



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

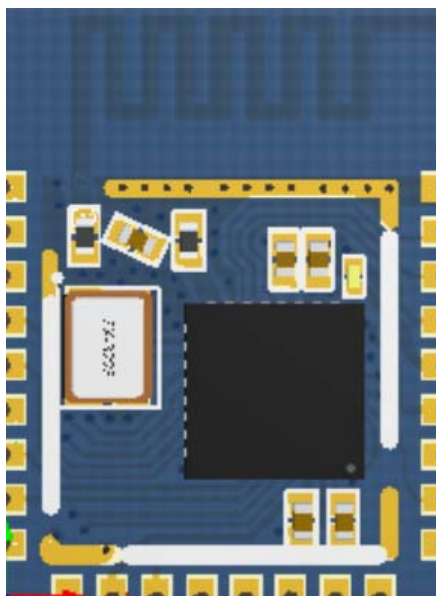
## 一. TEST INSTRUMENTATION

<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>	20±3℃
<b>HUMIDITY</b>	50±20%rh
<b>GROUND RESISTANCE</b>	<0.5R

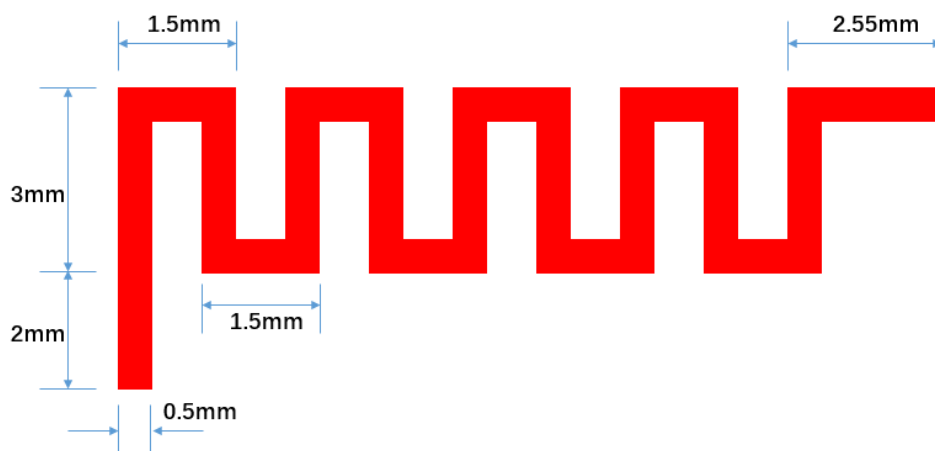
This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.



