规 格 承 认 书

Specification For Approval

客户名称：_____

Customer

规格描述：FPC 天线-113黑-L500MM

Part name

BJL料号：**BJL-F4G03-8520**-I500B

Part No

客户料号：_____

Customer Part No

客户确认Customer confirmation		
确认 Confirmation	核实check	批准Approver

制造厂商承认Manufacturer recognition			
销售代表 Sales	拟制 Drafters	核实check	批准Approver
李知非	郑少娟	刘立华	周锡华

感谢给予敝公司送样承认之机会.如惠蒙承认通过,烦请将此表签回敝公司.

Thank you for giving us the chance to approve samples. If you agree to pass it, please kindly send it back to us.

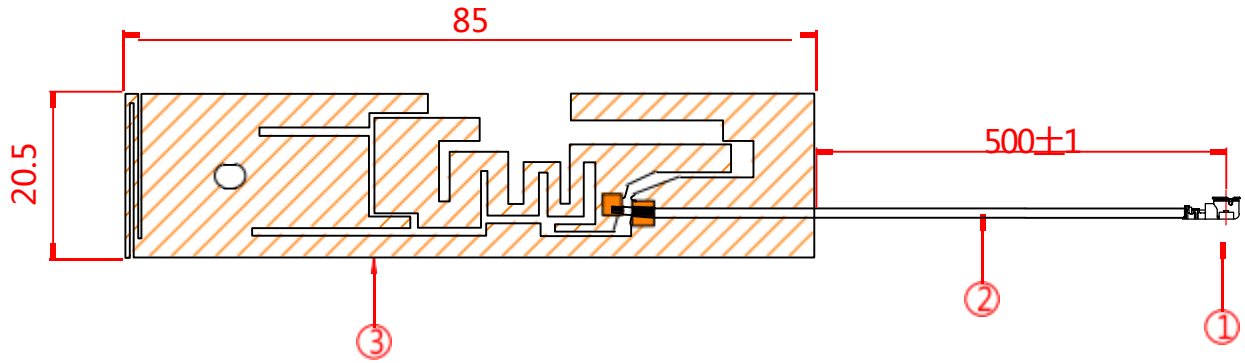
深 圳 市 百 进 联 无 线 技 术 有 限 公 司

地址： 中国深圳市龙岗区横岗镇西坑工业区宝桐南路 70号

电话： 15114085156 传真：

http://www.bjlwireless.com

REV	DESCRIPTION	DATE	APPROVED



Require:
1. There is no broken skin or damage on the outside of the wire
2. The finished product must be 100% test continuity ok
3. The finished product needs 100% full inspection ok
4. Only made of environmental protection, in line with ROHS requirements
5. Terminal pull force: 1.5 KG~
6. Please refer to the general tolerance for the unspecified tolerance

IPEX Parameter:
characteristic impedance ： 50 0HM
Frequency Range ： DC~6 GHZ
VSWR：1.10+0.025 max
Insulation resistance ： 5000 milliohms min
between outer conductors ： 20
Between inner conductors ： 10
Withstand Voltage ： AC 200V
Working Voltage ： 60V max
Durability ： 5 cycles min
Temperature range: -40~+90。C

No.	Name	Description	Qty	Part No.
3	FPC	85*20FPC板	1	
2	线材	1.13	1	
1	IPEX	1.13IPEX	1	

一般公差(GENERAL TOLERANCES)
尺寸(Dimension) 0~1 ±0.1; 1~10 ±0.3; 10~30 ±0.8; 30~100 ±1; 100~300 ±2
角度(Angles) Xo ±1o; XXo ±0.5o
(UNLESS OTHERWISE SPECIFIED)

版本(REV)	图形名称(Draw Name) 产品图			客户料号(CUS No.)
比例(Scale) 1:1	产品名称(Product Name) IPEX-4G-FPC天线-1.13			产品料号(Product No.)
绘图(Draw Name)	单位(UNIT) mm	幅面(Size) A4	页/次(Sheet) 1/1	首版日期(Original Date) 2023-04-13
审核(Checked)	西安百进联电子科技有限公司			
核准(APPROVED)				

2. Performance

Dimension	85*20	fixed way	3M Adhesive
Weight	/	Connector model	IPEX
Color of Shell	Black	cable	1.13 cable+500mm

