


Efficient (2500–2690MHz)

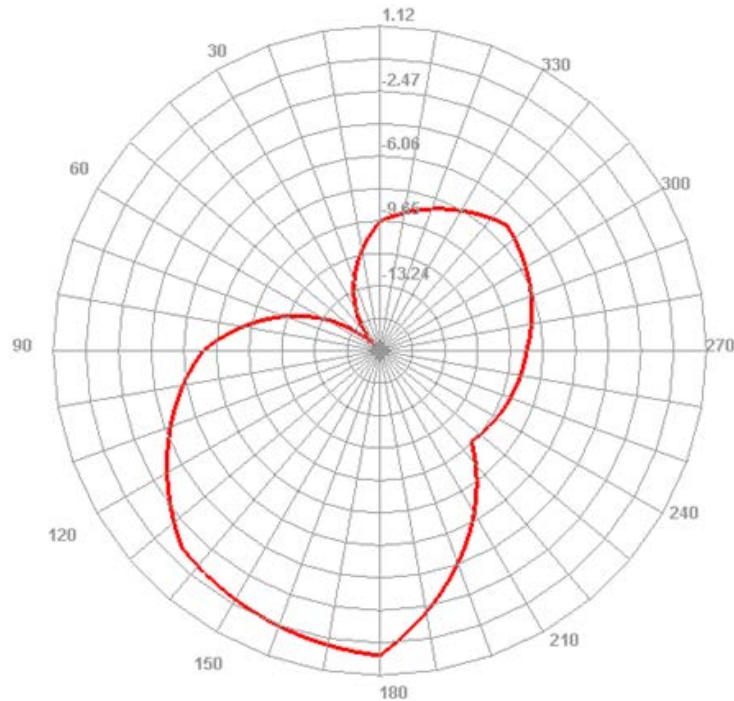
2660.000MHz



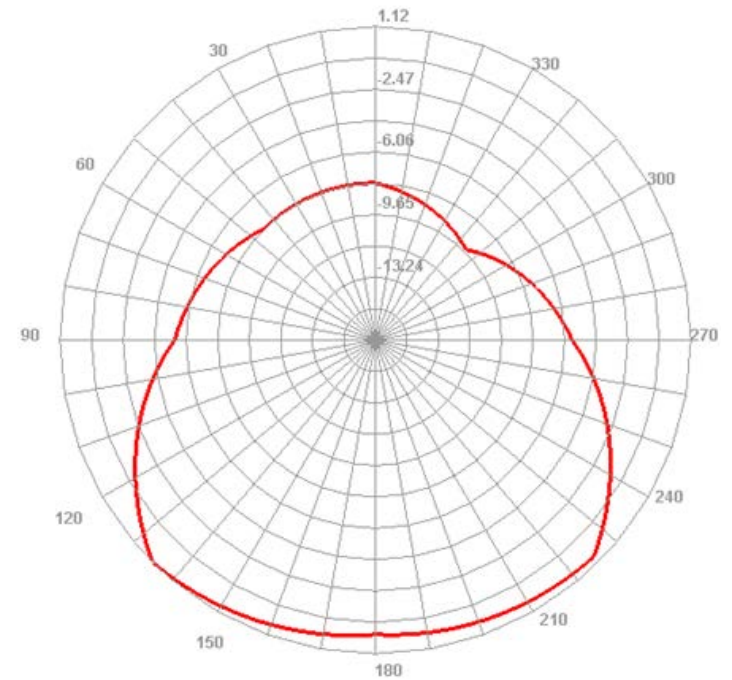
2660.000MHz H



2660.000MHz E1

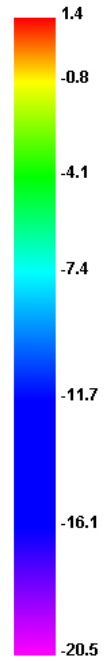
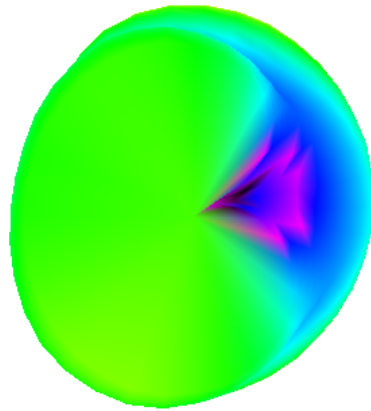


