

客戶名稱：**LG 15Z90RT**
CUSTOMER

Document No.:
Approval Sheet Rev.: P1
Spec. Rev. : P2

承認書

APPROVAL SHEET

Product Model No. : **WA-P-LELE-04-044**

LGE P/N. : **EAA65983501**

Maker P/N: **15Z90RT**

产品描述/Product Model No.: **WIFI Antenna**

发行日期/ Issue Date : **2022/12/19**

承認日期/ Approved Date : **2022/12/19**

Approved by customer: (signing or stamping here)



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WA-P-LELE-04-044 Specification

1. Explanation of part number :

WA - P - LELE - 04 - 044
(1) (2) (3) (4) (5)

(1) Product Type : Wireless Antenna

(2) PCB: PCB+CABLE

(3) Frequency : 2400~2500MHz&5100~5800MHz&5925~7125MHz

(4) Coaxial Cable Type : With ϕ 0.81 Main Black / AUX Gray

(5) Suffix : 044

2. Storage Condition:

Temperature -40 to +85°C

Humidity 20 to 90% RH

Recommended storage condition :

Store in room condition as listed below: Temperature -20°C~+45°C, Humidity 80% Max

3. Operating Condition:

Temperature -40 to +70°C

Humidity 10 to 85 %RH

4. Electrical Specification :

Those specifications were specially defined for LG 14Z90RS WIFI model, and all characteristics were measured under the model's handset testing jig .

4-1. Frequency Band:

Frequency Band	MHz
WIFI\BT	2400~2500 & 5100~5800 & 5925~7125

UNLESS OTHER SPECIFIED TOLERANCES ON :

X = $\pm$ X.X = $\pm$ X.XX = $\pm$

ANGLES = $\pm$ HOLEDIA = $\pm$

SCALE : UNIT : mm

DRAWN BY: 尹猛 CHECKED BY: 李志强

DESIGNED BY: 钱龙 APPROVED BY: 唐龙

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4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

4-4. VSWR

4-4.1 Measuring Method

1.A 50Ωcoaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR

2.Keeping this jig away from metal at least 20cm

4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	1
Main Antenna	2400	≤ 3.0	1.3
	2500	≤ 3.0	2.3
	5150	≤ 4.0	1.5
	7125	≤ 4.0	1.8
	Judgement		ok
Aux Antenna	2400	≤ 3.0	1.7
	2500	≤ 3.0	1.7
	5150	≤ 4.0	2.0
	7125	≤ 4.0	1.5
	Judgement		ok

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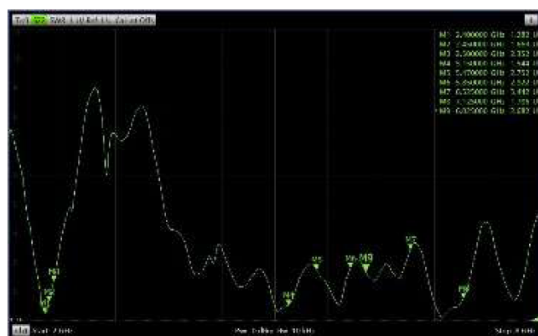
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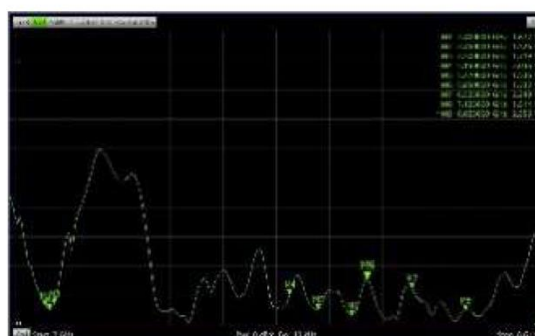
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Main Antenna-1



AUX Antenna-1

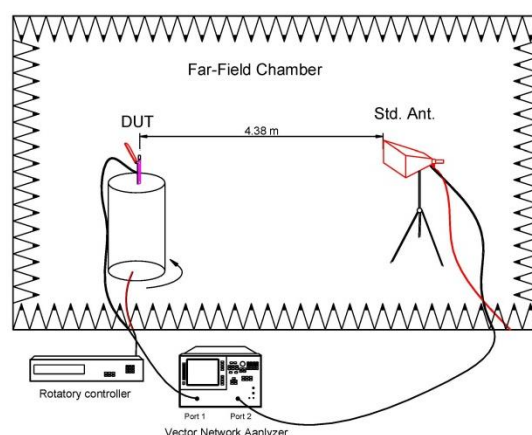


4-5. Efficiency and Gain

4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

4-5.2 Chamber definition



1. An anechoic chamber

- (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
- The quite room region is 40cmx40cmx40cm at the center of rotator
- The distance between DUT and standard antenna is 4.38 m
- Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

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4-5.3 Efficiency and Gain

Antenna gain is marked (dBi) and is based on STANDARD HORN antenna. The data shows Peak Gain and Average Gain.

