佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

客戶名稱 : **LG 16Z90SP**
CUSTOMER

Document No.:
Approval Sheet Rev.: P0
Spec. Rev. : P0

承　認　書

APPROVAL SHEET

產品品名/Product Model No. : **WA-P-LBLB-04-111**

客戶料號/Customer No. : **EAA65985601**

專案名稱/Project Name: **16Z90SP**

發行日期/ Issue Date : **2023/08/15**

承認日期/ Approved Date :

Approved by customer: (signing or stamping here)

INPAQ WEB

履历表

History List

版本 Version	变更页次 Pages ofchange	变更内容 Items of change	申请单位 Applicant Department	申请人 Applicant	变更日期 Modify date
P0	所有页次 ALL	首次发行 First Release	研发 RD	毕岩 YAN.BI	2023.08.15

WA-P-LBLB-04-111 Specification

1. Explanation of part number :

WA	_	P	_	LBLB	_	04	_	111
(1)		(2)		(3)		(4)		(5)

(1) Product Type：Wireless Antenna

(2) P: PCB+Cable

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

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

(5) Suffix : 111

2. Storage Condition:

Temperature	-40	to	+70℃
Humidity	20	to	65 %RH

3. Operating Condition:

Temperature	-40	to	+70℃
Humidity	10	to	85 %RH

4. Electrical Specification :

*Those specifications were specially defined for **LG 16Z90SP** 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**

4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

4-4. VSWR

4-4.1 Measuring Method

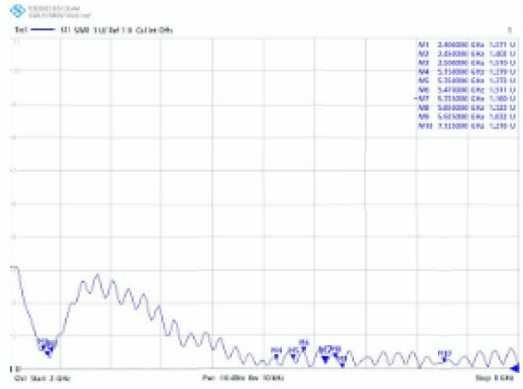
1.A 50Ωcoaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR

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

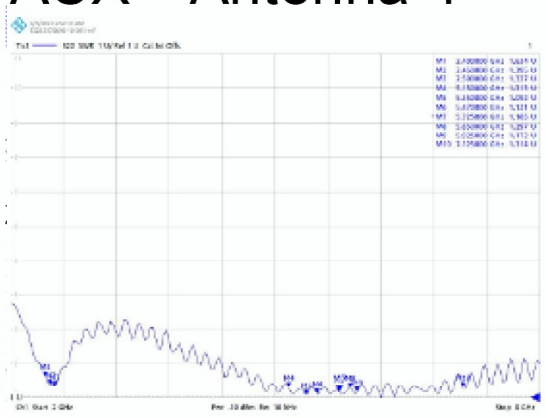
4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	1
Main Antenna	2400	≦3.0	1.5
	2500	≦3.0	1.5
	5150	≦3.0	1.2
	7125	≦3.0	1.2
	Judgement		ok
Aux Antenna	2400	≦3.0	1.6
	2500	≦3.0	1.3
	5150	≦3.0	1.3
	7125	≦3.0	1.3
	Judgement		ok

