



深圳市正大信维通讯设备有限公司

Shenzhen Zhengdaxinwei Communication Equipment Co., Ltd

产品承认书

APPROVAL

CUSTOMER: Zhejiang hongquan electronic technology co., ltd

DESCRIPTION: 915 Spring antenna

型号
MODEL NO: ZDXV-915MHz spring antenna

客户料号
CUS PART NO: _____

日期
DATE: 2023.10.10

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT
李倩楠	杨东东	丁志强

客户承认签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT

Manufacturer's name: Shenzhen Zhengda Xinwei Communication Equipment Co., LTD

The company address: No.486, Zhangbei Road, Zhangbei Community, Longcheng Street, Longgang District, Shenzhen

The company web site: www.zdxwtx.com Contact phone number: 0755-28839286

fax: 0755-89909291

email: yangwenjing@zidasv.net

1. Product size

会固司密特

3D 视图

技术要求:

- 1.915天线规格和特性:
- 2.频率范围: 902-922MHz:
- 3.工作温度: -40-85℃:
- 4.贮存温度: -40-90℃:
- 5.表面应光滑、无毛刺, 不得有裂纹, 划痕, 凹坑, 生锈, 竹节等缺陷:

		材料名称和牌号				ZDXV-915MHz弹簧天线	
标记	数量	更改文件号	签字	日期	阶段标记	版本	数量
设计		李倍楠	审核	刘显嘉	阶段标记	A/0	数量
校对			批准		第 几 页	共 几 页	单位: mm
工艺		袁军宝	日期	2023/09/05			

板	元	外	删	更改	日期	版本	升至	
■	6	X						
		X						
		X						
		X						

板	元	外	删	更改	日期	版本	升至	
△	X	X						
		X						
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		X			X	X	X	
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板	元	外	删	更改	日期	版本	升至	
□	X	X						
		X						
		X			X	X	X	
		X						
		X						

2. Electrical Specification :

型号	915 天线	Model	915 Antenna
主要技术参数		Main Technical Specifications	
频率范围 (MHz)	902-922MHz	Frequency Range (MHz)	902-922MHz
电压驻波比	≤3.0	VSWR	≤3.0
增益 (dBi)	0.31	Gain (dBi)	0.31
输入阻抗 (Ω)	50	Input Impedance (Ω)	50
极化形式	N/A	Polarization Type	N/A
接口形式	N/A	Connector Type	N/A
工作温度	-40°C~+85°C	Working Temperature	-40°C~+85°C
储存温度	-40°C~+90°C	Storage Temperature	-40°C~+90°C

2-1. Frequency Band:

