

**TP-LINK®**

# Antenna Specification



Product Number: 3101504943

Product Name: Antenna

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Product Number: 3101504943

Product Name: Antenna

**TP-LINK®**

## Specification For Approval

Date: \_\_\_\_\_

File No. : \_\_\_\_\_

Version: 1.0

Customer: \_\_\_\_\_ / \_\_\_\_\_

Customer P/N : \_\_\_\_\_ / \_\_\_\_\_

TP-LINK P/N: 3101504943

Description: Antenna|2.4-2.5GHz&5.15-5.85GHz|1.0dBi&1.0dBi|LP|Omni|2W|I-PEX|100

mm|D1.37mm|无|无||3030-JI100Rev1.0sp1|无|不防水||内置贴壳天线/用于  
PX50 机型/自制件/灰色线]

**TP-LINK Checked By:**

**Customer Approved By:**

**TP-LINK®**

**TP-LINK TECHNOLOGIES CO., LTD.**

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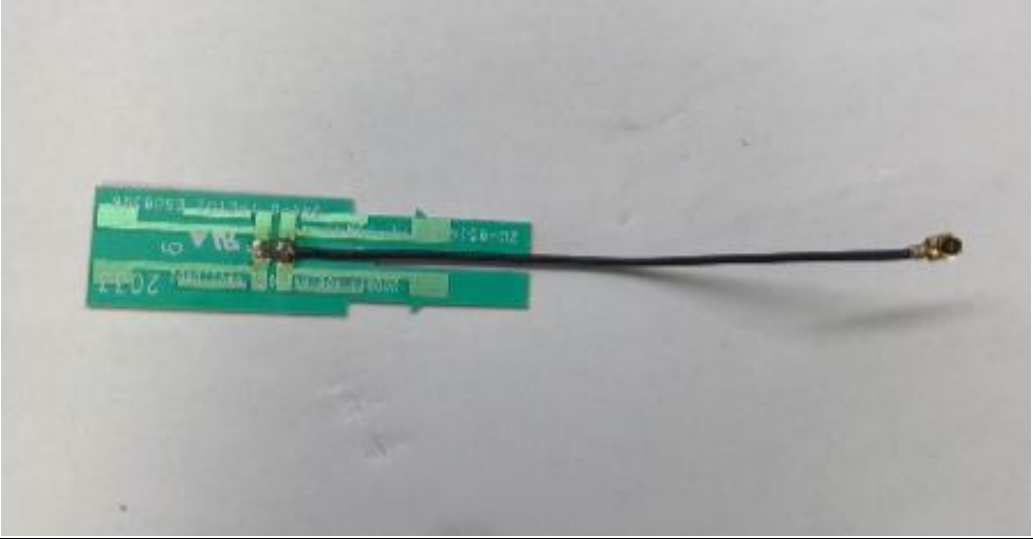
+ 86 755 26504400

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## Index

I. Specification.....	1
II. Characteristics and Reliability Test.....	1
III. Mechanical Drawing and Material Description .....	3
IV. RoHS Test Report .....	4
V. Antenna – S Parameter Test Data.....	5
VI. Antenna – Radiation Pattern Test Data .....	5
VII. Packing Drawing .....	8

## I. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400~2500MHz&5150~5850MHz
Impedance	50 Ohm
S.W.R.	<= 2.0
Antenna Type	Dipole
Antenna Gain	1.0dBi@2.4-2.5GHz&1.0dBi@5.15-5.85GHz
Max Input Power	2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Cable Type	O.D. 1.37mm (Grey)
Connector Type	I-PEX
Connector Pull Test	3Kg
C. Environmental	
Operation Temperature	- 40°C ~ + 65°C
Storage Temperature	- 40°C ~ + 70°C

## II. Characteristics and Reliability Test

Test Items	Test Condition and Procedure	Requirements
C1   S.W.R.	Set DUT on Network Analyzer;	Directive DUT specification