2660.000MHz E2

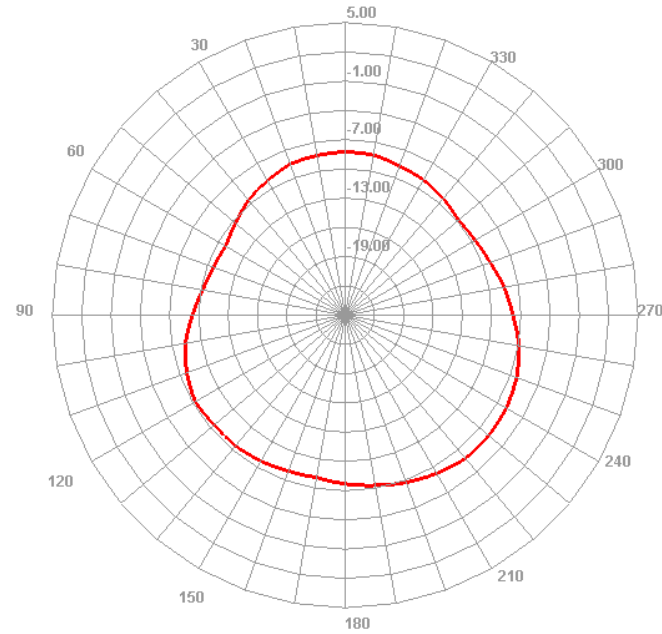


Efficient (2.4G-WIFI/BT 2400-2500MHz)

