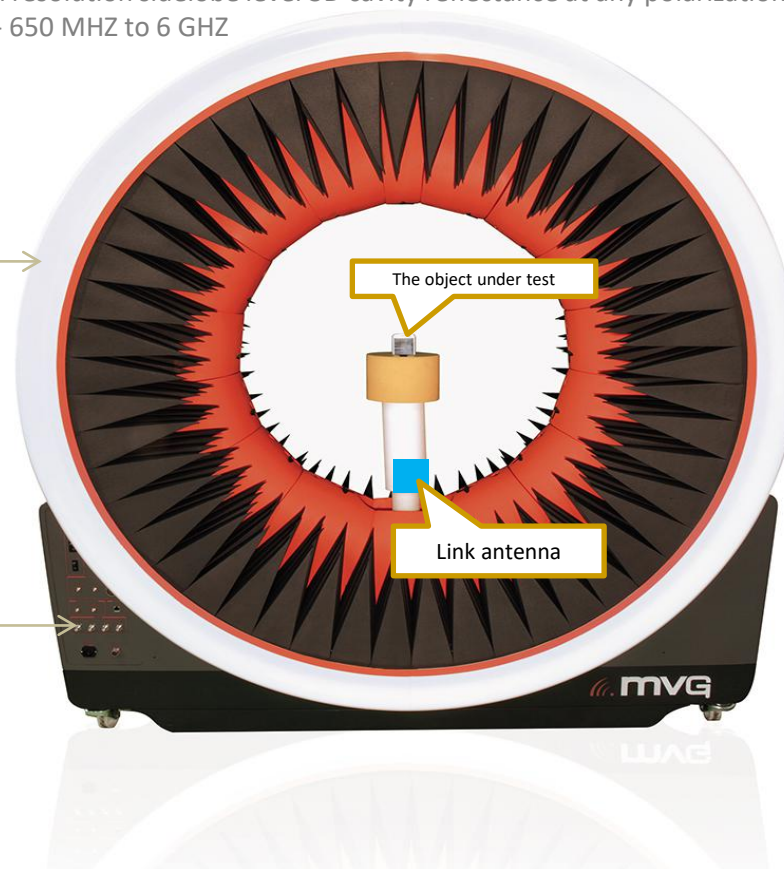
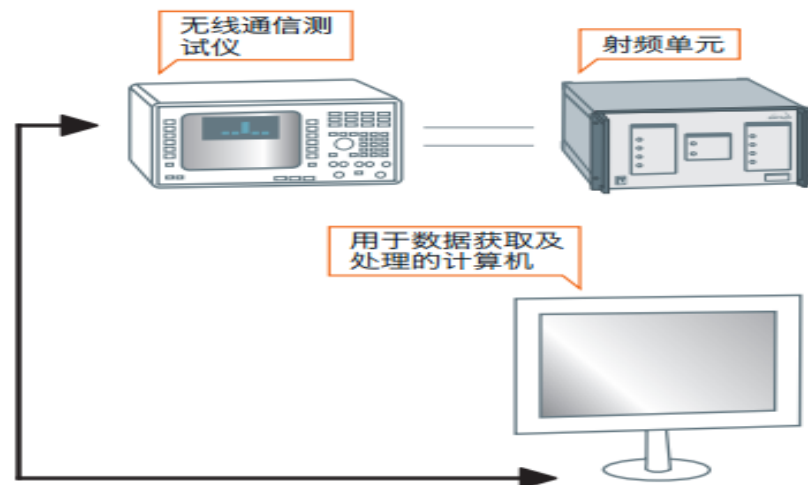


The customer name		Maxwest	Project Name	GRAVITY G64
NO.	project	Detailed above		
1	spectrum	GSM850/900/1800/1900+WCDMA-B1/2/4/5/8+LTE-B1/2/3/4/5/7/12/17/28/66/71/41+GPS/WIFI/BT		
2	Project type	The mobile phone		
3	Antenna space area			
4	Feed point type			
5	The sensitivity			
6	Type of antenna			
7	The length of the PCB board			
8	note	Debugging prototype		

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

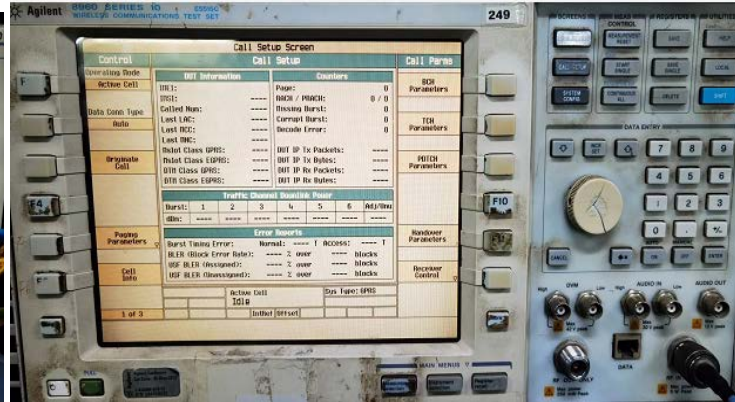


TIS 3D方位切割强度图



TRP 3D方位切割强度图

Test Equipment



Antenna matching and switching logic

1.Antenna SUB small board under main antenna

Small board position antenna switch control NV				
In the software, the RF1 channel is set as the default channel, and the RF1 channel is automatically in normal working state after the mobile phone is turned on.				
	value	switch U100	value	Lower antenna switching logic
L101	12nH	R109	18pF	RF1: GSM900RX
R110	0Ω	R107	6.8nH	RF2: GSM850+W5+LTE-B5+W4+LTE-B3/4/66
C103		R108	0Ω	RF3: GSM900TX+W8+W1/2+LTE-B1/2
R105	0Ω	R113	27nH	RF4: LTE-B12/17/28AB/71/B41/7
antenna frequency band: GSM850/900/W5/8+LTE-B5/12/17/28AB/71				
Remarks: The middle and high frequency bands of the lower antenna are diversity-assisted upper antenna RX.				

2.Main board diversity antenna

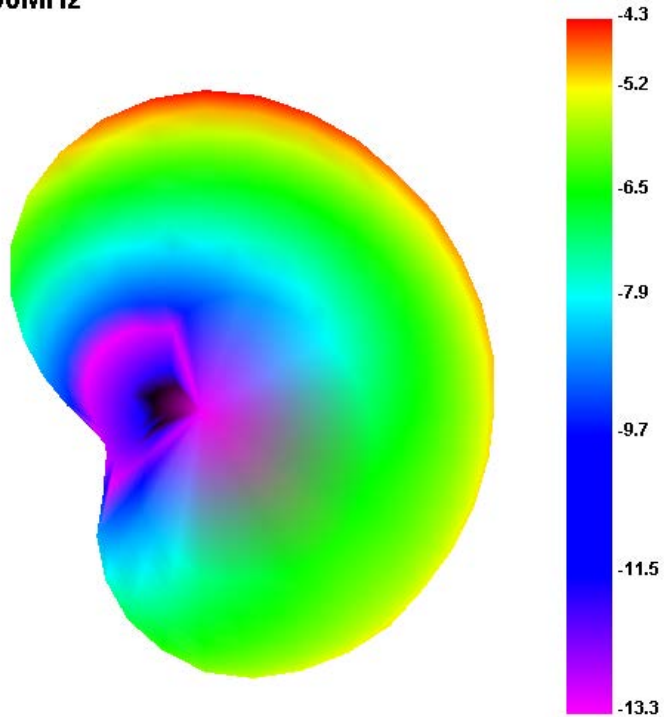
Diversity position antenna switch control NV				
In the software, the RF1 channel is set as the default channel, and the RF1 channel is automatically in normal working state after the mobile phone is turned on.				
	value	switch U1103	value	Upper antenna switching logic
L0839	6.8nH	R0806	0Ω	RF1: GSM1900+W1/2+LTE-B2
R0807	0Ω	R0809	1.5nH	RF2: GSM1800+W4+LTE-B3/4/66
C0842		R0803		RF3: LTE-B7/41+W5/8+LTE-B5/12/17/28AB/71
		R0804		RF4:
Upper antenna frequency band: GSM1800/1900/W1/2/4+LTE-B1/2/3/4/7/66/41				
Remarks: The low frequency band of this upper antenna is diversity-assisted lower antenna RX.				

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

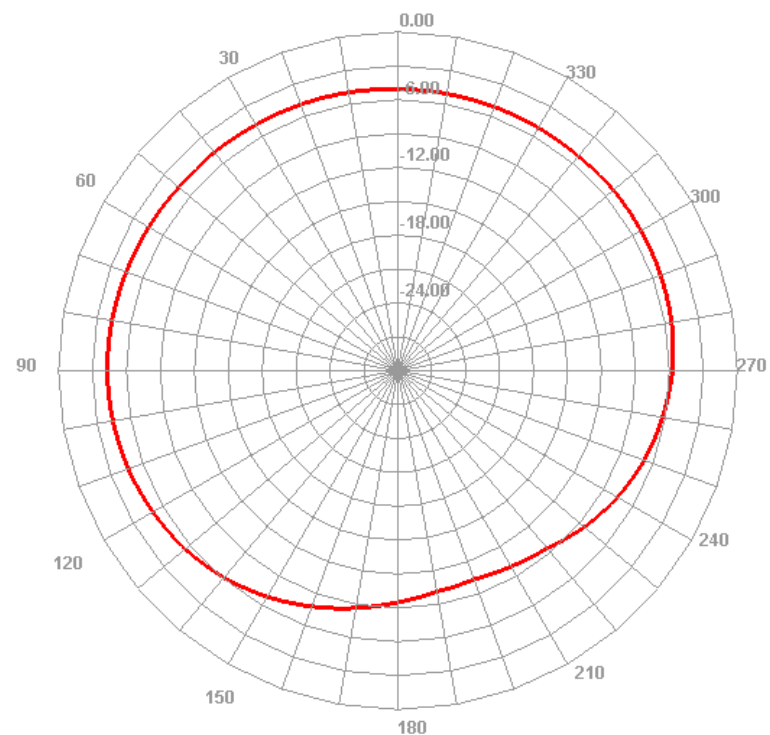
PEAK GAIN			
2G:	Frequency range	Effi %	Gaim dBi
GSM850	824~894Mhz	21.80	-0.71
GSM900	880~960Mhz	20.84	-1.05
DCS1800	1710~1880Mhz	28.62	0.63
PCS1900	1850~1990Mhz	30.81	0.81
3G:			
W1	1920~2170Mhz	37.45	0.91
W2	1850~1990Mhz	30.81	0.81
W4	1710~2155Mhz	31.07	0.92
W5	824~894Mhz	21.80	-0.71
W8	880~960Mhz	20.84	-1.05
4G:			
LTE-B1	1920~2170Mhz	37.45	0.91
LTE-B2	1850~1990Mhz	30.81	0.81
LTE-B3	1710~1880Mhz	28.62	0.63
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	19.04	-1.42
LTE-B28AB	708~798Mhz	19.05	-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)

