

WA-P-LELE-04-070 Specification

1. Explanation of part number :

WA - P - LELE - 04 - 070
(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 ϕ 0.81 Main Black / AUX Gray

(5) Suffix : 070

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 16Z90T 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 & 5150~5850 & 5925~7125

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DESIGNED BY : 刘海	APPROVED BY : 唐龙		
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4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

4-4. VSWR

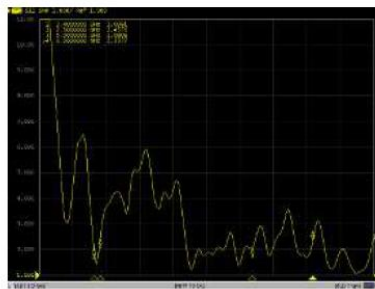
4-4.1 Measuring Method

- 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

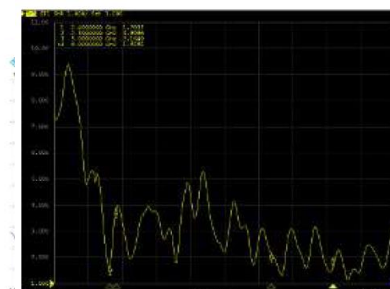
4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	1
Main Antenna	2400	≤ 3.0	2.0
	2500	≤ 3.5	2.4
	5000	≤ 3.0	2.0
	6000	≤ 4.0	2.3
	Judgement		ok
Aux Antenna	2400	≤ 3.0	1.7
	2500	≤ 4.5	3.8
	5000	≤ 3.0	2.1
	6000	≤ 3.0	1.6
	Judgement		ok

Main Antenna-1



AUX Antenna-1



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4-5. Efficiency and Gain

4-5.1 Measuring equipment

Measuring instrument:

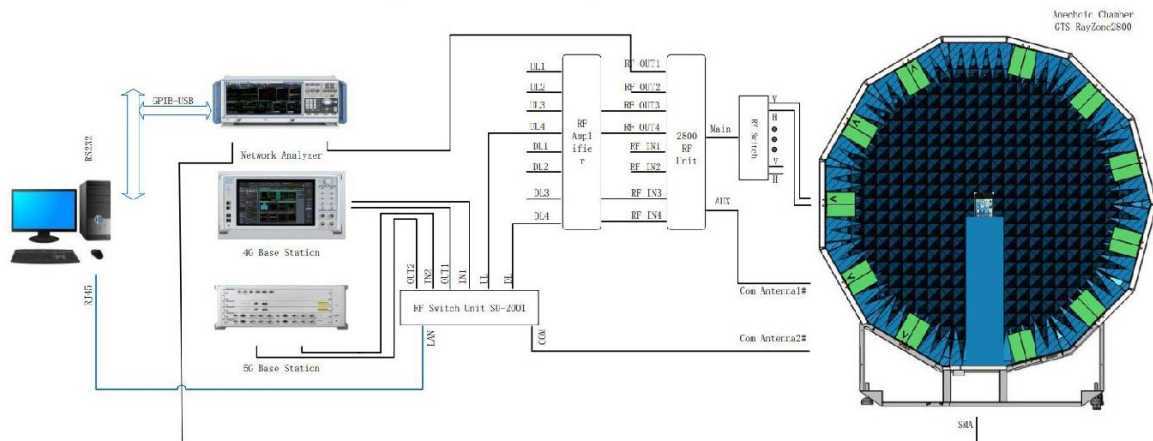
Microwave chamber, Network analyzer, and standard antenna.

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.




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

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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

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)	43%	-3.7	2.1	2.4GHz (2400~2500MHz)	42%	-3.8	2.5
5.2&5.3GHz (5150~5350MHz)	38%	-4.2	1.5	5.2&5.3GHz (5150~5350MHz)	33%	-4.8	0.8
5.5GHz (5470~5725MHz)	35%	-4.6	0.9	5.5GHz (5470~5725MHz)	32%	-4.9	1.1
5.8GHz (5725~5850MHz)	36%	-4.4	1.8	5.8GHz (5725~5850MHz)	36%	-4.4	1.5
5.9GHz (5850~5900MHz)	38%	-4.2	1.8	5.9GHz (5850~5900MHz)	37%	-4.3	1.7
6.2GHz (5925~6425MHz)	41%	-4.4	1.7	6.2GHz (5925~6425MHz)	40%	-4	1.9
6.5GHz (6425~6525MHz)	34%	-3.9	0.9	6.5GHz (6425~6525MHz)	38%	-4.2	1.4
6.7GHz (6525~6875MHz)	39%	-4.1	1.5	6.7GHz (6525~6875MHz)	37%	-4.3	2
6.9GHz (6875~7125MHz)	35%	-4.6	1.4	6.9GHz (6875~7125MHz)	41%	-3.9	1.8

