

ALLISCOM

GPS /2G / 3G / 4G / Wi-Fi Antenna

Data Sheet



Model No. GCREB

Feature Delivers high performance for GPS / 2G / 3G / 4G / Wi-Fi
GPS / LTE / AMPS/GSM / DCS / PCS / WCDMA / GPRS / EDGE
1575.42MHz/696~800/824~960/
1710~2170MHz/2.4~2.5/5GHz
RoHS Compliant

Benefit Resistant to harsh outdoor environment
High Performance
Concealable, Flat structure
Omni directional for cellular system

Description The GCREB is a high performance and quality antenna for GPS / 2G / 3G / 4G / Wi-Fi applications. The antenna features high efficiency and it can meet all of the 4G LTE performance standards. The RF connector and cable length can be customized as required.

1. Electrical Specifications

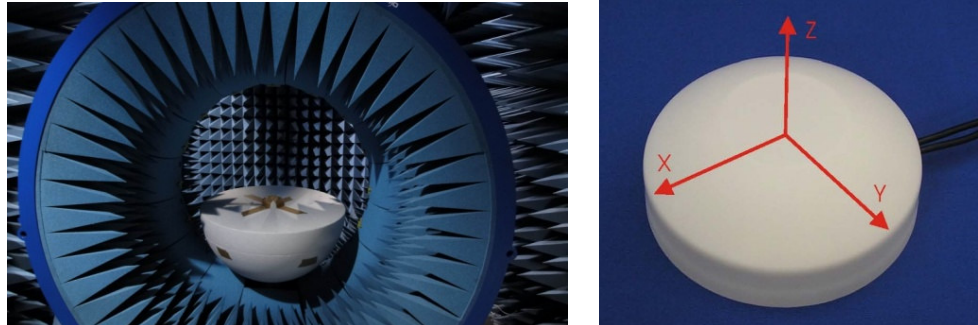
1.1 Electrical Data

GPS Active Antenna:					
Patch Antenna					
Frequency	1575.42 ± 3 MHz				
VSWR	1.5 Max.				
Bandwidth	20 MHz Min. at -10 dB				
Gain Coverage	≥ -4dBic at −90°≤ θ≤90°(over 75% volume)				
Polarization	RHCP				
Amplifier Module					
Amplifier Gain without cable	Noise Figure	Output VSWR	DC Voltage	DC Current	
27dB Typical	1.8dB Typical	2.0 Max.	DC 2.7V to 6.0V	8.5±4.5mA	
LTE/Cellular/WCDMA Antenna:					
Frequency		LTE 696~800MHz	AMPS/GSM 824~960MHz	DCS/PCS 1710~1990MHz	WCDMA 1920~2170MHz
VSWR Max.		3.0:1	3.0:1	3.0:1	3.0:1
Average Gain	with Ground Plane*	-1.50dBi	-2.33dBi	-1.86dBi	-1.52dBi
	w/o Ground Plane	-2.15dBi	-3.33dBi	-2.75dBi	-2.07dBi
Average Efficiency	with Ground Plane	71.07%	61.60%	65.36%	70.87%
	w/o Ground Plane	61.36%	48.47%	53.23%	62.58%
Peak Gain	with Ground Plane	3.79dBi	4.11dBi	4.94dBi	5.91dBi
	w/o Ground Plane	3.74dBi	3.61dBi	2.34dBi	4.21dBi
Wi-Fi Antenna:					
Frequency		2.4~2.5GHz	4.7~5.0GHz	5~5.4GHz	5.4~5.9GHz
Average Gain	with Ground Plane*	-2.15 dBi	-4.63dBi	-3.76 dBi	-3.34 dBi
	w/o Ground Plane	-2.70 dBi	-5.16dBi	-4.31 dBi	-3.71 dBi
Average Efficiency	with Ground Plane	61.07%	35.27%	42.87%	47.69%
	w/o Ground Plane	53.88%	31.13%	37.53%	43.67%
Peak Gain	with Ground Plane	2.49 dBi	6.31 dBi	6.28dBi	6.38 dBi
	w/o Ground Plane	1.19 dBi	5.63 dBi	5.79 dBi	6.22 dBi
VSWR(2~2.48GHz)		VSWR<2.0			
VSWR(5~6GHz)		VSWR<3.0			
Impedance		50Ω			
Pattern Type/ Polarization		Omni-direction / Linear			
Power Handling		25 watt			

* : 40x40cm Ground Plane

Note: Specifications subject to change without notice.

