Test Report

Test Report

Product Name： **PCB天线**

Model： BLE-(02540)

Client Organization： /

Detection category： /

Shortcut Labs AB
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Test Report

1. General testing conditions:

1) This report is only valid for the tested sample.

2) This report itself does not represent the appraisal of this product by the certification body or authorized institution.

3) This document is only valid as a whole. Without the written permission of this testing center, no part of this report may be reproduced.

2 Test items and requirements:

2.1 Antenna Efficiency Test (Passive): The test frequency ranges from 2600 to 2700 MHz, with points taken every 10 MHz.

3 Test equipment:

3.1 Environmental conditions in the testing area:

Temperature:	Minimum: 20℃, Maximum: 25℃	
Relative humidity:	Minimum: 40%, Maximum: 70%	
Darkroom dimensions:	10m (L) × 3.6m (W) × 3.6m (H)	
Shielding effect	≥90dB	Frequency range: 0.45-6G
Impedance of the grounding system	<1Ω	

3.2 Information of the device under test：

Product	PCB ANT	Brand	/
Model	BLE-（02540）		
Working Frequency	2600~2700MHZ		

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4 Test conditions:

4.1 Antenna Dimension Drawing:

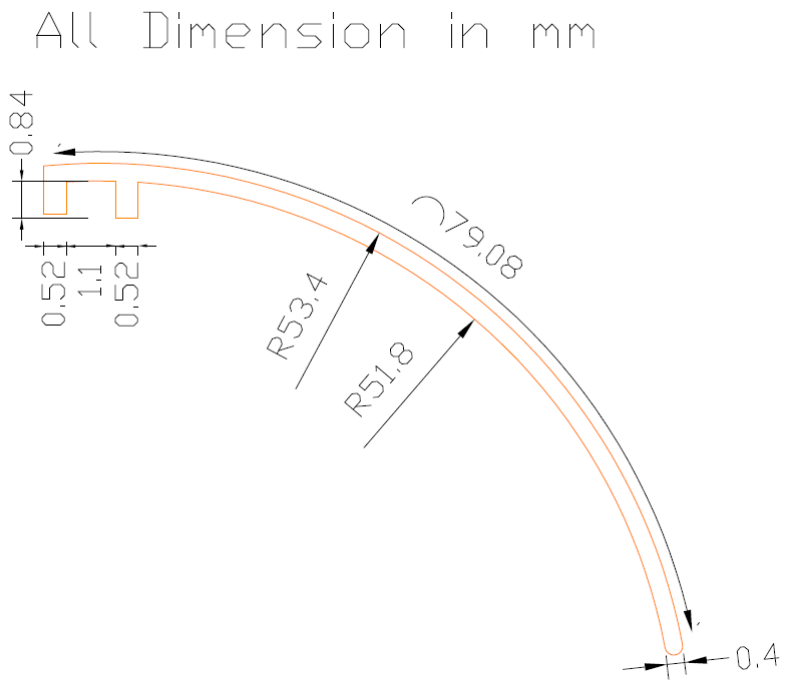

Figure 1

4.2. Test arrangement:

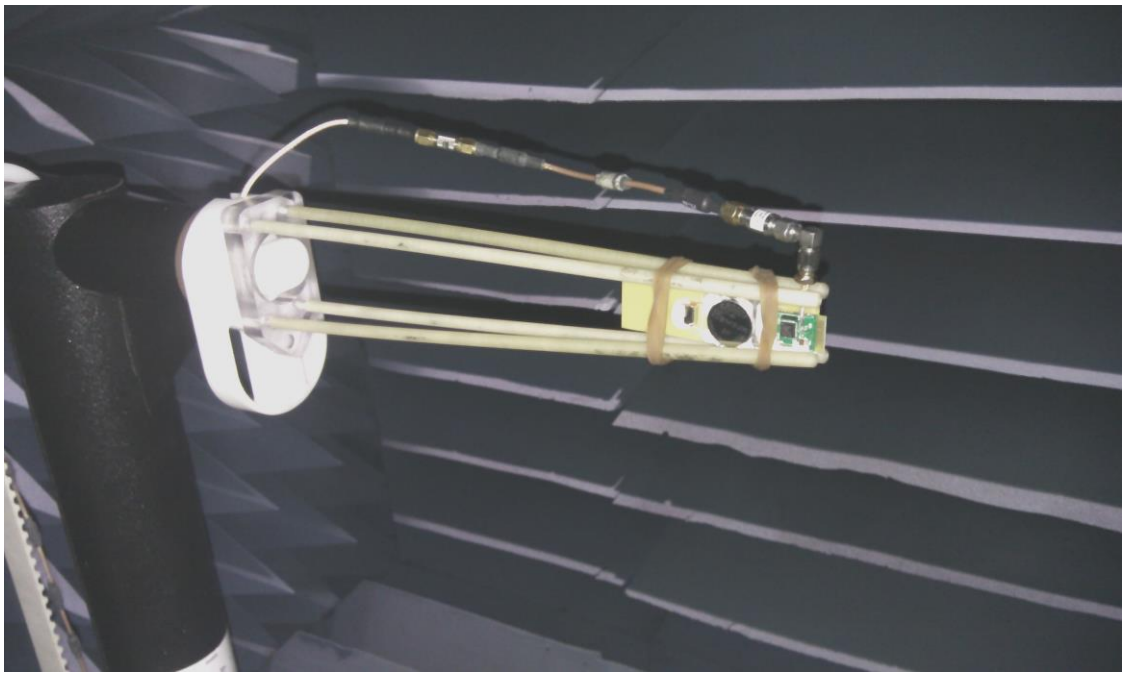

Figure 2 Layout of free space venue