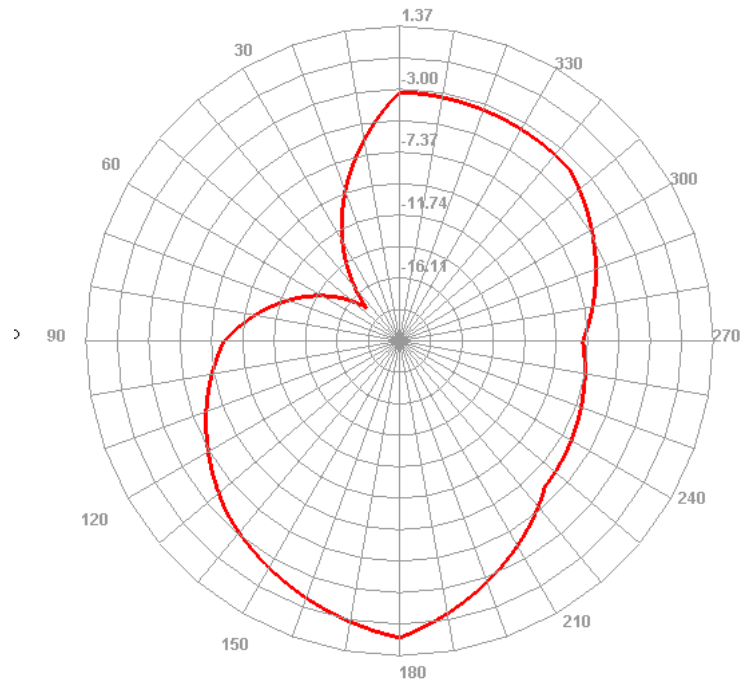
2450.000MHz



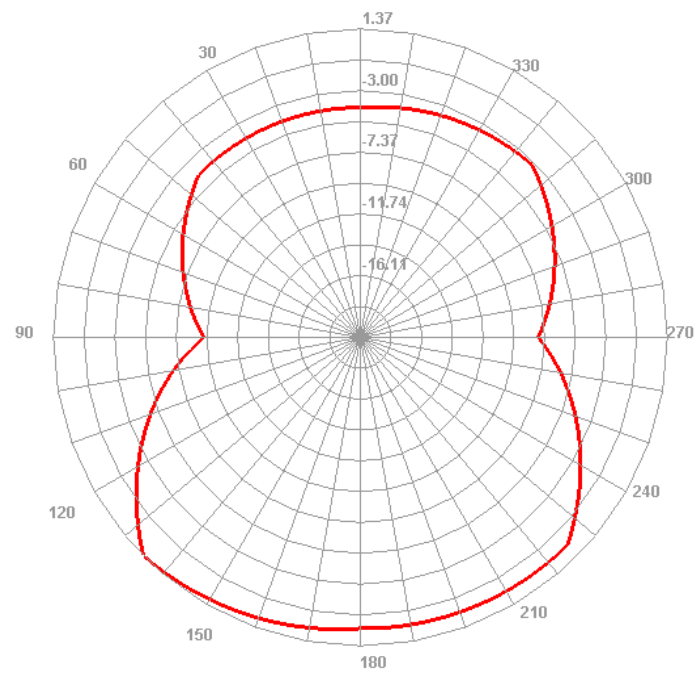
2450.000MHz H



2450.000MHz E1

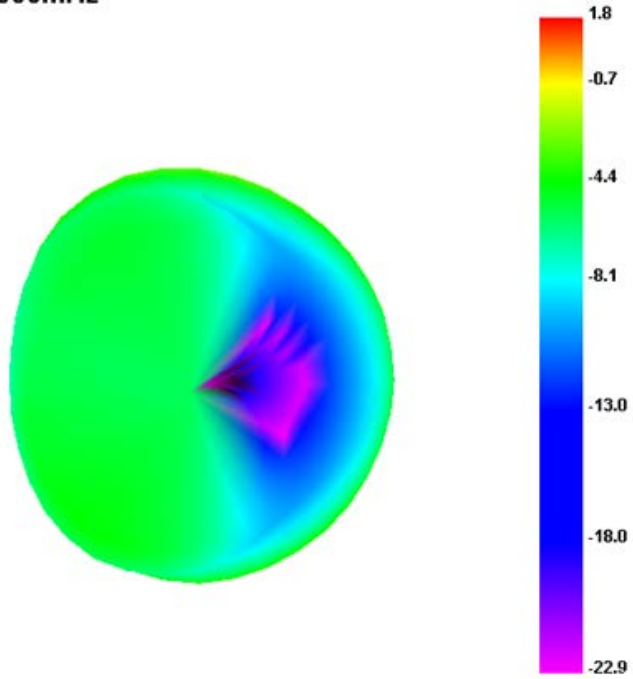


2450.000MHz E2

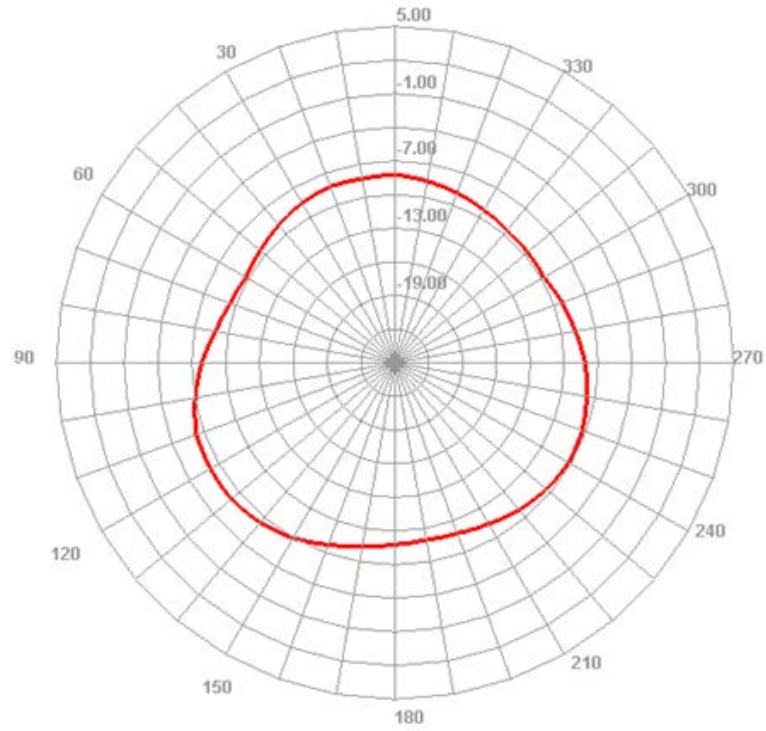


Efficient (5G-WIFI 5000-5250MHz)

