Performance of the invented antenna:

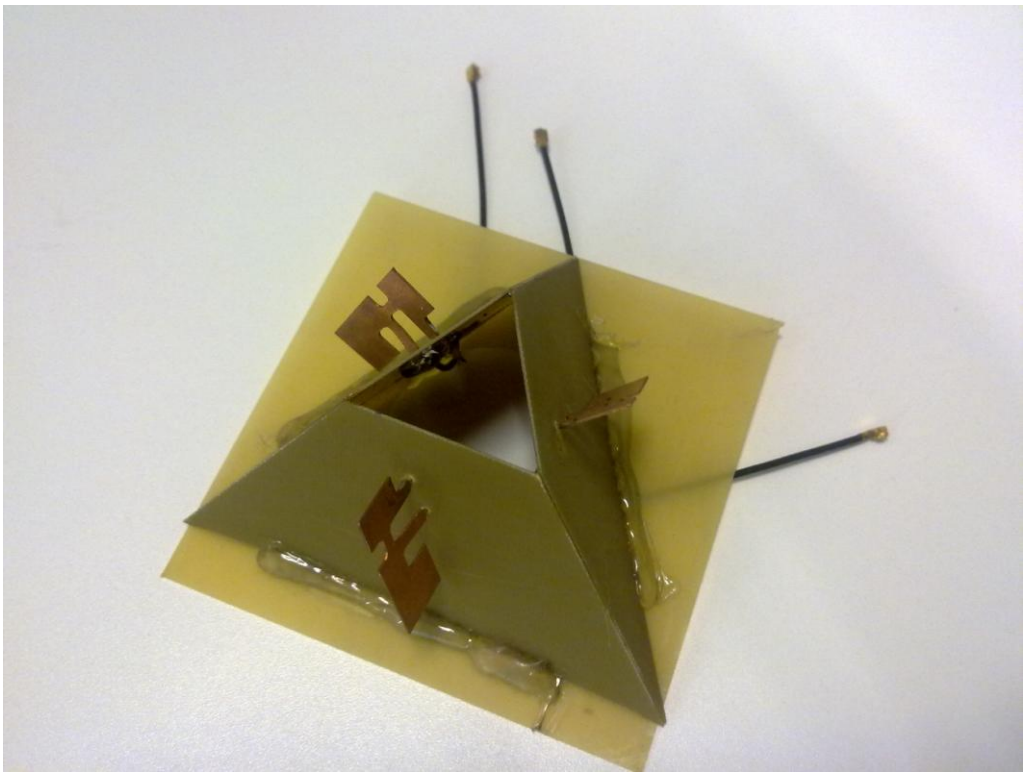


Figure 1: Measured impedance of single antenna element and isolation between antenna elements

- The return loss (S_{11}) is less than -10 dB over 2.4–2.5 GHz and 4.8–5.85 GHz.
- Good isolation of -15 dB and -30 dB are achieved at the lower and higher bands respectively.
-

