	document number:

Specification For Approval

Customer Name: Customer:			
Supplier Name: Customer:	Dongguan Zhongyida Electronic Technology Co., LTD		
Customer No.:		Supplier No.:	
product description:	2.4G-mushroom head antenna	Equipped with models:	
Supplier recognition (seal):		Customer recognition (seal):	
Production: Zhou Jingfeng	Structure: Zhou Jingfeng		
examine and verify:	Date: 2024.08.20		

catalogue

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1. product picture

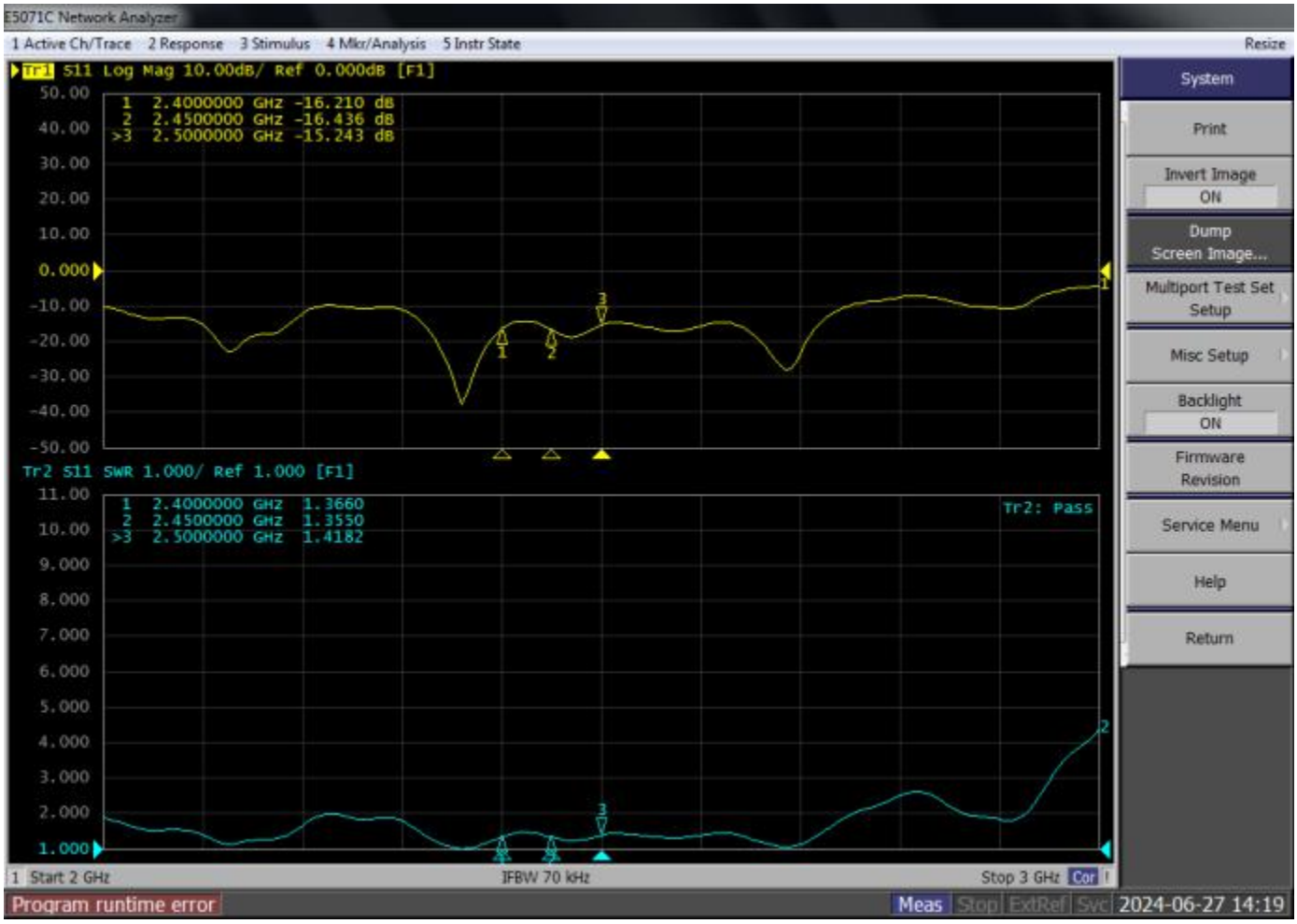
2. Product Parameter

Product test, test parameters			
Product Name (Name)	2.4G-mushroom head antenna	**Product Model Number (Model Type)**	
Electrical performance index (Electrical Specifications)			
