

SKYWORTH			深圳市创维电器科技有限公司 Shenzhen Skyworth Electronic Appliance Tech Co., Ltd.					
APPROVAL SHEET								
Part Description:	(Vendor):		Shenzhen Tongcheng Unlimited Technology Co., Ltd		(Description):		B81-V1.1	
	(Product Name):		FPCantenna		(Part No.):		N012102-000502-001	
	(Version NO.):		V1.1		(type):		B81	
	notes:							
Attachments:	☒ Spec ☒ Process Flow Chart ☒ QC Flow Chart ☒ CPK report ☒ Electrical Spec ☒ Dimension Report ☒ Reliability Test Report ☒ ROHS Report ☒ Packing ☒ Sample ☒ Materialdeclaration ☐ REACH param							
Supplier sign off	Design: Zou Fanglan		Verify:	Yan Peihao	Approval: Feng Juan			
Above filled by supplier, following filled by Skyworth								
Skyworth Approval	structure	☐ size	engineer:	approval	hardware	☐ Electrical performance	engineer:	approval:
		☐ reliability				☐ PIN definition		
	Project Department	☐ Drawing confirmation						
☐ project manager								
		☐ Functional performance testing	engineer:		production department	☐ authentication		
		☐ Reliability testing						
Conditions of acknowledgment	☐ Formal Verify ☐ Limited Verify ☐ Rejection Verify quantity: ☐ Small test ☐ Pilot Test							
Finally confirm	sign							
Distribution Dept.	☐ IQC ☐ supplier ☐ technology ☐ other							

Table of Contents

- 1、 Cover
- 2、 Content
- 3、 Material declaration param
- 4、 SPEC Blueprint SPEC
- 5、 Product specification
- 6、 MSDS Material report
- 7、 ROHS List /ROHS report
- 8、 Full size measurement report
- 9、 Cpk report
- 10、 Reliability test report
- 11、 Manufacturing flow chart
- 12、 QC工程图 QC engineering drawing
- 13、 包装规范 Packing specification

