



ShenZhen Huaxinwei communication technology
Co.,Ltd.

Antenna test report

Customer Name: Hua Yue Shi Tong

Project Name: L5009D

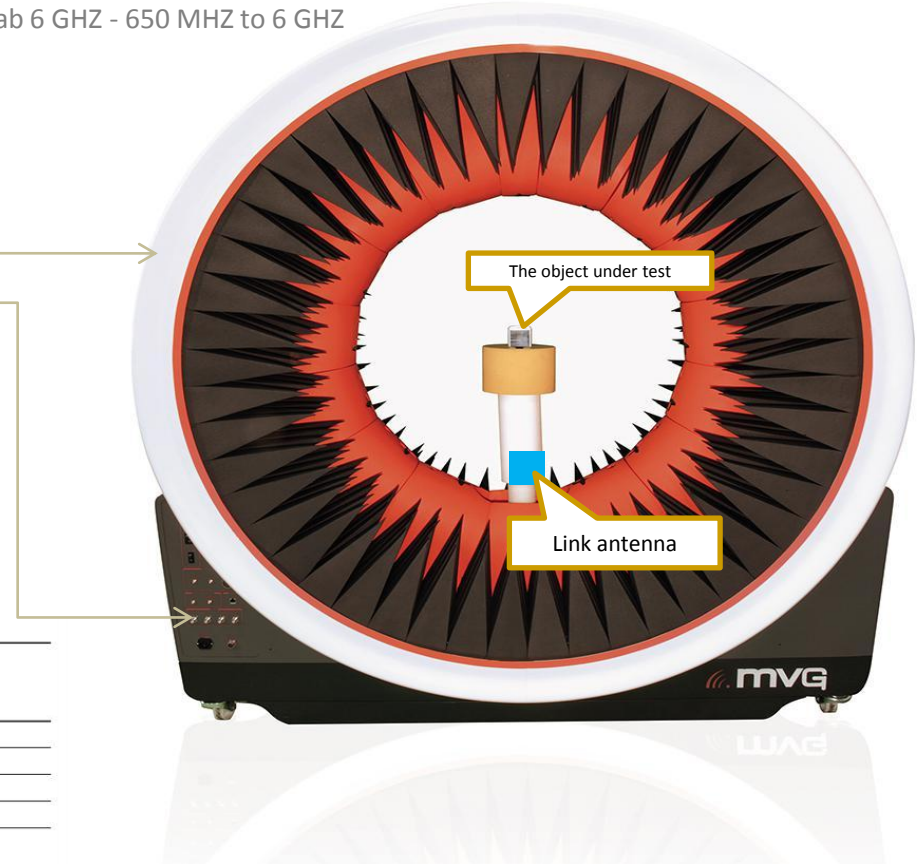
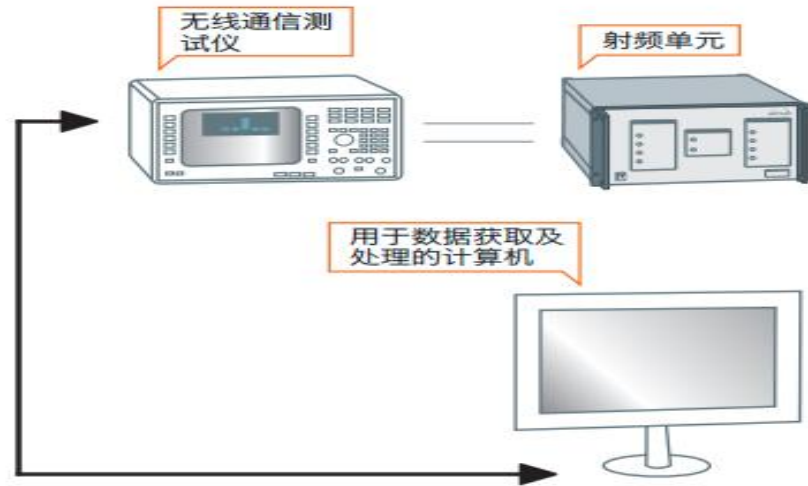
Designer: Zhang Jun

Date: 2022/10/26

The customer name		Hua Yue Shi Tong	Project Name	L5009D
NO.	project	Detailed above		
1	spectrum	GSM850/900/1800/1900+WCDMA-B1/2/5/8+LTE-B2/3/4/7/17+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

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



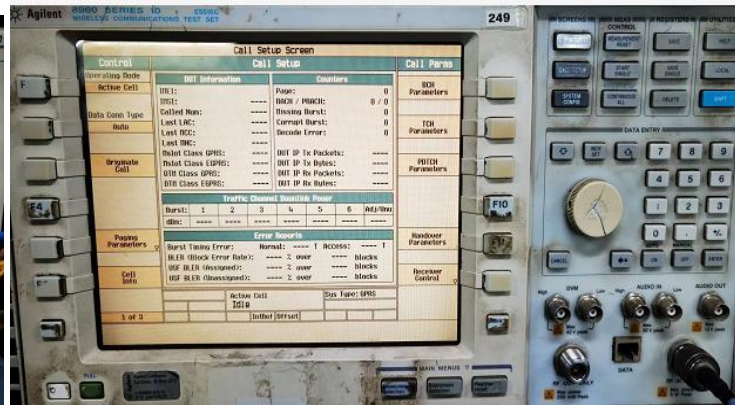
TIS预计测量时间 (一个信道每隔30° 取样)

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



Test Equipment



Antenna position

WWAN LB antenna



GPS/WIFI/BT antenna



WWAN M&H antenna

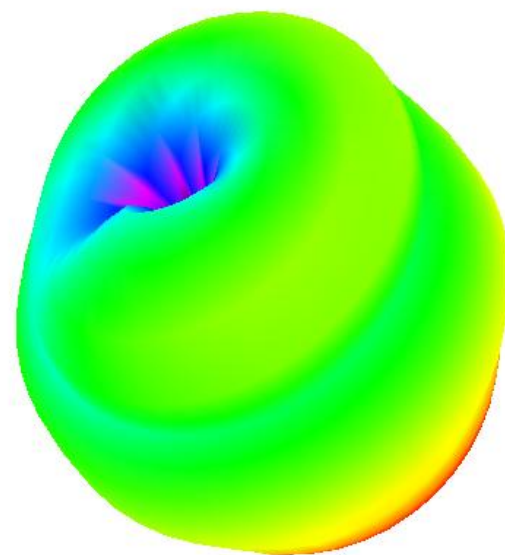


Efficient (2G+3G+4G+2. 4G-WiFi /BT)

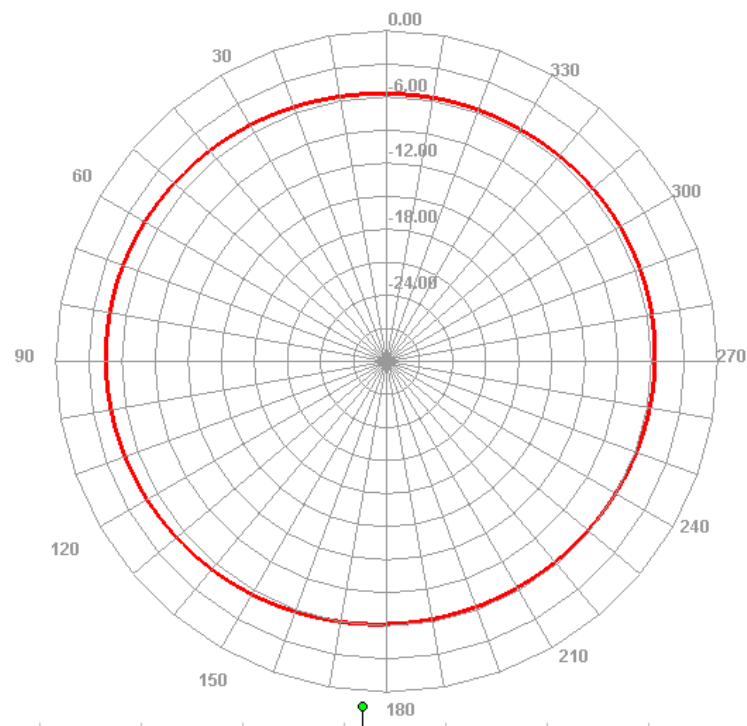
PEAK GAIN		
2G:		
GSM850	824~894Mhz	-0.71
GSM900	880~960Mhz	-1.05
DCS1800	1710~1880Mhz	0.63
PCS1900	1850~1990Mhz	0.81
3G:		
W1	1920~2170Mhz	0.92
W2	1850~1990Mhz	0.81
W5	824~894Mhz	-0.71
W8	880~960Mhz	-1.05
4G:		
LTE-B2	1850~1990Mhz	0.81
LTE-B3	1710~1880Mhz	0.63
LTE-B4	1710~2155Mhz	0.92
LTE-B7	2500~2690Mhz	1.12
LTE-B17	704~746Mhz	-1.42dBi
WIFI	2400~2500Mhz	2.08dBi
BT	2400~2500Mhz	2.08dBi

