客戶名稱 . LG 17Z90

CUSTOMER

Document No.:_____

Approval Sheet Rev.:______

Spec. Rev. :_______
P1

承認書

APPROVAL SHEET

產品品名/Product Model No.: WA-P-LBLB-04-112

客戶料號/Customer No.: **EAA65985801**

專案名稱/Project Name: 17Z90SP

發行日期/ Issue Date: 2023/09/20

承認日期/ Approved Date:

Approved by customer: (signing or stamping here)



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I-FM-19-03

履历表

History List

版本	变更页次	变更内容	申请单位	申请人	变更日期
Version	Pages ofchange	Items of change	Applicant	Applicant	Modify date
			Department		
P0	所有页次	首次发行	研发	毕岩	2023. 08. 15
	ALL	First Release	RD	YAN. BI	
P1	所有页次	修改线长尺寸	研发	毕岩	2023. 09. 14
	ALL		RD	YAN. BI	
P2	所有页次	修改2D图档	研发	毕岩	2023. 09. 20
	ALL		RD	YAN. BI	

WA-P-LBLB-04-112 Specification

1. Explanation of part number :

- (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: 112

2. Storage Condition:

Temperature -40 to $+70^{\circ}$ C Humidity 20 to 65 %RH

3. Operating Condition:

Temperature -40 to $+70^{\circ}$ C Humidity 10 to 85 %RH

4. Electrical Specification:

Those specifications were specially defined for **LG** 17Z90SP 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

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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 $50\Omega coaxial$ cable is connected to the antenna. Then this cable is connected

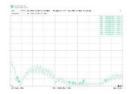
to a network analyzer to measure the VSWR

- 2.Keeping this jig away from metal at least 20cm
- 4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	3
	2400	≦ 3.0	1.6
Main	2500	≦ 3.0	1. 2
Antenna	5150	≦3.0	1. 2
	7125	≦3.0	1.6
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A	Access of the control	0.000	
Aux Antenna	2400	≦3.0	1.9
	2400 2500	≦3.0 ≦3.0	1.9 1.3







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4-5. Efficiency and Gain

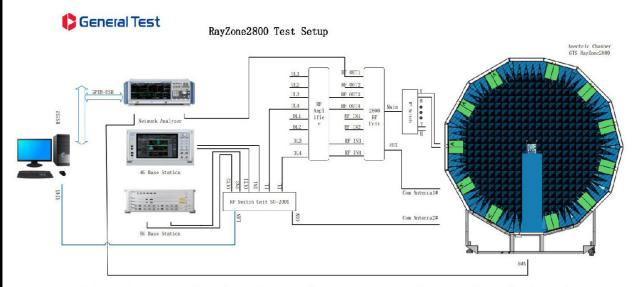
4-5.1 Measuring equipment

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 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

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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

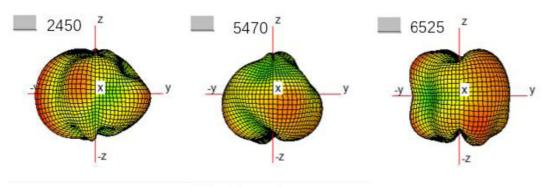
4-5.2-2 Efficiency and Gain Test Data

	Mair	Antenna	-3	Aux Antenna-3		
Frequency (MHz)	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)	Efficiency (%)	Gain w/ cable loss (dBi)	Peak Gain w/ cable loss (dBi)
2.4GHz (2400~2500MHz)	38.6	-4.1	2.1	35.7	-4.5	2.6
5.2&5.3GHz (5150~5350MHz)	34.4	-4.6	1.7	37.4	-4.3	2.8
5.5GHz (5470~5725MHz)	31.3	-5.0	2.4	37.1	-4.3	1.6
5.8GHz (5725~5850MHz)	35.6	-4.4	2.9	35.9	-4.4	2.3
6.2GHz (5925~6425MHz)	32.8	-4.2	0.8	38.5	-4.1	2.8
6.5GHz (6425~6525MHz)	30.9	-5.0	2.3	35.9	-4.4	2.2
6.7GHz (6525~6875MHz)	30.8	-5.1	2.9	35.8	-4.5	2.5
6.9GHz (6875~7125MHz)	28.4	-5.4	2.4	27.6	-5.6	-1.8

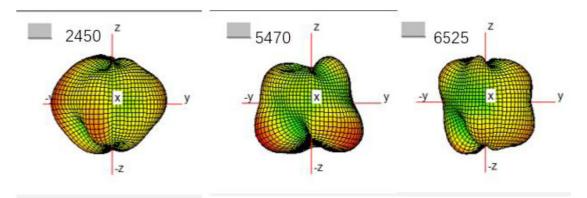
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4-5.2-3 Antenna 3D Radiation Pattern





AUX Antenna-3

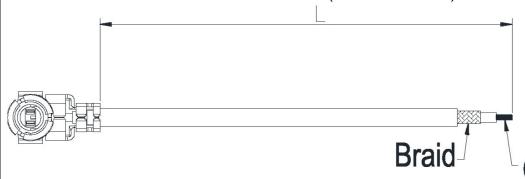


5. Mechanical Specification:

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

Cable length: Aux Antenna L: 324.5 ± 2mm(Include connector)

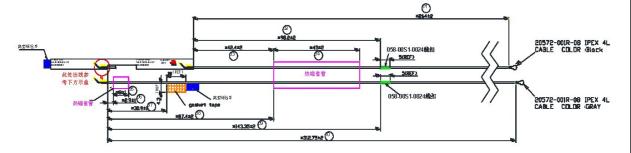
Main Antenna L:275.8 ± 2mm(Include connector)

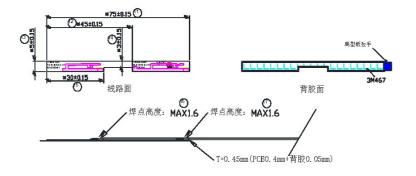


Core wire

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Mechanical Configuration:





Material list :

Item	Description	Material	Quantity
1	PCB	PCB T0.4 WA-P-LBLB-04-112	1
2	Acetate tape	Acetate tape 18x10mm, T0.12mm	1
3	Shrink Tube	Shrink Tube black, ∮ 1.5 x45mm	1
4	Shrink Tube	Shrink Tube black, ∮ 1.5 x8mm	1
5	Cable black	Cable 0.81 black	1
6	Cable gray	Cable 0.81 gray	1
7	Connector	I-PEX MHF 4L for 0.81, 20572	2
8	TAP	TAP 3M467 74x4mm	1
9	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	

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