

**TP-LINK®**

# Antenna Specification



Product Number: 3101504783

Product Name: Antenna

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<http://www.tp-link.com>

Product Number: 3101504783

Product Name: Antenna

**TP-LINK®**

## Specification For Approval

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504783

Description:

Antenna|2.4-2.5GHz&5.15-5.85GHz|2.0dBi&1.0dBi|LP|Omni|2W|I-PEX|140  
mm|D1.37mm|Deco X80|无||3045-J1140REV1.0|绿色|否|[灰色线/自制件]

**TP-LINK Checked By:**

**Customer Approved By:**

**TP-LINK®**

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

South Buiding, No.5 Keyuan Road,  
Central Zone, Science&Technology Park,  
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[http:// www.tp-link.com](http://www.tp-link.com)

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## 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	2.0dBi & 1.0dBi
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 (Gray)
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; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification

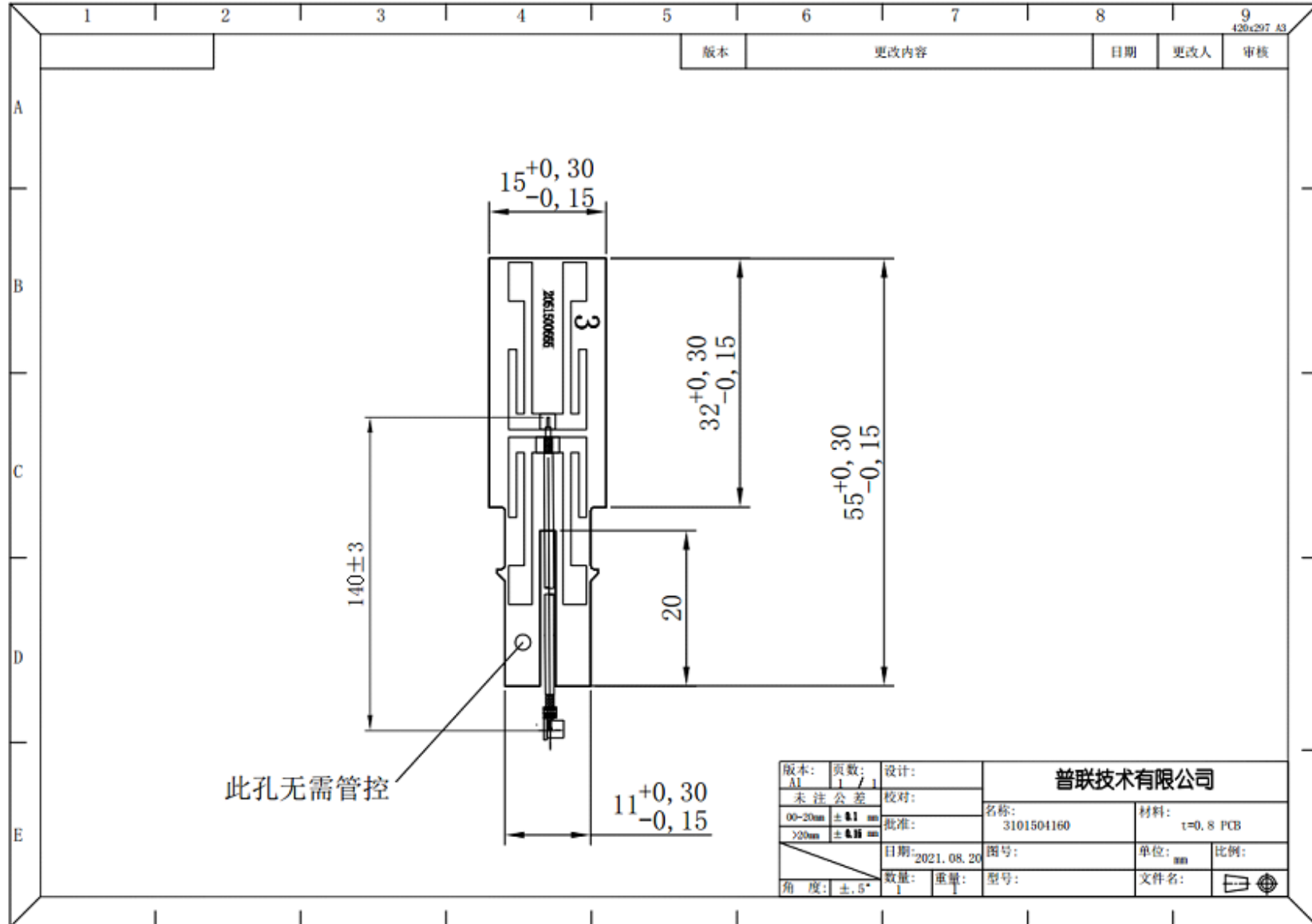
Product Number: 3101504783

Product Name: Antenna

**TP-LINK®**

<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

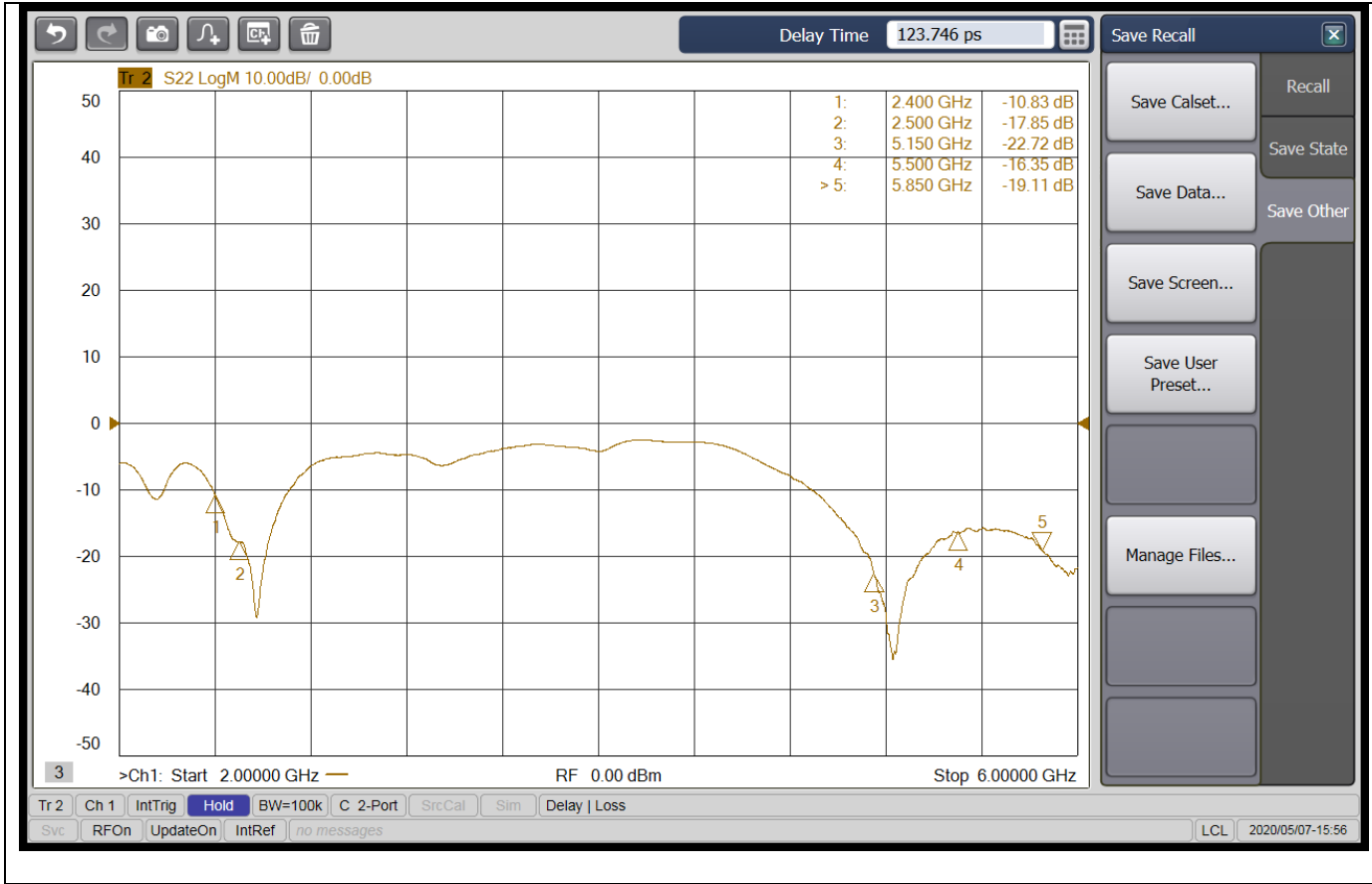


**IV. RoHS Test Report**

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	2051500666	PCB	FR-4	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	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	3120500195	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

