

客戶名稱 : LG 16Z90R TC  
CUSTOMER

Document No.: \_\_\_\_\_  
Approval Sheet Rev.:   P1    
Spec. Rev. :   P1  

**承 認 書**  
**APPROVAL SHEET**

產品品名/Product Model No. : **WA-P-LBLB-04-110**

客戶料號/Customer No. : **EAA65985101**

產品描述/Product Model No. : **Wifi Antenna**

發行日期/ Issue Date : **2023/6/14**

承認日期/ Approved Date : \_\_\_\_\_

**Approved by customer: (signing or stamping here)**



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# WA-P-LBLB-04-110 Specification

## 1. Explanation of part number :

WA    -    P    -    LBLB    -    04    -    110  
 (1)        (2)        (3)        (4)        (5)

- (1) Product Type : Wireless Antenna
- (2) P: PCB+Cable
- (3) Frequency : 2400~2500MHz&5150~5850MHz&5925~7125MHz
- (4) Coaxial Cable Type : With  $\phi$  0.81 Main Black / AUX Gray
- (5) Suffix : 110

## 2. Storage Condition:

Temperature                      -40 to +70°C  
 Humidity                            20 to 65 %RH

## 3. Operating Condition:

Temperature                      -40 to +70°C  
 Humidity                            10 to 85 %RH

## 4. Electrical Specification :

*Those specifications were specially defined for LG 16290R 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 & 5150~5850 & 5925~7125

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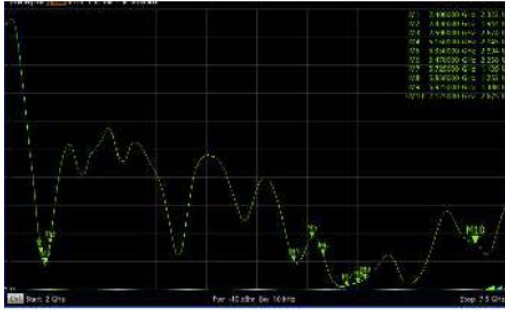
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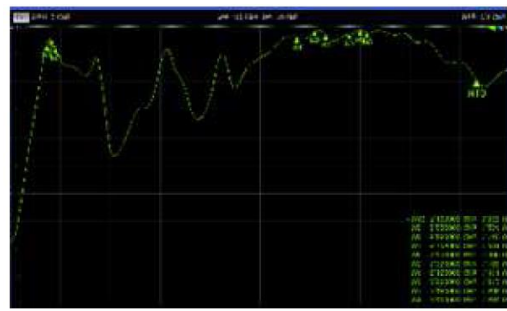
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## Main Antenna-2



## AUX Antenna-2



### 4-5. Efficiency and Gain

#### 4-5.1 Measuring equipment

##### Measuring instrument:

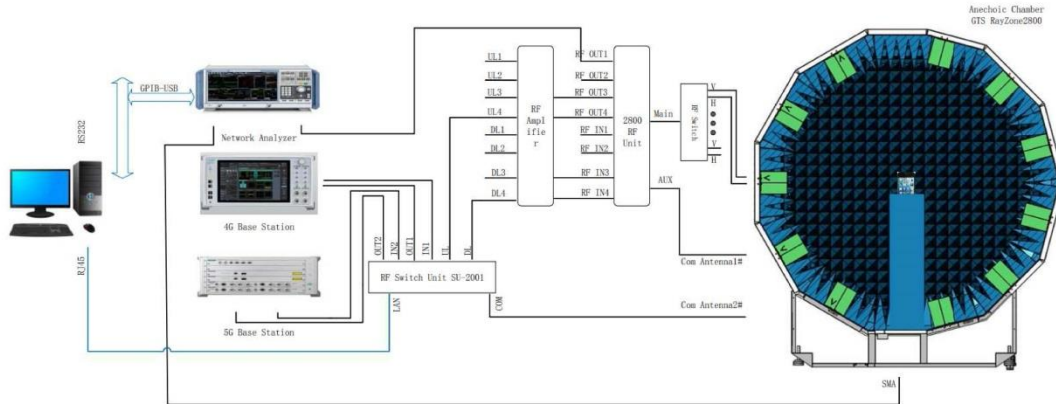
Microwave chamber, Network analyzer, and standard antenna.

