

**TP-LINK®**

# Antenna Specification



Product Number: 3101504695

Product Name: Antenna

**TP-LINK®**

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

Product Number: 3101504695

Product Name: Antenna

**TP-LINK®**

## Specification For Approval

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504926

Description: Antenna|5.15-5.85GHz|3.0dBi|LP|Omni|2W|weld|90mm|D1.37mm|小  
叉(改)天线|无|X2050-RI090REV3.1|黑色/PC-HB+ABS-HB/光面+纹面  
[不防水|[黑色线/自制件/3101503464 改 CEM-1/焊线]

<b>TP-LINK Checked By:</b>
<b>Customer Approved By:</b>

**TP-LINK®**

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## I. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	5150 ~ 5850 MHz
Impedance	50 Ohm
S.W.R.	<= 2.0
Antenna Gain	3.0dBi
Max Input Power	<= 2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: ABS-HB Holder: PC、ABS
Cable Type	O.D. 1.37mm (black)
Connector Type	Weld
Connector Pull Test	3.0Kg
C. Environmental	
Operation Temperature	- 10℃ ~ + 60℃
Storage Temperature	- 40℃ ~ + 70℃

## 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

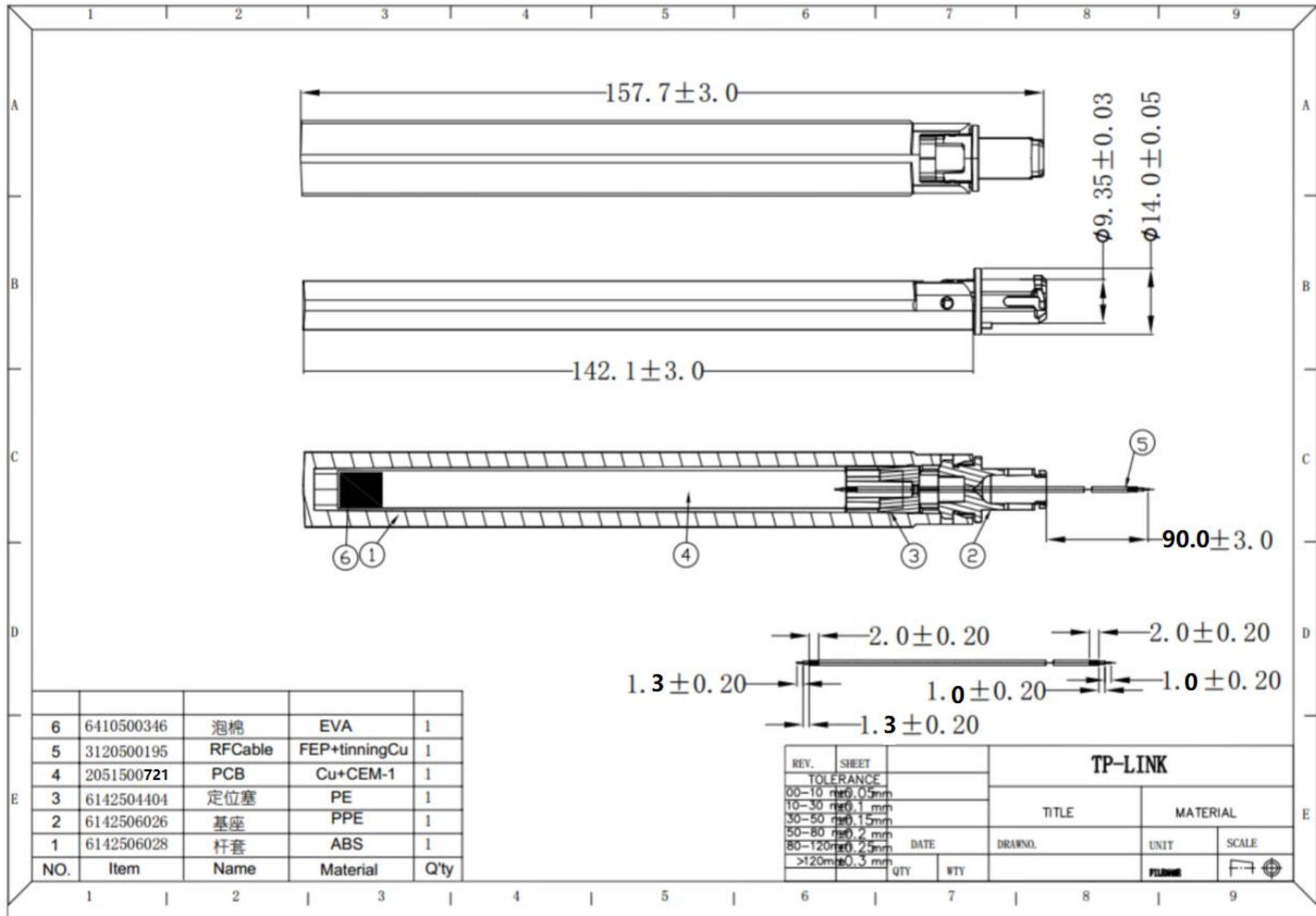
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<b>C2</b>	<b>Antenna Gain</b>	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
<b>M1</b>	<b>Vibration</b>	MIL-STD-202G, 201 A Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz 3 directions; 2 hours for each 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>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>M5</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: -20°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: 3101504695