Efficient (LTE-B17 704~746 MHz)

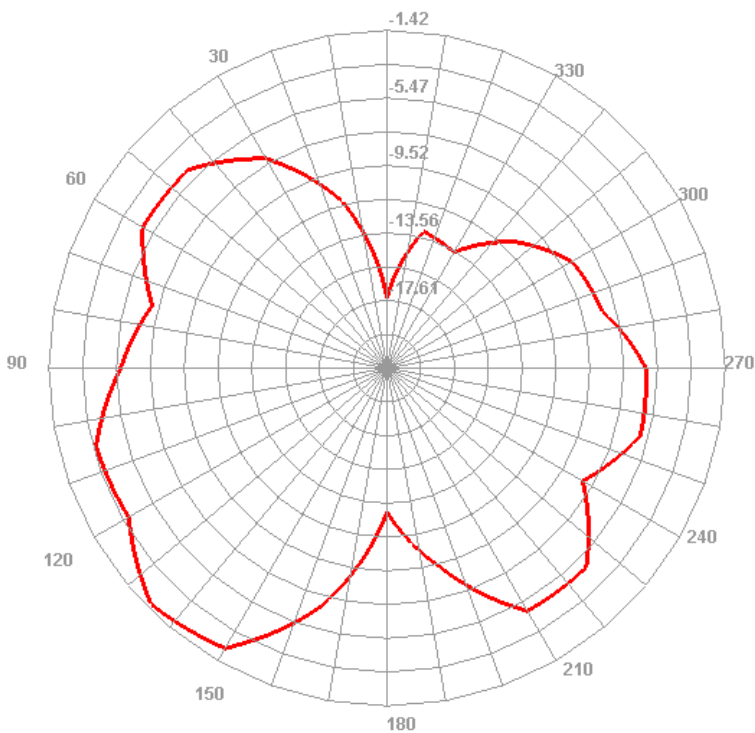
710.000MHz



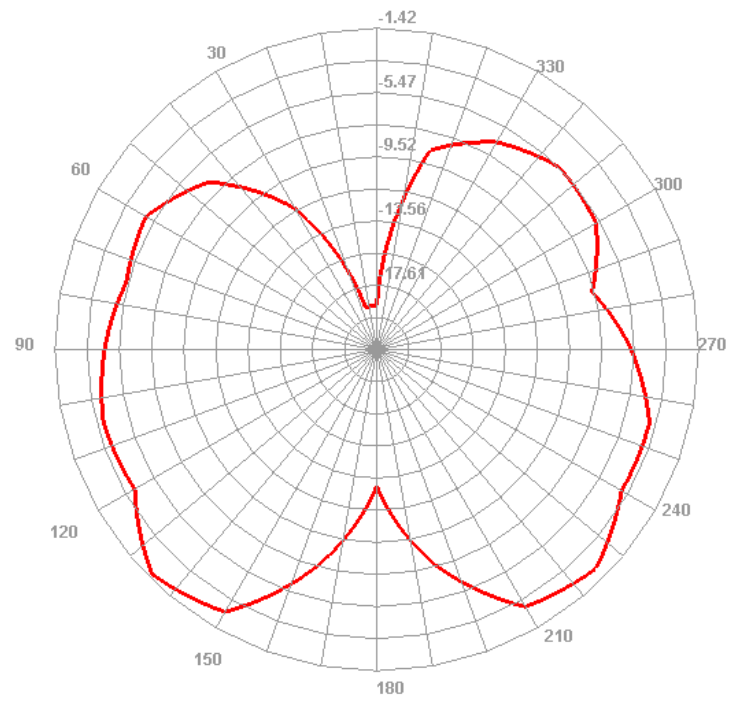
710.000MHz H



710.000MHz E1

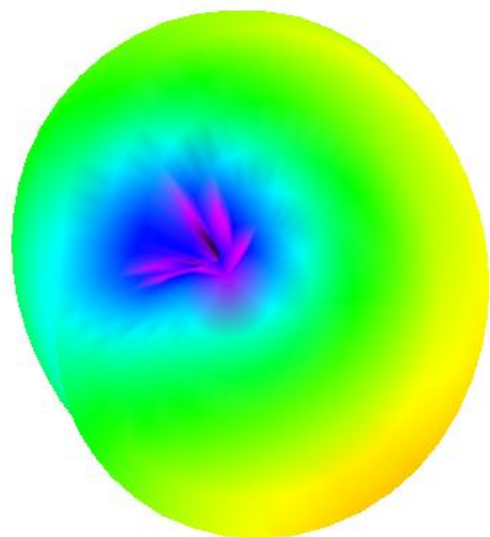


710.000MHz E2

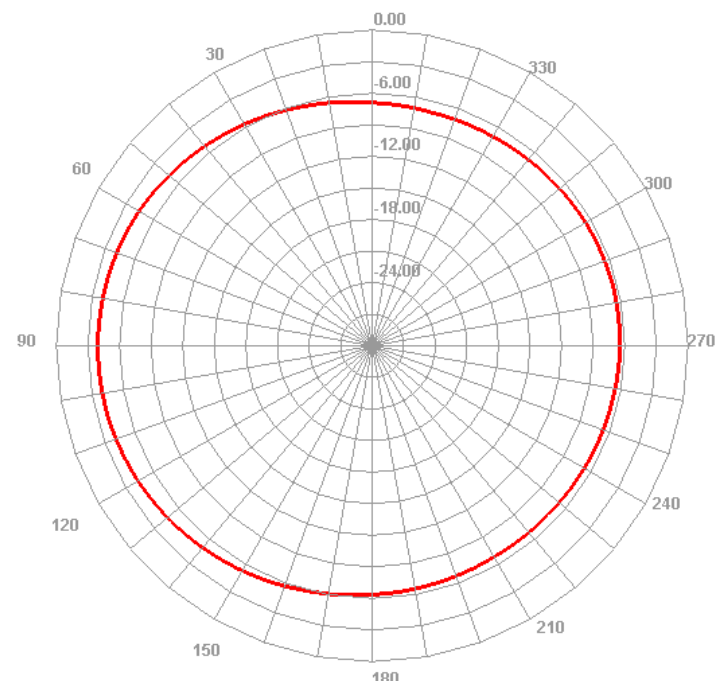


Efficient (GSM850+W5)