Product Number: 3101504943

Product Name: Antenna



		make individual calibration to test	
<b>C2</b>	<b>Antenna Gain</b>	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
<b>M1</b>	<b>Vibration</b>	MIL-STD-202G, 201 A Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<=5%
<b>M2</b>	<b>Random Drop</b>	Height: 1.5 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<=5%
<b>M3</b>	<b>Drop Test</b>	Combine DUT with router; Height: 0.6 Meter; 1 direction; 3 times for the direction	1. No parts separated 2. Frequency Tol.<=5%
<b>M4</b>	<b>Solderability</b>	MIL-STD-202G, 210F, cond. A Solder iron: 350+- 10°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
<b>M5</b>	<b>Terminal- Pull Test</b>	MIL-STD-202G, 211A, cond. A Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<=5%
<b>M6</b>	<b>Bend Test</b>	3 angles: 0° ,45° ,90° .100 times for each angle	1. No Visual Damage 2. No Obvious shake
<b>M7</b>	<b>Dimension</b>	Inspection of dimension, color, material, package, surface process	Directive DUT specification
<b>E1</b>	<b>Salt Spray</b>	SE-GS-90T Temp: 35°C; RH: 93%±3%; NaCl solution proportion: 1.026 ~ 1.041; Time:12 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%
<b>E2</b>	<b>Thermal Shock</b>	1Cycle: -40°C (30 minutes) to +70°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%
<b>E3</b>	<b>Life (HighTemp.)</b>	MIL-STD-202G,108A, cond. A Temp: 70°C; Time: 8 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%

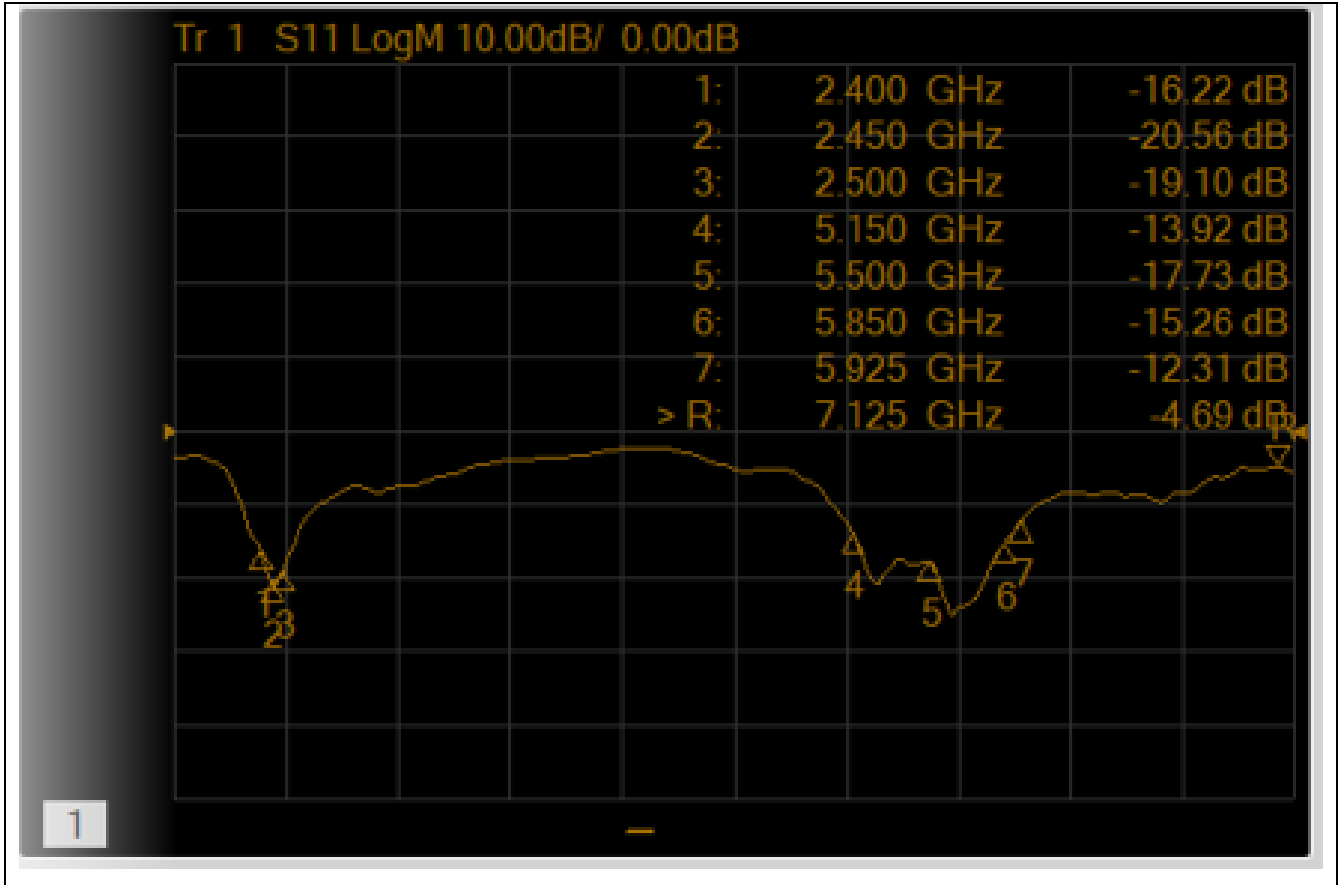
### **III. Mechanical Drawing and Material Description**