Product Name: Antenna

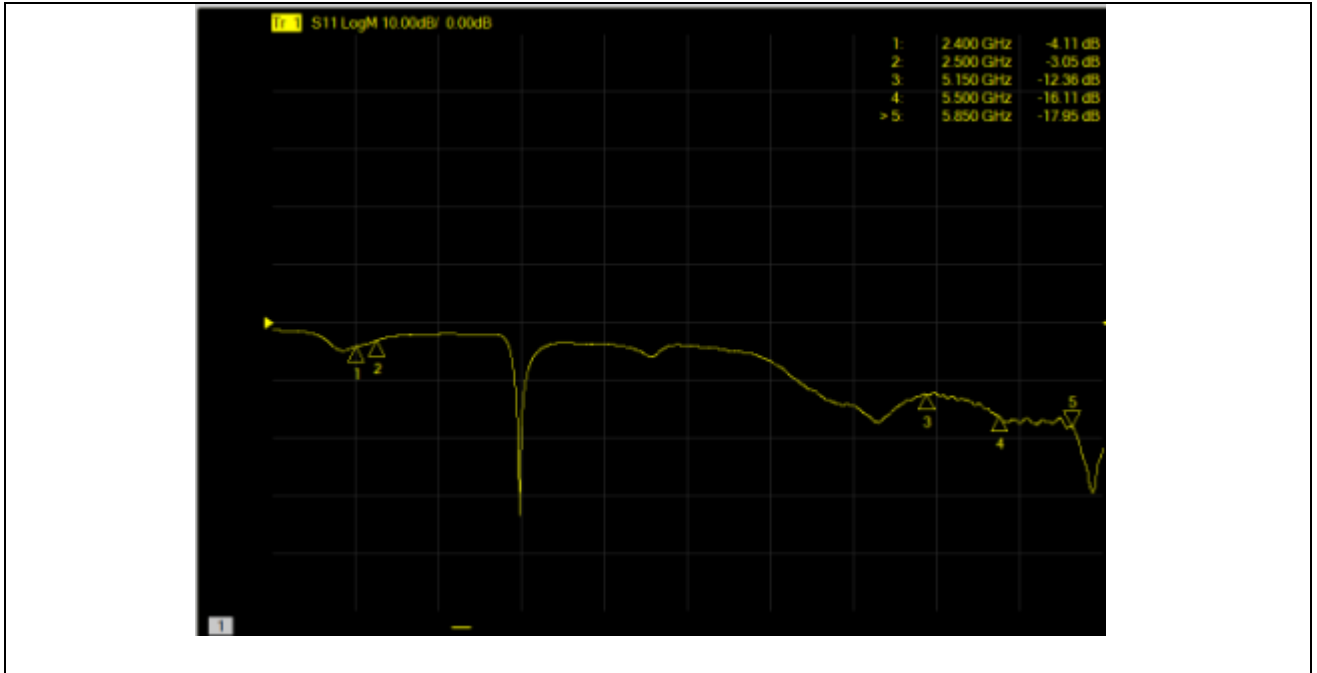


## IV. RoHS Test Report

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	2051500200	PCB	CEM-1	2	2	2	2				50mg/kg	50mg/kg	50mg/kg	50mg/kg	NO.CANEC1601019327	2016/02/01	Sub	广州 SGS	
2	6142501780	Body 1	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		SCL01G055729002	2014/11/26	GP-1006FMR	上海 SGS	
			PC		N.D.		N.D.											广州 SGS	
3	6142501780	Body 2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		SCL01G055729002	2014/11/26	GP-1006FMR	上海 SGS	
			PC		N.D.		N.D.											广州 SGS	
4	3110500018	Connector	PBT	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						CE/2012/13508	2012.01.18	-	台湾 SGS	
			Copper	N.D.	17	N.D.	Negative								CE/2012/23265	2012.02.21	-	台湾 SGS	
