



Percsson Communication Equipment Co., Ltd

# Antenna OTA Test Report

For

HH-SLNPT501

<b>Customer</b>	深圳四博智联科技有限公司	<b>Demo</b>	HH-SLNPT501
<b>Band</b>	2.4GHz	<b>Color</b>	黑色
<b>PRS PN</b>		<b>Version</b>	V1.0
<b>Issued by</b>	Jason	<b>Checked by</b>	Mem
<b>Confirmed by</b>	Zhang	<b>Date</b>	2023.03.20

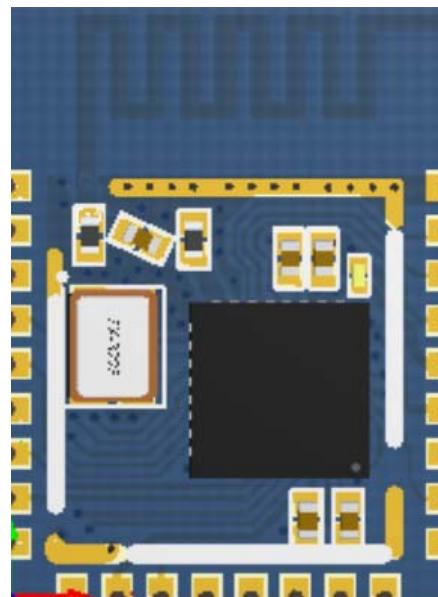
## 一. TEST INSTRUMENTATION

CHAMBER	SATIMO Chamber
Wireless Networking Test Set	Agilent E5071C
NETWORK ANALYZER	Agilent 8753D
TEMPERATURE	20±3°C
HUMIDITY	50±20%rh
GROUND RESISTANCE	<0.5R

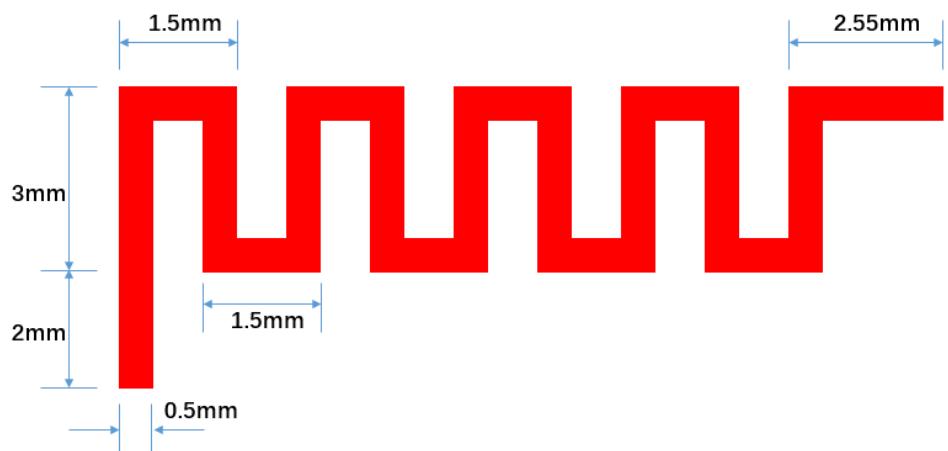
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HH-SLNPT501 BLE Module