3. Antenna Performance and Parameters

Project	Characteristic	Unit
Frequency Range	824-960/1710-2700	MHz
output impedance	50	Ω
VSWR	Compare waveforms (empty test)	
Gain	3.5	dBi
Polarization mode	linear polarization	
Radiation direction	Omnidirectional	
Maximum input power	5	W
Operating temperature	-40~+85	℃
Storage temperature	-45~+85	℃

4. Cable specification

1.13 line structure diagram

Structural parameters

	Material	diameter(mm)
1. inner conductor	tinned copper wire	7/0.08±0.02
2. insulator	solid polyethylene (PE)	0.66±0.02
3. Outer conductor	tinned copper wire	0.88±0.05
4. protective case	FEP	1.13±0.05

Electrical performance parameters

5. Environmental test

Environmental test report

5.1 High and low temperature constant humidity test

Part No			Product Specifications	4G built-in FPC antenna
Pilot projects	High temperature, low temperature, constant humidity test			
Testing Equipment	Constant temperature and humidity test chamber		test numbers	
Inspection standards	1. The coating on the metal surface is free from defects such as peeling, cracks, and wrinkles; the non-metallic parts must not have discoloration, cracks, deformation, degumming, etc.			
Test name	Pilot projects	Require	experiment method	Result judgment
high temperature test	temperature (℃) Test sample temperature time (h) Test duration (h) Recovery time (h)	75±3 1 2 1	experiment procedure: a) Put the test piece into the test chamber, then adjust the temperature of the high temperature chamber to 75 ℃±3 ℃, and monitor the time. b) Place it at room temperature for 1 hour after the test, and carry out Routine inspection.	qualified
Low temperature test	temperature (℃) Test sample temperature time (h) Test duration (h) Recovery time (h)	-40±3 1 2 1	experiment procedure: Put the test piece into the test chamber, then adjust the temperature of the low temperature chamber to -40 ℃±3 ℃, and monitor the time. After the test, place it at room temperature for 1 hour for routine inspection.	qualified
constant heat and humidity test	temperature (℃) Relative humidity (%) Test duration (h)	+40±3 90-95 21	a) Put the test piece into the test chamber, then adjust the temperature of the test chamber to +40 ℃±3 ℃, the humidity is 90-95%, and monitor the time.	qualified
	Recovery time (h)	1	b) Place it at room temperature for 1 hour after the test, and carry out Routine inspection.	
Inspectors: 陆晓君		Review:王洪坤		Approve:肖添芳

5.2 Free Drop Test

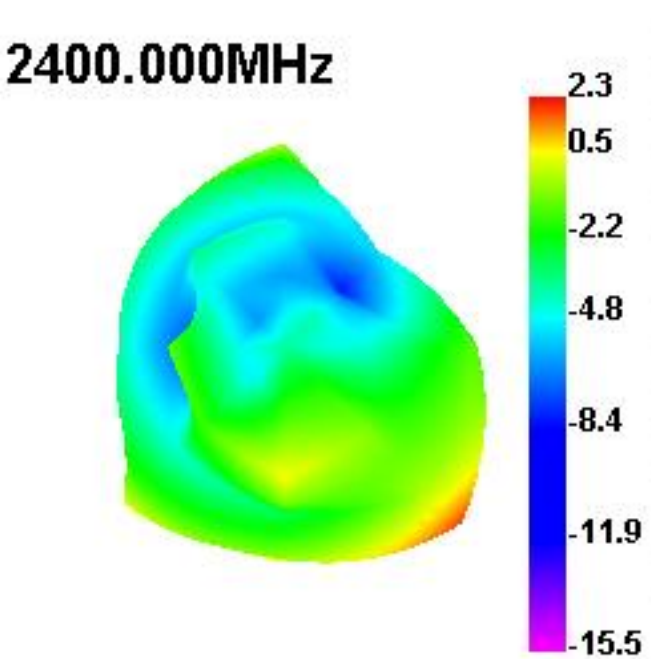
Part No			Product Specifications	
Pilot projects	**Free Drop Test**			
Testing Equipment	1 meter high table top		test numbers	
Inspection standards	1. Dropped at a height of 1 meter, the product has no defects such as falling off, cracks, etc., and the appearance has no deformation.			
Test name	Pilot projects	Require	experiment method	Result judgment
Free Drop Test	Drop height 1000mm	Drop 2 times on both sides	experiment procedure: a) Drop the tested part at a height of 1000mm, and carry out routine inspection after the test.	qualified
Inspectors: 陆晓君		Review： 王洪坤		Approve： 肖添芳