1.2 Antenna Characteristics

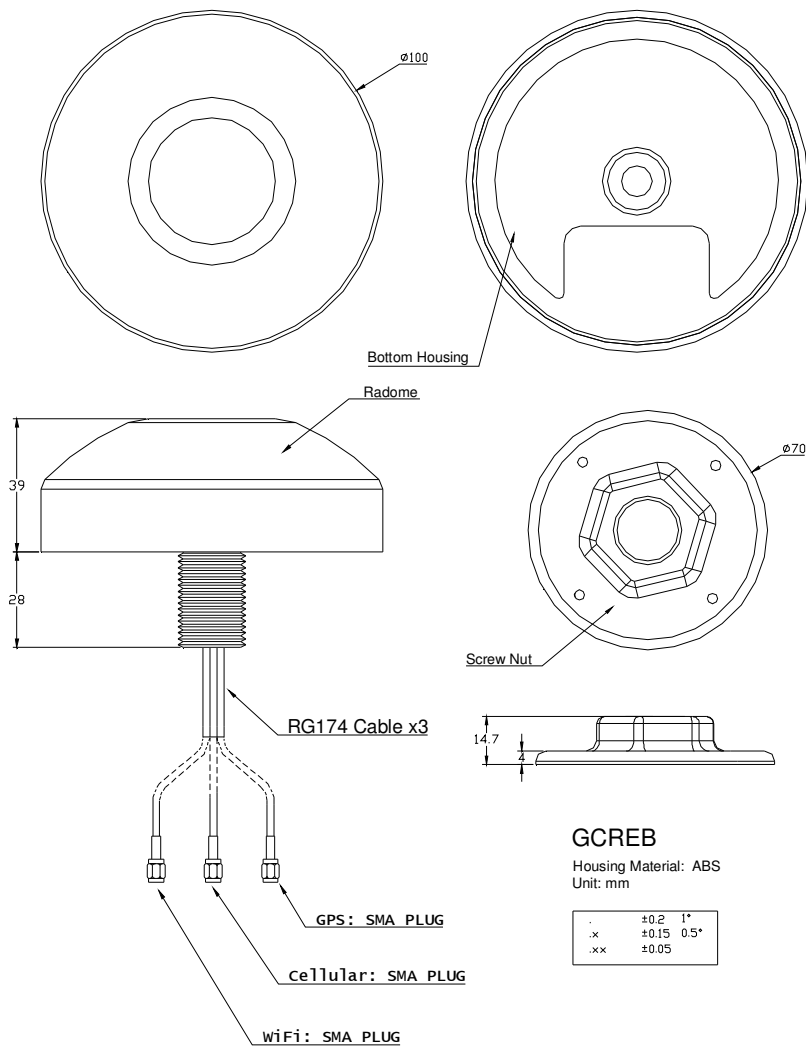


2. Mechanical Specification

2.1 Mechanical

Item	Specification
Weight (Without Cable)	280 grams Max.
Housing Material	ABS
Size	100mm Dia.x 67mm(39mm+28mm)
Connector	Custom
RF Cable	Custom
Mounting	Permanent mount
Housing Color	White
Waterproof	IP56

2.2 Dimension



Note: Specifications subject to change without notice.

3. Appendix: Gain Pattern

- GPS

Y-Z Plane

Test Voltage: 5V

Cable length: 5m

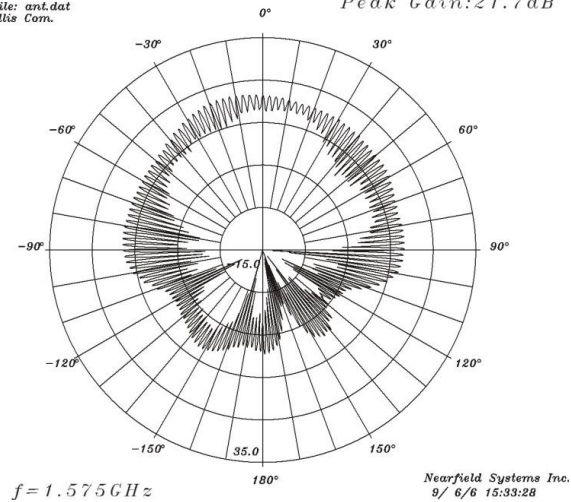
Cable loss $\approx$ 6dB

Polar plot

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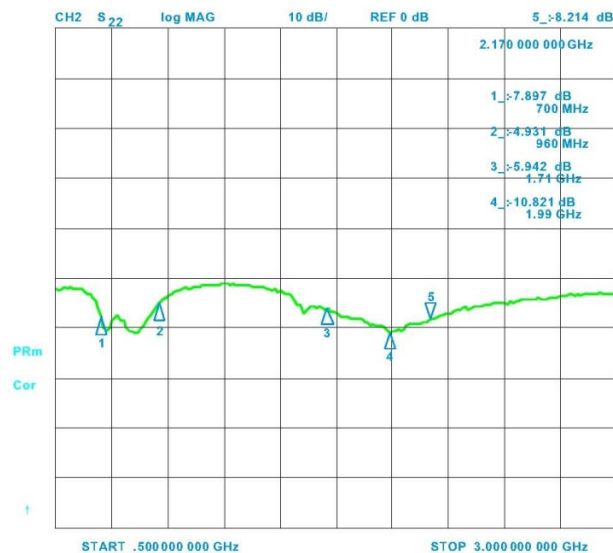
Axial Ratio: 3dB