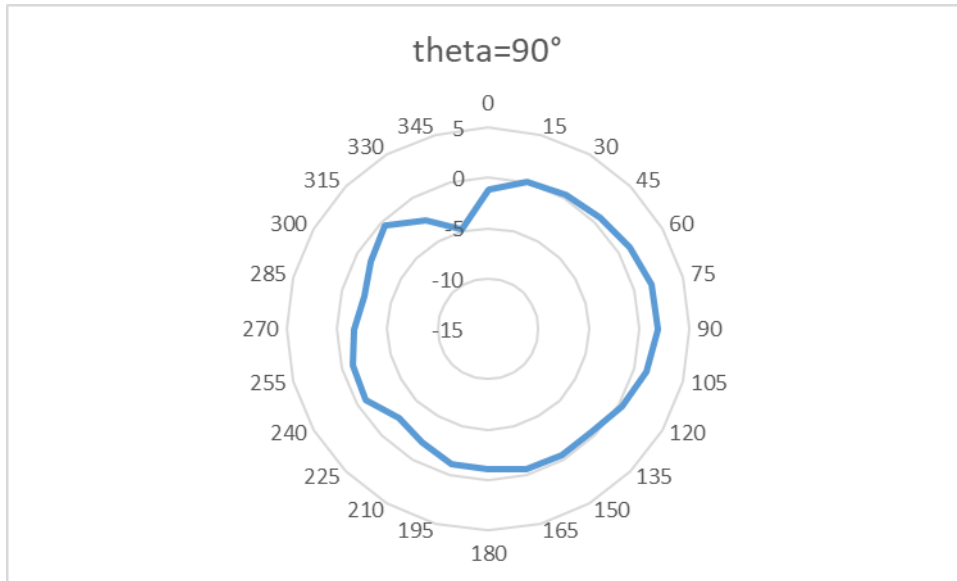


## VI. Antenna – Radiation Pattern Test Data

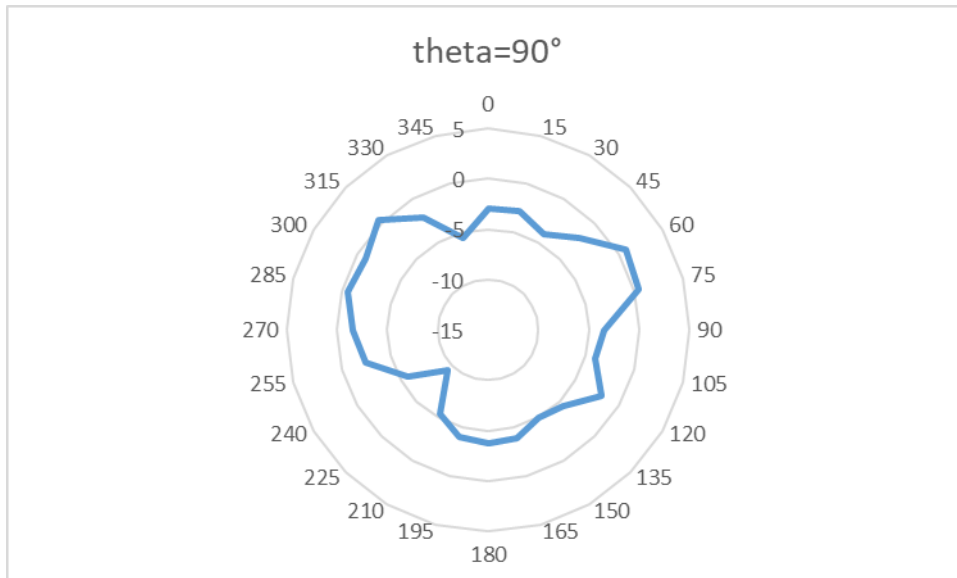
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	1.87	1.89	1.91	1.96	1.88	1.90	1.90	1.84	1.81	1.82	1.79
Freq. (MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Peak Gain (dBi)	0.96	0.84	0.87	0.94	0.84	0.78	0.65	0.93	0.73	0.80	0.63
Freq. (MHz)	5700	5750	5800	5850							
Peak Gain (dBi)	0.61	0.42	0.31	0.55							

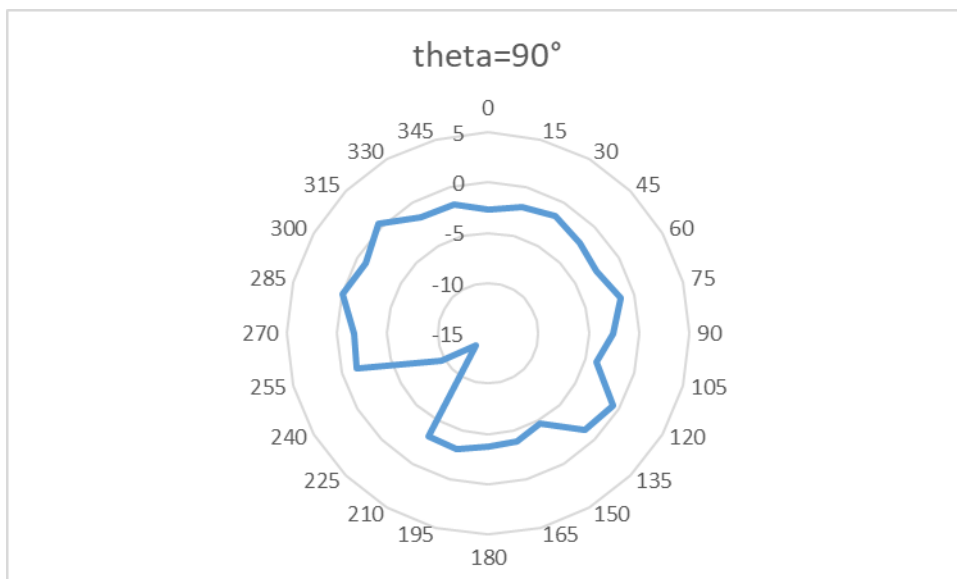
2450MHz



5200MHz



5750MHz



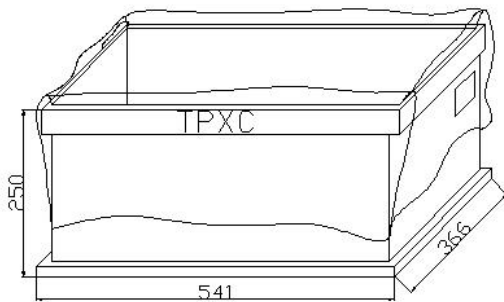
## VII. Packing Drawing

### i . Put ANT into Plastic Tray (仅作装箱说明)




200PCS/bag

### ii. Packing

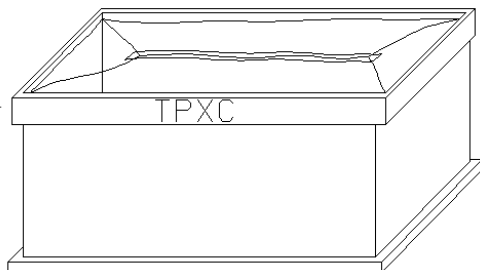


2000PCS/Box

Label

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

### iii. Sealing



**TP-LINK®**

# Antenna Specification



Product Number: 3101504784

Product Name: Antenna

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504784

Description:

Antenna|2.4-2.5GHz&5.15-5.85GHz|2.0dBi&1.0dBi|LP|Omni|2W|I-PEX|145  
mm|D1.37mm|Deco X80|无||3045-J1145REV1.0|绿色|否|[黑色线/自制件]

**TP-LINK Checked By:**

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V. Antenna – S Parameter Test Data.....	5
VI. Antenna – Radiation Pattern Test Data .....	5
VII. Packing Drawing .....	7

## 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	2.0dBi & 1.0dBi
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; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification



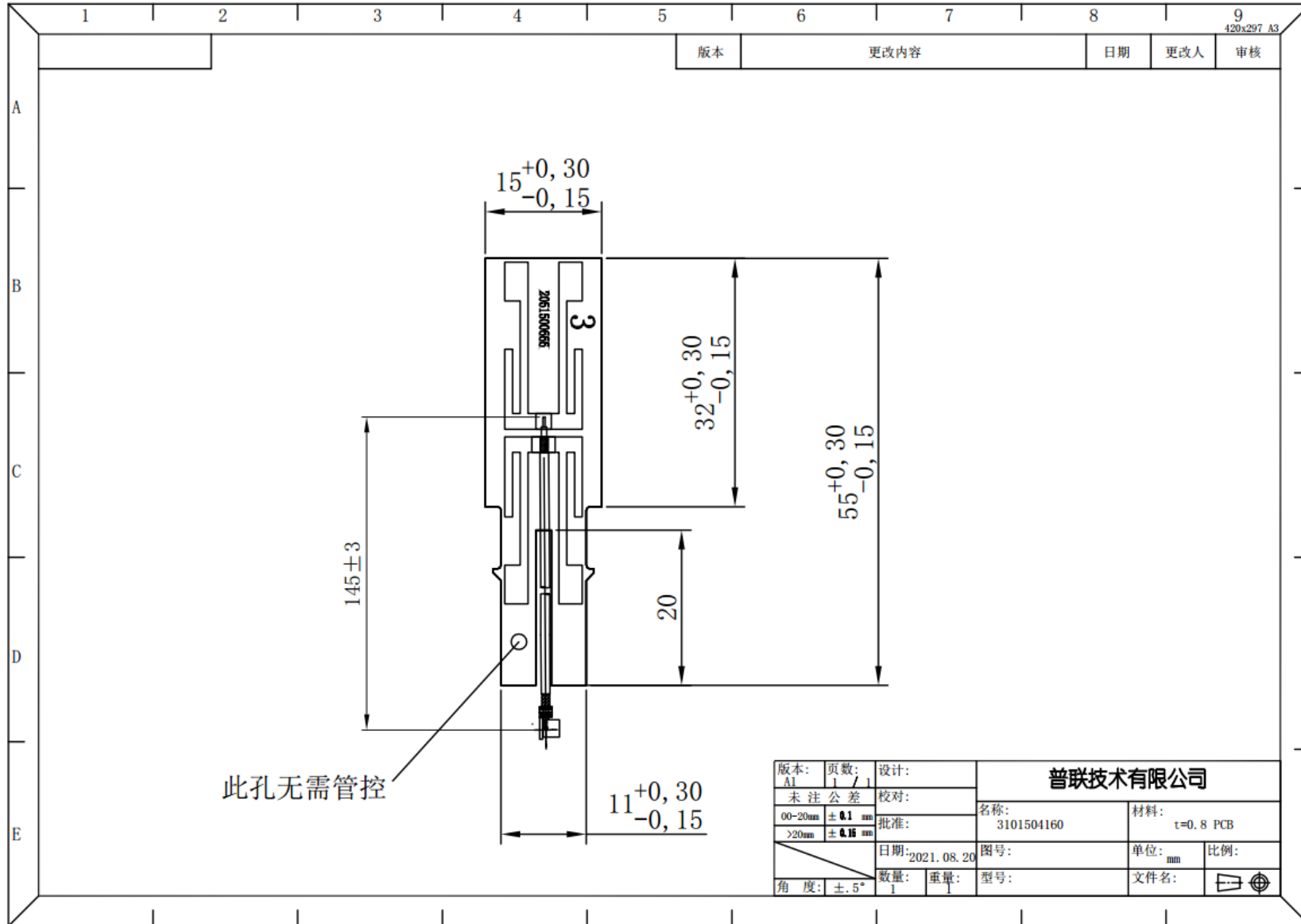
Product Number: 3101504784

Product Name: Antenna

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<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



Product Number: 3101504784

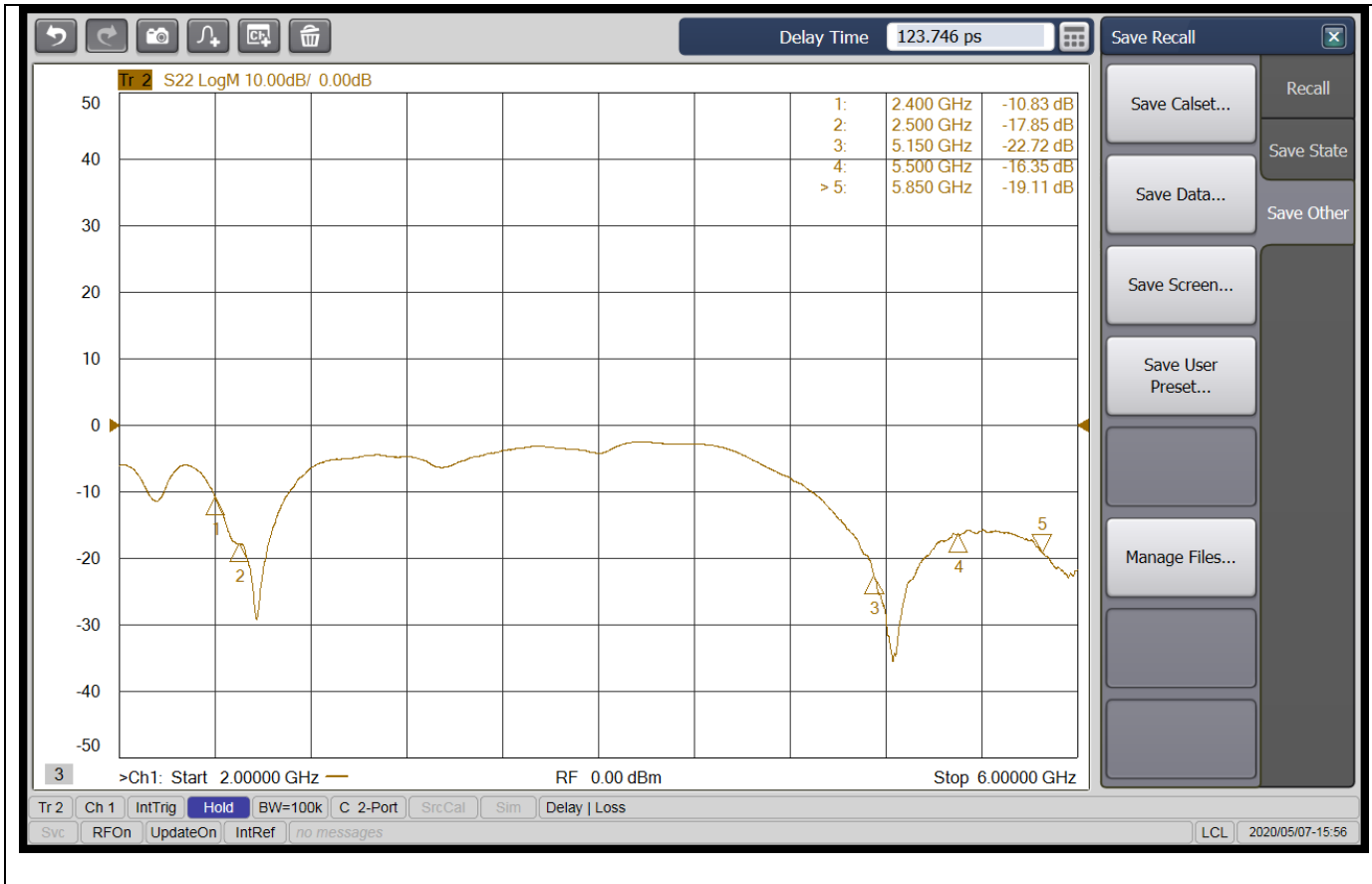
Product Name: Antenna



### 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	2051500666	PCB	FR-4	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	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