**IV. RoHS Test Report**

NO.	Product Model	Constituents	Material	Test Result for RoHS-corresponding Substance						PFOS	Halogen				Series No.	Date	Title	Test Agent	
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	PFOS	F	Cl	Br	I					
1	205150032	PCB	PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					SHAEC1200879510	2014/02/12	板材	SGS	
			RS-2000 BGL	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		135	256	N.D.	N.D.	RSH03G002208001C	2014/04/24	防焊油墨	CTI
			2M-400WF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		148	124	N.D.	N.D.	CE/2014/80454	2014/08/12	文字油墨	SGS
			OSP F-005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						CANEC1404310001	2014/04/08	OSP 药水	CTI
2	6141501507	Body1	TPEE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					CE/2014/C1826	2014/12/09	杆套	SGS		
3	6141501029	Hinge Pin	PA+GF	16	N.D.	N.D.	N.D.	N.D.	N.D.					RLSZE001282400001	2012/05/17	PA66-G30	CTI		
4	6142503361	Body2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					SHAEC1200148411	2012/01/09	ABS	上海 SGS		
5	6141501809	Body3	PC		N.D.		N.D.					N.D.	N.D.	GZ1106084755	2011.07.05	PC S-2000VR	广州 SGS		
6	3110500039	RFConnector	Gold plating	N.D.	N.D.	N.D.	Negative			Negative				CE/2015/32675	2015/03/10	Plug Housing	SGS		
			PBT	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	Negative	1110	N.D.	N.D.	N.D.	CE/2014/B2826	2014/11/18	Plug Housing	SGS	
			Phosphor Bronze	N.D.	N.D.	N.D.	Negative			Negative					CE/2015/30055	2015/03/02	Plug Housing	SGS	
7	3120500194	Cable	Inner conductor	N.D.	46.	N.D.	Negative	N.D.	N.D.	N.D.					SHAEC1507036516	2015/4/28	Cable	SGS 上海	
			Insulation	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	>100000	N.D.	N.D.	N.D.	SHAEC1500664111	2015/1/21	Cable	SGS 上海	
			Outer conductor	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1420243205	2014/12/11	Cable	广州SGS	
			mesh	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ECL03G00367502E	2014/12/15	Cable	CTI	
			jacket	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	>100000	N.D.	N.D.	N.D.	SHAEC1500664109	2015/1/21	Cable	SGS 上海
			FEP color Masterbatch(black)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		>100000	N.D.	N.D.	N.D.	SHAEC1503900602	2015/03/18	Cable	SGS 上海	



