

Dongguan Lianwute Industrial Co., Ltd

ADD: 1st industrial part, Wusha Chenwu, Changan town, Dongguan city, Guangdong, China

TEL: 0769-83284297

FAX: 0769-83284397

承 认 书

Specification for approval

客户名称: 朝阳电子有限公司

Customer name

品名规格: RF内置天线 HSF 焊锡耐热性 $\geq 265^{\circ}\text{C}$ $\geq 5.5\text{S}$ "

Product spec

客户料号: 1029-0000158

Customer P/N

连吾特料号: 1029-0000158

ST P/N

送样日期: 2021.07.13

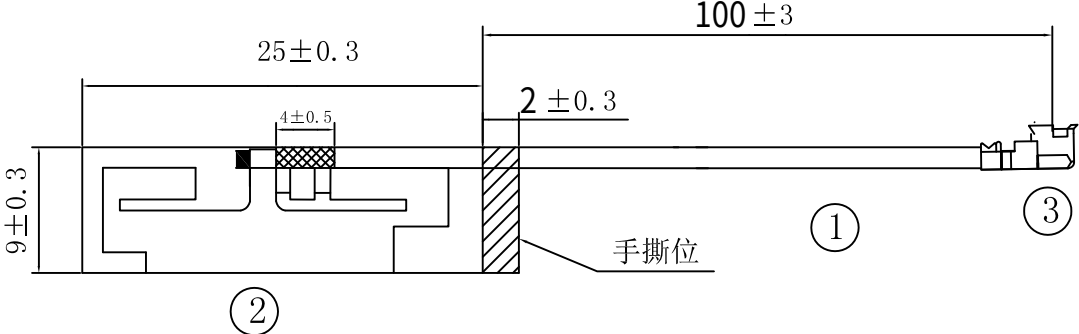
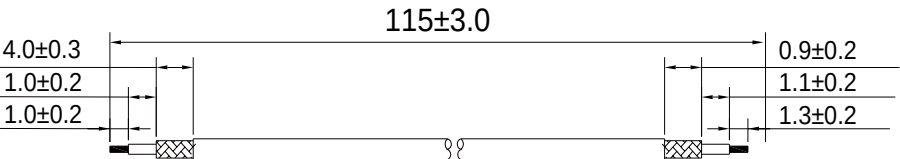
Date

☐ 环保要求	料件之所有组成物质, 必须遵守有害物质要求: ☐ HALOGEN FREE 无卤 ☒ ROHS 2.0 ☒ REACH. ☐ PR065. ☐ CARB2 详细的有害物质管控限值: ☒ Zylux QMI-P40-01, ☐ Samsung 0QA-2049, ☐ Sony SS-00259等	☒ 合格 ☐ 不合格	品管管控
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承办 ISSUED	审核 CHECKED	核准 APPROVED	客户确认 APPROVED
陶宽敏	张朝云	JERRY	ZTC 2021.09.24 游萬國

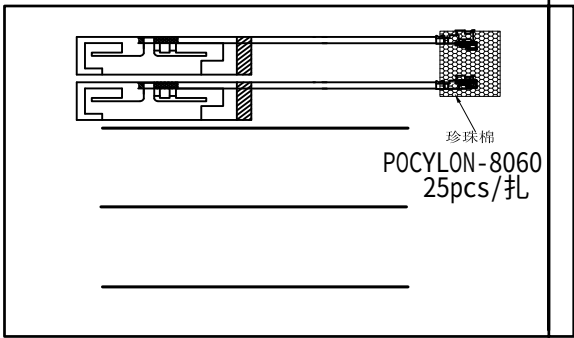
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	1	2	3	4								
D	RECORD <table><tr><td>REV</td><td>DATE</td><td>DESCRIPTION (变更内容)</td><td>NAME</td></tr><tr><td>1.1</td><td>2021-07-13</td><td>变更出线长度 由130mm变更为100mm</td><td>DJC</td></tr></table>				REV	DATE	DESCRIPTION (变更内容)	NAME	1.1	2021-07-13	变更出线长度 由130mm变更为100mm	DJC
	REV	DATE	DESCRIPTION (变更内容)	NAME								
1.1	2021-07-13	变更出线长度 由130mm变更为100mm	DJC									
C	背面											
B												
A	注意: 1. 环保材料, 环保制程, 符合ROHS标准											
	连吾特实业有限公司			TITLE: WLAN AUX ANTENNA								
				PART NO:								
	NO	ITEM	Description	QTY								
	①	线材	INI CLAXIAL 32AWG编 (镀锡铜) 白D1.13	1pcs								
②	FPC板	FPC L27W9T0.2MM 单面板 材PI	1pcs									
③	I-PEX	MHF-I I-PEX FOR 1.13MM	1pcs									
④												
		TOLERANCES UNLESS OTHERWISE SPECIFIED		APPROVED BY								
		X ±X		CHECKED BY								
		XX ±XX		BRAWN BY								
		XXX ±XXX		Kenny								
		ANGLE			陈印							
				陶宽敏								
					CLIENT:							
				NO:								
				UNIT: mm								
				SCALE: NO								
				DATE: 2021-07-13								
				REV: A0								
	1	2	3	4								

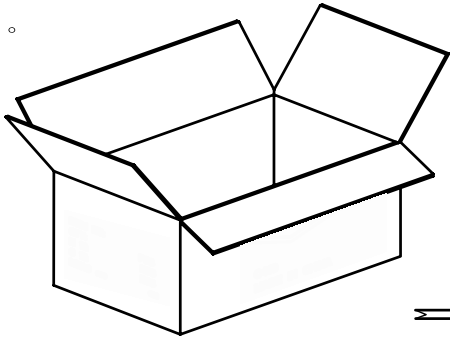
Part Number : 1029-0000158	Revision : A
Name: 内置天线	Customer : ALL

1. 將天線裝入PE袋。



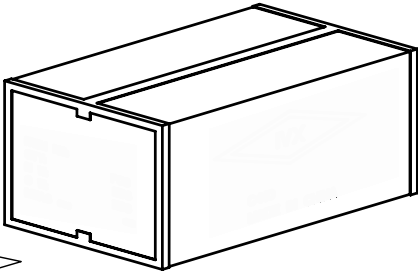
R-PE-BAG-220150006
400pcs/包

2. 裝箱。

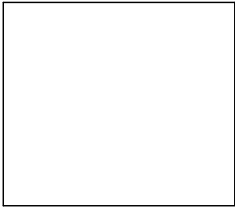


Size: 29*23*32.5CM
10000PCS/BOX

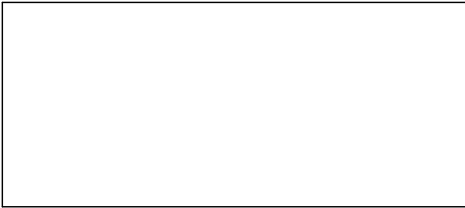
3. 封箱。



SIDE



FRONT



APPROVED BY : Kenny CHECKED BY : 陈印 DESIGNED BY : 陶宽敏

1. 适用范围:

Scope
本规格书制定了 50 Ω FEP 绝缘射频电缆 YD113 系列的结构和电气特性。
This specification covers the construction and the electrical properties of YD113 series of 50 Ω FEP Insulation Coaxial Cable.

2. 结构/Construction: 单位/Unit:mm

项目/Item		详细资料/Details
导体/Conductor	材料/Material	镀锡铜线/Tinned Copper Wire
	构成(根/mm) Composition(No./mm)	7/0.083
	标称直径/NOM O.D	0.24±0.03
绝缘层 /Insulation	材料/Material	聚全氟乙丙烯(自然色) /FEP(Natural)
	标称绝缘厚度/Nom.Thick. (mm)	0.23
	标称外径/NOM O.D	0.695±0.03
屏蔽层/Shield	材料/Material	镀锡铜线/Tinned annealed copper wire
	构成/Composition	0.05 单线编织/Single Braid of 0.05
护套/Jacket	材料/Material	聚全氟乙丙烯/FEP
	标称护套厚度 / Nom.Thick (mm)	0.10
	标称外径/Nom. O.D (mm)	1.13±0.05
	颜色/Color	按与客户确认的颜色/According to corresponding have approved by the suppliers and customers

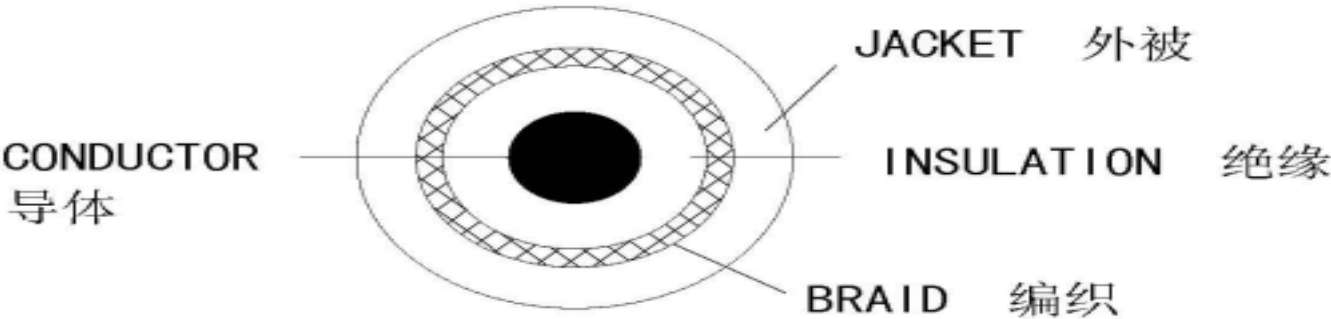
3. 电气特性(20℃时)/Electrical Properties(at 20℃)

项目/Item	单位/Unit	详细资料/Details
导体电阻/Conductor Resistance	Ω/km	Max. 560
绝缘电阻/Insulation Resistance	MΩ.km	Min. 200
耐压强度/Dielectric Strength	V(AC)/min	1000
静电容/Capacitance	pF/m	98
特性阻抗 /Characteristic Impedance	Ω	50±2.0

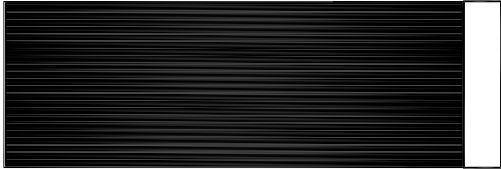
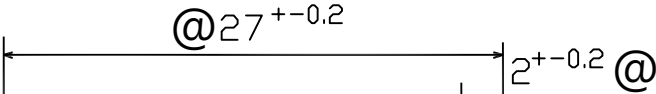
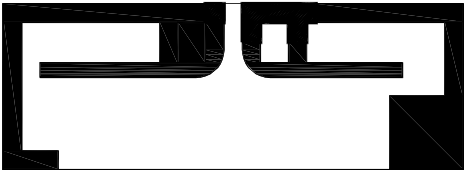
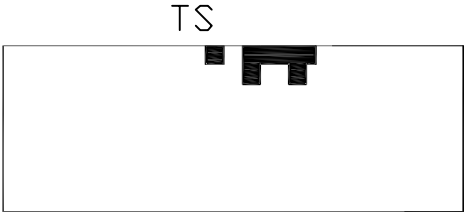
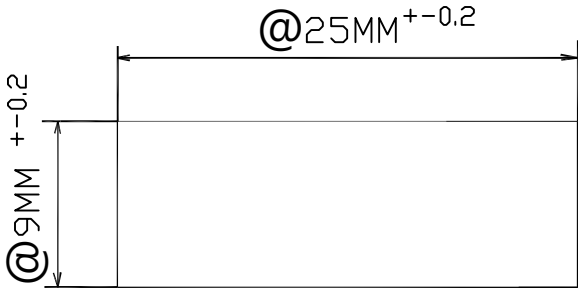
衰减/Attenuation	dB/m	1GHz	2.20
		2GHz	3.15
		3GHz	3.90
		4GHz	4.60
		5GHz	5.20
		6GHz	5.70
驻波比/Standing wave(0-6GHz)	/	≤1.35	