			Copper	N.D.	19	N.D.	Negative								CE/2012/25023	2012.03.02	-	台湾 SGS	
5	3120500035	Cable	Cu+Sn	7	N.D.	N.D.	Negative	N.D.	N.D.			N.D.	N.D.	N.D.	ECL03G00367502E	2014/12/08	Cable	CTI	
			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			>100000	N.D.	N.D.	N.D.	SHAEC1500664109	2015/01/13	Cable	SGS
			PET4CU8	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	SGS
			Cu+Ag.	N.D.	N.D.	N.D.	Negative	N.D.	N.D.							SHAEC1507036516	2015/04/28	Cable	CTI



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

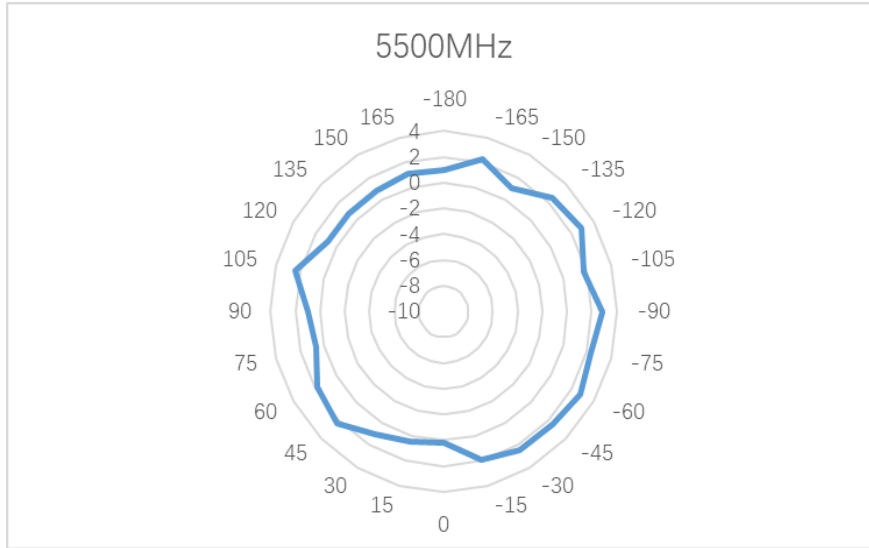


**VI. Antenna – Radiation Pattern Test Data**

Testing Equipment Specification	
Microwave Chamber	ETS AMS-8923
Testing Equipment	Agilent E5071C

