Tianfrequency Intelligent Internet of Things Technology (Shenzhen) Co., LTD

acknowledgement

Customer name: Toumei

Customer model: C900S projector

Customer No.:

Specification description: Built-in antenna Antenna/2.4G&5.8G-WiFi/3dBi/50ohm/FPC 43.40*12.00mm/ RF1.13mm black coaxis L=90mm + Ip ex1

Confirmation of signature and seal					
Sky frequency intelligent confirmation			Customer confirmation		
Sample making	examine and verify	ratify	test and verify	examine and verify	ratify
Sign and seal			Signature and seal of the customer		
date	2024-7-24		date	2024--	

Contact person: Wang Jianguo Mobile phone: 13424341872

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2. Document formulation / revision / abolition of the resume

edition	date	Make / revise the content	lay down	approval	remarks
A1.0	**2024.7.24**	**Sample seal sample test output**	**Fan Lei**	**Qin Su Lin**	

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3. Directory

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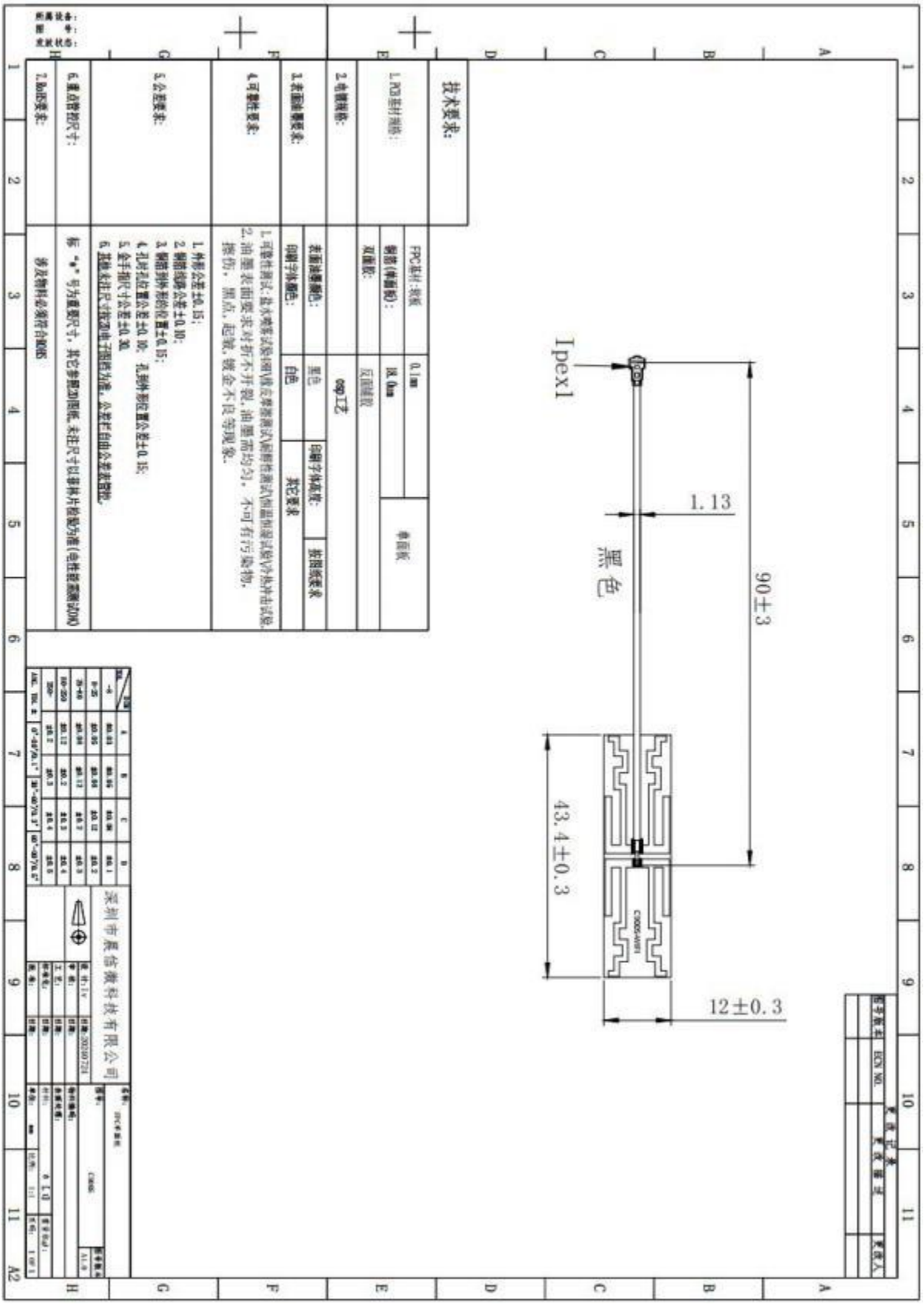
4. Product drawings