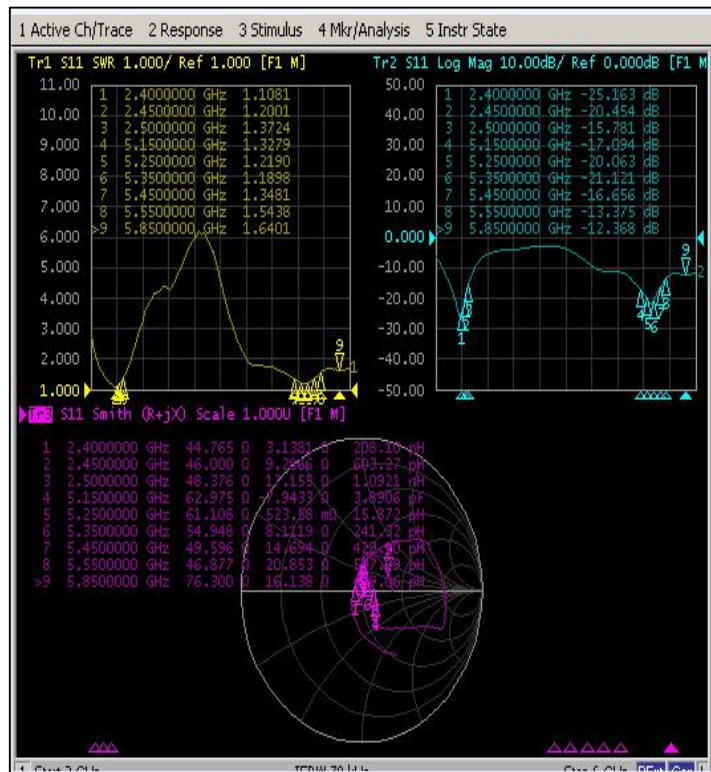
SPECIFICATION FOR CUSTOMS

SUPPLIER:	Shenzhen Tongcheng Unlimited Technology Co., Ltd	
MANUFACTURER:	Shenzhen Tongcheng Unlimited Technology Co., Ltd	
PART LOGO:	TOPO	
PART NAME:	FPC antenna	
SPEC. TYPE:	B81-V1.1	
MONOMER NET WEIGHT(g):	0.38g	
PACKAGE:	Plastic bag+cardboard box	
MIN. PACKAGE QTY(Pcs):	1000	
MANUFACTURING ORIGIN:	Shenzhen	
DATE:	2025/8/26	
MANUFACTURER		
DRAFTER	CHECK	APPROVER
Zou Fanglan	Yan Peihao	Feng Juan
Name of the manufacturer (seal):	Shenzhen Tongcheng Unlimited Technology Co., Ltd	
address:	405, Building A, Jinfulai Building, Dabao Road, Bao'an District 28, Shenzhen	
Tel:	0755-27728733	
Web:	www.topolink.com.cn	
Form encoding: QR-PU-065 version: A/0		



Work indicators	operation parameters
model	B81-V1.1
Operating Frequency	2400MHZ-2500MHZ/5180MHZ-5825MHZ
operation temperature	' -60+80 degrees
Working humidity	<90%
impedance	50 Ω
package	PE bags and cardboard boxes

Antenna S11, ReturnLoss, Smith chart:



Antenna efficiency gain

Freq (MHz)	Effi (%)	Gain (dBi)
2400	54.69	2.81
2405	56.16	2.9
2410	55.85	2.93
2415	56.03	3.03
2420	56.35	3.04
2425	58.31	3.08
2430	59.02	3.1
2435	59.26	3.13
2440	59.12	3.08
2445	59.42	2.99
2450	56.78	2.7
2455	55.76	2.6
2460	55.66	2.49
2465	54.04	2.2
2470	52.2	2.04
2475	52.83	2.09
2480	53.09	2.06
2485	53.6	2.18
2490	54.12	2.33
2495	53.6	2.27
2500	53.98	2.07