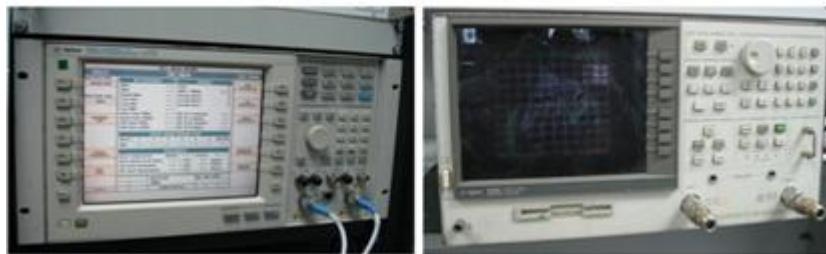


Antenna Dimension for HH-SLNPT501

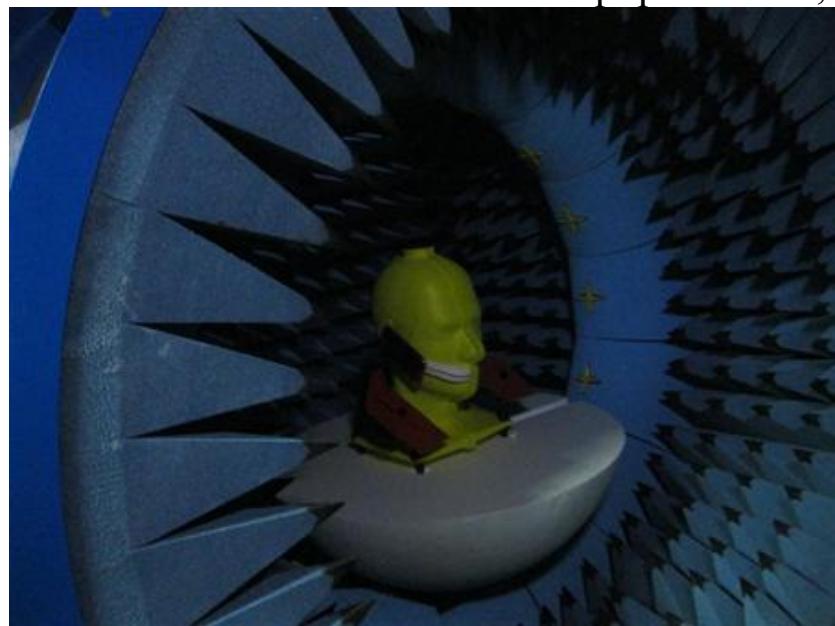
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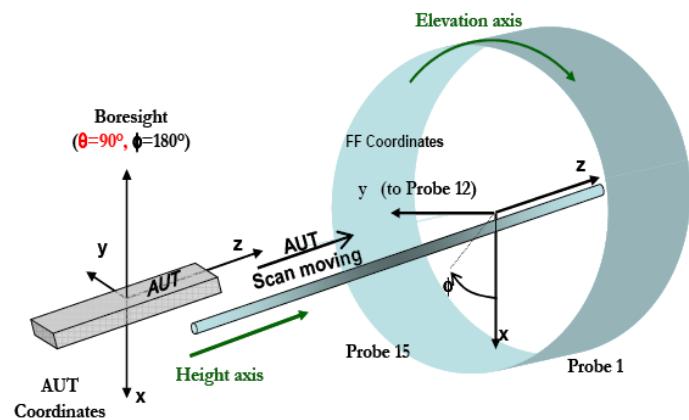
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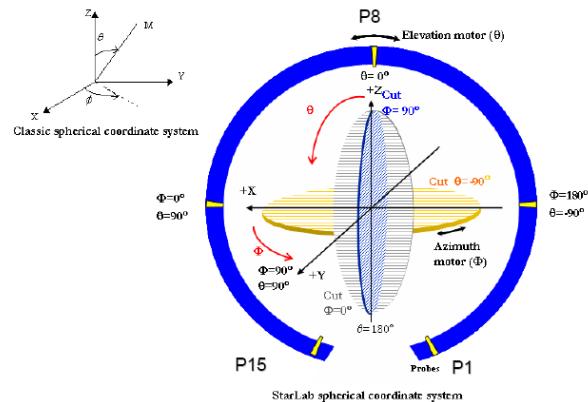
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## Coordinate system – Cylindrical geometry