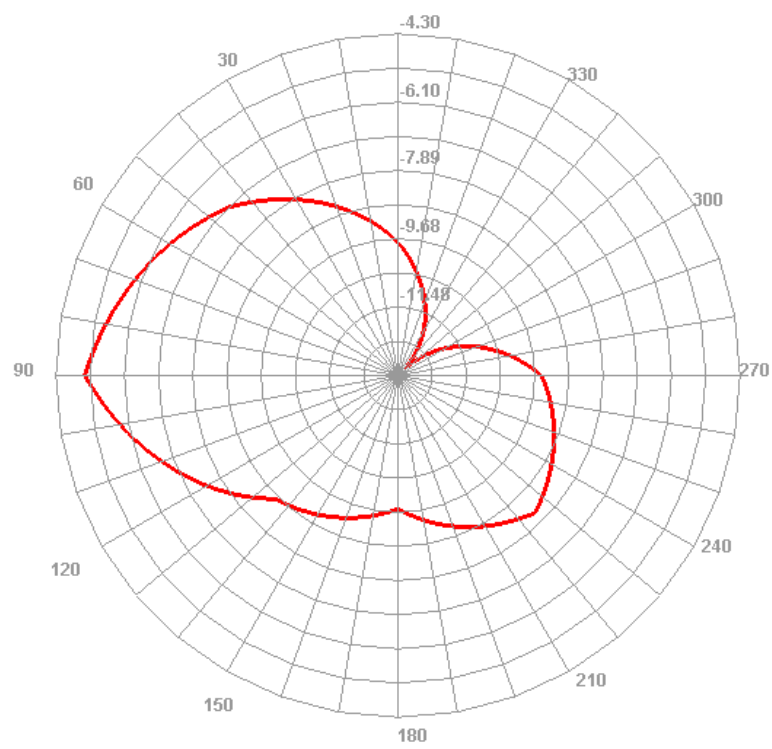
650.000MHz



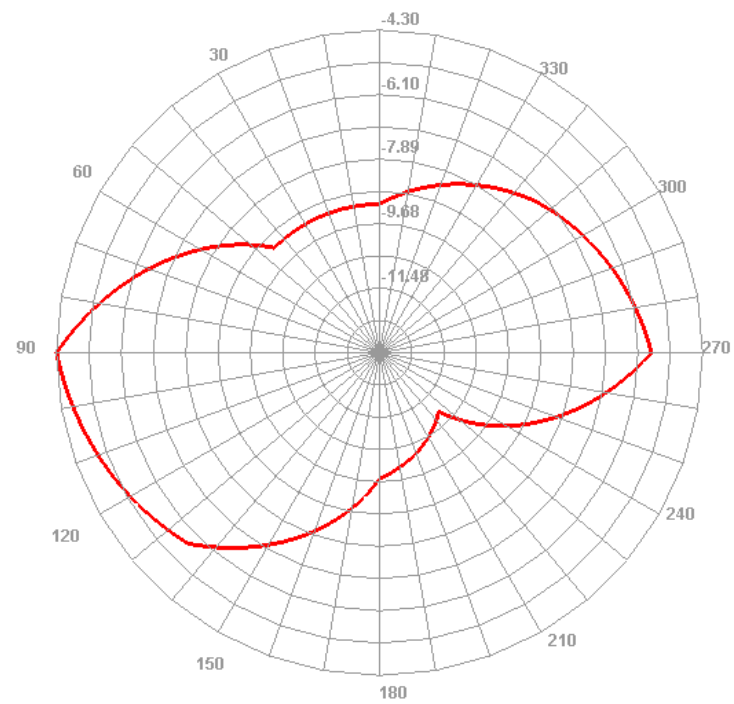
650.000MHz H



650.000MHz E1

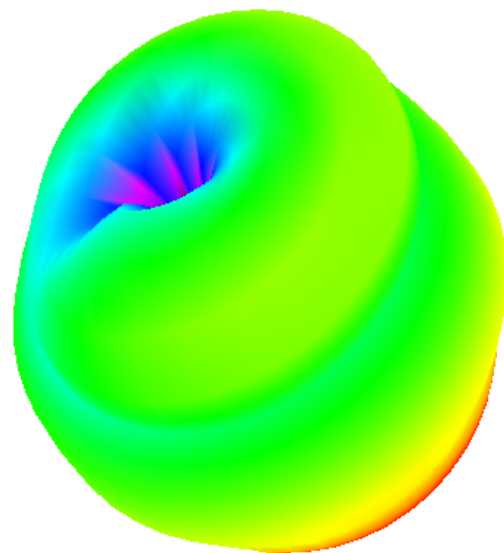


650.000MHz E2

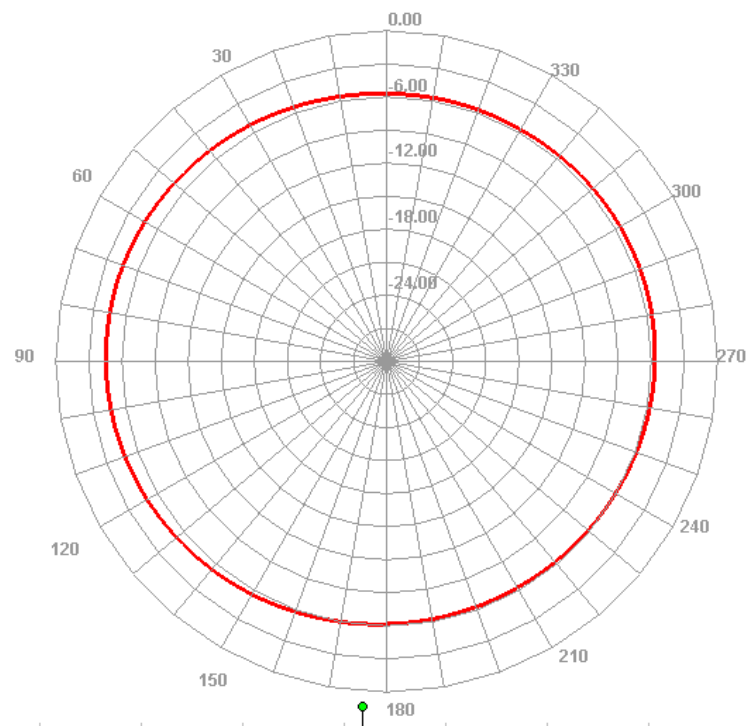


Efficient (698–798MHz)

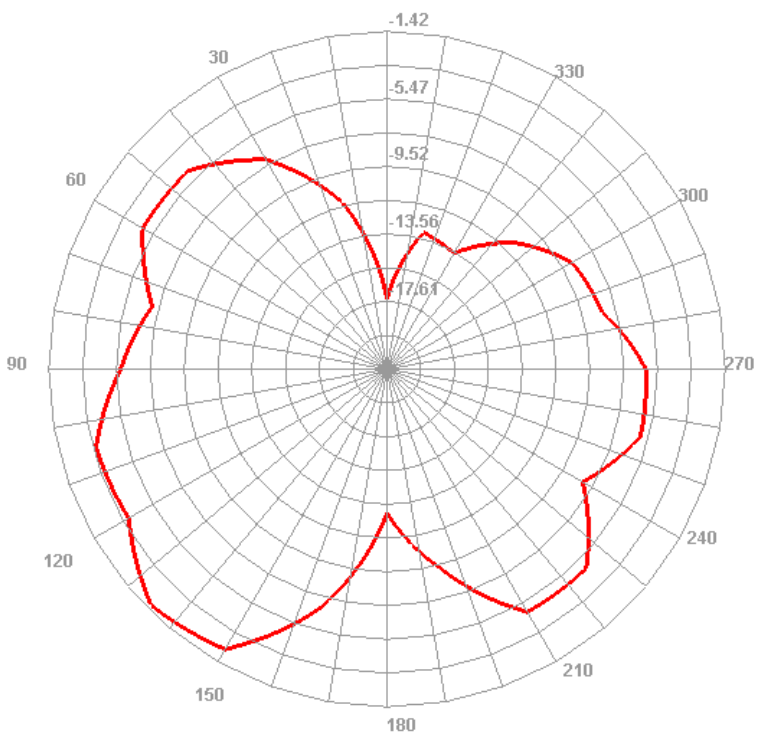
710.000MHz



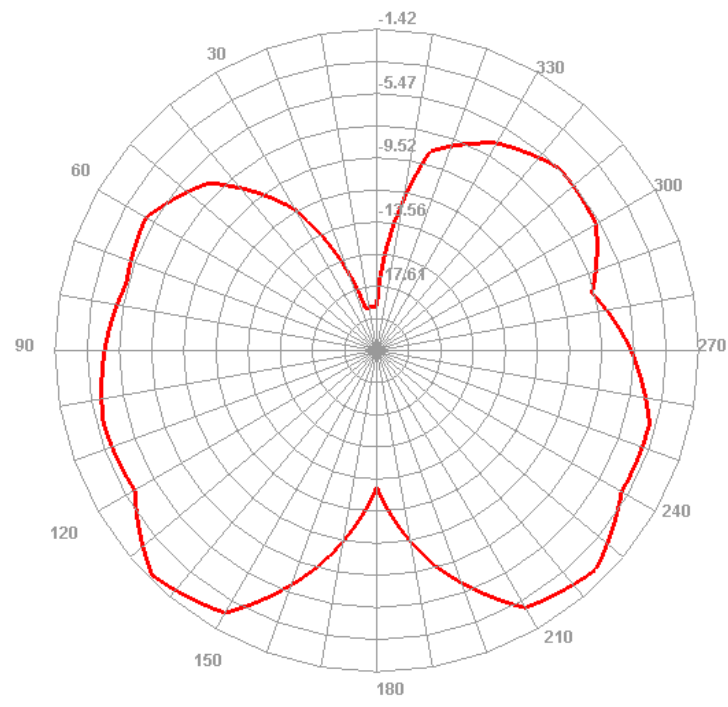
710.000MHz H



710.000MHz E1

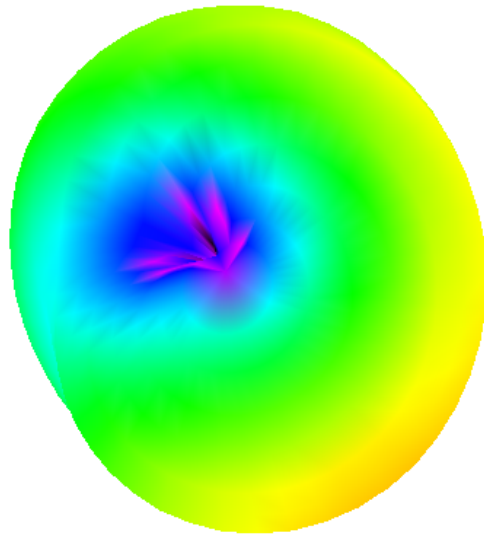


710.000MHz E2

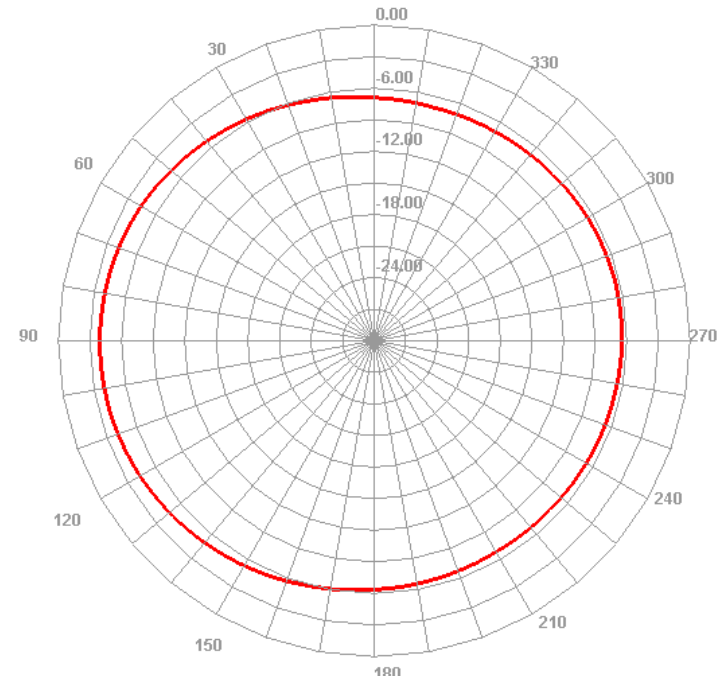


Efficient (791–894MHz)