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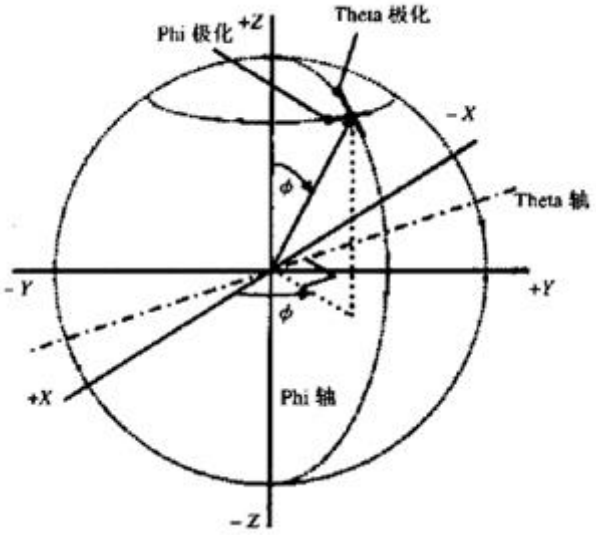
The EUT is fixed at the center of the turntable, with a measurement distance of 7 meters

4.3 Coordinate system:



Z-axis/Phi-axis: Aligned with the direction of the antenna of the mobile phone under test.

Theta angle: The angle formed with the positive direction of the Z axis, with a rotation range of 0~180°.

Y-axis: perpendicular to the side of the phone

X-axis/Theta-axis: Perpendicular to the front of the phone.

Phi angle: the angle with the positive direction of the X axis, the range of rotation 为 0~360°

Figure 3 Coordinate system

5 Test method:

5.1 Antenna efficiency test (Passive):

The radio frequency radiation performance of the EUT (Equivalent Unified Transmitting Unit) is evaluated by measuring its effective isotropic radiated power (EIRP) at various locations on a 3-dimensional sphere. The rotation steps for both the Theta and Phi axes are set at 30°, and measurements are skipped when the Theta angle is at 0° or 180°. This results in a total of 60 measurement points on the 3-dimensional sphere. At each measurement point, the efficiency and gain of the EUT are tested using horizontally and vertically polarized antennas, respectively. The total antenna efficiency and gain are then calculated by integrating all the measured values over the spherical surface.