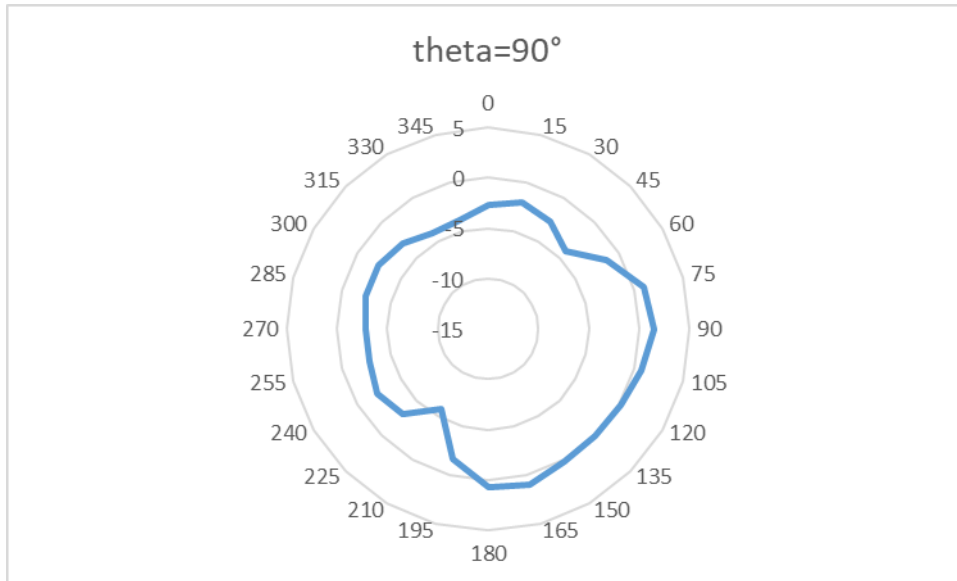


## VI. Antenna – Radiation Pattern Test Data

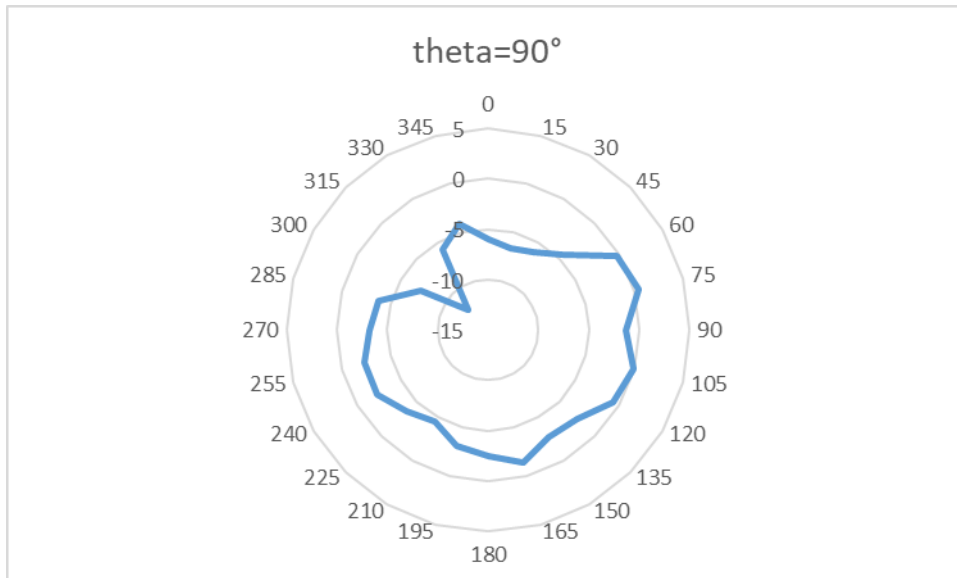
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	1.74	1.81	1.76	1.73	1.43	1.46	1.56	1.76	1.79	1.86	1.93
Freq. (MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Peak Gain (dBi)	0.86	0.46	0.54	0.55	0.59	0.64	0.74	0.83	0.86	0.91	0.83
Freq. (MHz)	5700	5750	5800	5850							
Peak Gain (dBi)	0.88	0.92	0.91	0.97							

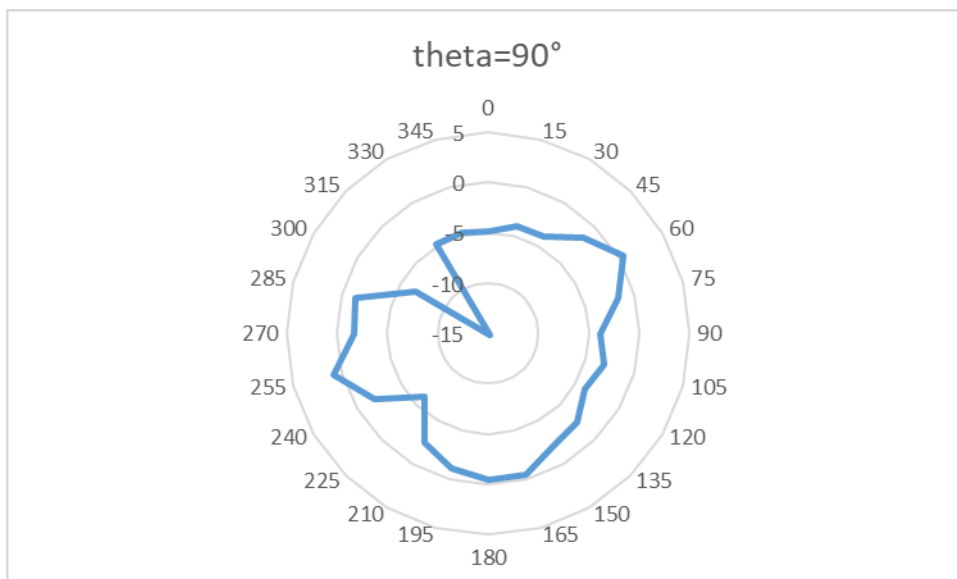
2450MHz



5200MHz



5750MHz



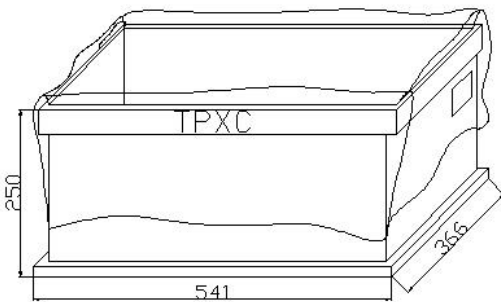
## VII. Packing Drawing

### i . Put ANT into Plastic Tray (仅作装箱说明)



200PCS/bag

### ii. Packing

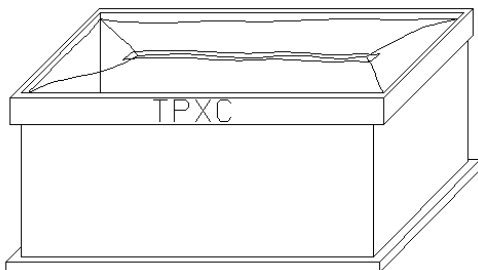


2000PCS/Box

Label

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

### iii. Sealing



**TP-LINK®**

# Antenna Specification



Product Number: 3101504785

Product Name: Antenna

**TP-LINK®**

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**TP-LINK®**

## Specification For Approval

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504785

Description:

Antenna|2.4-2.5GHz&5.15-5.85GHz|2.0dBi&1.0dBi|LP|Omni|2W|I-PEX|95  
mm|D1.13mm|Deco X80|无||3045-JI095REV1.0|绿色|否||蓝色线/自制件]

**TP-LINK Checked By:**

**Customer Approved By:**

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

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+ 86 755 26504400

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## 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	2.0dBi & 1.0dBi
Max Input Power	2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Cable Type	O.D. 1.13mm (Blue)
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; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification

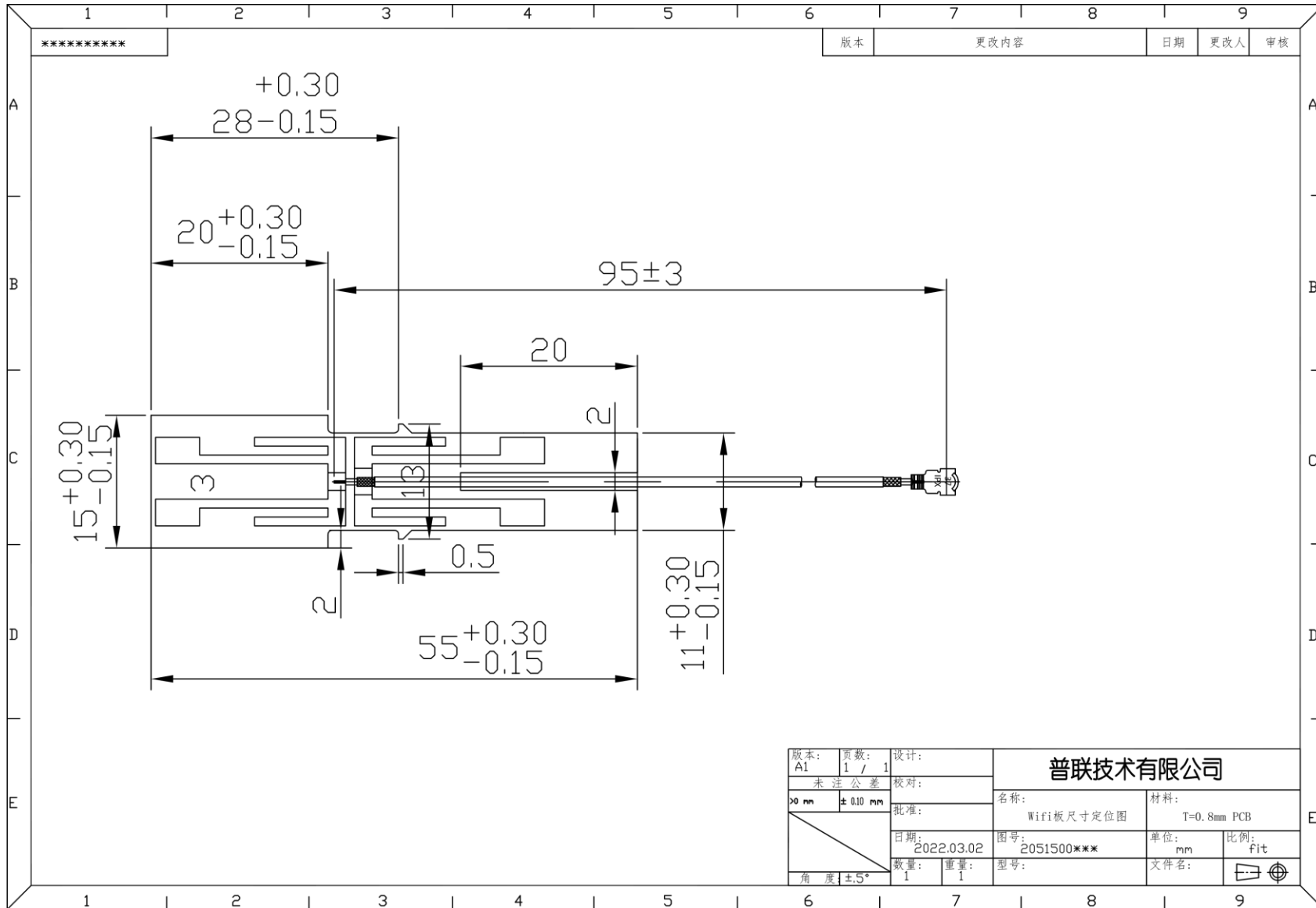
Product Number: 3101504785

Product Name: Antenna

**TP-LINK®**

<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



Product Number: 3101504785

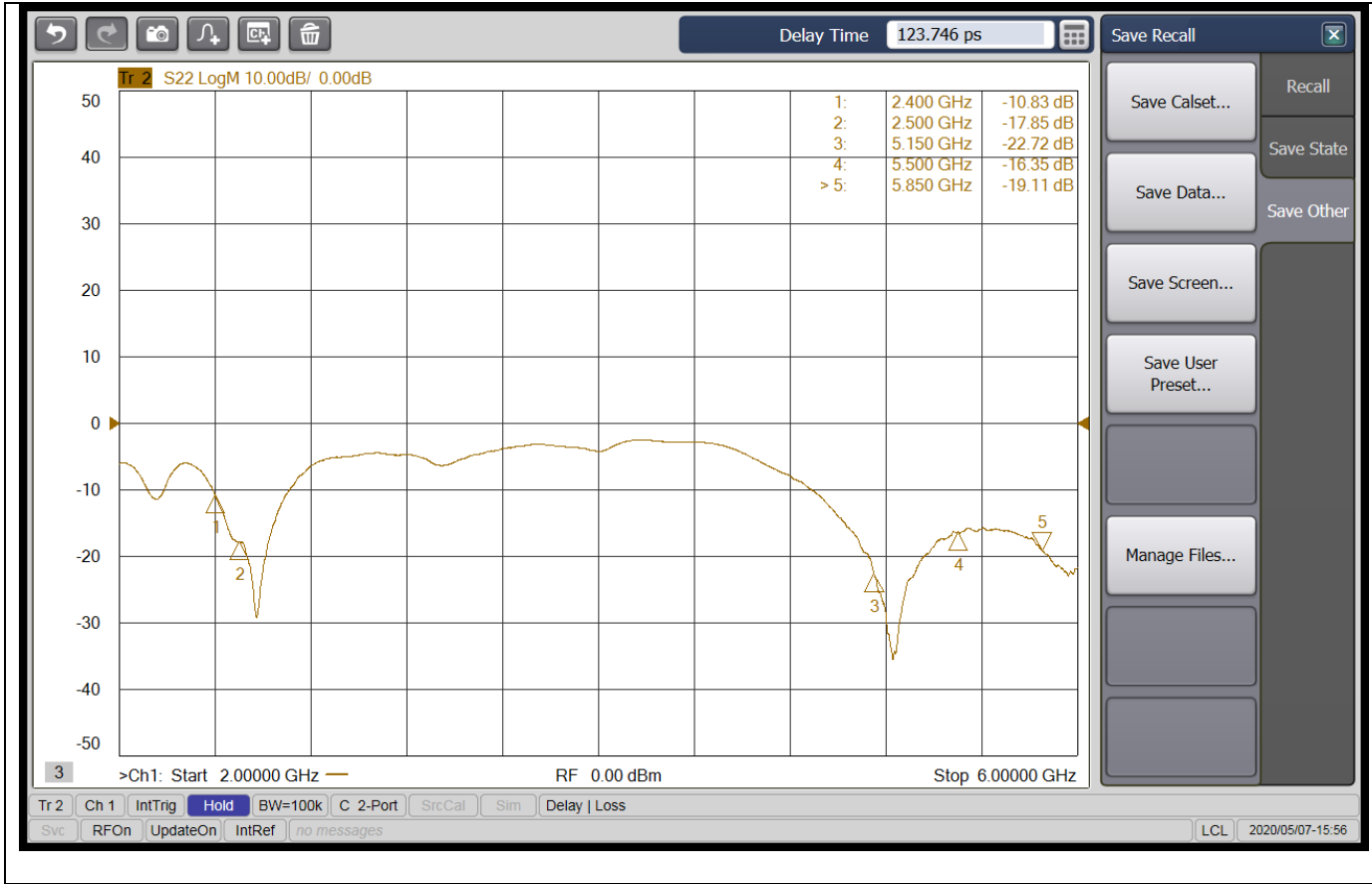
Product Name: Antenna



### 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	2051500960	PCB	FR-4	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	3110500018	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	3120500334	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