Peak Gain: 21.7dB



- LTE(696~800MHz)/Cellular (824~960MHz,1710~1880MHz ,1880~1990MHz)/WCDMA(1920~2170MHz)

Return Loss (With ground plane)



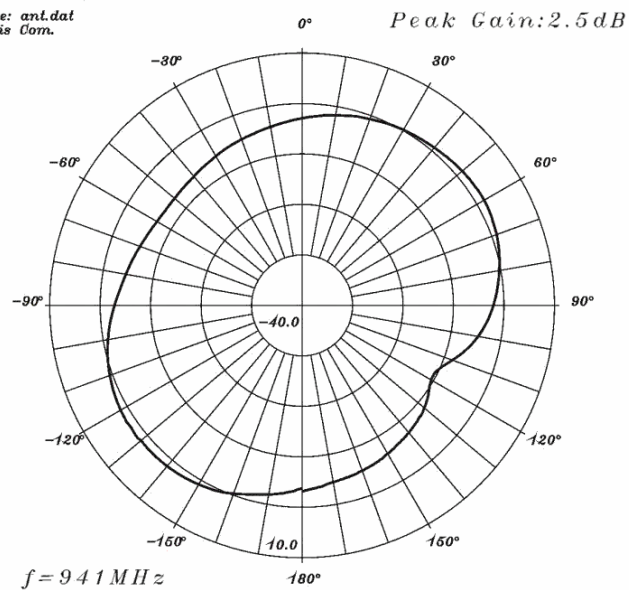
3.1 Gain Pattern(With ground plane)

X-Y Plane

Frequency : 941MHz

Polar plot

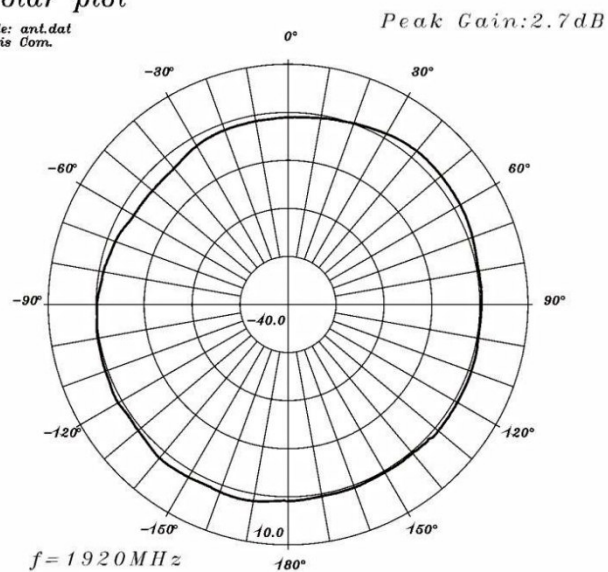
File: ant.dat
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Frequency : 1920MHz

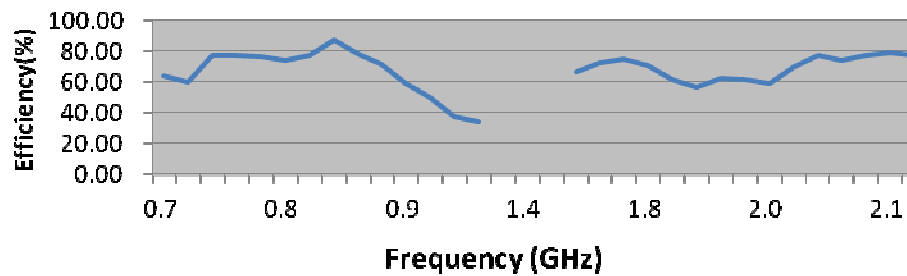
Polar plot

File: ant.dat
Allis Com.