Frequency Band	MHz
LORA 天线	902-922MHz

2-2. Impedance

2-3. VSWR

2-3-1. Measurement frequency points and VSWR value

50 ohm nominal

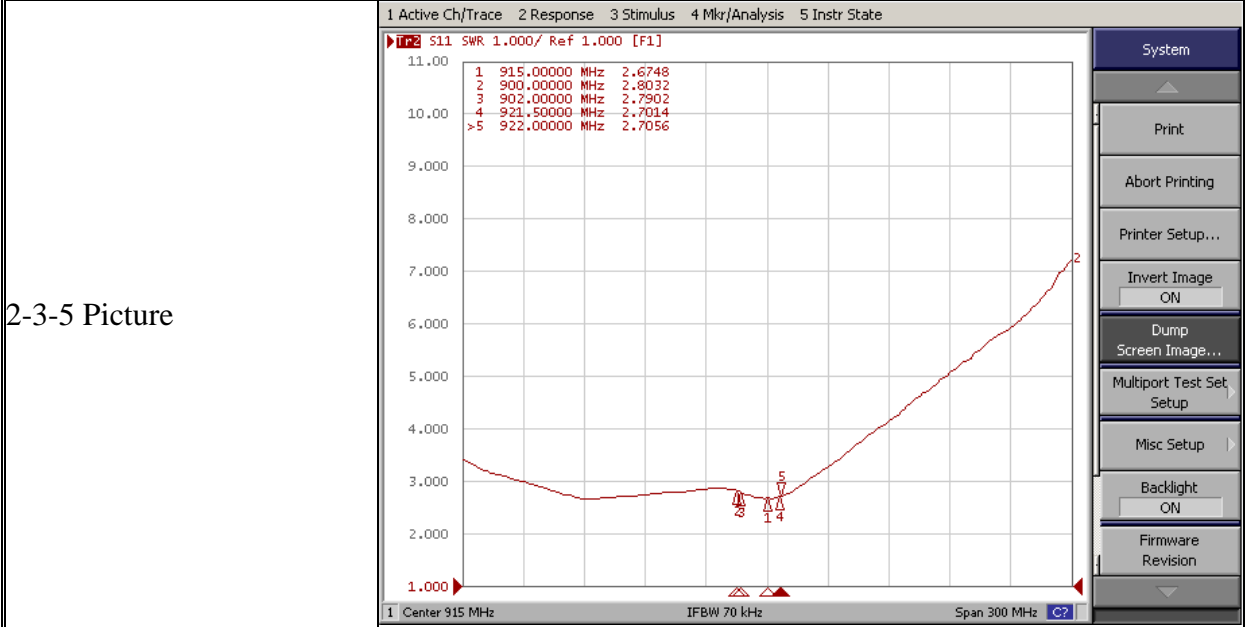
Frequency (Unit MHz)	902	915	921.5	922
VSWR	2.79	2.67	2.70	2.70

2-3-2. VSWR

Frequency Band(MHz)	902	915	921.5	922
2-3-3. Typical Value:	≤3.0	≤3.0	≤3.0	≤3.0

2-3-4 Measuring Method

1. A 50Ωcoaxial cable is connected to the Antenna. Then this cable is connected to a network analyzer to measure the VSWR.
2. Keeping this jig away from metal at least 20 cm



2-4. Efficiency and Gain

- Measuring instruments: microwave darkroom, network analyzer, standard antenna.

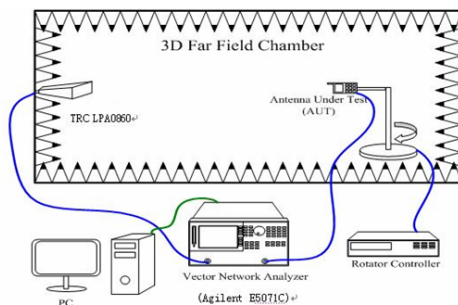


图 1. 微波暗室内部仪器设置

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

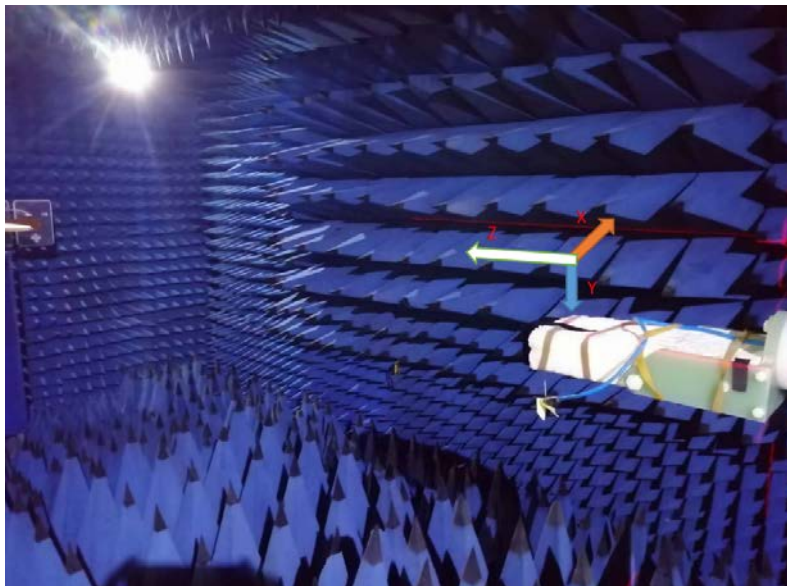
P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna

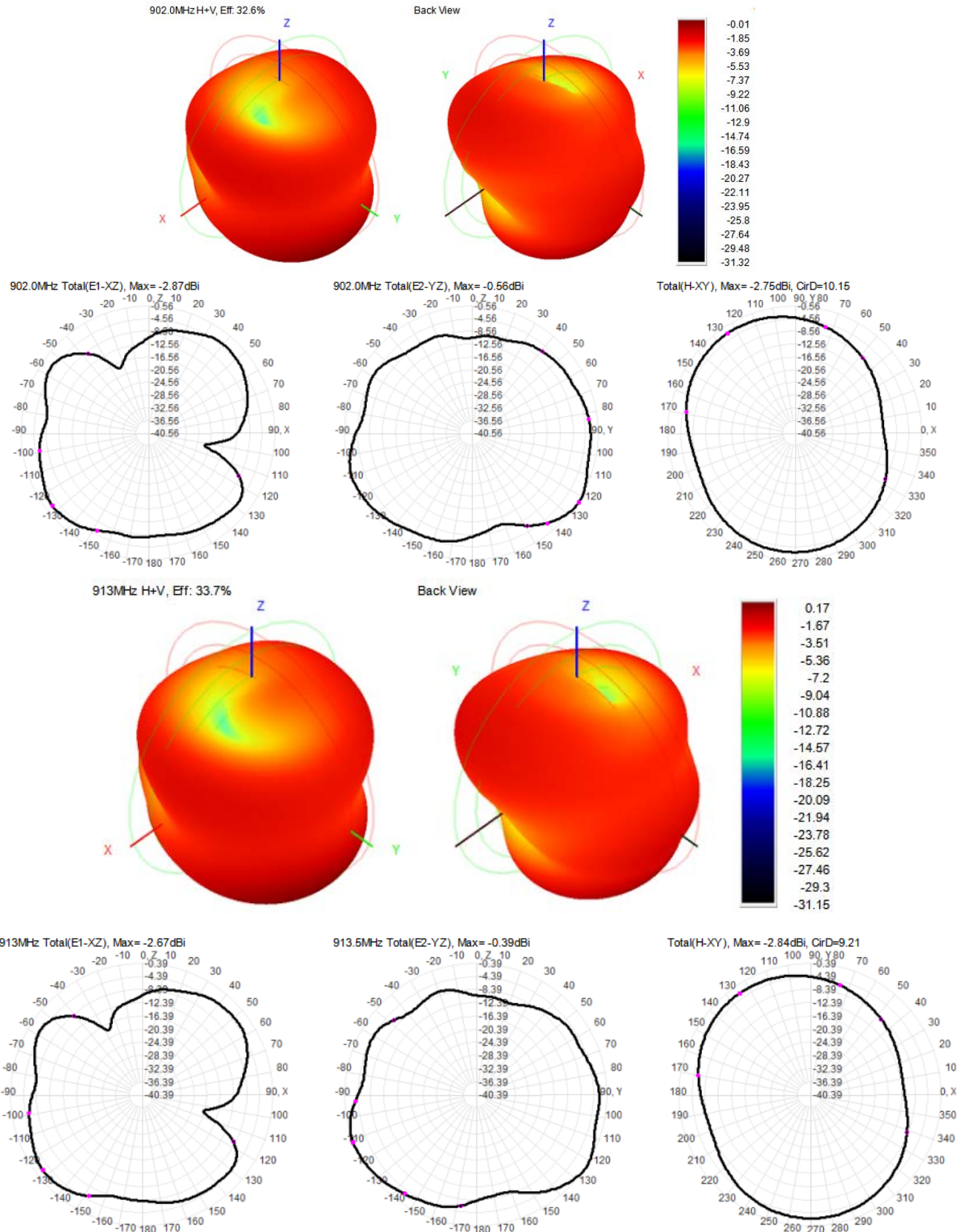
2-4-1 Efficiency and Gain

Frequency(MHz)	Efficiency (%)	Peak GAIN (dBi)
902	32.63	-0.01
913	33.72	0.17
915	34.66	0.27
916	35.07	0.31
921.5	33.84	0.09
922	33.65	0.05