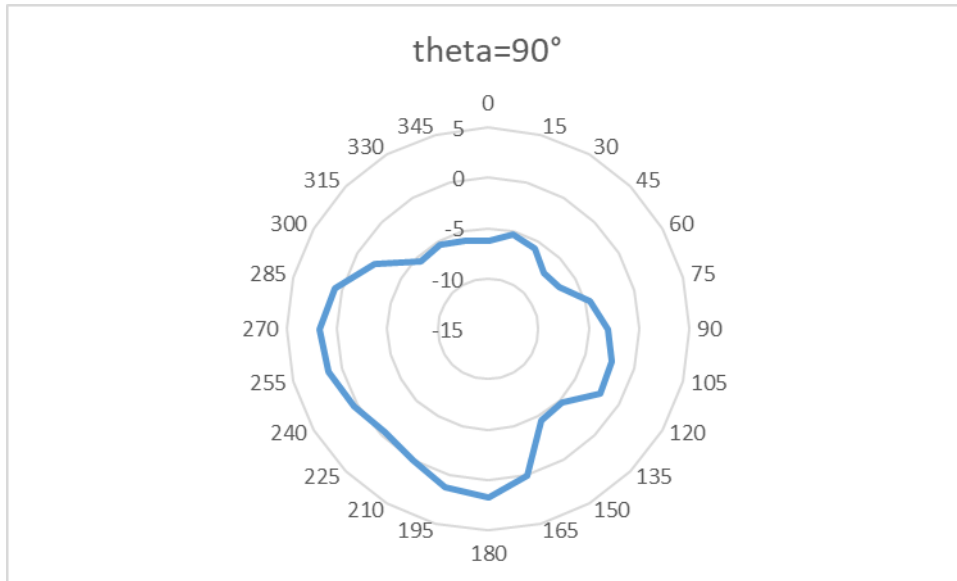


## VI. Antenna – Radiation Pattern Test Data

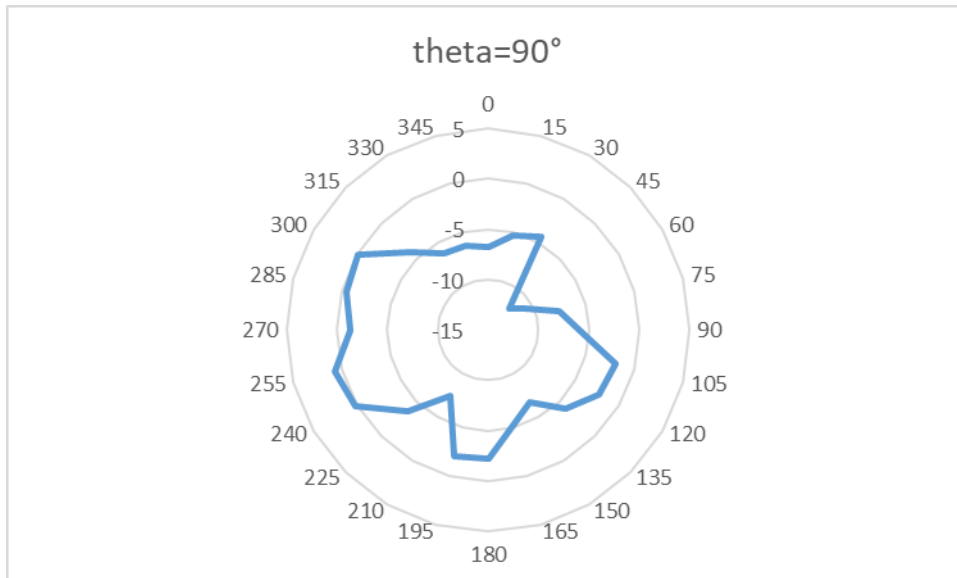
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	1.65	1.74	1.86	1.91	1.88	1.76	1.67	1.65	1.43	1.21	1.19
Freq. (MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Peak Gain (dBi)	0.76	0.77	0.74	0.81	0.88	0.71	0.86	0.91	0.99	0.97	0.95
Freq. (MHz)	5700	5750	5800	5850							
Peak Gain (dBi)	0.93	0.88	0.94	0.91							

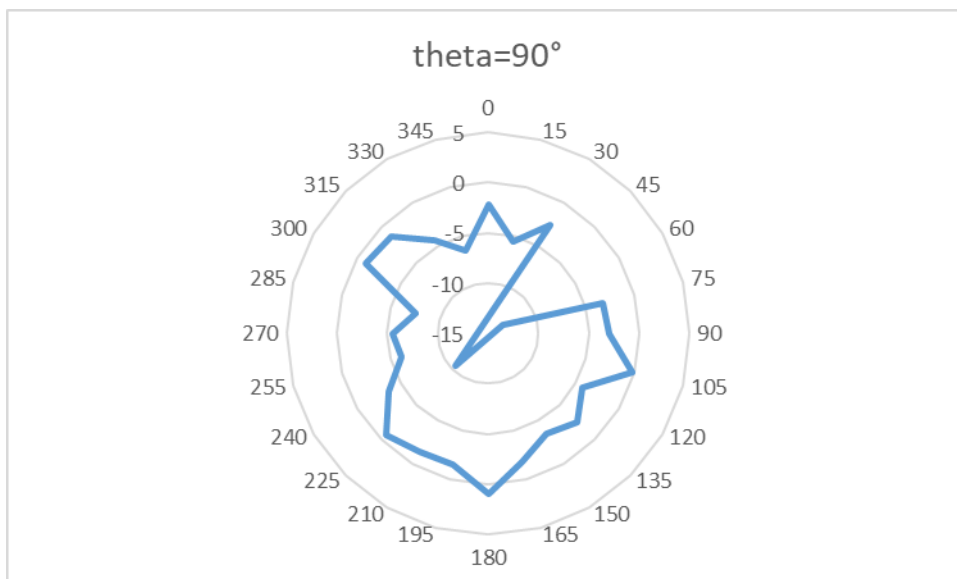
2.45GHz



5200MHz



5750MHz





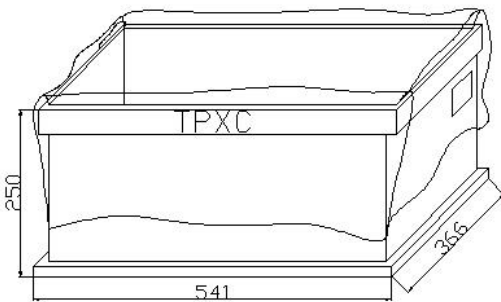
## VII. Packing Drawing

### i . Put ANT into Plastic Tray (仅作装箱说明)



200PCS/bag

### ii. Packing

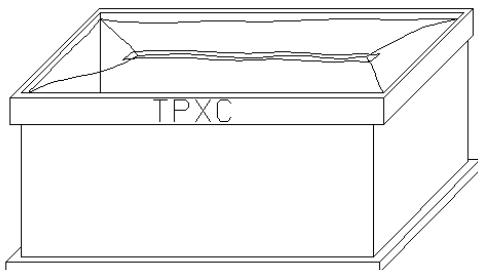


2000PCS/Box

Label

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

### iii. Sealing



**TP-LINK®**

# Antenna Specification



Product Number: 3101504786

Product Name: Antenna

**TP-LINK®**

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<http://www.tp-link.com>

Product Number: 3101504786

Product Name: Antenna

**TP-LINK®**

## Specification For Approval

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504786

Description:

Antenna|2.4-2.5GHz&5.15-5.85GHz|2.0dBi&1.0dBi|LP|Omni|2W|I-PEX|95  
mm|D1.13mm|Deco X80|无||3045-JI095REV1.0|绿色|否||橙色线/自制件]

**TP-LINK Checked By:**

**Customer Approved By:**

**TP-LINK®**

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

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Central Zone, Science&Technology Park,  
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+ 86 755 26504400

[http:// www.tp-link.com](http://www.tp-link.com)

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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 .....	7

## 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	2.0dBi & 1.0dBi
Max Input Power	2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Cable Type	O.D. 1.13mm (Orange)
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; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification

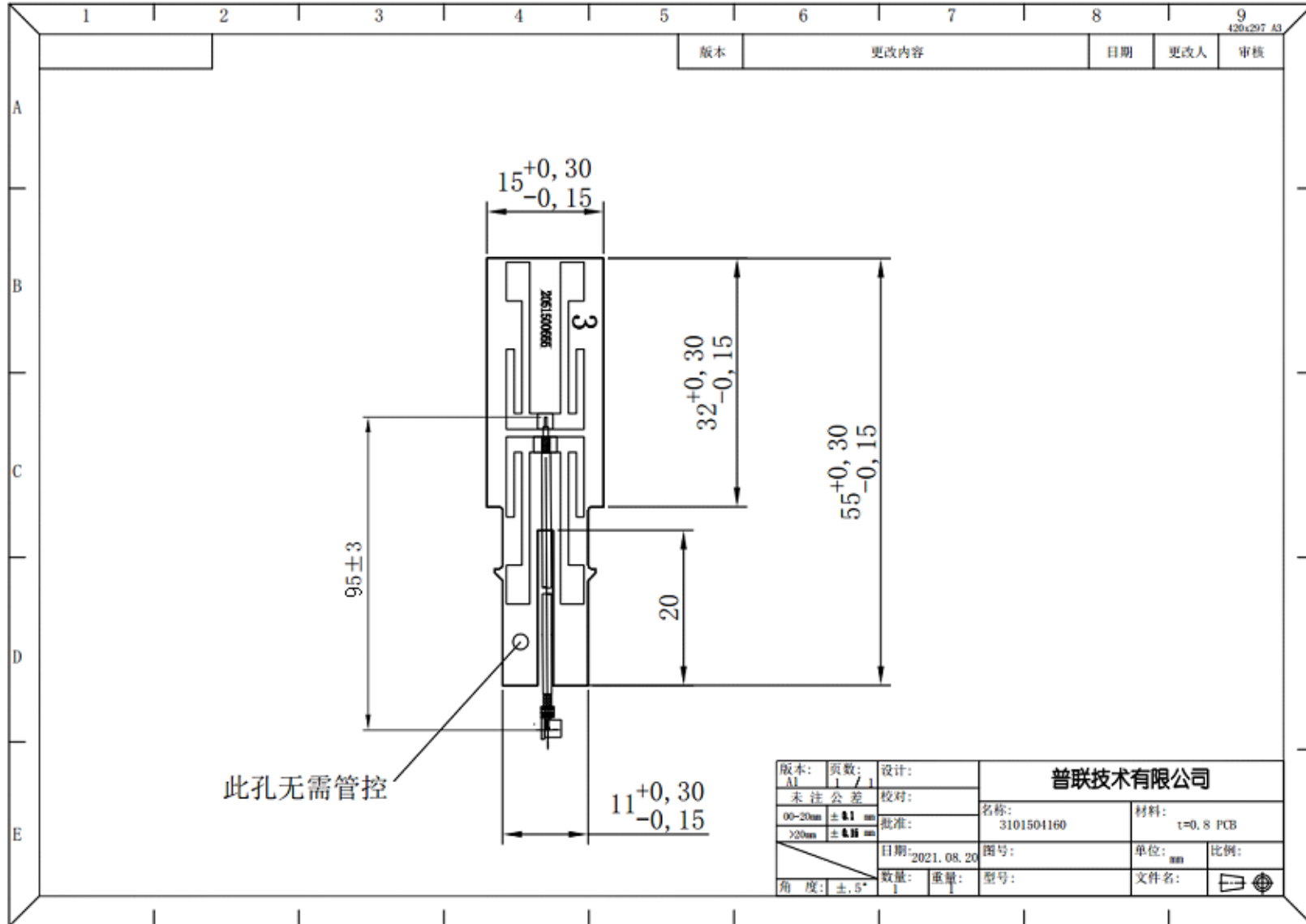
Product Number: 3101504786

Product Name: Antenna

**TP-LINK®**

<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





Product Number: 3101504786

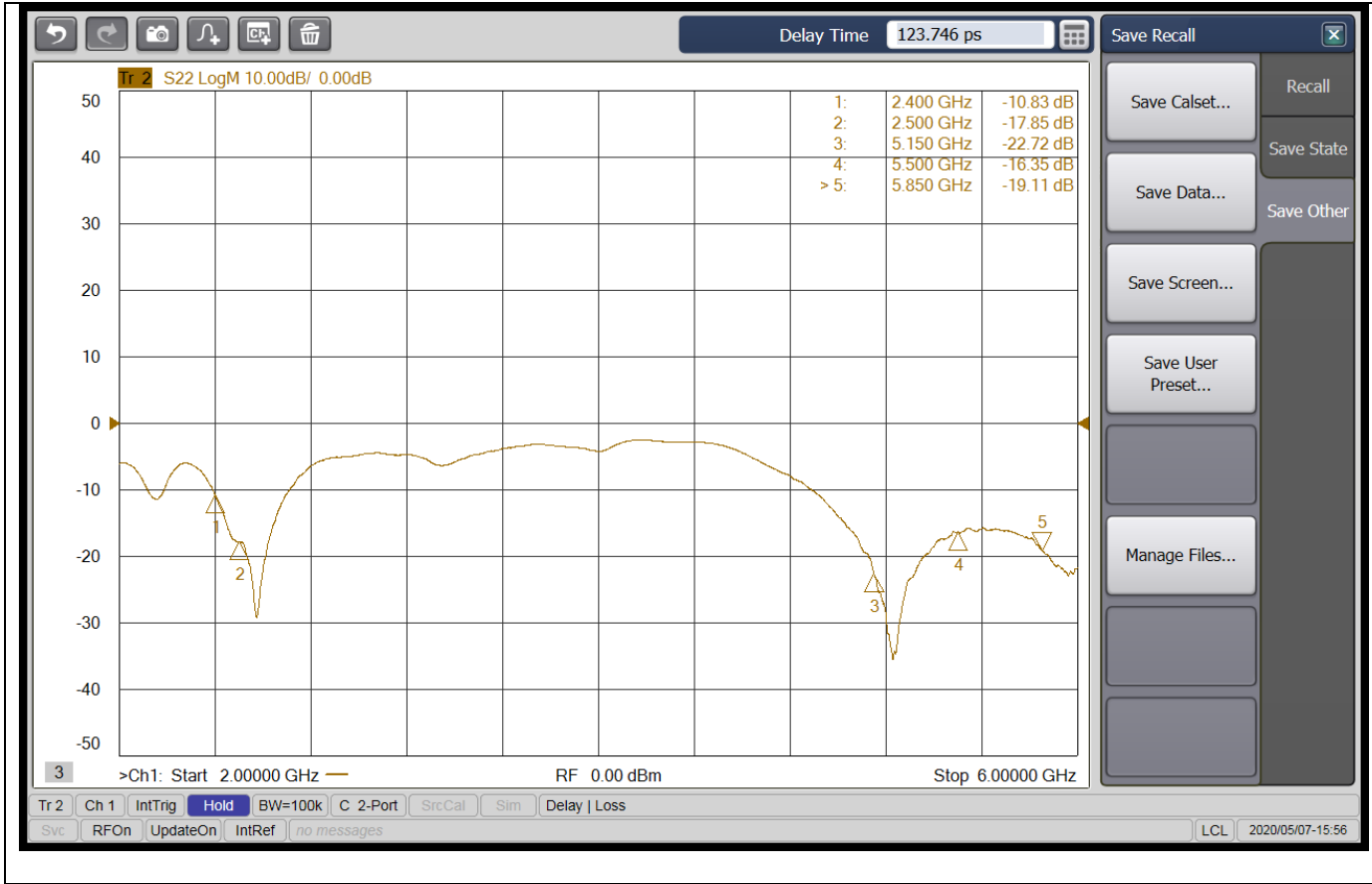
Product Name: Antenna



### 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	2051500666	PCB	FR-4	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	3110500018	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	3120500335	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