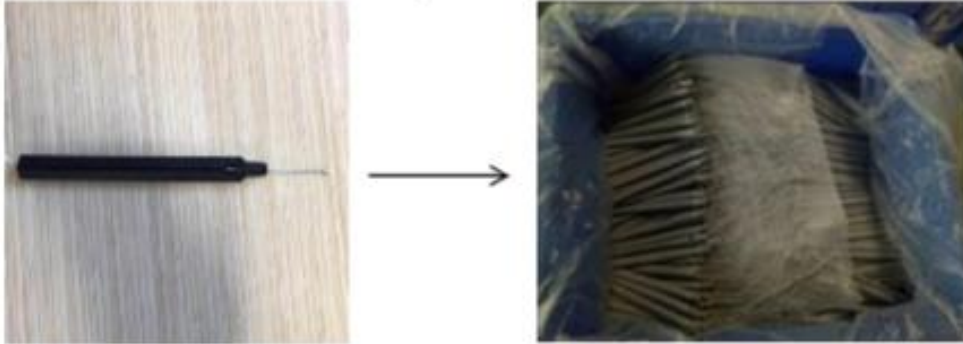
PeakGain:

Freq	5150	5200	5250	5300	5350	5400	5450	5500
Gain	1.43	1.21	0.94	1.11	1.71	1.94	2.08	2.49
Freq	5550	5600	5650	5700	5750	5800	5850	
Gain	2.21	2.86	2.57	3	2.5	2.86	2.51	

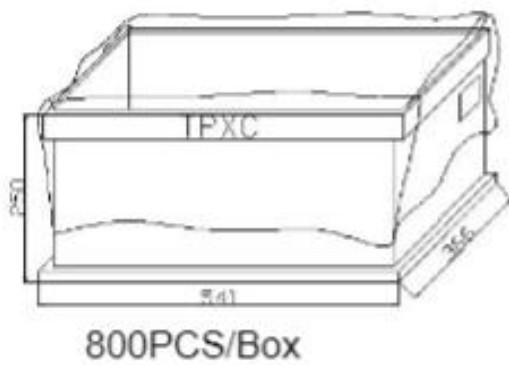


## VII. Packing Drawing

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



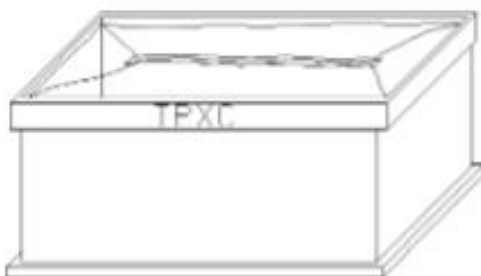
### ii. Packing



Label

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

### iii. Sealing



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## Specification For Approval

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

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

Version: 1.0

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

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

TP-LINK P/N: 3101504927

Description: Antenna|5.15-5.85GHz|3.0dBi|LP|Omni|2W|weld|165mm|D1.37mm|

小叉(改)天线|无|X2050-RI165REV3.1|黑色/PC-HB+ABS-HB/光面+纹  
面|不防水|[黑色线/自制件/3101503465 改 CEM-1/焊线]

<b>TP-LINK Checked By:</b>
<b>Customer Approved By:</b>

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Central Zone, Science&Technology Park,  
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## I. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	5150 ~ 5850 MHz
Impedance	50 Ohm
S.W.R.	<= 2.0
Antenna Gain	3.0dBi
Max Input Power	<= 2 W
Polarization	Linear
Radiation pattern	Omni-Directional
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: ABS-HB Holder: PC、ABS
Cable Type	O.D. 1.37mm (black)
Connector Type	Weld
Connector Pull Test	3.0Kg
C. Environmental	
Operation Temperature	- 10℃ ~ + 60℃
Storage Temperature	- 40℃ ~ + 70℃