Main Antenna-1



AUX Antenna-1



4-5. Efficiency and Gain

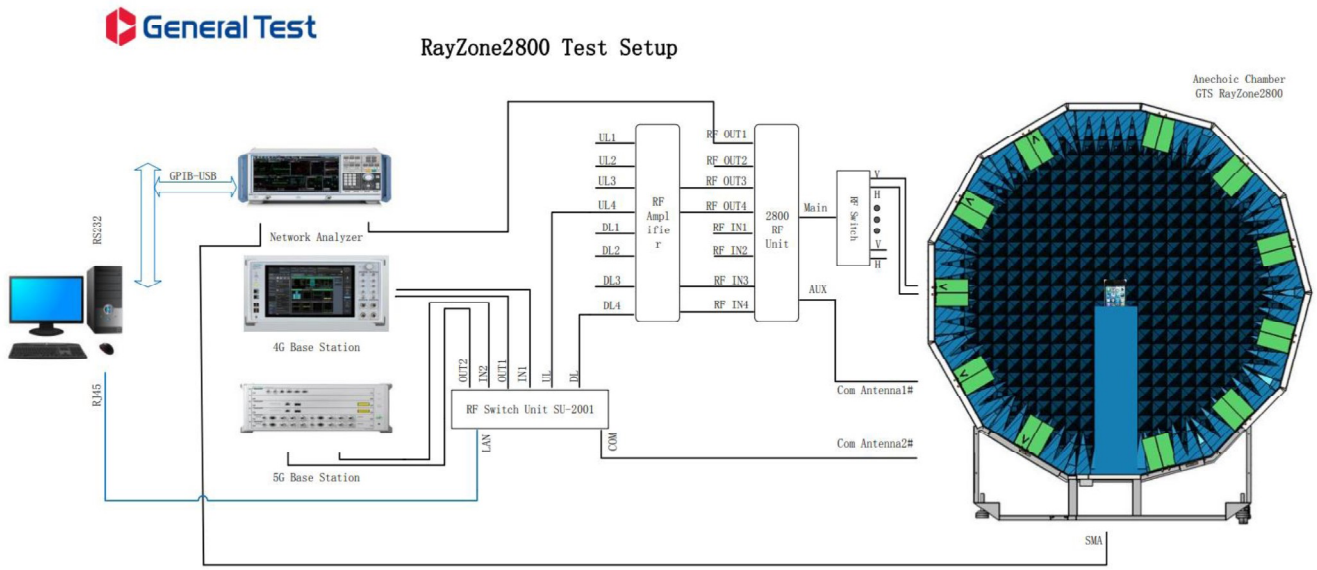
4-5.1 Measuring equipment

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.



The microware chamber, shown above, using a unique multi-probe technique，The aim is to reduce the measurement time of the whole measurement system. The

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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 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

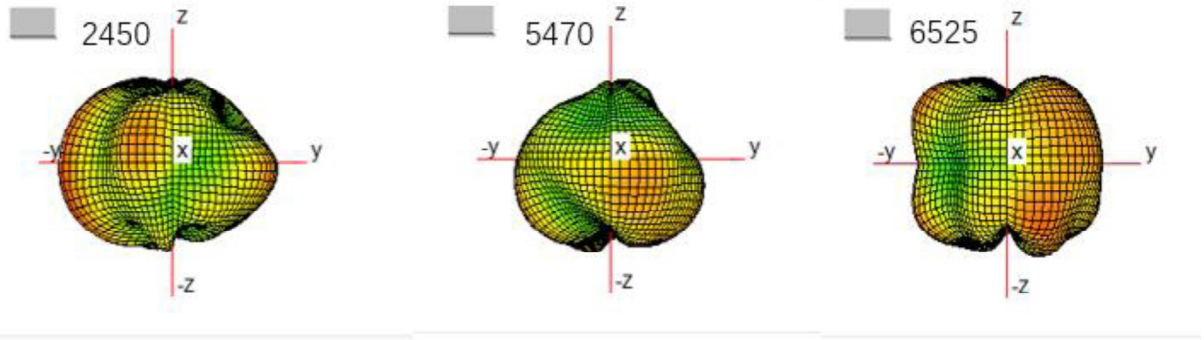
Frequency (MHz)	Main Antenna-1		
	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)
2.4GHz (2400~2500MHz)	-3.0	50.6	2.1
5.2&5.3GHz (5150~5350MHz)	-5.2	30.3	1.7
5.5GHz (5470~5725MHz)	-4.1	38.6	2.7
5.8GHz (5725~5900MHz)	-4.4	36.7	2.2
6.2GHz (5925~6425MHz)	-3.1	49.4	3.1

6.5GHz (6425~6525MHz)	-3.6	43.7	2.6
6.7GHz (6525~6875MHz)	-4.9	32.6	1.2
6.9GHz (6875~7125MHz)	-4.2	38.0	1.3

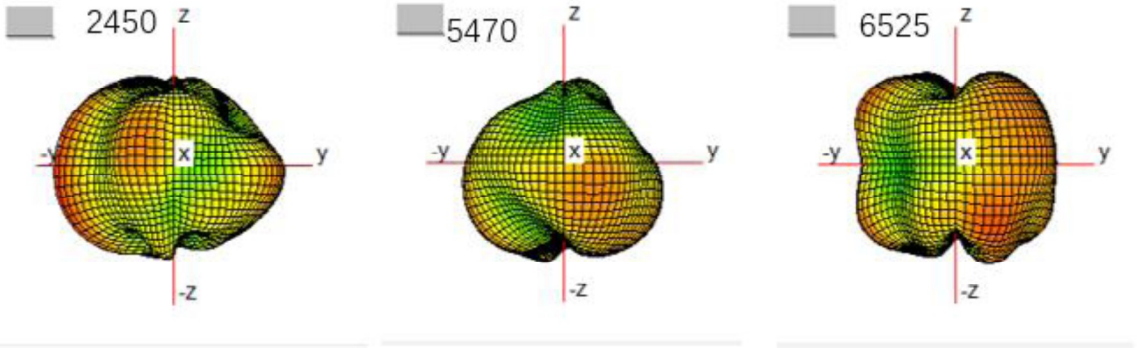
Frequency (MHz)	Aux Antenna-1		
	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)
2.4GHz (2400~2500MHz)	-2.5	55.7	2.1
5.2&5.3GHz (5150~5350MHz)	-4.5	35.4	1.7
5.5GHz (5470~5725MHz)	-5.0	31.4	2.7
5.8GHz (5725~5900MHz)	-4.0	39.6	2.8
6.2GHz (5925~6425MHz)	-3.7	42.6	1.7
6.5GHz (6425~6525MHz)	-4.2	37.7	2.4
6.7GHz (6525~6875MHz)	-4.5	35.8	3.2
6.9GHz (6875~7125MHz)	-3.7	42.4	2.8