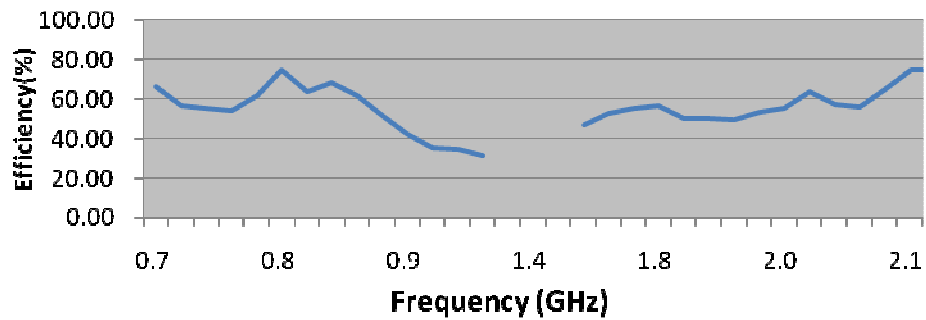


● Cellular Antenna Efficiency

a. With 40x40cm Ground Plane

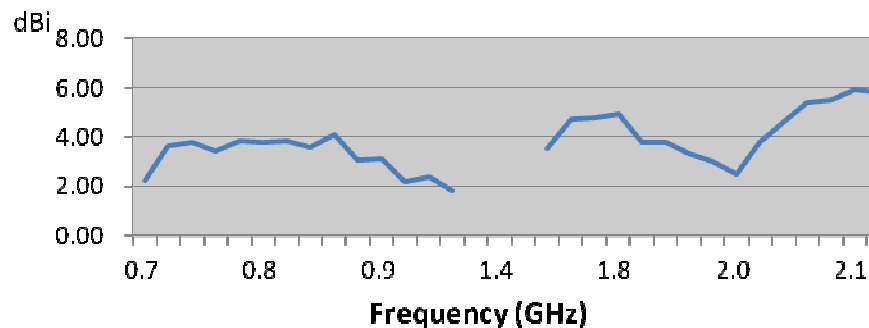


b. Without Ground Plane

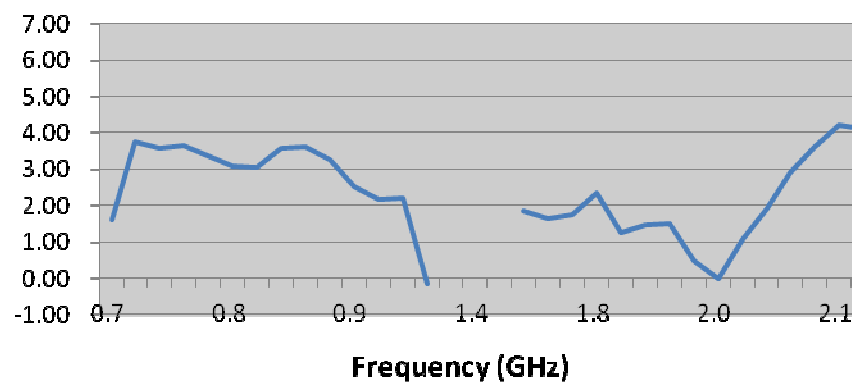


● Cellular Antenna Peak Gain

a. With 40x40cm Ground Plane



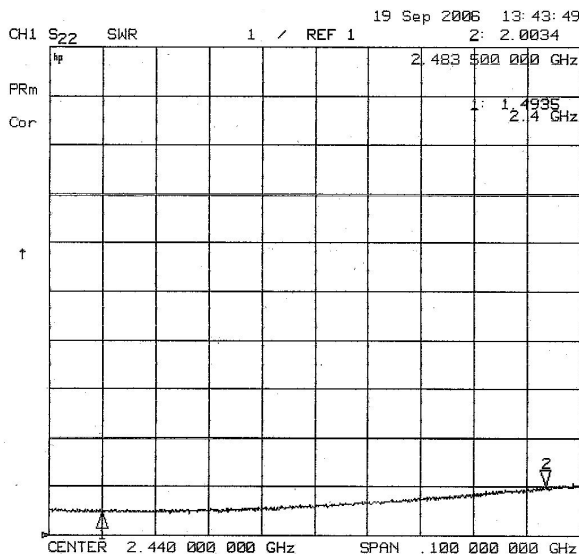
b. Without Ground Plane



- Wi-Fi(2.4~2.4835GHz ,4.7G~6GHz)

2.4~2.4835GHz VSWR: < 2.0

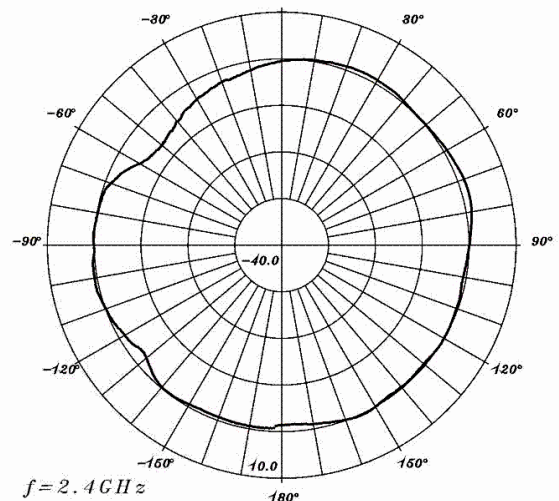
X-Y Plane



Polar plot

File: ant.dat
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Peak Gain: 2.5 dB