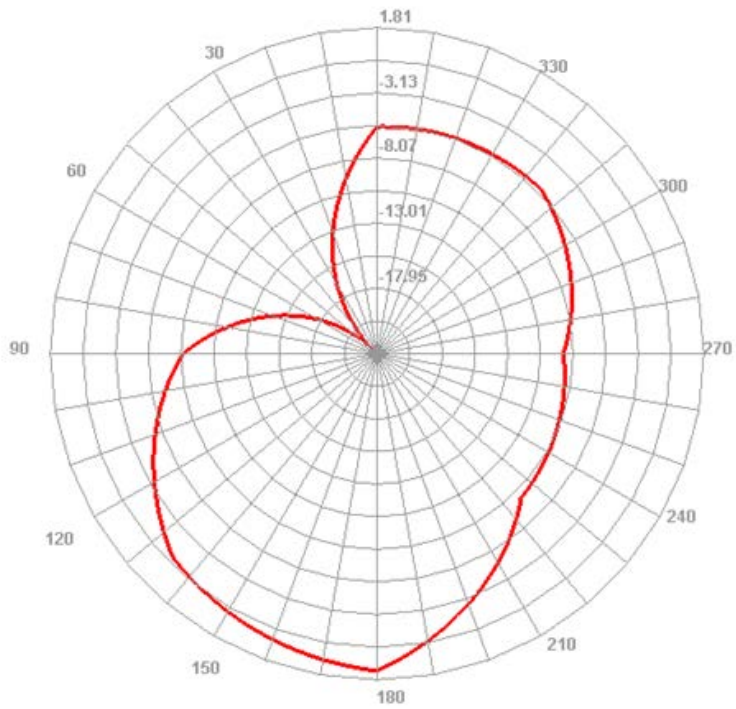
5150.000MHz



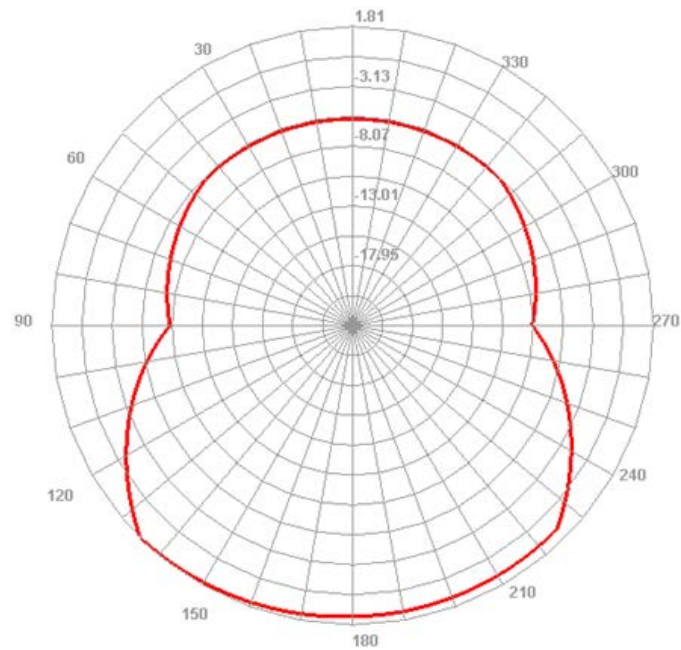
5150.000MHz H



5150.000MHz E1

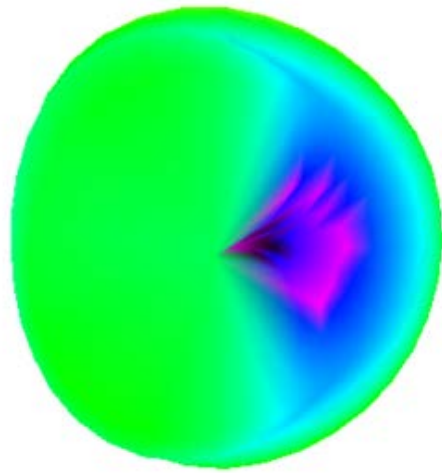


5150.000MHz E2

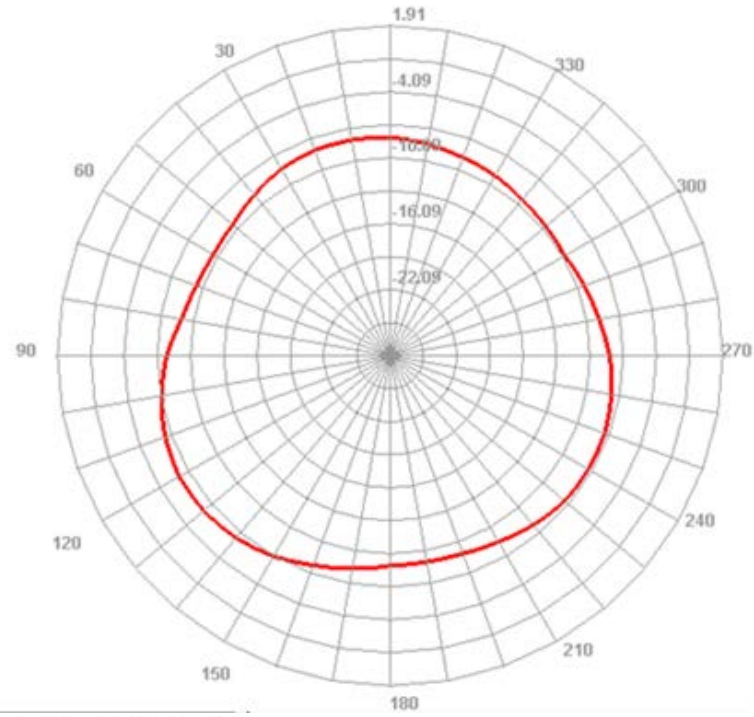


Efficient (5G-WIFI 5725-5850MHz)