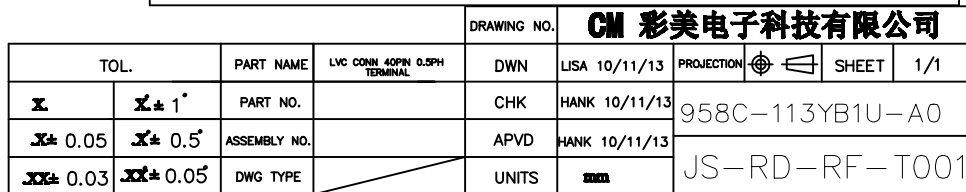
4. 包装 Packing

标准单位包装长度为 1000 米/盘, 每盘最多允许 5 个接头, 接头最短长度 20 米, 在搬运过程中不能损坏包装。
Standard unit length of finished cable shall be 1000m on reel, frequency of joint max.5/reel, the mini length is 20m. The finished cable shall be packed not be damaged during transportation



廠商料號		GM0160-05100030-00		
版本	發行日期	說明	ECN NO	NAME
A	15.12.25	原始版本		HEIDI





东莞市连吾特实业有限公司

鹽霧試驗報告

試驗日期: 2021/7/12		試驗編號: 2107Y015	
產品名稱: 藍牙天線 物料編號: 1029-0000158		供應商: 數量: 2 PCS	
試驗日期: 07月12日19時 至07月13日19時 共計 24 小時 噴霧時間: 實驗若有中斷,其原因為: 無中斷			
1.Nacl品質		NACL 含量: 99.5%	
2.蒸餾水品質		蒸餾水	
3. 噴霧採取器		1.0-2.0ml/80cm ² /h	
3.1 噴霧量			
3.2 收集溶液在室溫的比重或濃度.			
3.3 PH		Nacl 5.0%(現配)	
4. 試樣		6.9	
4.1 種類		表面區域	
4.2 形狀			
4.3 尺度			
4.4 數量 2PCS			
5. 壓縮空氣壓力.	1kgf/cm ²	8. 压力桶溫度.	47±1℃
6. 實驗室相對濕度 .	> 85%	9. 盐水桶溫度.	35±1℃
7. 實驗室溫度.	35±1℃	10. 噴霧收集量.	79ml
11. 實驗說明: 取 2PCS產品作鹽霧試驗.			
12.實驗後現象: 試驗結果在光學顯微鏡下觀察之結果.			
1. 經鹽霧試驗之表面區域外觀未有明顯生銹,發綠,氧化等現象.			
2. 取樣之產品經鹽霧實驗後未有見明顯差異.(附相關樣品).			
			
判定: 1. 依標準圖判定: 2. 依其它方法判定:取樣之產品鍍層鹽霧試驗24H後,產品表面區域OK.			
審核: 梁繼峰		試驗員: 黃建平	
確認: 黃建平			