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6 Result：

6.1 Passive：

Model	Test Model	Frequency （MHz）	Efficiency (dB)	Efficiency (%)	Gain (dBi)
BLE-(02540)	free space	2600	-4.6	34.7	-1.0
		2610	-4.6	34.5	-1.0
		2620	-4.8	33.3	-1.1
		2630	-4.6	34.4	-1.0
		2640	-4.4	36.0	0.0
		2650	-4.6	34.4	-1.0
		2660	-4.5	35.2	-0.9
		2670	-4.7	33.6	-1.1
		2680	-4.8	33.4	-1.1
		2690	-4.6	35.0	-0.9
		2700	-4.4	36.0	-0.7

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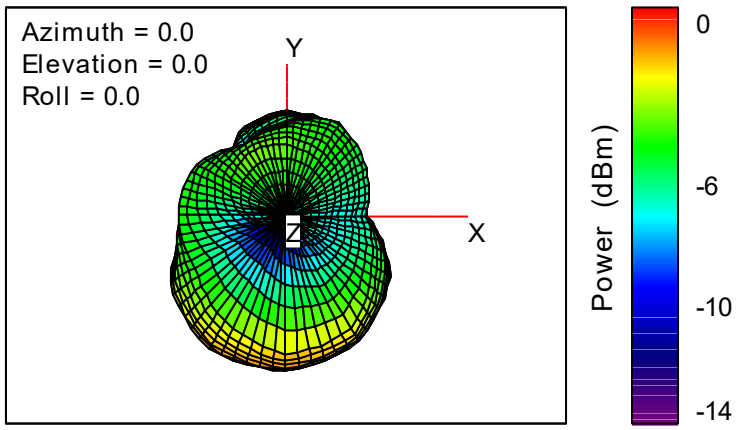
Polarization diagram in all directions:

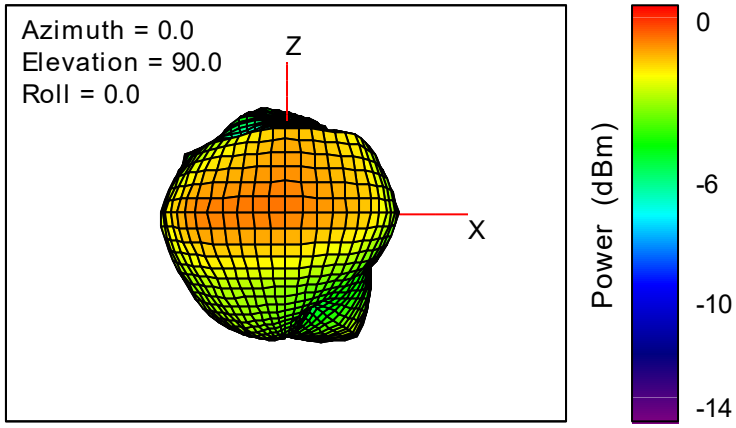
BLE-(02540)：

Total



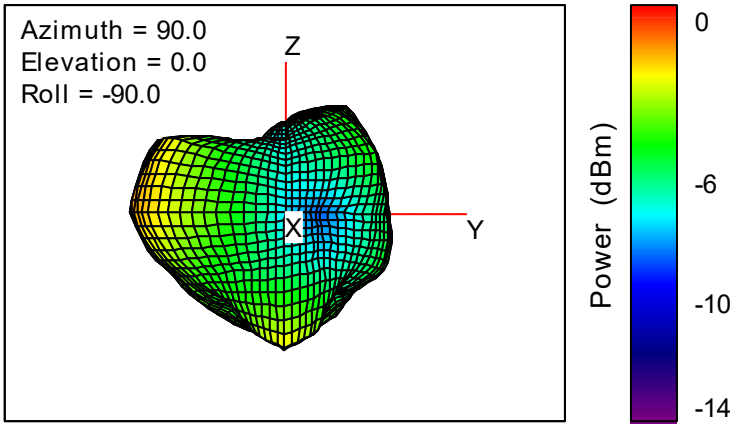
XOY

Total



XOZ

Total



YOZ

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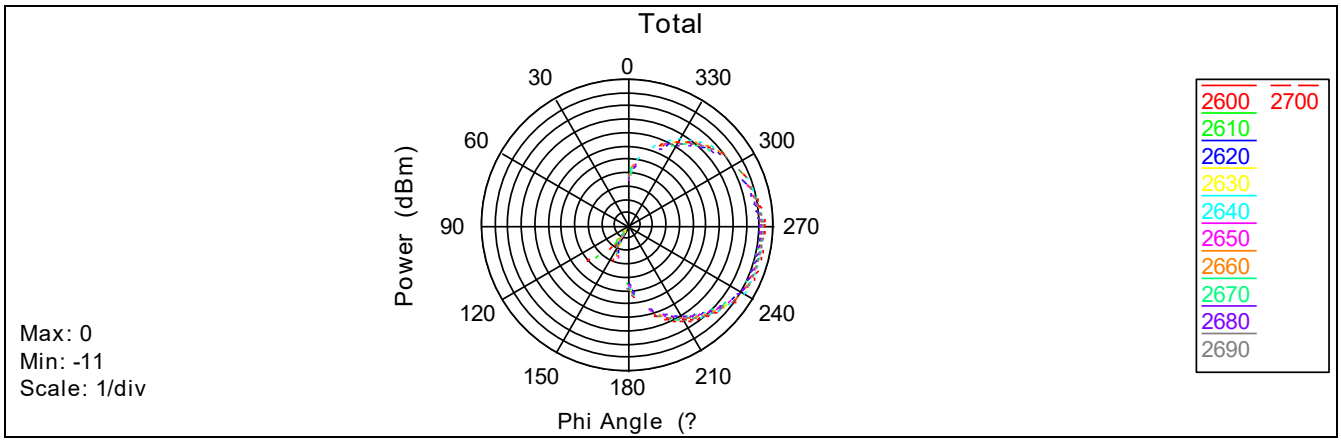
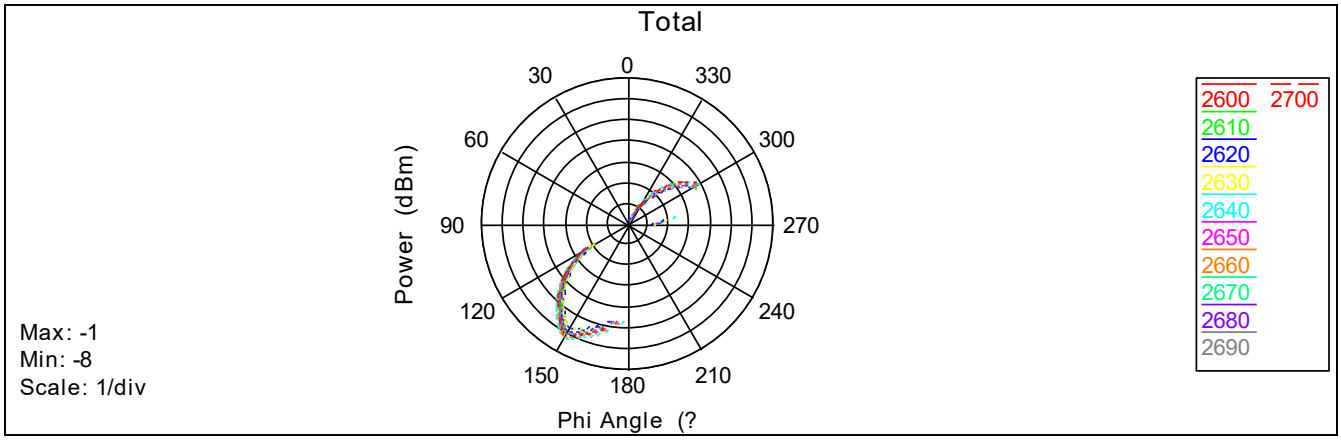


E1



E2