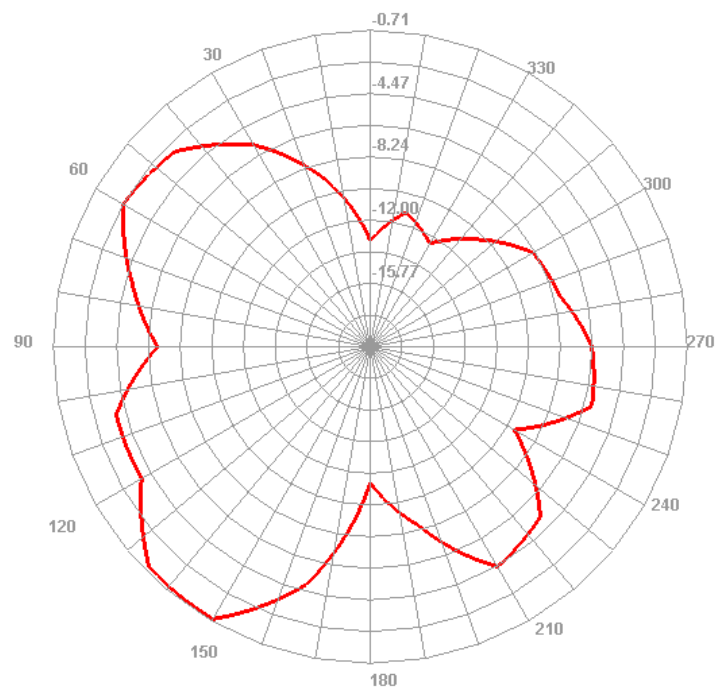
830.000MHz



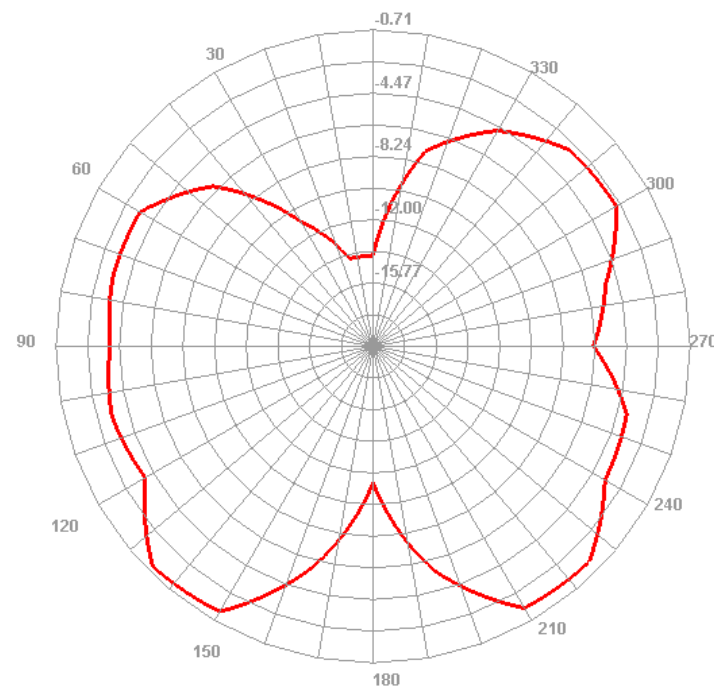
830.000MHz H



830.000MHz E1

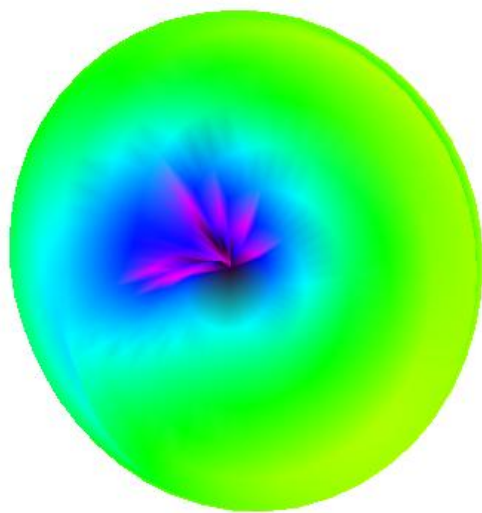


830.000MHz E2

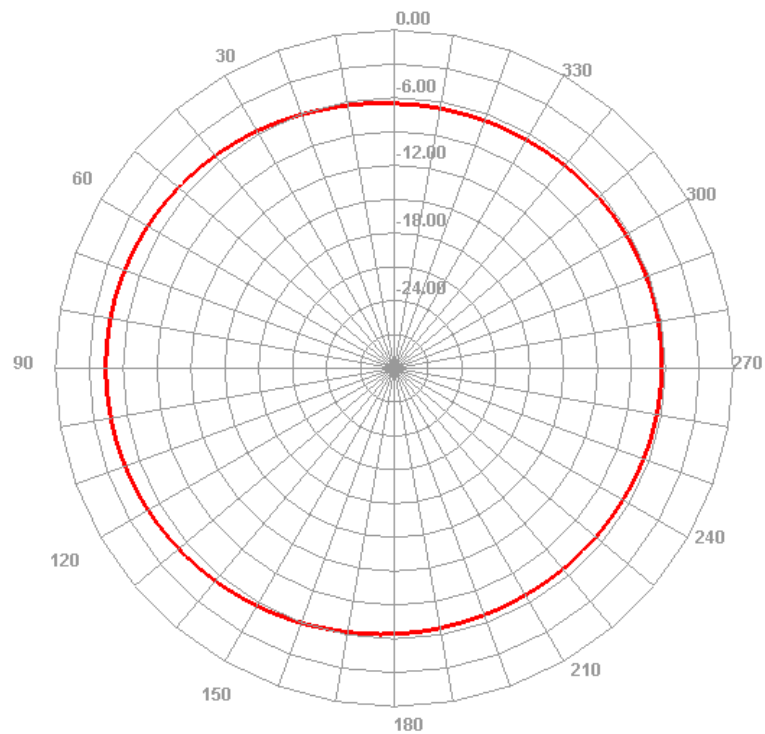


Efficient (GSM900+W8 880~960MHz)