RF1代射频线、板端（母座）插拔寿命报告（1-30 times）

插拔力测试报告

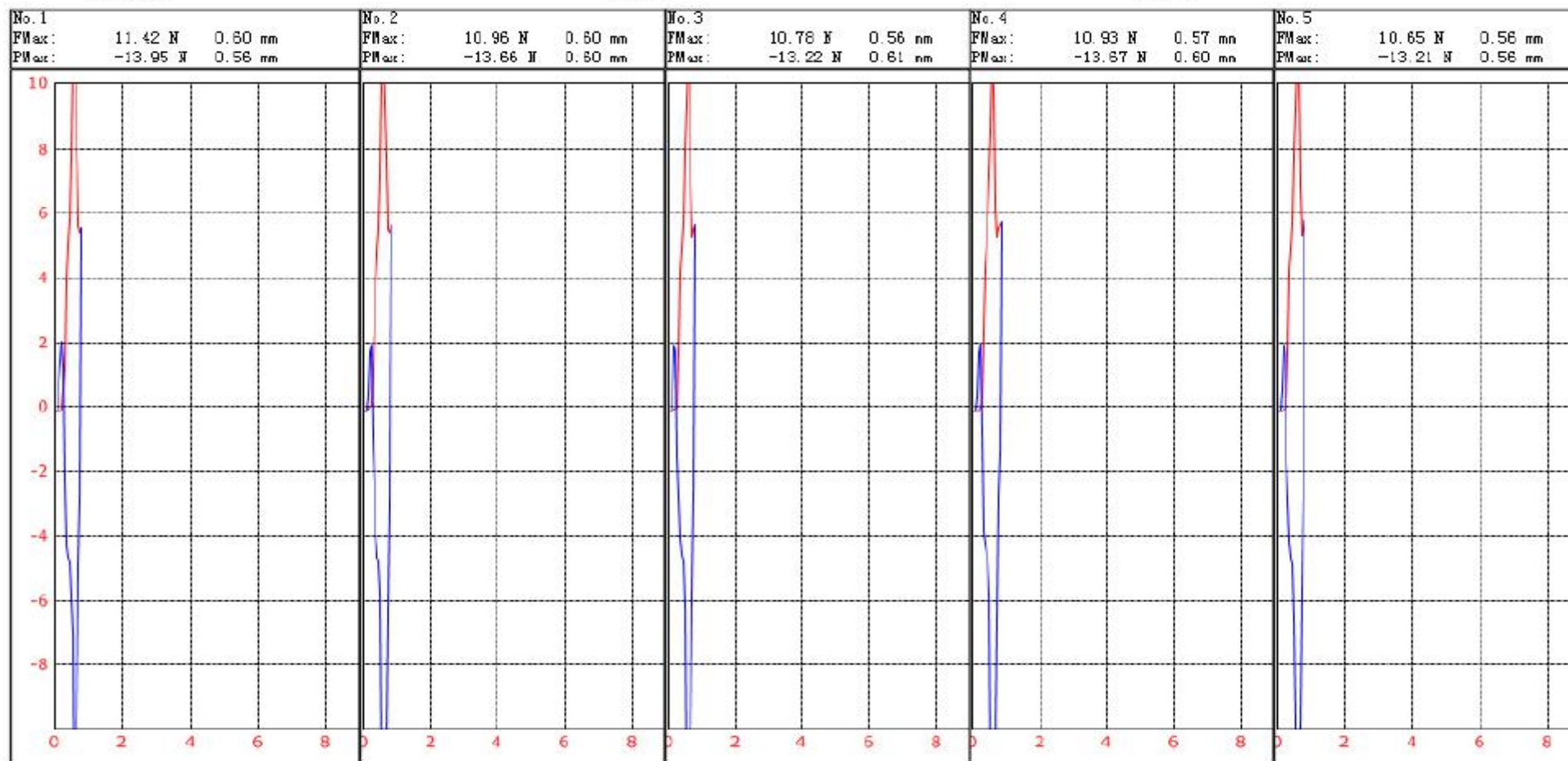
1
-
5

产品名称
Product name
产品型号
Model No

RF1代射频线
CM-1代

客户名称
Customer
制造批号
Lot No

测试日期
Test Date
测试人员
Tester



审核
Checked by Lampo.liu

核准
Approved by kennter.li

签名
Signature huajuan.huang

插拔力测试报告

产品名称
Product name
RF1代射频线

产品型号
Model No
CM-1代

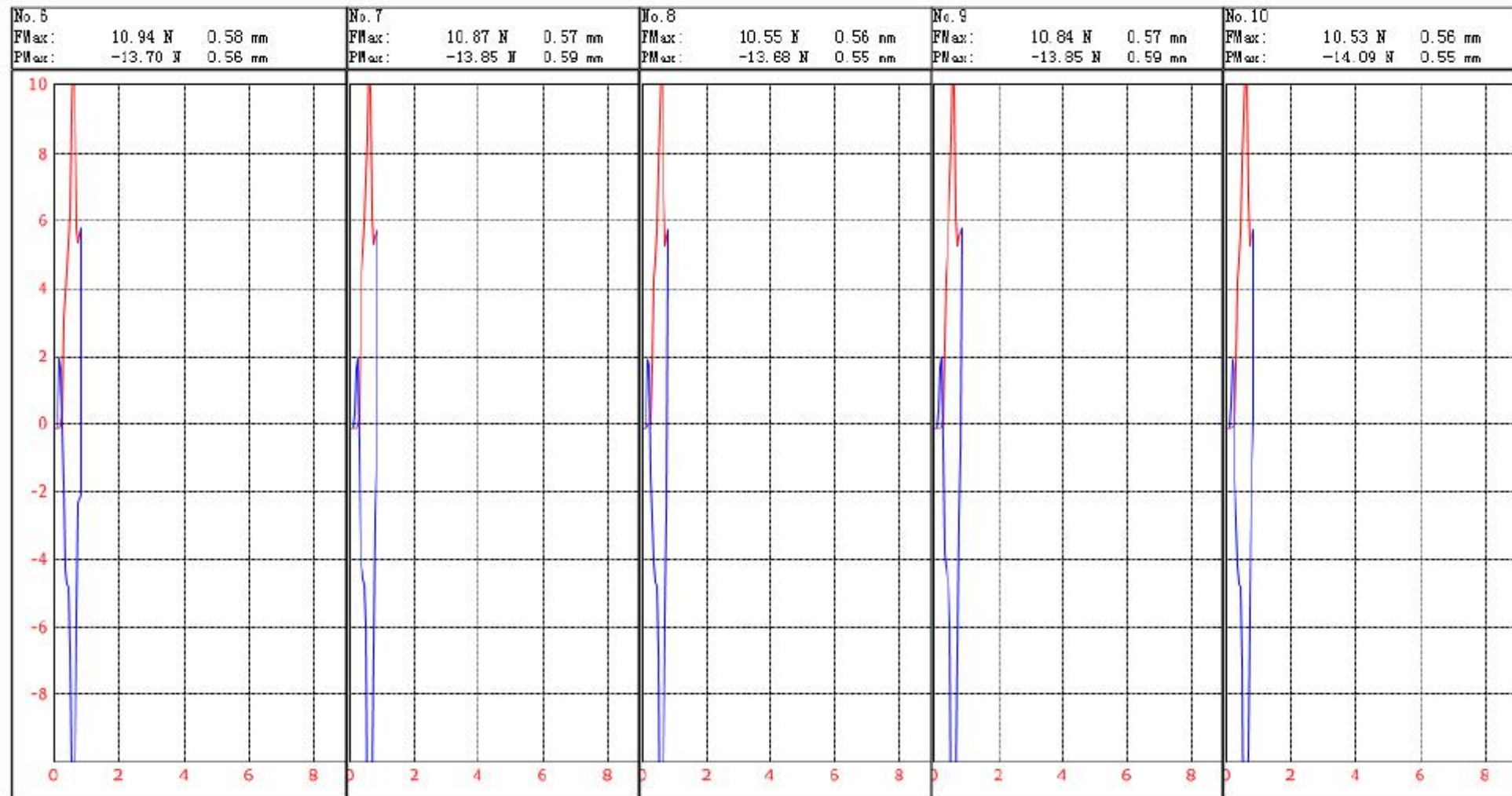
客户名称
Customer

制造批号
Lot No

测试日期
Test Date

测试人员
Tester

6
-
1
0



审核
Checked by
Lampo.liu

核准
Approved by
kennter.li

签名
Signature
huajuan.huang

插拔力测试报告

产品名称
Product name

RF1代射频线

客户名称
Customer

测试日期
Test Date

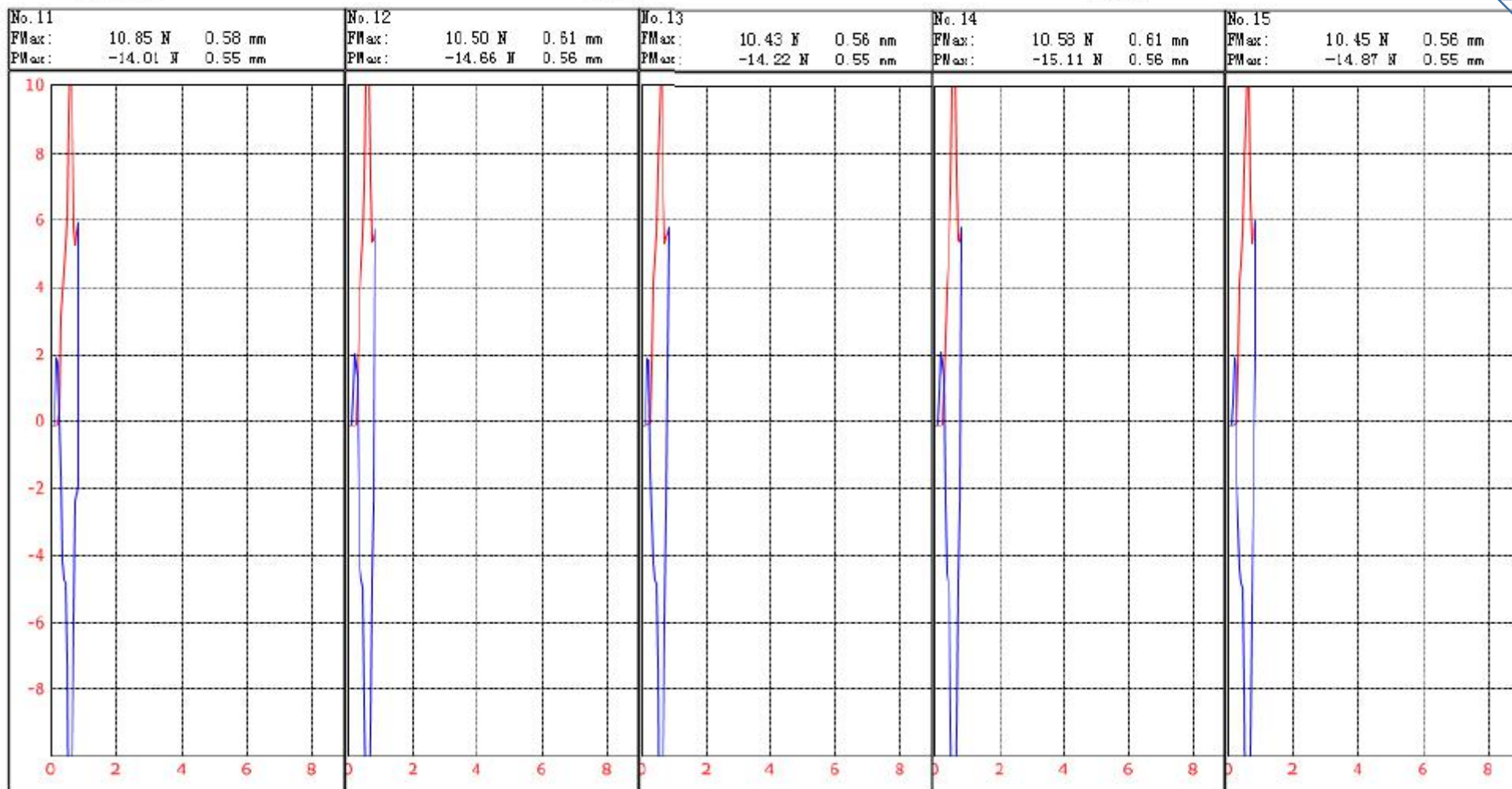
产品型号
Model No

CM-1代

制造批号
Lot No

测试人员
Tester

1
1
-
1
5



审核
Checked by Lampo.liu

核准
Approved by kennter.li

签名
Signature huajuan.huang

插拔力测试报告

产品名称

Product name

RF1代射频线

客户名称

Customer

测试日期

Test Date

产品型号

Model No

CM-1代

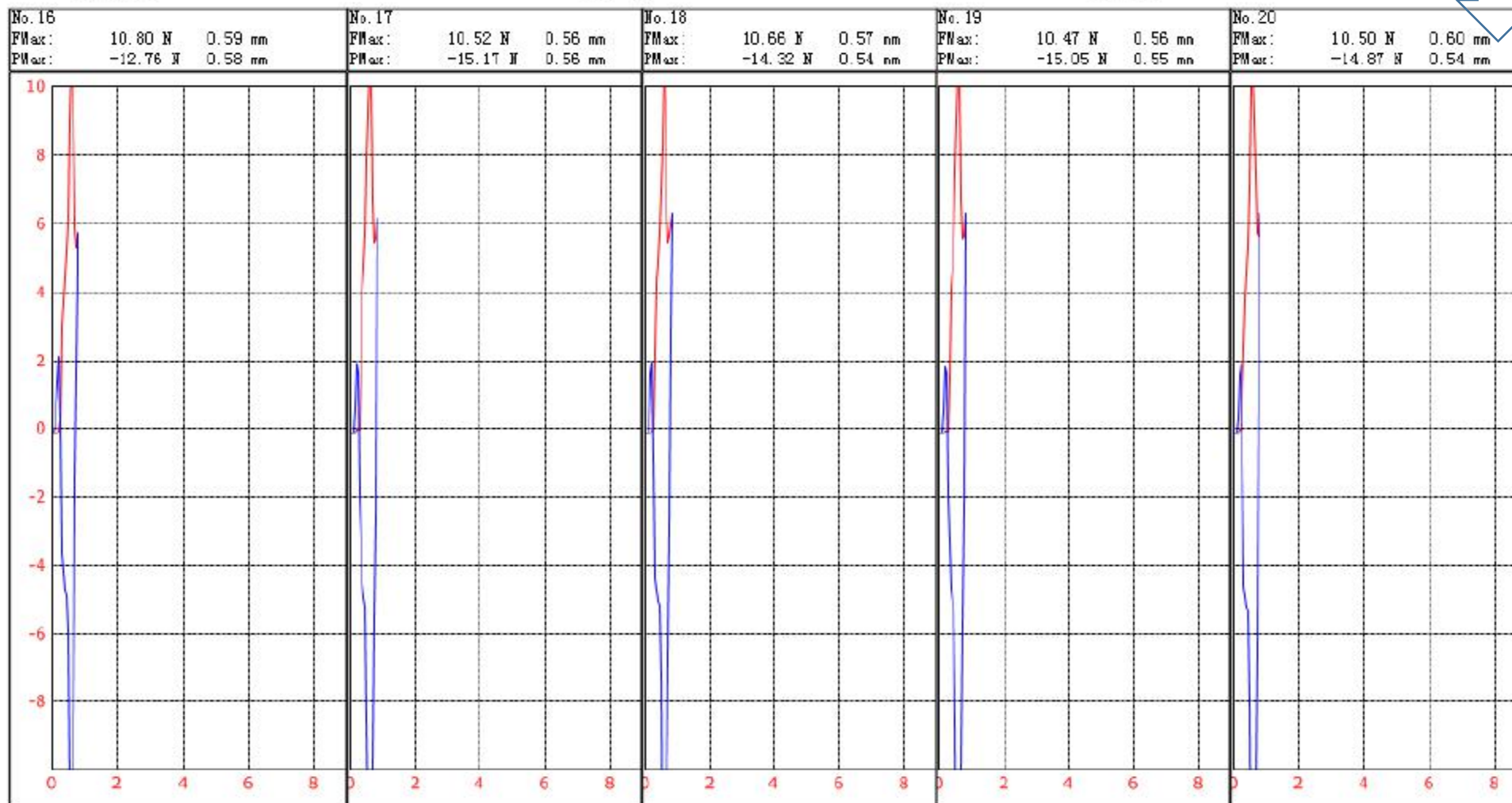
制造批号

Lot No

测试人员

Tester

1
6
-
2
0



审核

Checked by

Lampo.liu

核准

Approved by

kennter.li

签名

Signature

huajuan.huang

插拔力测试报告

产品名称
Product name

RF1代射频线

客户名称
Customer

测试日期
Test Date

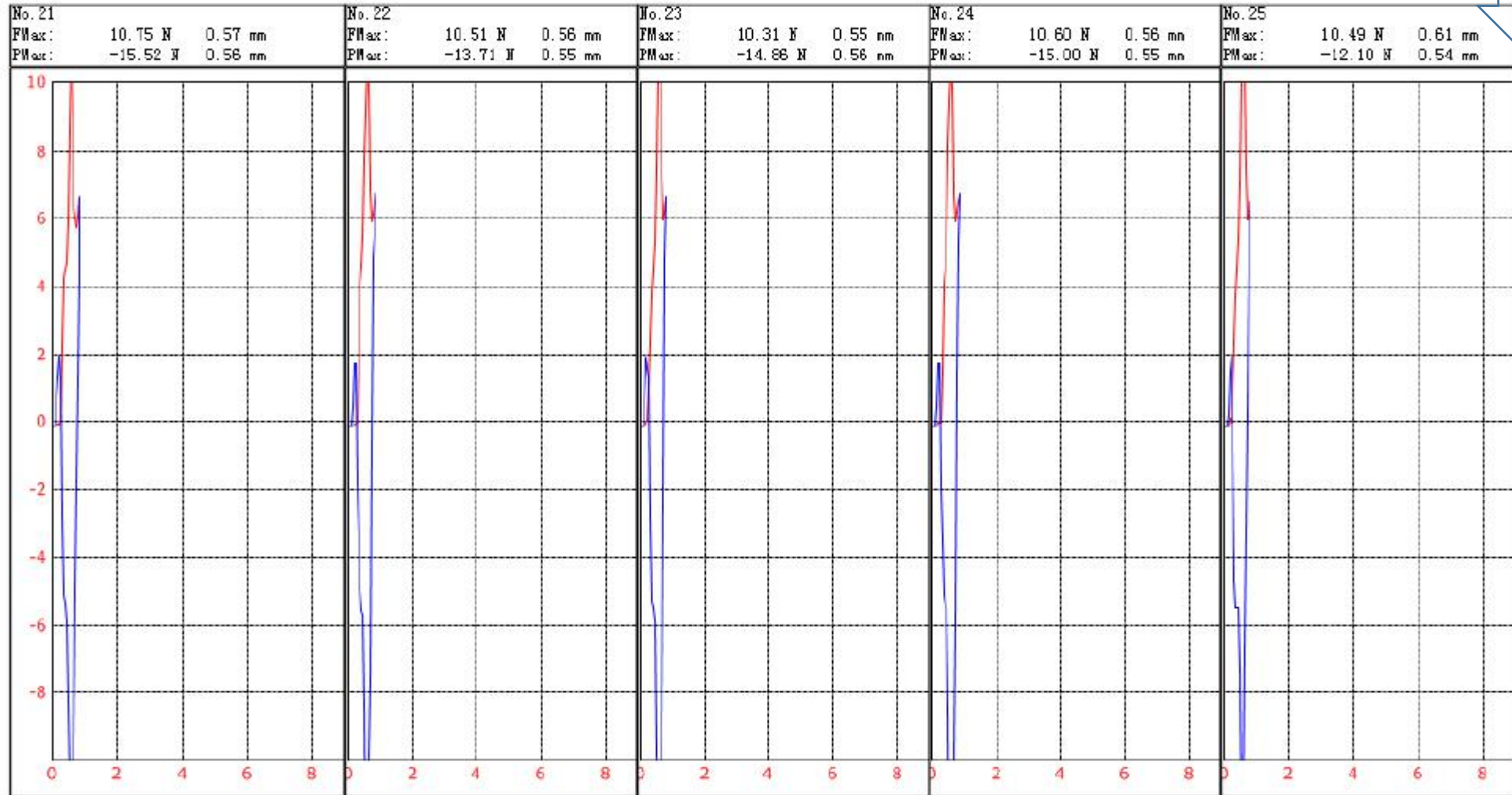
产品型号
Model No

CM-1代

制造批号
Lot No

测试人员
Tester

2
1
-
2
5



审核
Checked by Lampo.liu

核准
Approved by kennter.li

签名
Signature huajuan.huang

插拔力测试报告

2
6
-
3
0

产品名称
Product name

RF1代射频线

客户名称
Customer

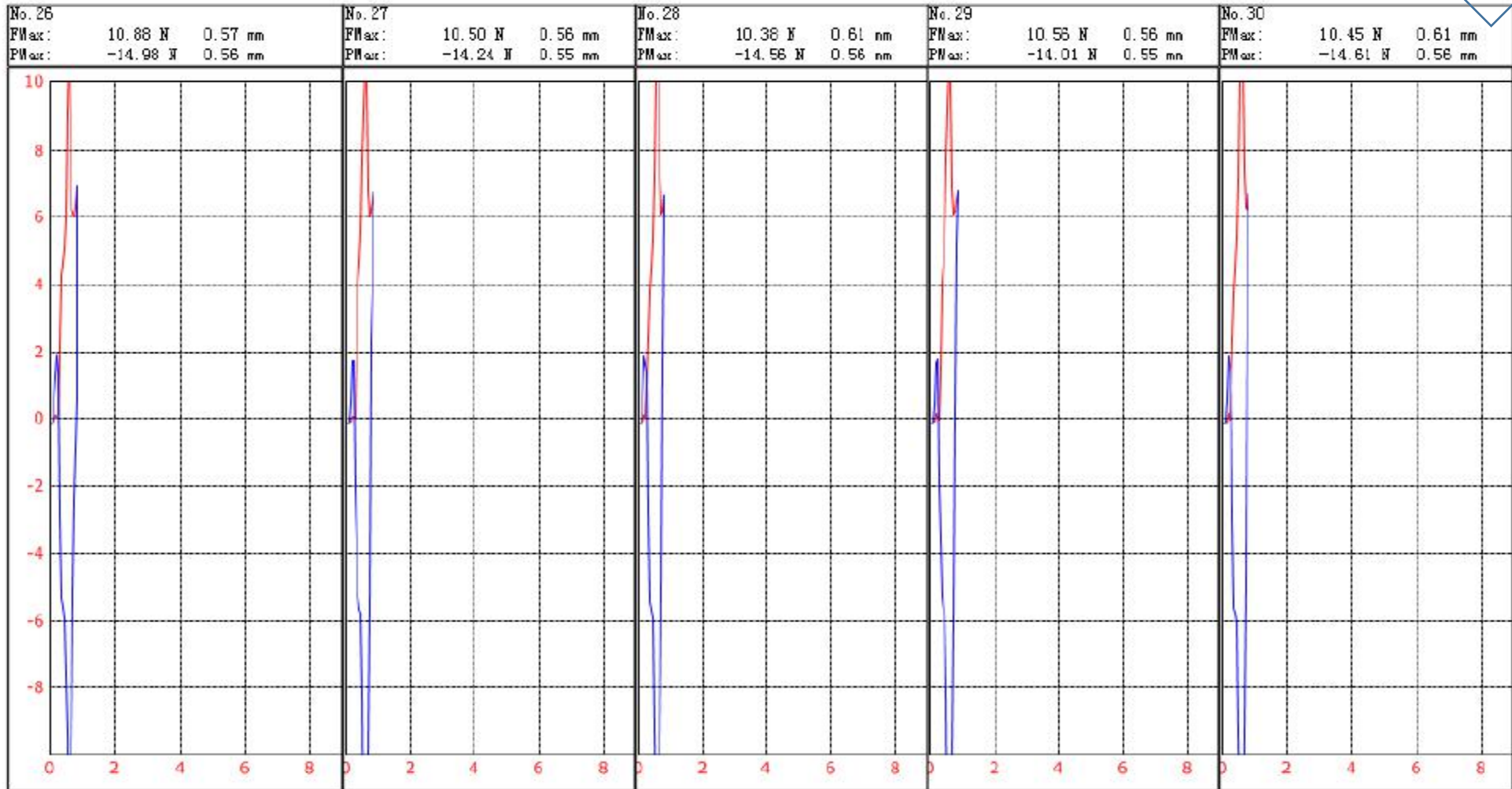
测试日期
Test Date

产品型号
Model No

CM-1代

制造批号
Lot No

测试人员
Tester



审核
Checked by

Lampo.liu

核准
Approved by

kennter.li

签名
Signature

huajuan.huang

东莞市连吾特实业有限公司

出货检验报告表

☒ 成品检验	制令号码		机种	1029-0000158	检验日期	2021/07/13
☐ 出货检验	客户	朝阳电子	数量	5PCS	抽检数	5PCS
ACCORDING TO INSPECTION	MIL-STD-105E LEVEL (II) SINGLE SAMPLE (AQL: 0.65)					
☒ 全检	☒ 正常检验	AQC	严重 0% (CR)	主要 0.65 (MA)	次要 1.0% (MI)	判定
	☐ 加严检验	允收/拒收 AC/RE	0/1	1/2	2/3	OK
☐ 免检	☐ 减量检验	不良数	0	0	0	OK
检验项目		检验标准	检验结果	不良数		
				CR	MA	MI
外观 结构	线材	白色同轴1.13线	白色同轴1.13线	0	0	0
	长度尺寸	成品长度：126±3mm	126 127 126	0	0	0
		线材长度：115±3mm	115 116 115.5	0	0	0