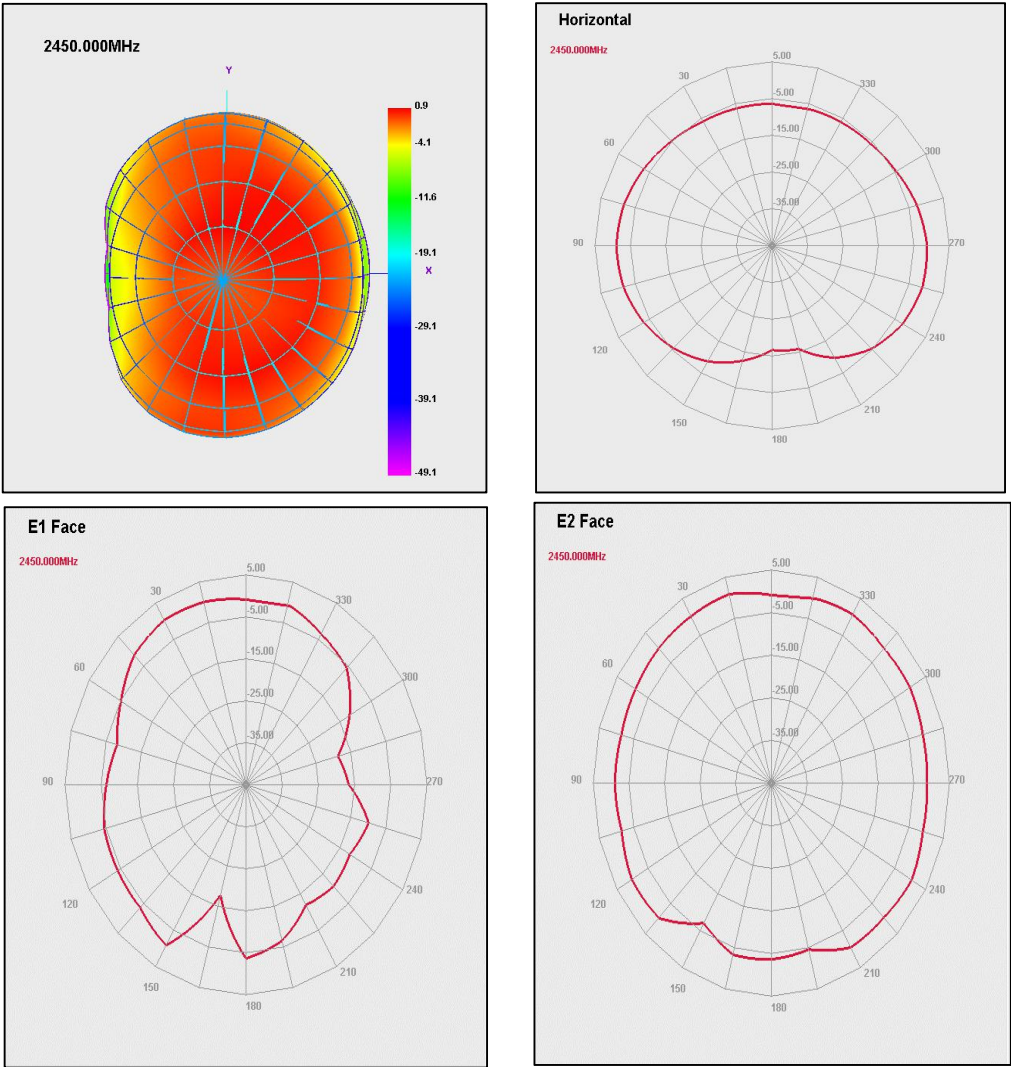
Freq (MHz)	Effi (%)	Gain (dBi)
5150	56.14	3.22
5178	55.35	3
5206	53.14	2.94
5234	55.79	3.34
5262	56.57	3.45
5290	54.75	3.02
5318	54.55	2.81
5346	57.83	3.36
5374	57.31	3.25
5402	56.43	3.3
5430	53.42	3.26
5458	50.97	3.19
5486	52.72	3.13
5514	53.38	3.43
5542	51.03	3.13
5570	51.03	3.06
5598	51.53	3.25
5626	50.99	3.01
5654	51.52	2.5
5682	51.74	2.54
5710	52.97	2.25
5738	55.77	2.63
5766	54.85	2.56
5794	53.65	2.19
5822	55.59	2.54
5850	53.72	2.42

WIFI active test data:

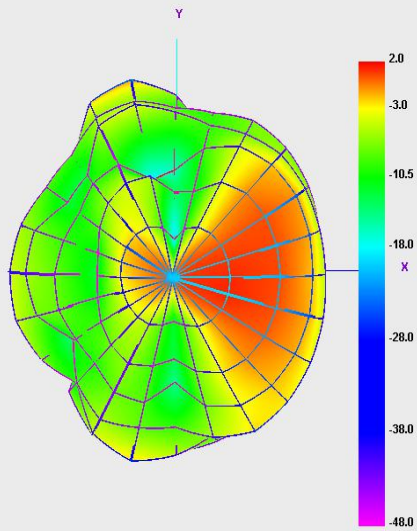
WIFI2.4G B-mode				
Test Result		WIFI		
		1	6	11
TRP (dBm) 11MBPS		14.07	13.65	13.79
Test TIS (dBm) 11MBPS		WIFI		
				-83.26

WIFI5G A-mode					
Test Result		WIFI			
		36	64	149	165
TRP (dBm) 54MBPS		12.03	12.15	12.86	12.73
Test TIS (dBm) 54MBPS		WIFI			
					-72.53

WIFI direction diagram:

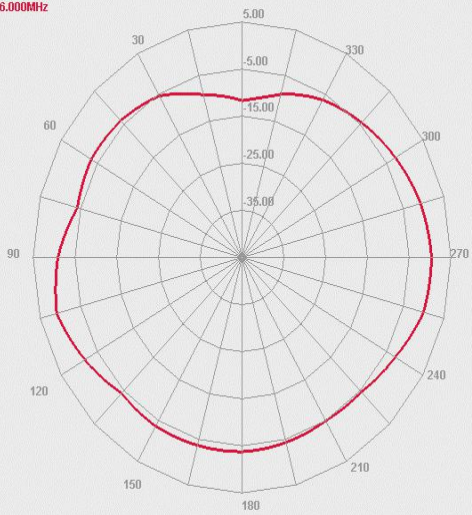


5486.000MHz



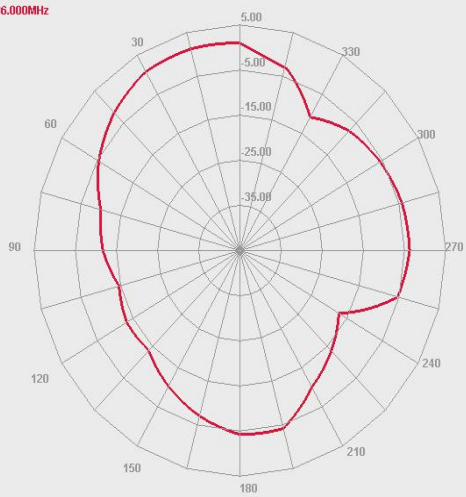
Horizontal

5486.000MHz



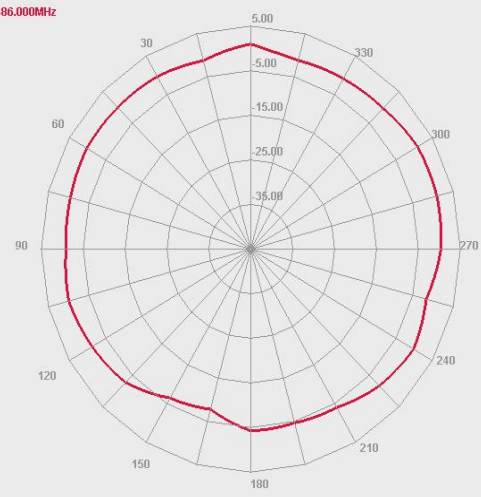
E1 Face

5486.000MHz



E2 Face

5486.000MHz



Bill of materials								
Name		FPC antenna						
Customer		skyworth						
Please provide detailed information on all components, raw materials, and auxiliary materials used in this product								
NO.	Name	supplier	material quality	Testing agency	Report number	Report date	Maturity	Report
1	FPC board	Cai Lungeti	base material	banner	SHAEC24028809006	2024/12/20	2025/12/20	have
2	FPC board	Jinyuan Xinghui	bonding pad	Huace	A2240614868101001C	2024/10/12	2025/10/12	have
3	FPC board	Youli	printing ink	SGS	ETR25501383	2025/5/20	2026/5/20	have
4	Coaxial line (insulation)	Juhua	FEP	SGS	NGBPC24007471212	2024/12/23	2025/12/23	have
5	Coaxial Line (Weaving)	Zhen Xiong	tinned copper wire	Huace	A2240555311101001C	2024/9/9	2025/9/12	have
6	Coaxial line (sheath)	Juhua	FEP	SGS	NGBPC24007471212	2024/12/23	2025/12/23	have

List of Materials and ROHS Test Reports				
Name	FPC antenna	Material specifications :	B81-V1.1	The testing agency must comply with the requirements of CNAS-CL01 and ISO-IEC 17025:2005
客户Customer		物料编号Code :	N012102-000502-001	

Please provide detailed information on all components, raw materials, and auxiliary materials used in this product	
--	--

[illegible]