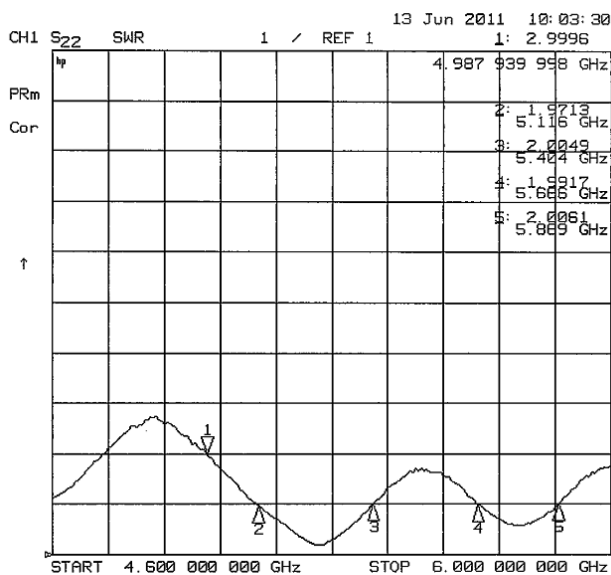


Gain Pattern: Omni

Cable length: 24cm Cable loss ÷ 1dB

5~6GHz VSWR: < 3.0

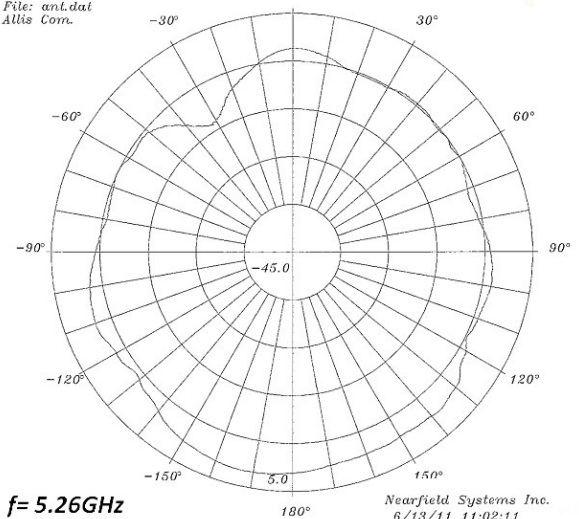
X-Y Plane



Polar plot

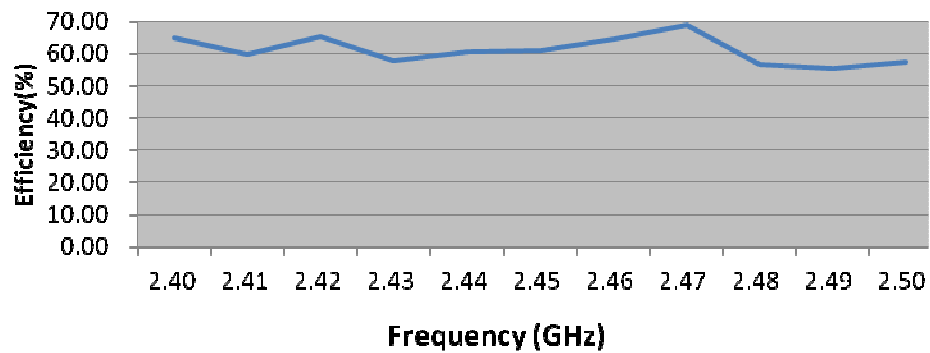
File: ant.dat
Allis Com.

Peak gain = 4.26 dB

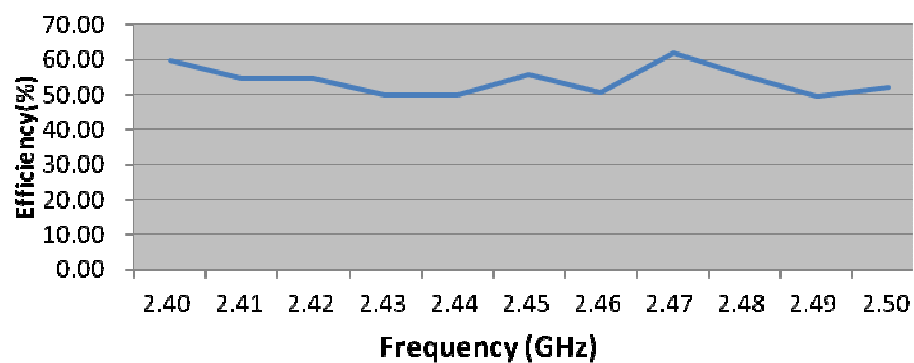


- WiFi Antenna Efficiency(2.4~2.5G)

