

WA-P-LBLB-04-117 Specification

1. Explanation of part number:

WA - P - LBLB - 04 - 117
(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 ϕ 0.81 Main Black / AUX Gray

(5) Suffix: 117

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 17Z90R TC 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 = $\pm$		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DRAWN BY: 尹猛	CHECKED BY: 李志强		
DESIGNED BY: 刘海	APPROVED BY: 唐龙		
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO.	ENS000199790
		PAGE	REV. P1

4-2. Impedance

50ohm 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

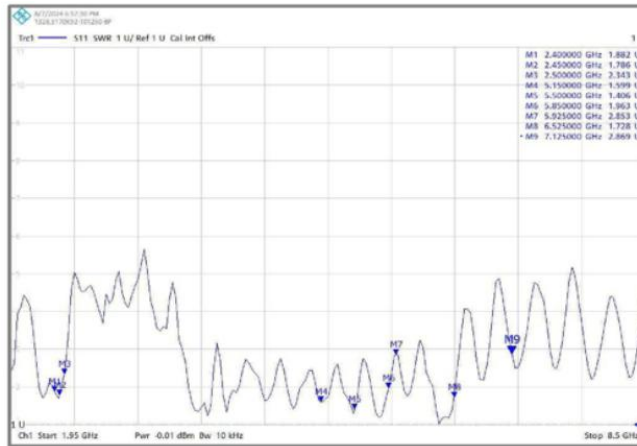
to a network analyzer to measure the VSWR

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

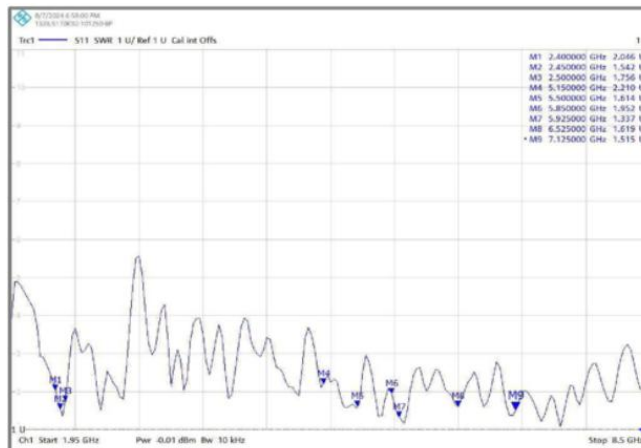
4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (MHz)	2400	2500	5150	5850	5925	7125
	Spec	≦ 3.0	≦ 3.0	≦ 4.0	≦ 4.0	≦ 5.5	≦ 5.5
Main Antenna	1#	1.8	2.3	1.5	1.9	2.8	2.8
	Judgement	ok	ok	ok	ok	ok	ok
AUX Antenna	1#	2.0	1.7	2.2	1.9	1.3	1.5
	Judgement	ok	ok	ok	ok	ok	ok

UNLESS OTHER SPECIFIED TOLERANCES ON :		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.
X = ±	X.X = ± X.XX = ±	
ANGLES = ±	HOLEDIA = ±	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY: 尹猛	CHECKED BY: 李志强	
DESIGNED BY: 刘海	APPROVED BY: 唐龙	
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO. ENS000199790
		PAGE REV. P1



Main Antenna-1



AUX Antenna-1

UNLESS OTHER SPECIFIED TOLERANCES ON :		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.	
X = ±	X.X = ±	X.XX = ±	
ANGLES = ±		HOLEDIA = ±	
SCALE :	UNIT : mm		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY: 尹猛	CHECKED BY: 李志强		
DESIGNED BY : 刘海	APPROVED BY : 唐龙		
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO.	ENS000199790
		PAGE REV. P1	

4-5. Efficiency and Gain

4-5.1 Measuring equipment

Measuring instrument:

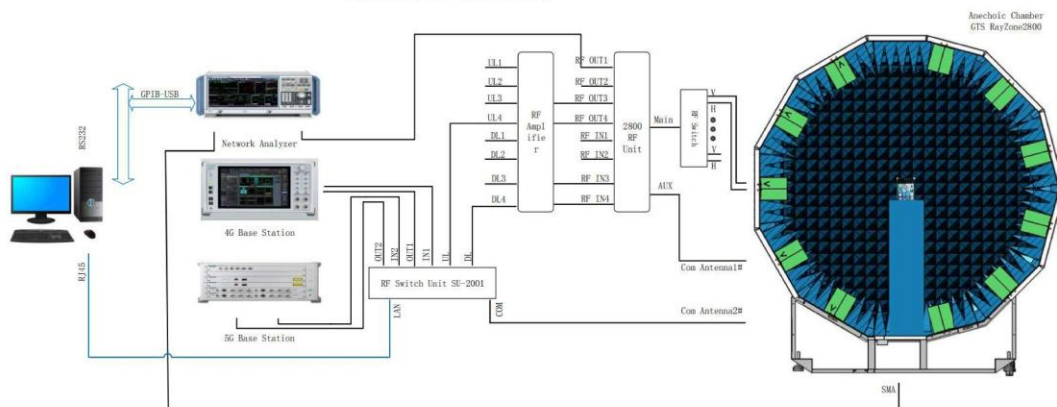
Microwave chamber, Network analyzer, and standard antenna.