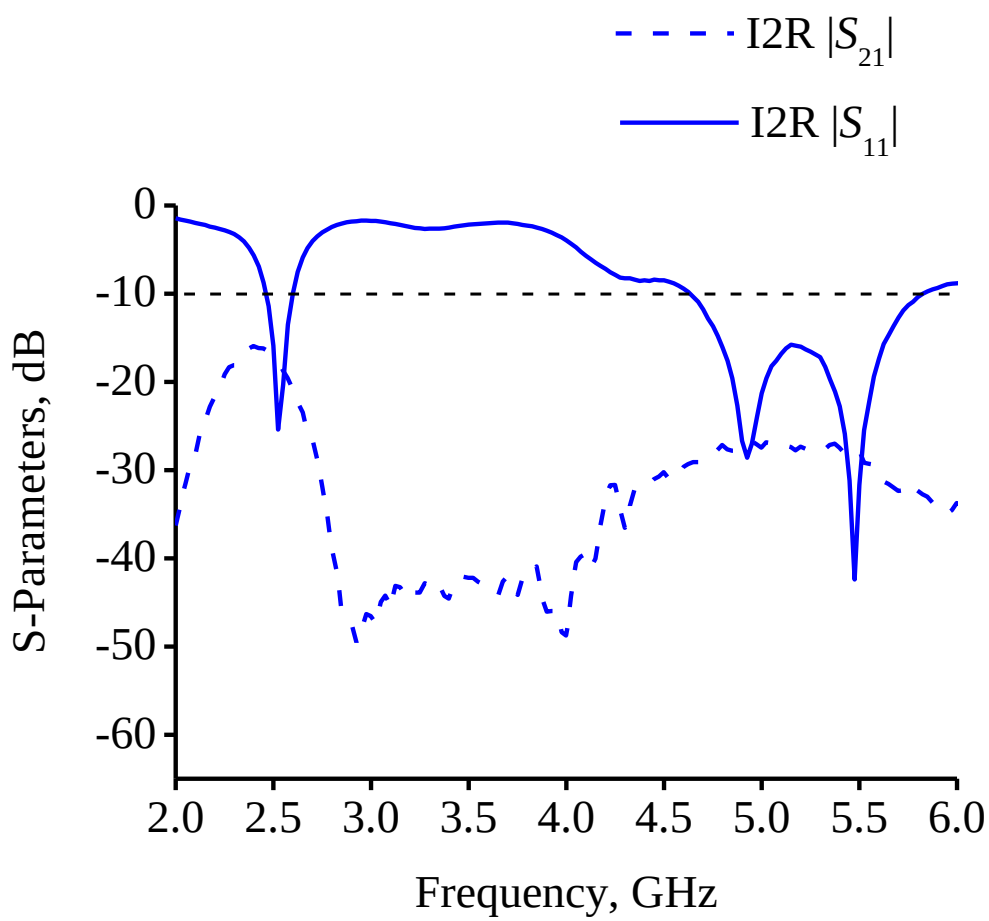
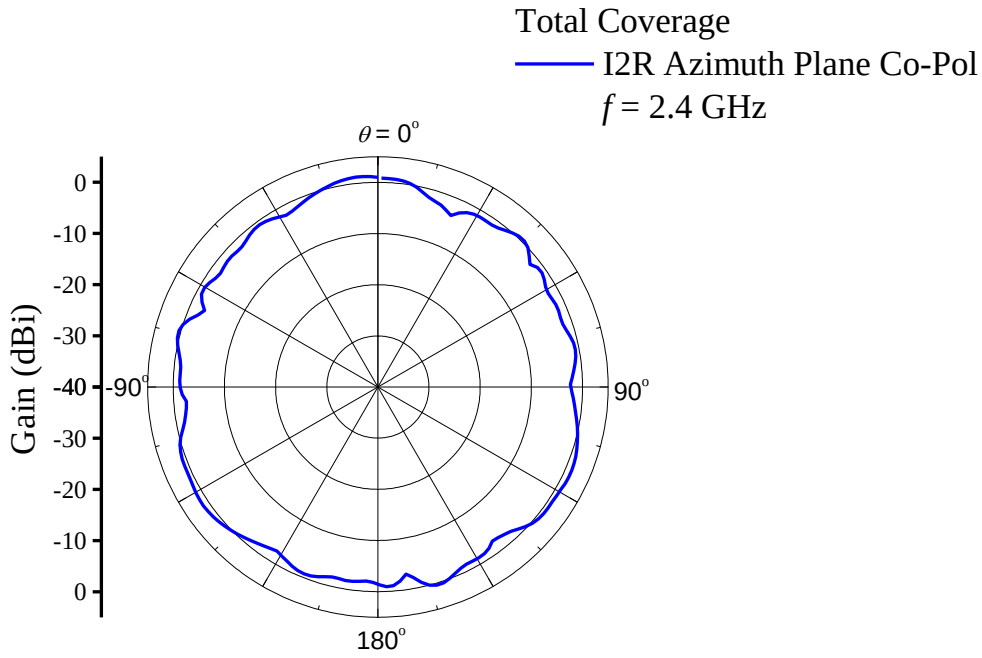