## 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



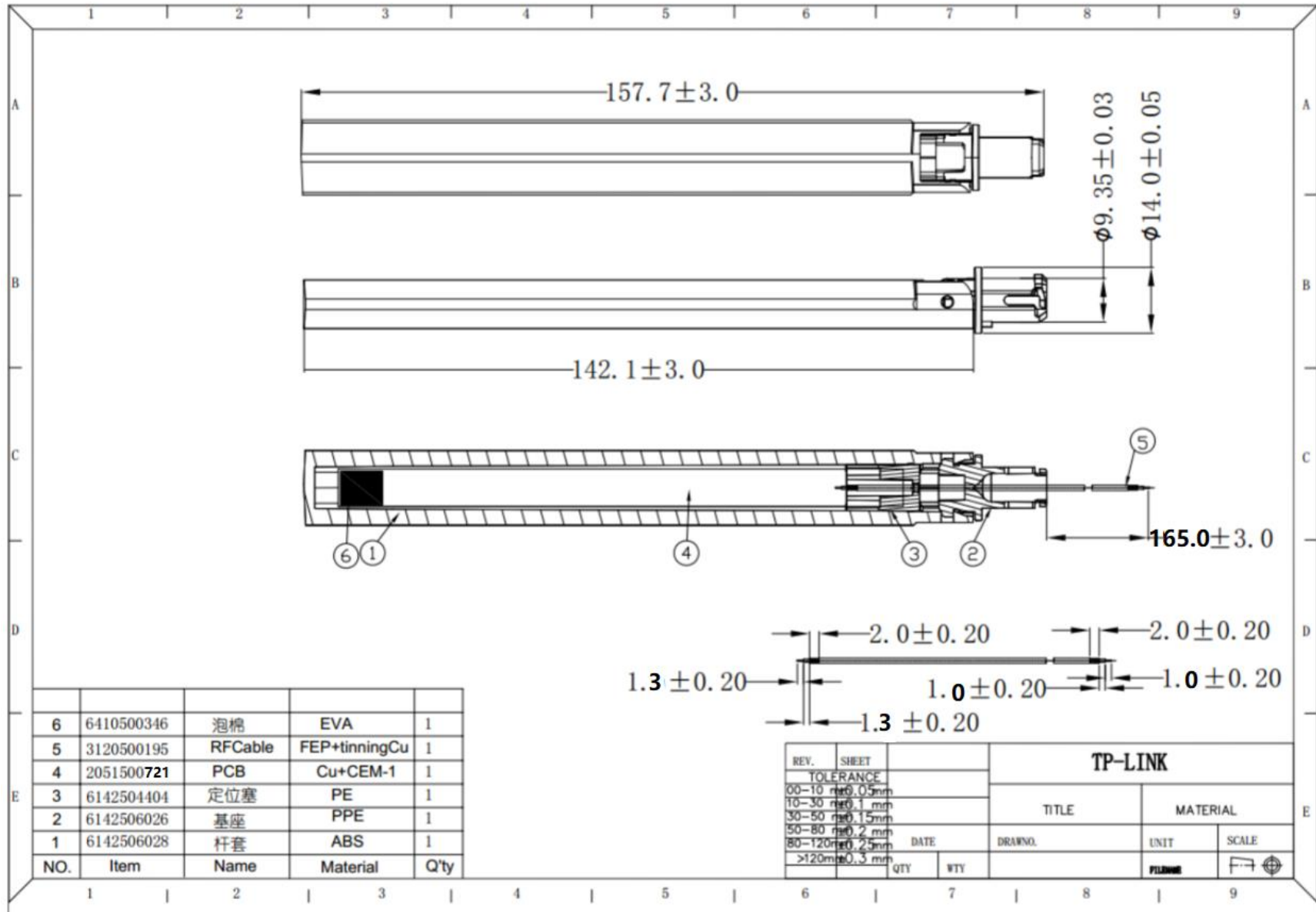
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Product Name: Antenna

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<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%
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<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%
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<b>M5</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: -20°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: 3101504695