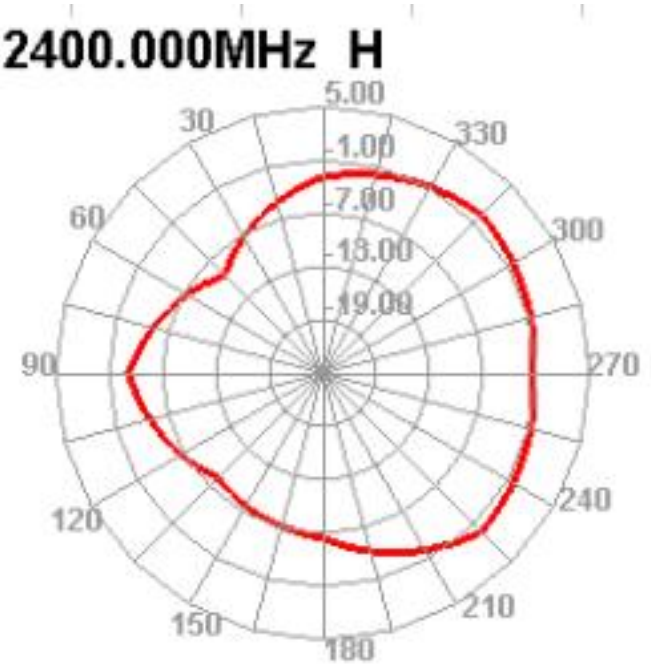
5.3 Salt spray test

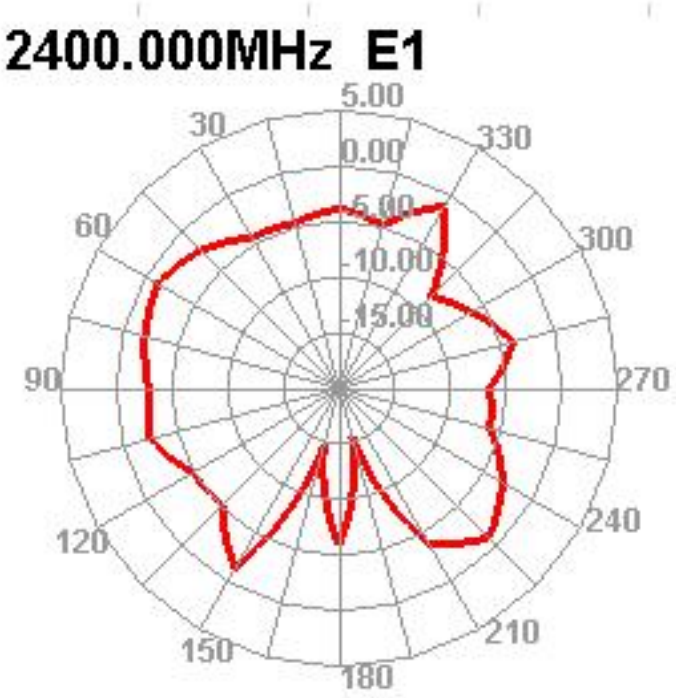
Part No			Product Specifications	
Pilot projects	**Salt spray test**			
Testing Equipment	Salt spray test machine		test numbers	
Inspection standards	1. The coating on the metal surface does not fall off; the appearance is free from rust, corrosion, oxidation and other adverse phenomena.			
Test name	Pilot projects	Require	experiment method	Result judgment
Salt spray test	1. NaCl concentration: 2. Air pressure: 3. PH value: 4. Spray volume: 5. Salt water test temperature setting a. Test room temperature: b. Pressure barrel temperature: 6 Test time:	40-60g/1kg 1.0±0.01kgf ㎡ 6.5-7.2 1.0-2.0ml/80c/h。 35±1℃ 47±1℃ 24H	experiment procedure: a) Adjust the salt spray testing machine to the relevant test conditions. b) Put the tested piece into the salt spray test machine and let it stand for 24 hours. Rinse with clean water after the test, visually inspect the appearance of the tested piece, and carry out routine inspection.	qualified
Inspectors： 陆晓君		Review： 王洪坤		Approve： 肖添芳