	颜色	白色	白色	0	0	0
	连接器规格	FPC 2.4G / IPEX	FPC 2.4G / IPEX	0	0	0
	塑壳/铁粉芯					
电性	开路/短路	100% OPEN / SHORT TEST				
	绝缘阻抗	IS ≥ <u>10</u> MΩ				
	导通阻抗	CT ≤ <u>3</u> Ω				
	高压测试	H/P ≥ DC: <u>10</u> V & AC: <u>300</u> V				
包装	包装方式	客户要求	客户要求	0	0	0
其他						
备注						

检验员：陶宽敏

审查：陈印

核准：JERRY

JD-QC-06

原材(物)料检验表/Mterial Inspect Sheet

品名 Part Name		RF内置天线		料号 /Part NO.		1029-0000158		★第____次试模/T		模号/Mold NO.				生产设备 Mahine		端子机	
规格 Dcscription		RF内置天线 2.4G												温/湿度 Temperature/ Huidity		92% / 6度	
厂商 Vondor		连吾特	★模具厂商 Mold Maker				检验日期 Check Date	2021-07-13	★模穴 号 Cav. NO		重量	0.58g	生产产地 Produce plac		China		
											Weight				东莞		
检查项目 Ins.ltom		线长 mm	脱皮	绝缘体	剥线	重量	绝缘阻抗 (MΩ)	高压测试	导通阻抗 (Ω)			FPC尺寸 mm		出线长度 mm			
规格 Specifiction		115	1	2	2	0.58	>10MΩ	300V DC/10MS	<3Ω			长	宽	/			
公差 Tolerancc		±2	±0.02	±0.02	±0.02	±0.1		/				25±0.3	9±0.3	130±3			
测定值	1	115	1.01	2	2.01	0.58	111	300V DC/10MS	0.1850			25.1	9.0	131.0	OK		
	2	114.9	1	2	2	0.578	102	300V DC/10MS	0.1980			25.0	9.2	130.5	OK		
	3	115.2	1.01	2	1.99	0.585	116	300V DC/10MS	0.2210			25.1	9.1	131.5	OK		
	4	114	1	2	2.02	0.573	112	300V DC/10MS	0.2180			24.9	9.0	131.0	OK		
	5	115.2	1	2	2.01	0.586	105	300V DC/10MS	0.1890			25.0	8.9	129.5	OK		
	6																
	7																
	8																
	9																
	10																
判定栏 Judgement		OK													OK		
外观记录 Appcarance Record			判定:OK					☐ 合格 /OK			☐ 不合格/OK				主管/Approval		检验者 /Inspector
装配记录 Assembly Record								备注Remark						陈印		陶宽敏	

成分表

NO	部品名称	规格	使用禁止 物质含有 之有无	构成部位 名	UL证书NO	SGS证书NO	原产国	原材料供应 商(中/英文)	材料/ 材质名	测试日期	铅(Pb)	镉(Cd)	汞(Hg)	六价铬 (Cr6)	聚溴联 苯(PBB)	聚溴二苯 醚(PBDE)
1	导体	7/0.08	☐ 有 ☐ 无			SCL01J025364001E		海联通	镀锡		N.D	N.D	N.D	Negative	N.D	N.D
	外被	FEP	☐ 有 ☐ 无			NGBML1800155001			FEP		N.D	N.D	N.D	N.D	N.D	N.D
2	FPC	PI	☐ 有 ☐ 无					晓鸽	PI		0.012	N.D	N.D	negative	N.D	N.D
3	胶芯	PA66	☐ 有 ☐ 无			ECL01J000242005		彩美	PA66		N.D	N.D	N.D	N.D	N.D	N.D
	外壳	C5210	☐ 有 ☐ 无			XMNEC1601350206			C5210		N.D	N.D	N.D	0.10	N.D	N.D

