



Percsson Communication Equipment Co., Ltd

# Antenna OTA Test Report

For

Model:ESP-ANT-A

<b>Manufacturer</b>	ShenZhen Doctors of Intelligence & Technology Co., Ltd	<b>Demo</b>	<b>ESP-C05</b>
<b>Band</b>	<b>2.4G</b>	<b>Color</b>	<b>WHITE</b>
<b>Antenna Type</b>	PCB Antenna	<b>Version</b>	<b>V1.0</b>
<b>Issued by</b>	<b>Jason</b>	<b>Checked by</b>	<b>Mem</b>
<b>Confirmed by</b>	<b>Zhang</b>	<b>Date</b>	<b>2022.03.18</b>

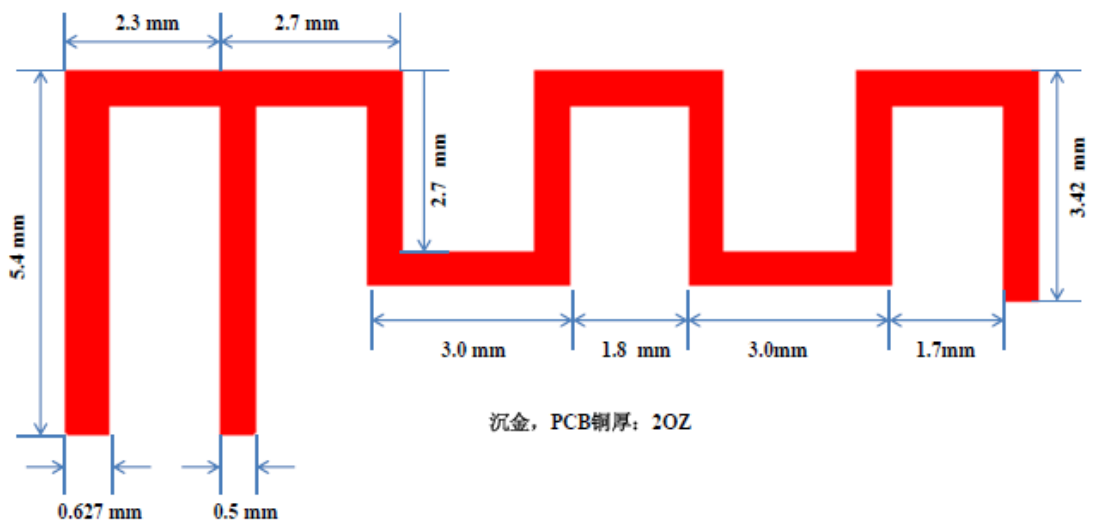
## 1. TEST INSTRUMENTATION

<b>CHAMBER</b>	<b>SATIMO Chamber</b>
<b>Wireless Networking Test Set</b>	<b>Agilent E5071C</b>
<b>NETWORK ANALYZER</b>	<b>Agilent 8753D</b>
<b>TEMPERATURE</b>	<b>20±3℃</b>
<b>HUMIDITY</b>	<b>50±20%rh</b>
<b>GROUND RESISTANCE</b>	<b>&lt;0.5R</b>