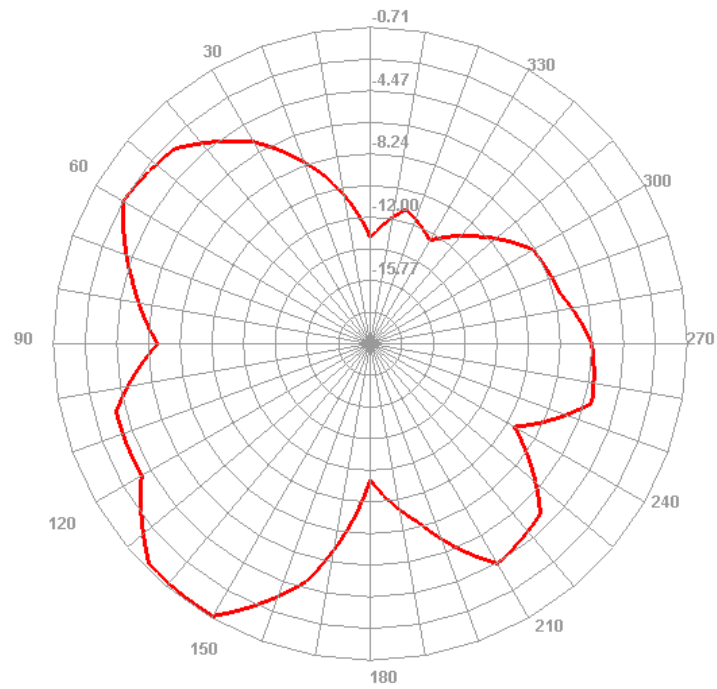
830.000MHz



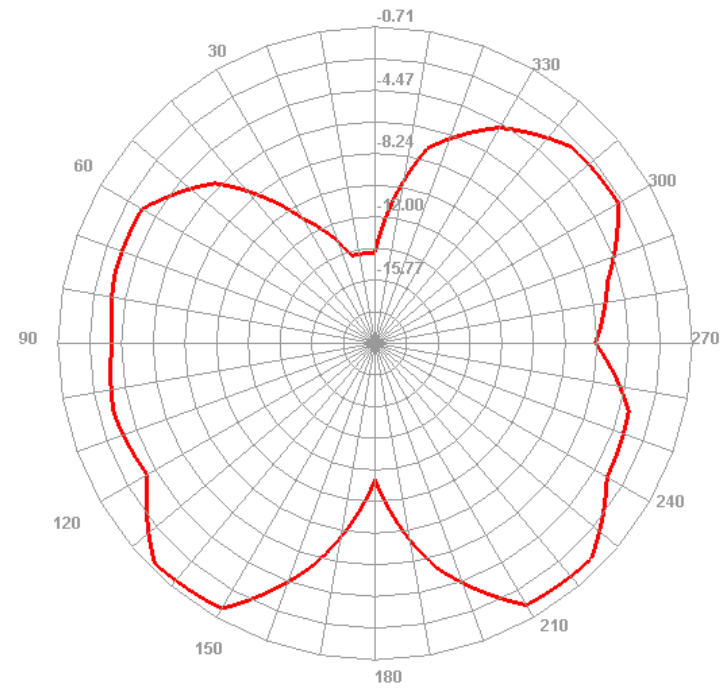
830.000MHz H



830.000MHz E1

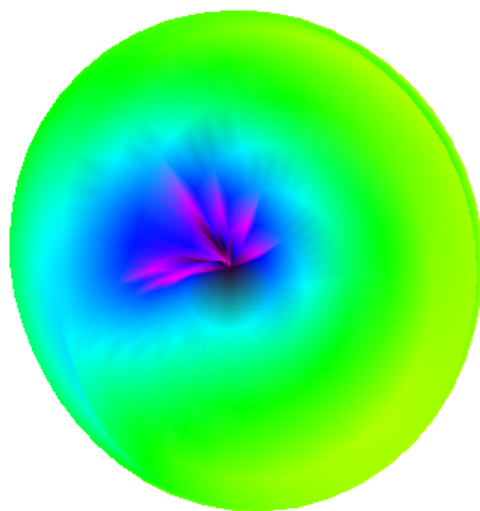


830.000MHz E2

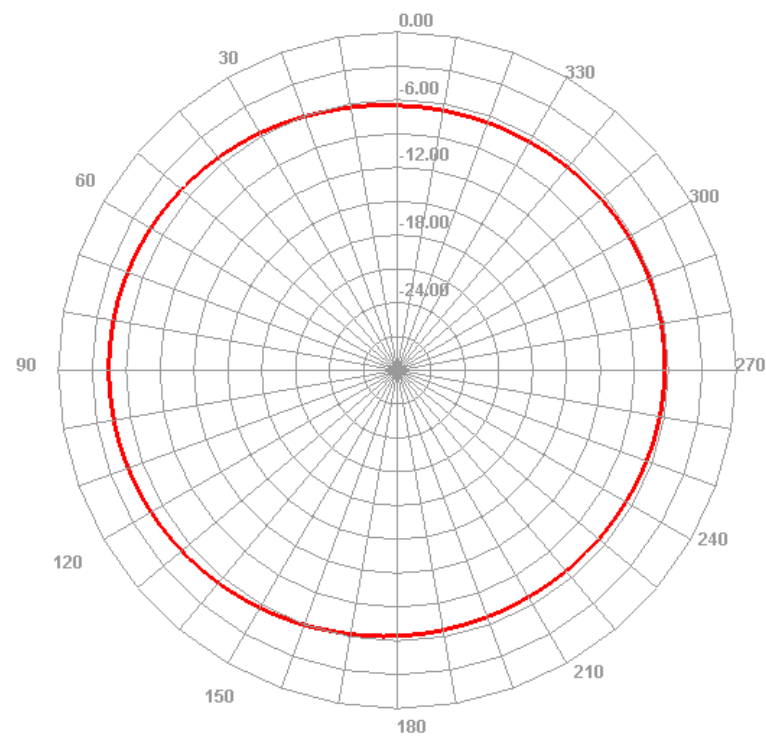


Efficient (880–960MHz)

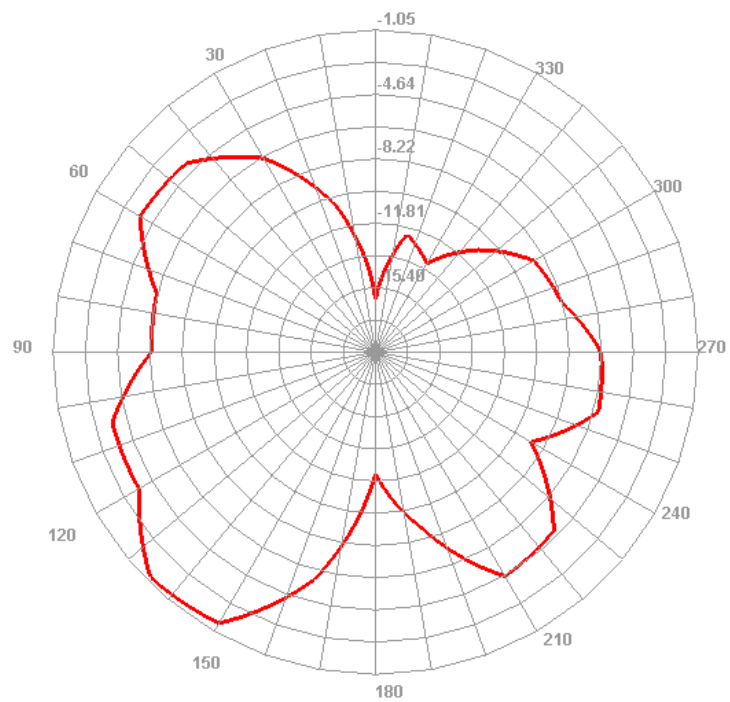
900.000MHz



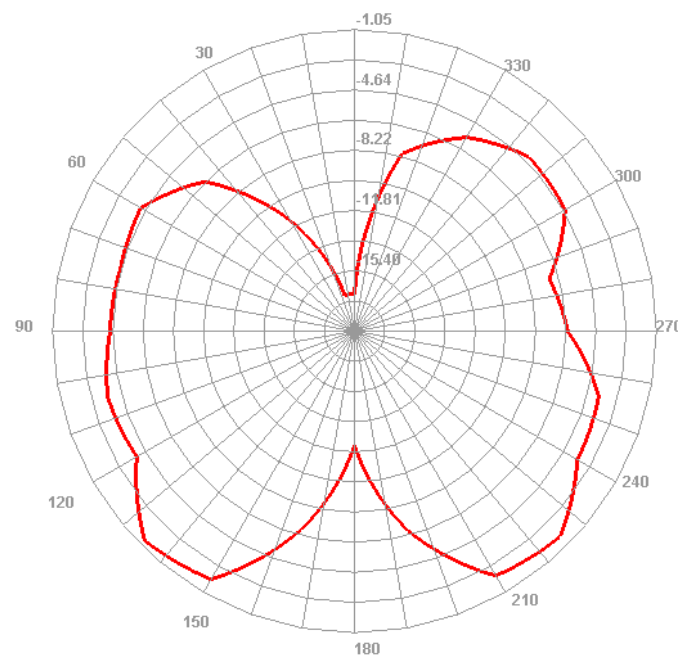
900.000MHz H



900.000MHz E1

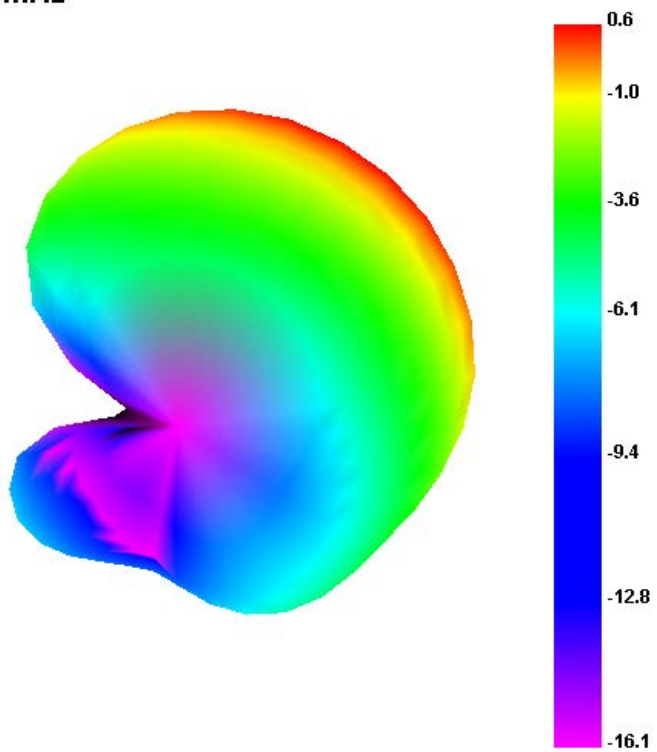


900.000MHz E2

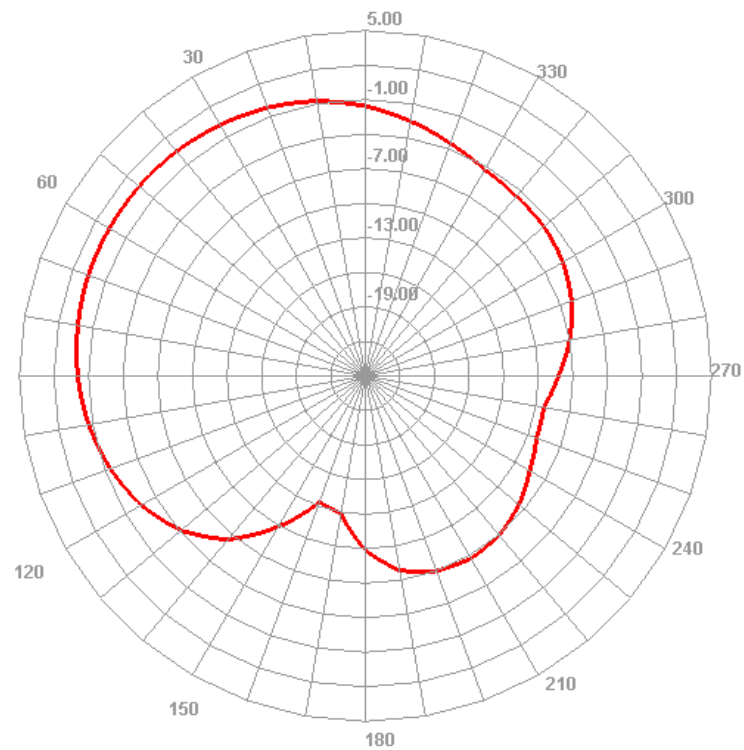


Efficient (1710–1880MHz)