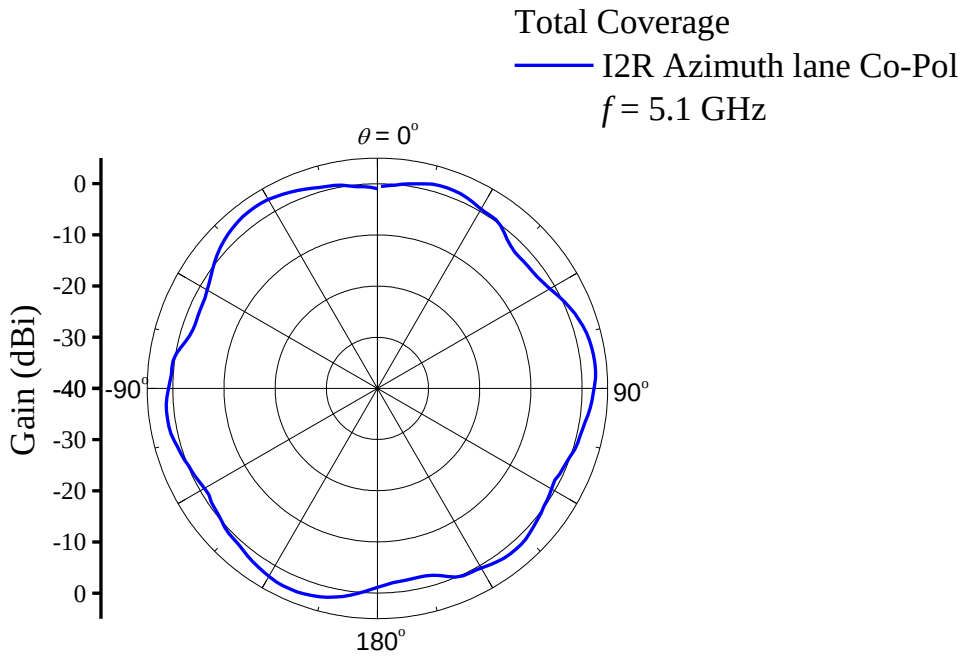
Figure 1

Figures 2a–d: Coverage patterns in azimuth planes

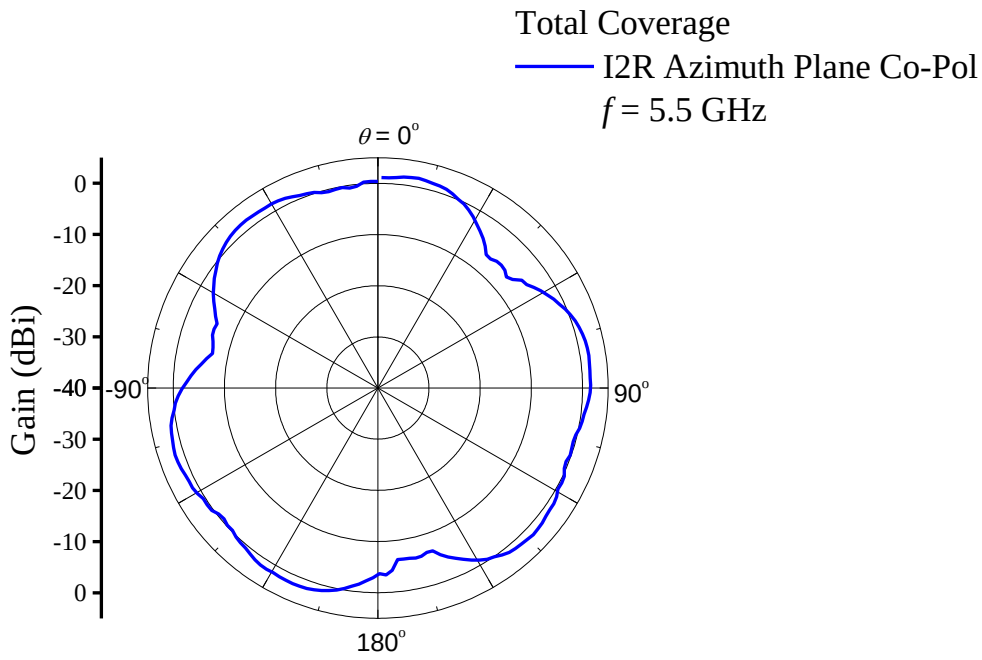
- Azimuth plane co-polarization total radiation patterns at (a) 2.4 GHz, (b) 5.1 GHz, (c) 5.5 GHz, and (d) 5.8 GHz.



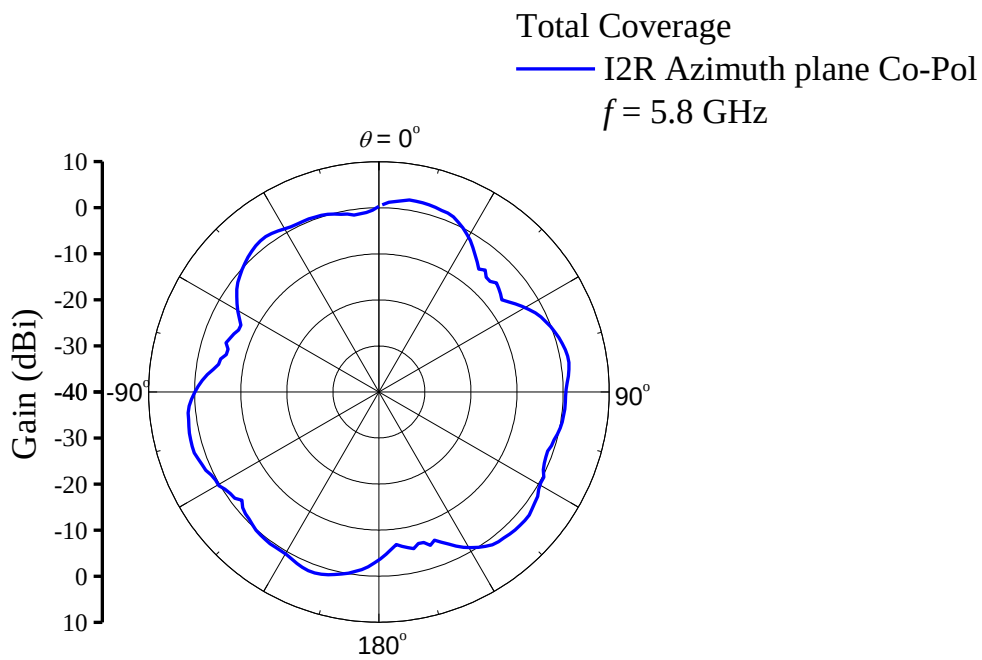
(a)



(b)