## Coordinate system – Spherical geometry



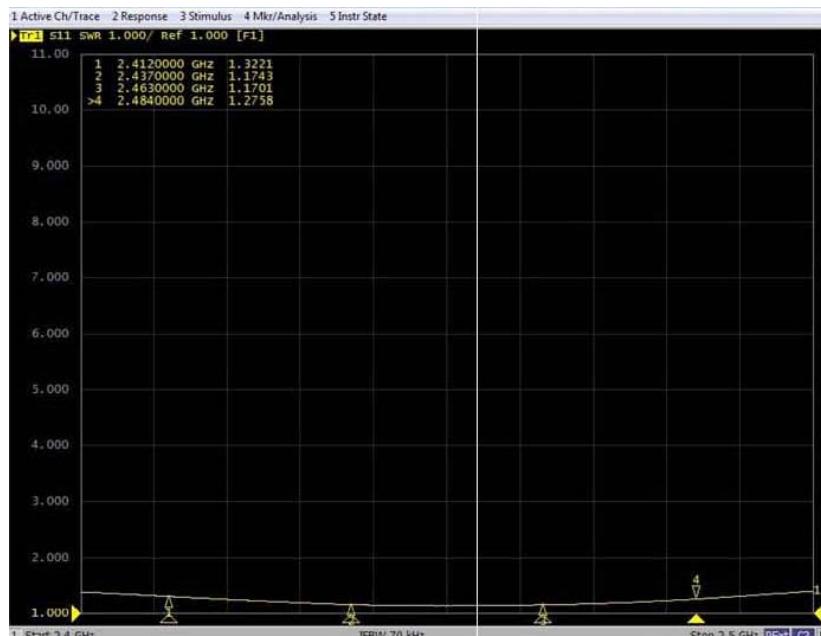


## 二. Test Results

### 2.1 Gain and Efficiency

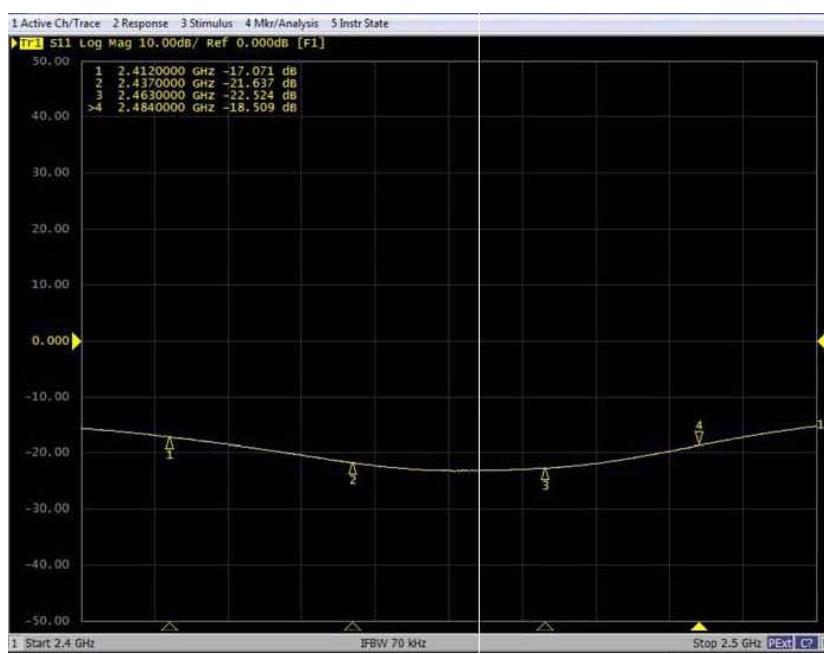
Test Item	Freq (MHz)	Efficiency (%)	Gain (dBi)	Note
Gain	2400	51. 22	1. 72	Vertical 30°
	2412	50. 68	2. 21	
	2417	56. 51	1. 88	
	2422	57. 78	1. 67	
	2427	60. 76	1. 89	
	2432	60. 11	1. 80	
	2437	55. 32	1. 64	
	2442	55. 23	1. 93	
	2447	52. 99	1. 78	
	2452	50. 01	2. 12	
	2457	52. 34	2. 13	
	2462	51. 32	2. 28	
	2467	52. 33	2. 24	
	2472	55. 67	2. 33	
	2477	52. 12	2. 42	
	2482	60. 23	2. 57	
	2500	59. 65	2. 22	

