900Mhz & 2.4G Dual Band Gooseneck Antenna

MODEL: TH-9024B-SMA(M)

1. GENERAL DESCRIPTION

Model No	P/N
TH-9024B	TH9024B-SMA(M)

Below is a table summarizing the antenna design specification.

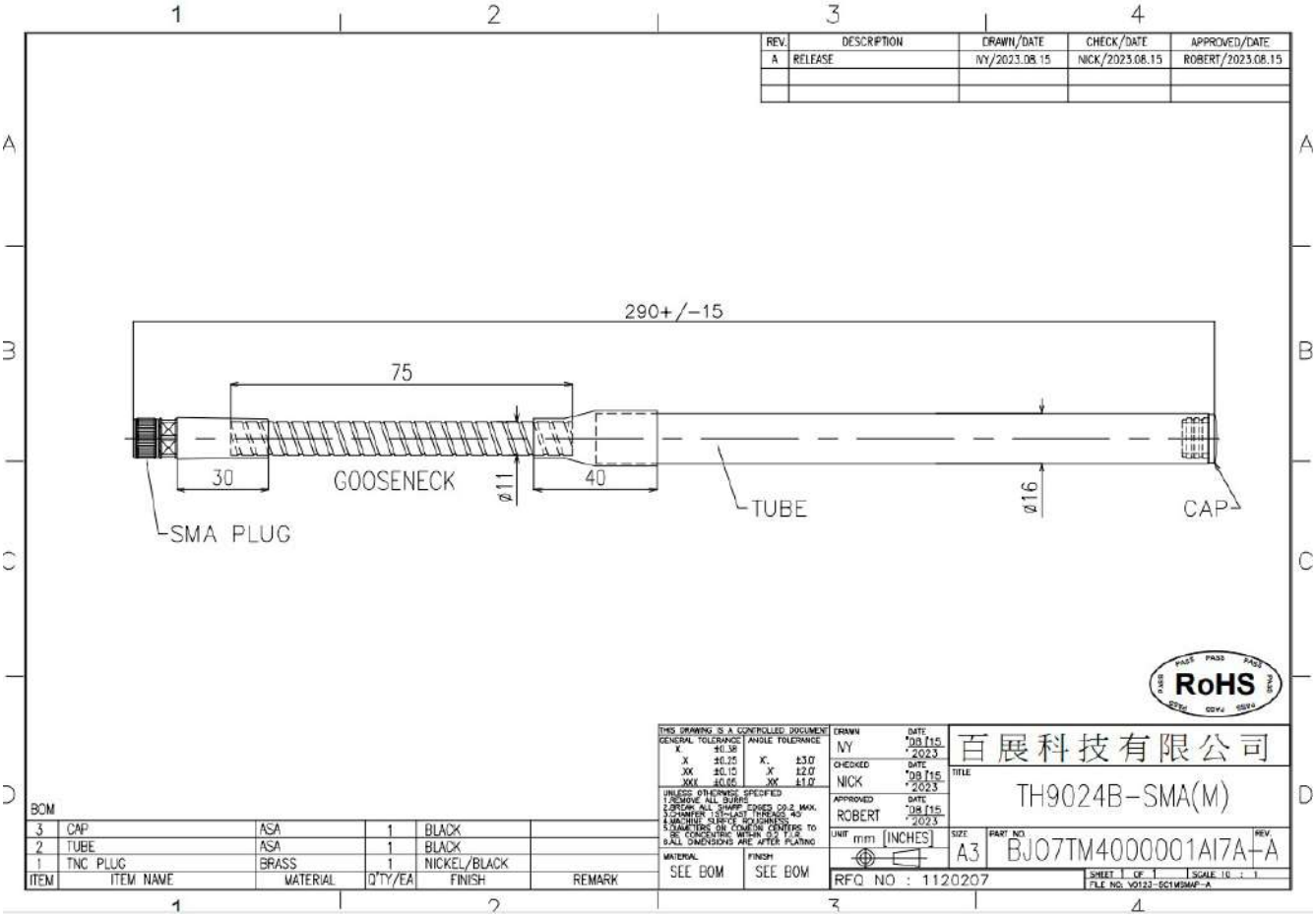
1.1 Electrical Properties

Parameter	Description
Frequency Band	902~928 MHz & 2.4~2.5Ghz
Nominal Impedance	50 ohm
Polarization	Vertical
Electrical Wave	Dipole
Return Loss	Please See Data-1
V.S.W.R	2.0：1
Gain	3db

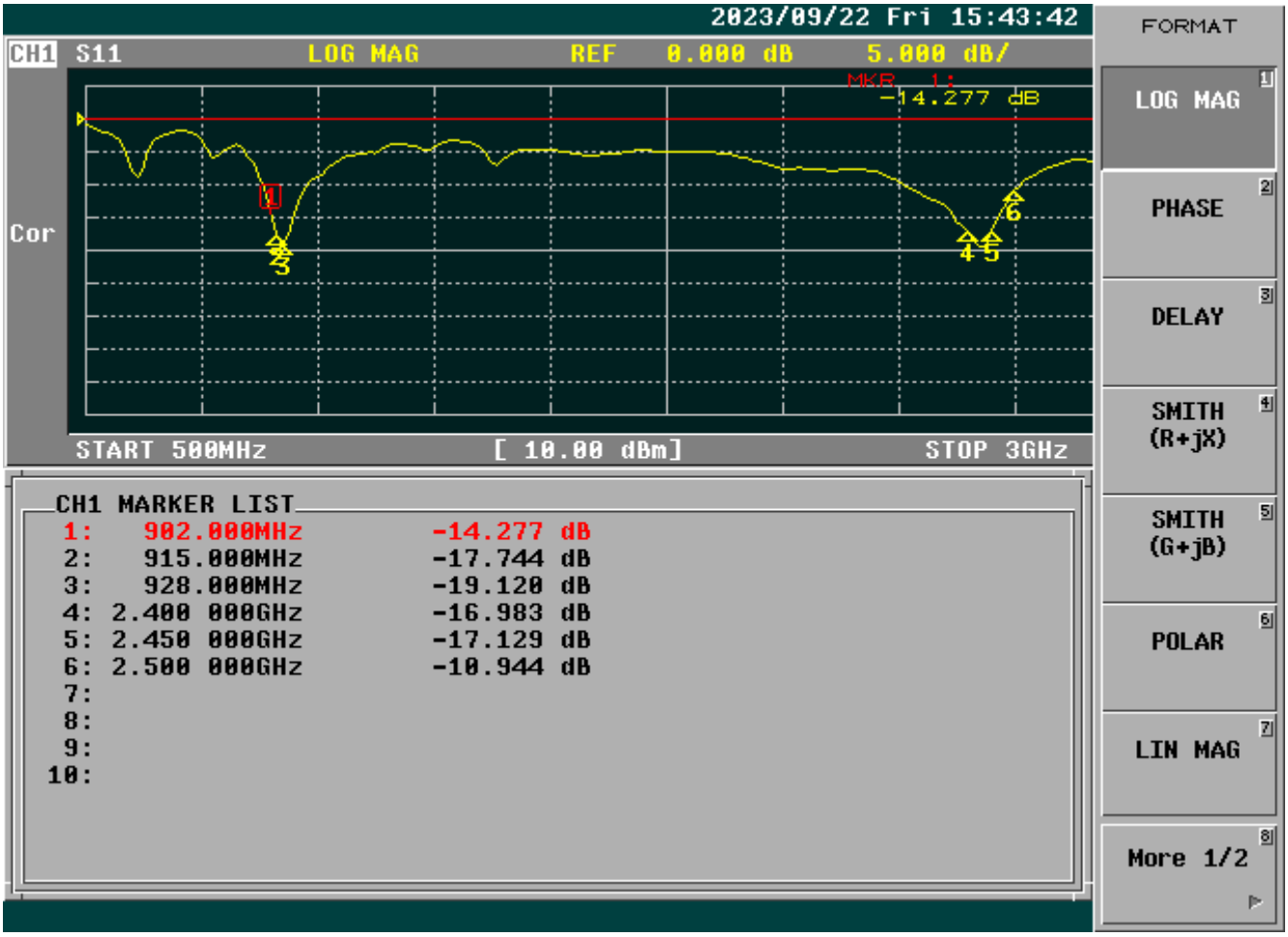
1.2 Mechanical Properties

Parameter	Description
Antenna Type	External Antenna
Touch Type	Screw Type
Connector Type	SMA(Male)
Antenna Dimensions	290mm ±15
Antenna Color	Black
Operating Temperature Range	-40°C~+85°C
Storage Temperature Range	-40°C~+85°C