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ESP-C05WiFi Module

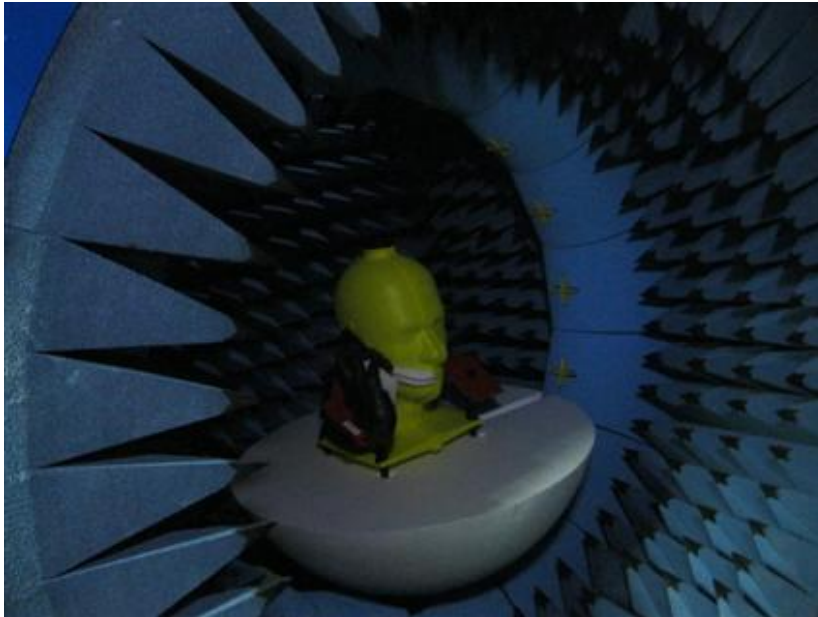


Antenna Dimension for ESP-C05

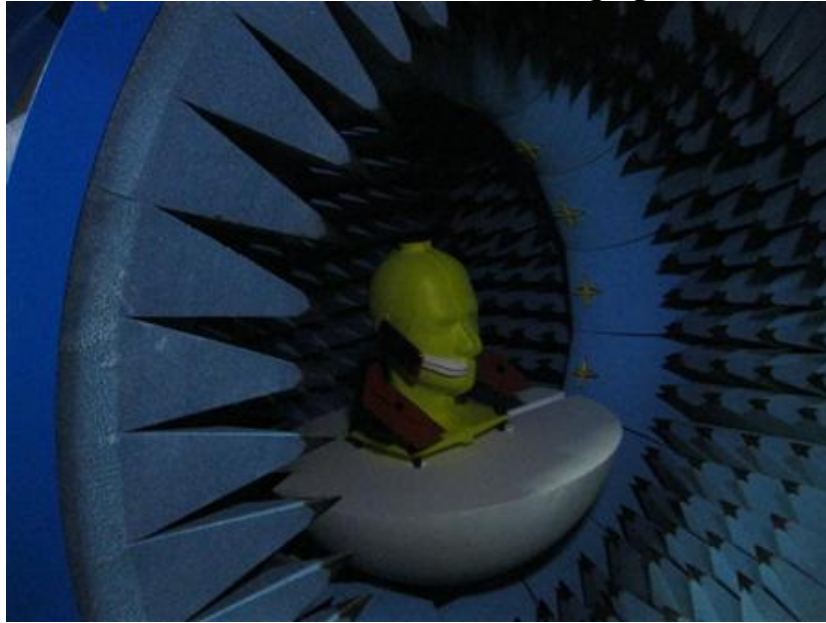
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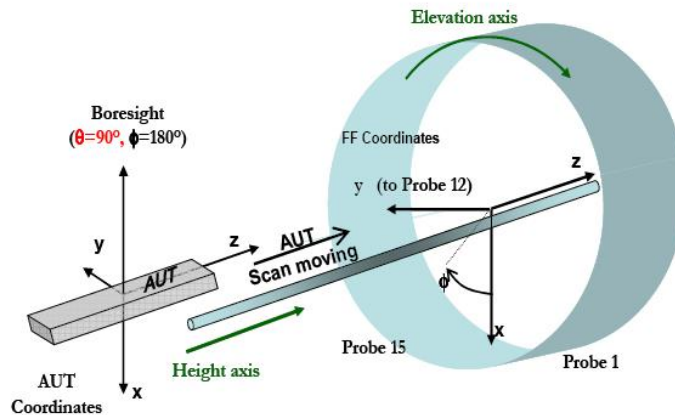
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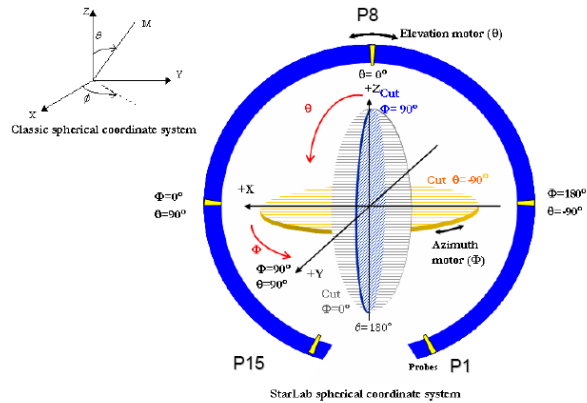
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### Coordinate system – Cylindrical geometry