Frequency Range (Frenquency Range)	2400-2500Mhz	**Polarization mode (Polarization)**	perpendicular
Input impedance (Impedance)	50 Ω	**radiation direction**	omnidirectional
Standing Bobby (VSWR)	≦2	**Power capacity (Power)**	50W
Gain (Gain)	5.38dBi	**Bandwidth (Bandwidth**	100MHz

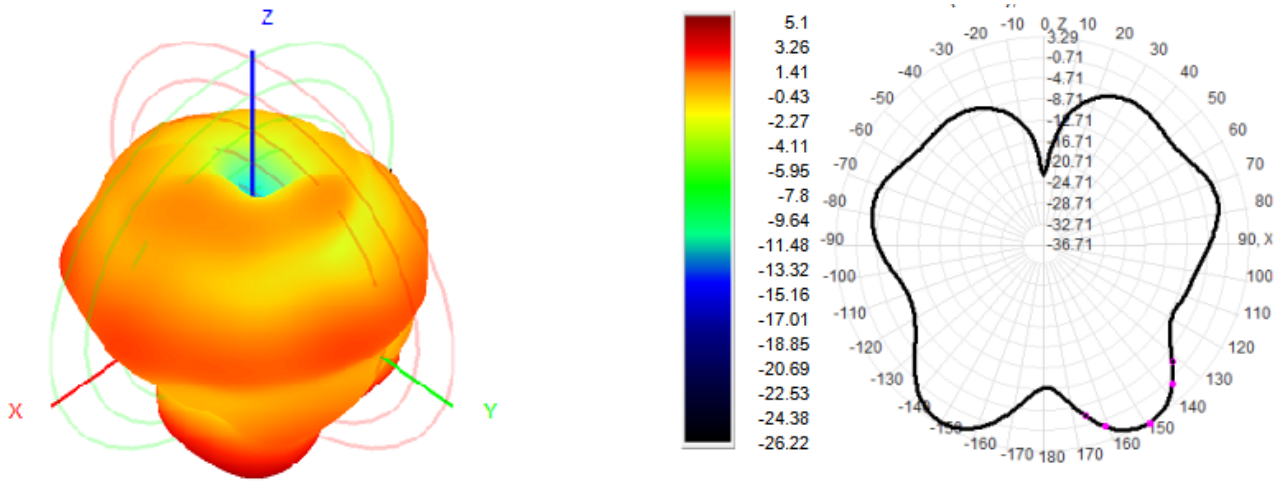
Mechanical index (Mechanical Specifications)			
Dimensions (Dimensions)	46.2MM ±2MM	**Antenna Color (Chassis Color)**	**black**
Connector model number (Connector)	**SMA needle**	**Lead length (Cable Length)**	300±3MM
Antenna material (Chassis Material)	AB S		
working temperature (Working Temperature)	-40℃±85℃	**Storage temperature (Limit Temperature)**	-40℃±85℃
UL certification number		QMTM2.E312670	