**V. Antenna – S Parameter Test Data**

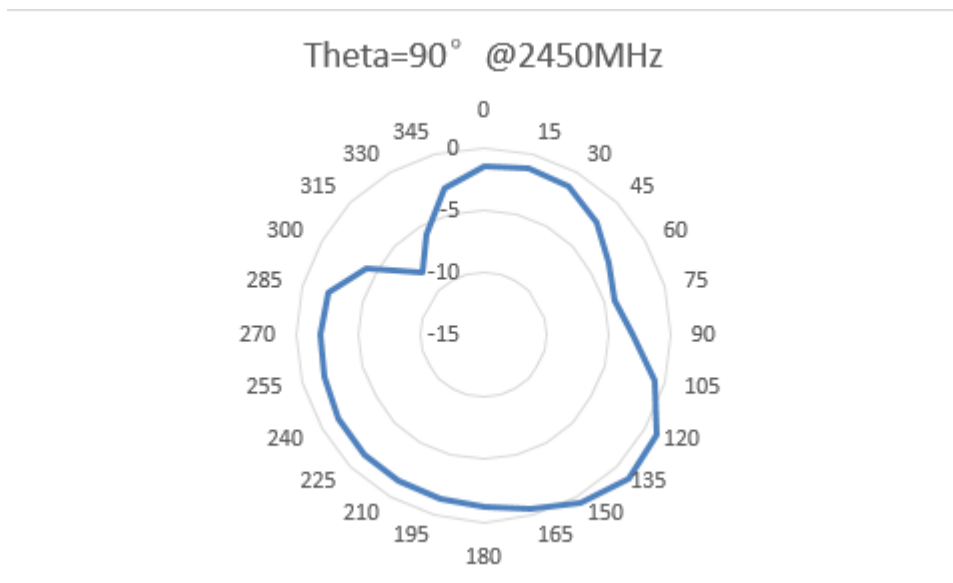


**VI. Antenna – Radiation Pattern Test Data**

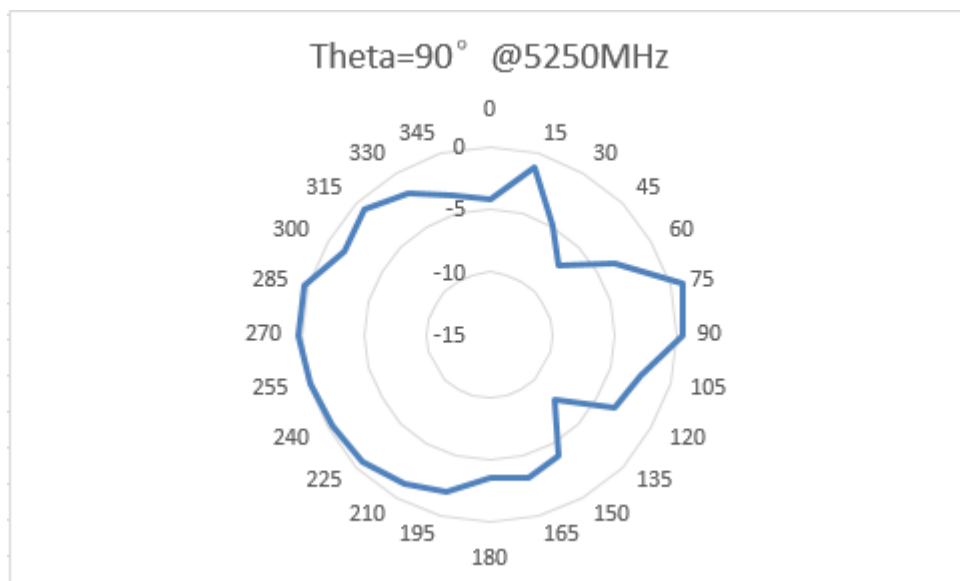
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain(dBi)	0.61	0.74	0.84	0.79	0.02	1.00	0.56	0.36	0.84	0.20	0.31
Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Gain(dBi)	0.38	0.49	0.50	0.27	0.65	0.81	0.73	1.00	0.55	0.60	0.47
Freq(MHz)	5700	5750	5800								
Gain(dBi)	0.48	0.98	0.35								

Theta=90° @2450MHz



Theta=90° @5250MHz

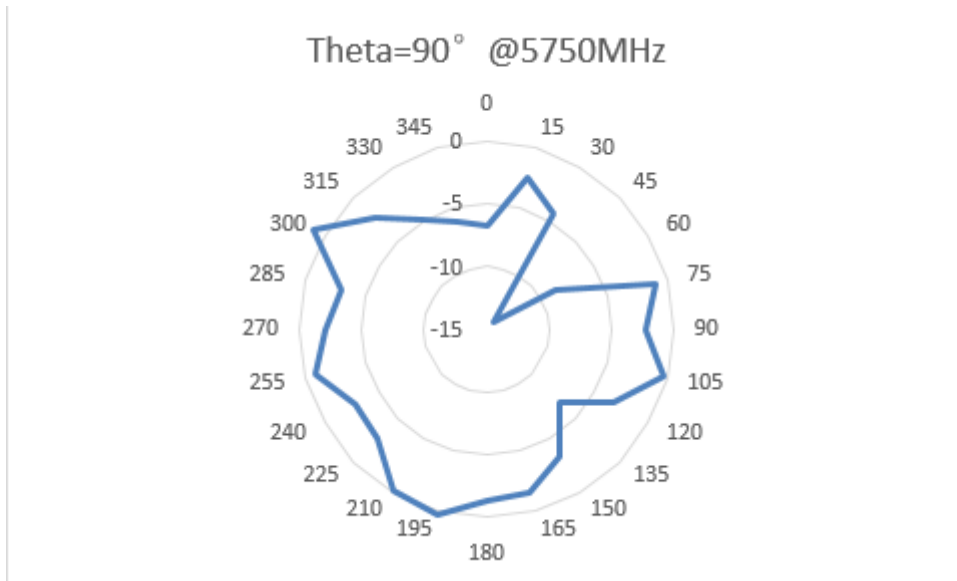


Theta=90° @5750MHz

Product Number: 3101504943

Product Name: Antenna

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## VII. Packing Drawing

i . Put ANT into Plastic Tray (800PCS/ BPX) (仅作装箱说明)