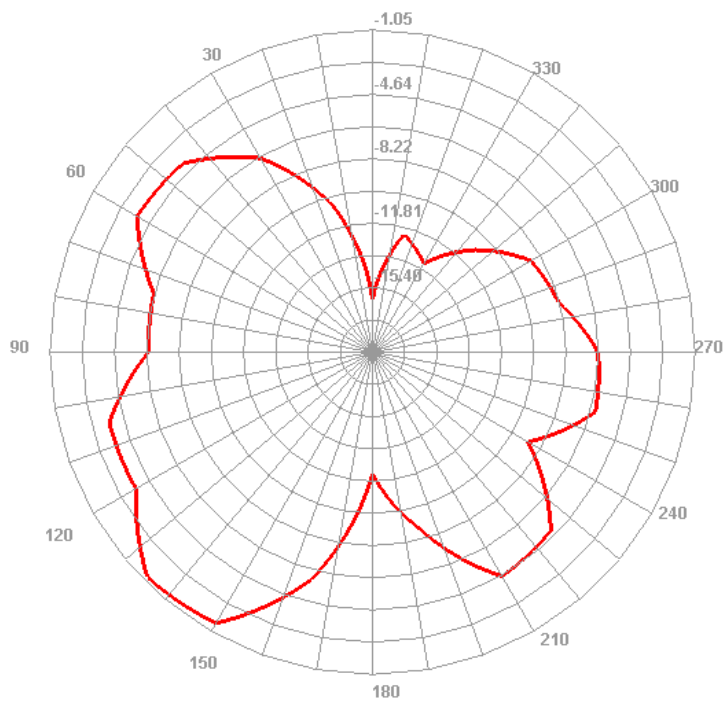
900.000MHz



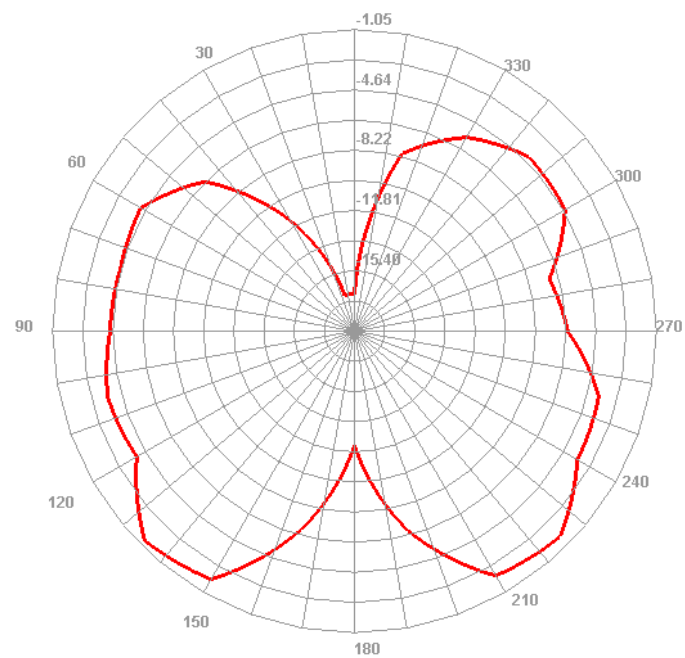
900.000MHz H



900.000MHz E1

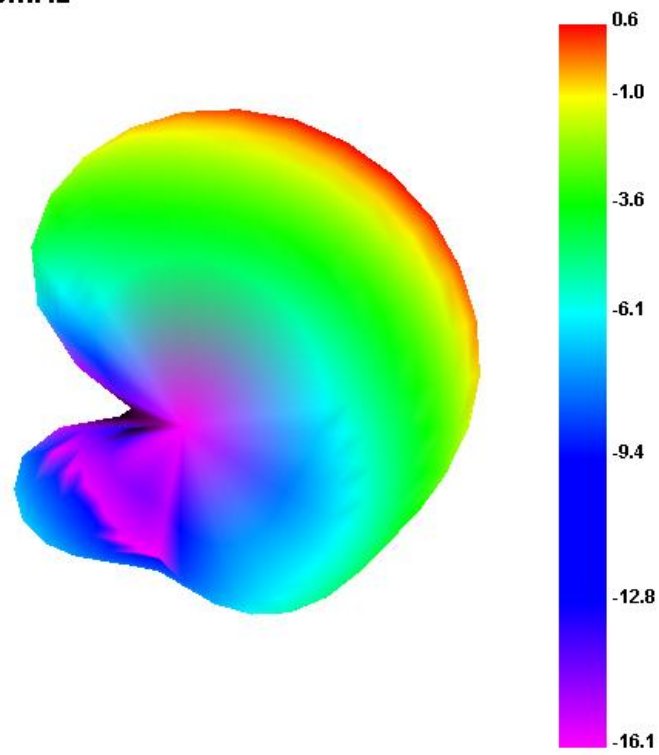


900.000MHz E2

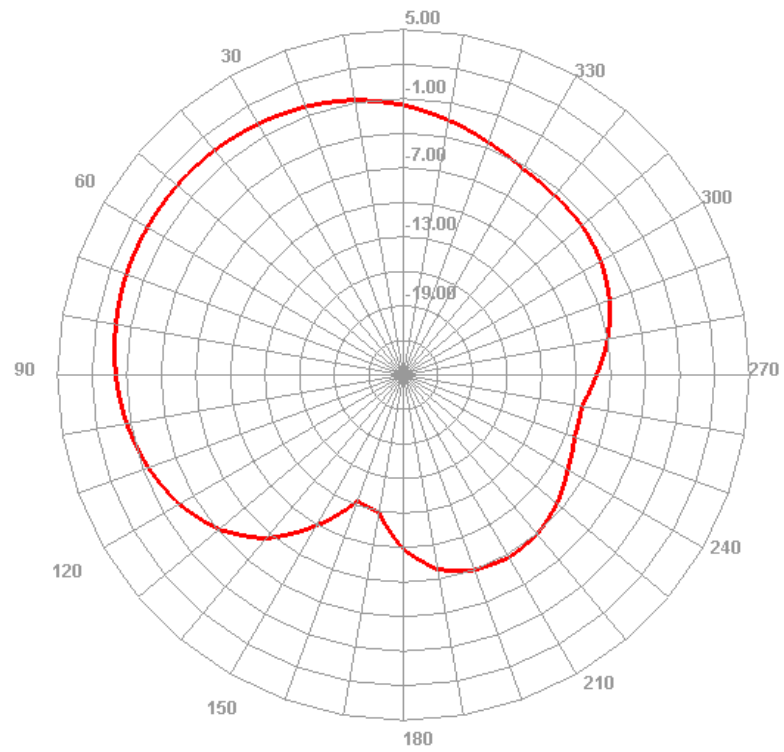


Efficient (GSM1800+LTE-B3 1710~1880 MHz)

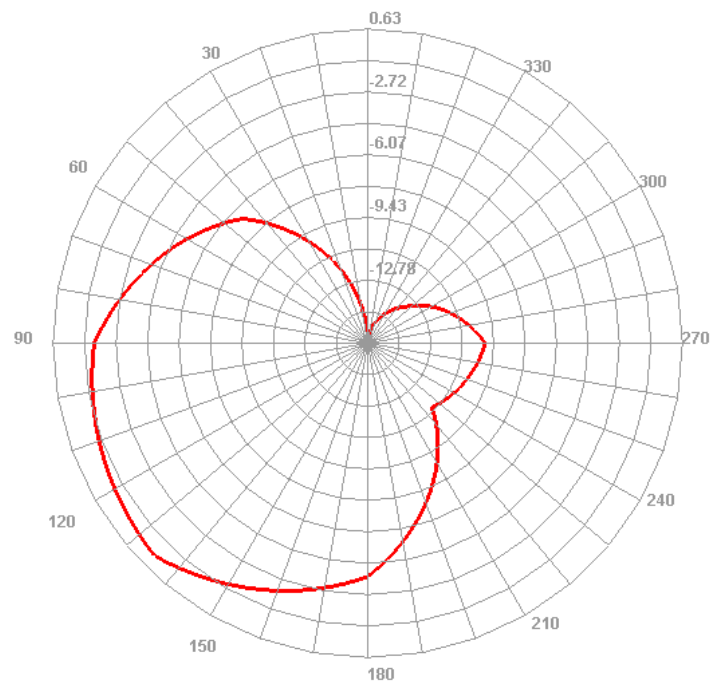
1820.000MHz



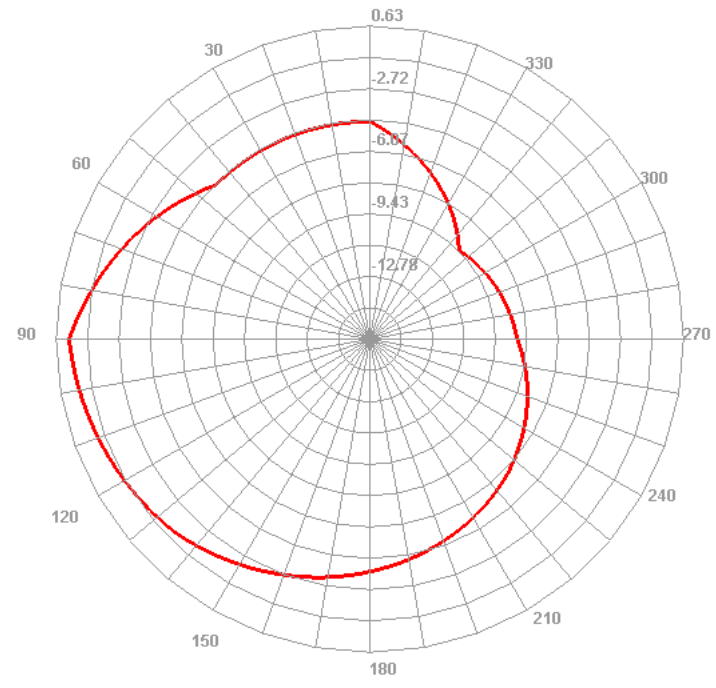
1820.000MHz H



1820.000MHz E1

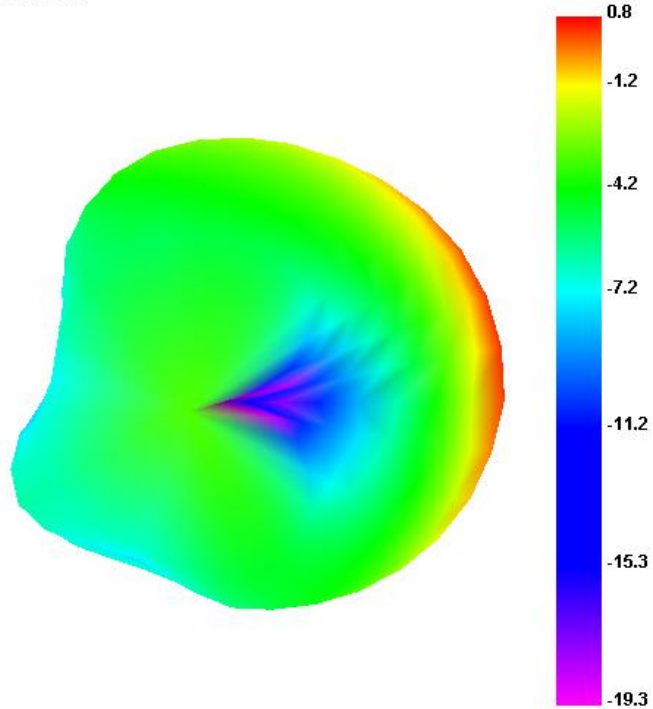


1820.000MHz E2

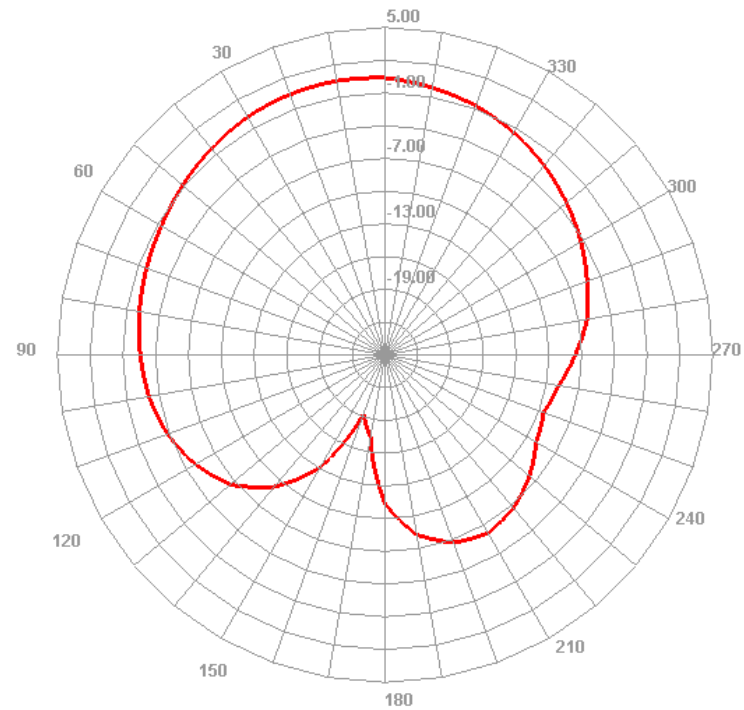


Efficient (GSM1900+W2+LTE-B2 1850~1990 MHz)