### 2.2 VSWR (Voltage Standing Wave Ration)



Frequency(MHz)	2412	2437	2463	2484
VSWR	1.12	1.05	1.01	1.11

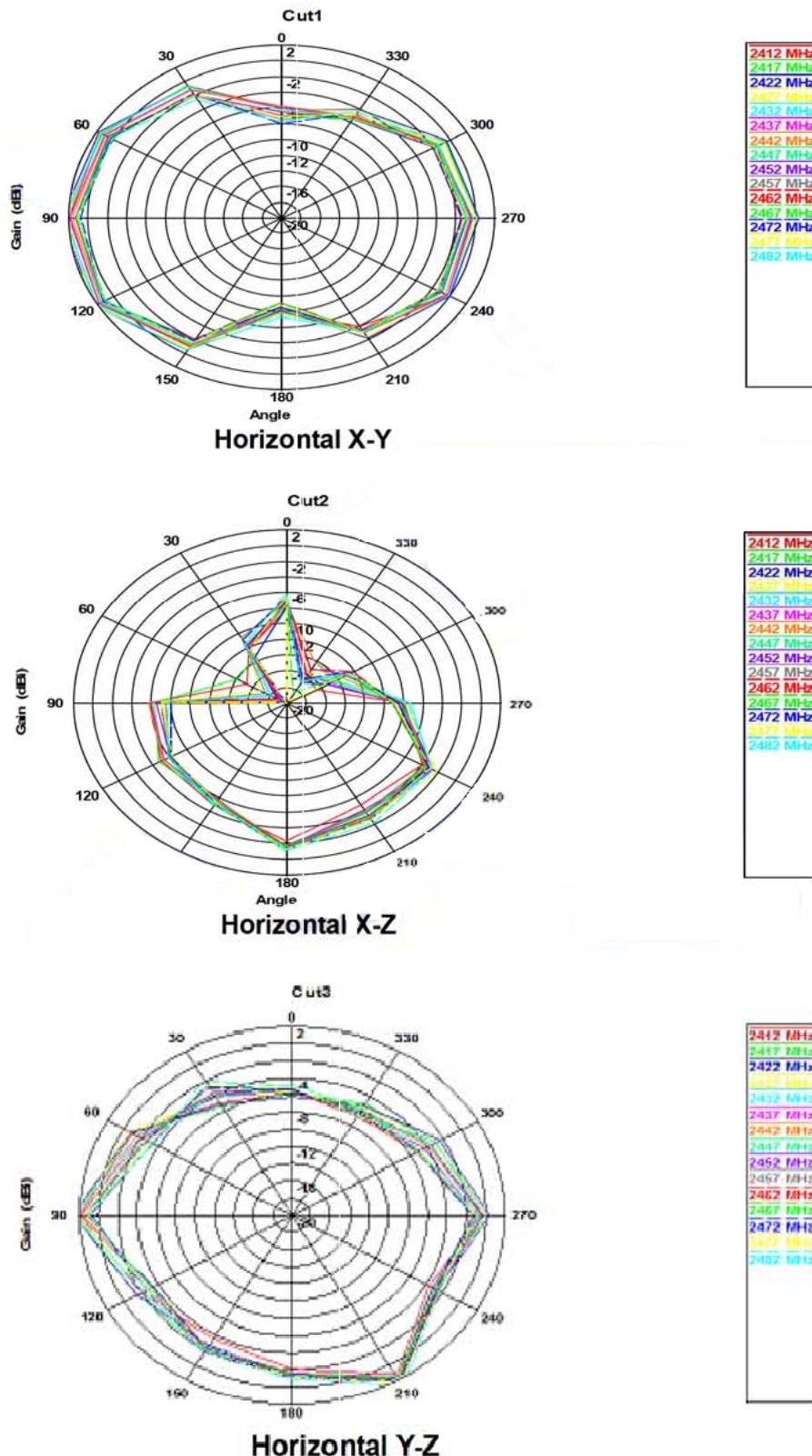
### 2.3 Antenna S11