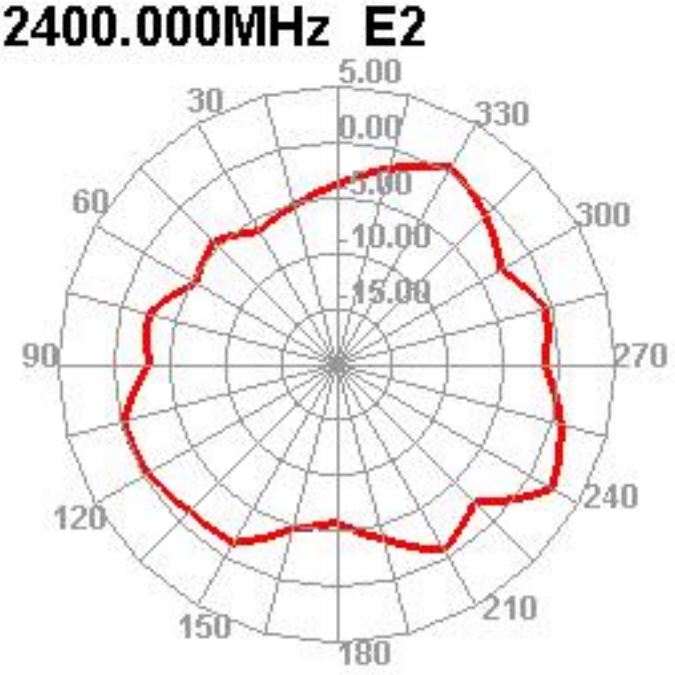
6. Antenna performance test (same test with prototype)

Freq (MHz)	Effi (%)	Gain (dBi)
2400	46.44	2.2
2450	49.18	3.3
2500	48.27	2.3

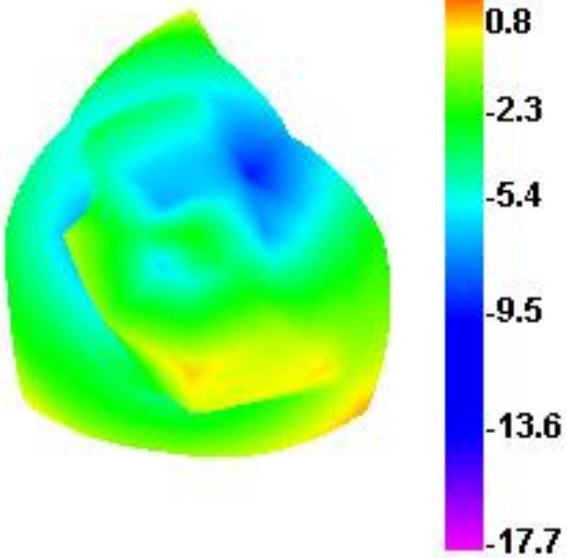

2400.000MHz
2.3
0.5
-2.2
-4.8
-8.4
-11.9
-15.5


2400.000MHz H
5.00
1.00
-3.00
-7.00
-13.00
-19.00
30
330
60
300
90
270
120
240
150
210
180