200PCS/bag

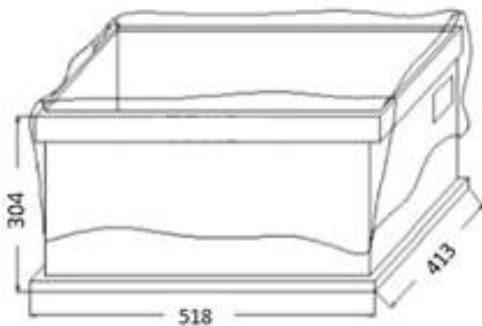
ii. Packing



10Bags, 2000PCS/Box

MO:		P/N:	ROHS
Specification:			
Quantity:	(PCS)	G.W:	(Kg)
Date:			
Manufacturer:	Cable manufacturing department		

iii.Sealing



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# Antenna Specification



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## Specification For Approval

Date: \_\_\_\_\_

File No. : \_\_\_\_\_

Version: 1.0

Customer: \_\_\_\_\_ / \_\_\_\_\_

Customer P/N : \_\_\_\_\_ / \_\_\_\_\_

TP-LINK P/N: 3101504944

Description: Antenna|2.4-2.5GHz&5.15-5.85GHz|1.0dBi&1.0dBi|LP|Omni|2W|I-PEX|160

mm|D1.37mm|无|无||3030-JI160Rev1.0sp1|无|不防水|内置贴壳天线/用于  
PX50 机型/自制件/黑色线]

**TP-LINK Checked By:**

**Customer Approved By:**

**TP-LINK®**

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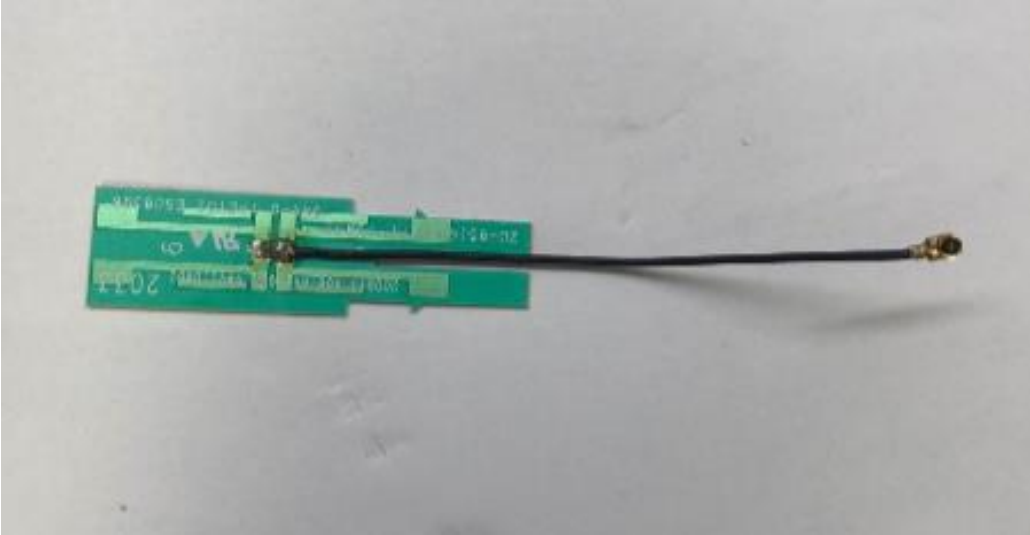
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## Index

I. Specification.....	1
II. Characteristics and Reliability Test.....	1
III. Mechanical Drawing and Material Description .....	3
IV. RoHS Test Report .....	4
V. Antenna – S Parameter Test Data.....	5
VI. Antenna – Radiation Pattern Test Data .....	5
VII. Packing Drawing .....	8



## I. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400~2500MHz&5150~5850MHz
Impedance	50 Ohm
S.W.R.	<= 2.0
Antenna Type	Dipole
Antenna Gain	1.0dBi@2.4-2.5GHz&1.0dBi@5.15-5.85GHz
Max Input Power	2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Cable Type	O.D. 1.37mm (Black)
Connector Type	I-PEX
Connector Pull Test	3Kg
C. Environmental	
Operation Temperature	- 40°C ~ + 65°C
Storage Temperature	- 40°C ~ + 70°C

## II. Characteristics and Reliability Test

Test Items	Test Condition and Procedure	Requirements
C1   S.W.R.	Set DUT on Network Analyzer;	Directive DUT specification