核准： 陈印

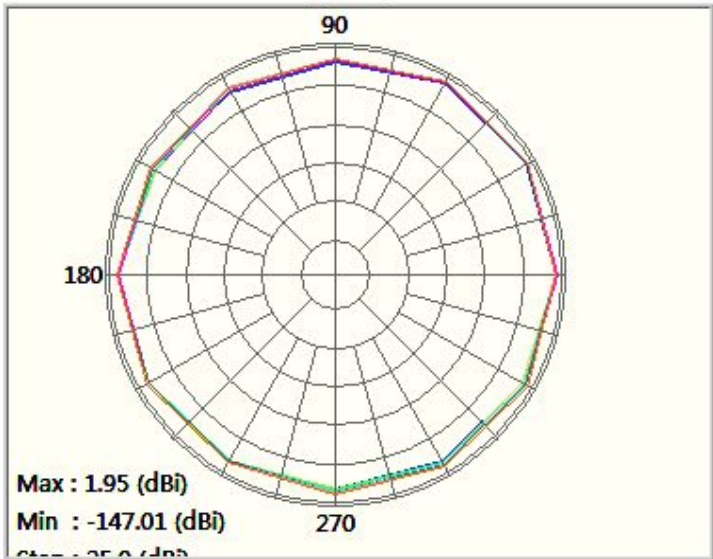
审核： 刘君

制表： 陶宽敏

Frequency	2.4G	2.41G	2.42G	2.43G	2.44G	2.45G	2.46G	2.47G	2.48G	2.49G	2.5G
Total Rad. Pow. Total (dBi)	-1.28	-1.29	-1.58	-1.25	-1.4	-1.7	-1.6	-1.59	-1.72	-1.76	-1.93
Total Rad. Pow.0-90 Total (dB	-3.41	-3.41	-3.7	-3.38	-3.51	-3.82	-3.74	-3.76	-3.89	-3.89	-4.06
Total Rad. Pow.90-180 Total (	-3.71	-3.78	-4.12	-3.83	-4.03	-4.34	-4.21	-4.16	-4.28	-4.32	-4.48
Maximum Total Value (dBi)	1.67	1.76	1.45	1.75	1.5	1.17	1.54	1.89	1.94	1.95	1.76
Maximum Total @ Theta (deg	60	60	60	60	60	150	150	150	150	150	150
Maximum Total @ Phi (deg.)	150	150	150	150	150	330	330	330	330	330	330
Minimum Total Value (dBi)	-5.9	-5.75	-5.97	-5.54	-5.91	-6.57	-7.01	-8.94	-11.39	-14.11	-17.87
Minimum Total @ Theta (deg.	120	120	60	90	90	90	0	0	0	0	0
Minimum Total @ Phi (deg.)	150	150	0	270	150	150	0	0	0	0	0
Ant. Port Inp. Pow. Total (dBi)	0	0	0	0	0	0	0	0	0	0	0
Peak EIRP Total (dBi)	1.67	1.76	1.45	1.75	1.5	1.17	1.54	1.89	1.94	1.95	1.76
Directivity Total (dBi)	2.95	3.05	3.03	3	2.9	2.87	3.14	3.48	3.66	3.71	3.69
Efficiency Total (dB)	-1.28	-1.29	-1.58	-1.25	-1.4	-1.7	-1.6	-1.59	-1.72	-1.76	-1.93
Efficiency Total (%)	74.47	74.3	69.5	74.99	72.44	67.61	69.18	69.34	67.3	66.68	64.12
Gain Total (dBi)	1.67	1.76	1.45	1.75	1.5	1.17	1.54	1.89	1.94	1.95	1.76
NHPIS +/-30 Total (dBi)	-4.11	-4.16	-4.53	-4.25	-4.43	-4.77	-4.69	-4.73	-4.88	-4.89	-5.07
NHPIS +/-45 Total (dBi)	-2.54	-2.56	-2.9	-2.6	-2.79	-3.13	-3.06	-3.09	-3.24	-3.27	-3.45
Maximum Theta Value (dBi)	-0.66	-0.68	-0.9	-0.57	-0.27	-0.25	-0.17	-0.1	-0.02	-0.05	-0.25
Maximum Theta @ Theta (deg	150	150	150	30	30	30	30	30	150	150	150
Maximum Theta @ Phi (deg.)	330	330	330	150	150	150	150	150	330	330	330
Minimum Theta Value (dBi)	-144.01	-143.89	-143.71	-143.73	-143.59	-143.23	-143.48	-143.1	-142.87	-142.95	-142.96
Minimum Theta @ Theta (deg	0	0	0	0	0	0	0	0	0	0	0
Minimum Theta @ Phi (deg.)	0	0	0	0	0	0	0	0	0	0	0
Maximum Phi Value (dBi)	0.74	0.86	0.66	1.12	0.8	0.28	0.43	0.35	0.17	0.09	-0.1
Maximum Phi @ Theta (deg.)	120	120	120	120	120	120	120	120	120	120	120
Maximum Phi @ Phi (deg.)	30	30	30	30	30	30	30	30	30	30	30
Minimum Phi Value (dBi)	-19.72	-20.89	-21.48	-21.28	-20.71	-20.39	-20.08	-22.19	-25.91	-28.17	-26.99
Minimum Phi @ Theta (deg.)	90	90	90	90	90	90	60	60	60	60	60
Minimum Phi @ Phi (deg.)	0	0	0	0	0	0	0	0	0	0	0

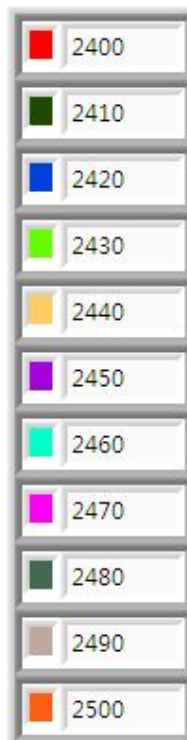
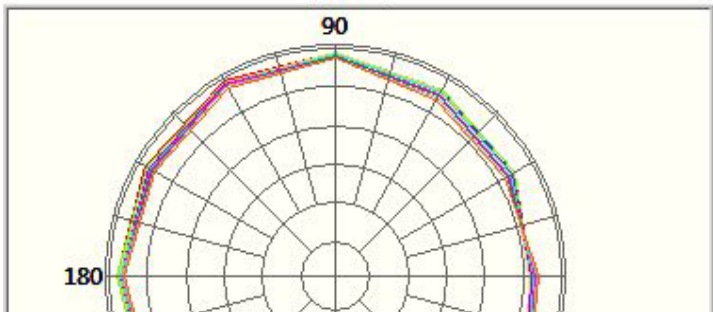
Theta H

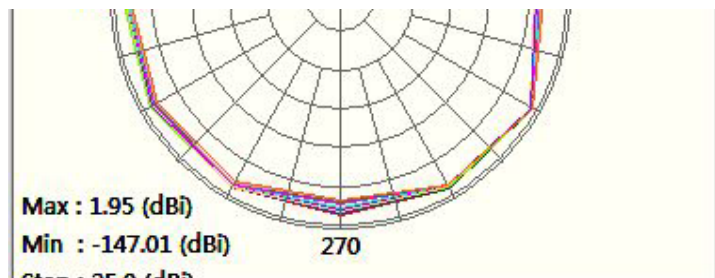
Excel XY Plot (Value dB / Angle deg.)



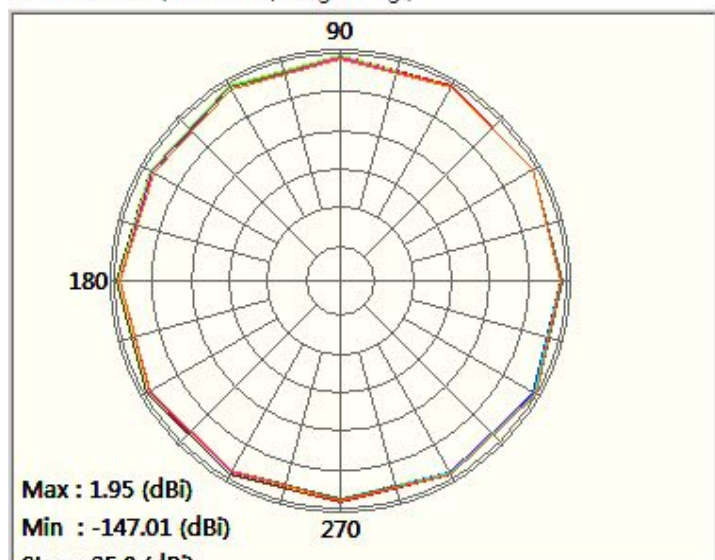
Phi H

Excel XY Plot (Value dB / Angle deg.)

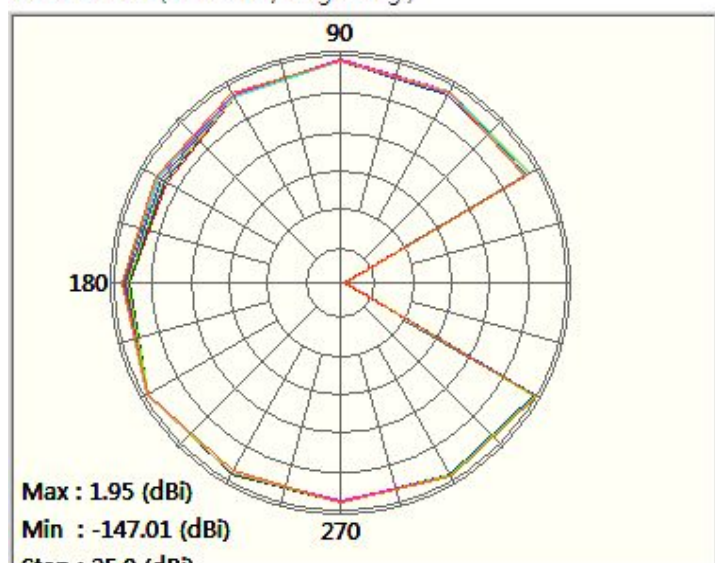




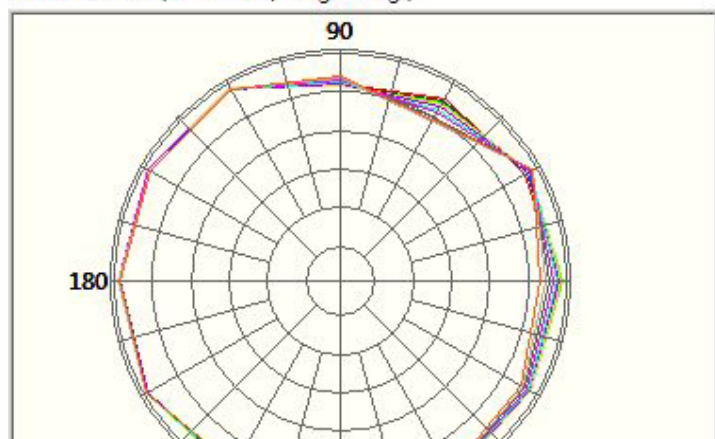
Total H
Excel XY Plot (Value dB / Angle deg.)