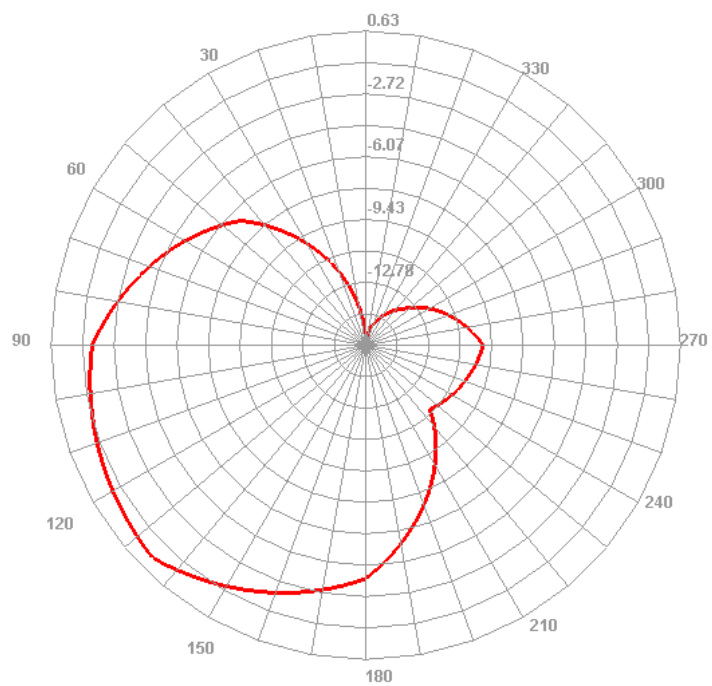
1820.000MHz



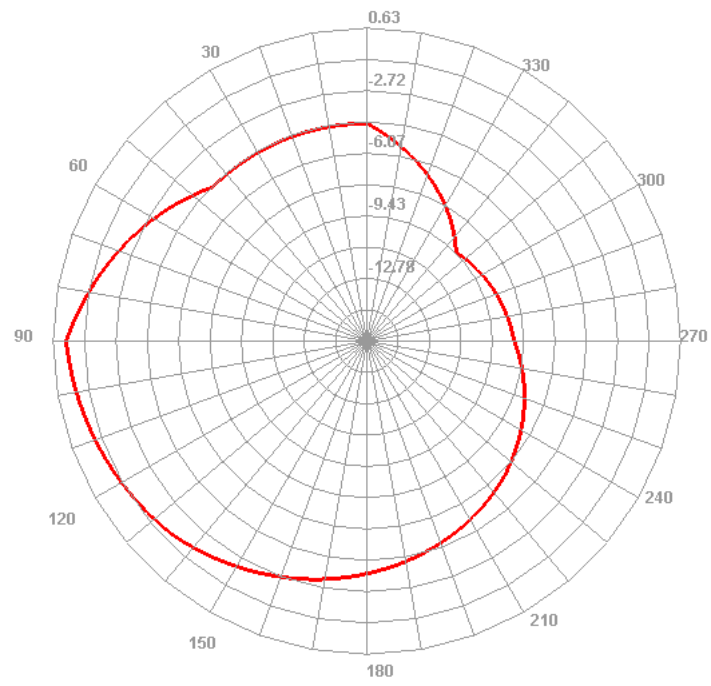
1820.000MHz H



1820.000MHz E1

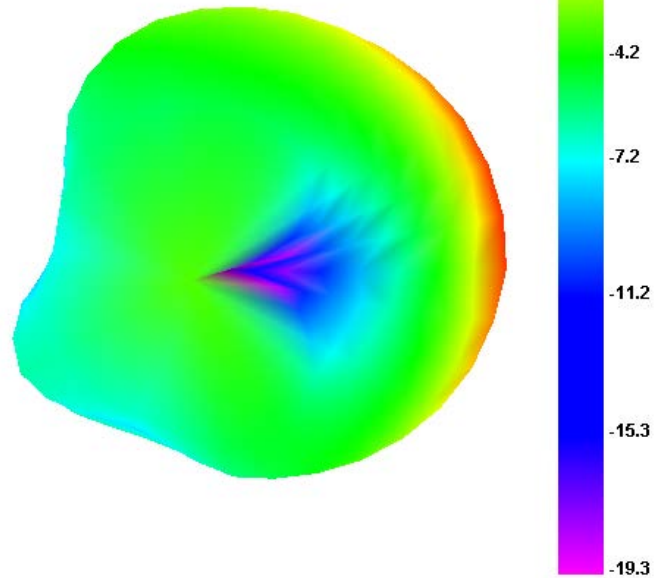


1820.000MHz E2

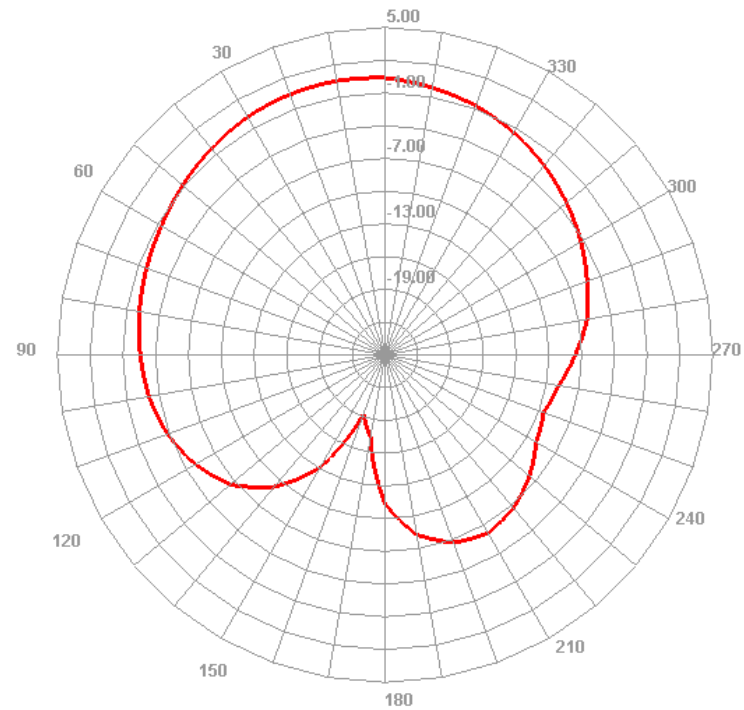


Efficient (1710–1990MHz)

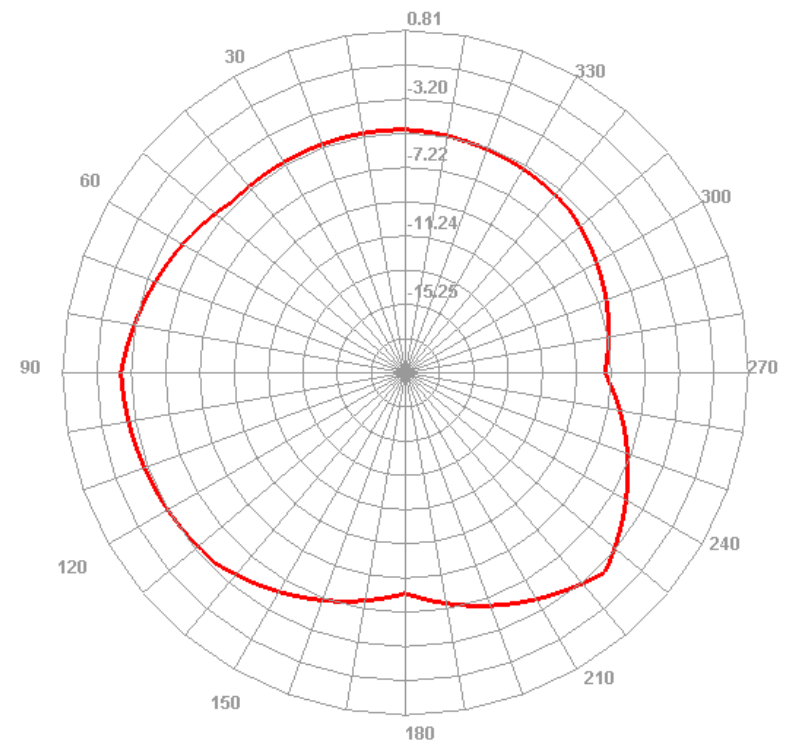
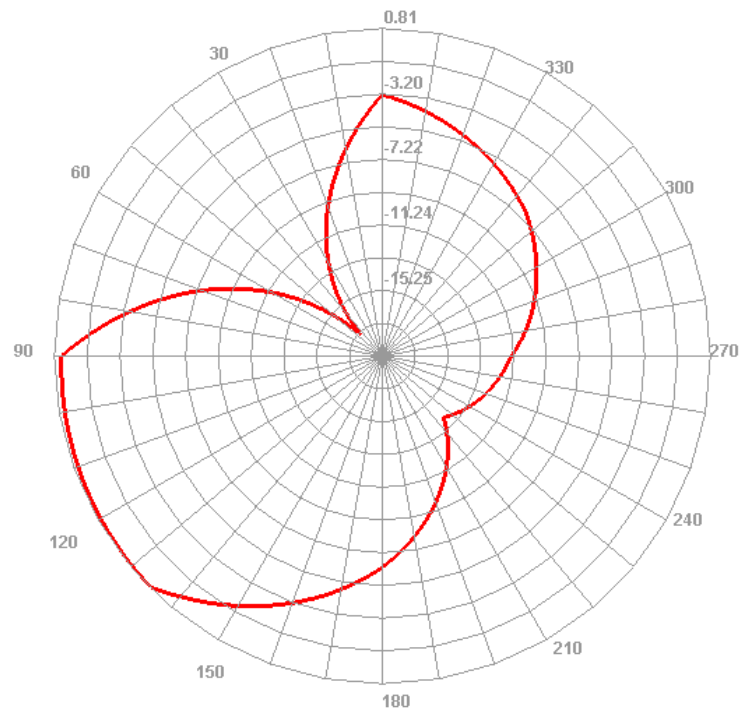
1920.000MHz