##### Instructions for microwave chamber:

This is a microwave chamber set up by our company in Suzhou, This microwave chamber belongs to a set of near-field measurement system. The size of the chamber is 2.95M \* 3M \* 3M.



RayZone2800 Test Setup



The microwave chamber, shown above, using a unique multi-probe technique, The aim is to reduce the measurement time of the whole measurement system. The measuring system use multi-probe array instead of single probe to scan the measured surface of the antenna under test, a single probe has the capability of measuring orthogonal polarization amplitude and phase, it also has a wide frequency

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range, the corresponding multi-probe array is switched quickly by electronic switch, greatly improved the measurement efficiency.

**The probe model: MA186960A(400MHz~7.5GHz) . Because of its capability of broadband frequency and the orthogonal polarization function, the number of probes needed to be equipped with the system is reduced; The small size of the probe reduces the coupling between the probes, make it is possible to insert probes of other frequency bands between probes, then a single system can support a wider frequency range**

#### 4-5.2 Efficiency and Gain

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

##### 4-5-2-1 Electrical specification

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

##### 4-5.2-2 Efficiency and Gain Test Data

Frequency (MHz)	Main Antenna-2		
	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)
2.4GHz (2400~2500MHz)	42.2	-3.8	3.1
5.2&5.3GHz (5150~5350MHz)	21.3	-6.7	-2.1
5.5GHz (5470~5725MHz)	34.9	-4.6	2.5
5.8GHz (5725~5850MHz)	52.1	-2.8	5.2
6.2GHz (5925~6425MHz)	47.9	-3.2	4.8
6.5GHz (6425~6525MHz)	44.2	-3.5	1
6.7GHz (6525~6875MHz)	41.9	-3.8	1.6
6.9GHz (6875~7125MHz)	49.5	-3.1	2.9

Frequency (MHz)	Aux Antenna-2		
	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)
2.4GHz (2400~2500MHz)	36.4	-4.4	2.9
5.2&5.3GHz (5150~5350MHz)	36.9	-4.3	2.8
5.5GHz (5470~5725MHz)	52.8	-2.8	5.7
5.8GHz (5725~5850MHz)	59.2	-2.3	5.3
6.2GHz (5925~6425MHz)	44.9	-3.5	3.7
6.5GHz (6425~6525MHz)	27.4	-5.6	-1
6.7GHz (6525~6875MHz)	36.3	-4.4	2.8
6.9GHz (6875~7125MHz)	28.6	-5.4	-1.4

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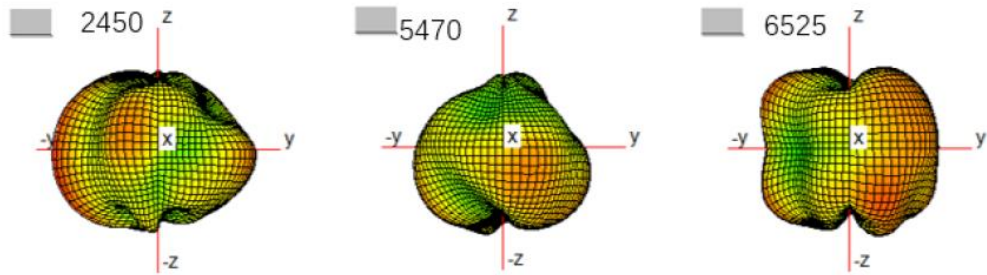
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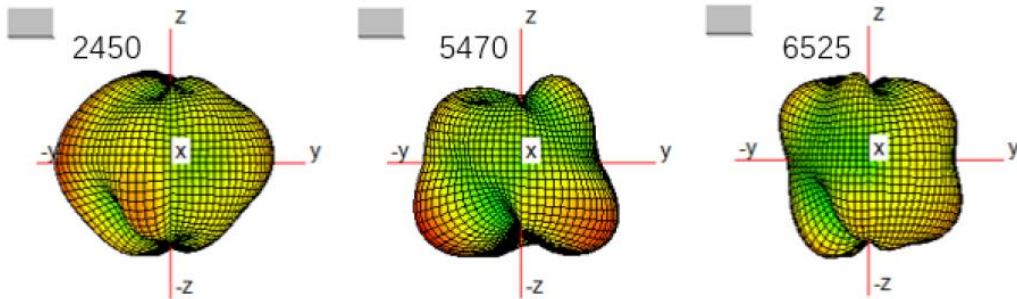
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### 4-5.2-3 Antenna 3D Radiation Pattern

