

**LITE-ON TECHNOLOGY CORPORATION**

A World-Class Company Striving for Excellence

# **CHK-001**

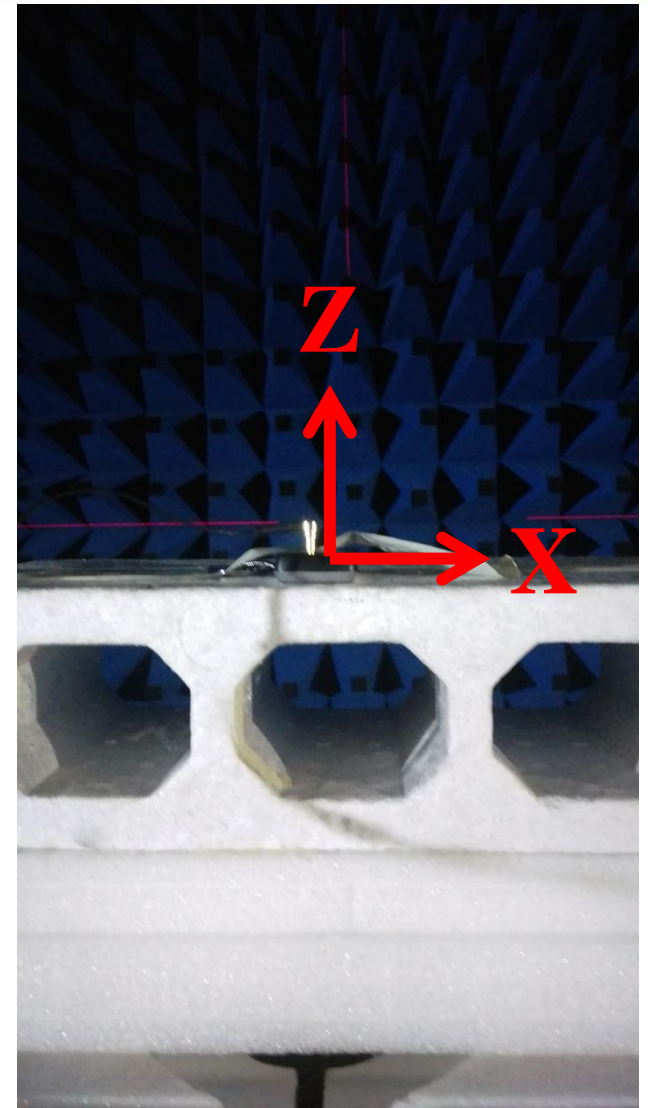
## **DVT1 Antenna Passive Test Report**

**Antenna Team, Network Access Strategic  
Business Unit Lite-On Technology Corp.**

**Antenna Type: PIFA Antenna**

**2015/06/17**

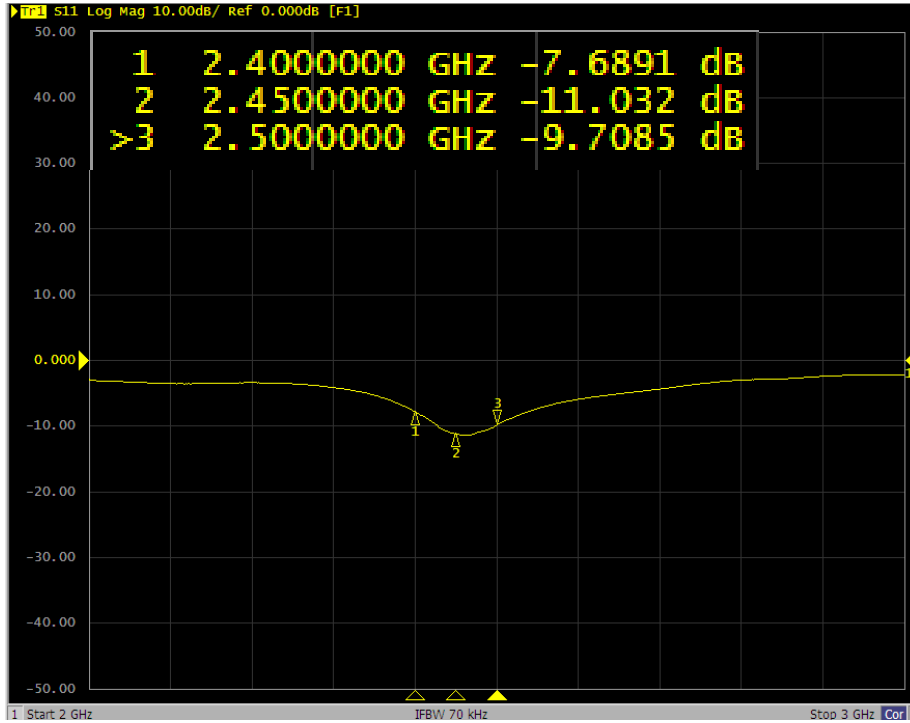
# The measurement in 3D chamber(HL)