### Coordinate system – Spherical geometry



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## 2. Test Results

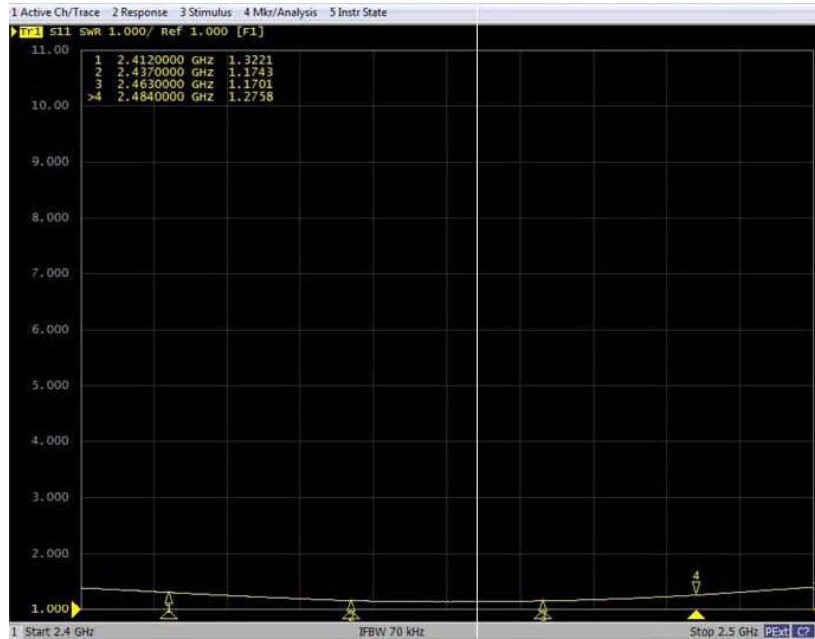
### 2.1 Gain and Efficiency

Test Item	Freq (MHz)	Efficiency (%)	Gain (dBi)	Note
Gain	2400	71.32	2.72	Vertical 30°
	2412	70.68	3.21	
	2417	76.51	2.88	
	2422	77.78	2.67	
	2427	80.76	2.89	
	2432	80.11	2.80	
	2437	75.32	2.64	
	2442	75.23	2.93	
	2447	72.99	2.78	
	2452	70.01	3.12	
	2457	72.34	3.13	
	2462	71.32	3.28	
	2467	72.33	3.24	
	2472	75.67	3.33	
	2477	72.12	3.42	
	2482	80.23	3.57	
2500	79.65	3.22		

### 2.2 VSWR (Voltage Standing Wave Ration)

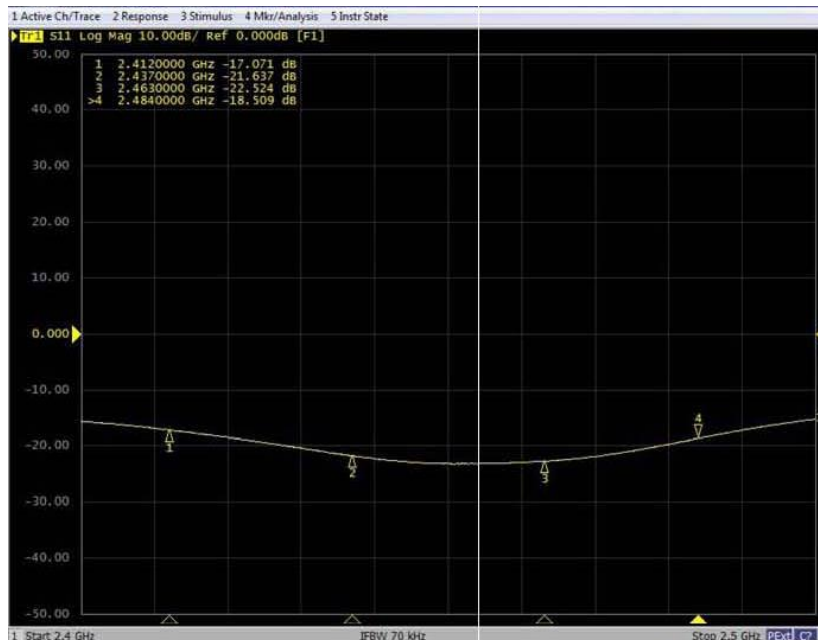


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Frequency(MHz)	2412	2437	2463	2484
VSWR	1.31	1.17	1.16	1.29