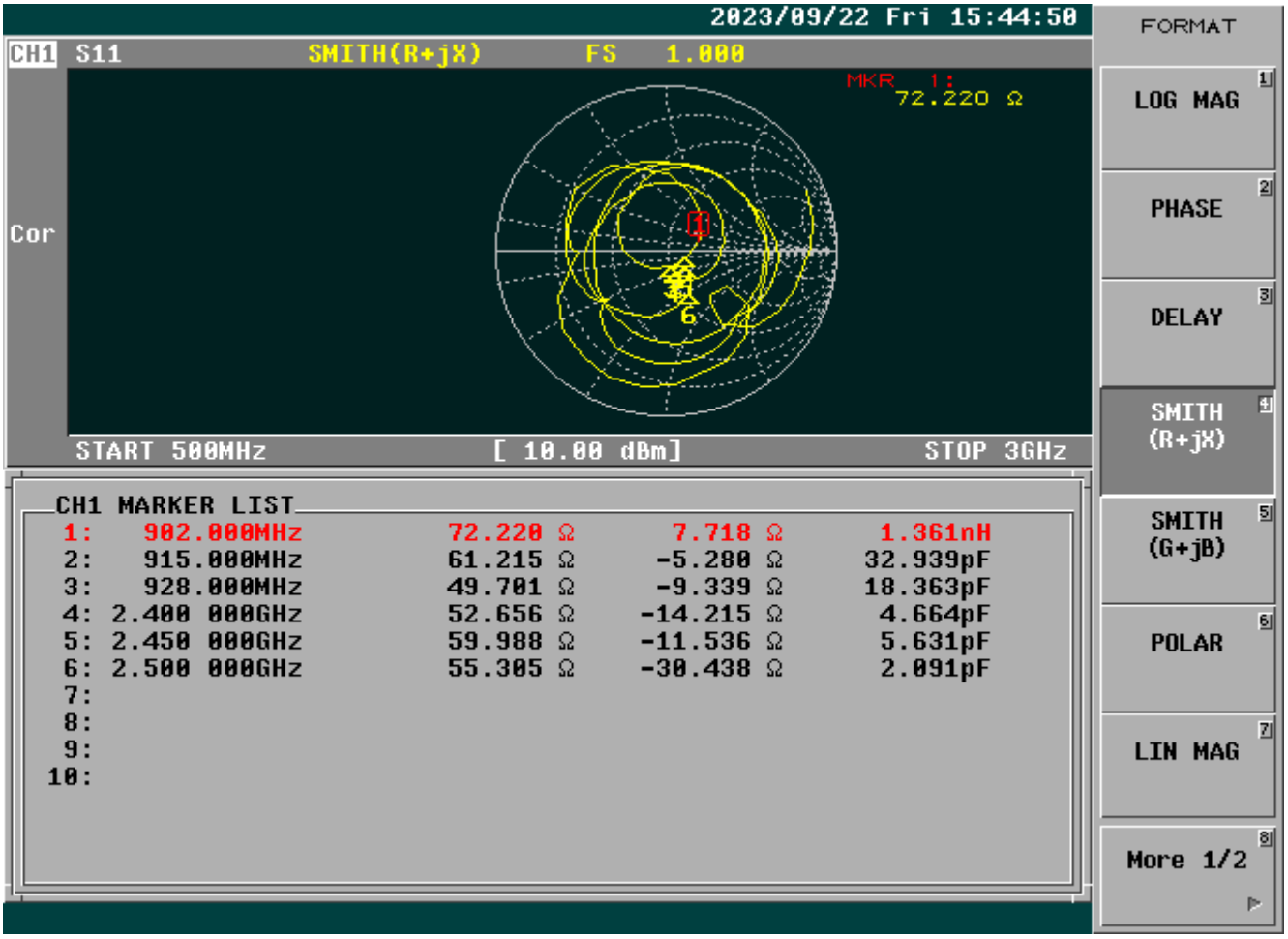
2. Appearance

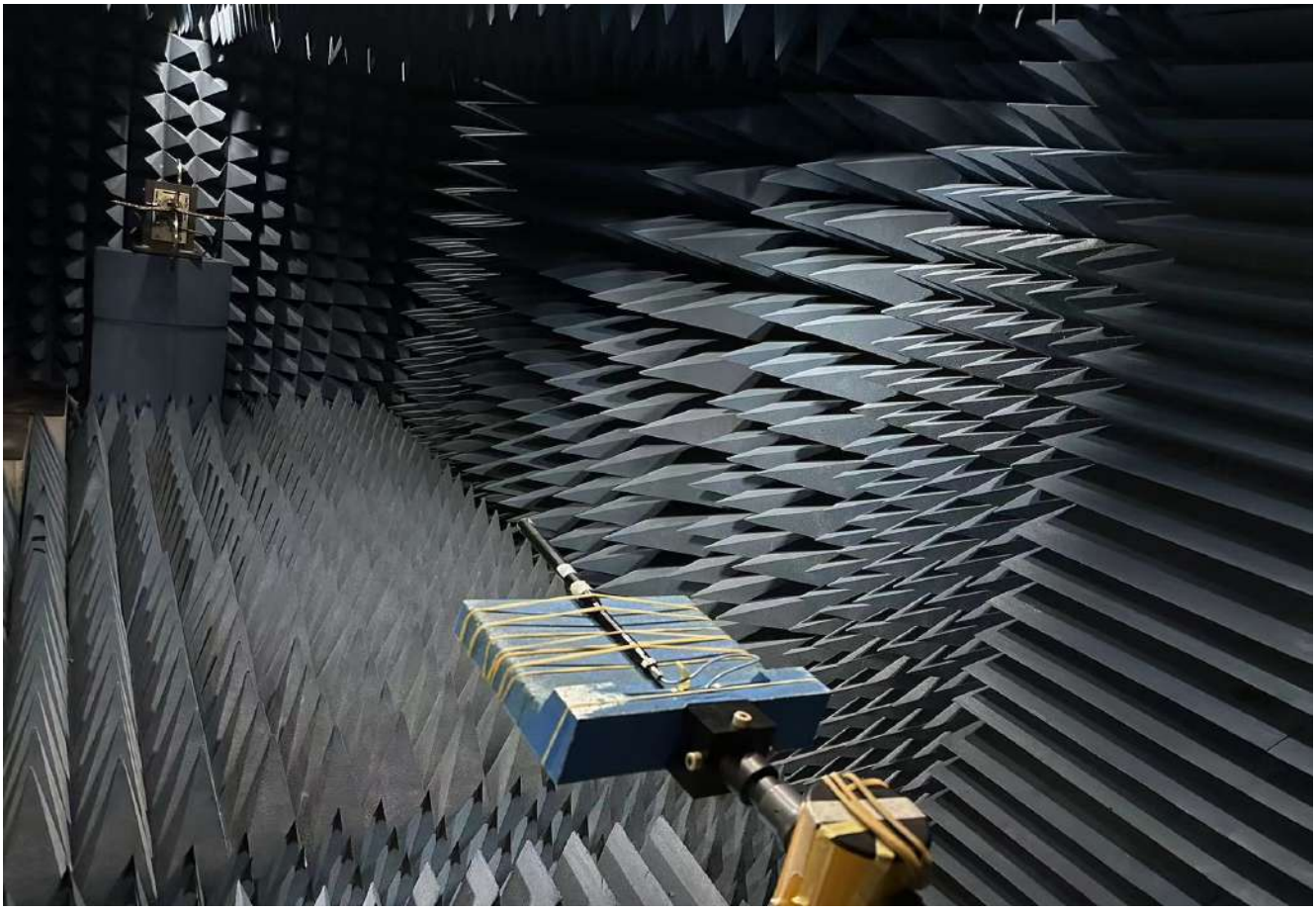


3. Frequency


2023/09/22 Fri 15:43:42
CH1 S11 LOG MAG REF 0.000 dB 5.000 dB/
MKR 1:
-14.277 dB
Cor
START 500MHz
[10.00 dBm]
STOP 3GHz
CH1 MARKER LIST
1: 902.000MHz -14.277 dB
2: 915.000MHz -17.744 dB
3: 928.000MHz -19.120 dB
4: 2.400 000GHz -16.983 dB
5: 2.450 000GHz -17.129 dB
6: 2.500 000GHz -10.944 dB
7:
8:
9:
10:
FORMAT
LOG MAG
PHASE
DELAY
SMITH (R+jX)
SMITH (G+jB)
POLAR
LIN MAG
More 1/2


2023/09/22 Fri 15:44:17
CH1 S11 SWR REF 1.000 1.000 /
MKR 1:
1.560
Cor
START 500MHz
[10.00 dBm]
STOP 3GHz
CH1 MARKER LIST
1: 902.000MHz 1.560
2: 915.000MHz 1.337
3: 928.000MHz 1.296
4: 2.400 000GHz 1.343
5: 2.450 000GHz 1.300
6: 2.500 000GHz 1.773
7:
8:
9:
10:
FORMAT
SWR
REAL
IMAG
PHASE -∞,+∞
LOG MAG & PHASE
LOG MAG & DELAY
LIN MAG & PHASE
More 2/2

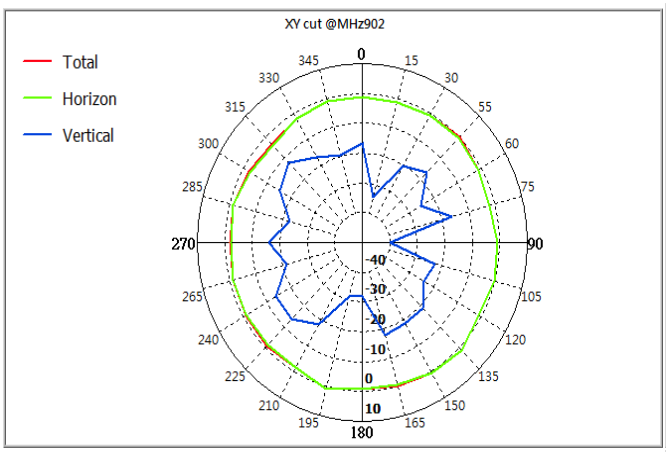

2023/09/22 Fri 15:44:50
CH1 S11 SMITH(R+jX) FS 1.000
MKR 1:
72.220 Ω
Cor
START 500MHz
[10.00 dBm]
STOP 3GHz
CH1 MARKER LIST
1: 902.000MHz 72.220 Ω 7.718 Ω 1.361nH
2: 915.000MHz 61.215 Ω -5.280 Ω 32.939pF
3: 928.000MHz 49.701 Ω -9.339 Ω 18.363pF
4: 2.400 000GHz 52.656 Ω -14.215 Ω 4.664pF
5: 2.450 000GHz 59.988 Ω -11.536 Ω 5.631pF
6: 2.500 000GHz 55.305 Ω -30.438 Ω 2.091pF
7:
8:
9:
10:
FORMAT
LOG MAG
PHASE
DELAY
SMITH (R+jX)
SMITH (G+jB)
POLAR
LIN MAG
More 1/2

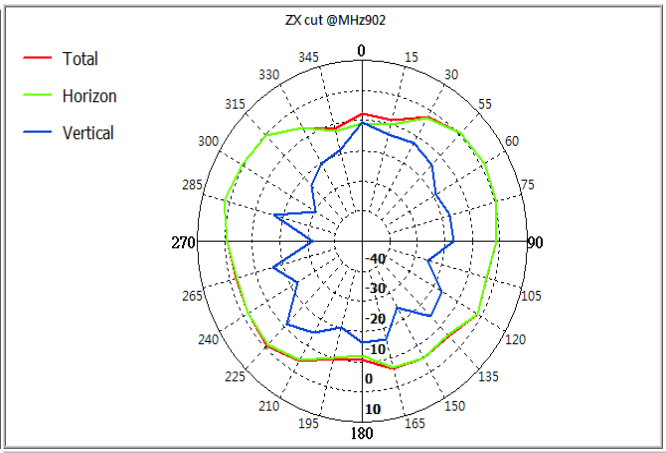


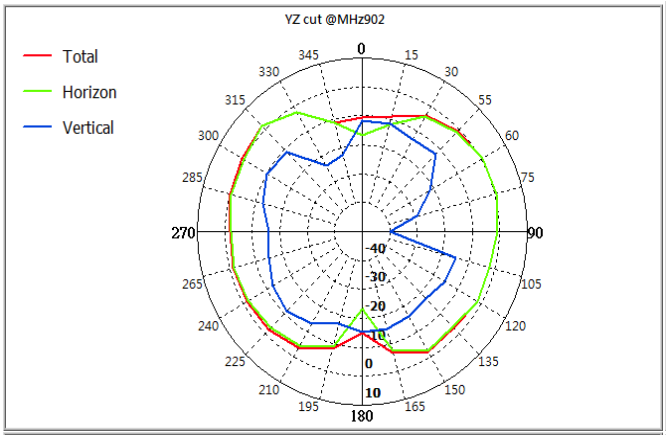
3D Total

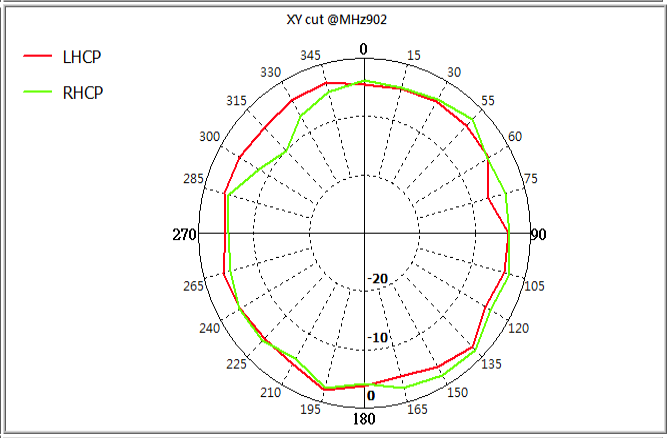
Frequency (MHz)	Upper Hem. PRP (dBm)	Lower HEM. PRP (dBm)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Tot. Rad.Pwr. (dBm)
902 MHz	-3.59	-6.22	-1.70	67.66	2.79	-1.70
915 MHz	-3.30	-5.69	-1.32	73.75	2.75	-1.32
928 MHz	-3.18	-4.97	-0.98	79.87	2.86	-0.98
930 MHz	-3.25	-4.96	-1.01	79.27	2.52	-1.01
2300 MHz	-5.25	-6.86	-2.97	50.47	2.72	-2.97
2350 MHz	-4.62	-5.89	-2.20	60.29	3.54	-2.20
2400 MHz	-5.03	-5.88	-2.43	57.19	2.45	-2.43
2450 MHz	-4.90	-6.03	-2.42	57.30	2.15	-2.42
2500 MHz	-4.93	-6.17	-2.49	56.33	2.43	-2.49
2600 MHz	-5.31	-6.46	-2.84	52.04	3.46	-2.84