Percsson Communication Equipment Co., Ltd



HH-SLNPT501 BLE Module

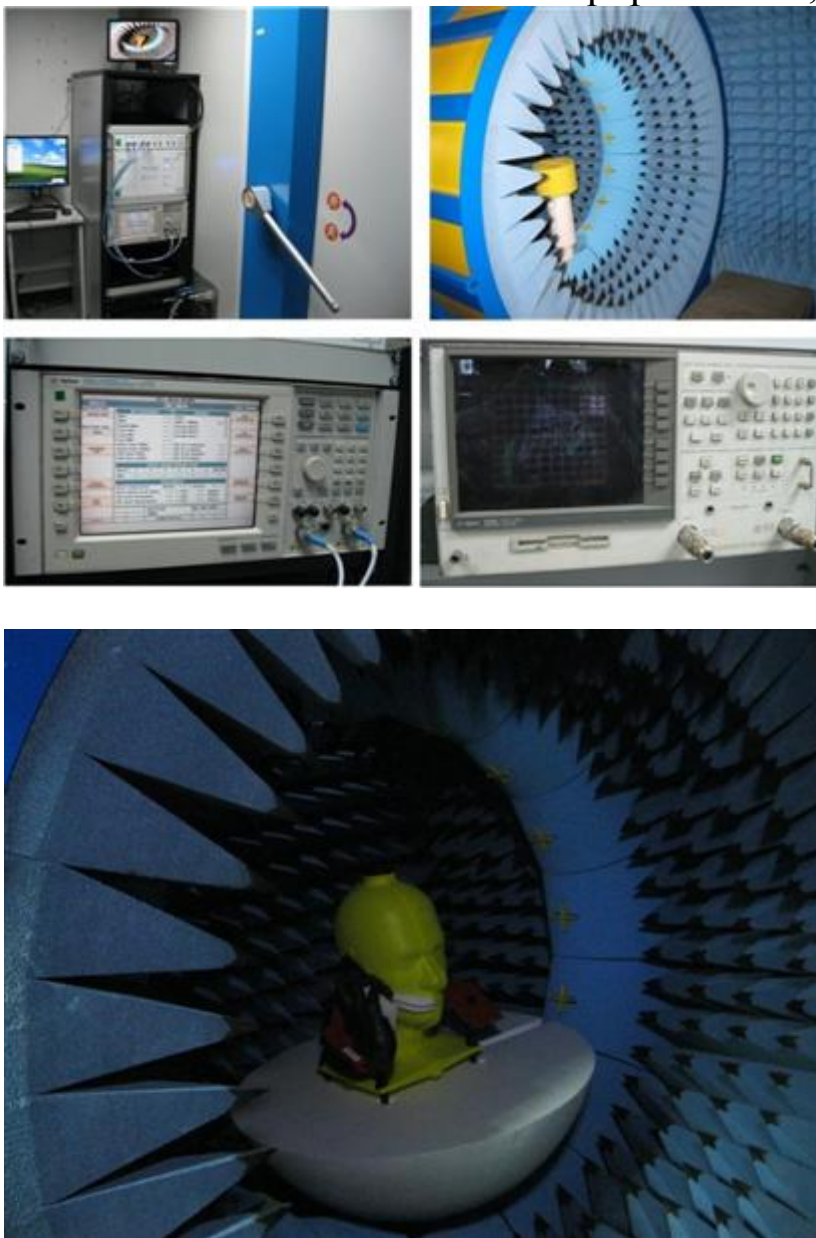


Antenna Dimension for HH-SLNPT501

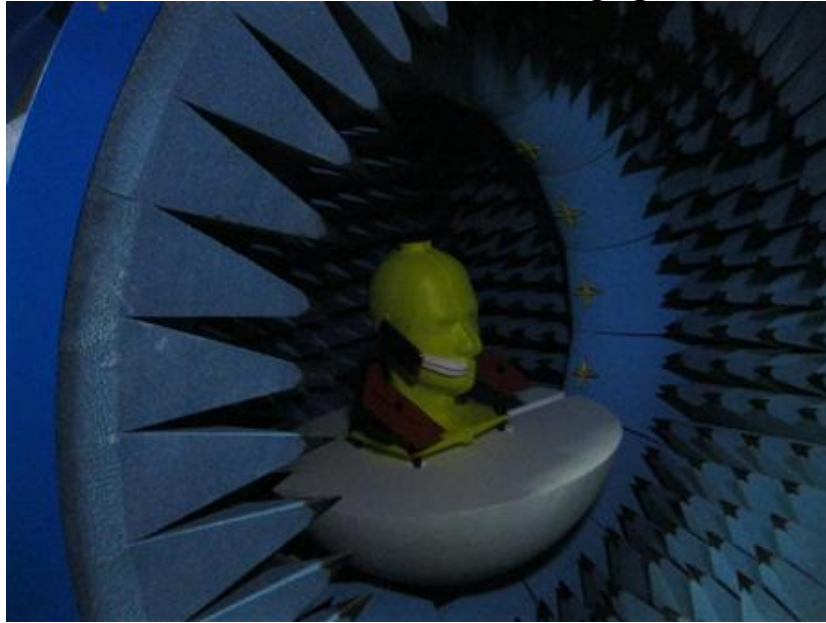
This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.