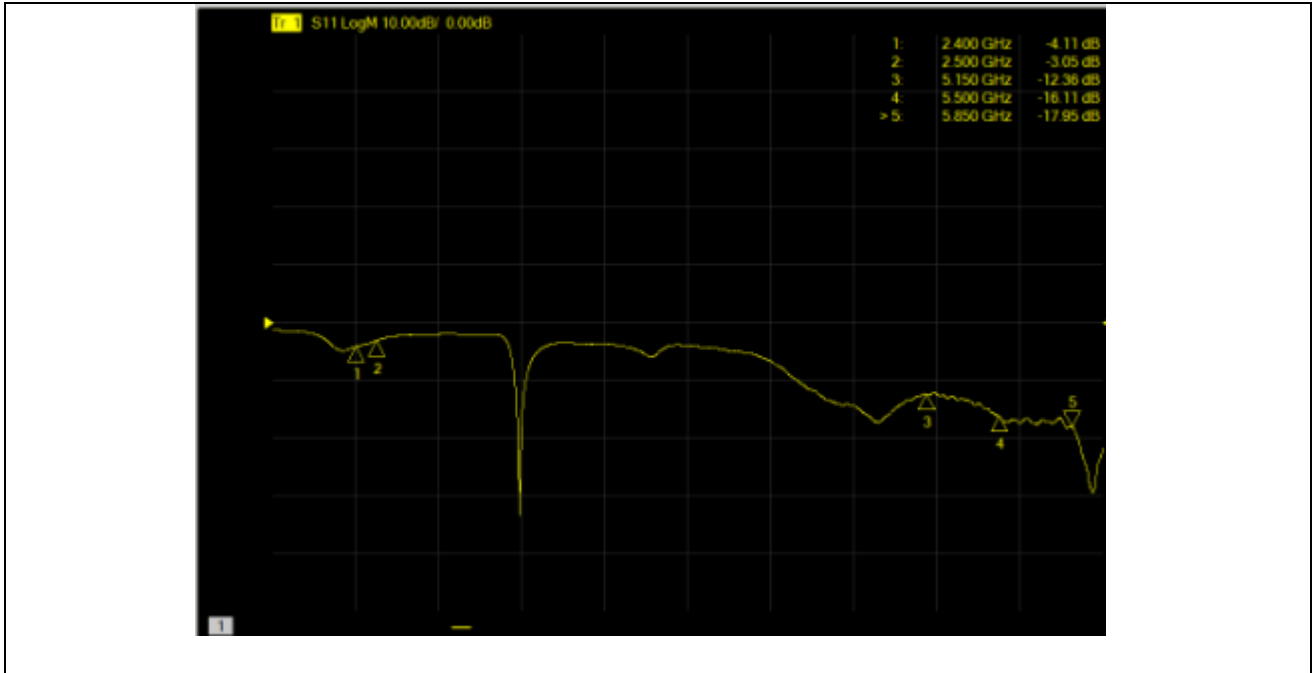
Product Name: Antenna



## 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	2051500200	PCB	CEM-1	2	2	2	2				50mg/kg	50mg/kg	50mg/kg	50mg/kg	NO.CANEC1601019327	2016/02/01	Sub	广州 SGS	
2	6142501780	Body 1	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		SCL01G055729002	2014/11/26	GP-1006FMR	上海 SGS	
			PC		N.D.		N.D.											广州 SGS	
3	6142501780	Body 2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			N.D.	N.D.		SCL01G055729002	2014/11/26	GP-1006FMR	上海 SGS	
			PC		N.D.		N.D.											广州 SGS	
4	3110500018	Connector	PBT	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						CE/2012/13508	2012.01.18	-	台湾 SGS	
			Copper	N.D.	17	N.D.	Negative								CE/2012/23265	2012.02.21	-	台湾 SGS	
			Copper	N.D.	19	N.D.	Negative								CE/2012/25023	2012.03.02	-	台湾 SGS	
5	3120500035	Cable	Cu+Sn	7	N.D.	N.D.	Negative	N.D.	N.D.			N.D.	N.D.	N.D.	ECL03G00367502E	2014/12/08	Cable	CTI	
			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.			>100000	N.D.	N.D.	N.D.	SHAEC1500664109	2015/01/13	Cable	SGS
			PET4CU8	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	SGS
			Cu+Ag.	N.D.	N.D.	N.D.	Negative	N.D.	N.D.							SHAEC1507036516	2015/04/28	Cable	CTI