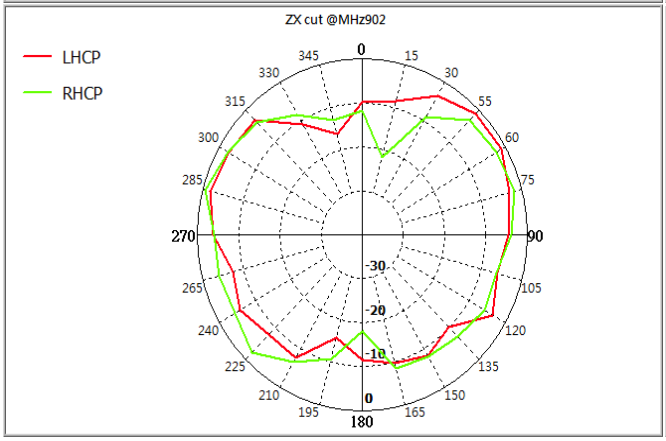
902Mhz:

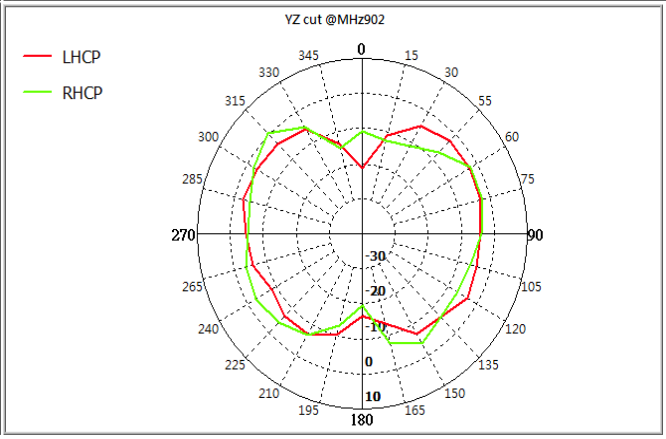


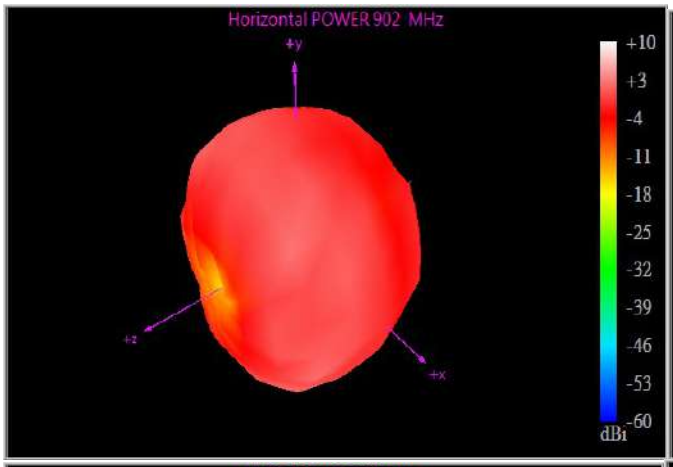


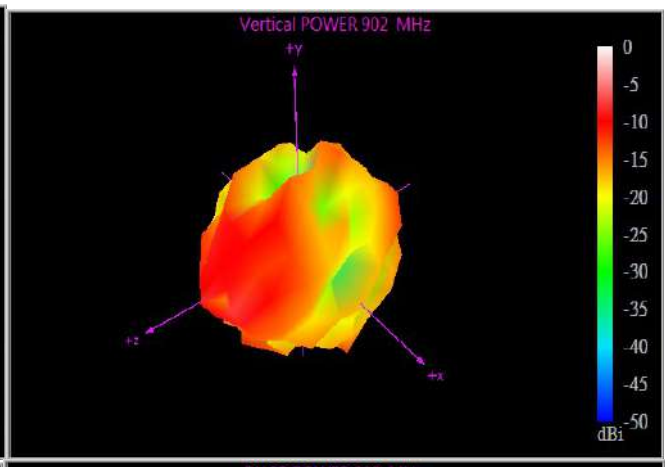


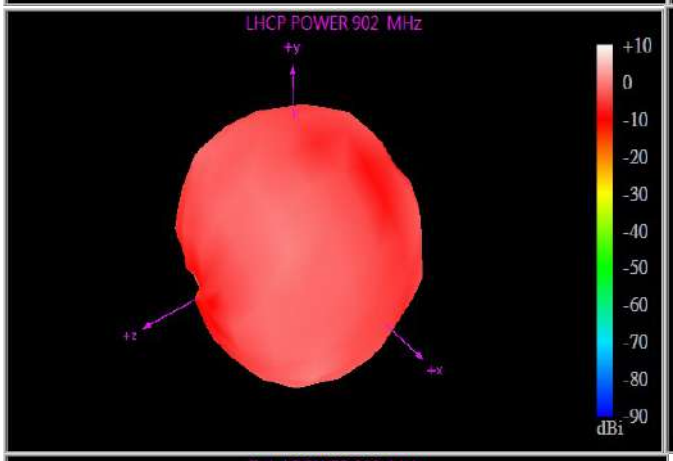


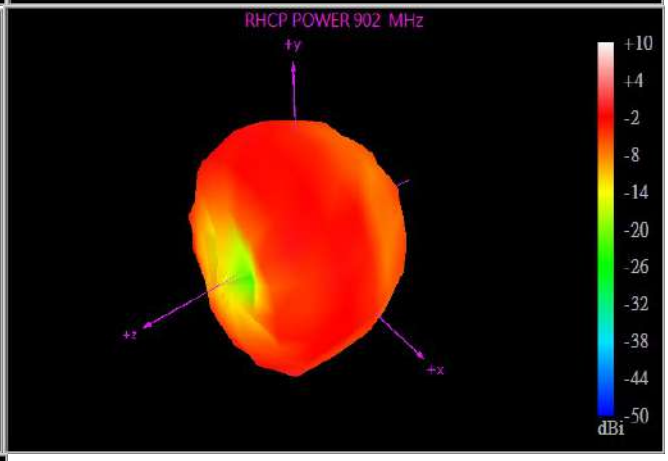


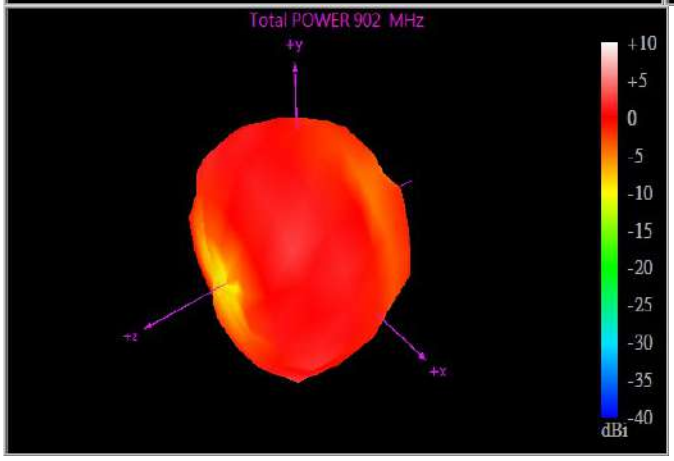



Horizontal POWER 902 MHz
+y
+z
+x
+10
+3
-4
-11
-18
-25
-32
-39
-46
-53
-60
dBi

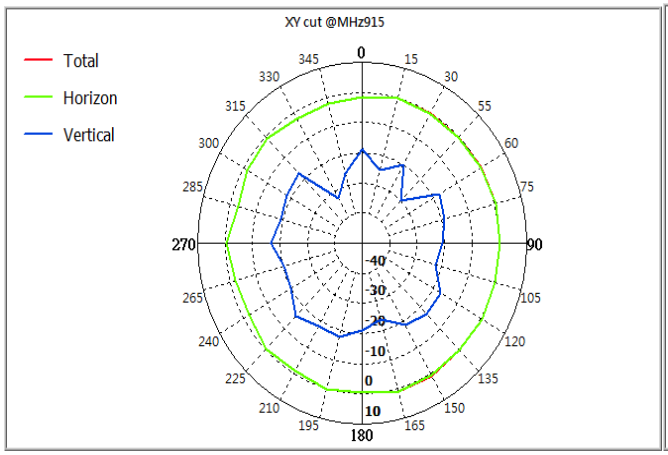

Vertical POWER 902 MHz
+y
+z
+x
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
dBi

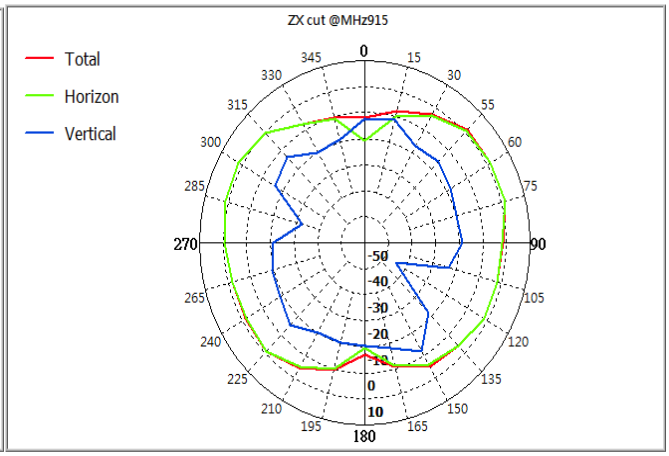

LHCP POWER 902 MHz
+y
+z
+x
+10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
dBi