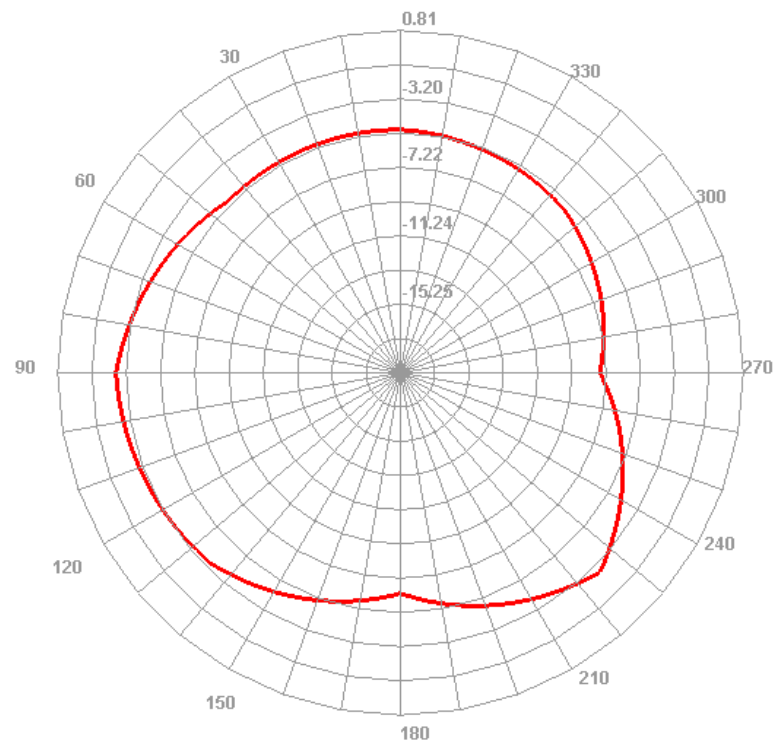
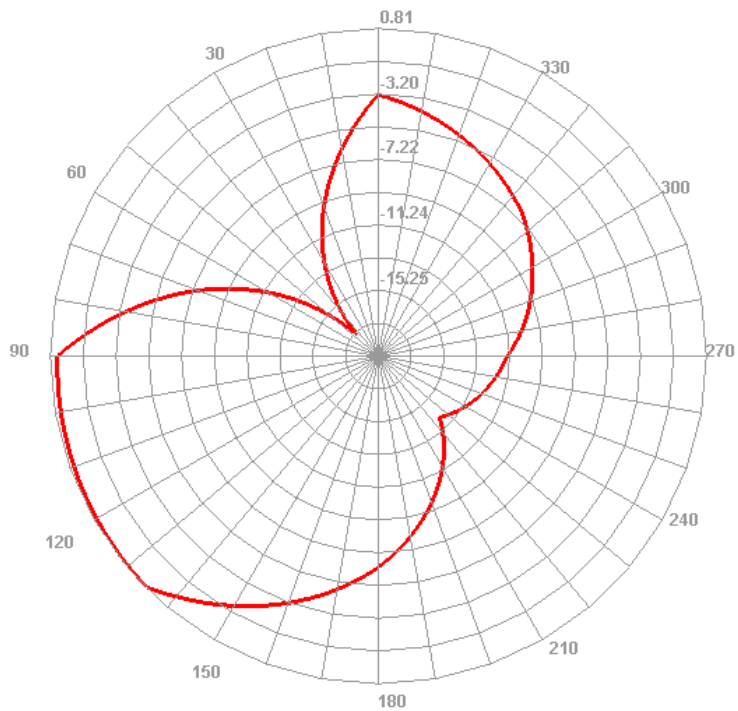
1920.000MHz



1920.000MHz H

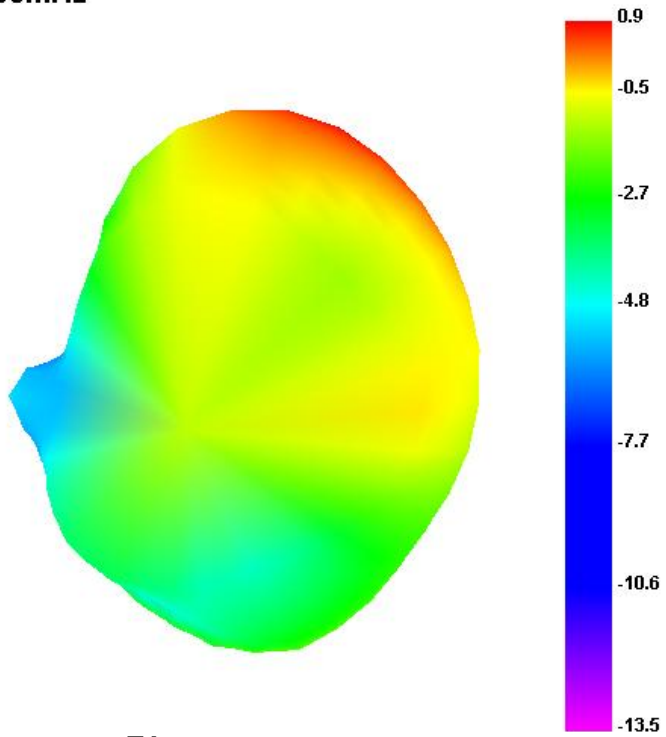


1920.000MHz E1

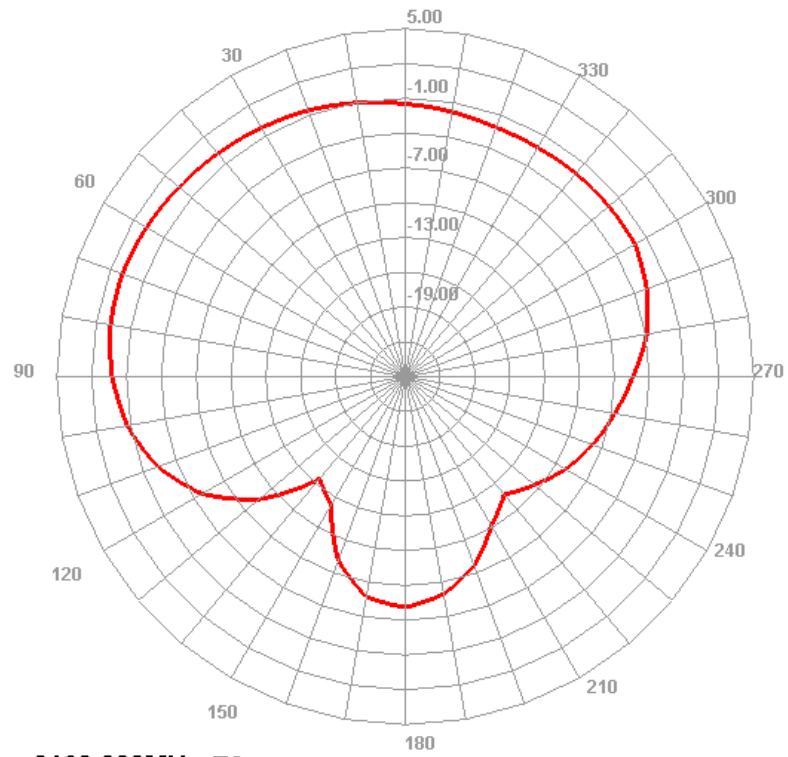


Efficient (W1/4+LTE-B1/4 1710~2170MHz)