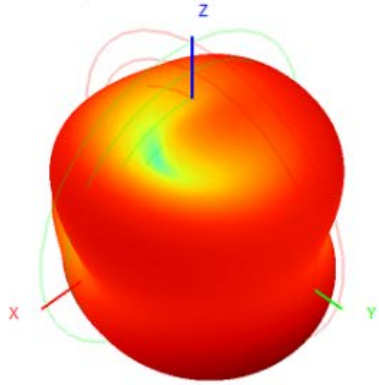
3. Test environment



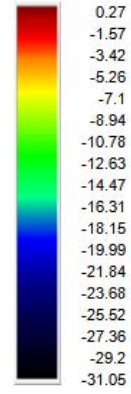
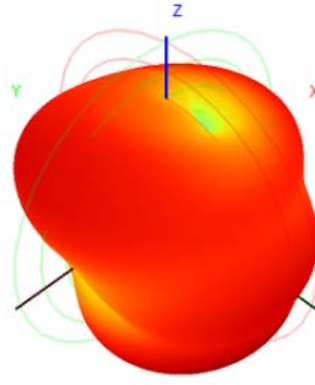
4. Directional diagram/ 方向图



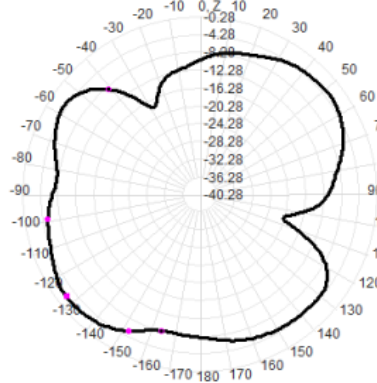
915MHz H+V, Eff: 34.7%



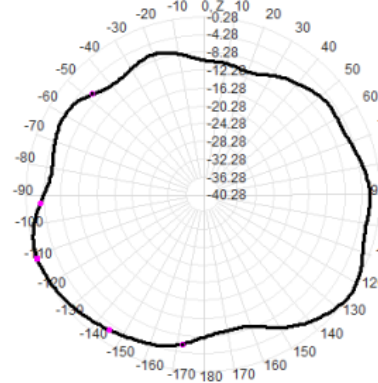
Back View



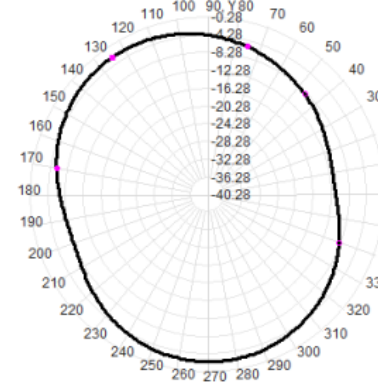
915MHz Total(E1-XZ), Max=-2.54dBi



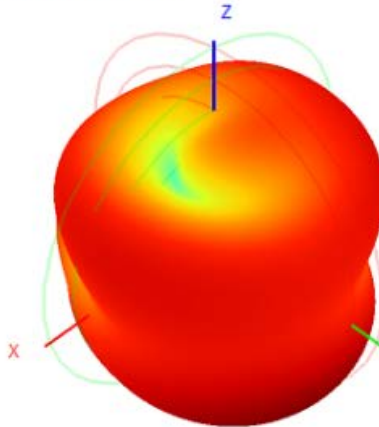
915.5MHz Total(E2-YZ), Max=-0.28dBi



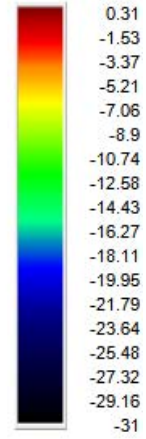
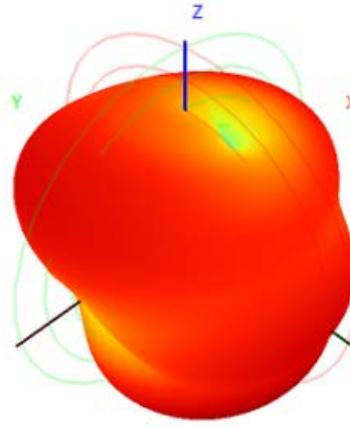
Total(H-XY), Max=-2.76dBi, CirD=9.00