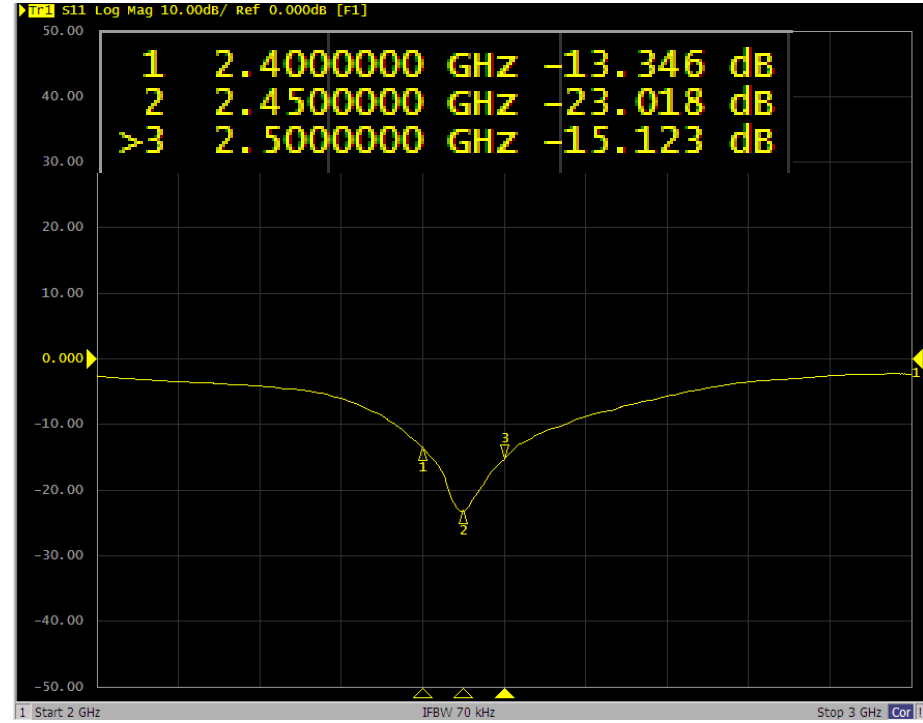
# S-parameter

- Measurement

## With Battery



## Without Battery



# Smith Chart

- Measurement

## With Battery



## Without Battery



# Radiation efficiency & Peak gain

## Measurement(With Battery)

Frequency (MHz)	Radiation efficiency (%)
2400	34.3
2410	35.1
2420	35.9
2430	37.7
2440	38.4
2450	41.3
2460	40.9
2470	40.7
2480	38.7
2490	42.1
2500	39.6
<b>Average Efficiency</b>	<b>38.6</b>

Frequency (MHz)	Peak Gain (dBi)
2400	0.47
2410	0.04
2420	0.42
2430	0.62
2440	0.36
2450	0.94
2460	0.57
2470	0.08
2480	-0.17
2490	0.62
2500	0.04
<b>Average Peak Gain</b>	<b>0.36</b>