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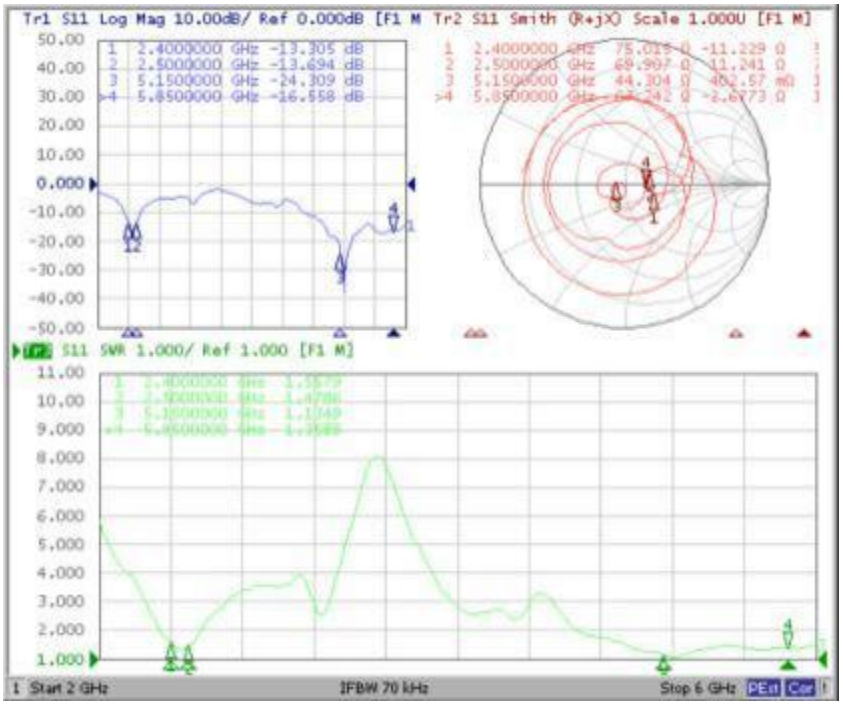
5. passive performance test parameters

S11



Fre(GHz)	2.4	2.5	5.15	5.85
ReeturnLoss	-13.30	-13.69	-24.30	-16.55
VSWR	1.55	1.47	1.13	1.35

Efficiency, gain, and direction diagram

Frequency ID	1	3	5	7	9	11	12	14	16	18	20	22	24	26
Frequency (MHz)	2400.0	2420.0	2440.0	2460.0	2480.0	2500.0	5150.0	5250.0	5350.0	5450.0	5550.0	5650.0	5750.0	5850.0
Efficiency (dBi)	-2.60	-2.61	-3.08	-3.39	-3.03	-2.61	-4.71	-4.91	-3.51	-3.51	-4.15	-4.60	-4.46	-4.21
Gain (dBi)	2.70	2.75	2.63	2.54	2.65	3.39	2.86	2.48	4.01	4.09	3.53	3.30	3.28	3.18
Efficiency (%)	54.95	54.81	49.21	45.78	49.77	54.86	33.80	32.28	44.58	44.59	38.50	34.67	35.81	37.97
Directivity (dB)	5.30	5.36	5.70	5.94	5.68	6.00	7.57	7.39	7.52	7.60	7.67	7.90	7.74	7.38
Peak Gain Position (Theta)	96.00	110.00	98.00	96.00	101.00	108.00	99.00	68.00	96.00	71.00	70.00	69.00	70.00	99.00
Peak Gain Position (Phi)	71.00	62.00	70.00	72.00	69.00	65.00	64.00	91.00	74.00	87.00	89.00	87.00	84.00	63.00
Efficiency ThetaPol (%)	44.13	43.69	39.28	37.66	40.31	44.84	30.68	28.07	40.36	40.98	34.90	30.84	32.28	34.08
Efficiency PhiPol (%)	10.82	11.12	9.93	8.11	9.46	10.02	3.12	4.20	4.23	3.61	3.60	3.83	3.53	3.90
Upper Hem. Efficiency (%)	31.68	30.27	26.30	25.46	28.01	29.56	20.11	17.97	25.14	25.47	22.73	20.81	21.25	22.10
Lower Hem. Efficiency (%)	23.27	24.54	22.92	20.32	21.76	25.31	13.69	14.31	19.44	19.12	15.76	13.86	14.56	15.88