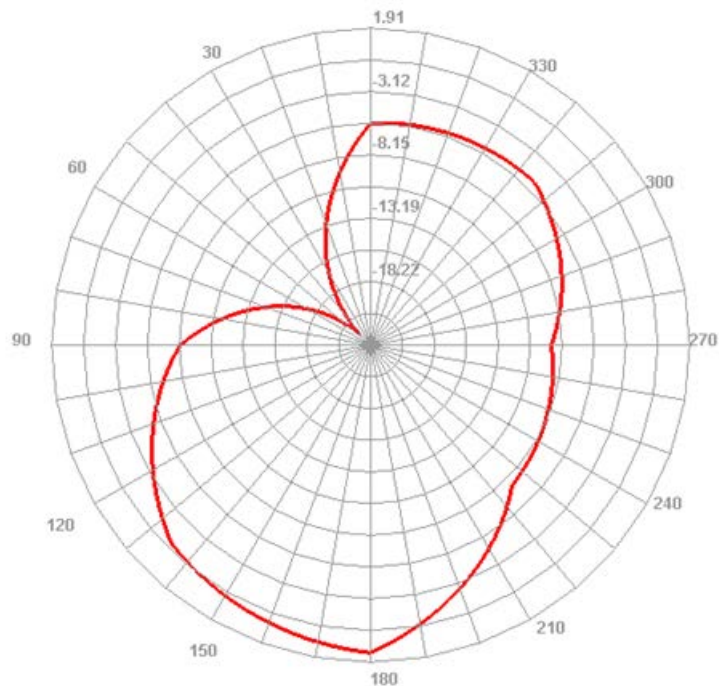
5740.000MHz



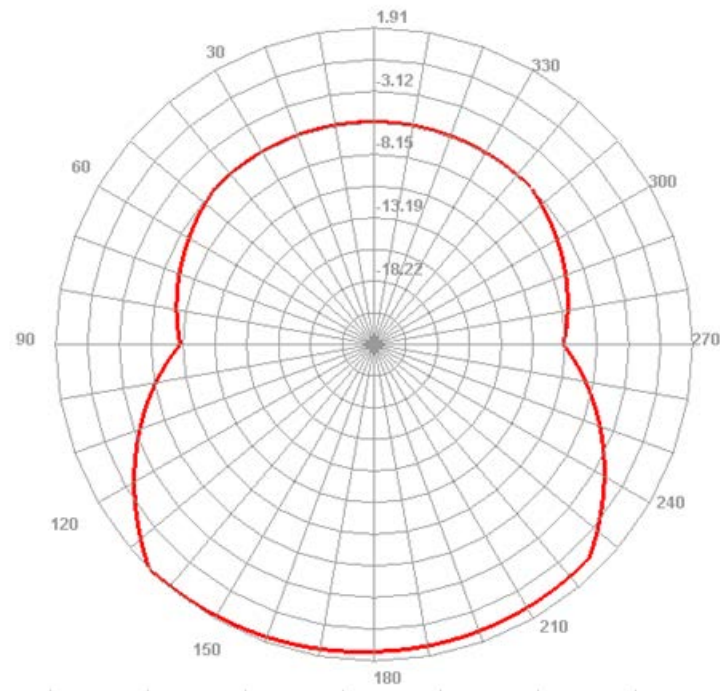
5740.000MHz H



5740.000MHz E1

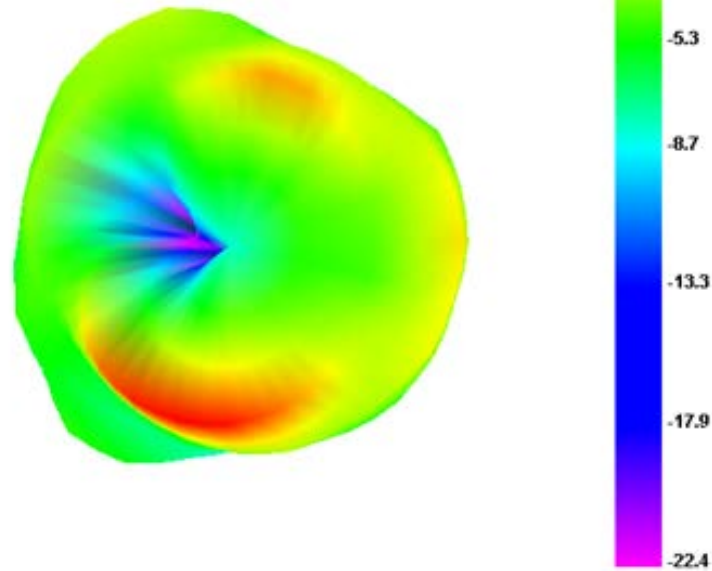


5740.000MHz E2

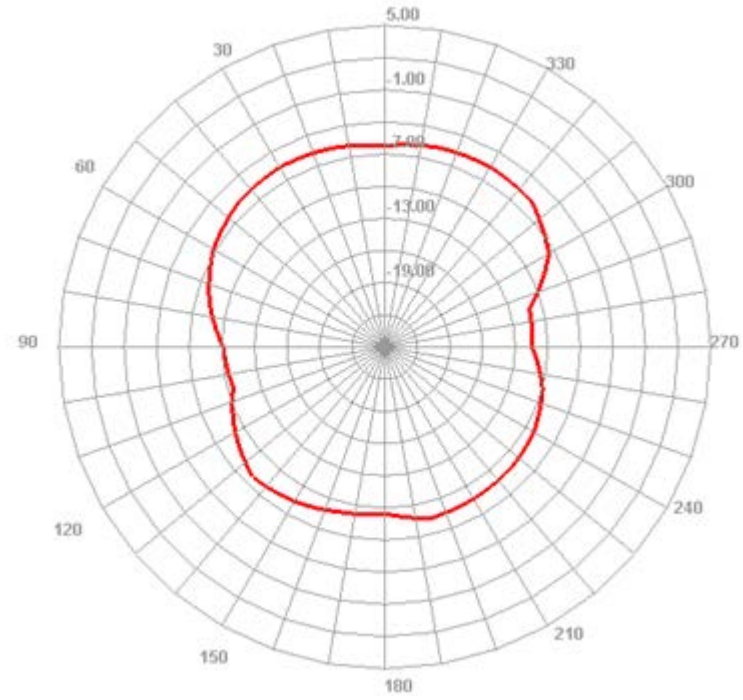


Efficient (GPS 1575.42MHz)