III. S 11 (VSWR, Return loss, Smith) data

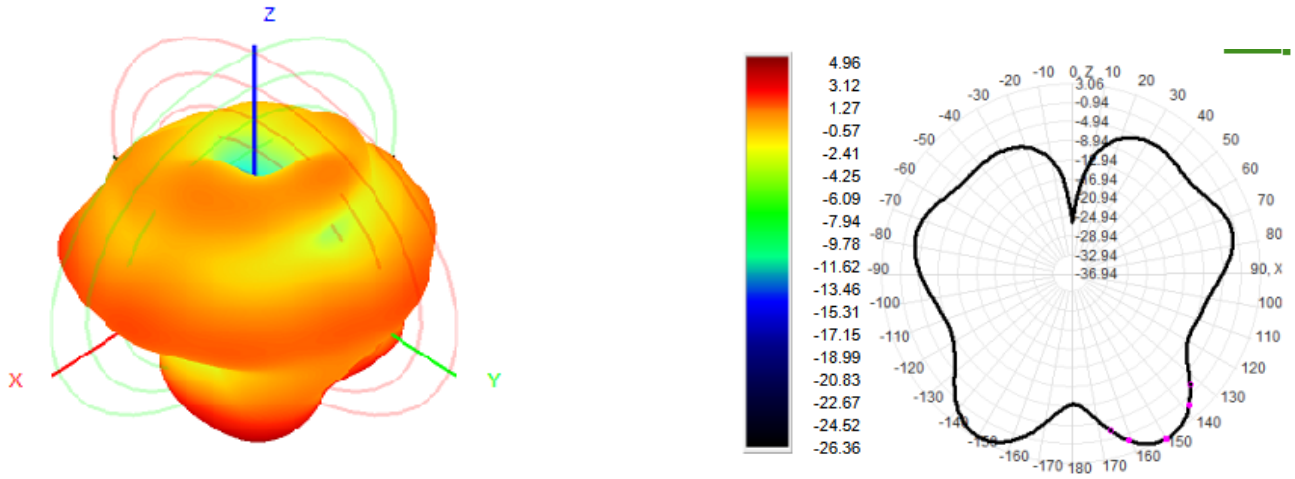
1.one. The Network Analyzer Report



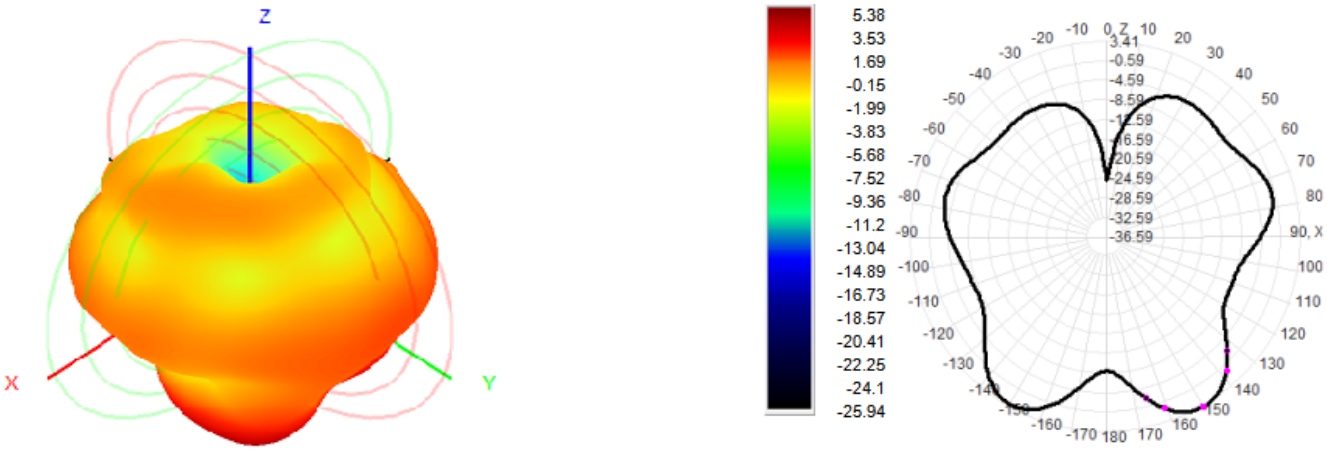
2.2D-3D pattern



2400HMZ



2450HMZ



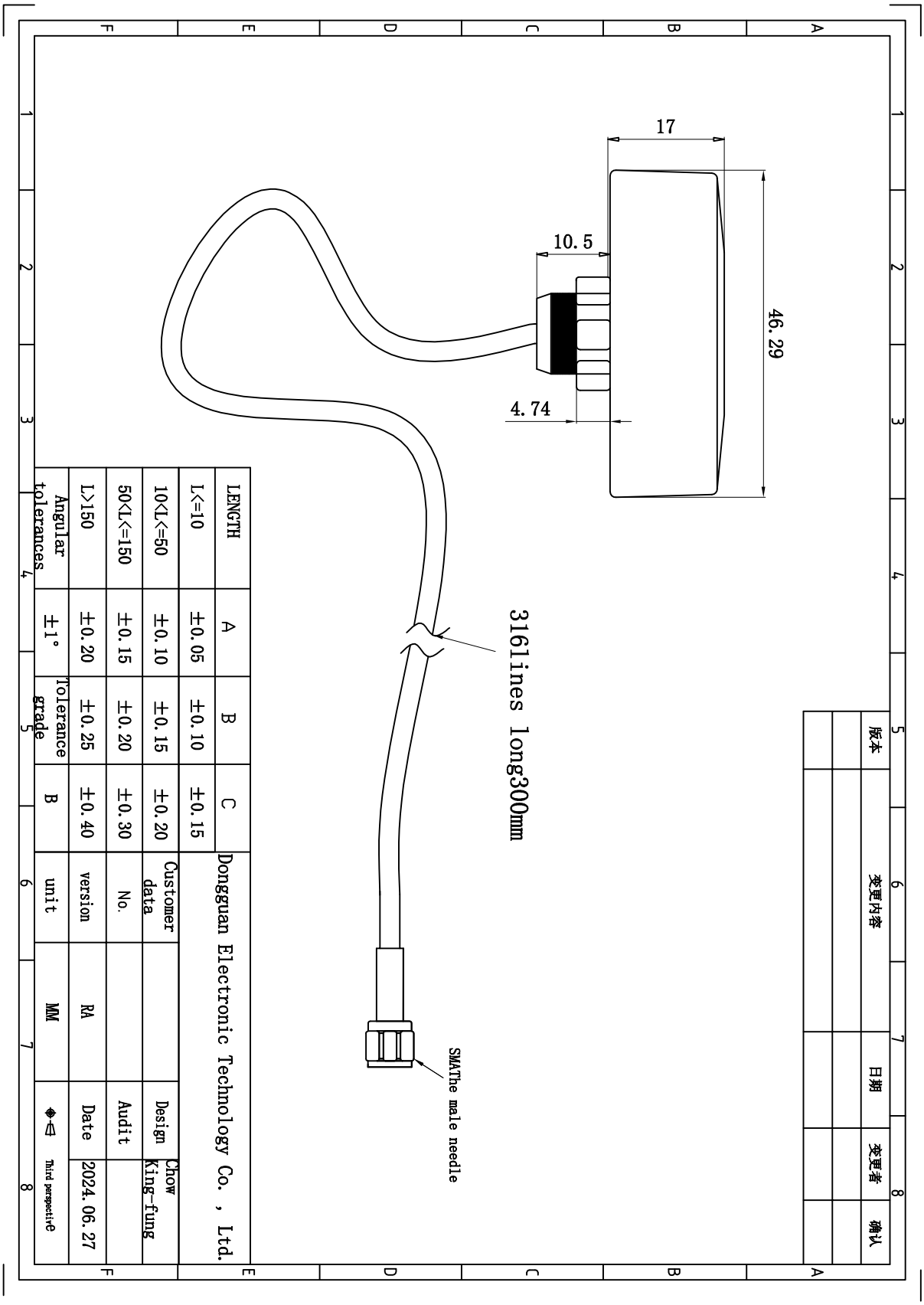
2500HMZ

4.Antenna efficiency and gain

TEST REPORT

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency (dBi)	-3.23	-3.48	-3.11	-3.26	-3.31	-3.48	-3.44	-3.41	-3.44	-3.21	-3.43
Gain (dBi)	5.10	4.96	5.38	5.26	5.23	5.08	5.14	5.18	5.14	5.36	5.12
Efficiency (%)	47.52	44.93	48.85	47.24	46.66	44.89	45.33	45.60	45.28	47.71	45.35
Directivity (dB)	8.33	8.43	8.49	8.51	8.54	8.55	8.57	8.59	8.58	8.57	8.56
Peak Gain Position (Theta)	145.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00	146.00
Peak Gain Position (Phi)	44.00	44.00	44.00	44.00	44.00	45.00	135.00	135.00	46.00	46.00	46.00
Efficiency ThetaPol (%)	39.53	37.48	40.82	39.47	38.84	37.24	37.50	37.57	37.17	39.10	37.24
Efficiency PhiPol (%)	7.99	7.44	8.03	7.77	7.81	7.64	7.84	8.03	8.11	8.61	8.10
Upper Hem. Efficiency (%)	17.11	16.46	18.13	17.71	17.57	16.90	16.97	16.82	16.28	16.58	15.12