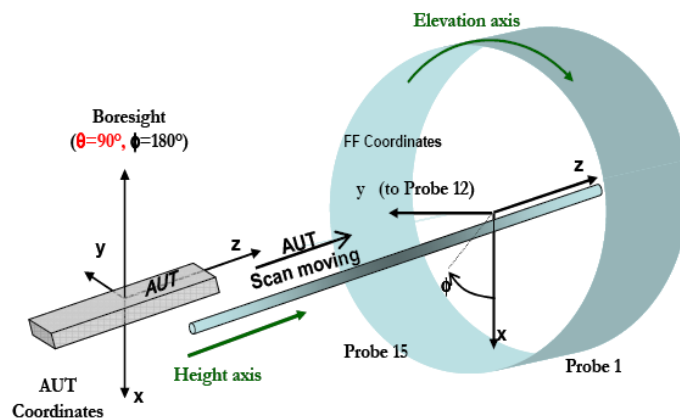
## Percsson Communication Equipment Co., Ltd



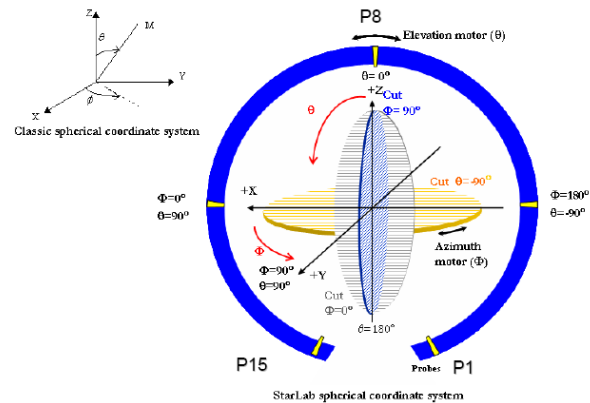
This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.



## Coordinate system – Cylindrical geometry



## Coordinate system – Spherical geometry



This test report belongs to PERCSSION COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it propely, without our company and related clients allowed, anybody has no rights to reval it to public.



## 二. Test Results

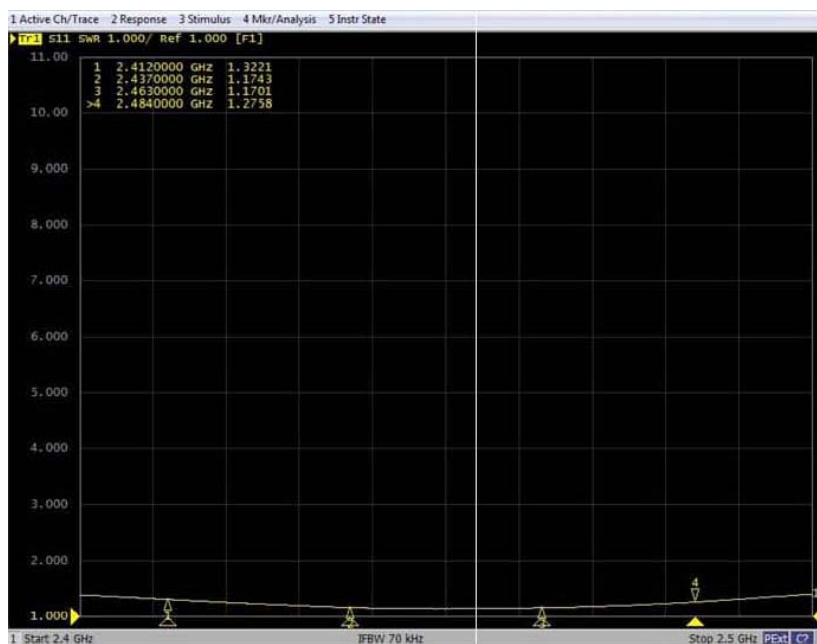
### 2.1 Gain and Efficiency

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)