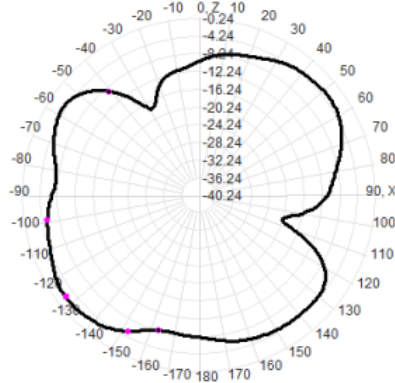
916MHz H+V, Eff: 35.1%



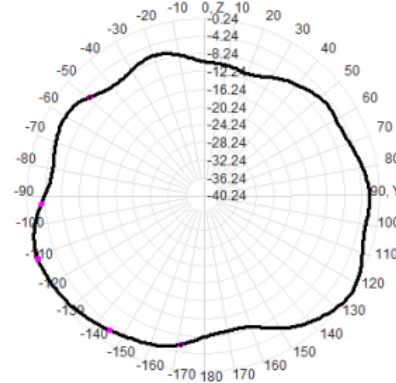
Back View



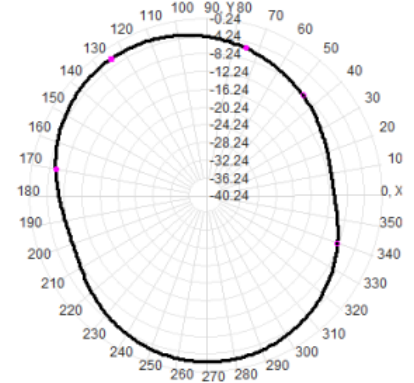
916MHz Total(E1-XZ), Max=-2.48dBi



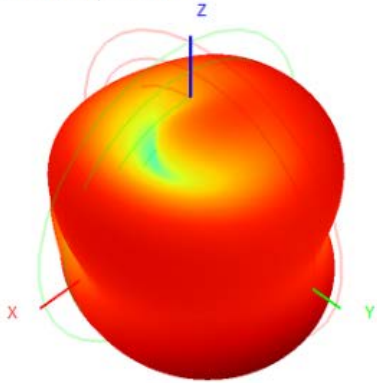
916.5MHz Total(E2-YZ), Max=-0.24dBi



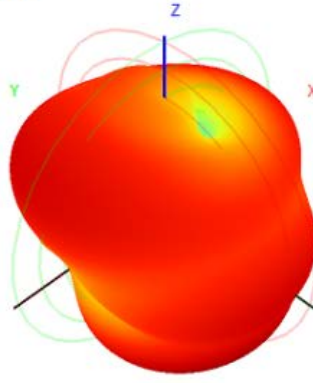
Total(H-XY), Max=-2.73dBi, CirD=8.88



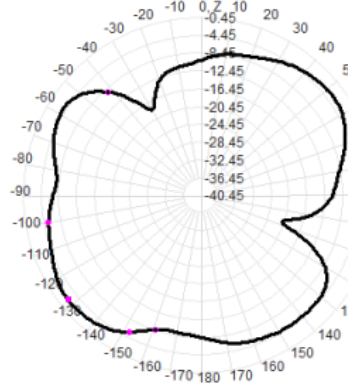
921.5MHz H+V, Eff: 33.8%



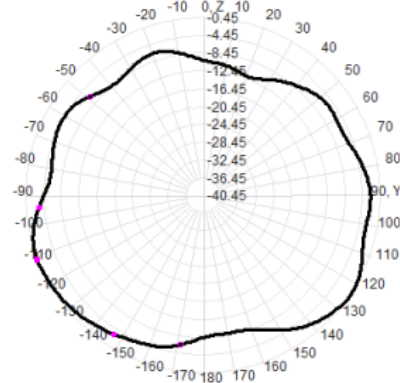
Back View