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 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

UNLESS OTHER SPECIFIED TOLERANCES ON :		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.
X = ±	X.X = ± X.XX = ±	
ANGLES = ±	HOLEDIA = ±	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY: 尹猛	CHECKED BY: 李志强	
DESIGNED BY: 刘海	APPROVED BY: 唐龙	
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO. ENS000199790 PAGE REV. P1

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

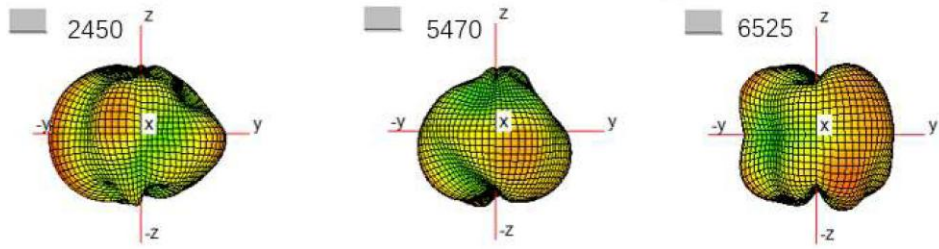
4-5-2-2 Efficiency and Gain Test Data

Frequency (MHz)	Main Antenna-1			Frequency (MHz)	Aux Antenna-1		
	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)	40%	-4	2.4	2.4GHz (2400~2500MHz)	43%	-3.7	2.2
5.2&5.3GHz (5150~5350MHz)	38%	-4.2	1.6	5.2&5.3GHz (5150~5350MHz)	37%	-4.3	1.2
5.5GHz (5470~5725MHz)	41%	-3.9	1.3	5.5GHz (5470~5725MHz)	38%	-4.2	0.7
5.8GHz (5725~5850MHz)	37%	-4.3	2.1	5.8GHz (5725~5850MHz)	40%	-4	1.5
5.9GHz (5850~5900MHz)	34%	-4.7	1.6	5.9GHz (5850~5900MHz)	38%	-4.2	1.6
6.2GHz (5925~6425MHz)	34%	-4.7	1.5	6.2GHz (5925~6425MHz)	36%	-4.4	1.5
6.5GHz (6425~6525MHz)	32%	-4.9	1.4	6.5GHz (6425~6525MHz)	34%	-4.7	1.4
6.7GHz (6525~6875MHz)	36%	-4.4	1	6.7GHz (6525~6875MHz)	33%	-4.8	1.3
6.9GHz (6875~7125MHz)	39%	-4.1	1.2	6.9GHz (6875~7125MHz)	36%	-4.4	2.1

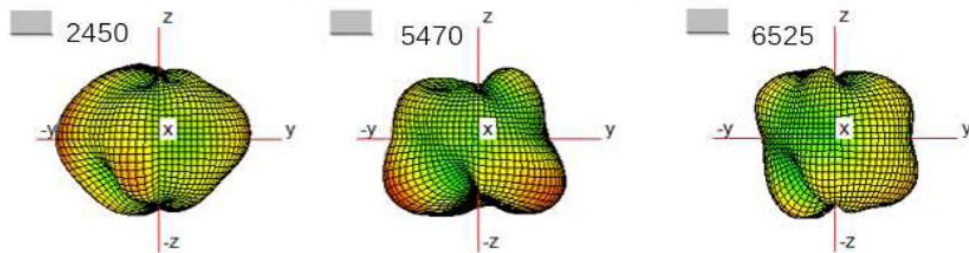
UNLESS OTHER SPECIFIED TOLERANCES ON :		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.
X = ±	X.X = ± X.XX = ±	
ANGLES = ±	HOLEDIA = ±	
SCALE :	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY: 尹猛	CHECKED BY: 李志强	
DESIGNED BY: 刘海	APPROVED BY: 唐龙	
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO. ENS000199790 PAGE REV. P1

