



ZCONNLINK DONGGUAN ZCONNLINK ELECTRONIC TECHNOLOGY CO., LTD

SPECIFICATION FOR APPROVAL

Customer Name: MAKEBLOCK

Customer P/N: E2501000011

Material Name: Internal FPC Antenna

Supplier P/N: 830102035121

Description: CZ001 Base WiFi Antenna I-PEX II RF 0.81 L=35MM

Version: V2.0

Customer Approval		
Engineer	QA	Approval
Signed Or Sealed		
Date	2025.06.02	

Supplier Name: Dongguan Zconnlink Electronic Technology Co.,Ltd

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SPECIFICATION

Supplier P/N: 830102035121

Description: CZ001 Base WiFi Antenna I-PEX II RF 0.81 L=35MM

Material Name: Internal FPC Antenna

Supplier Name: ZCONNLINK

Manufacturer: ZCONNLINK

Remark: _____

Prepared	Review	Approval
Eric Wang 2025.06.02	Sally Lee 2025.06.02	Jonathan Lee 2025.06.02

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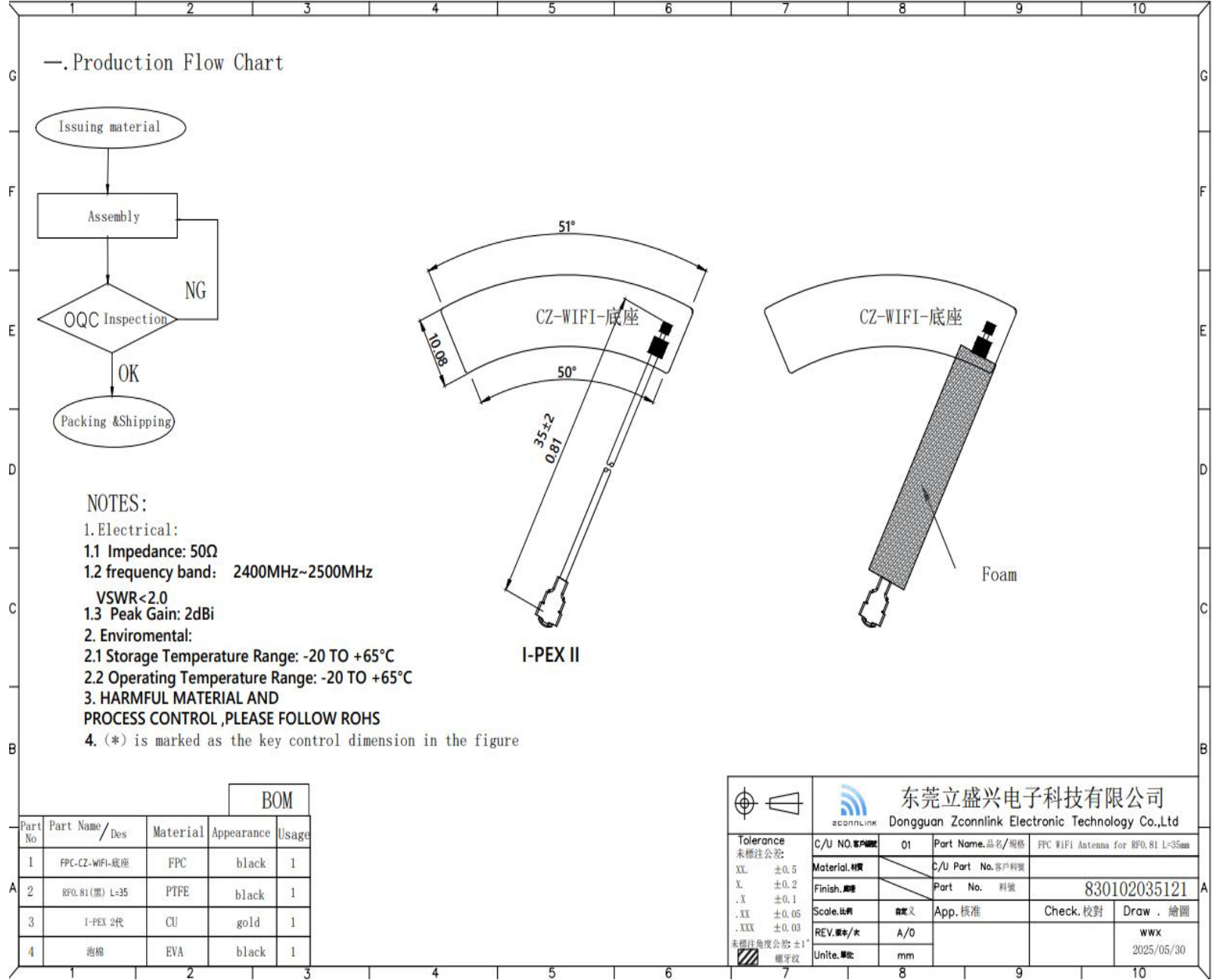