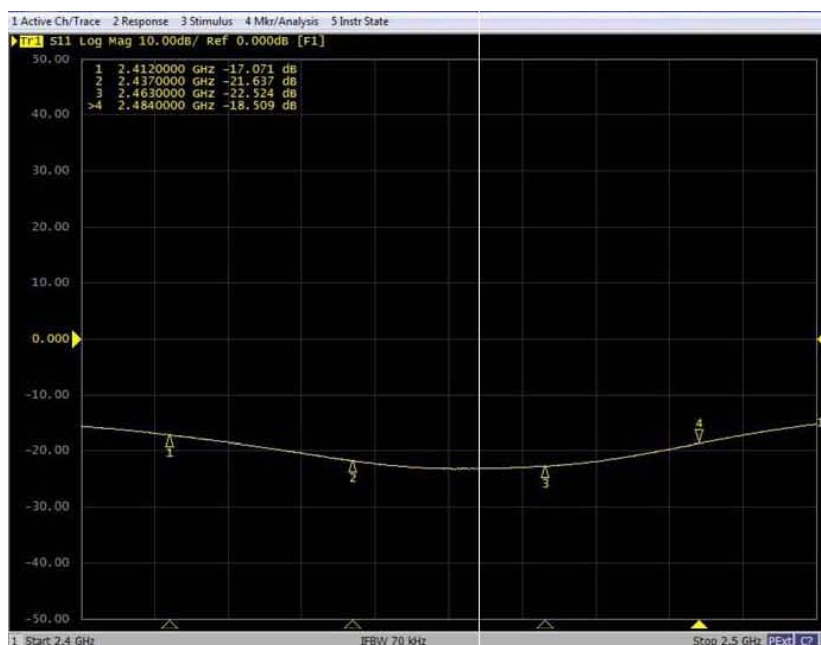


## Percsson Communication Equipment Co., Ltd



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

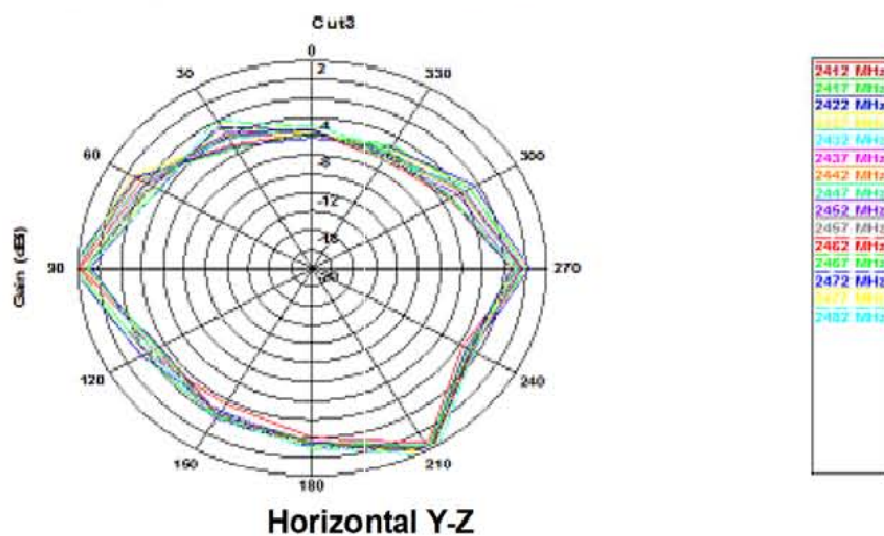
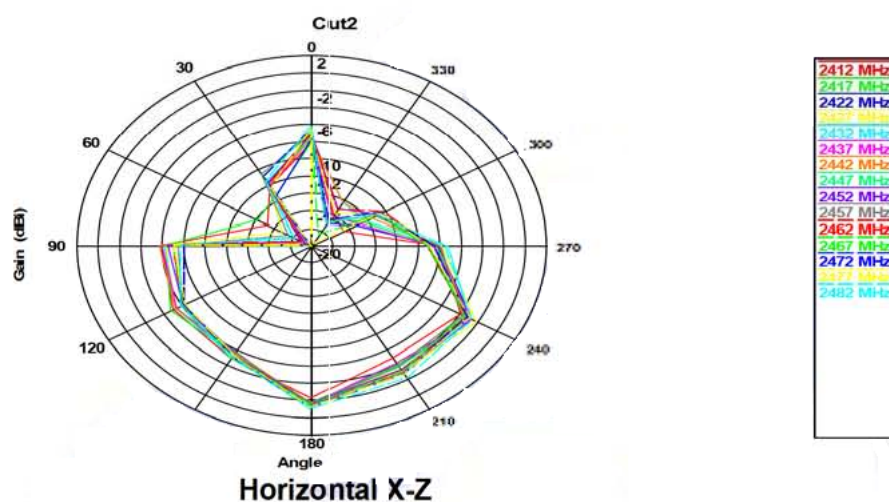