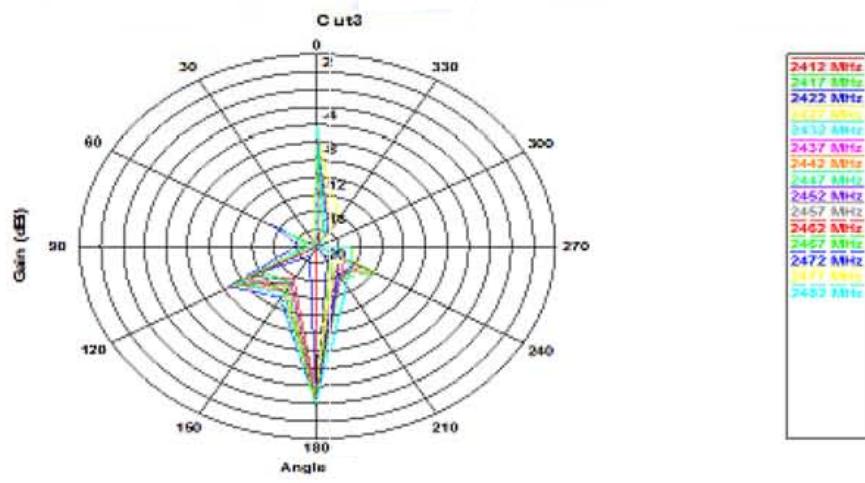
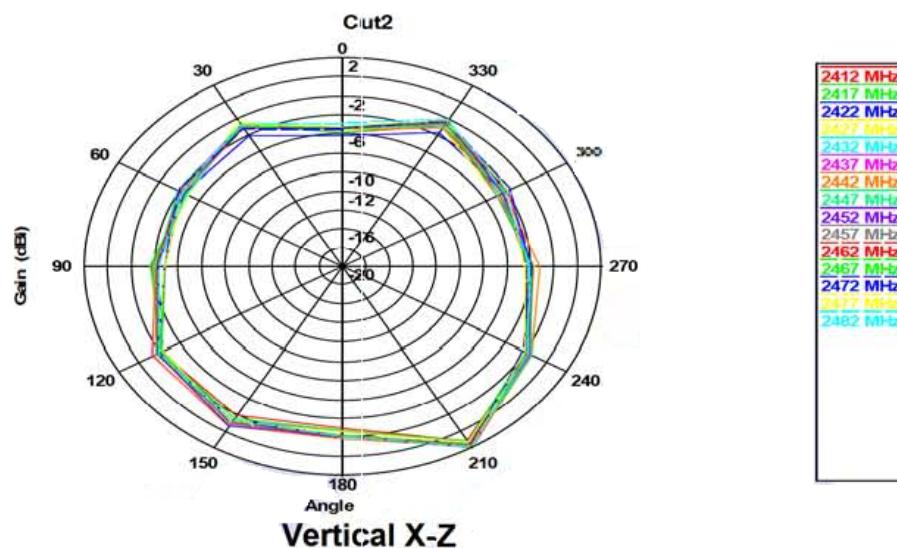
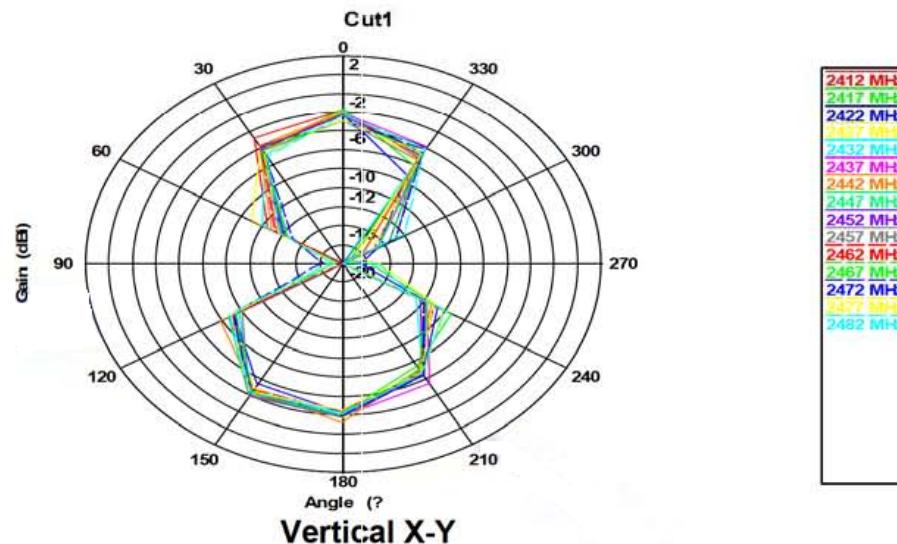
Frequency(MHz)	2412	2437	2463	2484
S11 (dB)	-15.01	-19.65	-20.52	-16.51