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One. Engineer Drawing





Electrical Parameters:

Frequency Band	2.4~2.5GHz
Impedance	50Ω
VSWR	≤2.0
Shortage Temperature	-20℃~+65℃
Operating Temperature	-20℃~+65℃

Two. Material List:

No:	Part Name:	Major material
1	RF0.81 black	PTFE
2	I-PEX II	CU
3	Main body	FPC
4	Shockproof form	EVA



Three:Environment And Reliability Test

Test item	Test basis	Judge requirement	Test equipment	Sample no Rejects(PCS)
Vibration	According to the B/T2423.48-199 prescribed method	1.No structural damage 2.Electrical meets the standard	Vibration tester	10/0
Drop	According to the B/T2423.8-1995 prescribed method	1. Drop height(mm) 1000 2. Smooth floor surface 3. Total number of falls (No:) 80	Drop tester	10/0
Constant temperature and humidity	According to the B/T 2423.3-93 chapter 5 prescribed method	1. Temperature (°C) 40 ± 2 2. humidity (%) 90~95 3. Time (h) 21 4. Recovery time (h) 1	Constant temperature and humidity Tester	10/0
Salt spray	B/T 2423.17-93 Temperature 55°C humidity $\geq 95\%$ NaCl ≥ 5	1.After working for 48 hours, remove and air-dry for 2 hours before resuming normal operation	Salt spray tester	10/0
High-temperature storage	B/T 2423.4-93 Temperature 70°C	1.24-hour recovery to room temperature 2.No structural damage 3.Electrical meets the standard	Constant temperature and humidity Tester	10/0
Pulling force	Test terminal tension 9.8N Bear one minute	Test terminal pull force 9.8N withstand 1 minute, Check again if the electrical are OK.	Tension meter	10/0



Four. Sample test report

No:	Item	Standard	N01	N02	N03	N04	N05
1	VSVR Max	≤ 2.0	1.53	1.62	1.89	1.55	1.63
2	Impedance	$50\Omega \pm 10$	50	49	47	43	45
3	Dimension	$35.0 \pm 2\text{mm}$	35.4	34.8	35.6	34.9	35.3



Five. WiFi Performance Test

HP8753D

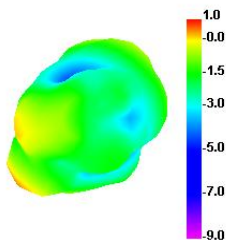




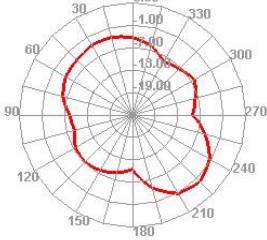
Six. WiFi Passive Test

Passive Test For 2.4G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	36.11	-4.42	0.99	-1.16	14.432	21.679	0.99	-21.85	5.42	30	46.94	46.41
2410	38.15	-4.18	1.46	-0.69	15.06	23.092	1.46	-22.14	5.64	30	47.38	46.82
2420	36.51	-4.38	1.27	-0.88	14.209	22.3	1.27	-20.97	5.65	0	47.31	46.73
2430	40.69	-3.91	1.73	-0.42	15.579	25.112	1.73	-18.16	5.63	0	47.57	46.98
2440	38.28	-4.17	1.54	-0.61	14.549	23.728	1.54	-19.96	5.71	0	47.86	47.31
2450	46.33	-3.34	2.26	0.11	17.664	28.663	2.26	-17.78	5.6	0	48.53	48.03
2460	40.5	-3.93	1.74	-0.41	15.351	25.148	1.74	-17.32	5.67	0	48.12	47.67
2470	43.2	-3.64	1.99	-0.16	16.296	26.907	1.99	-17.62	5.63	0	47.91	47.51
2480	44.35	-3.53	2.23	0.08	16.824	27.526	2.23	-17.42	5.76	0	48.08	47.74
2490	43.38	-3.63	2.17	0.02	16.461	26.919	2.17	-16.27	5.8	0	48.15	47.84
2500	49.02	-3.1	2.75	0.6	18.717	30.302	2.75	-14.98	5.85	0	47.85	47.54