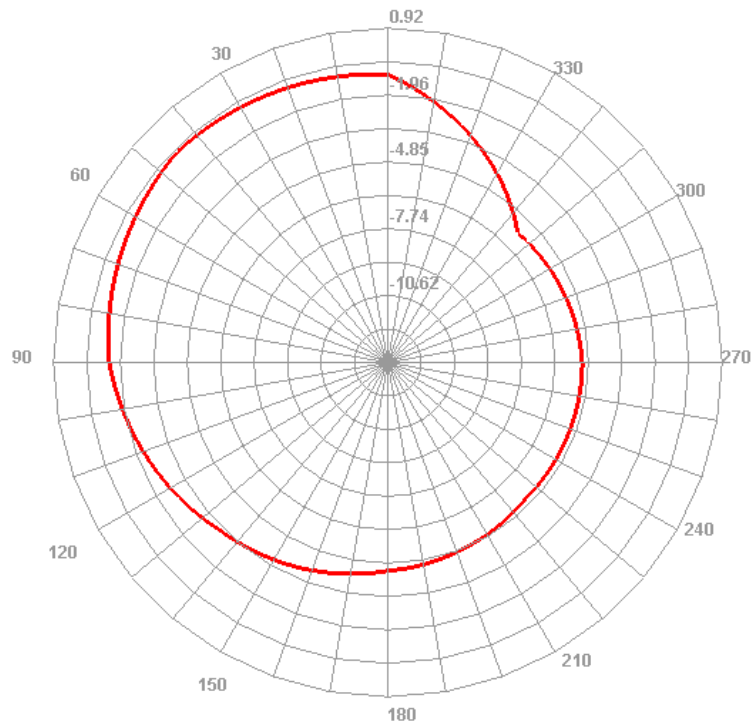
2160.000MHz



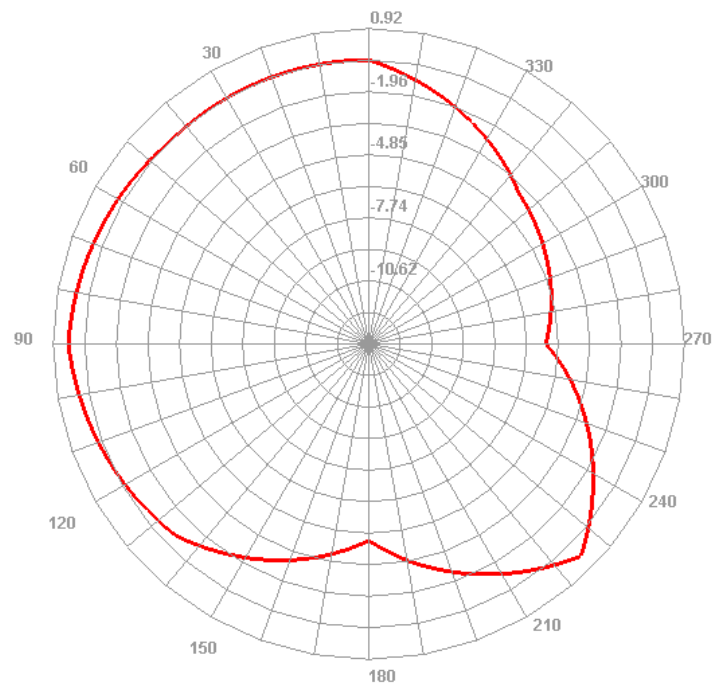
2160.000MHz H



2160.000MHz E1

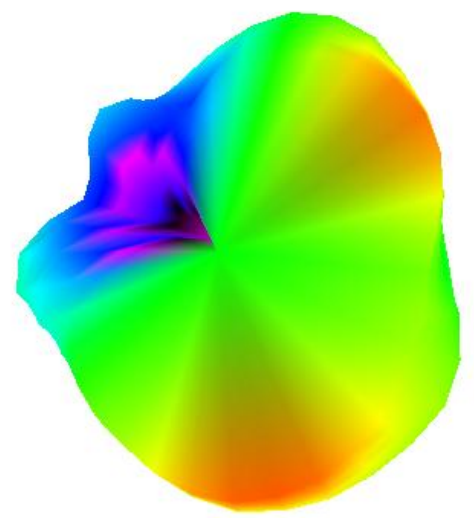


2160.000MHz E2

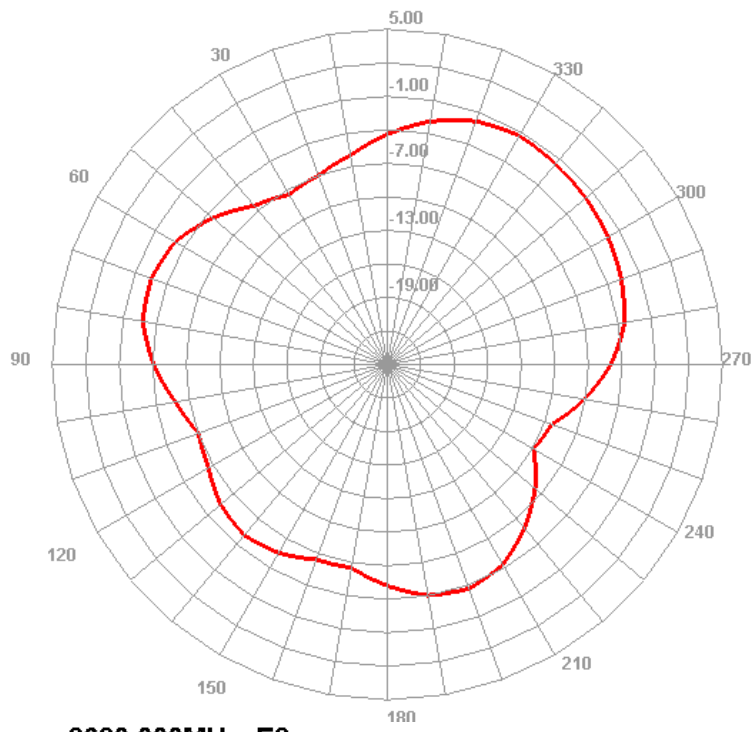


Efficient (LTE-B7 2500~2690MHz)