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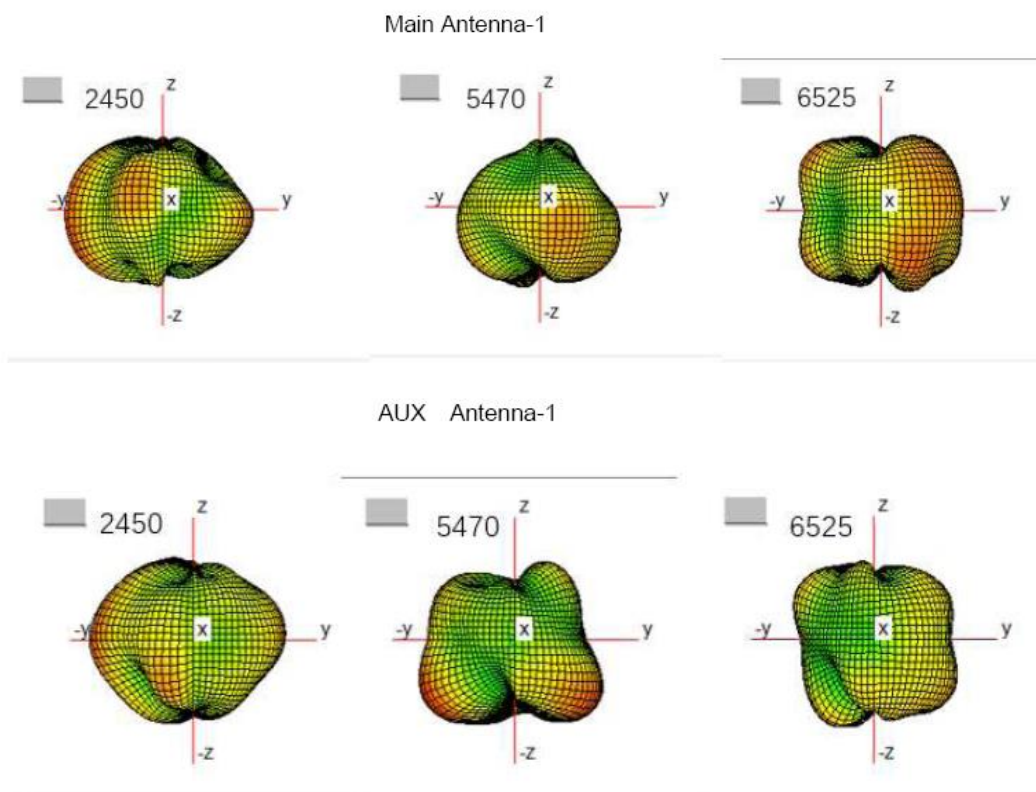
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4-5.2-3 Antenna 3D Radiation Pattern




5. Mechanical Specification:

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

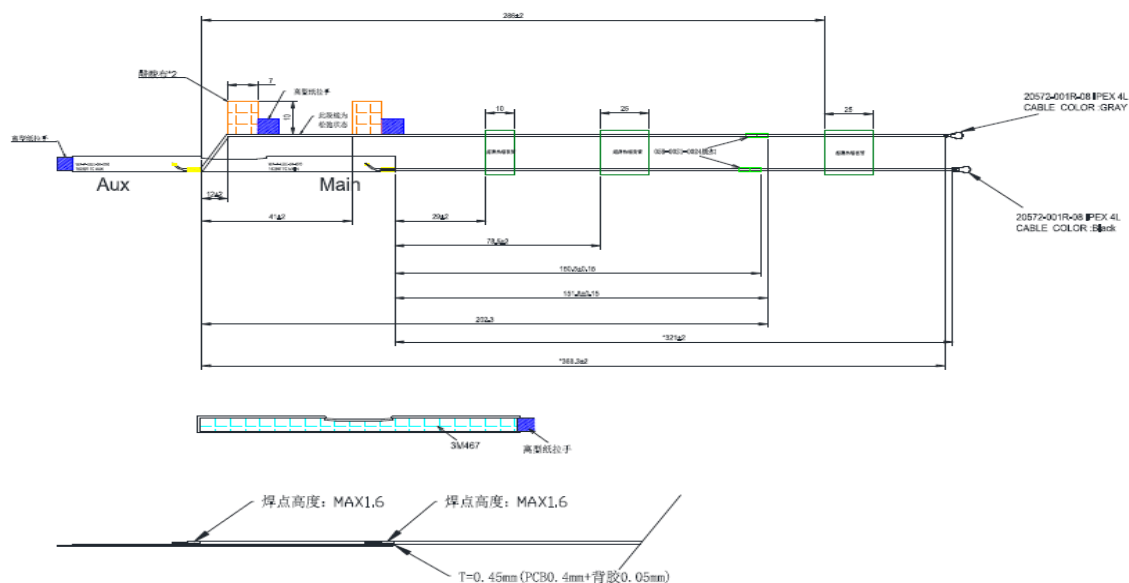
Cab Cable length: Aux Antenna L: 375.9±2mm(Include connector)

Main Antenna L:328.6±2mm(Include connector)



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Mechanical Configuration:



Material list :

Item	Description	Material	Quantity
1	PCB	PCB WA-P-LELE-04-070	1
2	Acetate tape	Acetate tape 21x7mm, T0.12mm	2
3	Shrink Tube 1	Shrink Tube black, \$ 1.5 x10mm	1
4	Shrink Tube 2	Shrink Tube black, \$ 1.5 x25mm	2
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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