Product Number: 3101504944

Product Name: Antenna

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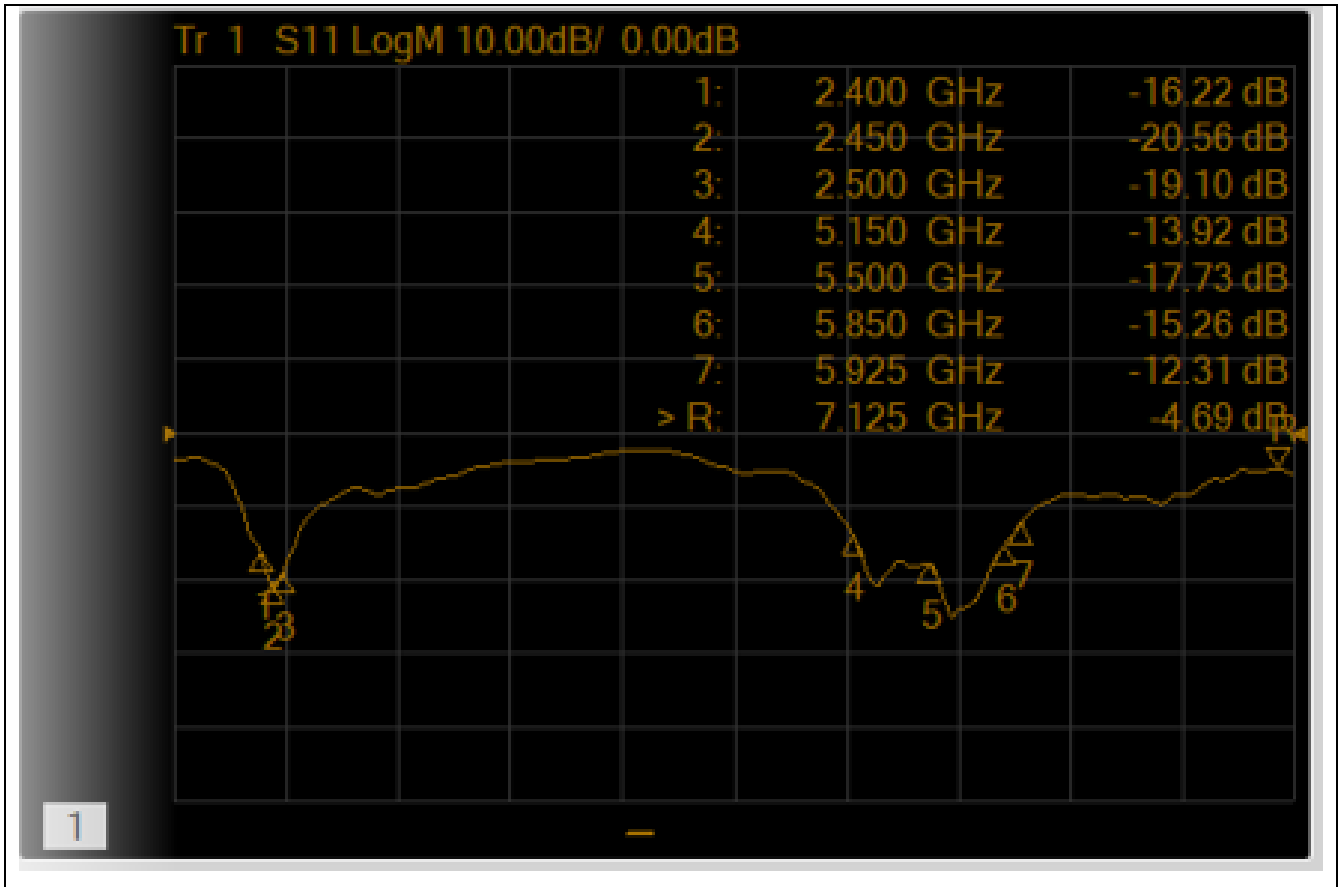
		make individual calibration to test	
<b>C2</b>	<b>Antenna Gain</b>	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
<b>M1</b>	<b>Vibration</b>	MIL-STD-202G, 201 A Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<=5%
<b>M2</b>	<b>Random Drop</b>	Height: 1.5 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<=5%
<b>M3</b>	<b>Drop Test</b>	Combine DUT with router; Height: 0.6 Meter; 1 direction; 3 times for the direction	1. No parts separated 2. Frequency Tol.<=5%
<b>M4</b>	<b>Solderability</b>	MIL-STD-202G, 210F, cond. A Solder iron: 350+- 10°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
<b>M5</b>	<b>Terminal- Pull Test</b>	MIL-STD-202G, 211A, cond. A Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<=5%
<b>M6</b>	<b>Bend Test</b>	3 angles: 0° ,45° ,90° .100 times for each angle	1. No Visual Damage 2. No Obvious shake
<b>M7</b>	<b>Dimension</b>	Inspection of dimension, color, material, package, surface process	Directive DUT specification
<b>E1</b>	<b>Salt Spray</b>	SE-GS-90T Temp: 35°C; RH: 93%±3%; NaCl solution proportion: 1.026 ~ 1.041; Time:12 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%
<b>E2</b>	<b>Thermal Shock</b>	1Cycle: -40°C (30 minutes) to +70°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%
<b>E3</b>	<b>Life (HighTemp.)</b>	MIL-STD-202G,108A, cond. A Temp: 70°C; Time: 8 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<=5%