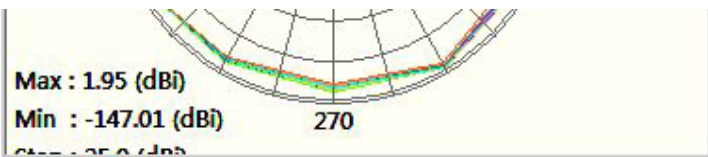


Theta E1
Excel XY Plot (Value dB / Angle deg.)

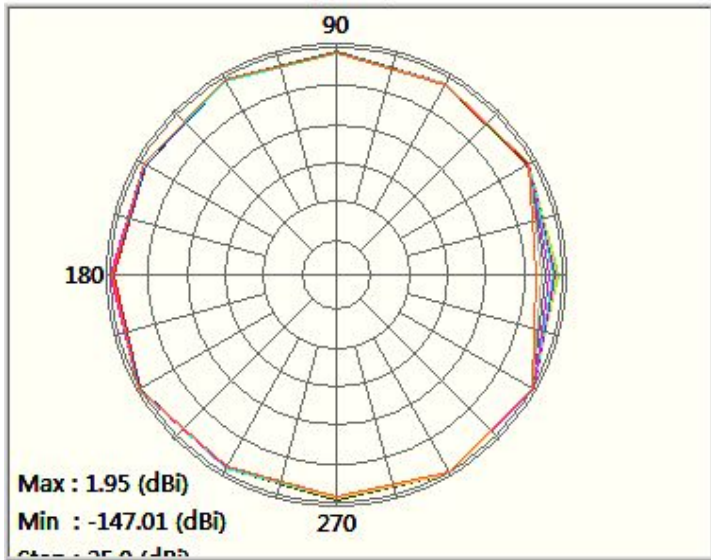


Phi E1
Excel XY Plot (Value dB / Angle deg.)

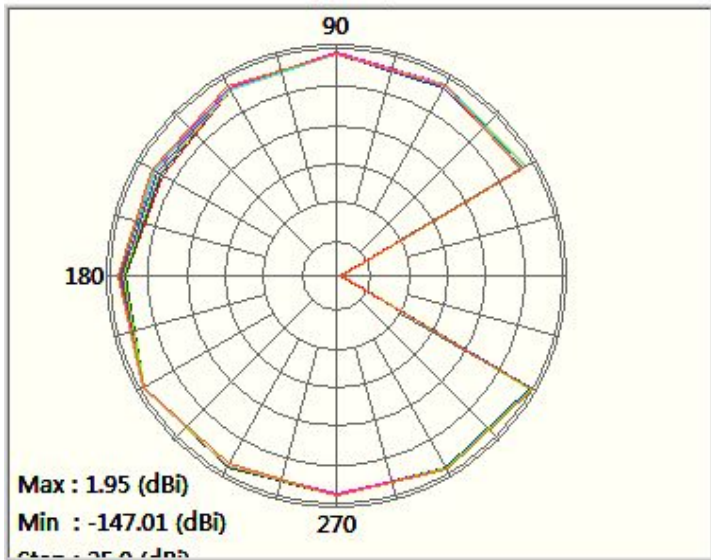




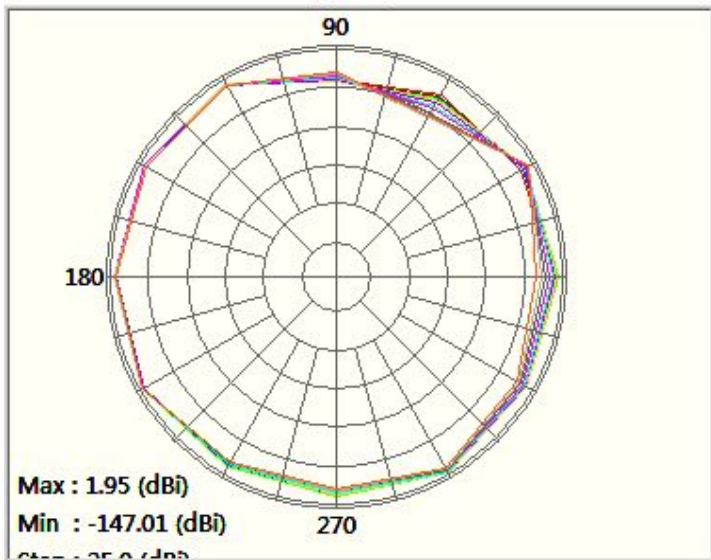
Total E1
Excel XY Plot (Value dB / Angle deg.)



Theta E2
Excel XY Plot (Value dB / Angle deg.)

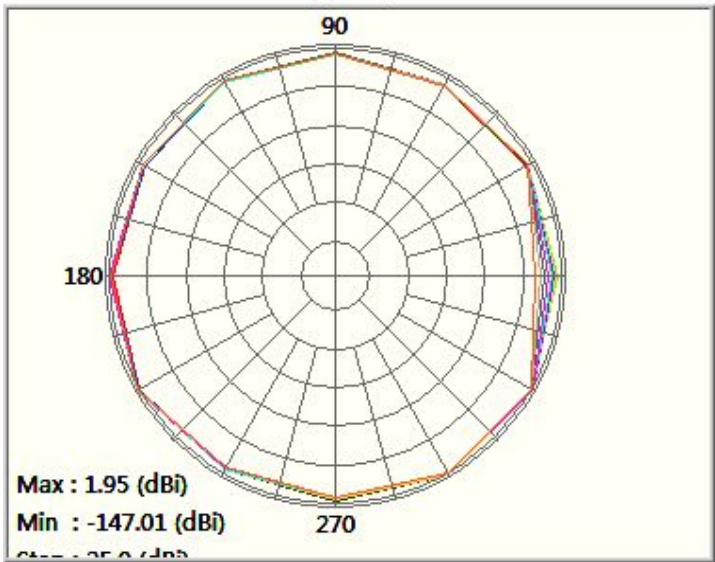


Phi E2
Excel XY Plot (Value dB / Angle deg.)



Step : 25.0 (dB)

Total E2
Excel XY Plot (Value dB / Angle deg.)



2.4GHz

3D Passive		
Total Rad. Pow. Total	-1.28	dBi
Total Rad. Pow.0-90 Total	-3.41	dBi
Total Rad. Pow.90-180 Total	-3.71	dBi
Ant. Port Inp. Pow. Total	0	dBi
Peak EIRP Total	1.67	dBi
Directivity Total	2.95	dBi
Efficiency Total	-1.28	dB
Efficiency Total	74.47	%
Gain Total	1.67	dBi
NHPRP +/-30 Total	-4.11	dBi
NHPRP +/-45 Total	-2.54	dBi
Total Rad. Pow. Theta	-6.52	dBi
Total Rad. Pow.0-90 Theta	-8.35	dBi
Total Rad. Pow.90-180 Theta	-8.72	dBi
Ant. Port Inp. Pow. Theta	0	dBi
Peak EIRP Theta	-0.66	dBi
Directivity Theta	5.86	dBi
Efficiency Theta	-6.52	dB
Efficiency Theta	22.28	%
Gain Theta	-0.66	dBi
NHPRP +/-30 Theta	-9.51	dBi
NHPRP +/-45 Theta	-7.99	dBi
Total Rad. Pow. Phi	-2.83	dBi
Total Rad. Pow.0-90 Phi	-5.1	dBi
Total Rad. Pow.90-180 Phi	-5.36	dBi
Ant. Port Inp. Pow. Phi	0	dBi
Peak EIRP Phi	0.74	dBi
Directivity Phi	3.57	dBi
Efficiency Phi	-2.83	dB
Efficiency Phi	52.12	%
Gain Phi	0.74	dBi
NHPRP +/-30 Phi	-5.59	dBi

	Theta dBi	Phi dBi	Total dBic	Theta AR	Phi AR	Total AR
0	-4.60282	-0.89106	0.9246	139.41052	6.82001	3.31164
30	-1.88138	0.2148	1.65599	17.54746	17.1903	5.87459
60	-2.81147	0.91992	2.4369	17.0297	12.12107	7.17039
90	-2.74301	-2.38662	0.01782	8.61907	17.25087	2.89876
120	-3.57415	1.08339	1.9666	4.72998	10.83877	7.09226
150	-0.63043	-0.54517	2.25338	21.05865	2.20623	5.80192

NHPRP +/-45 Phi	-3.99	dBi
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Maximum Theta Value	-0.66	dBi
Maximum Theta @ Theta	150	deg.
Maximum Theta @ Phi	330	deg.
Minimum Theta Value	-144.01	dBi
Minimum Theta @ Theta	0	deg.
Minimum Theta @ Phi	0	deg.
Maximum Phi Value	0.74	dBi
Maximum Phi @ Theta	120	deg.
Maximum Phi @ Phi	30	deg.
Minimum Phi Value	-19.72	dBi
Minimum Phi @ Theta	90	deg.
Minimum Phi @ Phi	0	deg.
Maximum Total Value	1.67	dBi
Maximum Total @ Theta	60	deg.
Maximum Total @ Phi	150	deg.
Minimum Total Value	-5.9	dBi
Minimum Total @ Theta	120	deg.
Minimum Total @ Phi	150	deg.