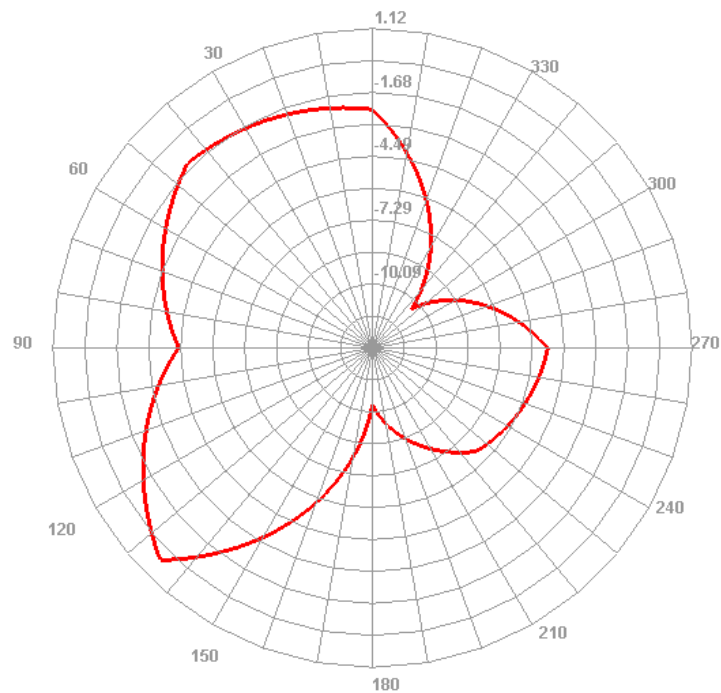
2680.000MHz



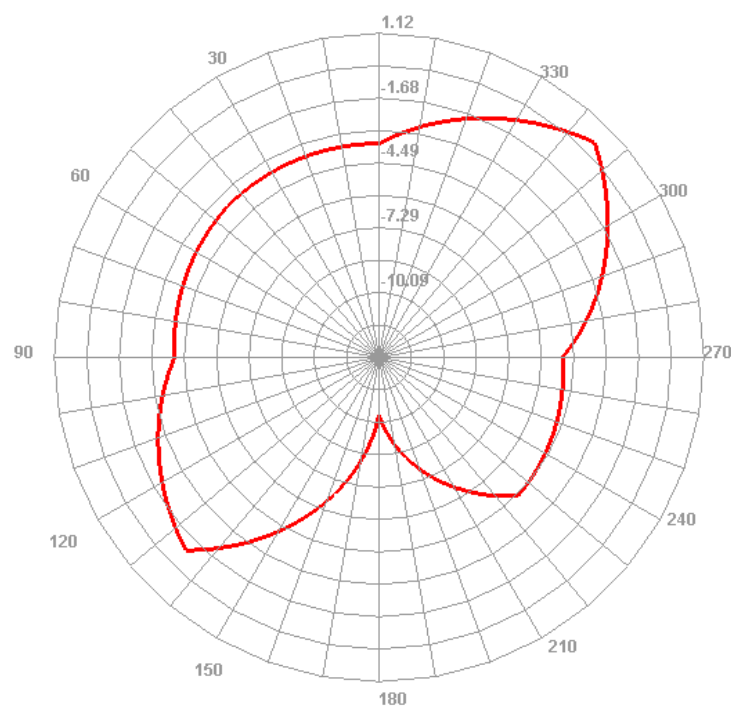
2680.000MHz H



2680.000MHz E1

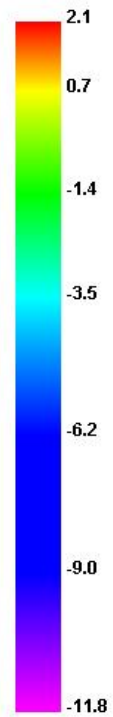
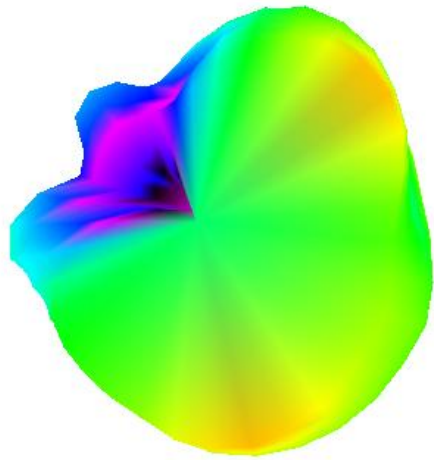


2680.000MHz E2

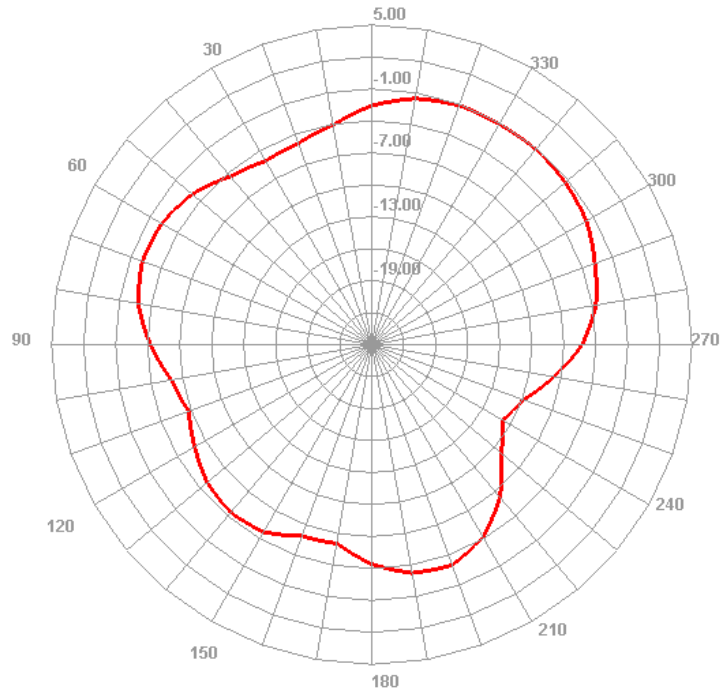


Efficient (2.4GWIFI/BT)