a. With 40x40cm Ground Plane

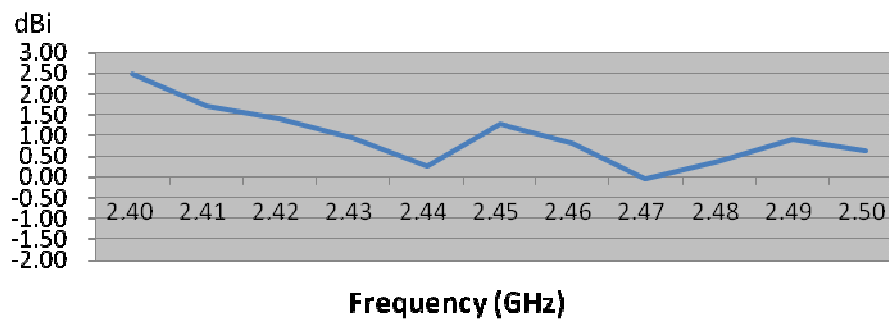


b. Without Ground Plane

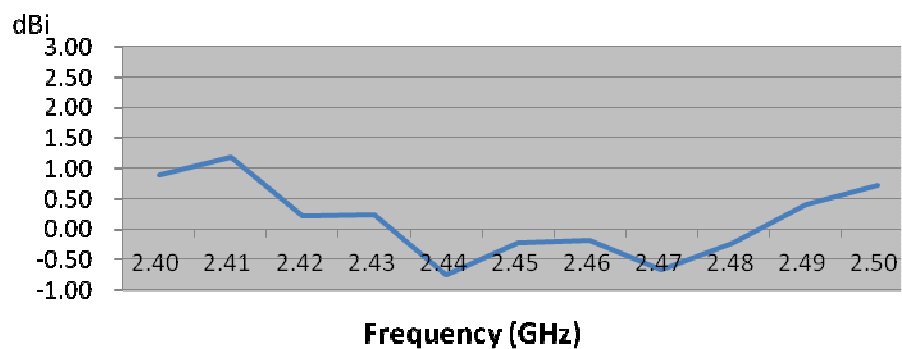


- WiFi Antenna Peak Gain (2.4~2.5G)

a. With 40x40cm Ground Plane

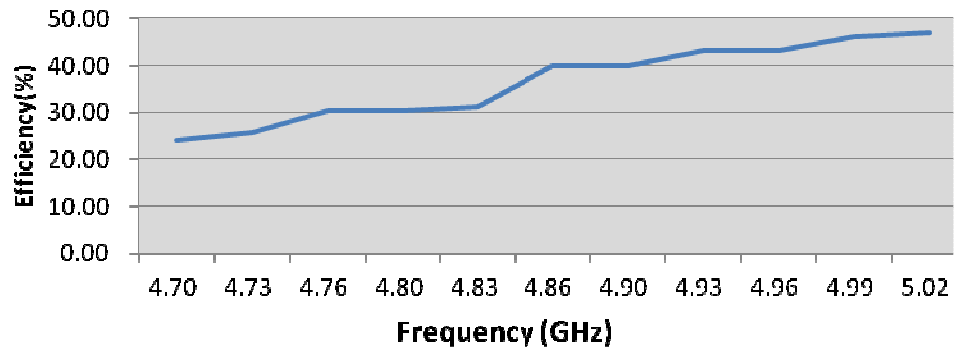


b. Without Ground Plane

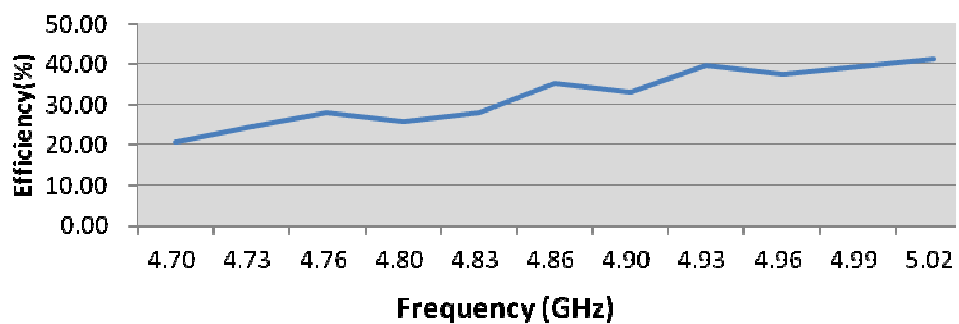


- WiFi Antenna Efficiency(4.7~5GHz)

