

Bluetooth antenna of PCB on-board specification

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Document Type: 2.4GHZ PCB antenna
Document Version: V1.0
Release Date: Aug. 23, 2017

2, Spec Drawing

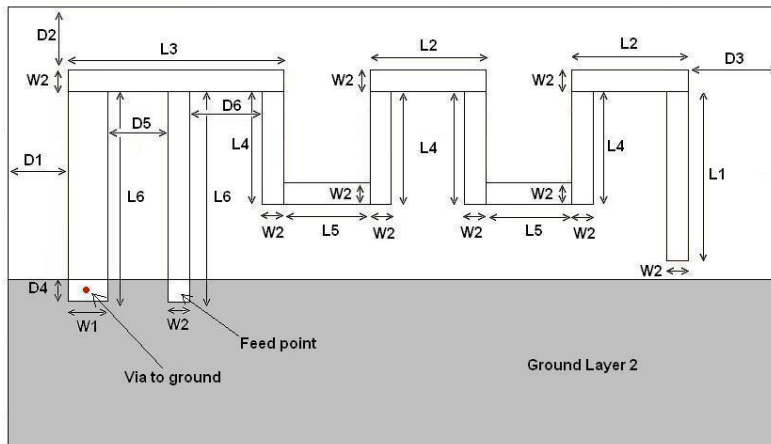


Figure 3: Antenna Dimensions

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 L13.94mm
 L22.70mm
 L35.00mm
 L42.64mm
 L52.00mm
 L64.90mm
 W10.90mm
 W20.50mm
 D10.50mm
 D20.30mm
 D30.30mm
 D40.50mm
 D51.40mm
 D61.70mm

Table 1: Antenna Dimensions

3, Specification

Product Number: 2.4GHZ PCB antenna

Sample Photo:



A. Electrical Characteristics

Frequency	2400 ~ 2500 MHz
S.W.R.	≤ 2.0
Gain	2.0 dBi
Efficiency	~ 50%
Polarization	Linear
Impedance	50 Ohm

B. Material & Mechanical Characteristics

Material of Radiator	Gold-plated copper
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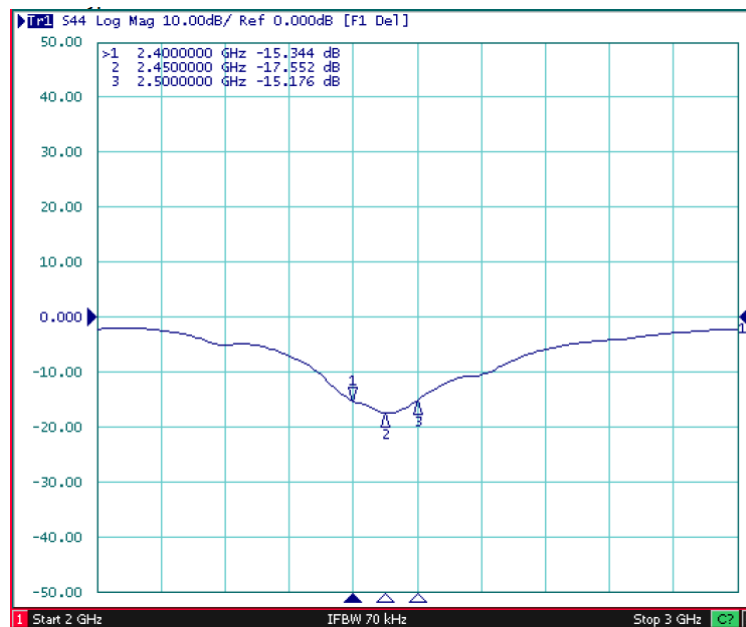
C. Environmental