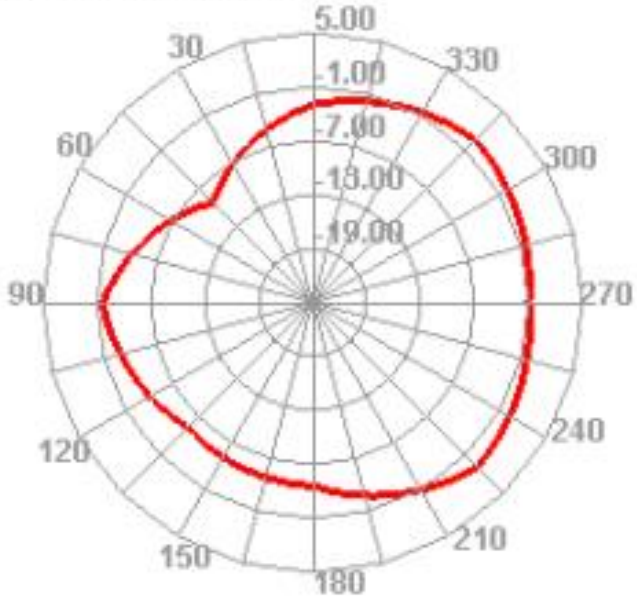

2400.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


2400.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180

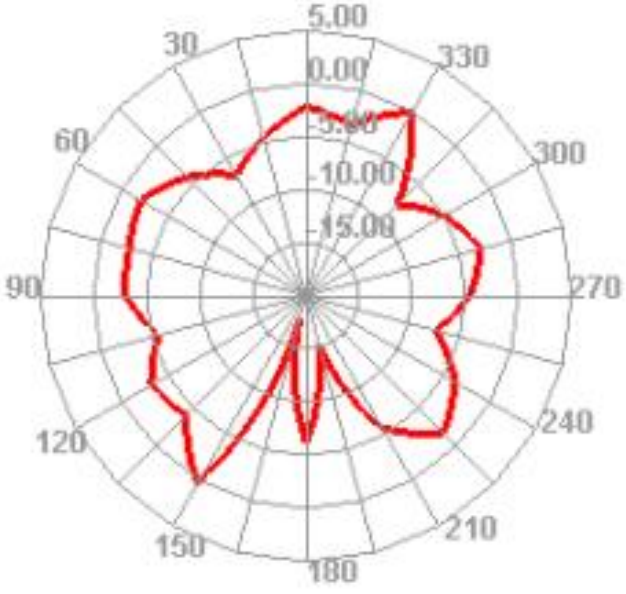
2450.000MHz



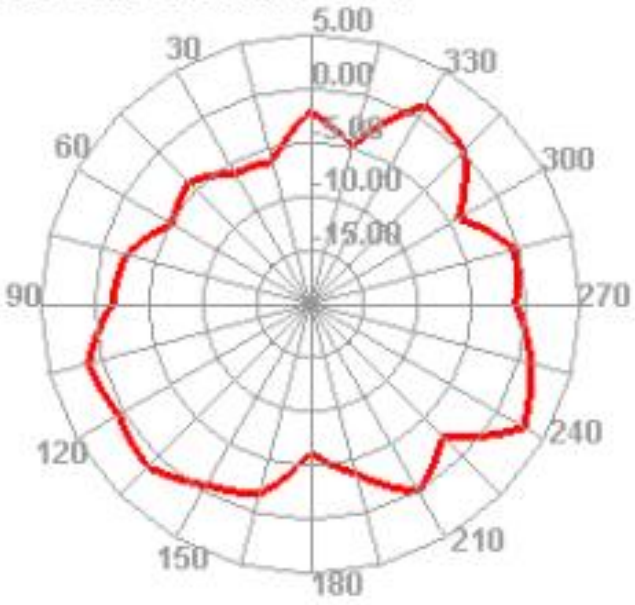
2450.000MHz H

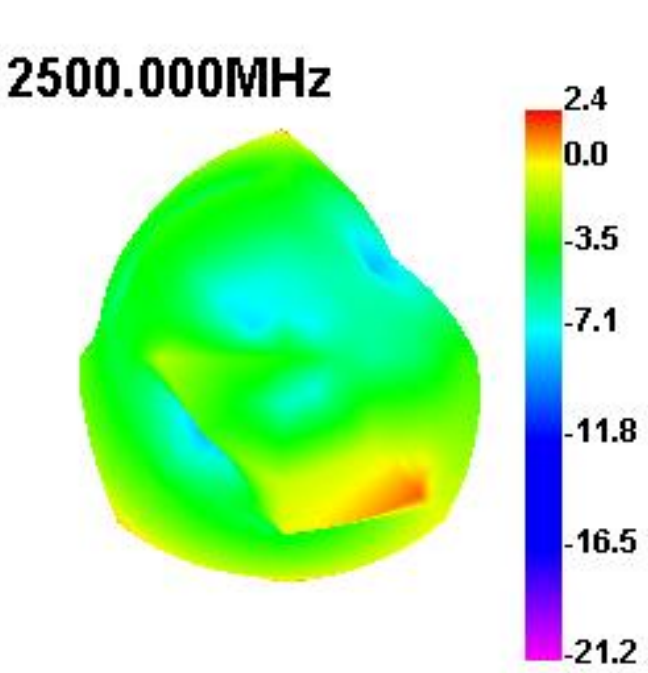


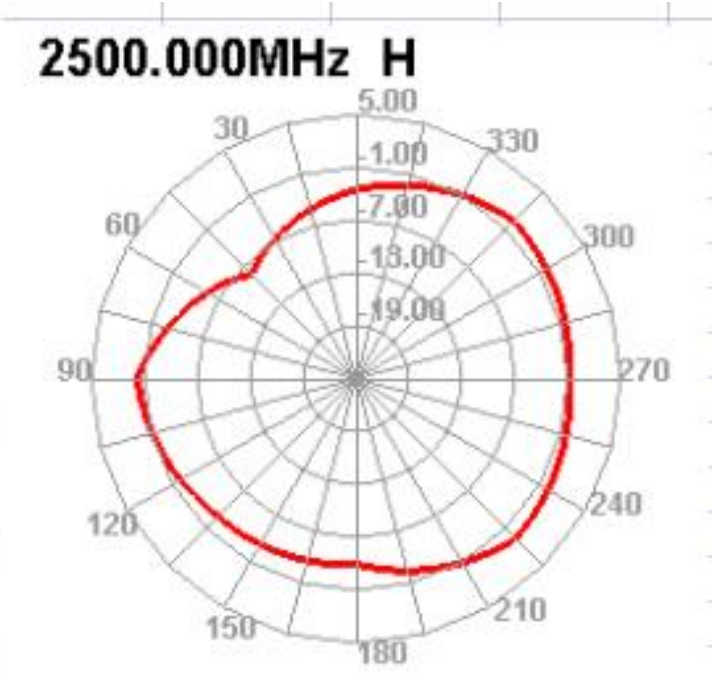
2450.000MHz E1



2450.000MHz E2




2500.000MHz
2.4