- a. With 40x40cm Ground Plane

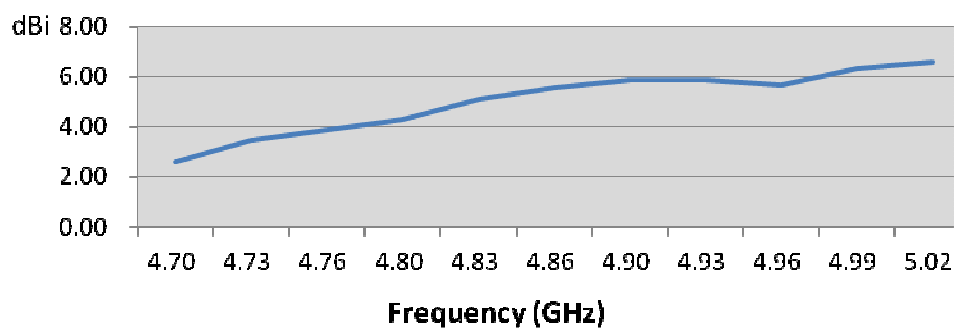


- b. Without Ground Plane

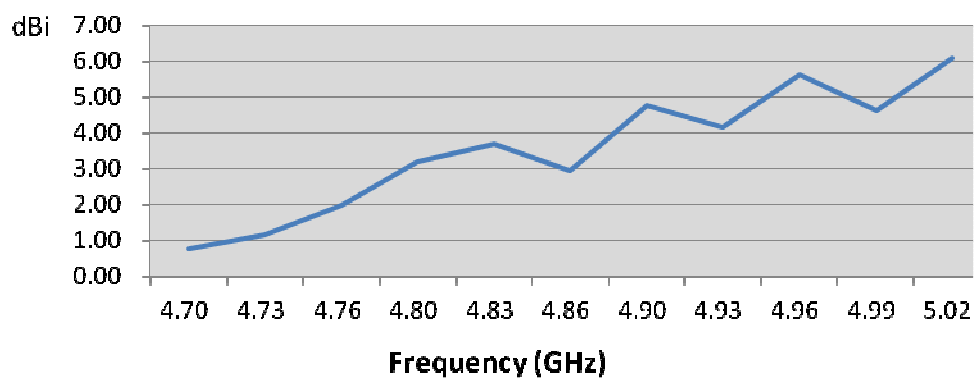


- WiFi Antenna Peak Gain (4.7~5GHz)

- a. With 40x40cm Ground Plane

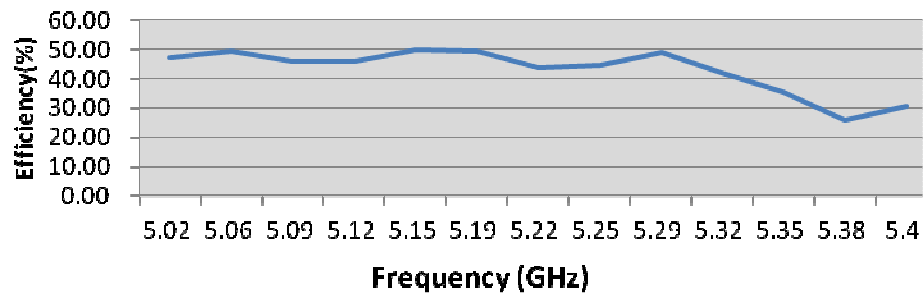


- b. Without Ground Plane

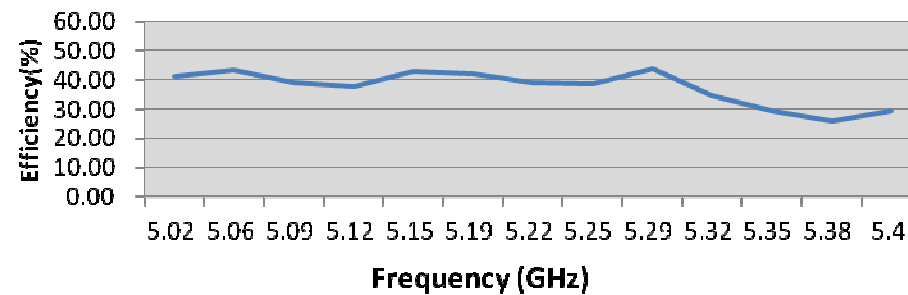


- WiFi Antenna Efficiency (5~5.4GHz)