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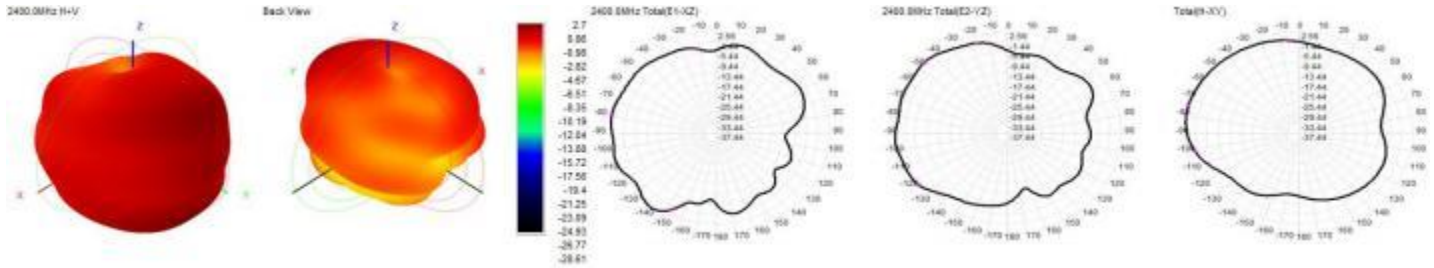
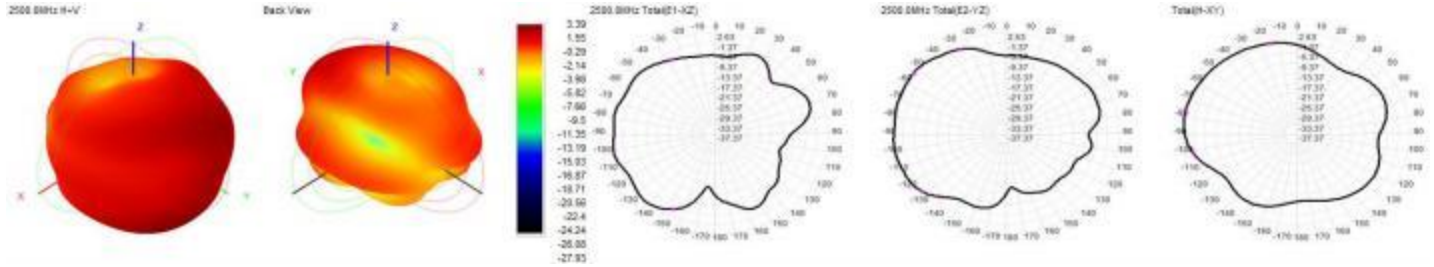
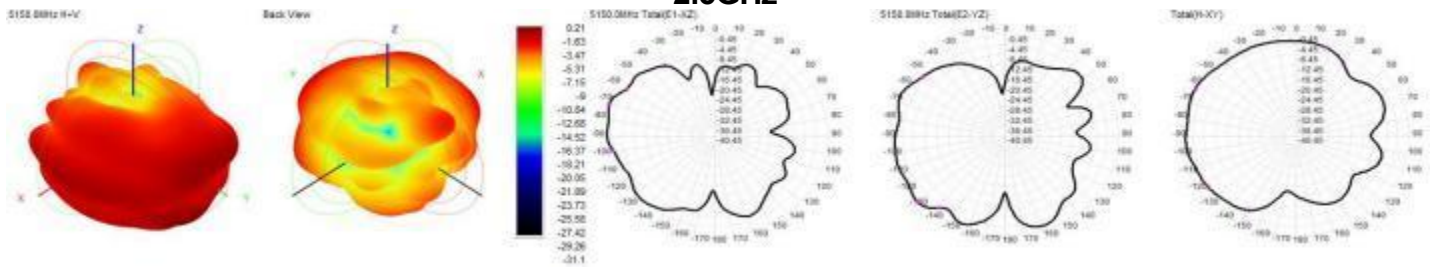