Total Coverage
I2R Azimuth Plane Co-Pol
f = 5.5 GHz
θ = 0°
Gain (dBi)
0
-10
-20
-30
-40
-30
-20
-10
0
-90°
90°
180°

(c)

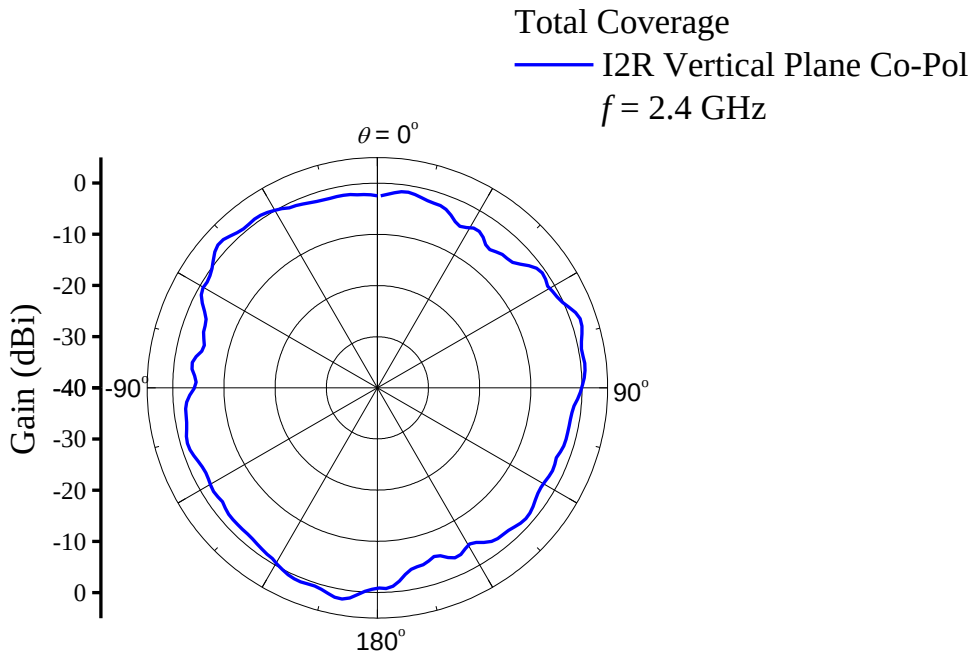

Total Coverage
I2R Azimuth plane Co-Pol
f = 5.8 GHz
θ = 0°
Gain (dBi)
10
0
-10
-20
-30
-40
-30
-20
-10
0
10
-90°
90°
180°

(d)