a. With 40x40cm Ground Plane

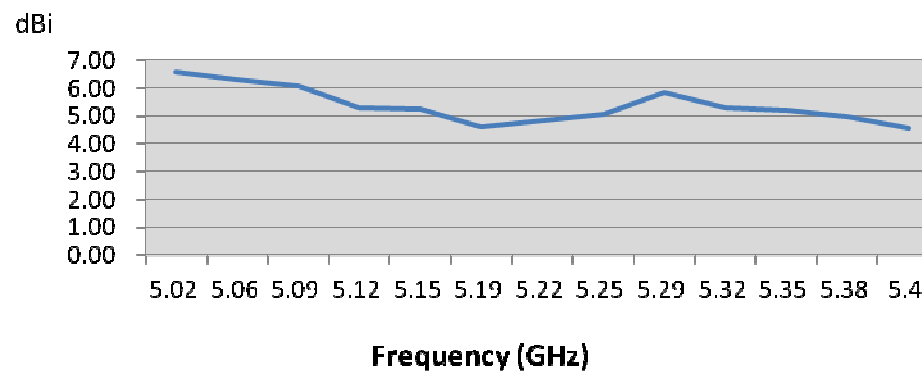


b. Without Ground Plane

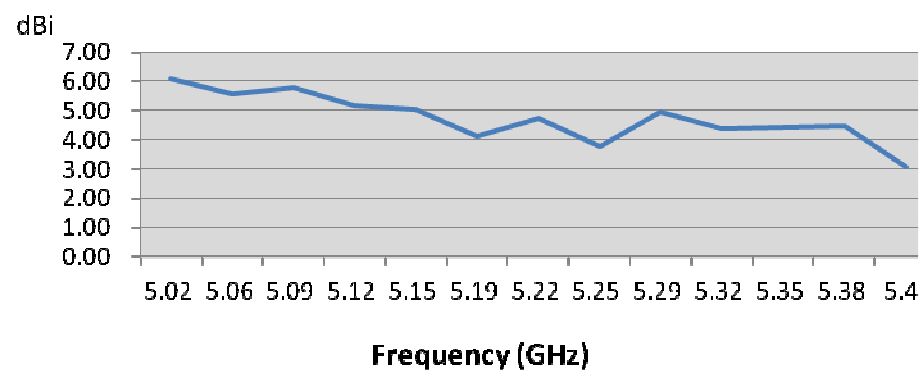


- WiFi Antenna Peak Gain (5~5.4GHz)

a. With 40x40cm Ground Plane

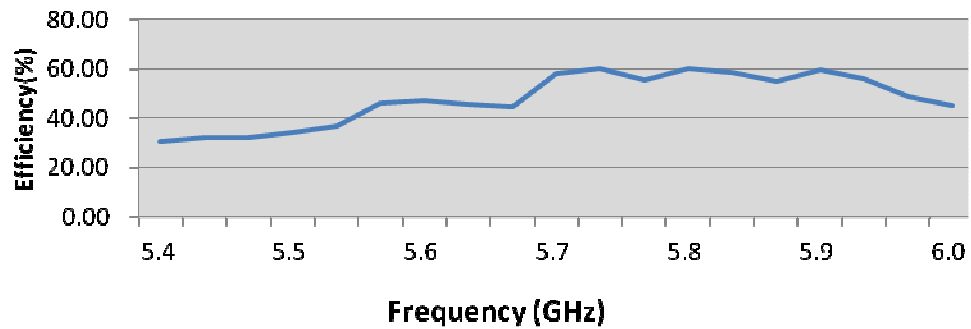


b. Without Ground Plane

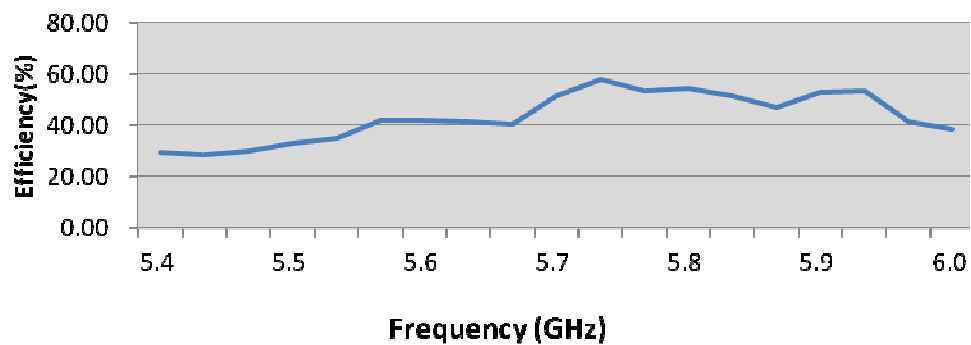


- WiFi Antenna Efficiency (5.4~5.9GHz)

- a. With 40x40cm Ground Plane

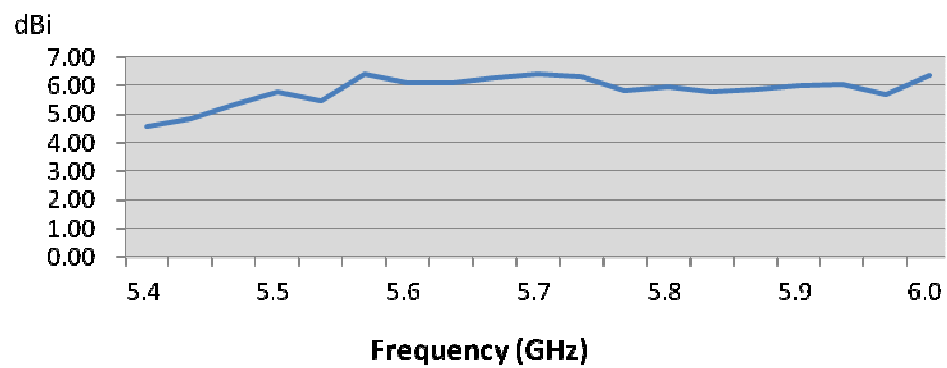


- b. Without Ground Plane



- WiFi Antenna Peak Gain (5.4~5.9GHz)

- a. With 40x40cm Ground Plane



- b. Without Ground Plane