4-5-3-1 Electrical specification

Frequency (MHz)	Average Efficiency (%)
2400~2500	>40
5100~5825	>30
5925~7125	>20

4-5.3-2 Efficiency and Gain Test Data

Frequency (MHz)	Main-Antenna-1		
	Efficiency (%)	Efficiency (dBi)	Peak Gain (dBi)
2400	56	-2.5	3.2
2450	56.8	-2.5	3.6
2500	47.4	-3.2	3.3
5150	42.5	-3.7	1.9
5470	31.6	-5	2.7
5850	30.1	-5.2	1.3
5925	37.2	-4.3	1.6
6525	25.4	-6	-0.5
7125	45.8	-3.4	3.9

Frequency (MHz)	Aux-Antenna-1		
	Efficiency (%)	Efficiency (dBi)	Peak Gain (dBi)
2400	50	-3	3.7
2450	51.8	-2.9	3.9
2500	46.3	-3.3	4.2
5150	31.4	-5	2.4
5470	38.9	-4.1	1.1
5850	33.2	-4.8	1.1
5925	37.2	-4.3	1.6
6525	24.7	-6.1	0.3
7125	39.4	-4	3

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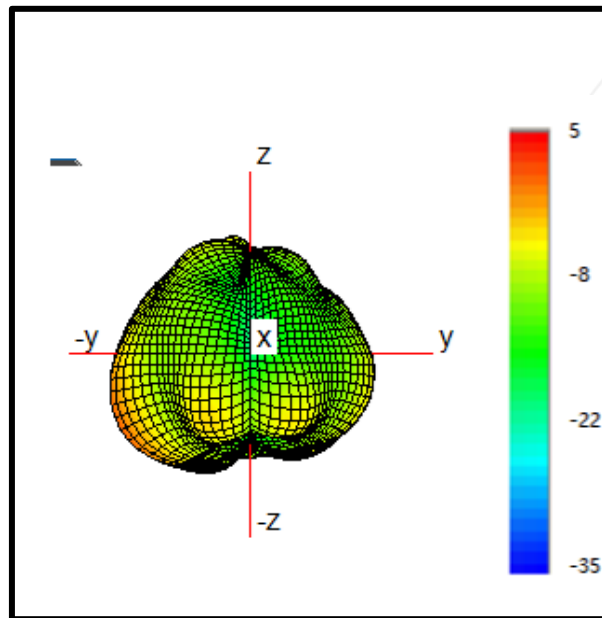
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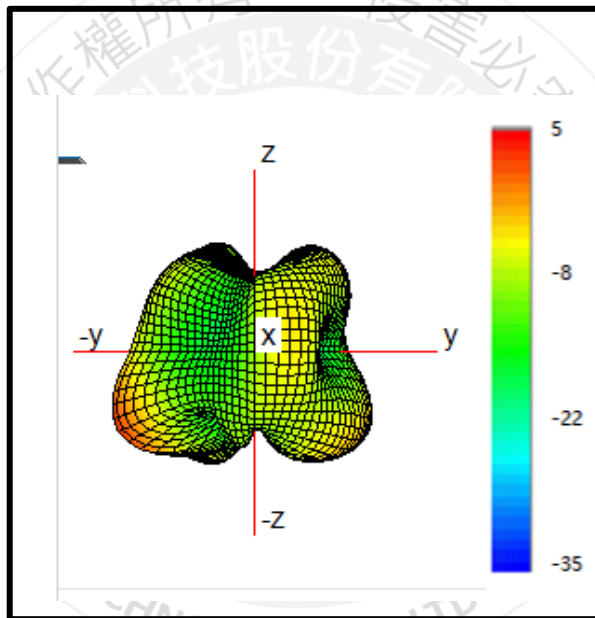
2. Antenna Test Results