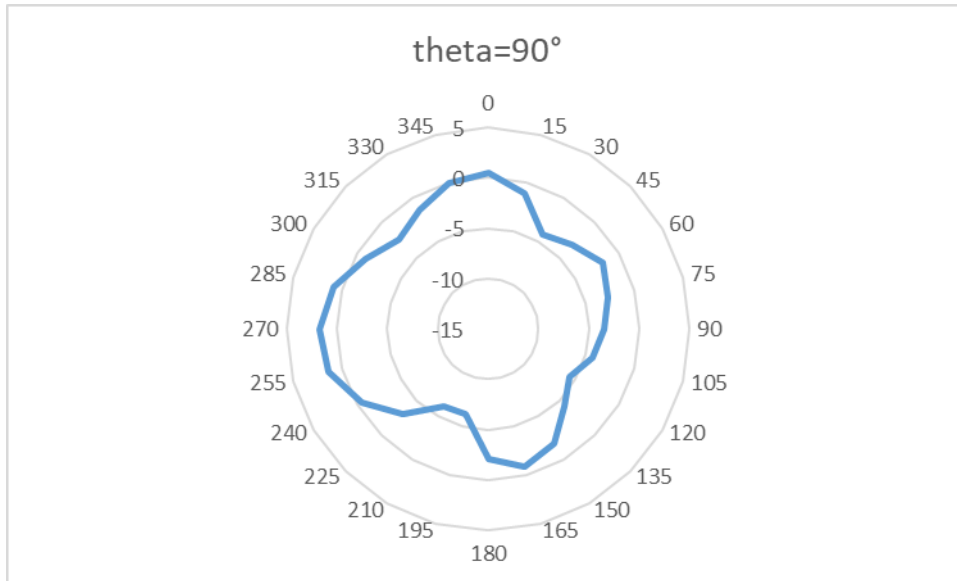


## VI. Antenna – Radiation Pattern Test Data

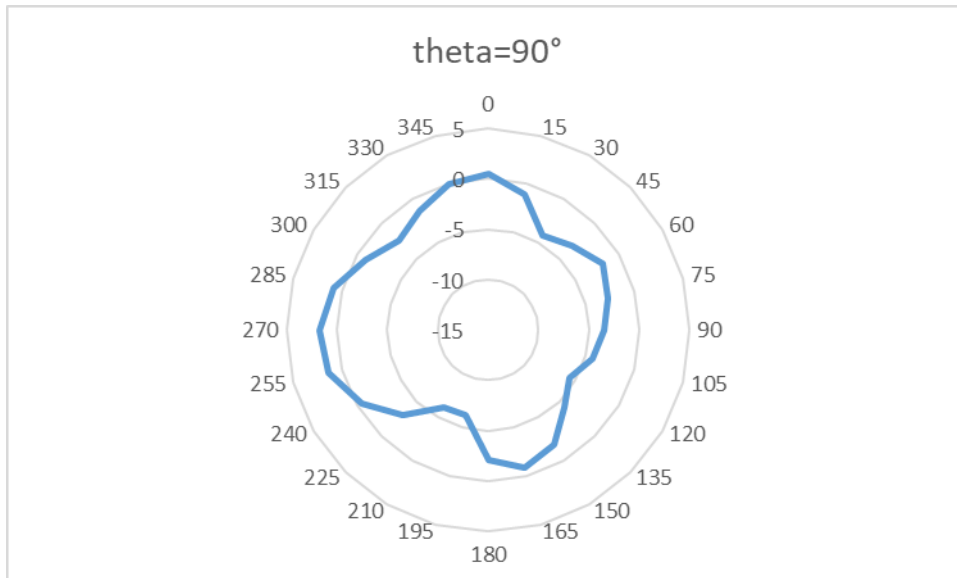
Testing Equipment Specification	
Microwave Chamber	Satimo SG24-S
Testing Equipment	Agilent 5071B

Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	1.58	1.64	1.61	1.71	1.76	1.81	1.88	1.97	1.76	1.81	1.74
Freq. (MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650
Peak Gain (dBi)	0.82	0.86	0.84	0.84	0.85	0.91	0.82	0.84	0.93	0.91	0.84
Freq. (MHz)	5700	5750	5800	5850							
Peak Gain (dBi)	0.88	0.74	0.76	0.69							

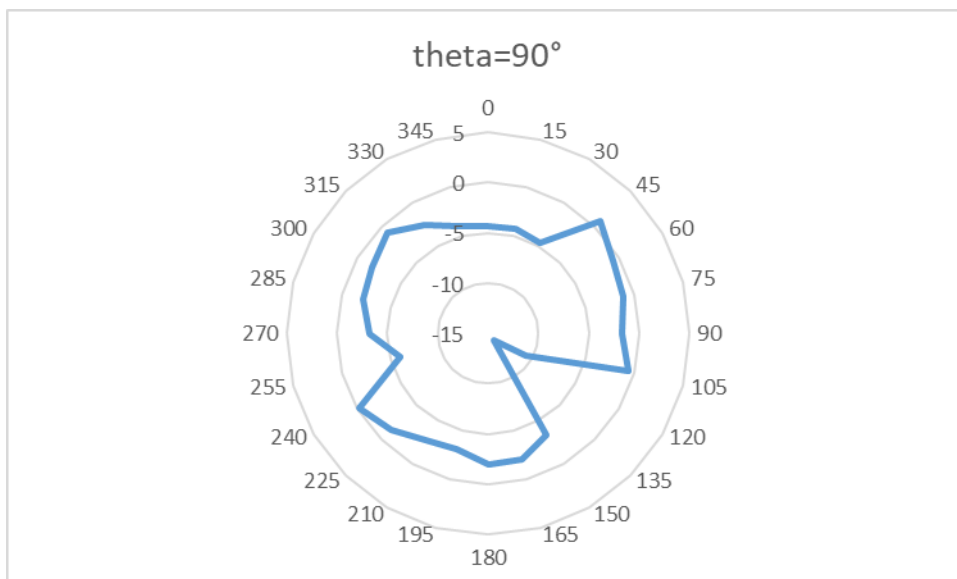
2.45GHz



5200MHz



5750MHz



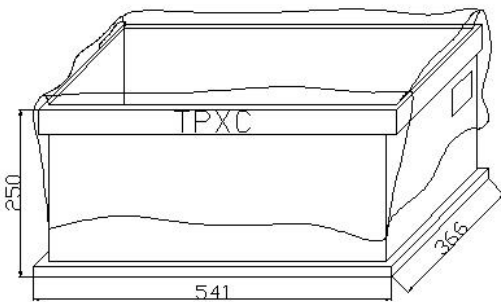
## VII. Packing Drawing

### i . Put ANT into Plastic Tray (仅作装箱说明)




200PCS/bag

### ii. Packing



2000PCS/Box

Label

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

### iii. Sealing