1920.000MHz H

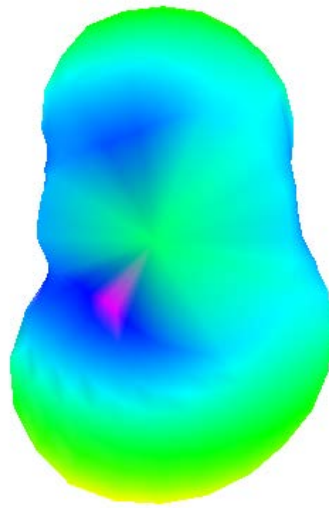


1920.000MHz E1

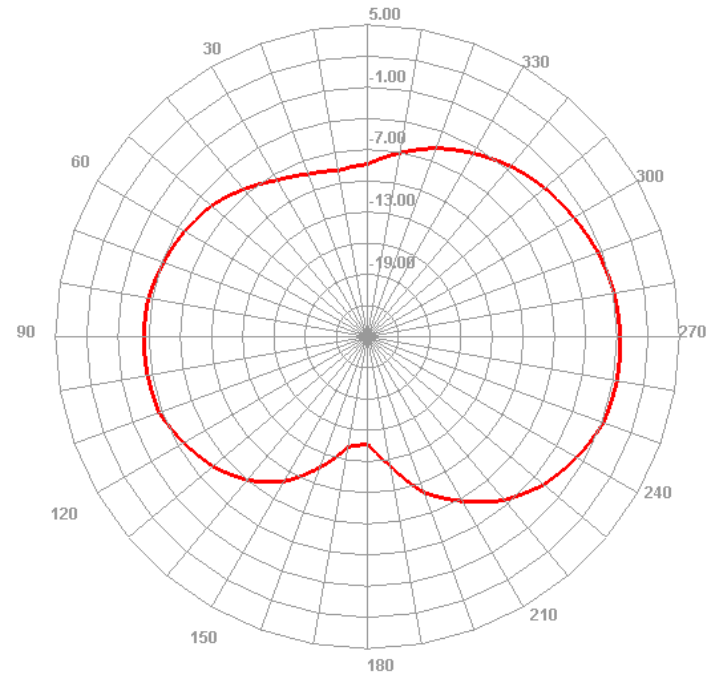


Efficient (1920-2170MHz)

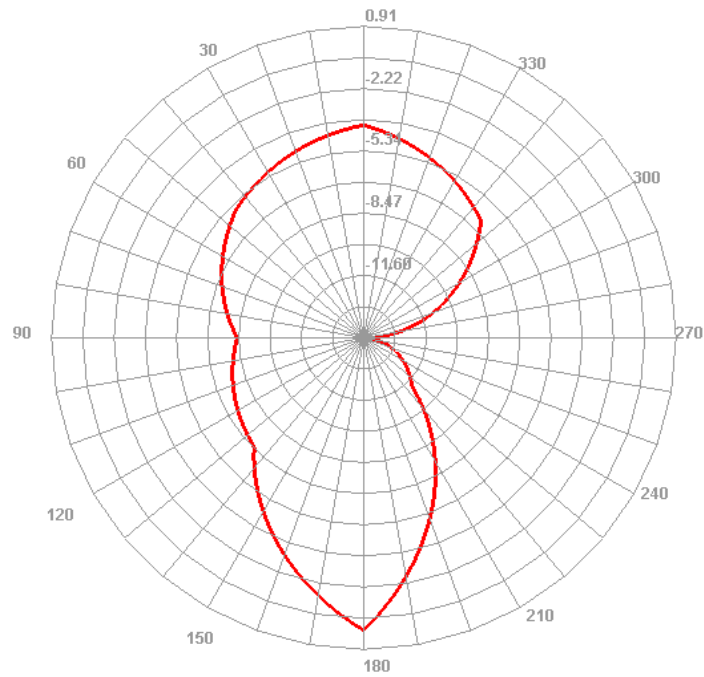
2010.000MHz



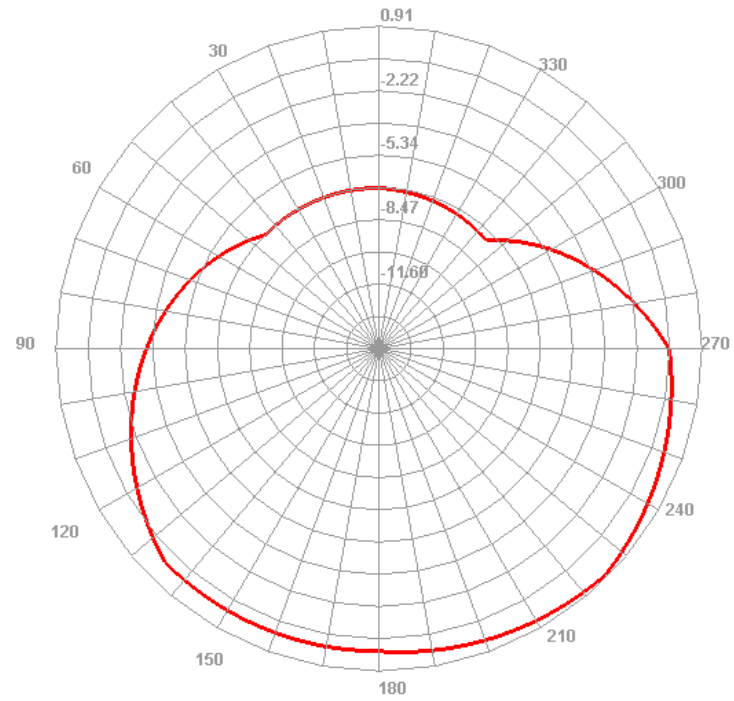
2010.000MHz H



2010.000MHz E1

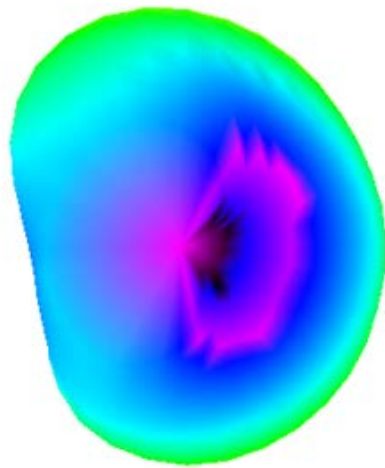


2010.000MHz E2

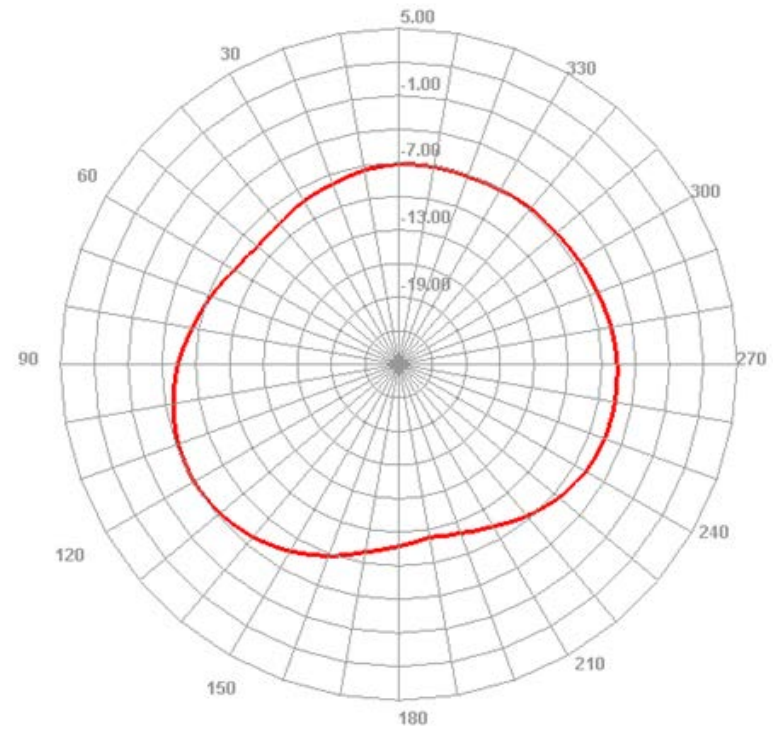


Efficient (2500–2690MHz)

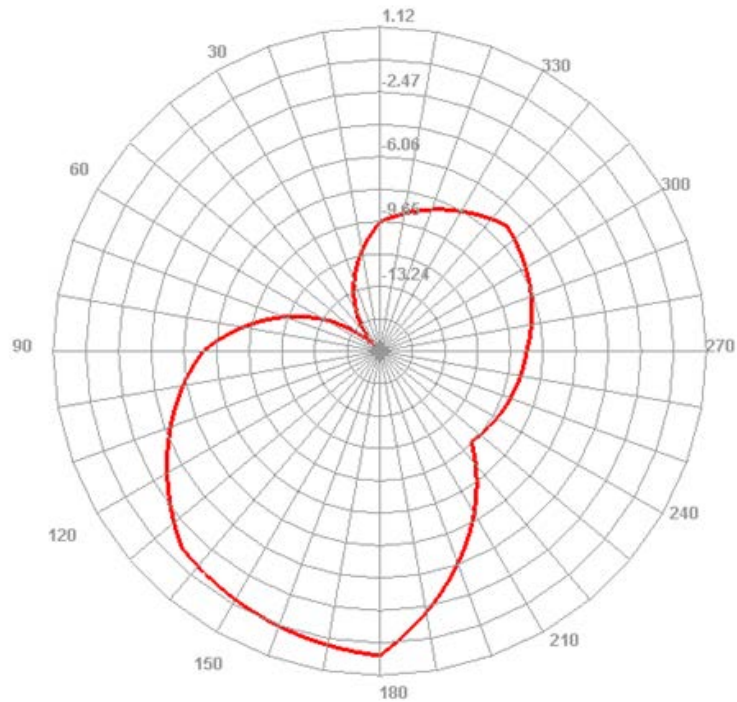
2660.000MHz



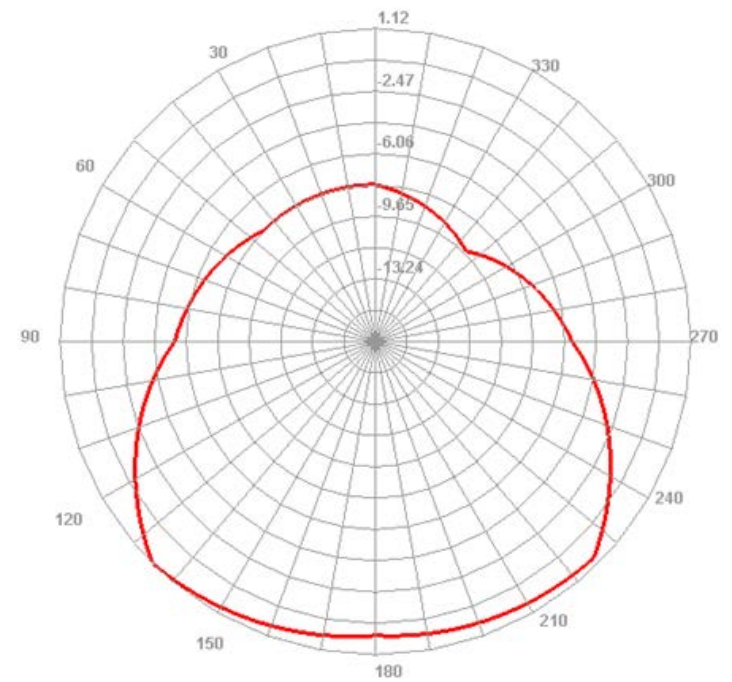
2660.000MHz H



2660.000MHz E1

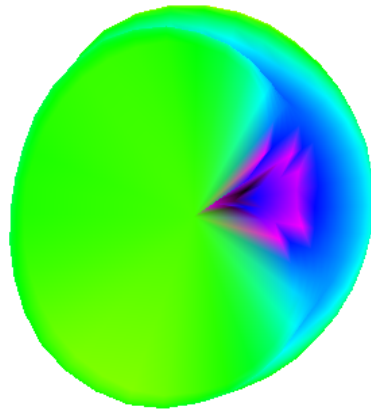


2660.000MHz E2

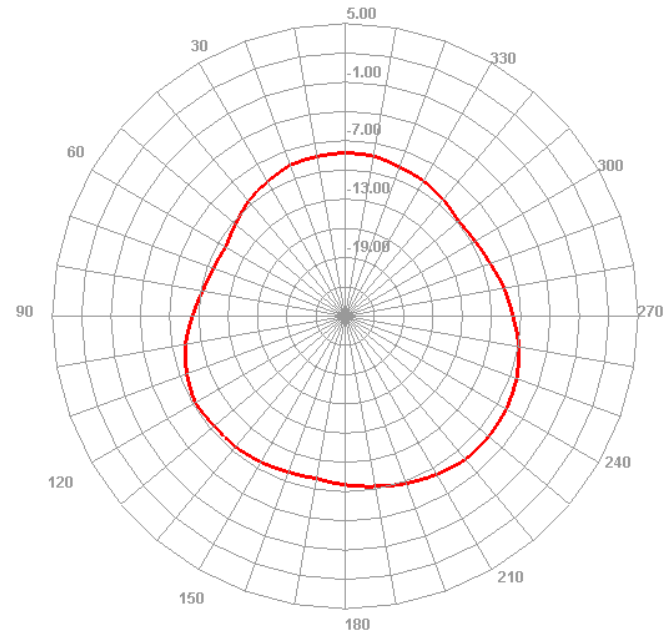


Efficient (2.4G-WIFI/BT 2400-2500MHz)