# Radiation efficiency & Peak gain

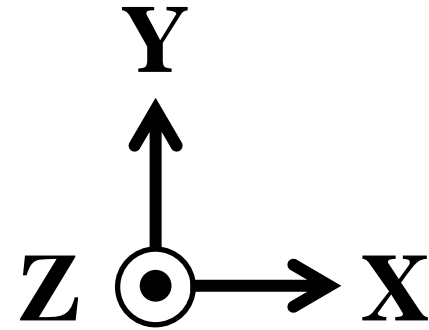
## Measurement(Without Battery)

Frequency (MHz)	Radiation efficiency (%)
2400	54.0
2410	55.0
2420	54.3
2430	54.8
2440	56.5
2450	59.0
2460	58.1
2470	56.6
2480	54.4
2490	58.5
2500	57.0
<b>Average Efficiency</b>	<b>56.2</b>

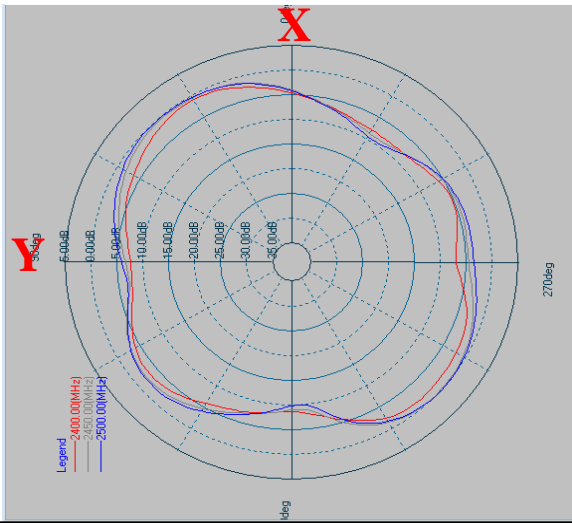
Frequency (MHz)	Peak Gain (dBi)
2400	2.28
2410	2.26
2420	1.97
2430	1.92
2440	1.94
2450	2.19
2460	2.28
2470	2.36
2480	2.08
2490	3.00
2500	2.71
<b>Average Peak Gain</b>	<b>2.27</b>