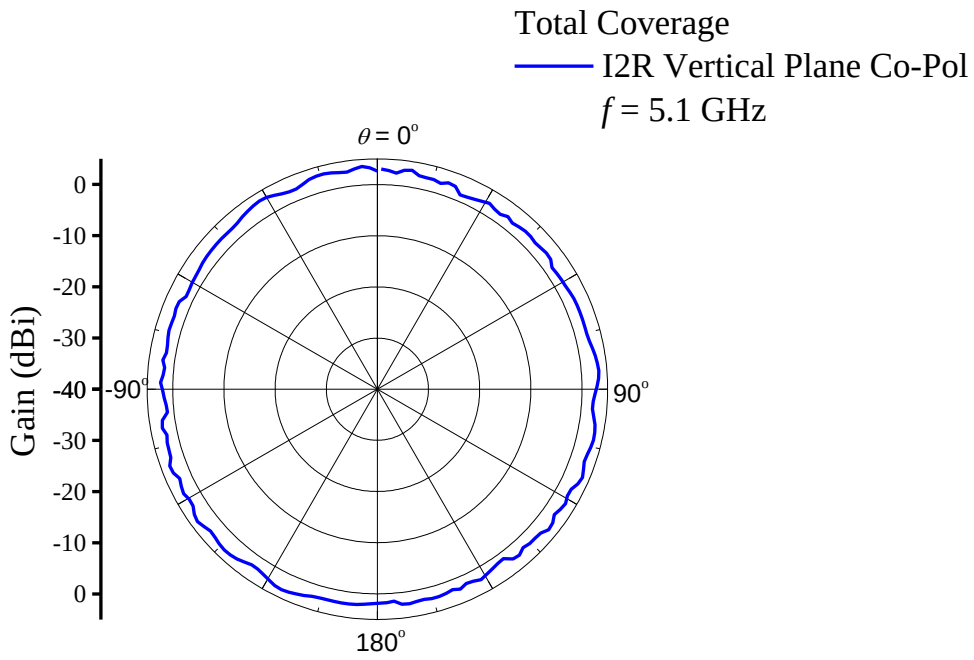
Figure 2

Figures 3a–d: Coverage patterns in vertical planes

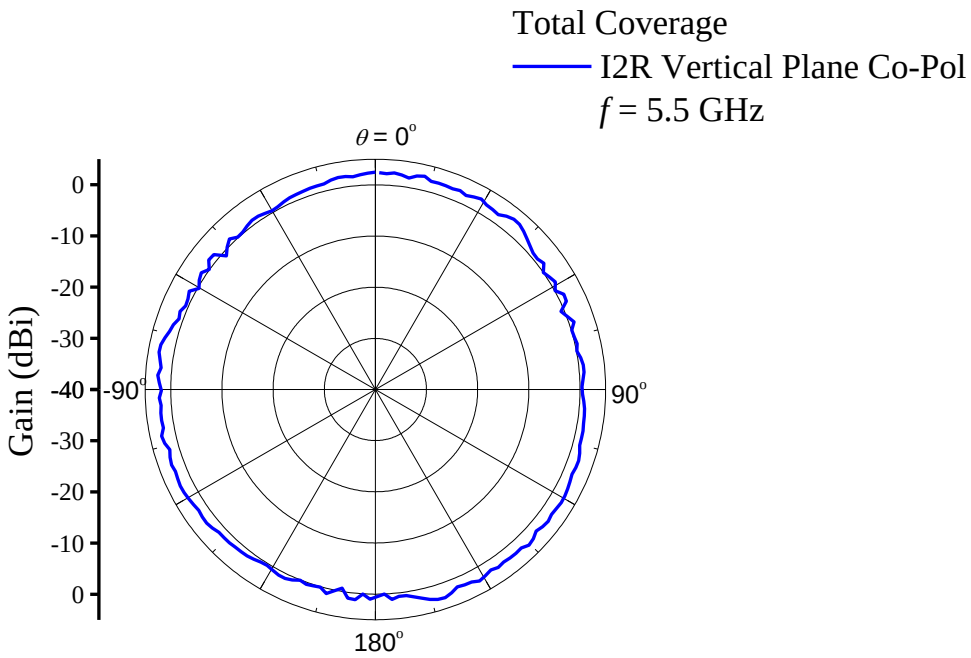
- Vertical plane co-polarization radiation patterns of a single-element at (a) 2.4 GHz, (b) 5.1 GHz, (c) 5.5 GHz, and (d) 5.8 GHz.



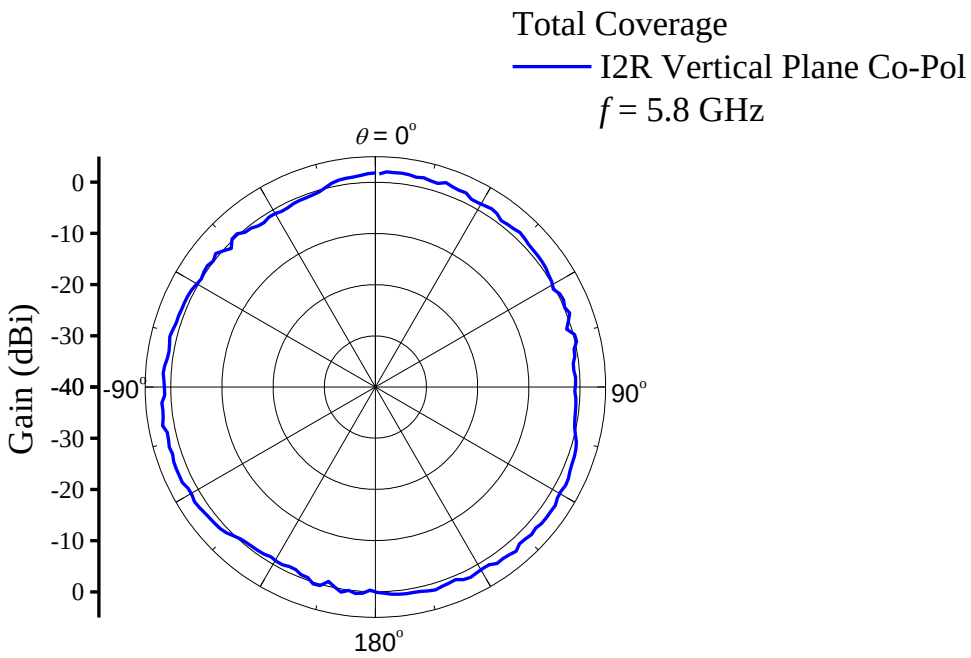
(a)



(b)


Total Coverage
I2R Vertical Plane Co-Pol
f = 5.5 GHz
θ = 0°
0
-10
-20
-30
-40
-30
-20
-10
0
Gain (dBi)
-90°
90°
180°

(c)


Total Coverage
I2R Vertical Plane Co-Pol
f = 5.8 GHz
θ = 0°
0
-10
-20
-30
-40
-30
-20
-10
0
Gain (dBi)
-90°
90°
180°

(d)