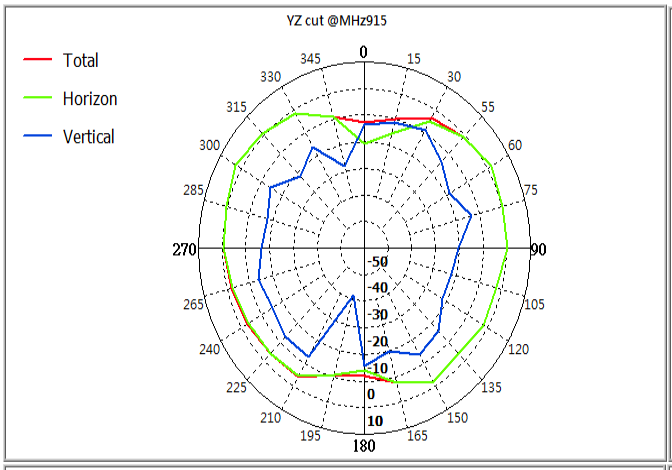

RHCP POWER 902 MHz
+y
+z
+x
+10
+4
-2
-8
-14
-20
-26
-32
-38
-44
-50
dBi

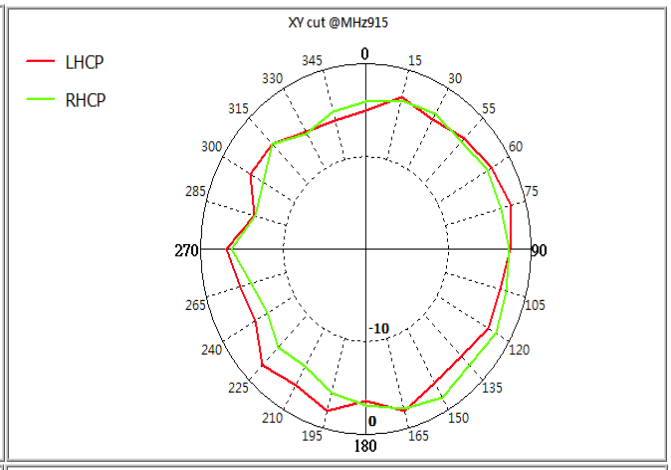

Total POWER 902 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi

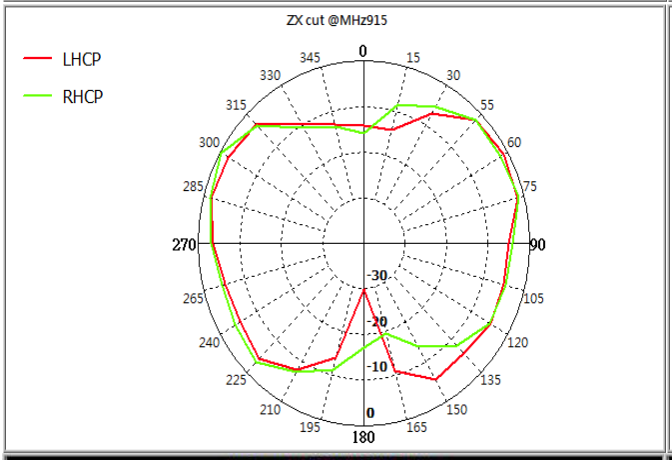
915Mhz:

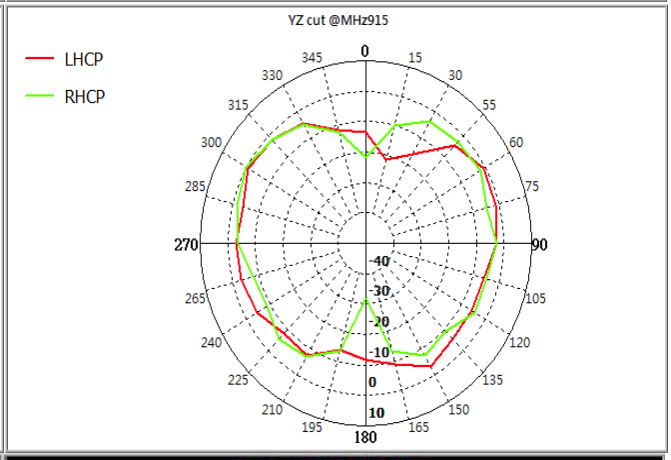

XY cut @MHz915
Total
Horizon
Vertical
0
15
30
55
60
75
90
105
120
135
150
165
180
195
210
225
240
265
270
285
300
315
330
345
-40
-30
-20
-10
0
10

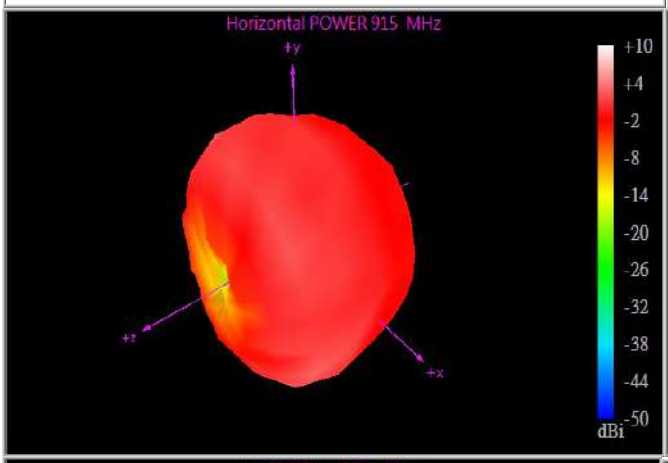

ZX cut @MHz915
Total
Horizon
Vertical
0
15
30
55
60
75
90
105
120
135
150
165
180
195
210
225
240
265
270
285
300
315
330
345
-50
-40
-30
-20
-10
0
10