## 2.3 Antenna S11

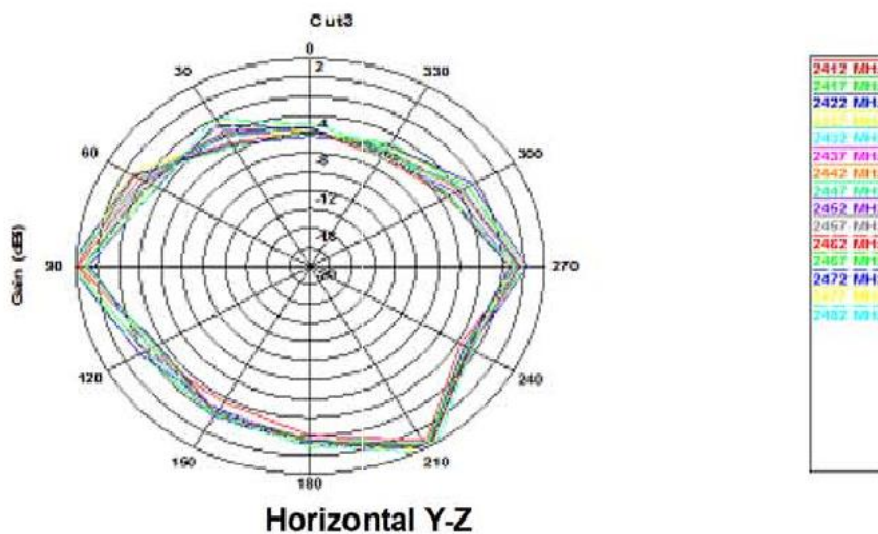
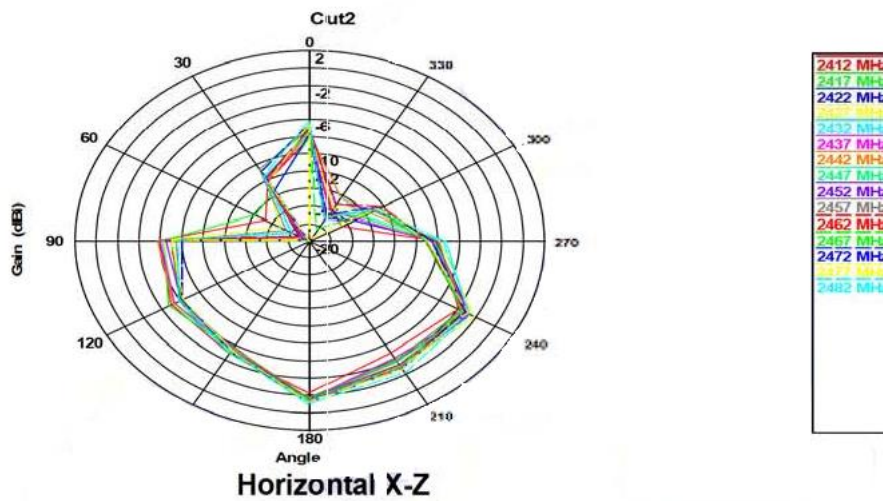
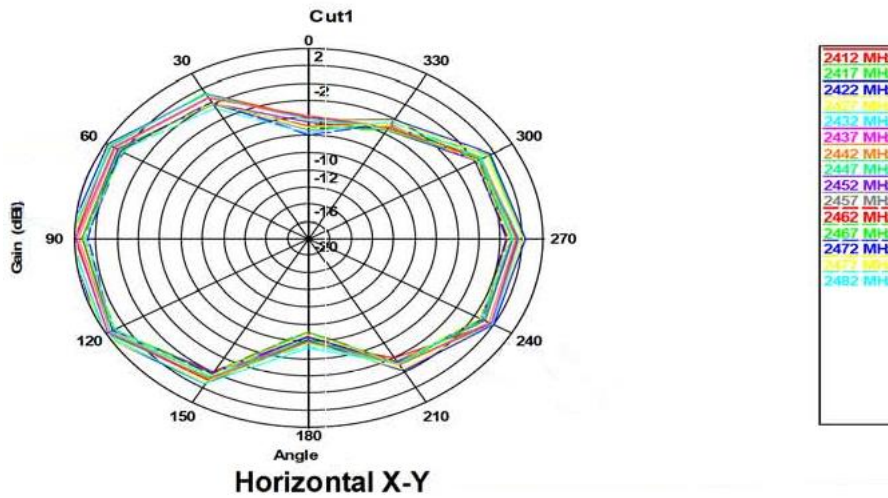