4-5.2-3 Antenna 3D Radiation Pattern

Main Antenna-1



AUX Antenna-1



5. Mechanical Specification:

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

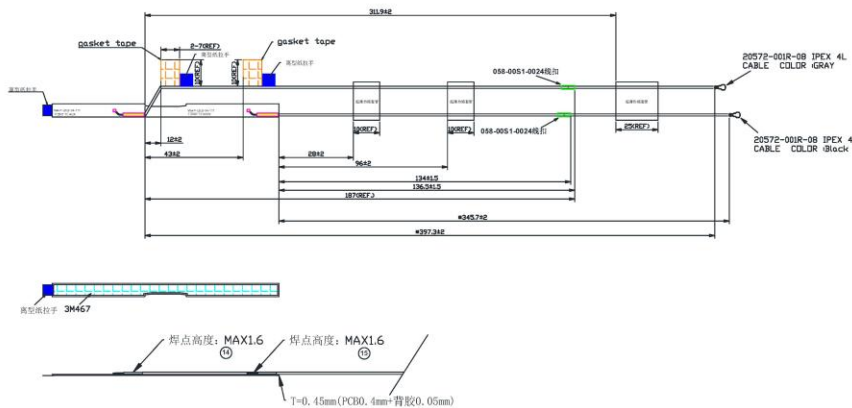
Cable length: Aux Antenna L: $361.1 \pm 2\text{mm}$ (Include connector)

Main Antenna L: $412.7 \pm 2\text{mm}$ (Include connector)



UNLESS OTHER SPECIFIED TOLERANCES ON :		 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.	
X = ±	X.X = ±	X.XX = ±	
ANGLES = ±		HOLEDIA = ±	
SCALE :	UNIT : mm		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY: 尹猛	CHECKED BY: 李志强		
DESIGNED BY : 刘海	APPROVED BY : 唐龙		
TITLE : WA-P-LBLB-04-117 Specification		DOCUMENT NO.	ENS000199790
		PAGE	REV. P1

Mechanical Configuration:



Note:

1. 外观标准依照INPAQ《PCB通用检验标准》：
需完整无缺损，不可有脏污、污渍、漏铜、气泡、毛边等情形。
2. 工程图上“ Φ ”为CPK 控制尺寸，“ Φ ”为导入到检验尺寸，“ $\square$ ”球标为全尺寸检验指示。
3. 产品符合RoHS2.0+HF+TSCA+REACH要求。符合采拓 (I-WI-21-01 HSF 控制清单)。

Material list :

Item	Description	Material	Quantity
1	PCB	PCB T0.4 WA-P-LBLB-04-117	1
2	Acetate tape	Acetate tape 21x7mm, T0.12mm	2
3	Shrink Tube	Shrink Tube black, ⌀ 1.5 x10mm	2
4	Shrink Tube	Shrink Tube black, ⌀ 1.5 x25mm	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 84.5x4mm	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

UNLESS OTHER SPECIFIED TOLERANCES ON :

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

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



佳邦科技股份有限公司

INPAQ TECHNOLOGY CO., LTD.

SCALE :	UNIT : mm
---------	-----------

UNIT : mm

DRAWN BY: 尹猛

UNIT : mm

DRAWN BY: 尹猛

DRAWN BY: 尹猛

CHECKED BY: 李志强

CHECKED BY: 李志强

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

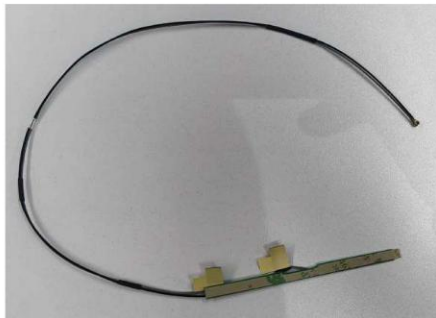
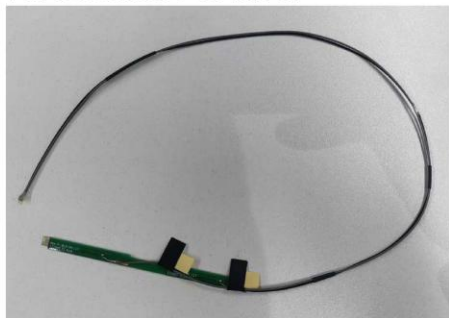
DOCUMENT NO.	
--------------	--

ENS000199790

PAGE	REV.
------	------

P1

7.Product Picture:



UNLESS OTHER SPECIFIED TOLERANCES ON :			 佳邦科技股份有限公司 INPAQ TECHNOLOGY CO., LTD.		
X = ± X.X = ± X.XX = ±					
ANGLES = ± HOLEDIA = ±					
SCALE :		UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION		
DRAWN BY: 尹猛		CHECKED BY: 李志强			
DESIGNED BY : 刘海		APPROVED BY : 唐龙			
TITLE : WA-P-LBLB-04-117 Specification			DOCUMENT NO.	ENS000199790	PAGE REV
					P1