### **III. Mechanical Drawing and Material Description**

**IV. RoHS Test Report**

NO.	Product Model	Constituents	Material	Test Result for RoHS-corresponding Substance						PFOS	Halogen				Series No.	Date	Title	Test Agent
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	PFOS	F	Cl	Br	I				
1	205150032	PCB	PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					SHAEC1200879510	2014/02/12	板材	SGS
			RS-2000 BGL	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		135	256	N.D.	N.D.	RSH03G002208001C	2014/04/24	防焊油墨	CTI
			2M-400WF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		148	124	N.D.	N.D.	CE/2014/80454	2014/08/12	文字油墨	SGS
			OSP F-005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						CANEC1404310001	2014/04/08	OSP 药水	CTI
2	6141501507	Body1	TPEE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					CE/2014/C1826	2014/12/09	杆套	SGS	
3	6141501029	Hinge Pin	PA+GF	16	N.D.	N.D.	N.D.	N.D.	N.D.					RLSZE001282400001	2012/05/17	PA66-G30	CTI	
4	6142503361	Body2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.					SHAEC1200148411	2012/01/09	ABS	上海 SGS	
5	6141501809	Body3	PC		N.D.		N.D.					N.D.	N.D.	GZ1106084755	2011.07.05	PC S-2000VR	广州 SGS	
6	3110500039	RFConnector	Gold plating	N.D.	N.D.	N.D.	Negative			Negative					CE/2015/32675	2015/03/10	Plug Housing	SGS
			PBT	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	Negative	1110	N.D.	N.D.	N.D.	CE/2014/B2826	2014/11/18	Plug Housing	SGS
			Phosphor Bronze	N.D.	N.D.	N.D.	Negative			Negative					CE/2015/30055	2015/03/02	Plug Housing	SGS
7	3120500194	Cable	Inner conductor	N.D.	46.	N.D.	Negative	N.D.	N.D.	N.D.					SHAEC1507036516	2015/4/28	Cable	SGS 上海
			Insulation	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	>100000	N.D.	N.D.	N.D.	SHAEC1500664111	2015/1/21	Cable	SGS 上海
			Outer conductor	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1420243205	2014/12/11	Cable	广州SGS
			mesh	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ECL03G00367502E	2014/12/15	Cable	CTI
			jacket	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	>100000	N.D.	N.D.	N.D.	SHAEC1500664109	2015/1/21	Cable
			FEP color Masterbatch(black)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.		>100000	N.D.	N.D.	N.D.	SHAEC1503900602	2015/03/18	Cable	SGS 上海