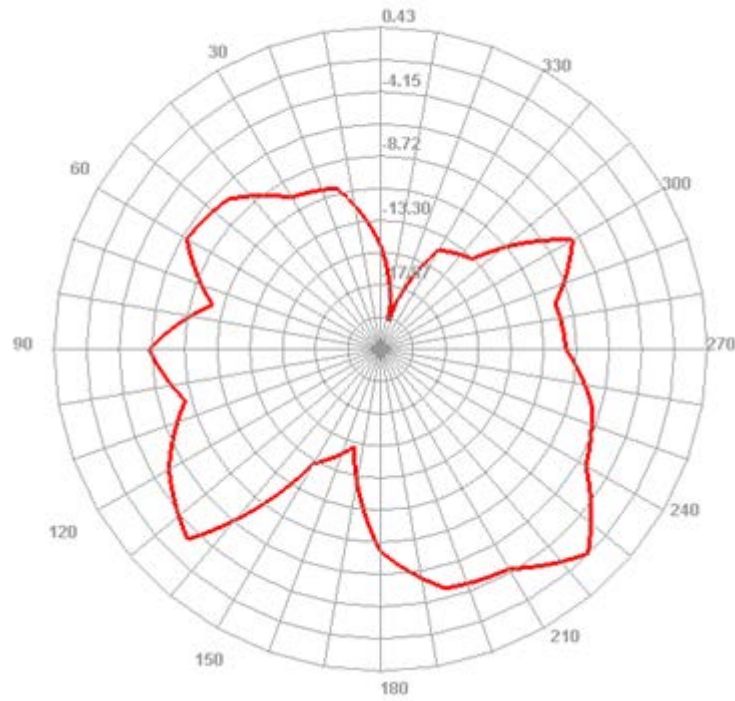
1575.491MHz



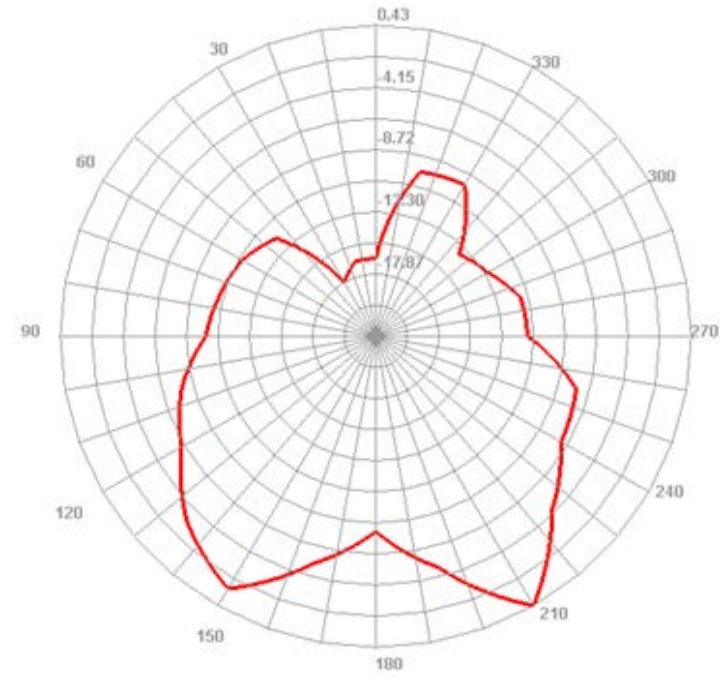
1575.491MHz H



1575.491MHz E1



1575.491MHz E2

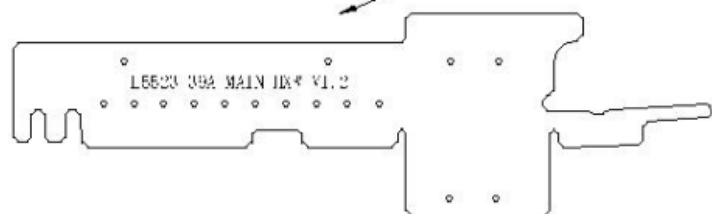


Master antenna specifications

version	Modify the content	modifier	date of revision

Shape - screen printing →

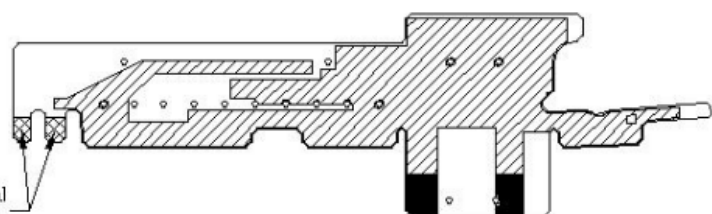
Subblack ink silk screen printing
bright black characters



substrate	half to 1/3	✓
	half and half	
	4 pair and a half	
	one-to-one	

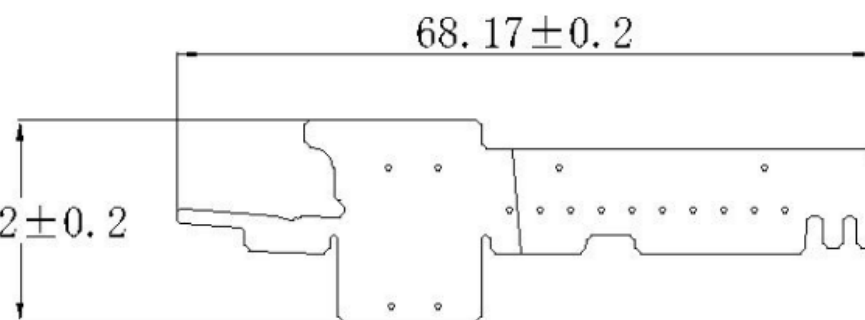
Total thickness $0.12 \pm 0.03\text{mm}$

No ink is needed
in this area



Finished product drawing-front

19.82 ± 0.2



Hand tear line back glue map-back

68.17 ± 0.2

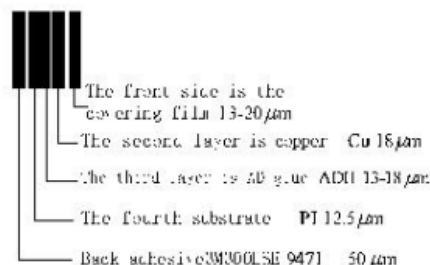
A

- ☑ V0.1
- ☑ V0.2
- ☑ V0.3
- ☑ V0.4
- ☑ V0.5
- ☑ V0.6
- ☑ V0.7
- ☑ V0.8
- ☑ V0.9
- ☑ V0.10

NOTES:

1. Gunned paper: 3M300LSE;
2. The gold finger has a gilded surface $0.5 \sim 3\mu$; Attention to materials, No oxidation is allowed in this position.
3. The overall thickness should be less than or equal to 0.12mm ;
4. Precise tolerance range: $\pm 0.03\text{mm}$;
5. Only the product diagram is allowed to conduct electricity;

Amplification at A

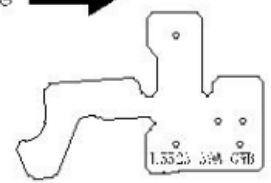


Huaxin Micro Communication Technology Co. LTD			
	unit: mm	name: FPC	date: 2023-09-06
General tolerance:		Material number: L5523 396 GSM	design: zhushunshen
∅	± 0.5	material: FPC+3M9471	RF:
.X	± 0.25		
.XX	± 0.05	Surface treatment: clean	confirm:
.XXX	± 0.05		
ANGULAR	$\angle = 0.5^\circ$	color:	proportion: 1:1
		version: A	

GPS/WIFI/BT Specifications

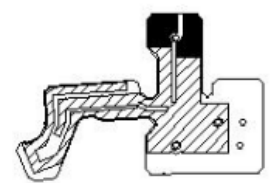
version	Modify the content	modifier	Date of revision