4-5.2-3 Antenna 3D Radiation Pattern

Main Antenna-1



Main Antenna-2



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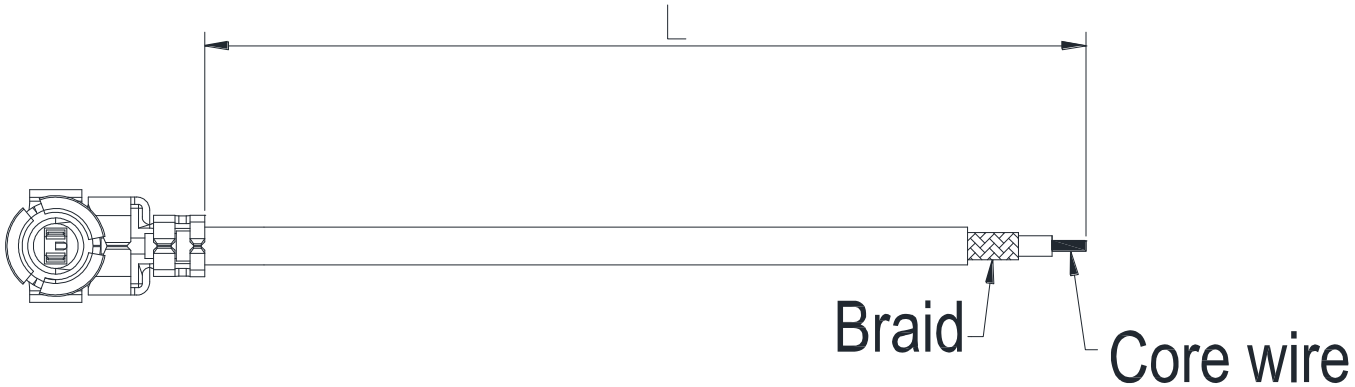
5. Mechanical Specification:

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

Cable length: Aux Antenna L: 301.5±2mm(Include connector)

Main Antenna L:255.3±2mm(Include connector)



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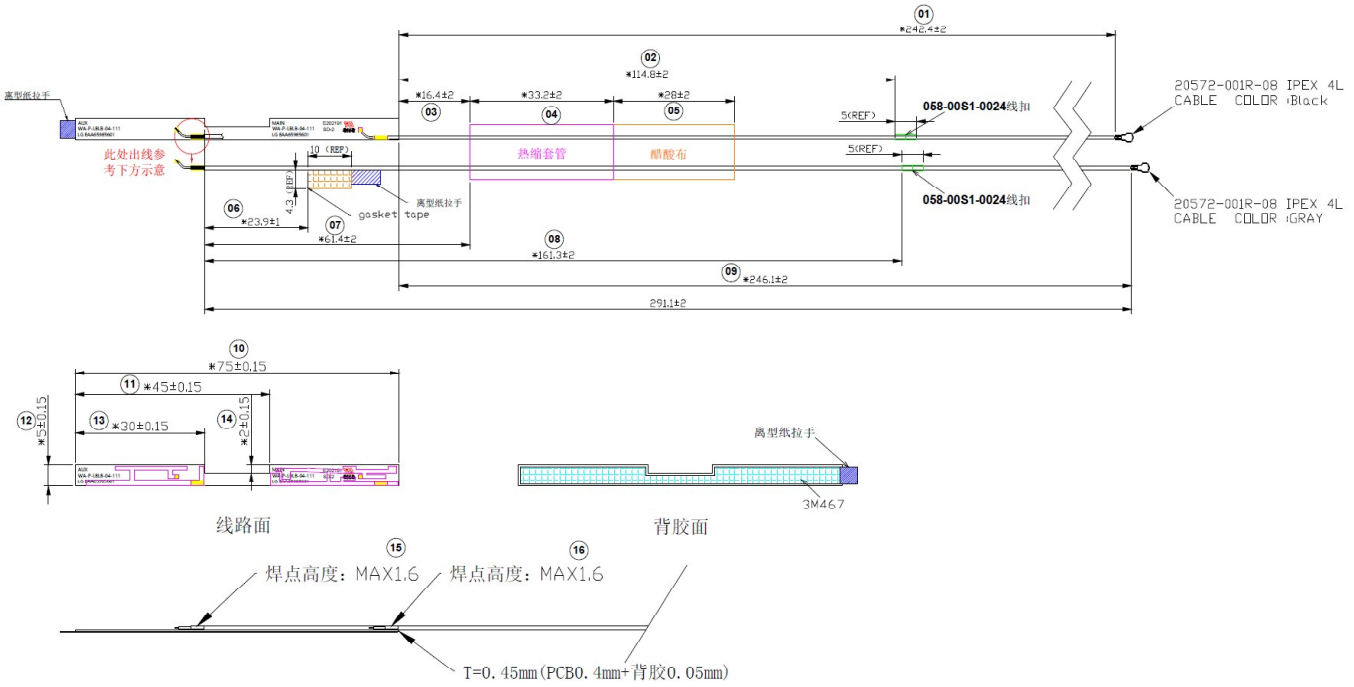
Mechanical Configuration:



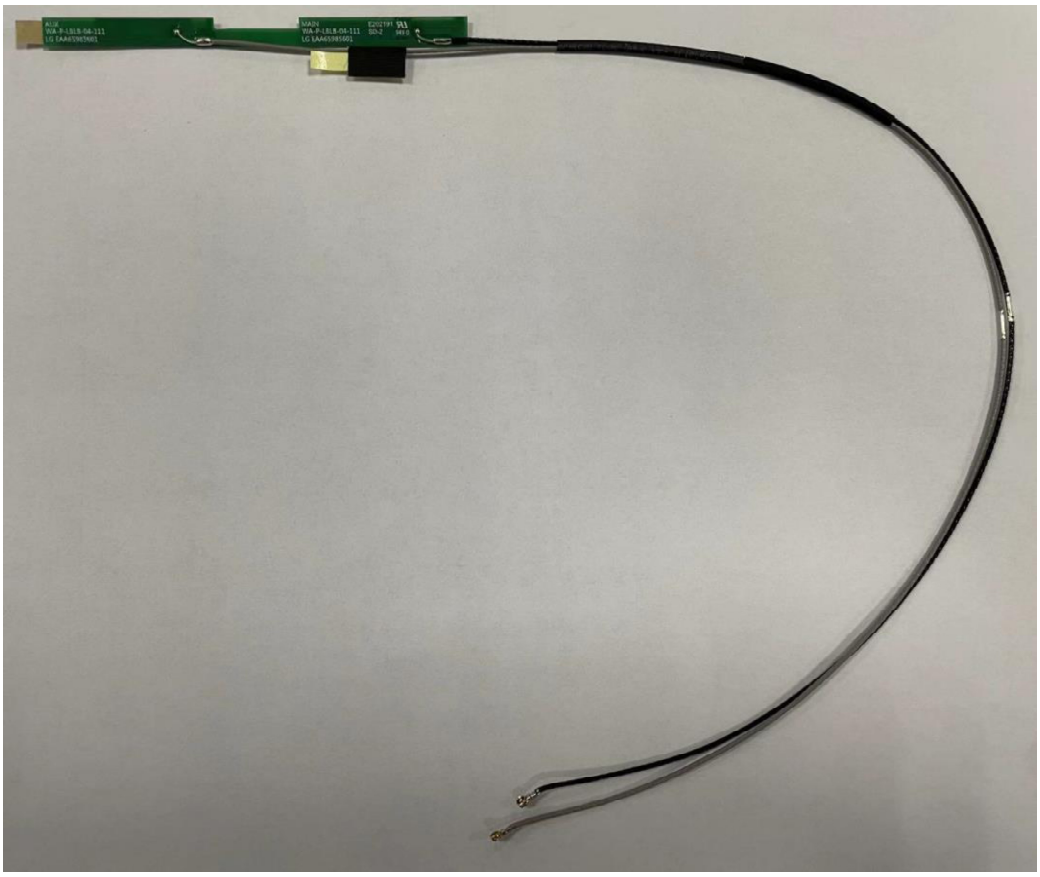
Material list ：

Item	Description	Material	Quantity
1	PCB	PCB T0.4 WA-P-LBLB-04-111	1
2	Acetate tape	Acetate tape 18x10mm, T0.12mm	1
3	Shrink Tube	Shrink Tube black, ∮1.5 x33.2mm	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
9	Acetate tape	醋酸布 28x10x0.08	1

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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