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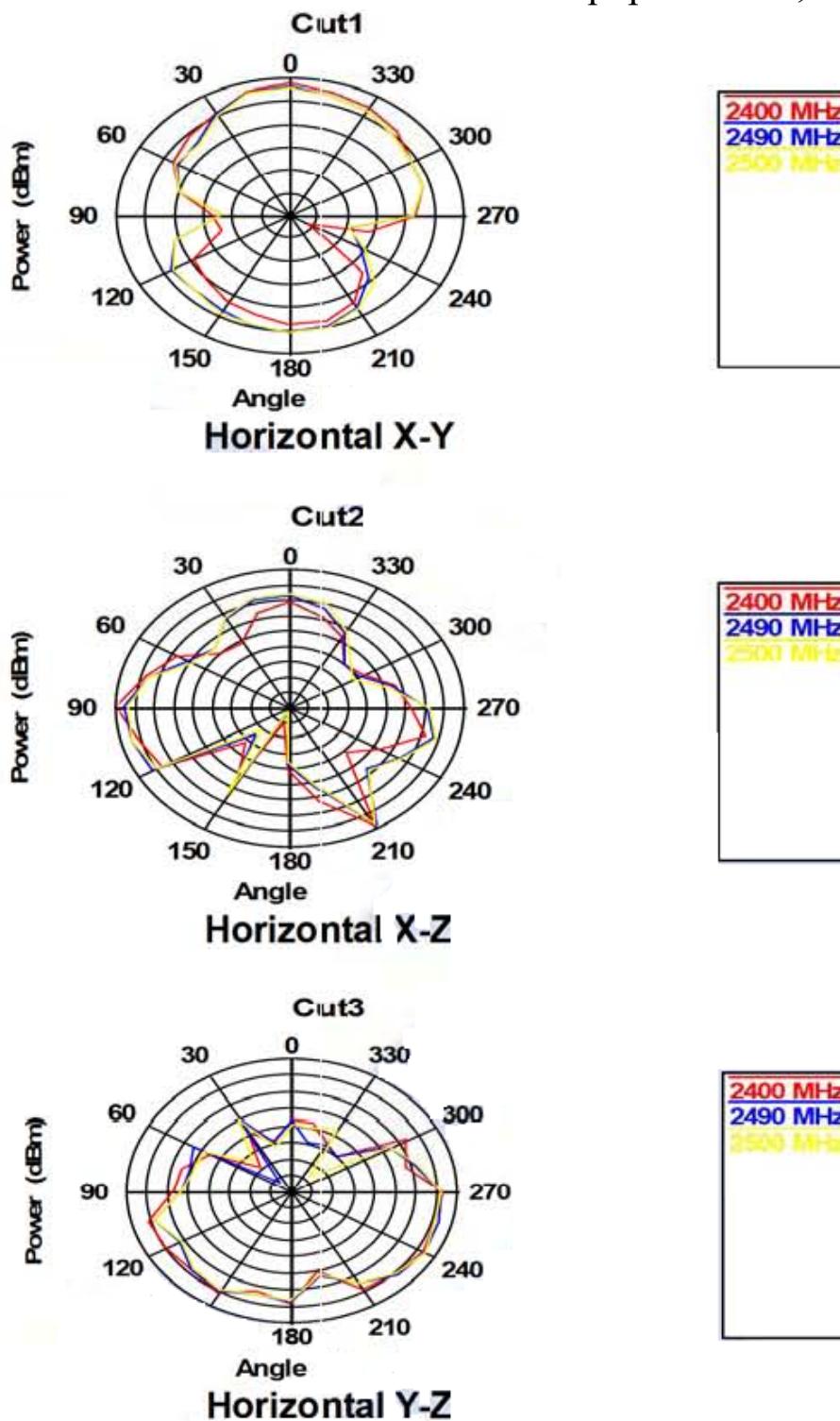
### 三. 2-D pattern Plots

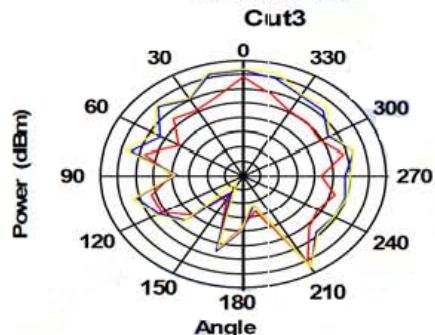
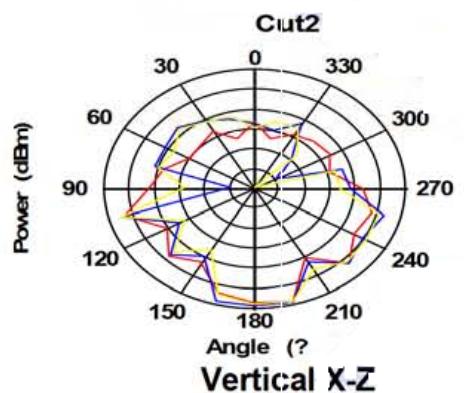
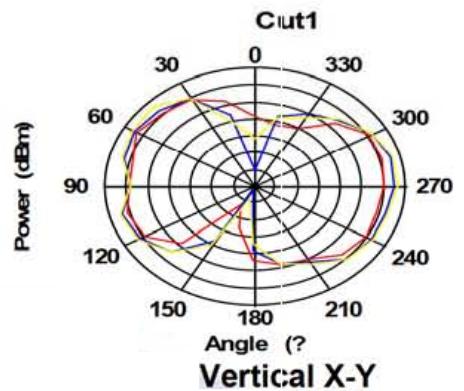


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### Vertical Y-Z