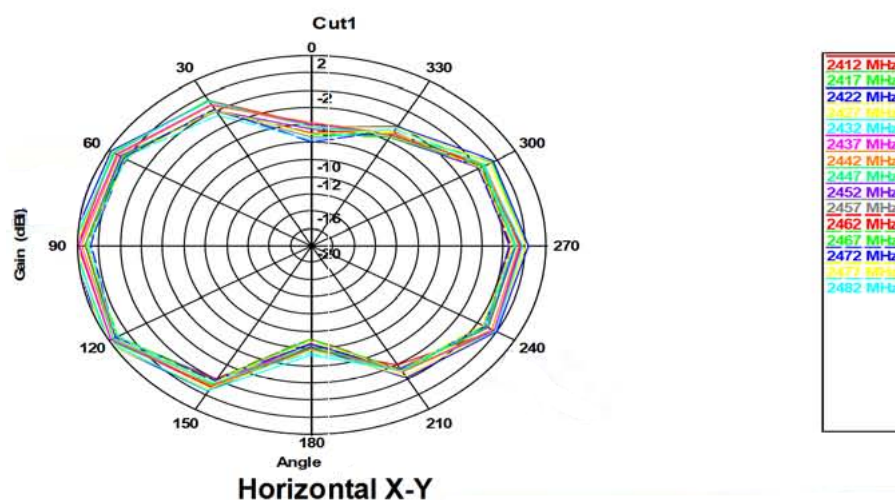
This test report belongs to PERCSSION COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it propely, without our company and related clients allowed, anybody has no rights to revel it to public.