Main Antenna-2



AUX Antenna-2

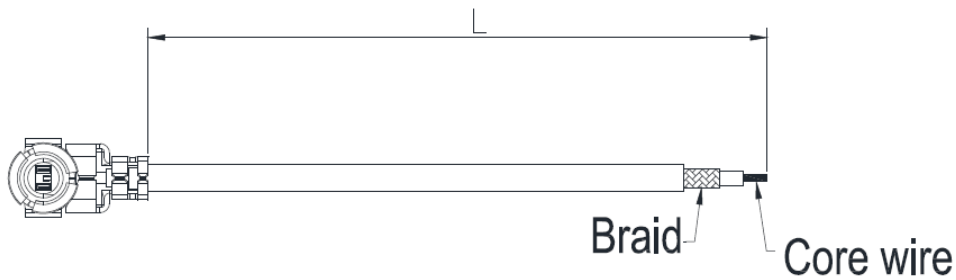


### 5. Mechanical Specification:

Connector: I-PEX MHF 4L; 20572; Cable: RF Cable 0.81 (Main Black/Aux Gray)

Cable length: Aux Antenna L:  $194.7 \pm 2\text{mm}$ (Include connector)

Main Antenna L:  $147.5 \pm 2\text{mm}$ (Include connector)



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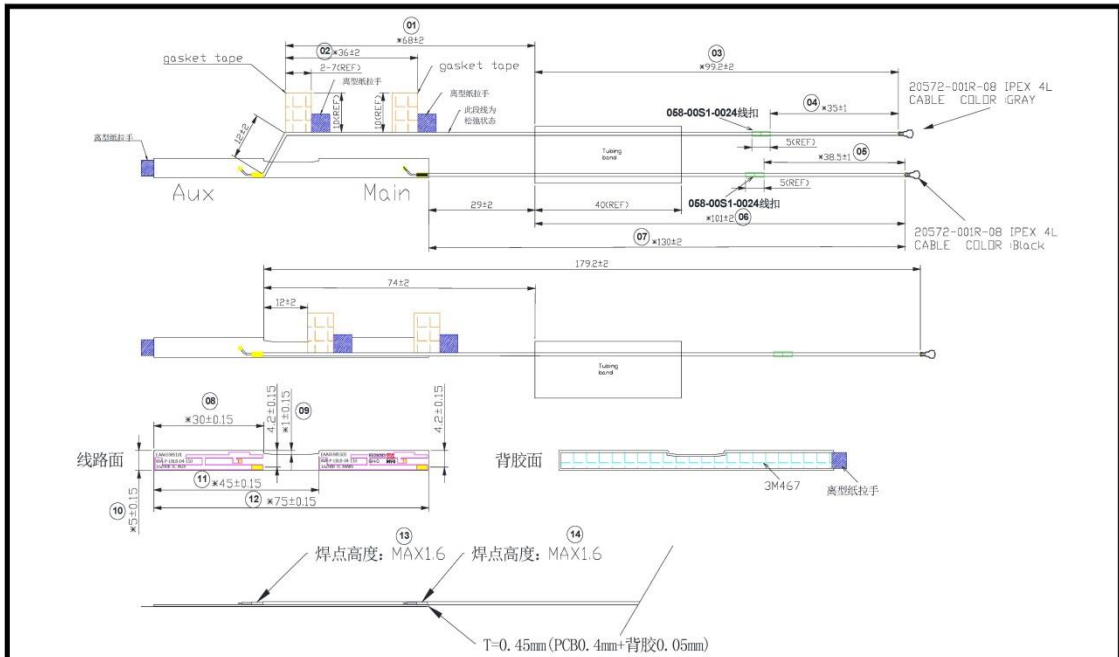
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Material list :