**V. Antenna – S Parameter Test Data**

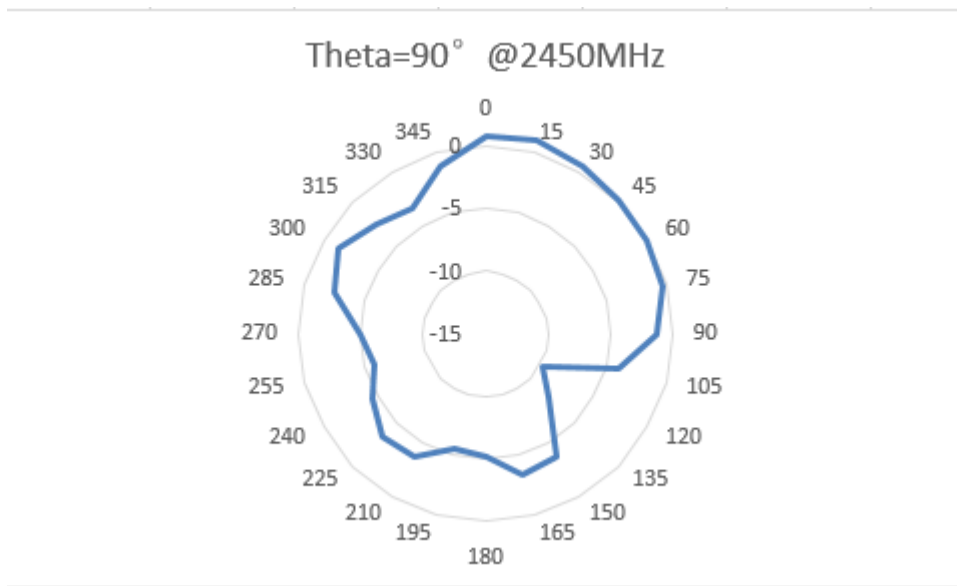


**VI. Antenna – Radiation Pattern Test Data**

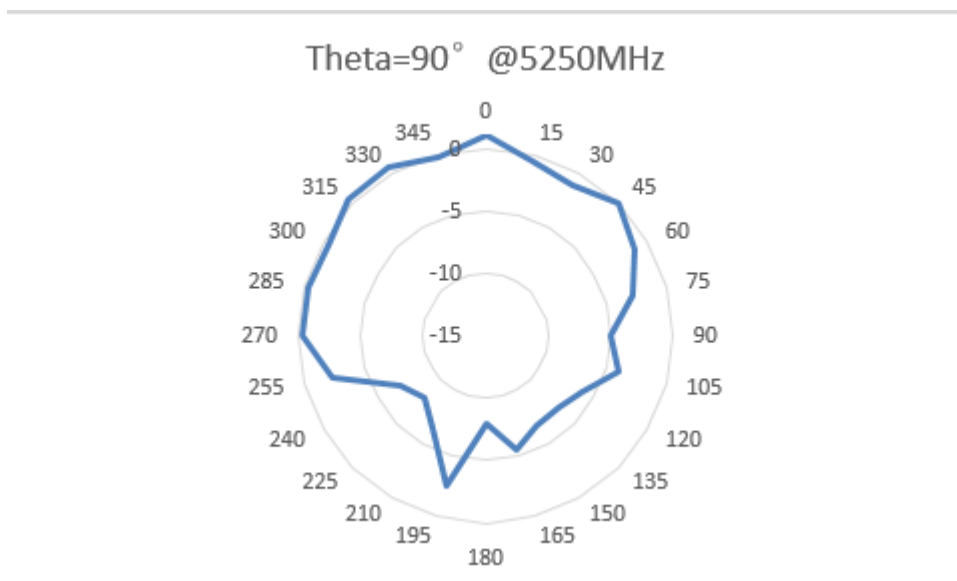
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain(dBi)	0.78	0.94	0.48	0.46	0.25	1.00	0.89	0.56	0.73	0.29	0.68
Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Gain(dBi)	0.78	0.56	0.97	0.35	0.36	0.96	0.74	1.00	0.86	0.37	0.93
Freq(MHz)	5700	5750	5800								
Gain(dBi)	0.34	0.84	0.58								

Theta=90° @2450MHz



Theta=90° @5250MHz

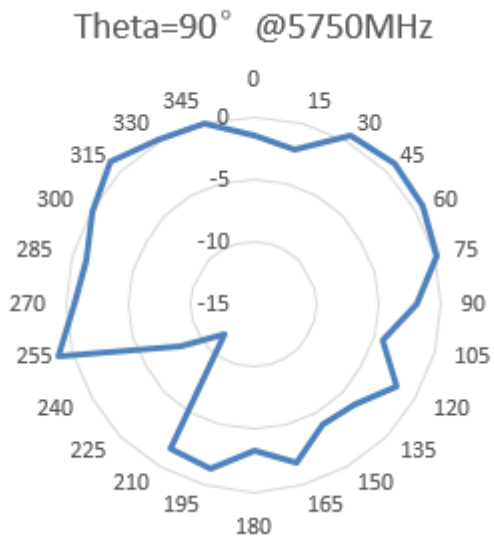


Theta=90° @5750MHz

Product Number: 3101504944

Product Name: Antenna

**TP-LINK®**



## VII. Packing Drawing

i . Put ANT into Plastic Tray (800PCS/ BPX) (仅作装箱说明)



200PCS/bag

ii. Packing



10Bags, 2000PCS/Box

MO:		P/N:	ROHS
Specification:			
Quantity:	(PCS)	G.W:	(Kg)
Date:			
Manufacturer:	Cable manufacturing department		

iii.Sealing