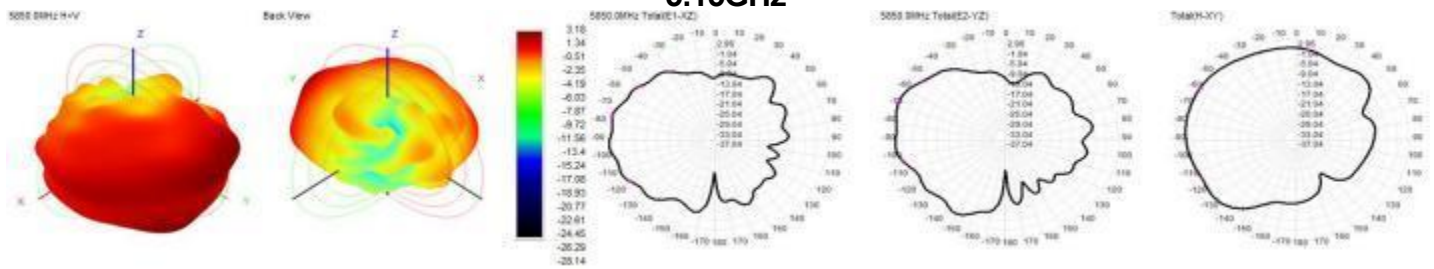
2.4GHz



2.5GHz



5.15GHz



5.85GHz

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6. Electrical performance parameters

Electrical parameters		
frequency range		2.4-2.5GHz /5.15-5.85GHz
input impedence		50Ω
standing-wave ratio		<2.0
gain	2.4GHz	3 dBi
	5.8GHz	3 dBi
Polarization mode		cross polarization
radiation direction		omnidirectional
Connector model		Ipex1
Mechanical parameters		
wire length		90mm
maintenance energy		/
coax		Black is 1.13mm
Salt Spray Test		
enviromental parameter		
working temperature		-40~85℃

7. Reliability test report

7.1. Constant temperature and humidity test

Test / test items	steady temperature damp test	Inspection sheet number
Product name / specification	2.4G&5.8G-FPC RF1.13mm Line, 90mm line length, Ipex1	Number of tests: 5 PCS
Inspection date: July 20,2024		Completion date: July 21-24,2024
Test / inspection equipment: 1. Program-type constant temperature and humidity test box 2.8753 ES network analyzer		
Test / Inspection Conditions: 1. Test for 12H at constant temperature-40℃ 2. + 65 ° 65 ~ 70% RH test 12H, a total of 24 hours;		
end of test		
requirement: 1. No cracks and separation on the metal surface; the non-metallic part should not have discoloration, cracking, deformation, glue and other bad; 2. The electrical test meets the standard requirements; the voltage ratio test is qualified		
Test / inspection determination:lqualified⊙unqualified⊙Do not make judgment		
Test: Audit:		

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7.2. Cold and cold shock at high and low temperature

Test / test items	High and low temperature hot and cold shock	Inspection sheet number
Product name / specification	2.4G&5.8G-FPC RF1.13mm Line, 90mm line length, Ip ex1	Number of tests: 5 PCS
Inspection date: July 20,2024		Completion date: July 2021,2024
Test / inspection equipment: 1. High and low temperature are alternating with humid heat 2.8753 ES Network Analyzer		
Test / Inspection Conditions: -40℃ (2H) - -80℃ (2H) interval, 6 cycles, a total of 24 hours;		
end of test		
requirement: 3. The metal surface coating shall not be peeling, cracking, separation, etc.; the non-metallic part shall not have discoloration, cracking, deformation, bonding and other bad; 4. The electrical test meets the standard; the voltage wave ratio test is qualified.		
Test / inspection determination:lqualified⊙unqualified⊙Do not make judgment		
Test: Audit:		

8. Packaging specifications

Product material number:							
Product specification: built-in antenna Antenna/2.4G&5.8G-WiFi/3dBi/50ohm/FPC 43.40*12.00mm/RF1.13mm black coaxial axis L=90mm + Ip ex1							
1. labeling requirement							
Inner label length 45 wide 70					Outer label long 45 wide 70		
demander					demander		
supplier	Tianfrequency Intelligent Internet of Things Technology (Shenzhen) Co., LTD				supplier	Tianfrequency Intelligent Internet of Things Technology (Shenzhen) Co., LTD	
Customer order number					Customer order		
Customer material number					Customer material number		
material code					material code		
Product name specification		examination clerk			Product name specification		examination clerk	
Quantity / unit		date of manufacture			Quantity / unit		date of manufacture	
remarks					remarks		
2. The packing requirements							
1. Internal packaging products 50 PCS 5000 PCS							
2. Packaging							
matters need attention:							