# 3-cut 2D radiation plane (measurement)

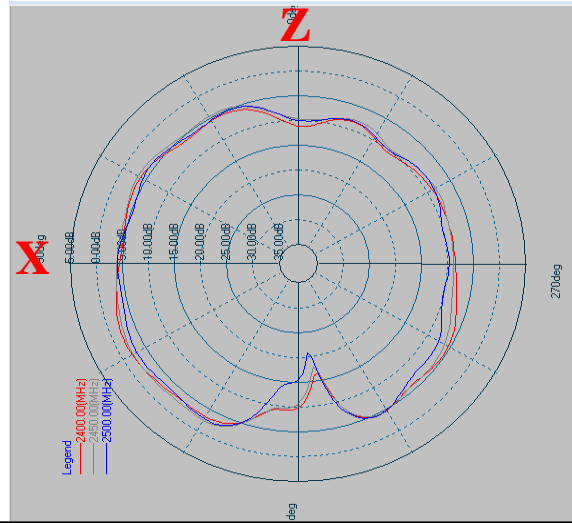
**(With Battery)**



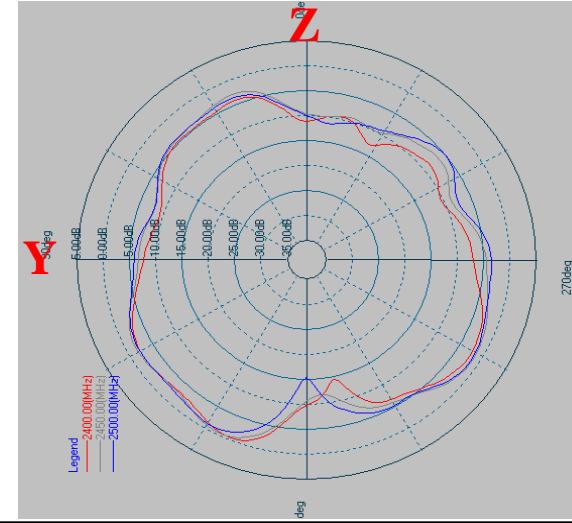
**XY Plane**



**XZ Plane**

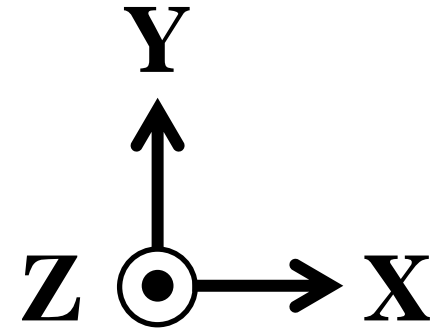


**YZ Plane**

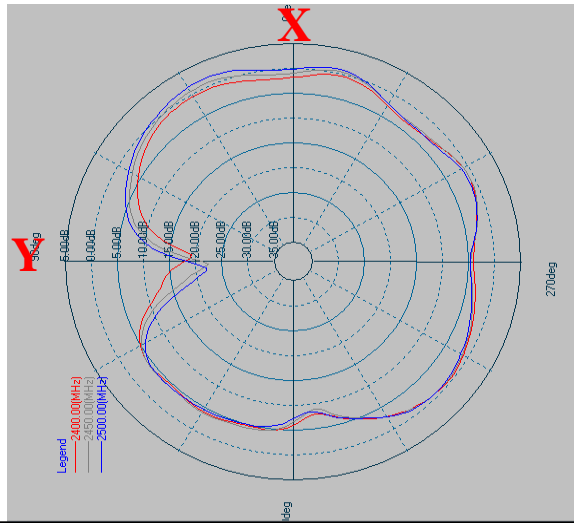


# 3-cut 2D radiation plane (measurement)

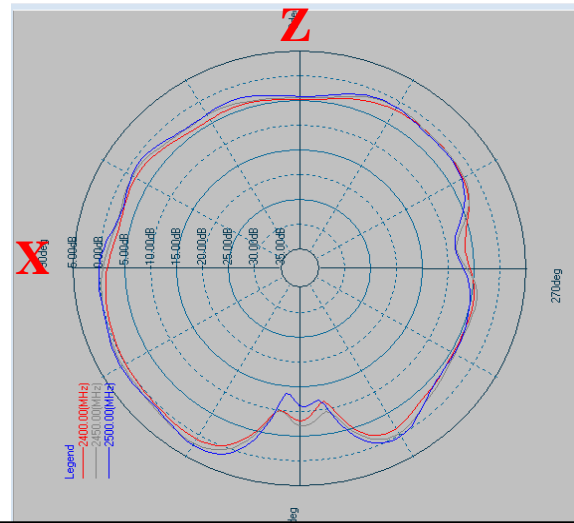
**(Without Battery)**



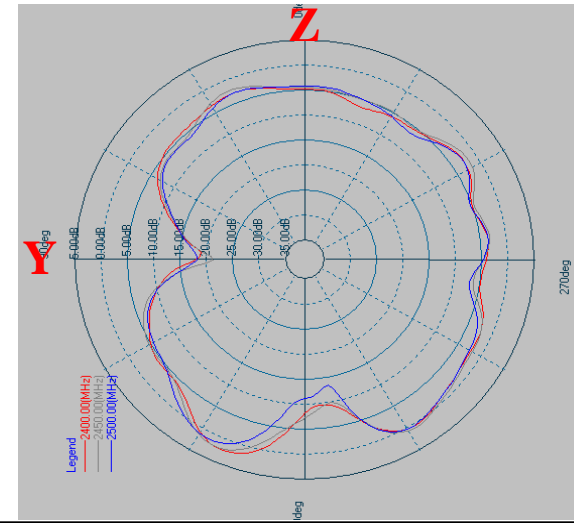
**XY Plane**



**XZ Plane**



**YZ Plane**





## Conclusion

- Device without battery can cover 2.4-2.5 GHz.
- Average peak gain and average efficiency table

With Battery		Without Battery	
Average Peak Gain	Average Efficiency	Average Peak Gain	Average Efficiency
0.36 dBi	38.6 %	2.27 dBi	56.2 %

- Battery in the device will effect the antenna matching and performance.