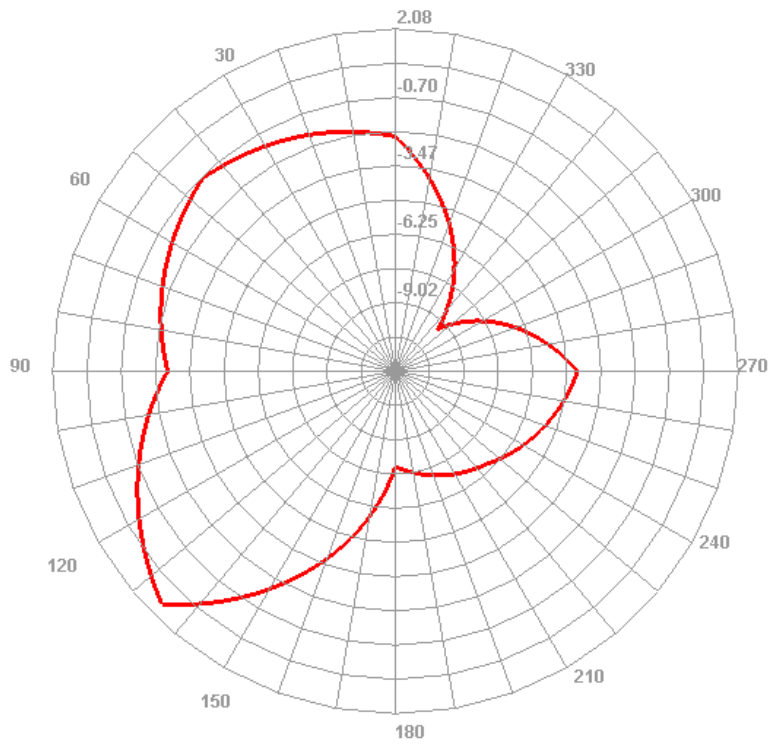
2440.000MHz



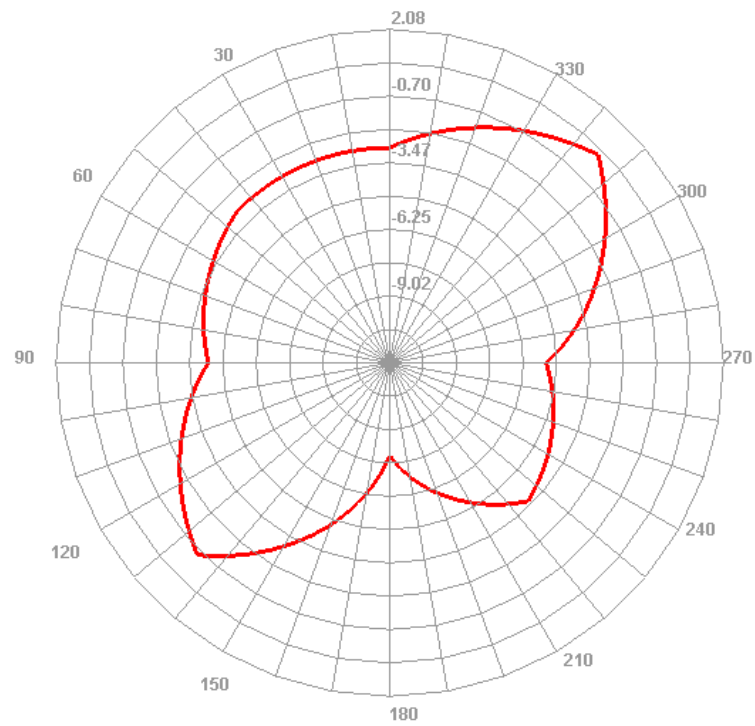
2440.000MHz H



2440.000MHz E1



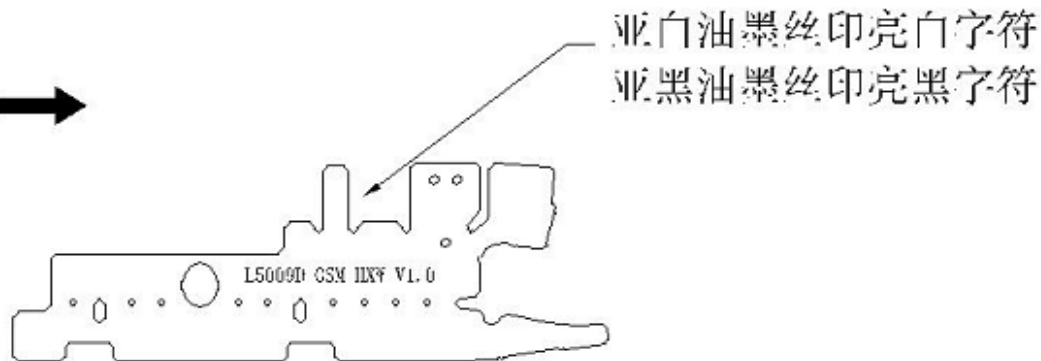
2440.000MHz E2



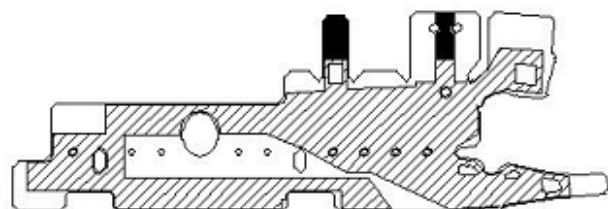
Master antenna specifications

版本	修改内容	修改者	修改日期

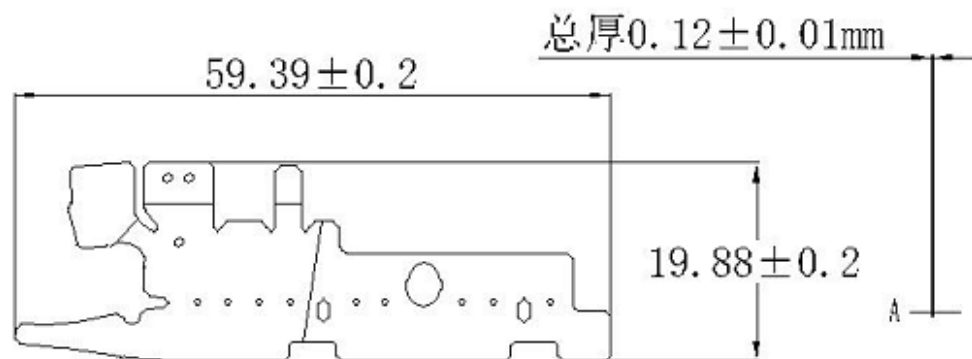
外形+丝印 →



基材	半双1/3	✓
	半双半	
	一大半	
	一大一	



成品图-正面



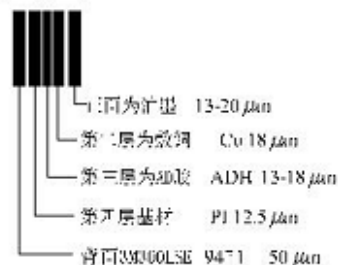
手撕线背胶图-背面

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

NOTES:

1. 胶纸为: 3M300LSE;
2. 金手指表面镀金 $0.5 \sim 3\mu$; 注意用材, 此位置不可有氧化现象.
3. 总体厚度应小于或等于 0.12mm ;
4. 精确公差范围: $\pm 0.03\text{mm}$;
5. 只允许产品图导电;

A 处放大

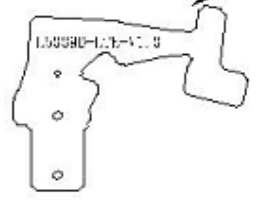


华信微通信技术有限公司			
	单位: mm	名称: FPC	日期: 2022-10-21
一般公差:		料号: L5009D-GSM	设计: 朱顺身
.5	± 0.5	材质: FPC1349471	R F:
.X	± 0.25	表面处理: 清洁	确认:
.XX	± 0.05	颜色:	比例: 1:1
.XXX	± 0.05	版本: A	
ANGULAR	$\angle = 0.5^\circ$		

Diversity antenna specifications

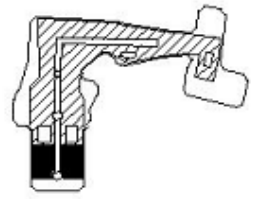
版本	修改内容	修改者	修改日期

外形+丝印 →

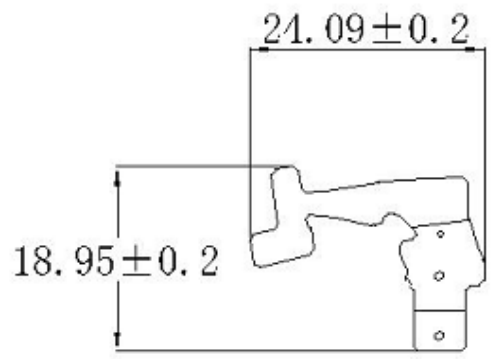


亚白油墨丝印亮白字符
亚黑油墨丝印亮黑字符

基 材	半对1/3	✓
	半对半	
	一对半	
	一对一	



成品图-正面



手撕线背胶图-背面

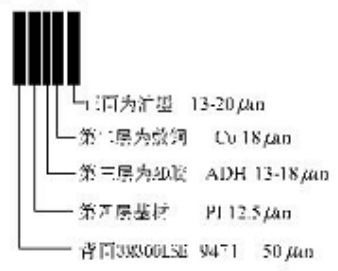
总厚0.12 ± 0.01mm



NOTES:

1. 胶纸为: 3M300LSE;
2. 金手指表面镀金0.5~3u";注意用材,此位置不可有氧化现象.
3. 总体厚度应小于或等于0.12mm;
4. 精确公差范围: ±0.03mm;
5. 只允许产品图导电;

A 处放大

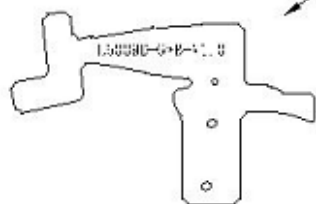


- ☑ V0.1
- ☑ V0.2
- ☑ V0.3
- ☑ V0.4
- ☑ V0.5
- ☑ V0.6
- ☑ V0.7
- ☑ V0.8
- ☑ V0.9
- ☑ V0.10

华信微通信技术有限公司			
	单位: mm	名称: FPC	日期: 2022-10-21
一般公差:		料号: 150090-LTE	设计: 朱顺身
±0.5		材质: FPC13M9471	R F:
±0.25		表面处理: 清洗	确认:
±0.05		颜色:	比例: 1:1
±0.05			版本: A
ANGULAR	∠ = 0.5°		

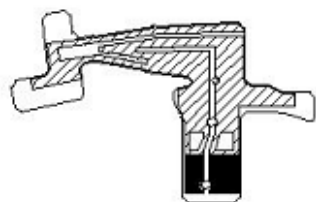
版本	修改内容	修改者	修改日期

外形+丝印 →

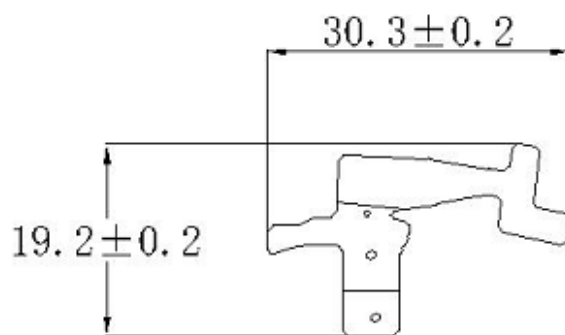


亚白油墨丝印亮白字符
亚黑油墨丝印亮黑字符

基材	半对1/3	✓
	半对半	
	一对半	
	一对一	



成品图-正面



总厚0.12 ± 0.01mm

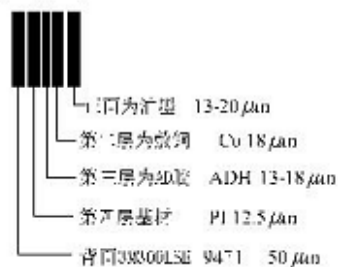
手撕线背胶图-背面

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

NOTES:

1. 胶纸为: 3M300LSE;
2. 金手指表面镀金0.5~3u";注意用材,此位置不可有氧化现象.
3. 总体厚度应小于或等于0.12mm;
4. 精确公差范围: ±0.03mm;
5. 只允许产品图导电;

A 处放大



华信微通信技术有限公司			
单位: mm 名称: FPC 日期: 2022-10-21	一般公差: .S ±0.5 .X ±0.25 .XX ±0.05 .XXX ±0.05 ANGULAR $\leq 0.5^\circ$	料号: 15009D-G/B/B 材质: FPC(3M9471) 表面处理: 清洗 颜色:	设计: 朱顺身 R F: 确认: 比例: 1:1 版本: A