Test Data

Total

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
0	-3.65	-1.07	-1.55	-2.99	-3.69	-3.93	-4.05	-2.66	-0.74	-1.27	-1.47
30	-5.22	-4.21	-3.53	-2.47	-2.18	-1.61	-0.52	0.51	0.66	0.35	0.04
60	-5.5	-4.35	-2.02	-1.25	-2.82	1.67	0.3	1.01	1.16	1.23	1.3
90	-3.51	-2.84	-2.5	-1.78	-1.85	-4.16	-2.26	-2.51	-3.78	-4.68	-3.39
120	-2.45	1.19	1.03	0.39	-3.64	-5.9	-2.54	-0.39	-0.34	-0.36	-0.34
150	-4.56	-4.21	-3.41	-3.23	-3.86	-1	-0.24	-0.4	-1.23	0.06	0.69

Theta

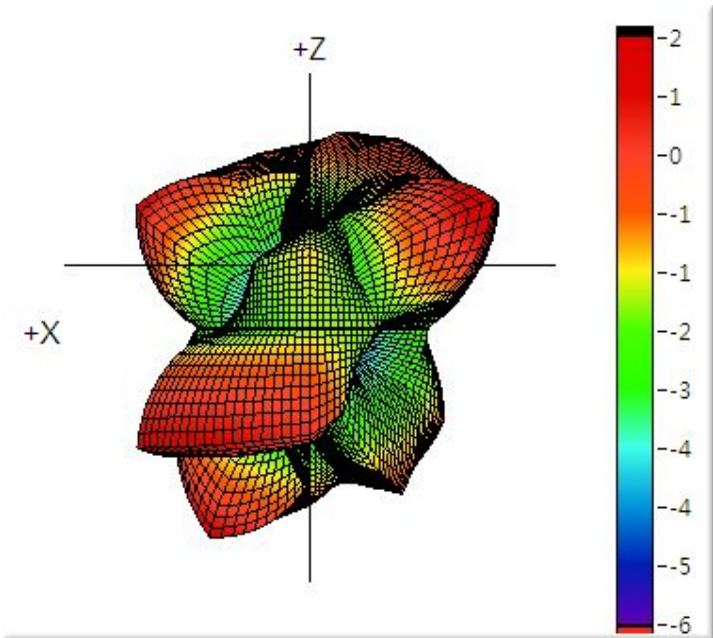
Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
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0	-144.01	-4.82	-6.97	-6.89	-6.16	-6.02	-5.96	-4.6	-6.54	-11.39	-7.95
30	-7.32	-5.97	-4.94	-2.63	-2.36	-2.02	-1.96	-3.33	-7.28	-12.67	-15.39
60	-6.76	-8.31	-14.07	-19.93	-7.9	-2.9	-4.12	-6.13	-7.15	-7.05	-7.35
90	-3.62	-3.3	-3.72	-9.6	-10.62	-11.92	-5.63	-6.93	-8.49	-8.95	-8.8
120	-9.14	-8.86	-9.33	-9.08	-8.44	-7.98	-4.83	-6.88	-8.95	-8.98	-9.12
150	-17.35	-21.7	-18.45	-16.38	-15.36	-6.14	-3.72	-3.53	-3.85	-1.8	-1.16

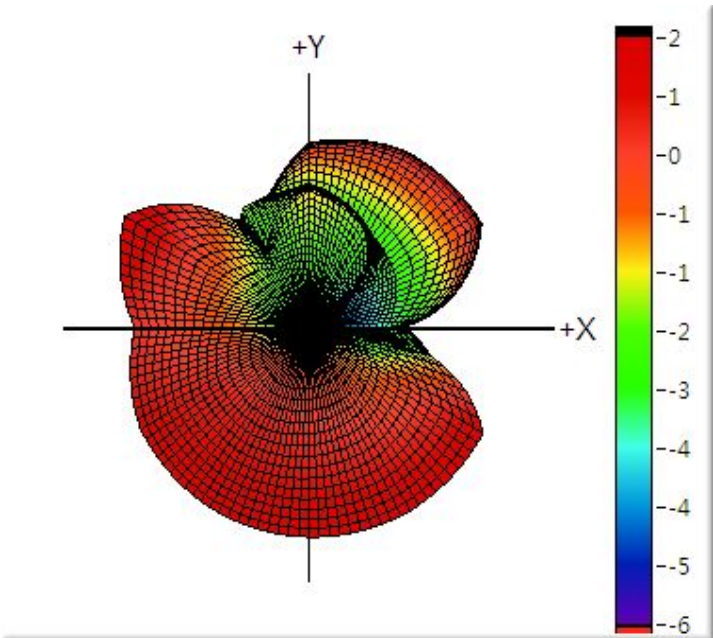
Phi

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
0	-3.65	-3.44	-3.02	-5.26	-7.32	-8.11	-8.53	-7.08	-2.06	-1.71	-2.57
30	-9.37	-8.98	-9.09	-17.06	-16.25	-12.04	-6.03	-1.8	-0.1	0.13	-0.08
60	-11.46	-6.58	-2.3	-1.31	-4.43	-0.19	-1.65	0.08	0.47	0.53	0.66
90	-19.72	-12.8	-8.59	-2.56	-2.47	-4.95	-4.95	-4.46	-5.57	-6.72	-4.86
120	-3.5	0.74	0.61	-0.13	-5.39	-10.1	-6.4	-1.49	-0.99	-1	-0.96
150	-4.8	-4.28	-3.55	-3.44	-4.18	-2.59	-2.82	-3.29	-4.68	-4.51	-3.9

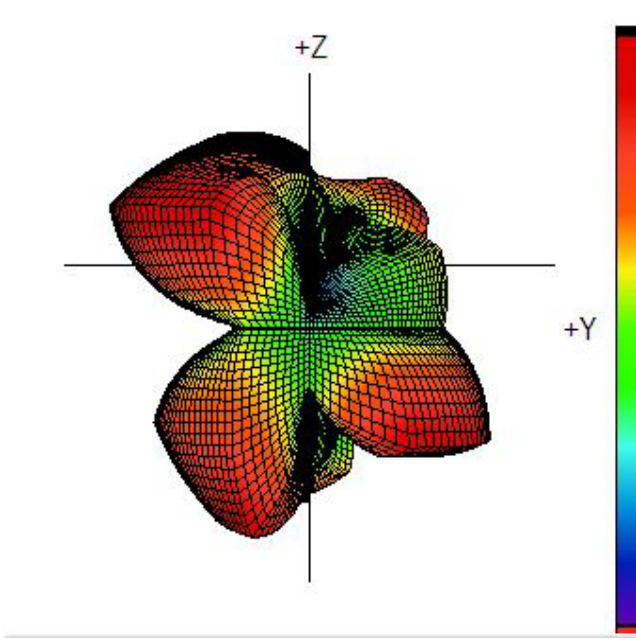
2.4GHzUp - Down View



2.4GHzFront - Back View



2.4GHzLeft - Right View



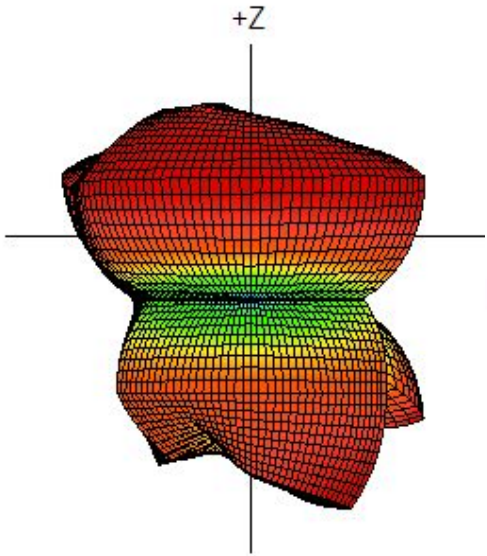
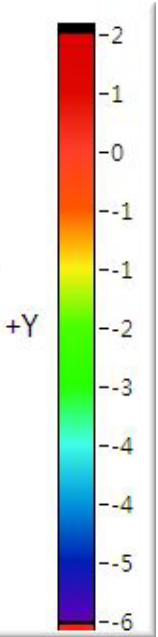
330
-1.44
-0.93
1.25
-1.89
-0.37
1.24

330

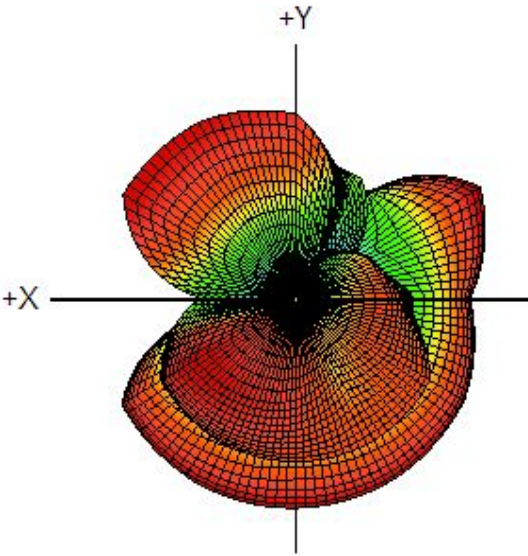
-7.97
-19.5
-7.69
-7.88
-9.56
-0.66

330
-2.53
-0.99
0.66
-3.15
-0.92
-3.26

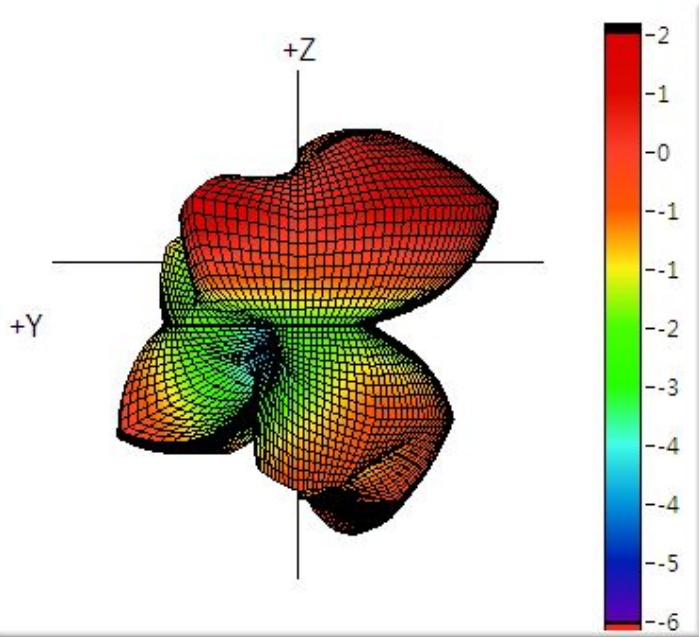
2.4GHzDown - Up View



2.4GHzBack - Fornt View



2.4GHzRight - Left View



2.4GHz

3D Passive		
Total Rad. Pow. Total	-1.28	dBi
Total Rad. Pow.0-90 Total	-3.41	dBi
Total Rad. Pow.90-180 Total	-3.71	dBi
Ant. Port Inp. Pow. Total	0	dBi
Peak EIRP Total	1.67	dBi
Directivity Total	2.95	dBi
Efficiency Total	-1.28	dB
Efficiency Total	74.47	%
Gain Total	1.67	dBi
NHPRP +/-30 Total	-4.11	dBi
NHPRP +/-45 Total	-2.54	dBi
Total Rad. Pow. Theta	-6.52	dBi
Total Rad. Pow.0-90 Theta	-8.35	dBi
Total Rad. Pow.90-180 Theta	-8.72	dBi
Ant. Port Inp. Pow. Theta	0	dBi
Peak EIRP Theta	-0.66	dBi
Directivity Theta	5.86	dBi
Efficiency Theta	-6.52	dB
Efficiency Theta	22.28	%
Gain Theta	-0.66	dBi
NHPRP +/-30 Theta	-9.51	dBi
NHPRP +/-45 Theta	-7.99	dBi
Total Rad. Pow. Phi	-2.83	dBi
Total Rad. Pow.0-90 Phi	-5.1	dBi
Total Rad. Pow.90-180 Phi	-5.36	dBi
Ant. Port Inp. Pow. Phi	0	dBi
Peak EIRP Phi	0.74	dBi
Directivity Phi	3.57	dBi
Efficiency Phi	-2.83	dB
Efficiency Phi	52.12	%
Gain Phi	0.74	dBi
NHPRP +/-30 Phi	-5.59	dBi

	Theta dBi	Phi dBi	Total dBic	Theta AR	Phi AR	Total AR
0	-4.60282	-0.89106	0.9246	139.41052	6.82001	3.31164
30	-1.88138	0.2148	1.65599	17.54746	17.1903	5.87459
60	-2.81147	0.91992	2.4369	17.0297	12.12107	7.17039
90	-2.74301	-2.38662	0.01782	8.61907	17.25087	2.89876
120	-3.57415	1.08339	1.9666	4.72998	10.83877	7.09226
150	-0.63043	-0.54517	2.25338	21.05865	2.20623	5.80192

NHPRP +/-45 Phi	-3.99	dBi
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Maximum Theta Value	-0.66	dBi
Maximum Theta @ Theta	150	deg.
Maximum Theta @ Phi	330	deg.
Minimum Theta Value	-144.01	dBi
Minimum Theta @ Theta	0	deg.
Minimum Theta @ Phi	0	deg.
Maximum Phi Value	0.74	dBi
Maximum Phi @ Theta	120	deg.
Maximum Phi @ Phi	30	deg.
Minimum Phi Value	-19.72	dBi
Minimum Phi @ Theta	90	deg.
Minimum Phi @ Phi	0	deg.
Maximum Total Value	1.67	dBi
Maximum Total @ Theta	60	deg.
Maximum Total @ Phi	150	deg.
Minimum Total Value	-5.9	dBi
Minimum Total @ Theta	120	deg.
Minimum Total @ Phi	150	deg.