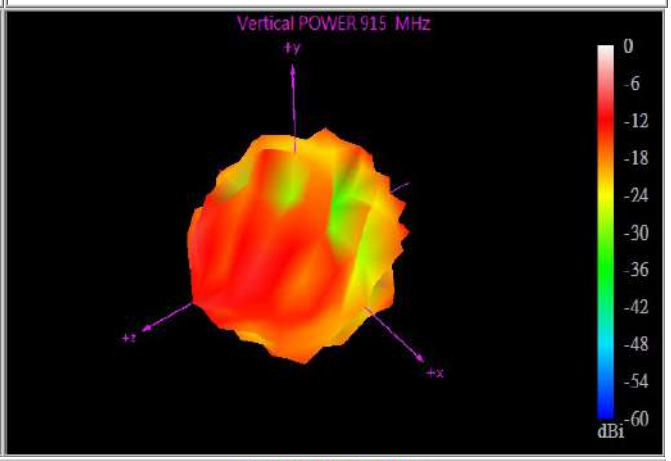

YZ cut @MHz915
Total
Horizon
Vertical

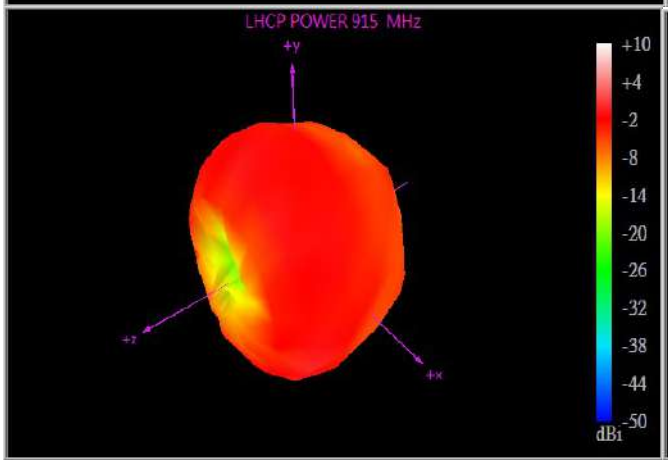

XY cut @MHz915
LHCP
RHCP

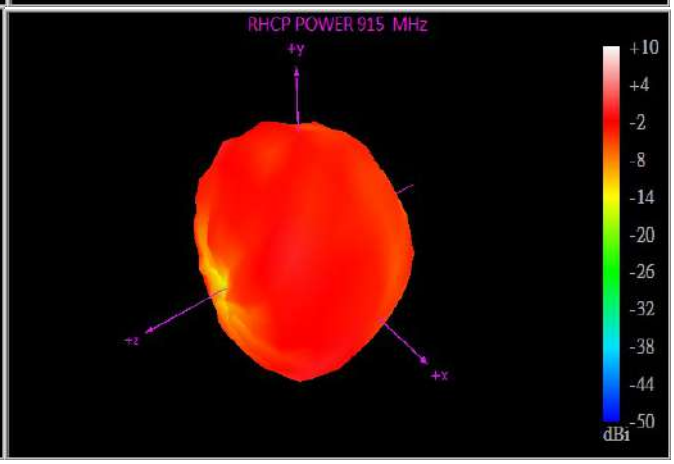

ZX cut @MHz915
LHCP
RHCP

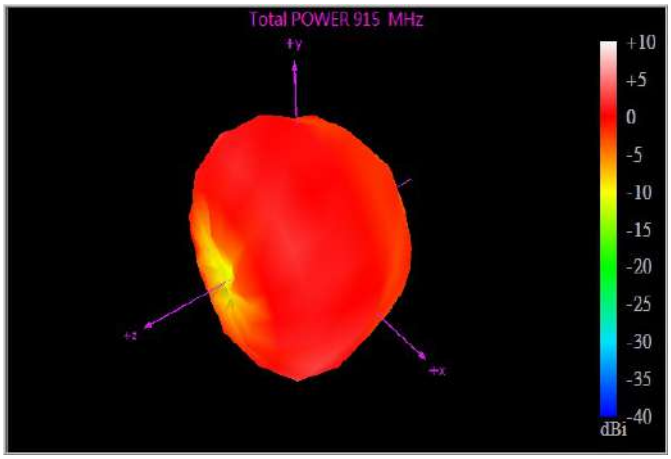

YZ cut @MHz915
LHCP
RHCP


Horizontal POWER 915 MHz
dBi

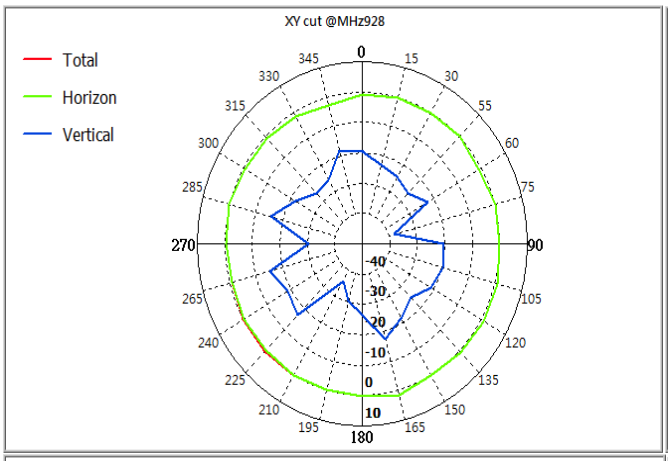

Vertical POWER 915 MHz
dBi

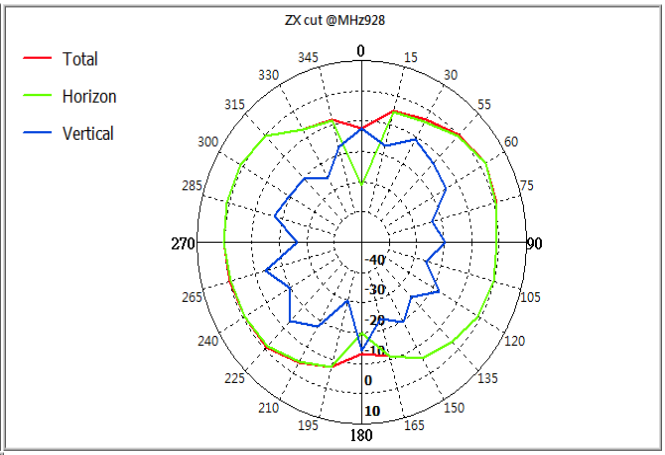

LHCP POWER 915 MHz
dBi

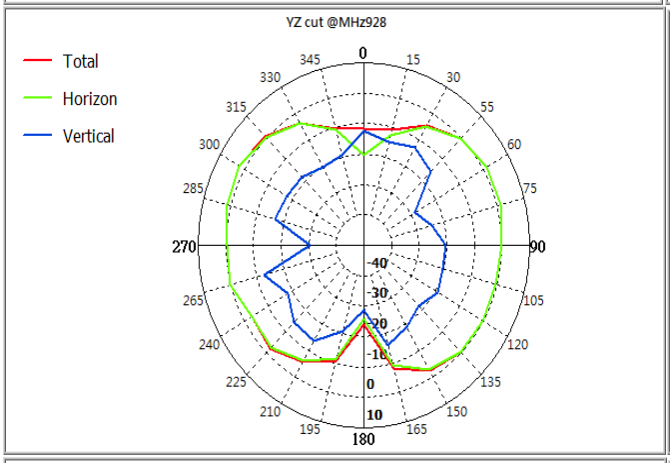

RHCP POWER 915 MHz
dBi

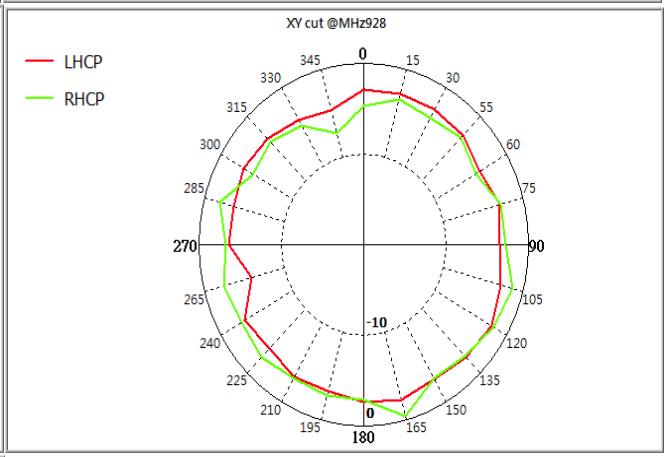

Total POWER 915 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi

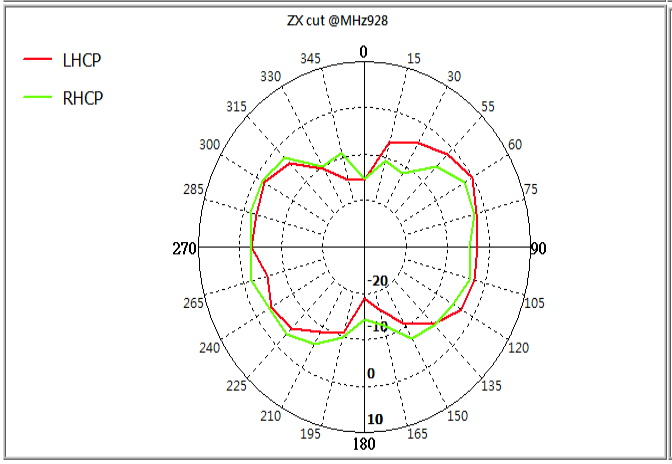
928Mhz:

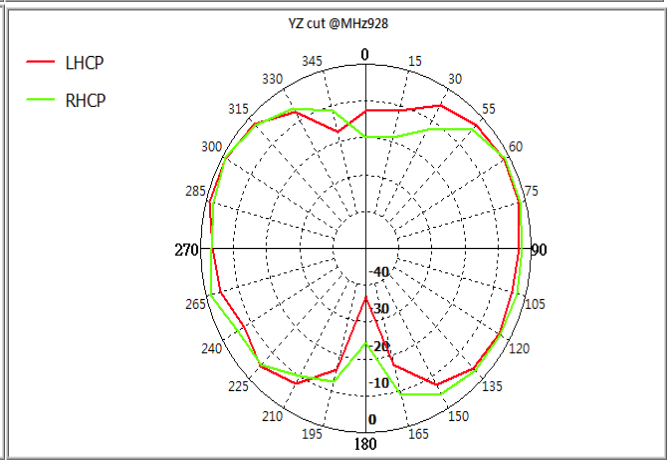

XY cut @MHz928
Total
Horizon
Vertical

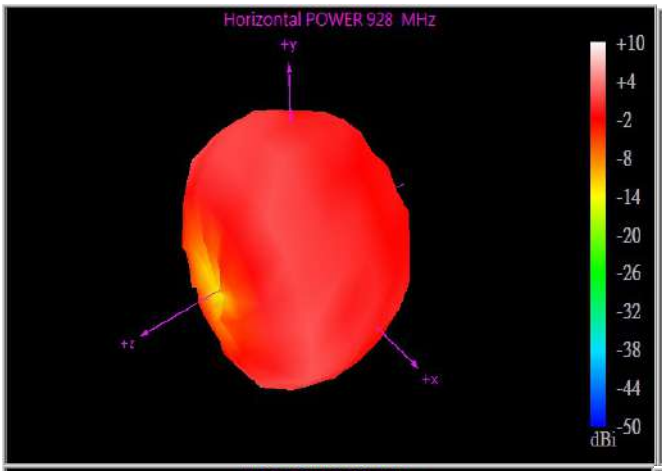

ZX cut @MHz928
Total
Horizon
Vertical

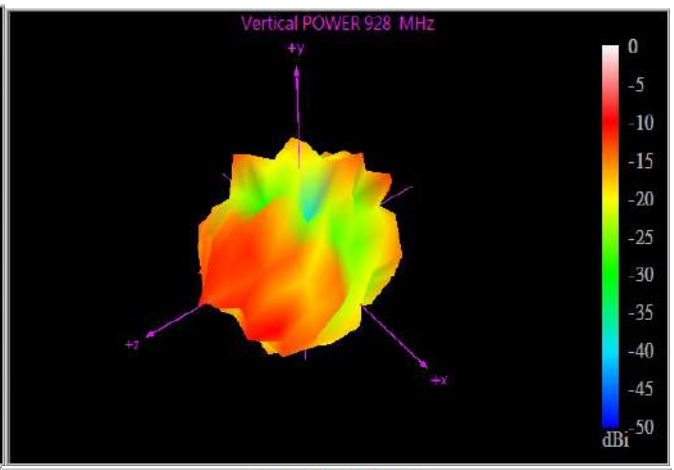

YZ cut @MHz928
Total
Horizon
Vertical

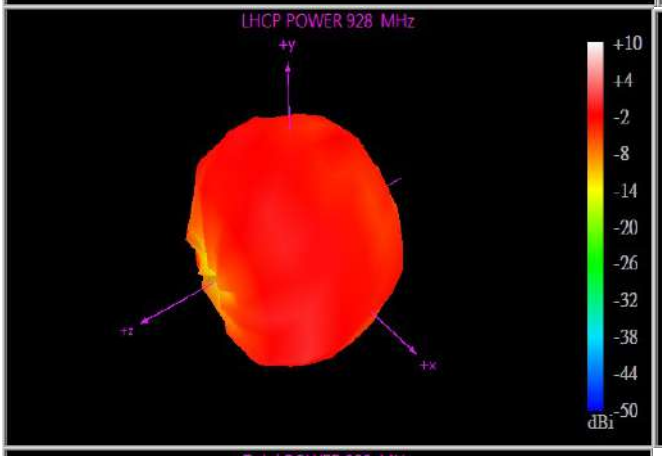

XY cut @MHz928
LHCP
RHCP

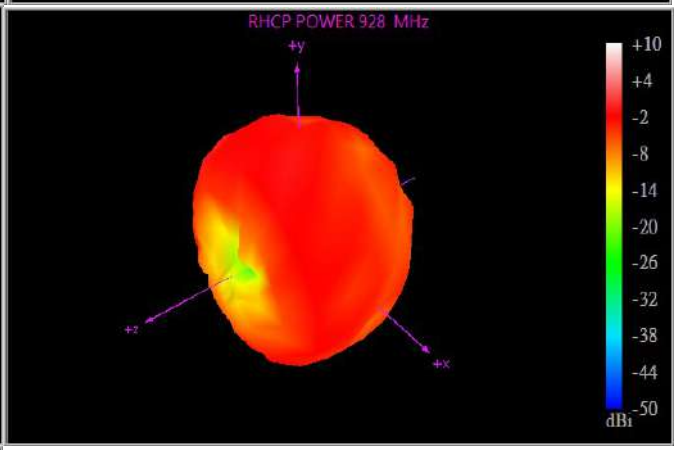

ZX cut @MHz928
LHCP
RHCP

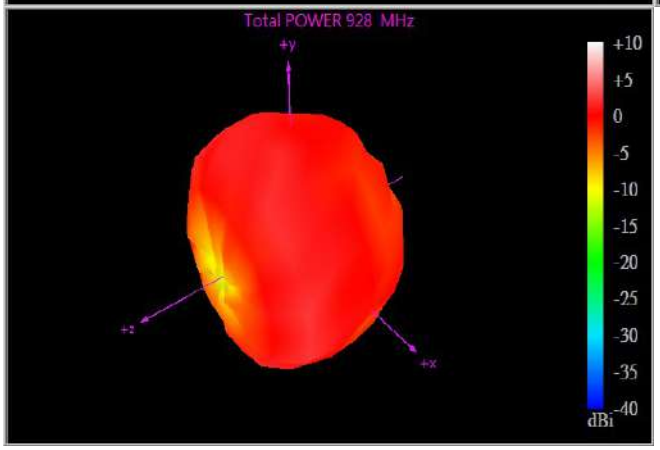

YZ cut @MHz928
LHCP
RHCP


Horizontal POWER 928 MHz
+y
+z
+x
+10
+4
-2
-8
-14
-20
-26
-32
-38
-44
-50
dBi

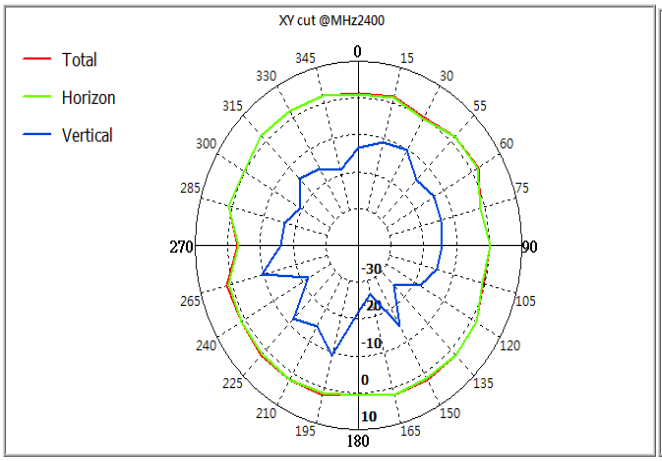

Vertical POWER 928 MHz
+y
+z
+x
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
dBi