Lower Hem. Efficiency (%	30.42	28.46	30.71	29.52	29.09	27.99	28.37	28.78	29.00	31.14	30.23
T90(H)圆度	4.20	4.03	3.92	3.89	4.00	4.04	3.79	3.35	3.24	3.17	3.21
Gain 15deg (dBi)											
E1(XZ)波瓣宽度	24.00	23.00	23.00	24.00	24.00	23.00	23.00	22.00	22.00	22.00	23.00
E1(XZ)前后比	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E2(YZ)波瓣宽度	23.00	23.00	23.00	23.00	22.00	22.00	22.00	23.00	23.00	25.00	26.00
E2(YZ)前后比	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02
最大增益处轴比(P)	7.99	8.26	8.72	9.28	9.65	9.64	13.90	14.34	8.44	8.04	7.88
仰角10度最差(大)轴比(P)	56.23	50.67	66.21	58.64	57.81	50.52	55.28	49.65	59.84	45.70	53.89
Hc(XY)波瓣宽度	129.00	131.00	134.00	139.00	147.00	173.00	182.00	194.00	347.00	349.00	347.00
Hc(XY)前后比	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
左旋圆极化效率(%)	21.12	19.97	21.92	21.48	21.45	20.79	21.10	21.24	20.92	21.78	20.53
右旋圆极化效率(%)	26.40	24.96	26.92	25.75	25.20	24.10	24.23	24.36	24.36	25.93	24.82

III. Product size drawings



IV. Environmental performance test

Storage environment	Test temperature, humidity and air pressure are as follows: 1. Temperature is-30℃ ~ + 80℃ 2. Relative humidity is 45% - 85% 3. Air pressure is 86 kpa-106 kpa	Electrical and mechanical properties are normal
thermocycling	Five cycles were performed between 70℃ and 40℃ and then 1-2H under normal conditions.	Dimensions shall meet the requirements and shall be Meet the satisfaction In the mechanical and electrical performance
Constant humidity and heat trial	Relative humidity: 95 ± 3%, test temperature: 40℃. After a sustained 2H action, Electrical performance is measured within 5min after its removal. The test article is 1-2H under normal conditions to check the appearance quality	Dimensions shall meet the requirements and shall be Meet the satisfaction In the mechanical and electrical performance
vibration test	.0Dynamic frequency range: 10-55 HZ, displacement amplitude: 0.35MM, acceleration amplitude: 50M / S, sweep cycle number: 30 times	Electrical and mechanical properties are normal
fall-down test	1M falls 3 times in the axis direction vertical to each other	Electrical and mechanical properties are normal