### V. Antenna – S Parameter Test Data

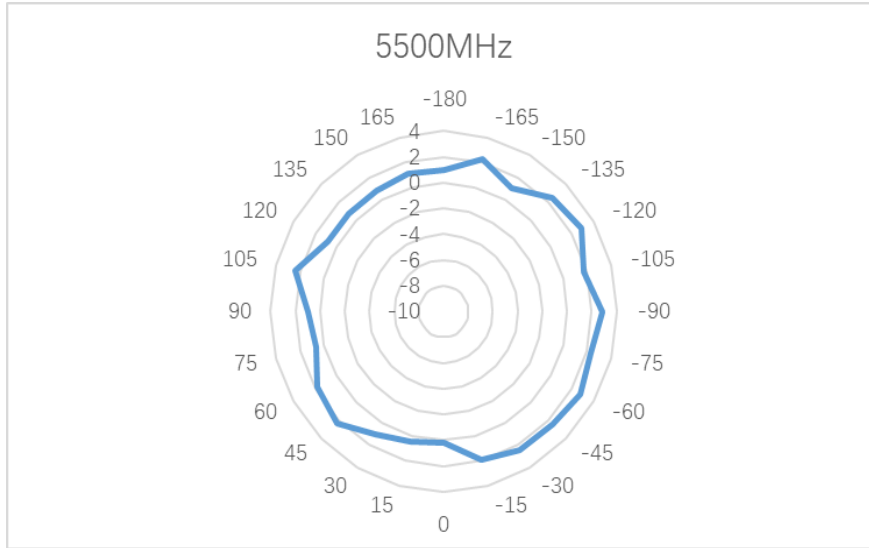


### VI. Antenna – Radiation Pattern Test Data

Testing Equipment Specification	
Microwave Chamber	ETS AMS-8923
Testing Equipment	Agilent E5071C

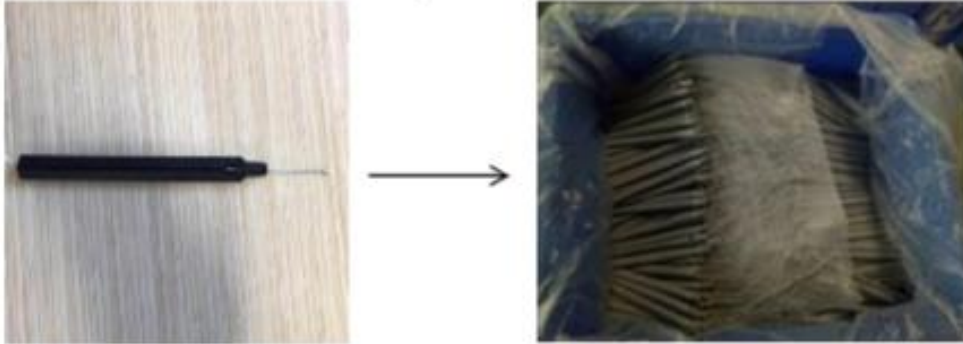
PeakGain:

Freq	5150	5200	5250	5300	5350	5400	5450	5500
Gain	1.43	1.21	0.94	1.11	1.71	1.94	2.08	2.49
Freq	5550	5600	5650	5700	5750	5800	5850	
Gain	2.21	2.86	2.57	3	2.5	2.86	2.51	

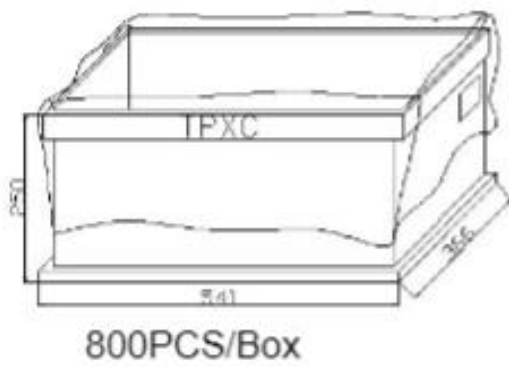


## VII. Packing Drawing

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



### ii. Packing



Label

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

### iii. Sealing