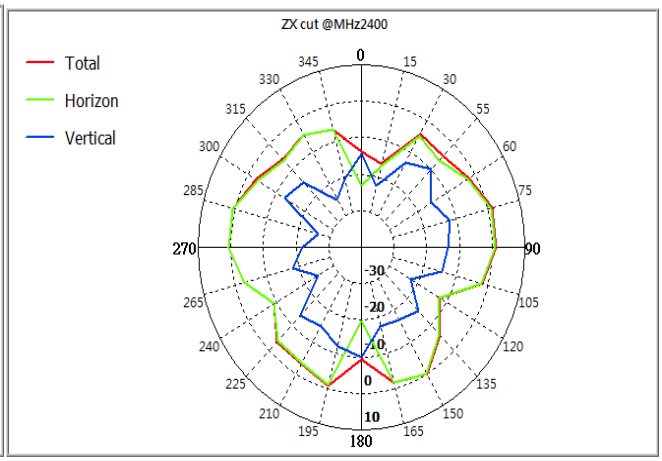

LHCP POWER 928 MHz
+y
+z
+x
+10
+4
-2
-8
-14
-20
-26
-32
-38
-44
-50
dBi

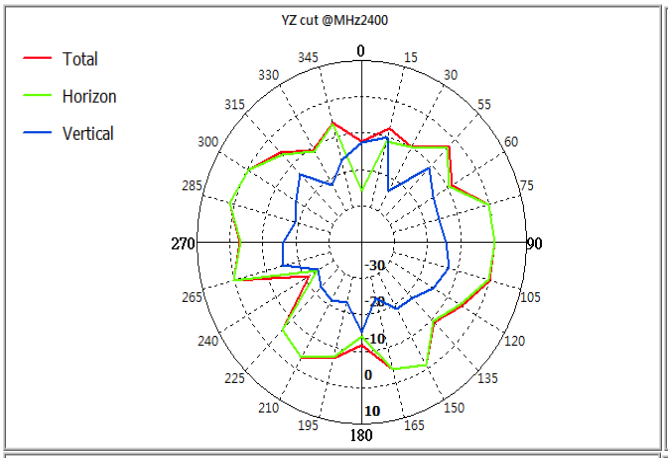

RHCP POWER 928 MHz
+y
+z
+x
+10
+4
-2
-8
-14
-20
-26
-32
-38
-44
-50
dBi

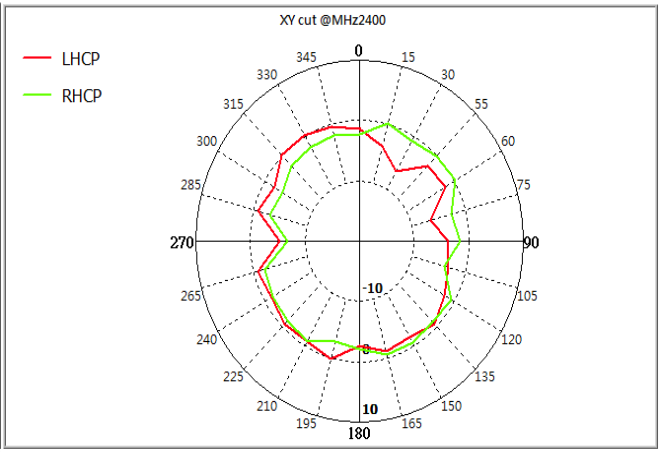

Total POWER 928 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi

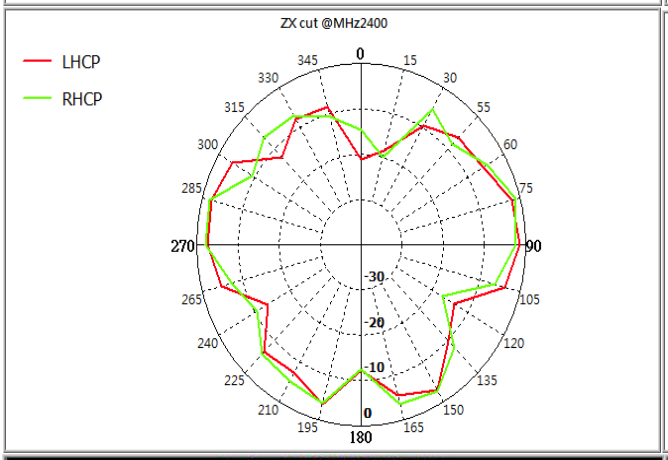
2.4Ghz:

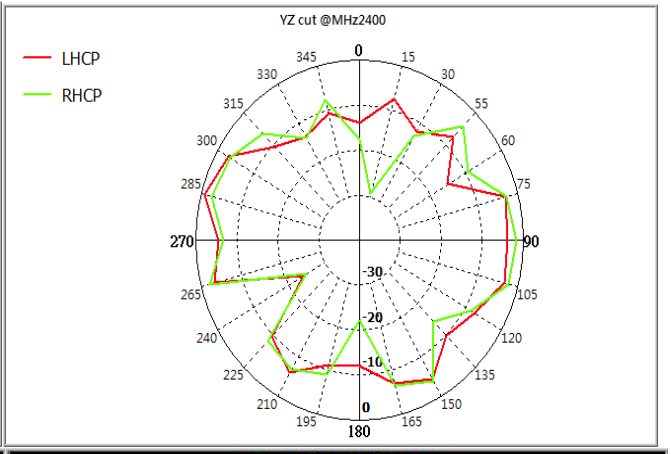

XY cut @MHz2400
Total
Horizon
Vertical
0
15
30
55
60
75
90
105
120
135
150
165
180
195
210
225
240
265
270
285
300
315
330
345
-30
-20
-10
0
10

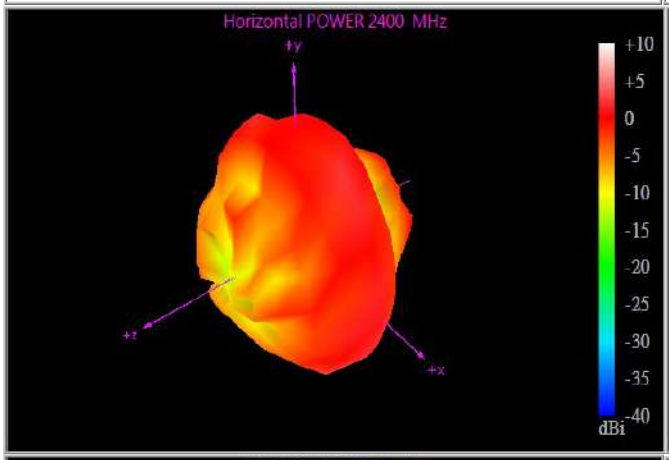

ZX cut @MHz2400
Total
Horizon
Vertical
0
15
30
55
60
75
90
105
120
135
150
165
180
195
210
225
240
265
270
285
300
315
330
345
-30
-20
-10
0
10