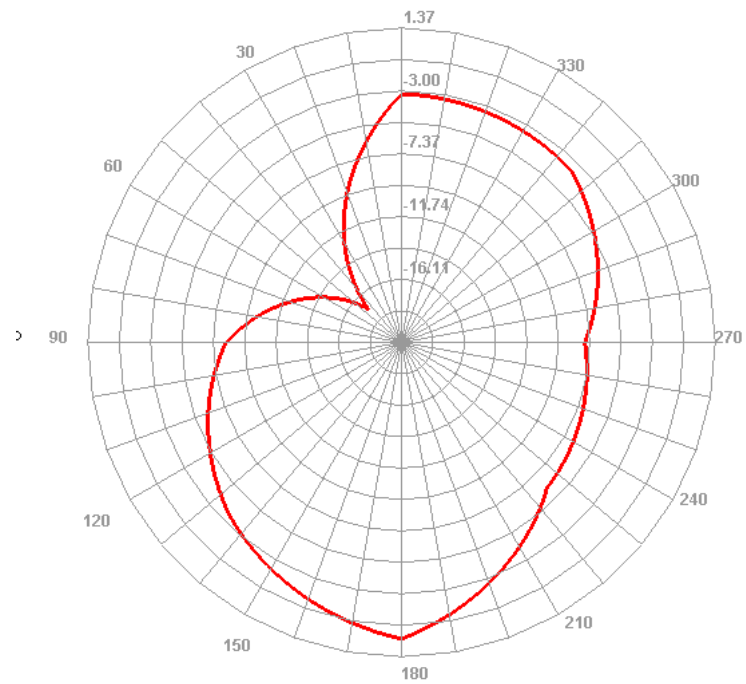
2450.000MHz



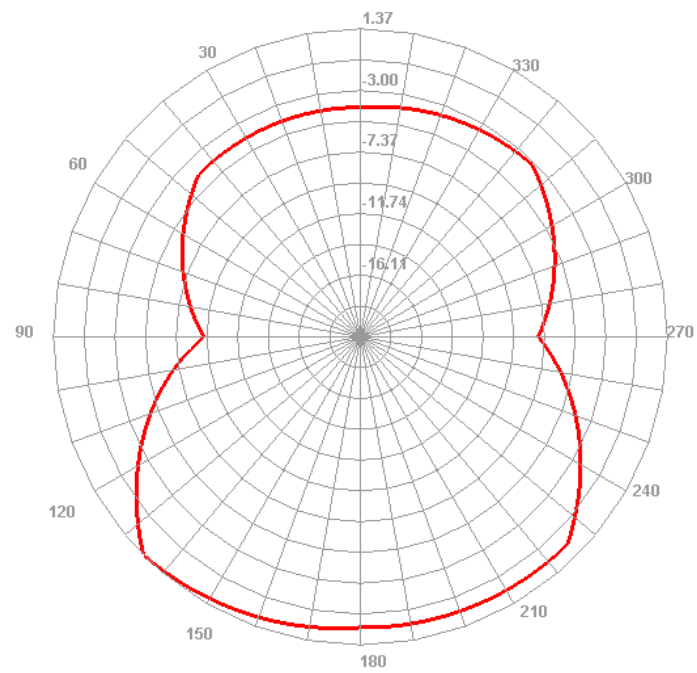
2450.000MHz H



2450.000MHz E1

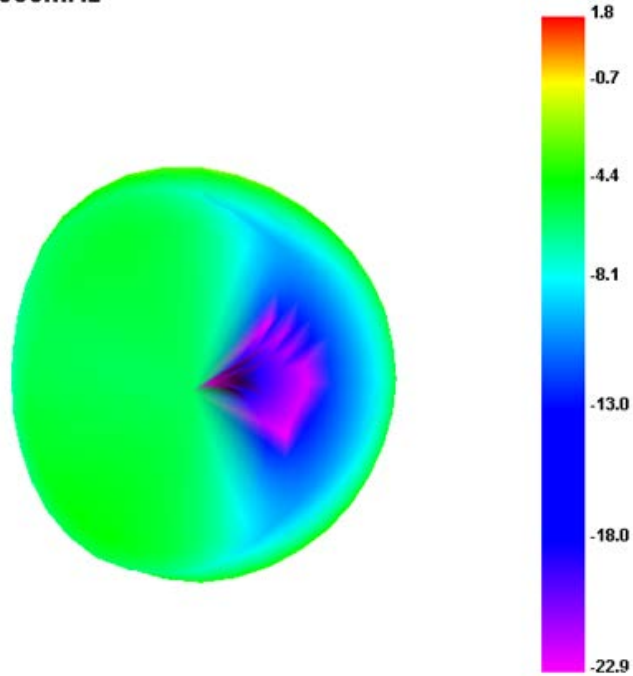


2450.000MHz E2

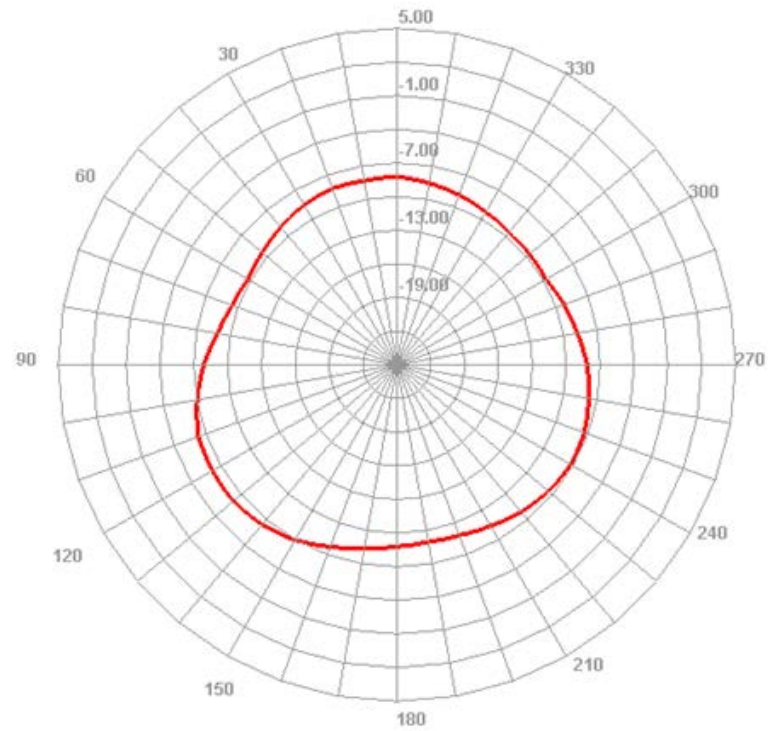


Efficient (5G-WIFI 5000-5250MHz)