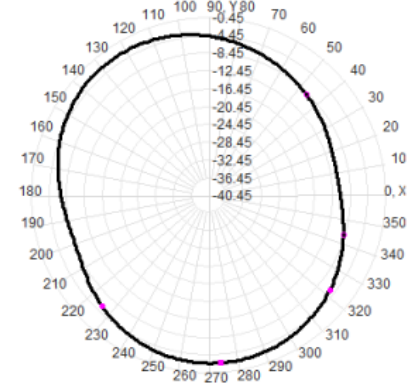
921.5MHz Total(E1-XZ), Max=-2.58dBi



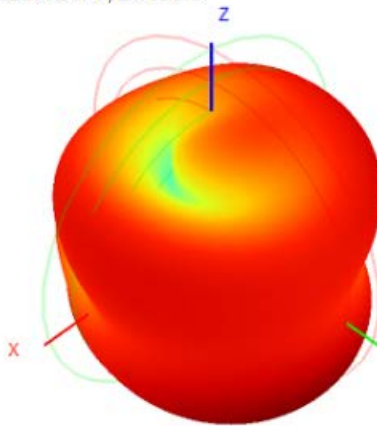
921.5MHz Total(E2-YZ), Max=-0.45dBi



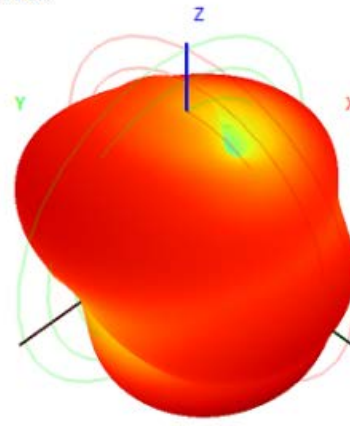
Total(H-XY), Max=-2.89dBi, CirD=8.41



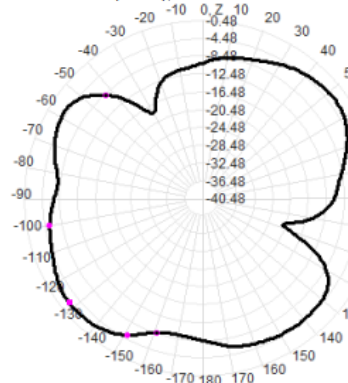
922.0MHz H+V, Eff: 33.6%



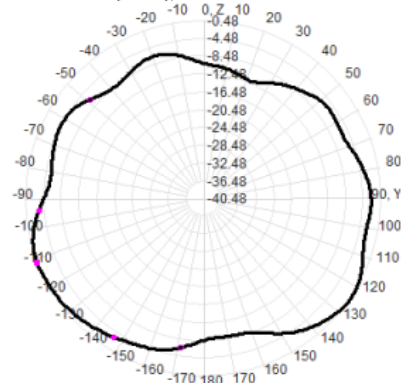
Back View



922.0MHz Total(E1-XZ), Max=-2.61dBi



922.0MHz Total(E2-YZ), Max=-0.48dBi



Total(H-XY), Max=-2.91dBi, CirD=8.38