Figure 3

Results

Rev 1.0

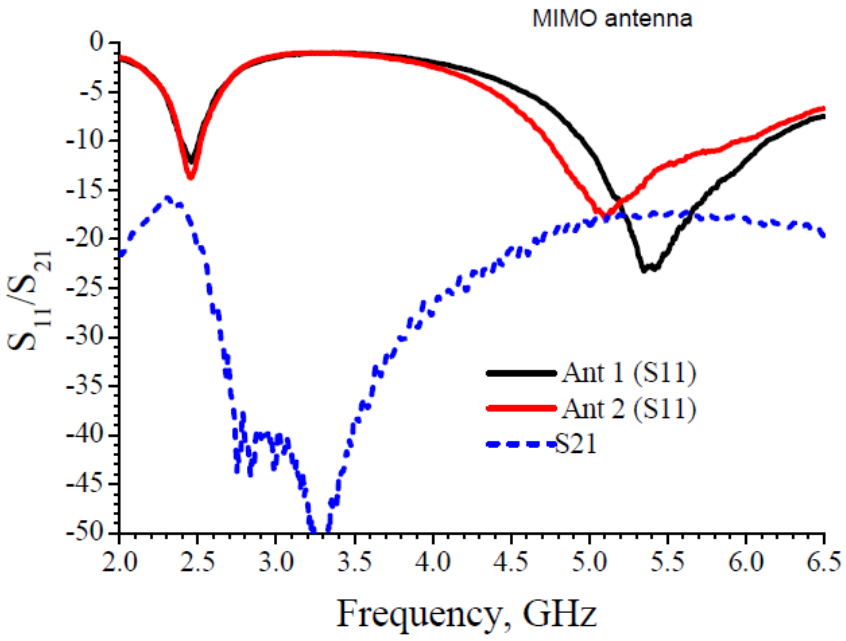
Date: 15th Jun, 2011

Date	Revision	Description	Results By
15th Jun,11	1.0	Results from 7th Jun, 11 & 14th Jun, 11	Xianming

Parameters	Results (14th Jun, 11)		MaxBeam30N(DS)		Comments
	2.4GHz	5.8GHz	2.4GHz	5.8GHz	
S11 (Port1)	2.4 - 2.5	5 - 6.1	2.4 – 2.49	4.9 - 6	
S11 (Port2)	2.4 – 2.5	4.8 – 5.8	2.4 – 2.49	4.9 - 6	
S12 (Isolation)	< -16	< -17	Not Stated	Not Stated	
Gain	3	5	5	5.1@ 5.2GHz 7.0@5.8GHz	MaxBeam "might" be using 2 chain gain.
Azimuth(Port1)		Given			
Azimuth(Port2)		Given			
Elevation(Port1)					
Elevation(Port2)		Given			