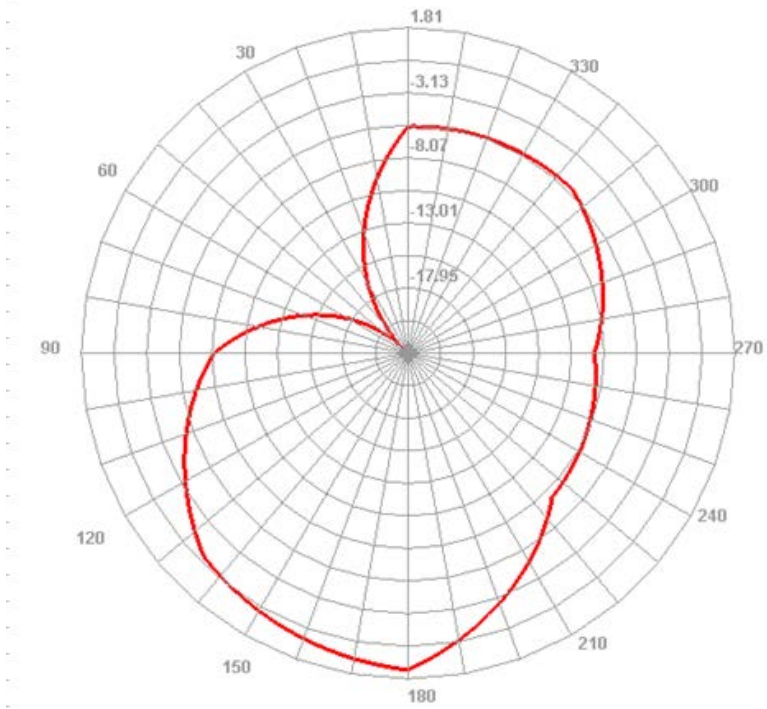
5150.000MHz



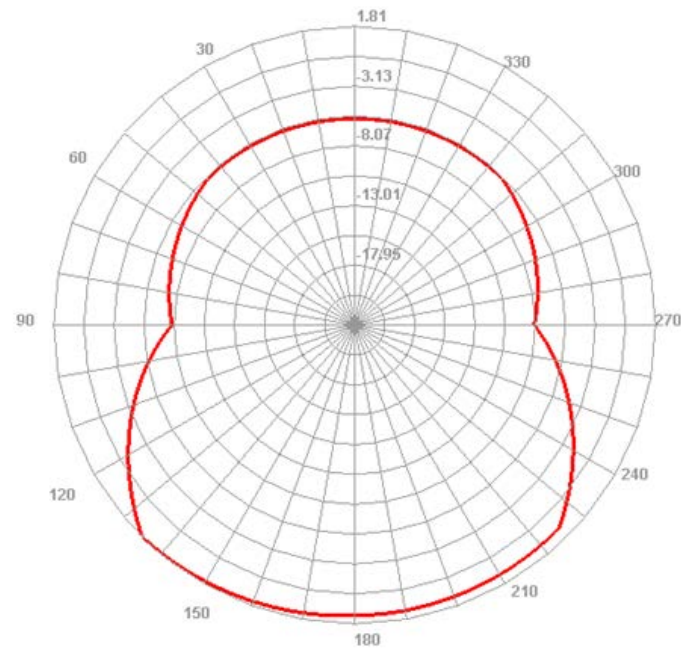
5150.000MHz H



5150.000MHz E1

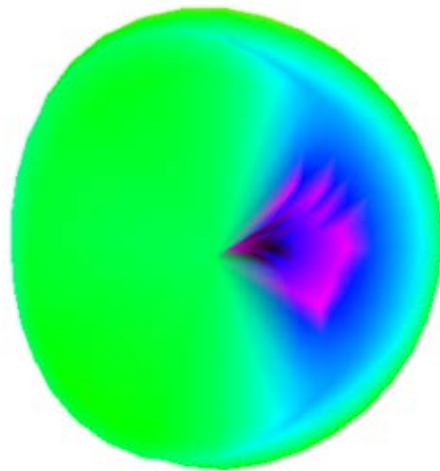


5150.000MHz E2

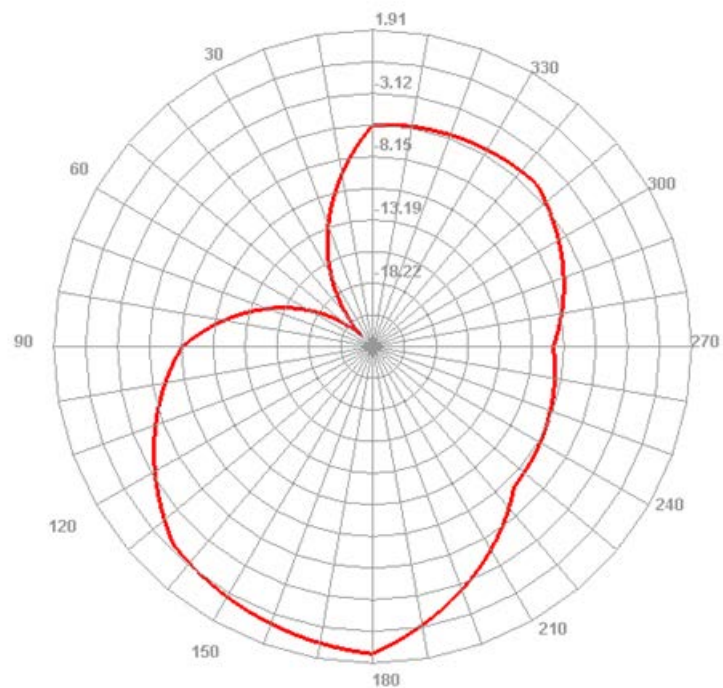


Efficient (5G-WIFI 5725-5850MHz)

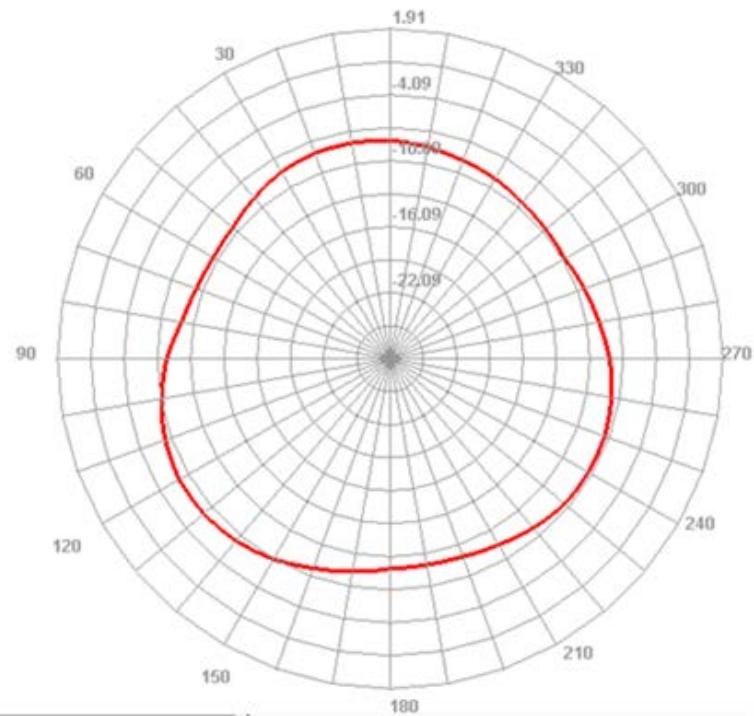
5740.000MHz



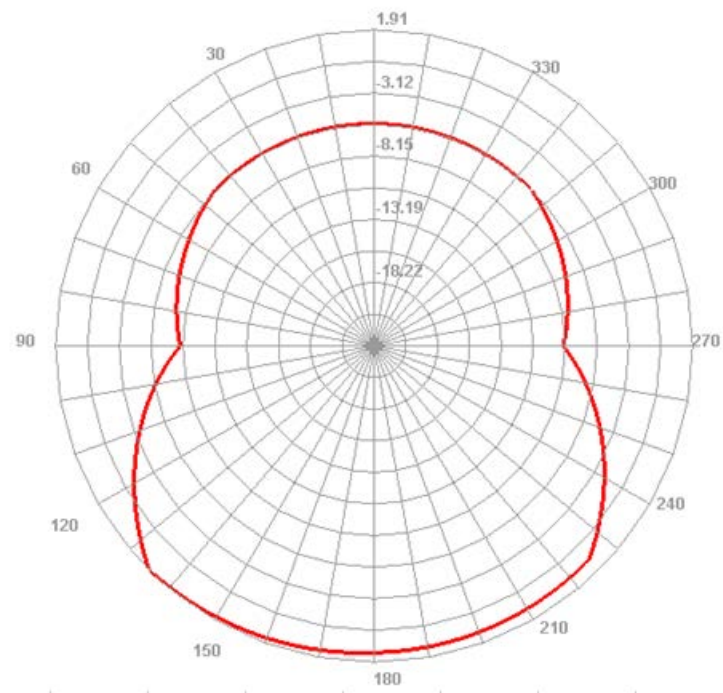
5740.000MHz E1



5740.000MHz H

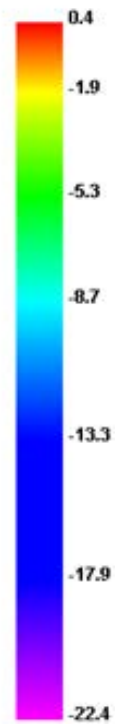
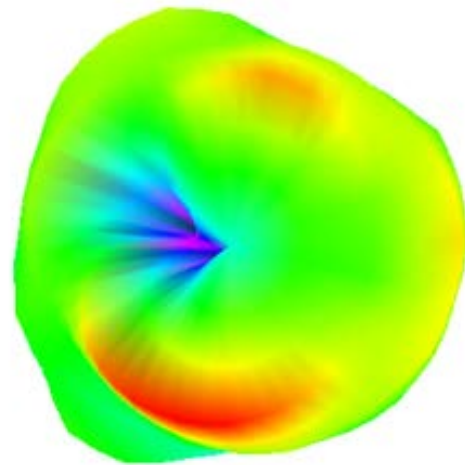


5740.000MHz E2

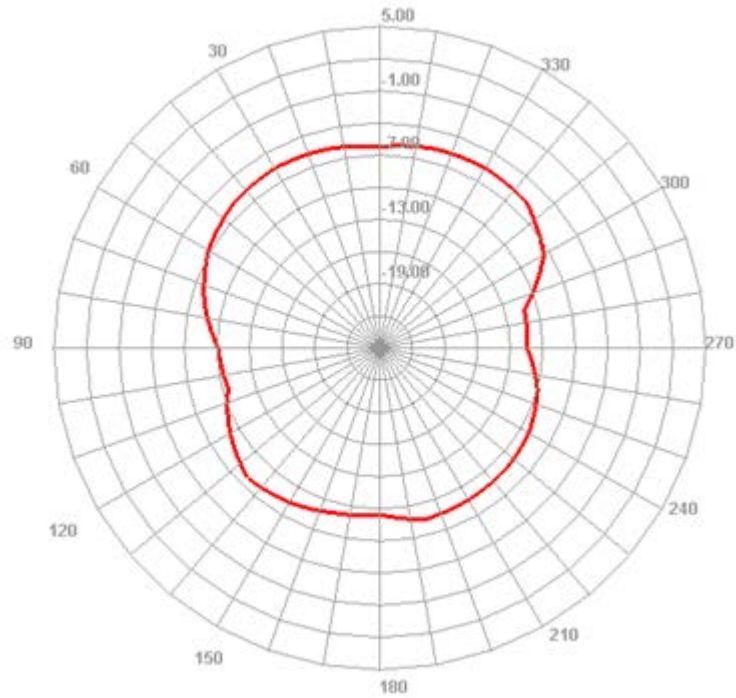


Efficient (GPS 1575.42MHz)