Frequency(MHz)	2412	2437	2463	2484
S11 (dB)	-17.01	-21.65	-22.52	-18.51

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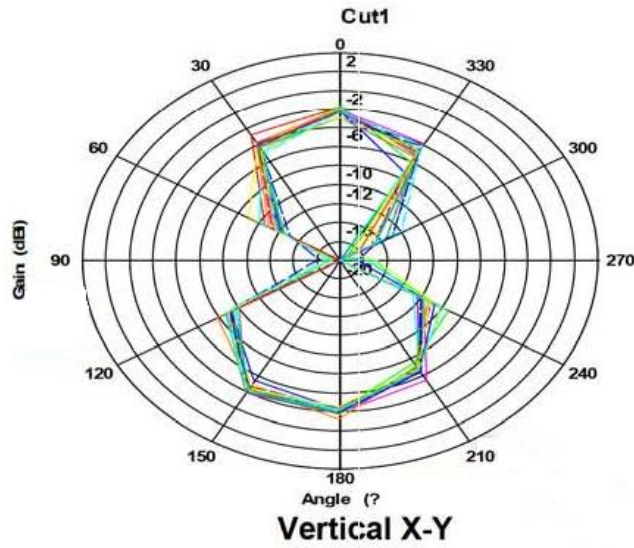
### 3. 2-D pattern Plots



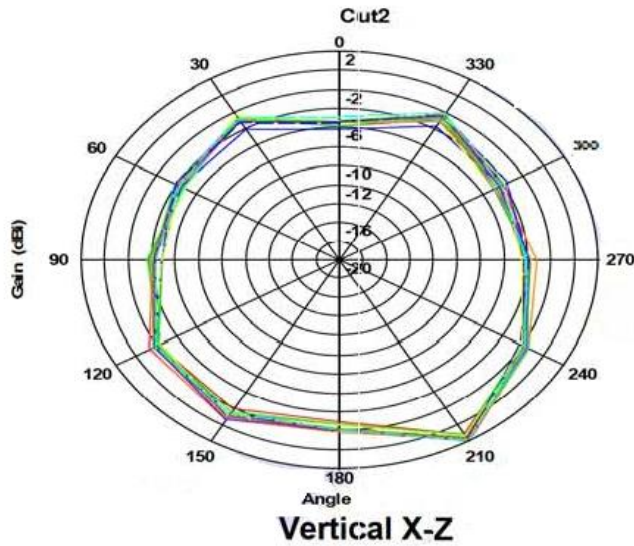
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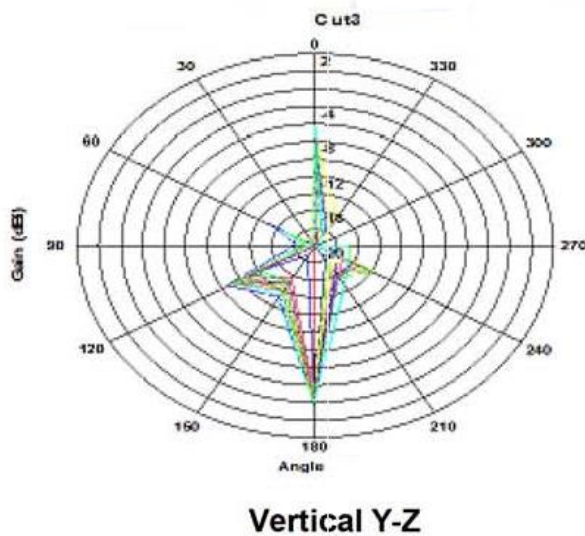
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2412 MHz
2417 MHz
2422 MHz
2432 MHz
2437 MHz
2442 MHz
2447 MHz
2452 MHz
2457 MHz
2462 MHz
2467 MHz
2472 MHz
2477 MHz
2482 MHz



2412 MHz
2417 MHz
2422 MHz
2432 MHz
2437 MHz
2442 MHz
2447 MHz
2452 MHz
2457 MHz
2462 MHz
2467 MHz
2472 MHz
2477 MHz
2482 MHz