Test Data

Total

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
0	-3.65	-1.07	-1.55	-2.99	-3.69	-3.93	-4.05	-2.66	-0.74	-1.27	-1.47
30	-5.22	-4.21	-3.53	-2.47	-2.18	-1.61	-0.52	0.51	0.66	0.35	0.04
60	-5.5	-4.35	-2.02	-1.25	-2.82	1.67	0.3	1.01	1.16	1.23	1.3
90	-3.51	-2.84	-2.5	-1.78	-1.85	-4.16	-2.26	-2.51	-3.78	-4.68	-3.39
120	-2.45	1.19	1.03	0.39	-3.64	-5.9	-2.54	-0.39	-0.34	-0.36	-0.34
150	-4.56	-4.21	-3.41	-3.23	-3.86	-1	-0.24	-0.4	-1.23	0.06	0.69

Theta

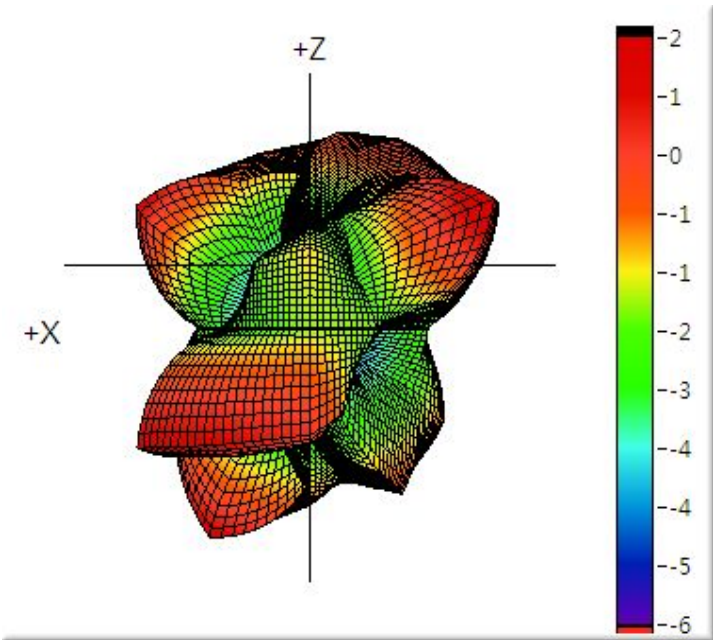
Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
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0	-144.01	-4.82	-6.97	-6.89	-6.16	-6.02	-5.96	-4.6	-6.54	-11.39	-7.95
30	-7.32	-5.97	-4.94	-2.63	-2.36	-2.02	-1.96	-3.33	-7.28	-12.67	-15.39
60	-6.76	-8.31	-14.07	-19.93	-7.9	-2.9	-4.12	-6.13	-7.15	-7.05	-7.35
90	-3.62	-3.3	-3.72	-9.6	-10.62	-11.92	-5.63	-6.93	-8.49	-8.95	-8.8
120	-9.14	-8.86	-9.33	-9.08	-8.44	-7.98	-4.83	-6.88	-8.95	-8.98	-9.12
150	-17.35	-21.7	-18.45	-16.38	-15.36	-6.14	-3.72	-3.53	-3.85	-1.8	-1.16

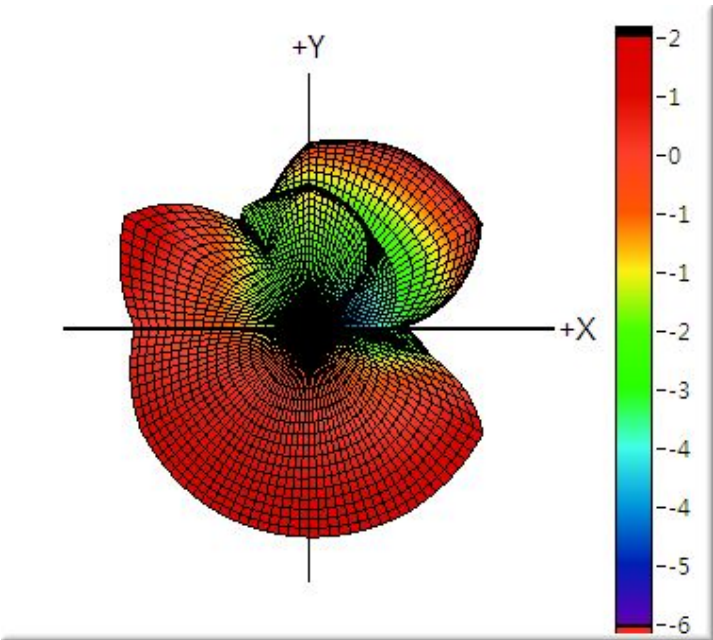
Phi

Theta (deg.) \ Phi (deg.)	0	30	60	90	120	150	180	210	240	270	300
0	-3.65	-3.44	-3.02	-5.26	-7.32	-8.11	-8.53	-7.08	-2.06	-1.71	-2.57
30	-9.37	-8.98	-9.09	-17.06	-16.25	-12.04	-6.03	-1.8	-0.1	0.13	-0.08
60	-11.46	-6.58	-2.3	-1.31	-4.43	-0.19	-1.65	0.08	0.47	0.53	0.66
90	-19.72	-12.8	-8.59	-2.56	-2.47	-4.95	-4.95	-4.46	-5.57	-6.72	-4.86
120	-3.5	0.74	0.61	-0.13	-5.39	-10.1	-6.4	-1.49	-0.99	-1	-0.96
150	-4.8	-4.28	-3.55	-3.44	-4.18	-2.59	-2.82	-3.29	-4.68	-4.51	-3.9

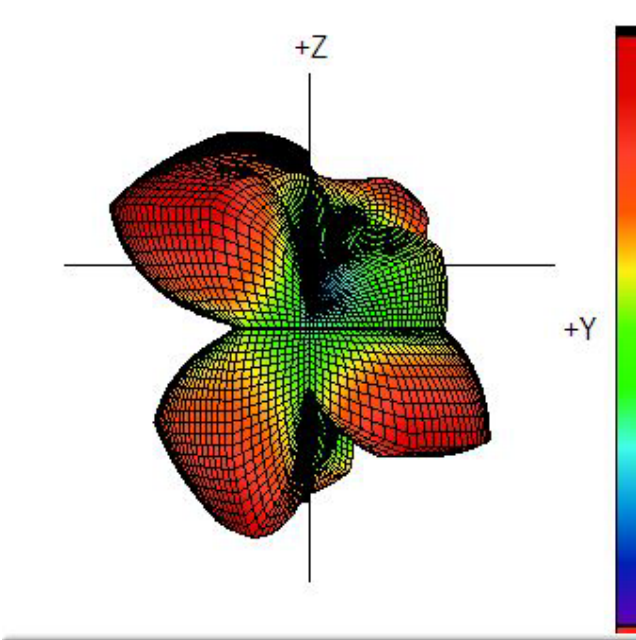
2.4GHzUp - Down View



2.4GHzFront - Back View



2.4GHzLeft - Right View



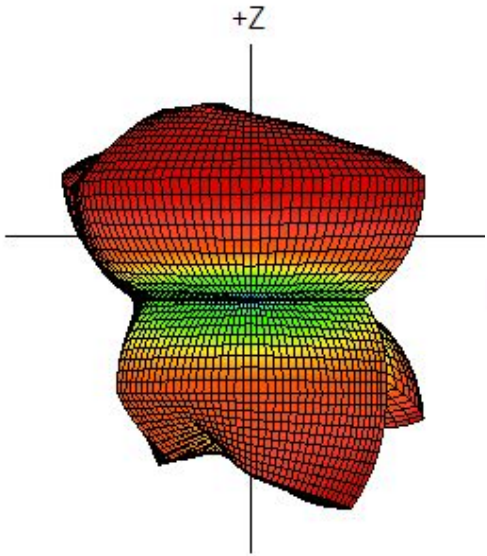
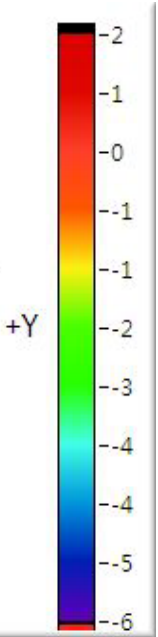
330
-1.44
-0.93
1.25
-1.89
-0.37
1.24

330

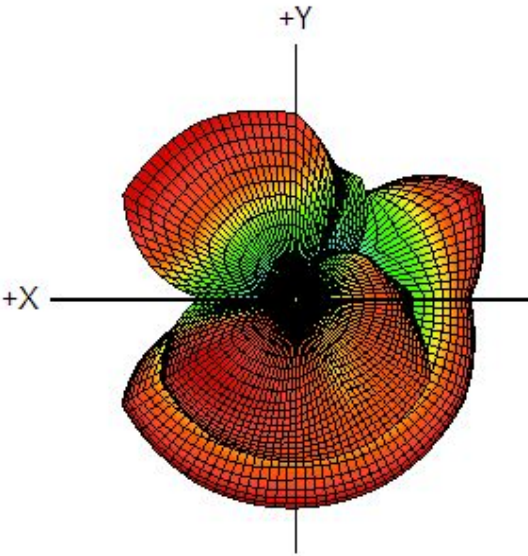
-7.97
-19.5
-7.69
-7.88
-9.56
-0.66

330
-2.53
-0.99
0.66
-3.15
-0.92
-3.26

2.4GHzDown - Up View



2.4GHzBack - Fornt View



2.4GHzRight - Left View