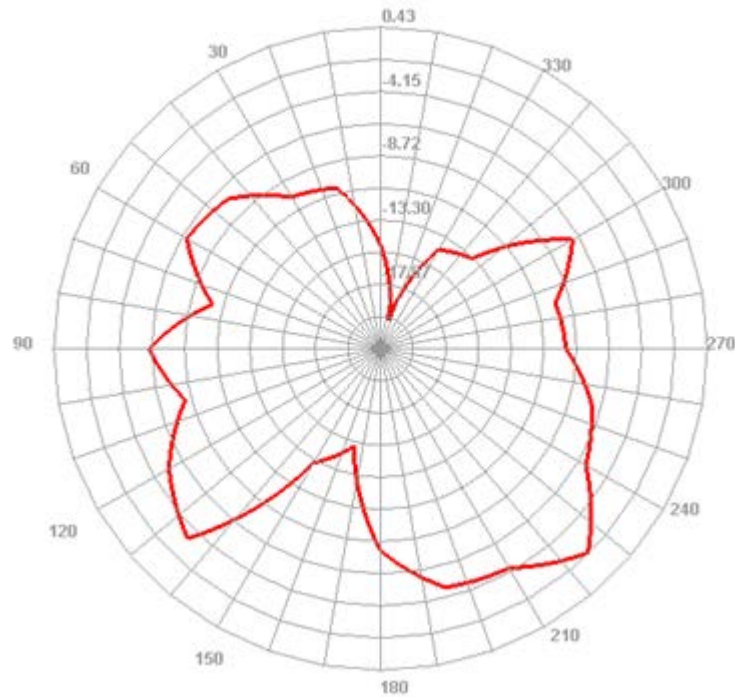
1575.491MHz



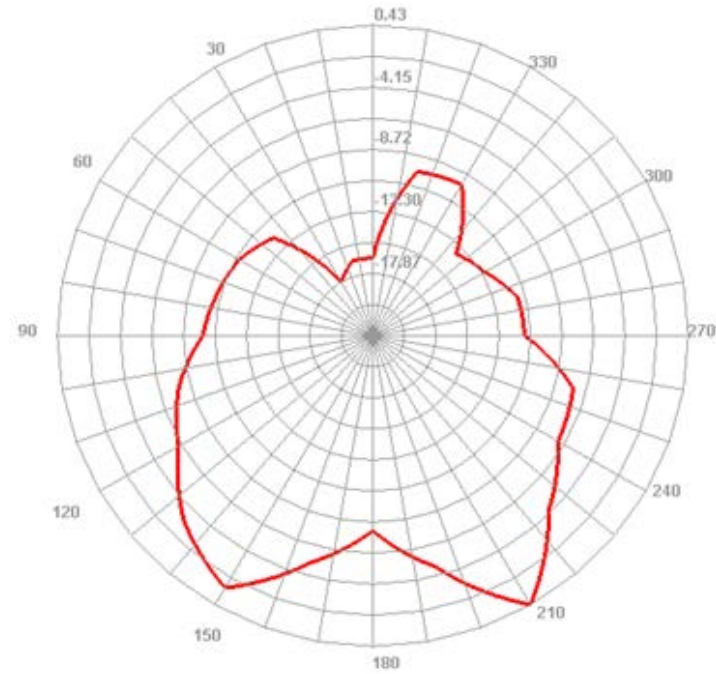
1575.491MHz H



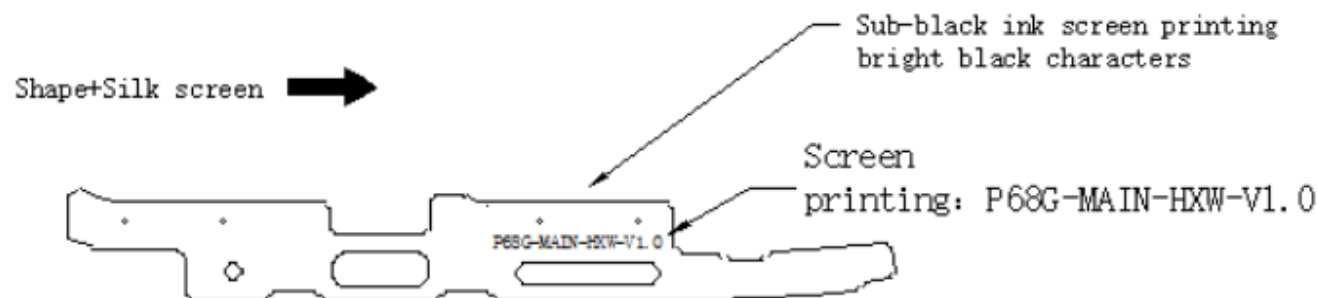
1575.491MHz E1



1575.491MHz E2

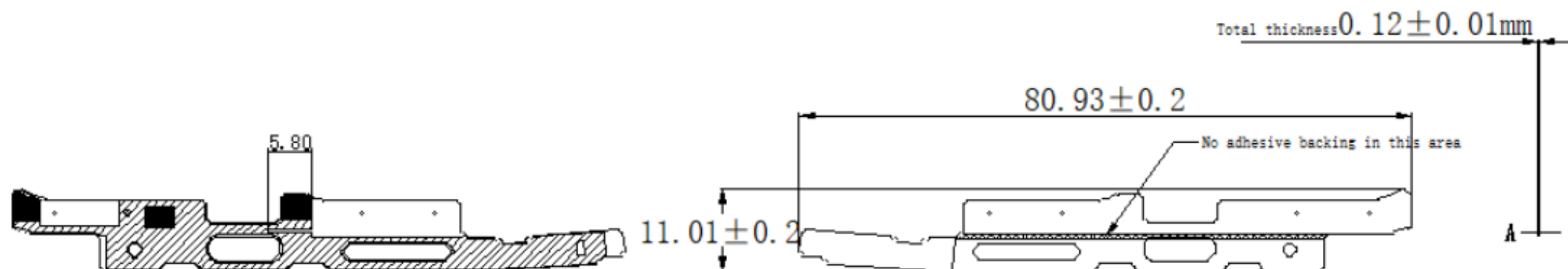


Master antenna specifications



Version	Modify the content	Modifiers	Revision date

Substrate	Half pair/3	
	Half and half	
	A pair and a half	✓
	One on one	



Finished drawing-Heads

Figure of hand-pulled

thread back glue

-Back

P 00.1
P 00.2
P 00.3
P 00.4
P 00.5
P 00.6
P 00.7
P 00.8
P 00.9
P 00.10

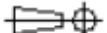
NOTES:

1. The adhesive paper is: 3M300LSE;
2. Gold-plated fingers $0.5 \sim 3 \mu$; Pay attention to the materials, There shall be no oxidation in this position.
3. The overall thickness should be less than or equal to 0.12 mm ;
4. Precise tolerance range: $\pm 0.03 \text{ mm}$;
5. Only allow electrical conductivity of product drawings;

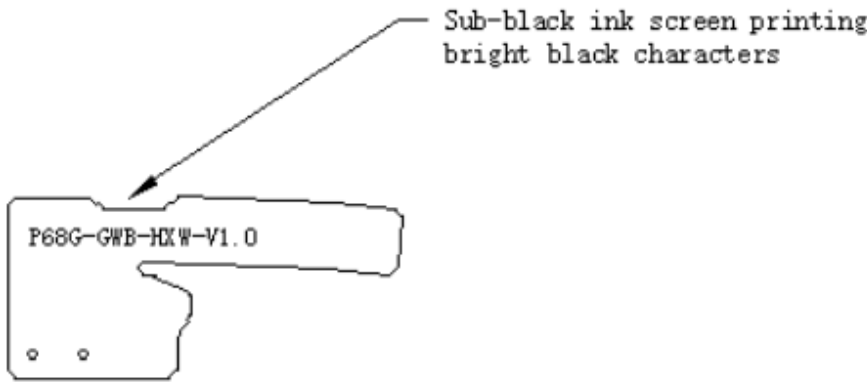
Zoom in on A



The front side is ink $13-20 \mu\text{m}$
The second layer is coated
with copper $\text{Cu} 18 \mu\text{m}$
The third layer is AD glue
ADH $13-18 \mu\text{m}$
Fourth layer of substrate
PI $12.5 \mu\text{m}$
Back 3M300LSE 9471 $50 \mu\text{m}$

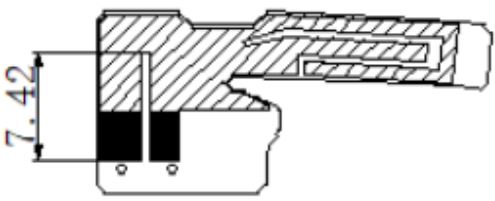
HuaXinWei Communications Technology Co. , Ltd.					
	Unit: mm	Name: FPC		Date: 2024-11-20	
	General tolerance:		Material no.: P68G-GSM		Design: Zhu Shun Shao
	.I ±0.5		Material: FPC+3M9471		R F:
	.X ±0.25		Surface treatment: Clean		Confirm:
	.XX ±0.05		Color:		Proportion: 1:1
.XXX ±0.05		ANGULAR		Version: A	
± 0.5°					

Shape+Silk screen



Version	Modify the content	Modifiers	Revision date

Substrate	Half pair/3	
	Half and half	
	A pair and a half	✓
	One on one	



Finished drawing-Heads

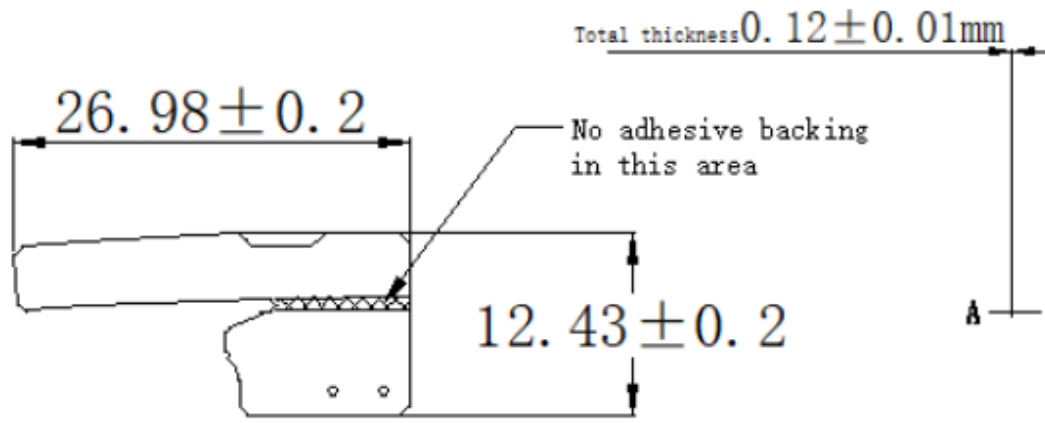
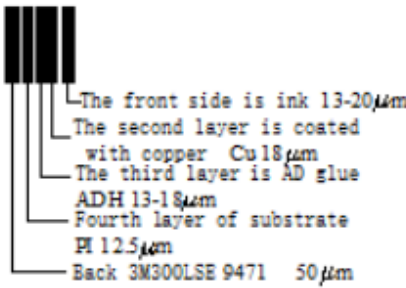


Figure of hand-pulled thread back glue -Back

NOTES:

1. The adhesive paper is: 3M300LSE;
2. Gold-plated fingers 0.5~3u"; Pay attention to the materials, There shall be no oxidation in this position.
3. The overall thickness should be less than or equal to 0.12mm;
4. Precise tolerance range: ±0.03mm;
5. Only allow electrical conductivity of product drawings;

Zoom in on A



HuaXinWei Communications Technology Co. , Ltd.						
		Unit: mm	Name: FPC		Date: 2024-11-20	
General tolerance:  .I .II .III ANGULAR			Material no.: P68G-GWB		Design: Zhu Shun Shen	
			Material: FPC+3M9471		R F;	
			Surface treatment: Clean		Confirm	
			Color:		Proportion: 1:1	Version: A
			Angular: $\leq \pm 0.5^\circ$			

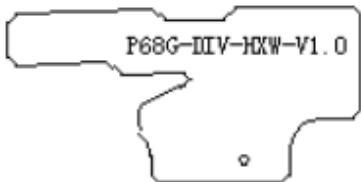
- P'90.1
- P'90.2
- P'90.3
- P'90.4
- P'90.5
- P'90.6
- P'90.7
- P'90.8
- P'90.9
- P'90.10

Diversity antenna specifications

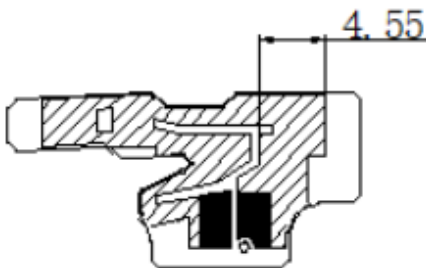
Version	Modify the content	Modifiers	Revision date

Shape+Silk screen →

Sub-black ink screen printing
bright black characters

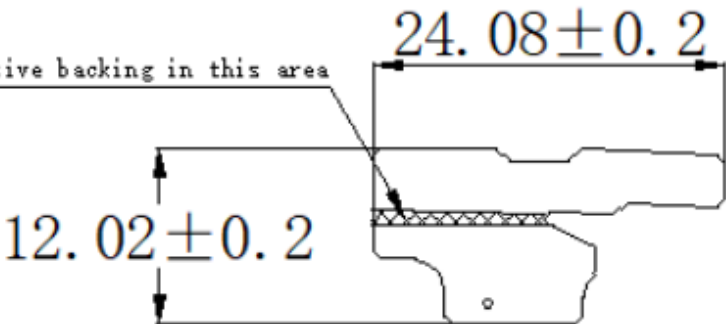


Substrate	Half pair/3	
	Half and half	
	A pair and a half	✓
	One on one	



Total thickness $0.12 \pm 0.01\text{mm}$

No adhesive backing in this area



Finished drawing-Heads

Figure of hand-pulled
thread back glue —Back

NOTES:

1. The adhesive paper is: 3M300LSE;
2. Gold-plated fingers $0.5 \sim 3\text{u}''$; Pay attention to the materials, There shall be no oxidation 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 allow electrical conductivity of product drawings;

Zoom in on A



- The front side is ink $13\text{-}20\mu\text{m}$
- The second layer is coated with copper $\text{Cu } 18\mu\text{m}$
- The third layer is AD glue $\text{ADH } 13\text{-}18\mu\text{m}$
- Fourth layer of substrate $\text{PI } 12.5\mu\text{m}$
- Back 3M300LSE 9471 $50\mu\text{m}$

P 96.1
P 96.2
P 96.3
P 96.4
P 96.5
P 96.6
P 96.7
P 96.8
P 96.9
P 96.10

HuaXinWei Communications Technology Co., Ltd.					
	Unit: mm	Name: FPC	Date: 2024-11-20		
General tolerance:		Material no.: P68G-DIV	Design: Zuo Shun Shen		
.X ± 0.5		Material: FPC+3M9471	R F:		
.XX ± 0.25		Surface treatment: Clean	Confirm:		
.XXX ± 0.05		Color:	Proportion: 1:1	Version: A	
ANGULAR $\angle \pm 0.5^\circ$					