0.0
-3.5
-7.1
-11.8
-16.5
-21.2


2500.000MHz H
5.00
1.00
-3.00
-7.00
-11.00
-15.00
-19.00
30
330
60
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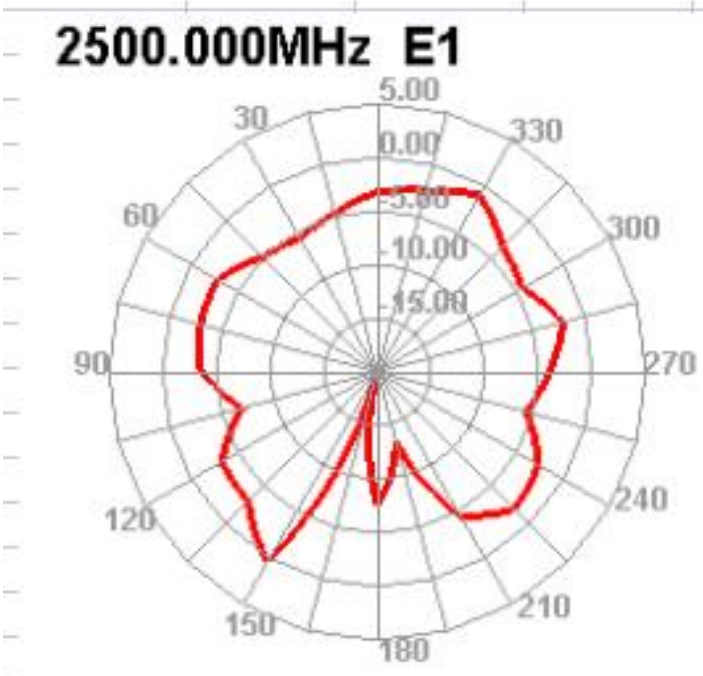
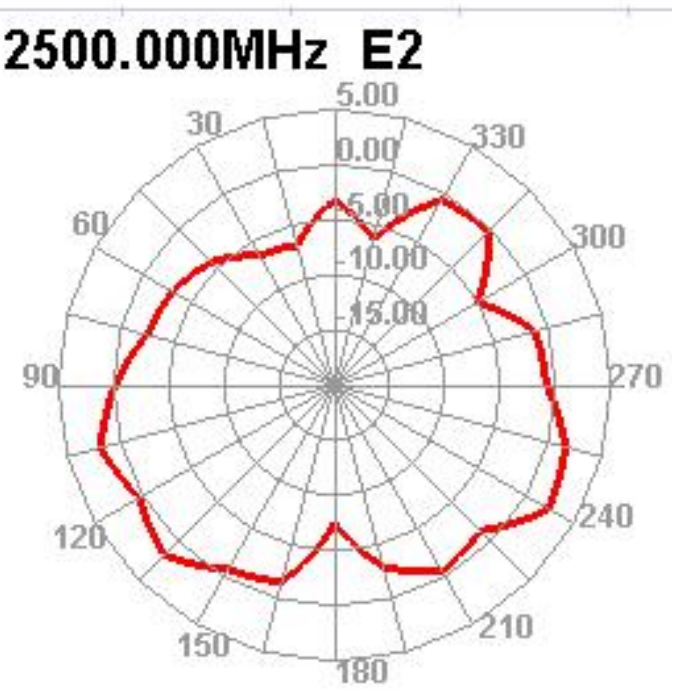
120
240
150
210
180


2500.000MHz E1
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180


2500.000MHz E2
5.00
0.00
-5.00
-10.00
-15.00
30
330
60
300
90
270
120
240
150
210
180