2.4 Antenna Radiation Pattern

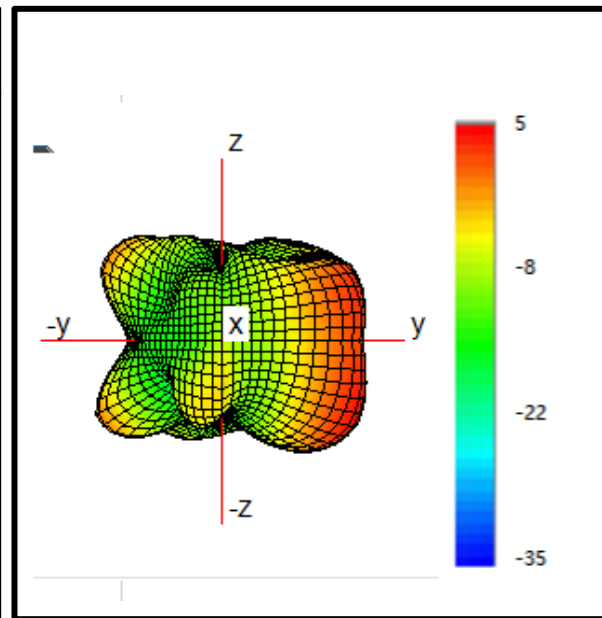
Main Antenna-1



2450MHz



5470MHz

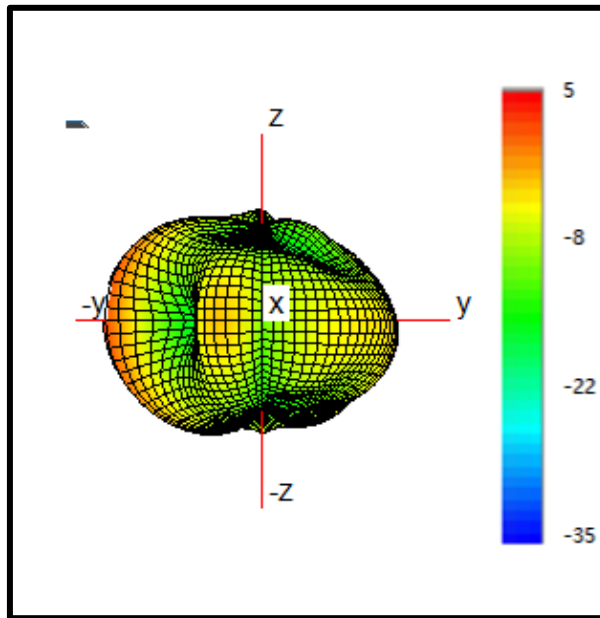


6525MHz

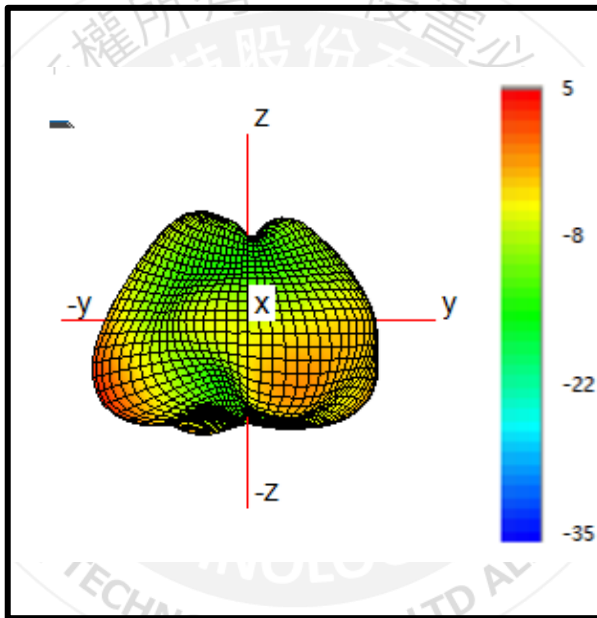
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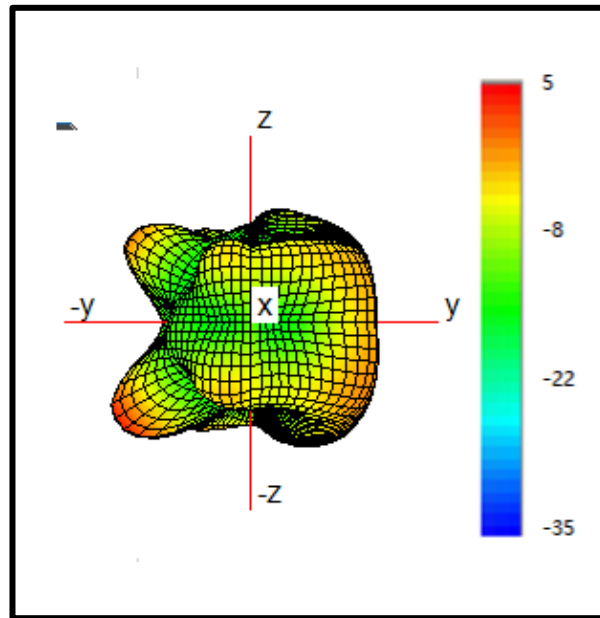
AUX Antenna-1



2450MHz



5470MHz



6525MHz