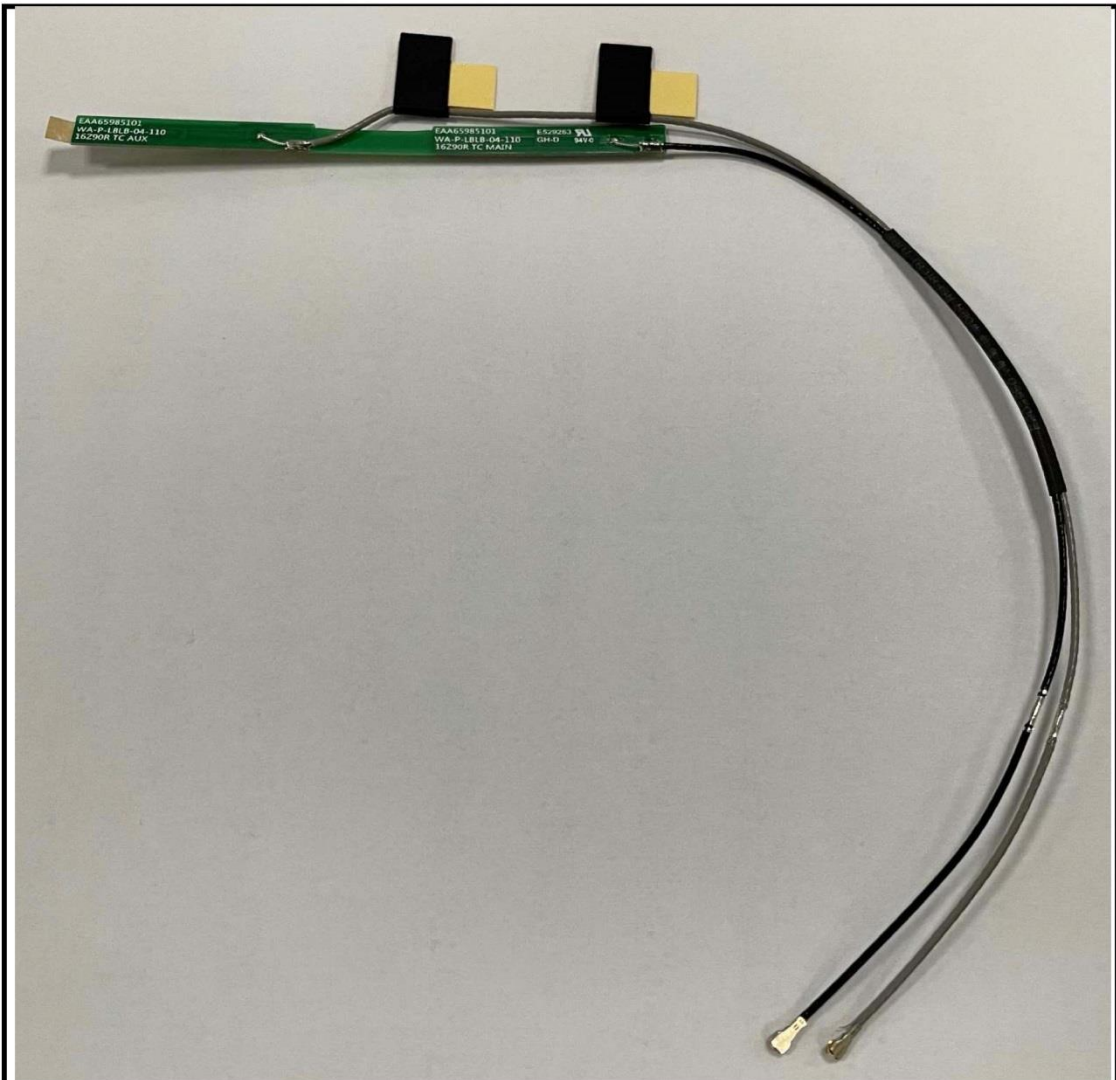
Item	Description	Material	Quantity
1	PCB	PCB T0.4 WA-P-LBLB-04-110	1
2	Acetate tape	Acetate tape 21x7mm, T0.12mm	2
3	Shrink Tube	Shrink Tube black, $\phi$ 1.5 x40mm	1
4	Cable black	Cable 0.81 black	1
5	Cable gray	Cable 0.81 gray	1
6	Connector	I-PEX MHF 4L for 0.81, 20572	2
7	TAP	TAP 3M467 74x4mm	1
8	Clamp	Clamp 0.81 5mm	2

6. UL File No:

ITEM	DESCRIPTION	SUPPLIER	UL File No
1	PCB	HA0129	E202191
2	CABLE	HA0008	E318898
		HA0053	E464731

7. Product Picture:

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