Shape - screen printing

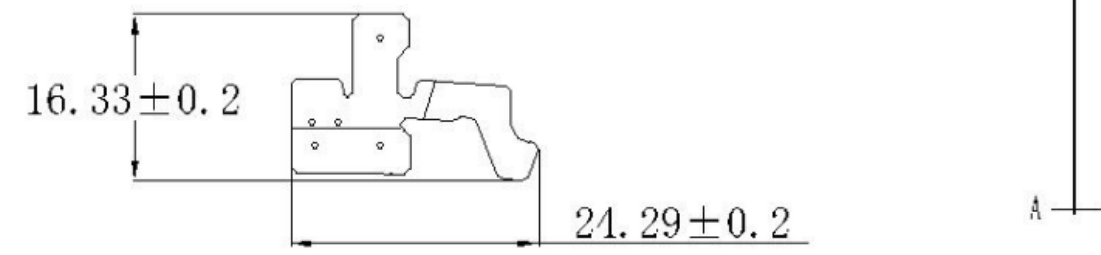


Subblack ink silk screen printing
bright black characters

substrate	Half to 1/3	✓
	Half and half	
	5 pair and a half	
	one-to-one	



Total thickness $0.12 \pm 0.03\text{mm}$



Finished product drawing-front

Hand tear line back glue map-back

- ☑ V0.1
- ☑ V0.2
- ☑ V0.3
- ☑ V0.4
- ☑ V0.5
- ☑ V0.6
- ☑ V0.7
- ☑ V0.8
- ☑ V0.9
- ☑ V0.10

NOTES:

1. Gunned paper: 3M300LSE;
2. The gold finger has a gilded surface $0.5 \sim 3\mu$; Attention to materials, No oxidation is allowed in this position.
3. The overall thickness should be less than or equal to 0.12mm ;
4. Precise tolerance range: $\pm 0.03\text{mm}$;
5. Only the product diagram is allowed to conduct electricity;

Amplification at A

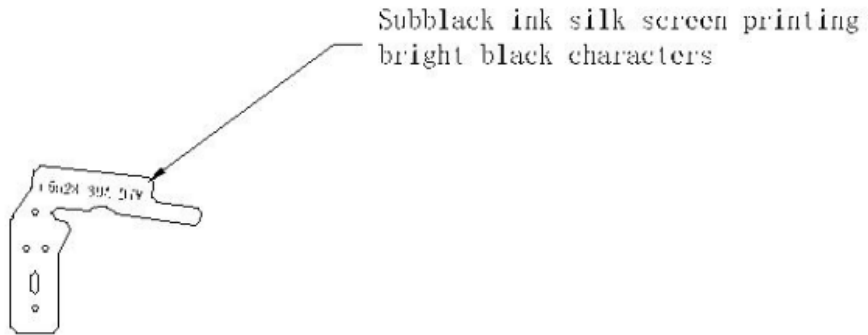


Huaxin Micro Communication Technology Co. LTD			
	unit: mm	name: FPC	date: 2023-09-06
General tolerance:		Material number: 1.5523 39A G7B	design: zhusunster
±	±0.5	material: FPC+3M9471	R F:
.X	±0.25		
.XX	±0.05	Surface treatment: clean	confirm:
.XXX	±0.05		
ANGULAR	$\angle = 0.5^\circ$	color:	proportion: 1:1 version: A

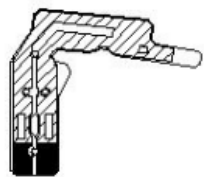
Diversity antenna specifications

version	Modify the content	modifier	date of revision

Shape - screen printing →



substrate	Half to 1/3	✓
	Half and half	
	A pair and a half	
	one-to-one	



18.64 ± 0.2

Total thickness $0.12 \pm 0.03\text{mm}$

16.33 ± 0.2

A

Finished product drawing-front

Hand tear line back glue map-back

- ☑ V0.1
- ☑ V0.2
- ☑ V0.3
- ☑ V0.4
- ☑ V0.5
- ☑ V0.6
- ☑ V0.7
- ☑ V0.8
- ☑ V0.9
- ☑ V0.10

NOTES:

1. Gunned paper: 3M300LSE;
2. The gold finger has a gilded surface $0.5 \sim 3\mu$; Attention to materials, No oxidation is allowed in this position.
3. The overall thickness should be less than or equal to 0.12mm ;
4. Precise tolerance range: $\pm 0.03\text{mm}$;
5. Only the product diagram is allowed to conduct electricity;

Amplification at A



Huaxin Micro Communication Technology Co. LTD			
	unit: mm	name: FPC	date: 2023-09-06
General tolerances:		Material number: L5523 39% LTF	design: zhushunshen
±	±0.5	material: FPC+3M9471	R F:
.X	±0.25	Surface treatment: clean	confirm:
.XX	±0.05	color:	proportion: 1:1
.XXX	±0.05	version: A	
ANGULAR	$\angle = 0.5^\circ$		