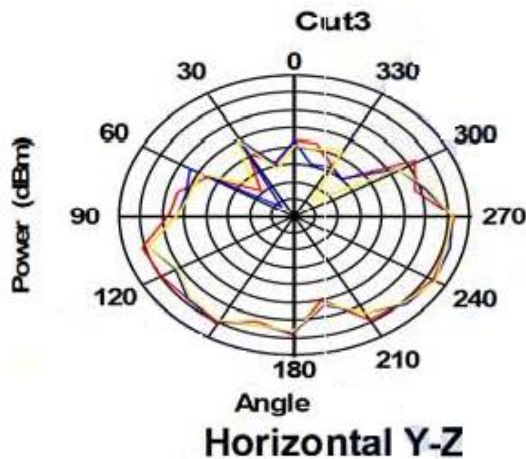
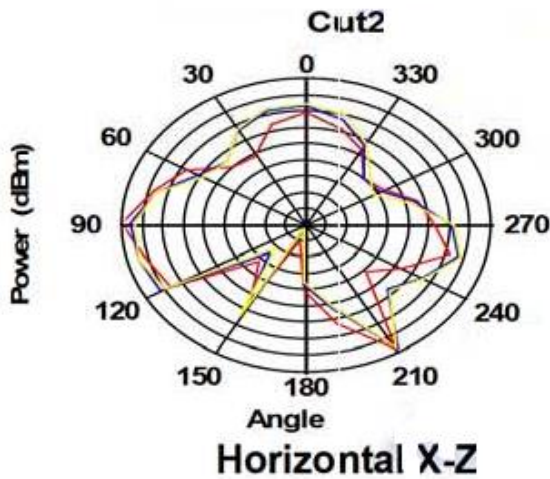
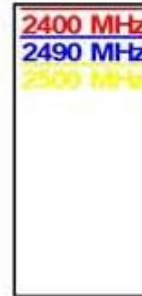
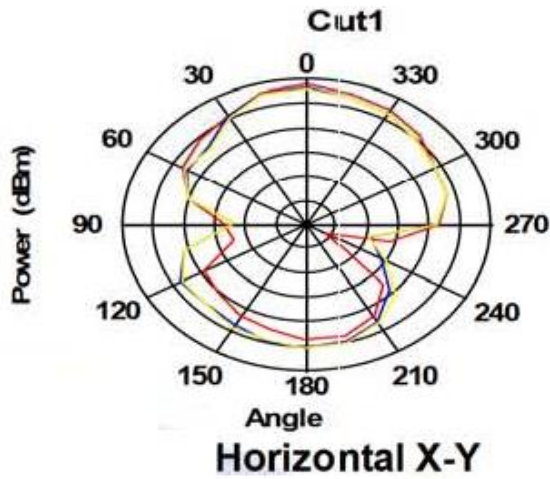
2412 MHz
2417 MHz
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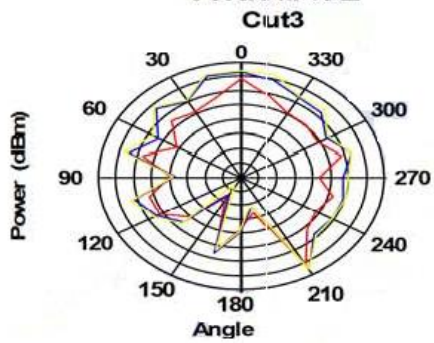
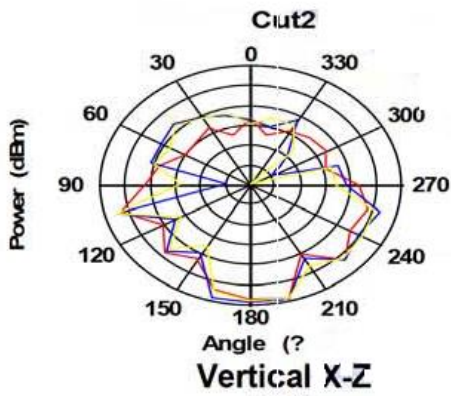
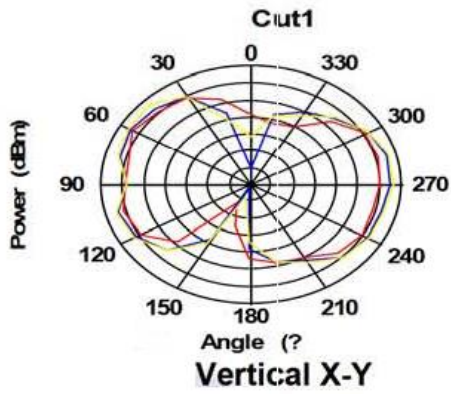
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