Percsson Communication Equipment Co., Ltd

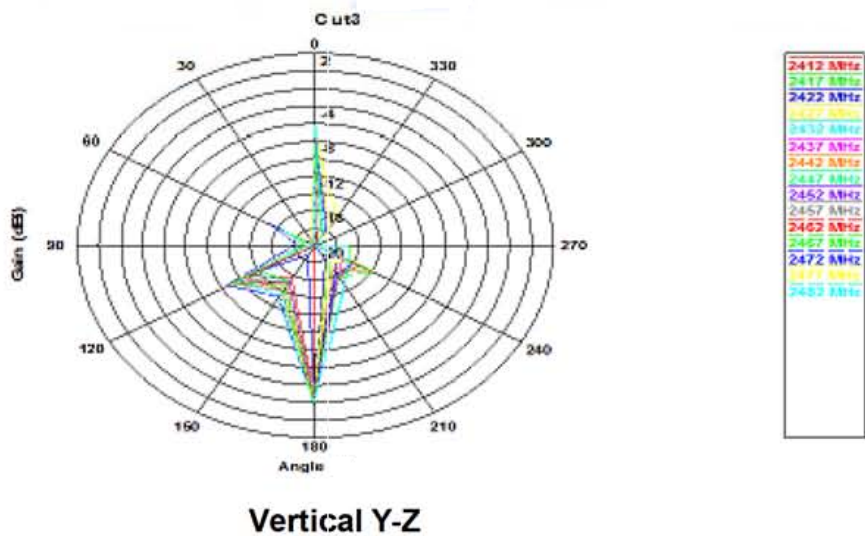
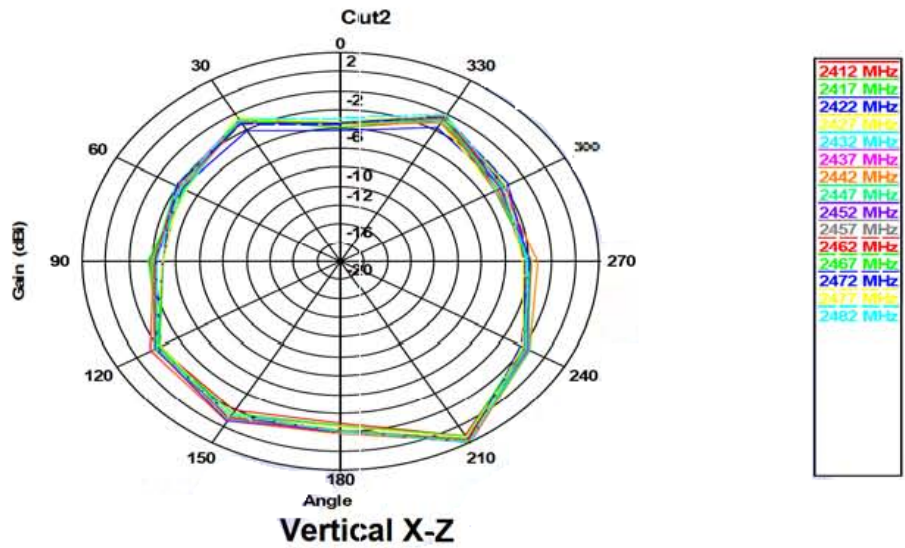
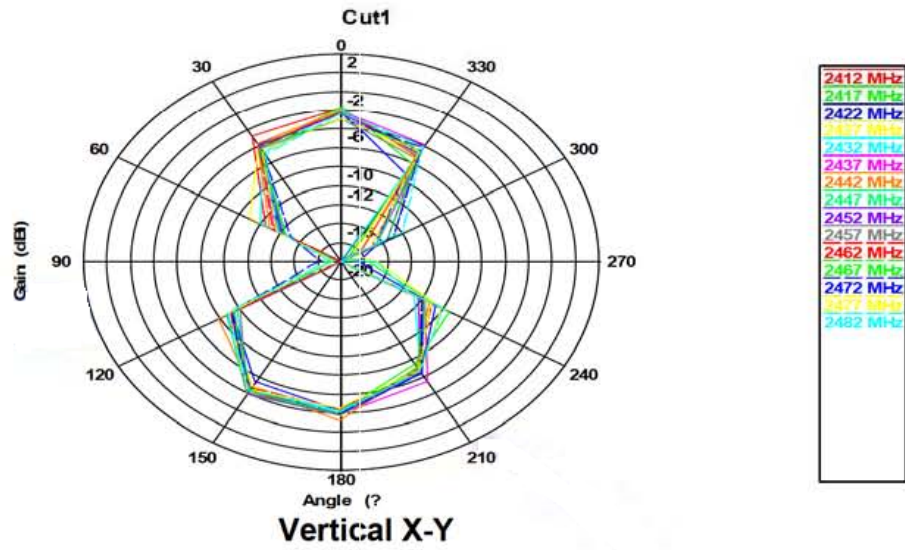
### 三. 2-D pattern Plots



This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.