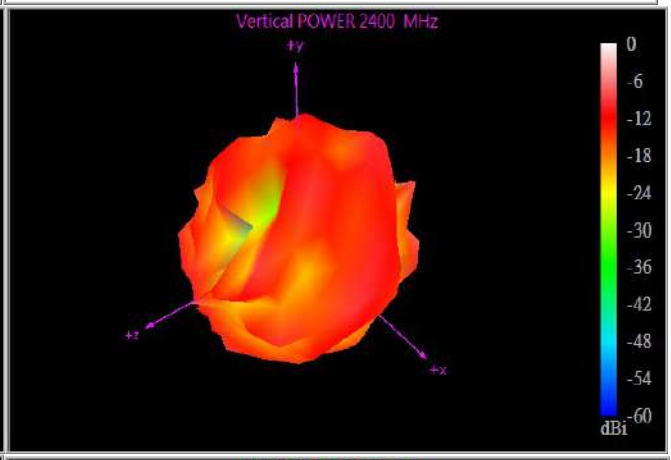

YZ cut @MHz2400
Total
Horizon
Vertical

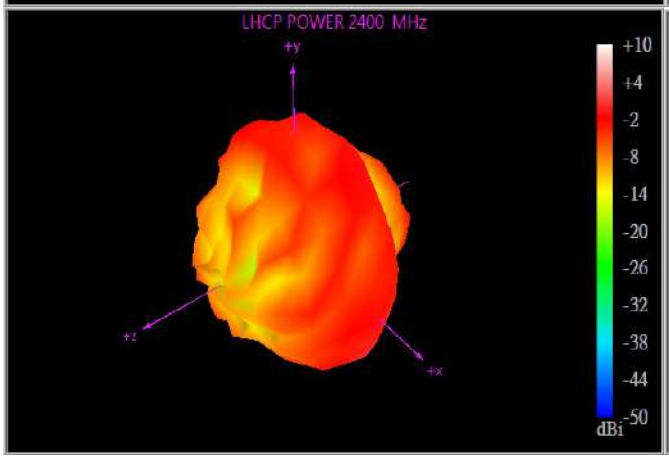

XY cut @MHz2400
LHCP
RHCP

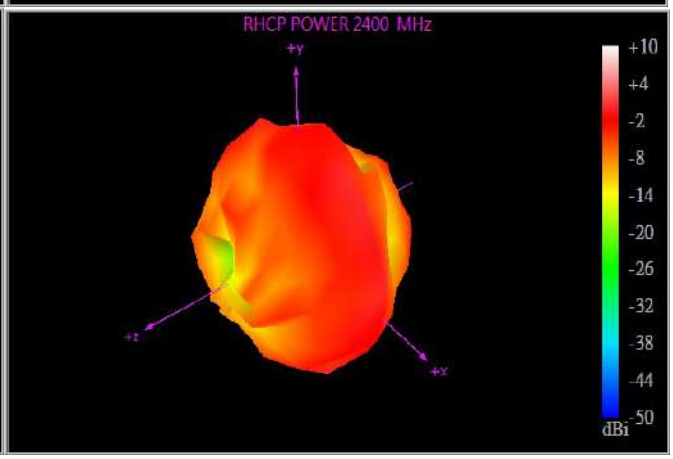

ZX cut @MHz2400
LHCP
RHCP

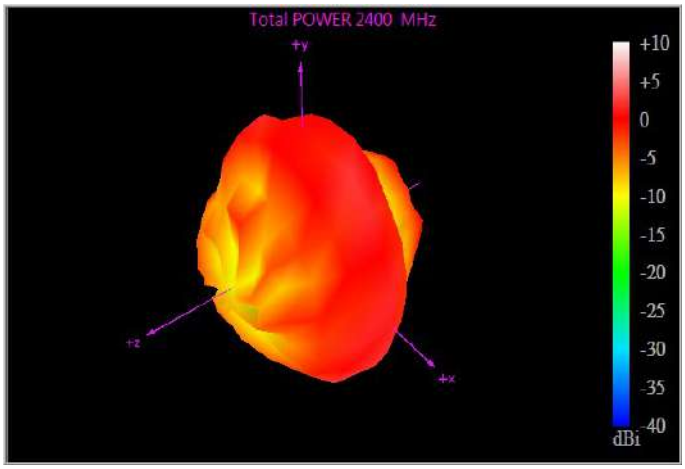

YZ cut @MHz2400
LHCP
RHCP


Horizontal POWER 2400 MHz
dBi

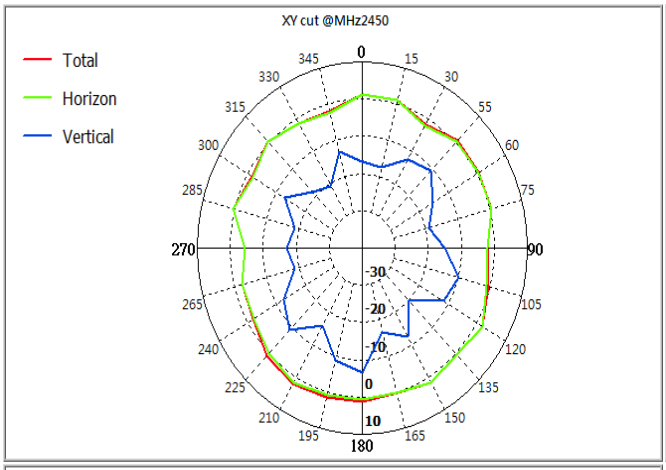

Vertical POWER 2400 MHz
dBi

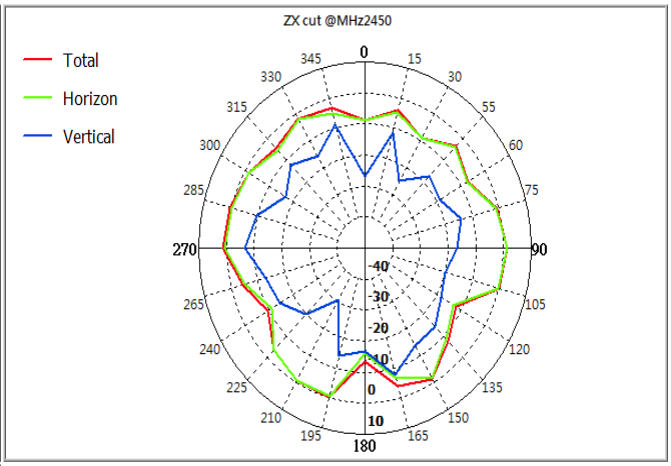

LHCP POWER 2400 MHz
dBi

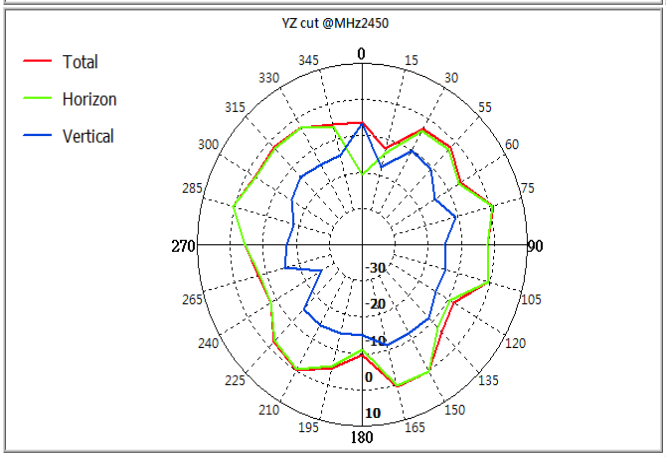

RHCP POWER 2400 MHz
dBi

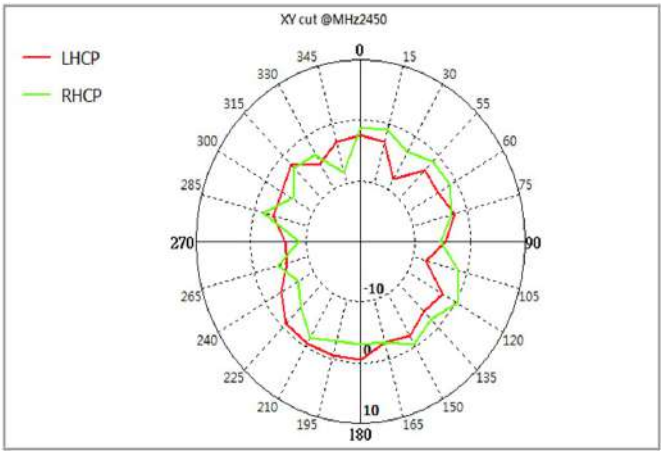

Total POWER 2400 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi

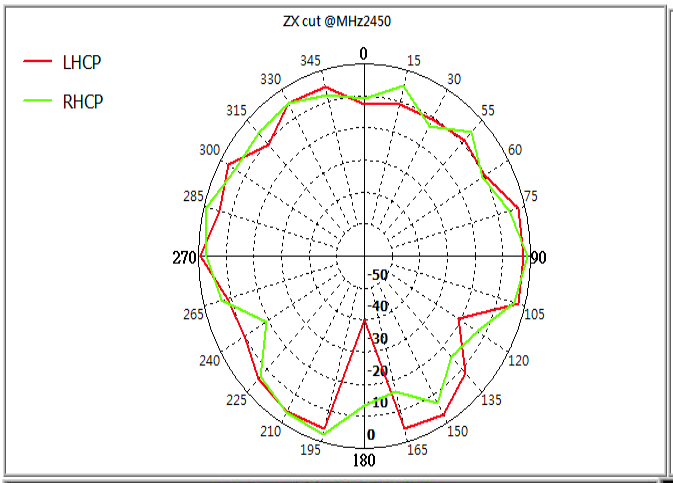
2.45Ghz:

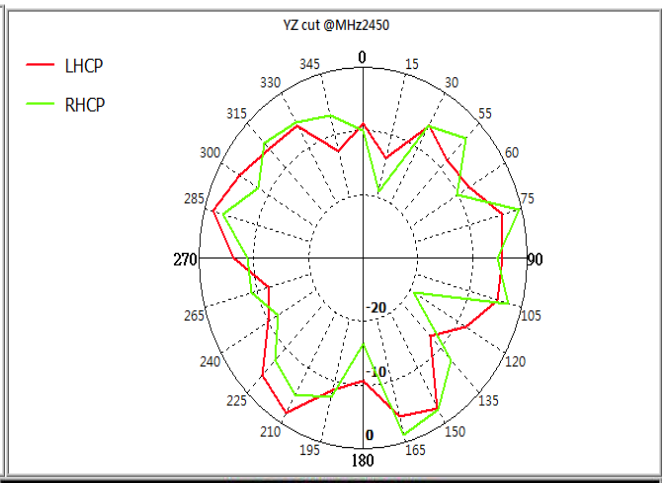

XY cut @MHz2450
Total
Horizon
Vertical

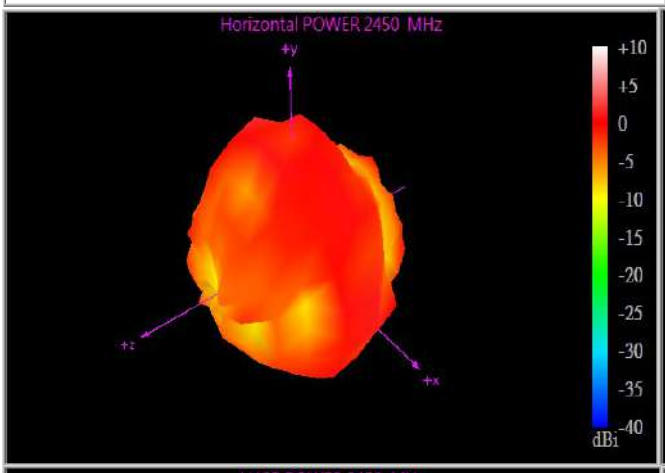

ZX cut @MHz2450
Total
Horizon
Vertical

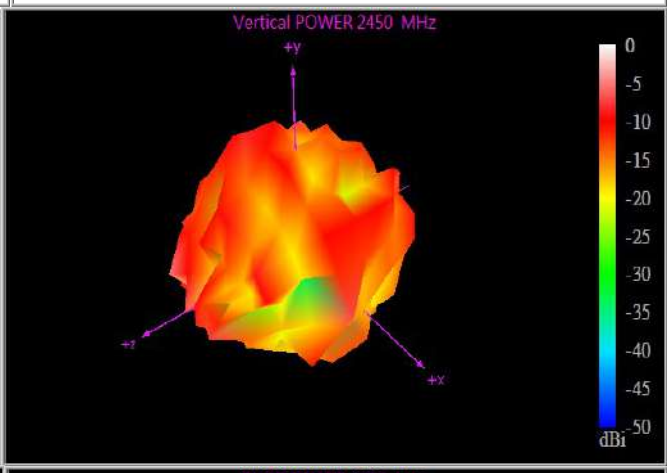

YZ cut @MHz2450
Total
Horizon
Vertical

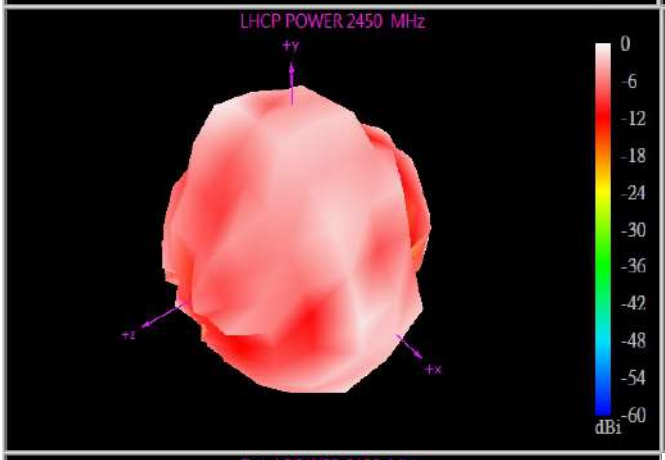

XY cut @MHz2450
LHCP
RHCP

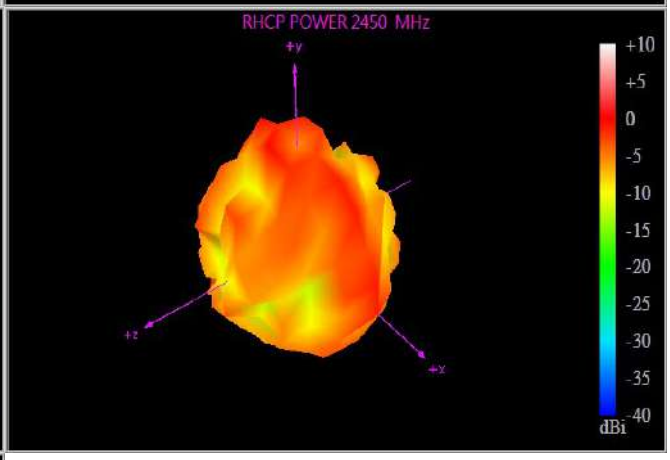

ZX cut @MHz2450
LHCP
RHCP

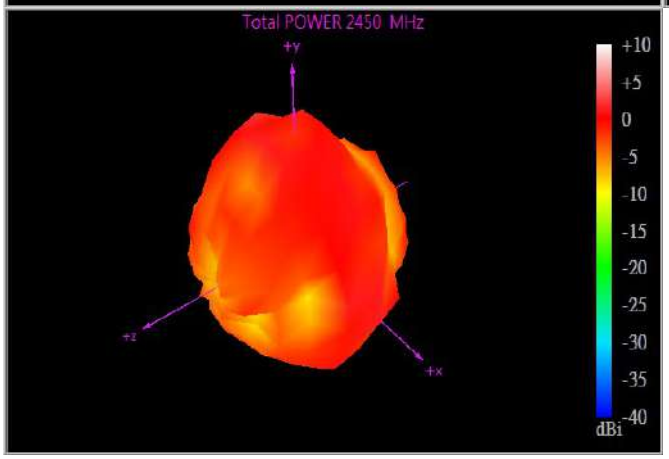

YZ cut @MHz2450
LHCP
RHCP


Horizontal POWER 2450 MHz
dBi

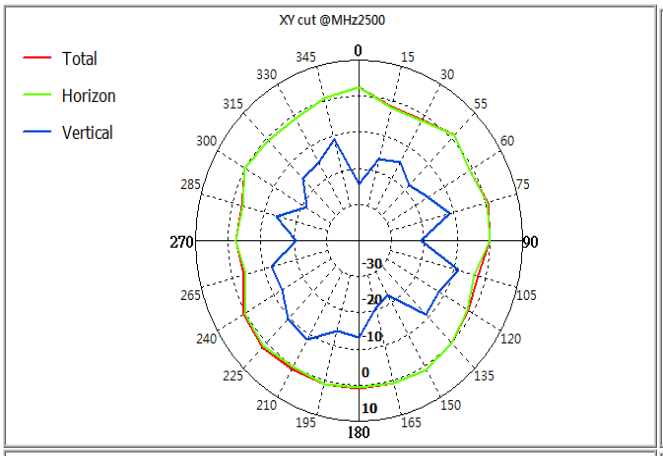

Vertical POWER 2450 MHz
dBi

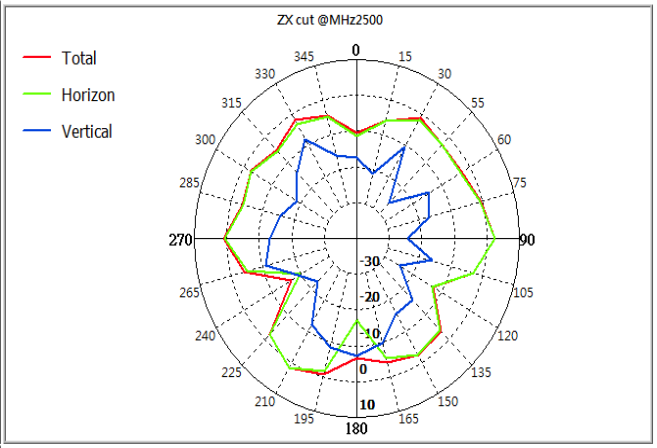

LHCP POWER 2450 MHz
dBi

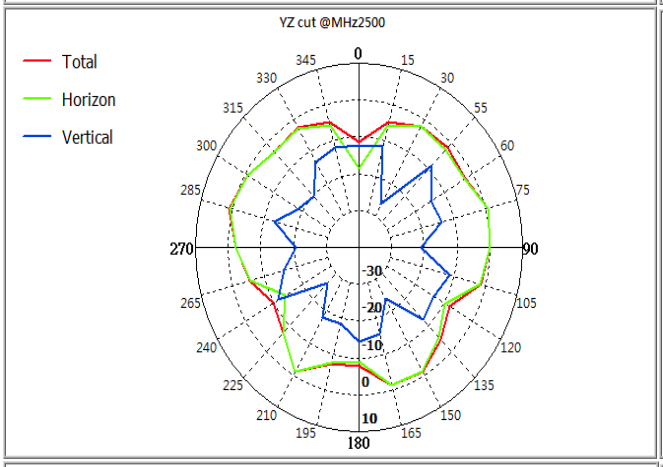

RHCP POWER 2450 MHz
dBi

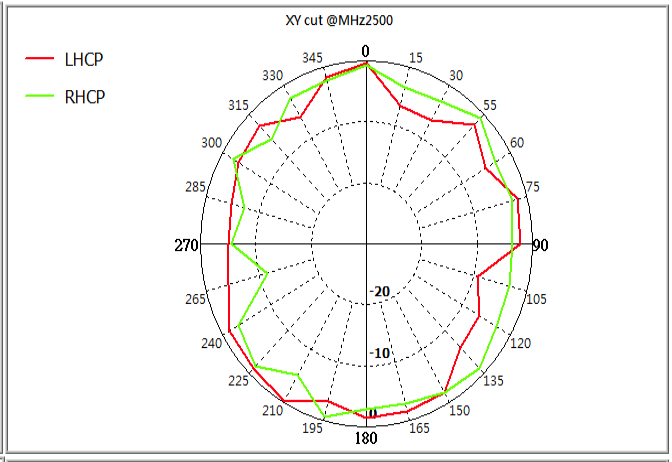

Total POWER 2450 MHz
dBi

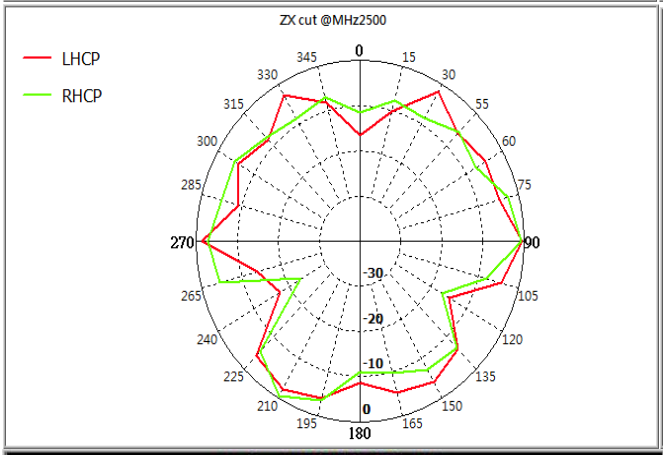
2.5Ghz:

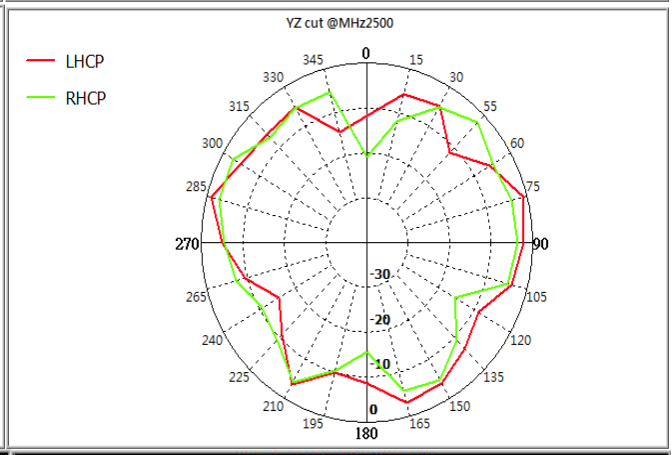

XY cut @MHz2500
Total
Horizon
Vertical

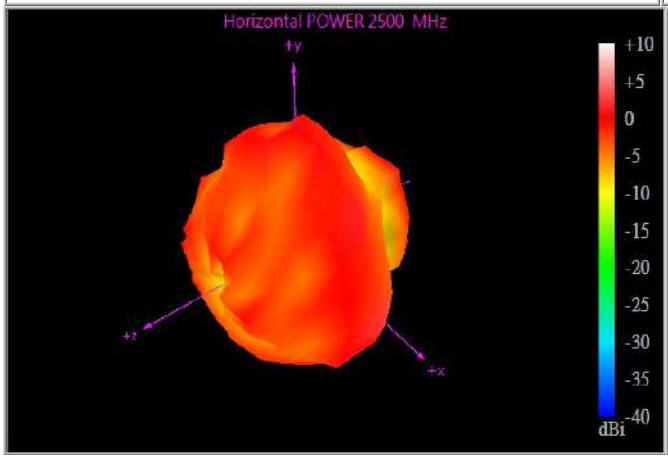

ZX cut @MHz2500
Total
Horizon
Vertical

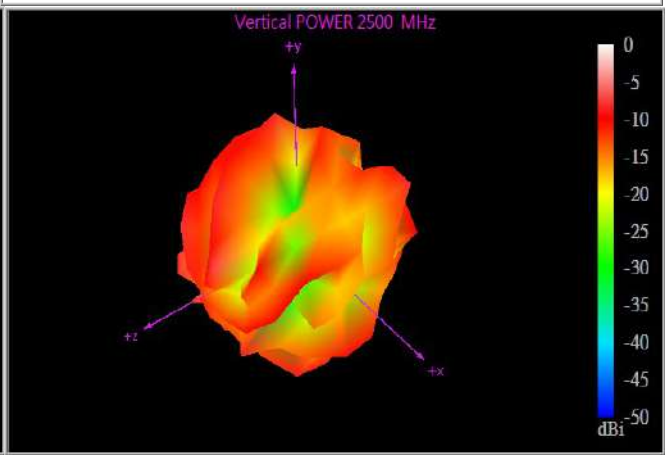

YZ cut @MHz2500
Total
Horizon
Vertical

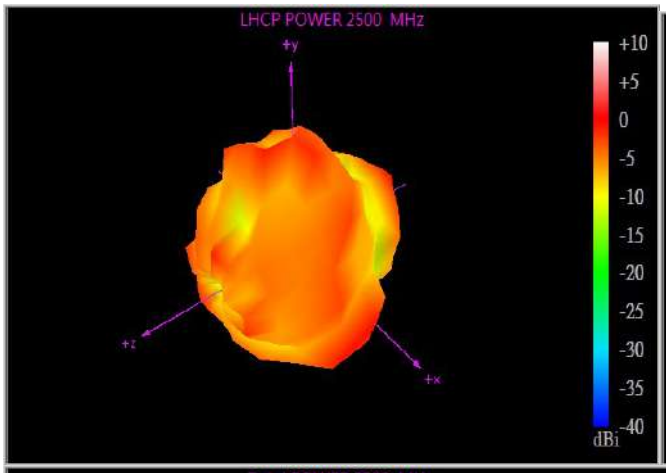

XY cut @MHz2500
LHCP
RHCP

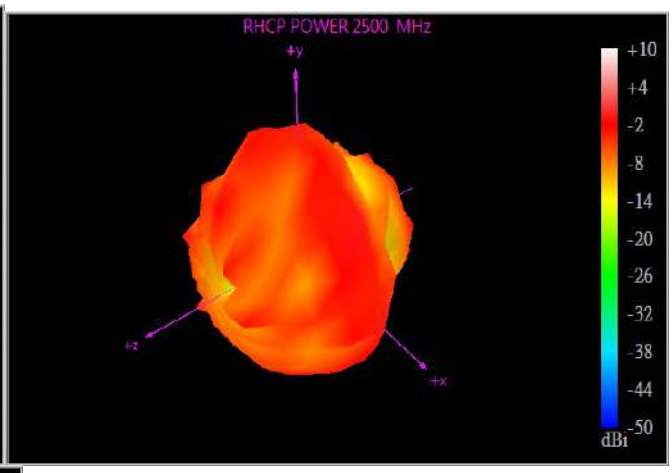

ZX cut @MHz2500
LHCP
RHCP

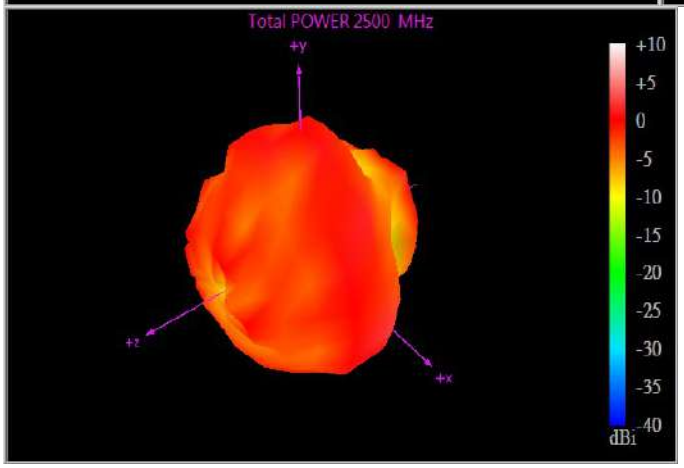

YZ cut @MHz2500
LHCP
RHCP


Horizontal POWER 2500 MHz
dBi


Vertical POWER 2500 MHz
dBi


LHCP POWER 2500 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi


RHCP POWER 2500 MHz
+y
+z
+x
+10
+4
-2
-8
-14
-20
-26
-32
-38
-44
-50
dBi


Total POWER 2500 MHz
+y
+z
+x
+10
+5
0
-5
-10
-15
-20
-25
-30
-35
-40
dBi