Operation Temperature	- 40°C ~ + 85°C
Storage Temperature	- 40°C ~ + 105°C

4, Antenna On Test Board



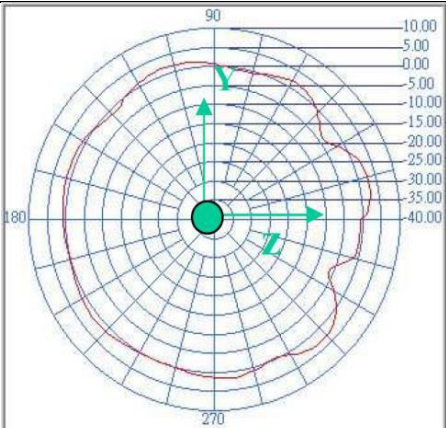
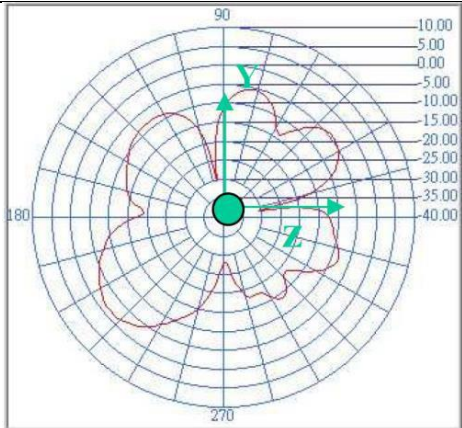
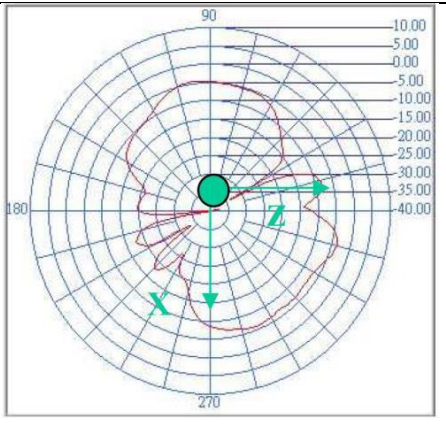
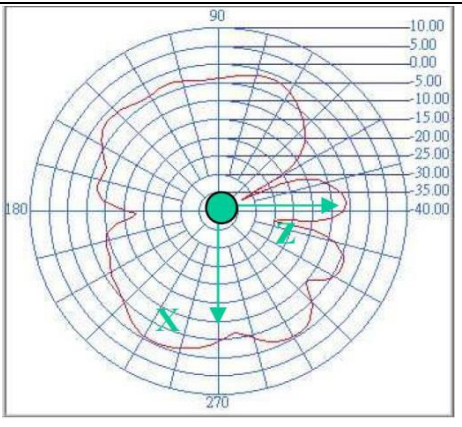
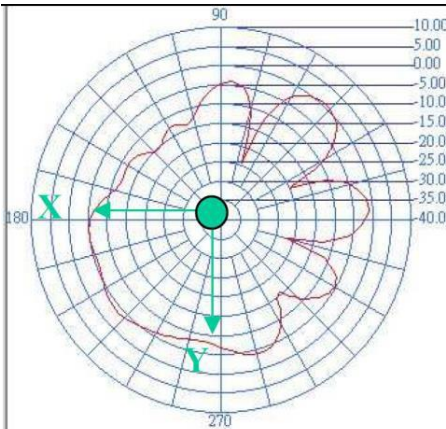
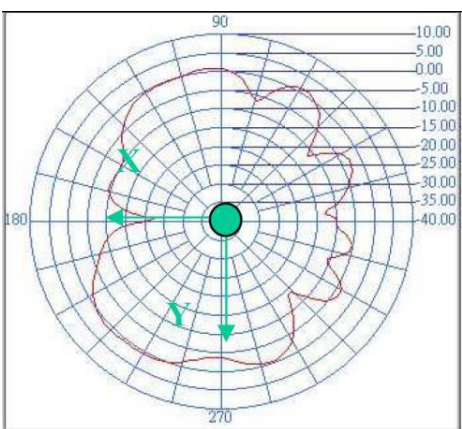
5, Return Loss



6, Radiation Pattern

Radiation Pattern and Gain were dependent on measurement board design. The specification of PCB antenna was measured based on the PCB size and installation position as shown in the below figure Test Board.



	Vertical	Horizontal
Y - Z Plane Average Gain=1.19 dBi		
	Frequency: 2460 MHz Max:2.00 dBi Min:-5.48 dBi Avg:0.70 dBi	Frequency: 2490 MHz Max:-1.32 dBi Min:-24.85 dBi Avg:- 4.57 dBi
X - Z Plane Average Gain=-2.91d Bi		
	Frequency: 2440 MHz Max: 0.36 dBi Min:-21.96 dBi Avg:-8.68dBi	Frequency: 2480 MHz Max: -0.26 dBi Min:-20.58 dBi Avg: -4.18dBi
X - Y Plane Average Gain=-0.95 dBi		
	Frequency: 2470 MHz Max: 0.68 dBi Min:-16.30 dBi Avg: -5.76dBi	Frequency: 2410 MHz Max: 1.13 dBi Min:-10.10 dBi Avg: -2.57dBi

Test Result:

Frequency VNA	E Total. dBi	Efficiency
2400MHz	0.68	40.77%
2410MHz	1.13	47.37%
2420MHz	0.22	40.01%
2430MHz	-0.12	33.43%
2440MHz	0.36	37.54%
2450MHz	1.01	41.57%
2460MHz	2.00	50.87%
2470MHz	0.68	41.25%
2480MHz	-0.26	37.14%
2490MHz	-1.32	33.53%
2500MHz	0.71	40.72%