# Percsson Communication Equipment Co., Ltd

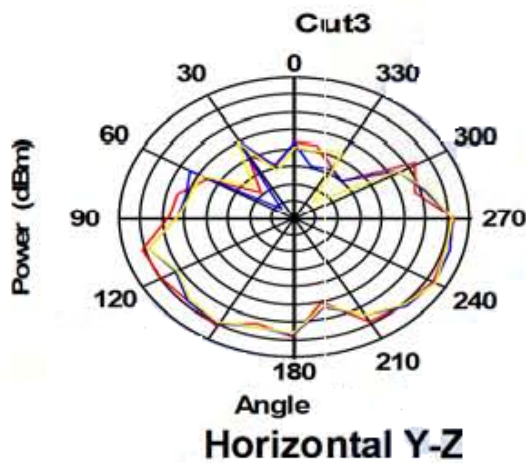
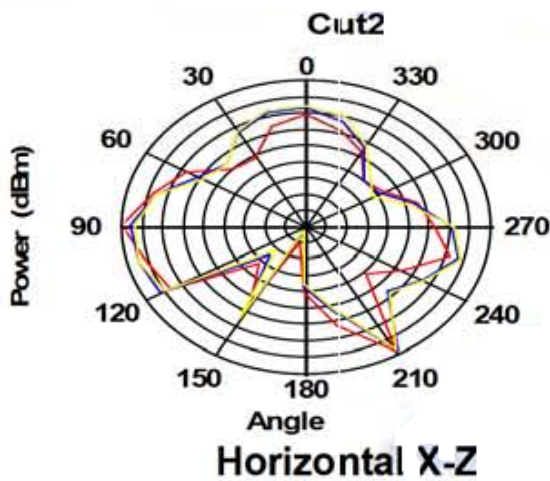
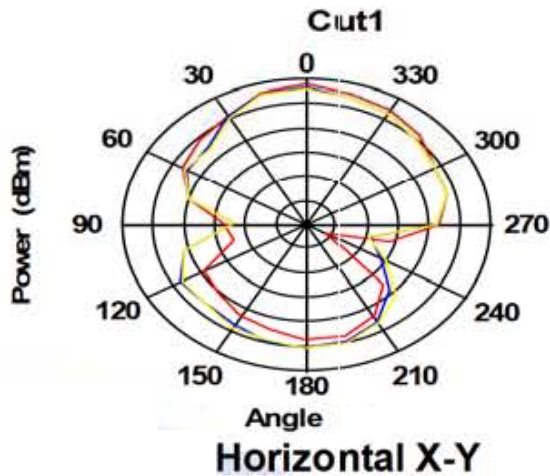


This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.





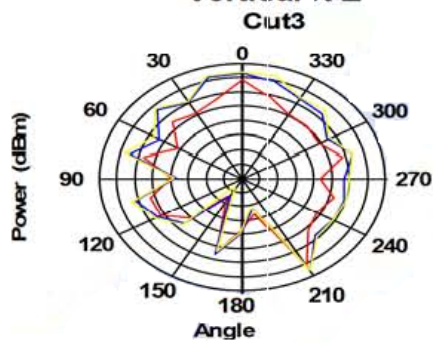
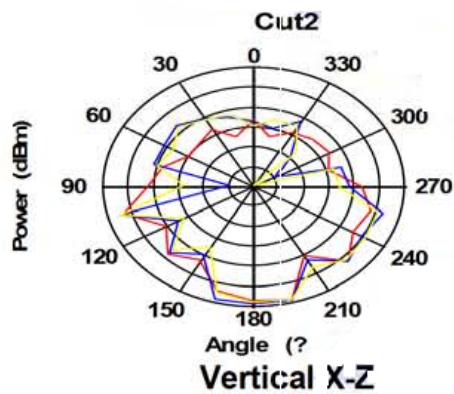
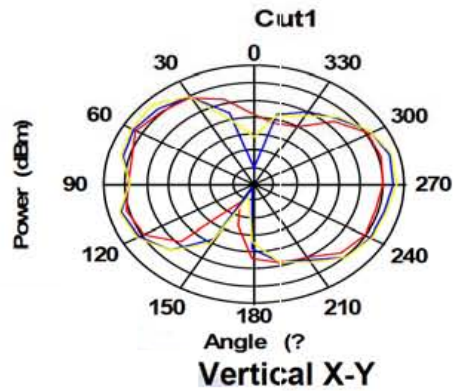
## Percsson Communication Equipment Co., Ltd



This test report belongs to PERCSSON COMMUNICATION EQUIPMENT CO.LTD. and related clients to file, please keeping it properly, without our company and related clients allowed, anybody has no rights to reveal it to public.



# Percsson Communication Equipment Co., Ltd



## Vertical Y-Z

This test report belongs to PERCSSION COMMUNICATION EQUIPMENT CO.LTD. and related clients to file,please keeping it propely,without our company and related clients allowed,anybody has no rights to revel it to public.