Results from 7th June, 2011 & 14th June, 2011

1. S-Parameters

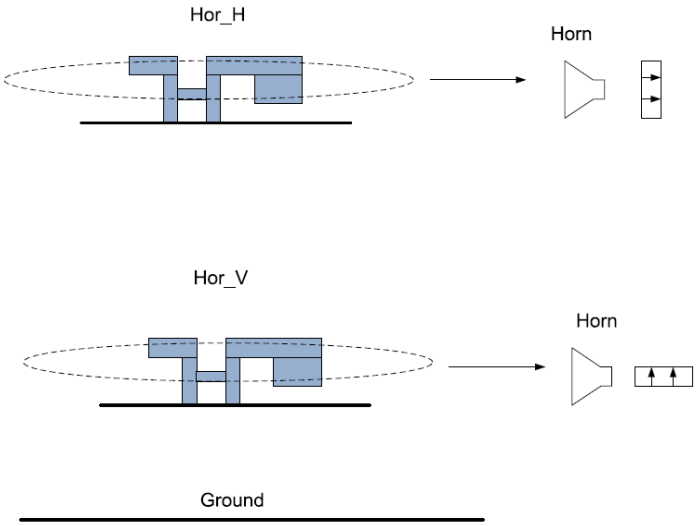


2. Gain

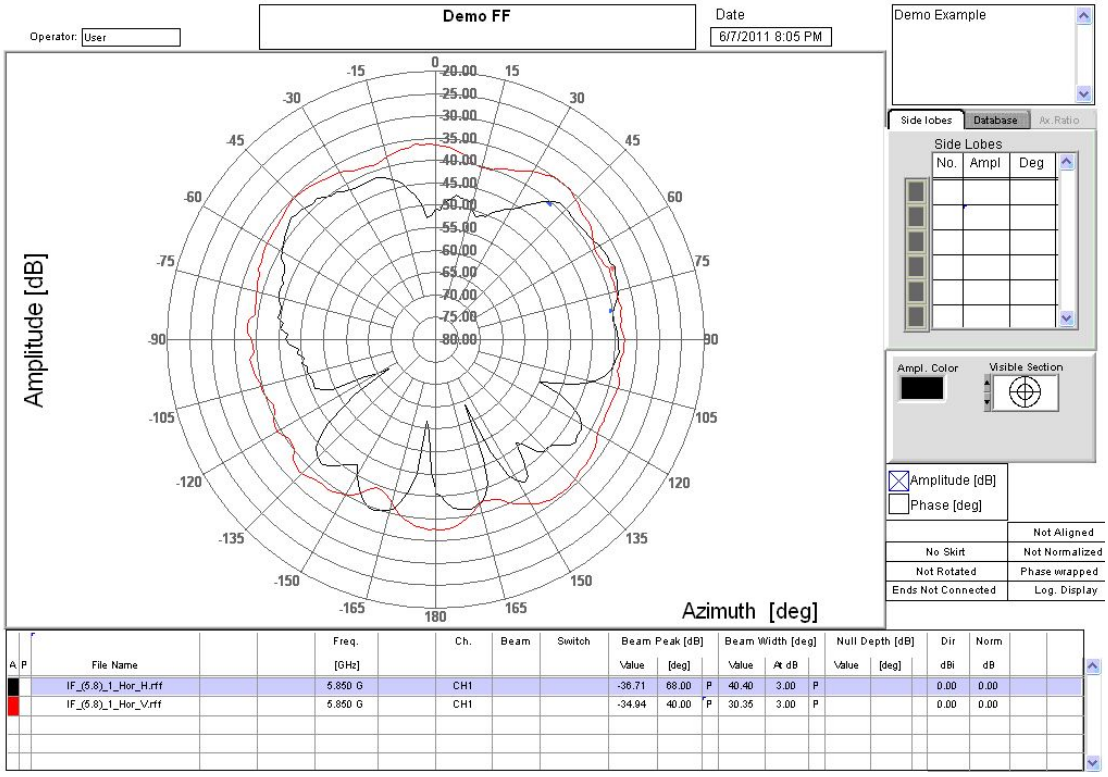
From Email, Xianming mentioned

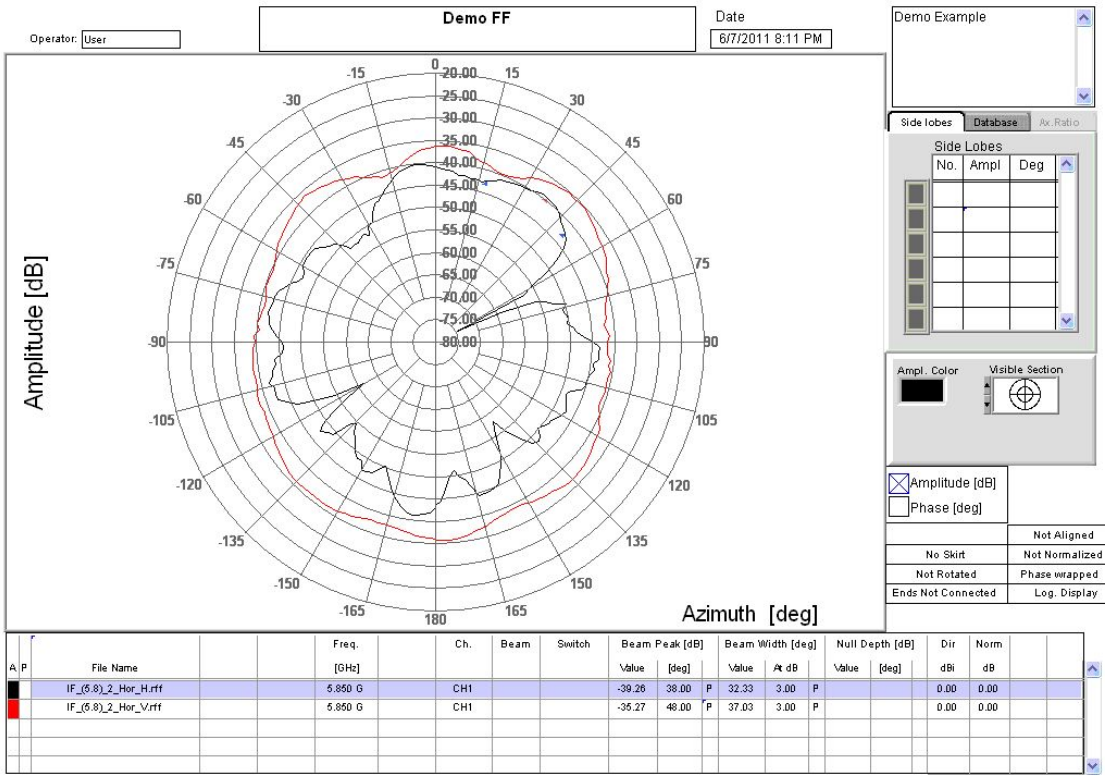
The peak gain for MIMO antenna is about 3 dBi @ 2.4 Ghz and 5 dBi @5GHz.

3. Azimuth ➔ Hor_H

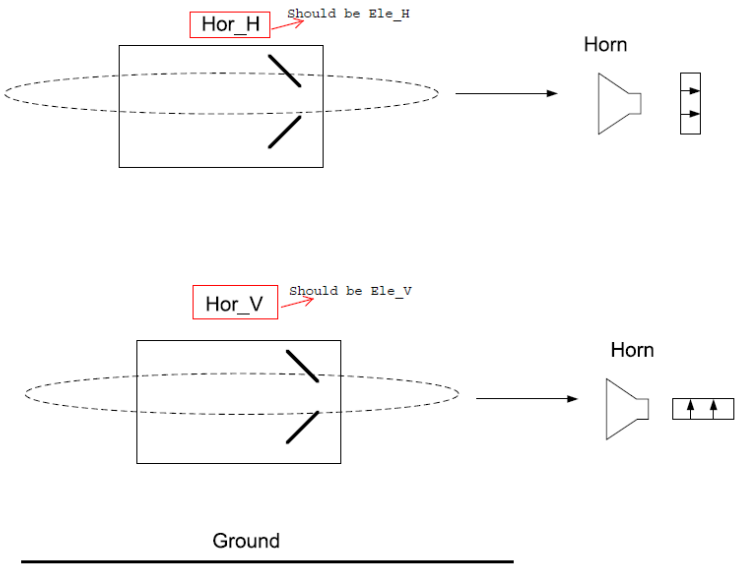


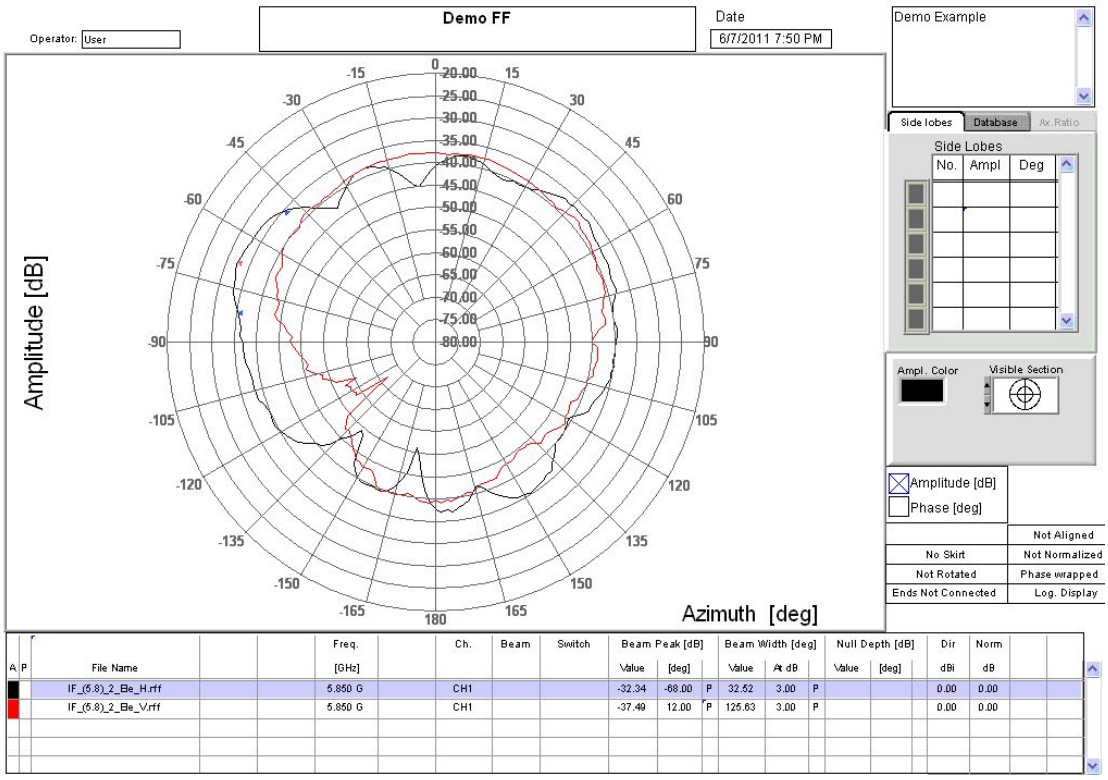
The antenna move one round, and the Horn is placed as shown.
Hor_H represents the Azimuth of the antenna.





4. Elevation➔ Ele_H




Operator: User
Demo FF
Date
6/7/2011 7:50 PM
Demo Example
Side lobes
Database
Ax.Ratio
Side Lobes
No.
Ampl
Deg
Ampl. Color
Visible Section
Amplitude [dB]
Phase [deg]
Not Aligned
No Skirt
Not Normalized
Not Rotated
Phase wrapped
Ends Not Connected
Log. Display
Amplitude [dB]
Azimuth [deg]
A P File Name
Freq. [GHz]
Ch.
Beam
Switch
Beam Peak [dB] Value [deg]
Beam Width [deg] Value At dB
Null Depth [dB] Value [deg]
Dir dBi
Norm dB
IF_(5.8)_2_Ele_H.rff 5.850 G CH1 -32.34 -68.00 P 32.52 3.00 P 0.00 0.00
IF_(5.8)_2_Ele_V.rff 5.850 G CH1 -37.49 12.00 P 125.63 3.00 P 0.00 0.00

5. Pictures