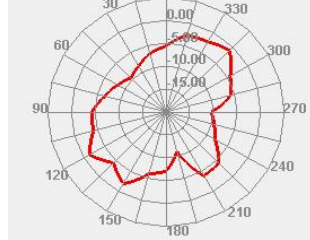
2400.000MHz



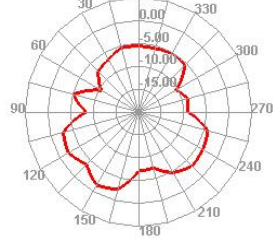
2400.000MHz H



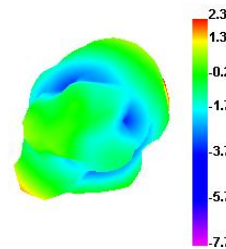
2400.000MHz E1



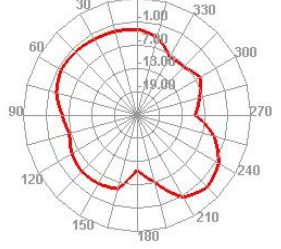
2400.000MHz E2



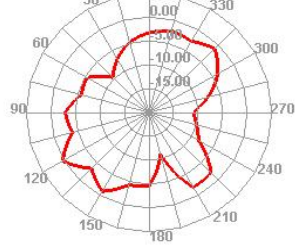
2450.000MHz



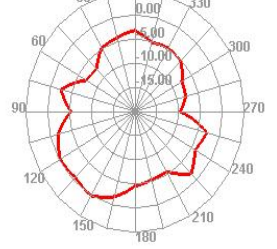
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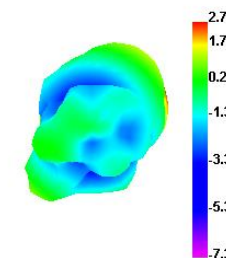
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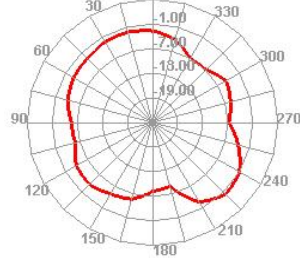
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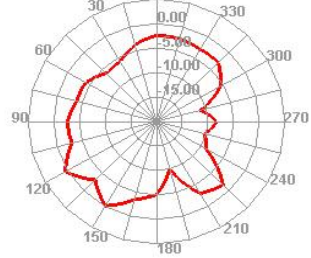
2500.000MHz



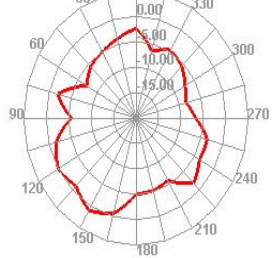
2500.000MHz H



2500.000MHz E1



2500.000MHz E2





Seven. WiFi TRP&TIS Test

1: Band b Test (TRP &TIS)

Test	Wifi 2G TRP		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TRP (dBm)	17.17	18.51	18.53
NHPRP (dBm)	16.28	17.5	17.43
MAX (dBm)	21.57	22.87	22.96
EIRP peak	21.57	22.87	22.96
Min (dBm)	6.35	4.05	7.35
Attenuation Horizontal	24.62	24.74	24.74
Attenuation Vertical	25.46	25.61	25.49

Test	Wifi 2G TIS		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TIS (dBm)	-86.96	-86.39	-86.96
NHPIS (dBm)	-86.07	-85.37	-85.85
RSSIAve	16.86	18.25	18.53
MaxPosRSSI	20.42	21.72	22.52
MaxPosSens	-90.52	-89.86	-90.95
MAX (dBm)	21.23	22.56	22.9
EIS peak	21.23	22.56	22.9
Min (dBm)	6.04	3.87	7.47
Attenuation Horizontal	24.22	24.36	24.65
Attenuation Vertical	25.39	25.69	25.78

2: Band g Test (TRP &TIS)

Test	Wifi 2G TRP		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TRP (dBm)	16.34	17.29	18.01
NHPRP (dBm)	15.44	16.28	16.89
MAX (dBm)	20.76	21.57	22.54
EIRP peak	20.76	21.57	22.54
Min (dBm)	5.69	2.68	6.73
Attenuation Horizontal	24.62	24.74	24.74
Attenuation Vertical	25.46	25.61	25.49

Test	Wifi 2G TIS		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TIS (dBm)	-74.54	-71.61	-74.05
NHPIS (dBm)	-73.63	-70.58	-72.91
RSSIAve	16.04	17.04	18.01
MaxPosRSSI	19.62	20.49	22.11
MaxPosSens	-78.12	-75.06	-78.15
MAX (dBm)	20.41	21.27	22.48
EIS peak	20.41	21.27	22.48
Min (dBm)	5.38	2.53	6.85
Attenuation Horizontal	24.22	24.36	24.65
Attenuation Vertical	25.39	25.69	25.78

2: Band n Test (TRP &TIS)

Test	Wifi 2G TRP		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TRP (dBm)	16.27	17.3	17.91
NHPRP (dBm)	15.36	16.25	16.78
MAX (dBm)	20.71	21.44	22.46
EIRP peak	20.71	21.44	22.46
Min (dBm)	5.21	2.88	6.08
Attenuation Horizontal	24.62	24.74	24.74
Attenuation Vertical	25.46	25.61	25.49

Test	Wifi 2G TIS		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
TIS (dBm)	-71.92	-69.06	-71.84
NHPIS (dBm)	-71	-68	-70.69
RSSIAve	15.97	17.04	17.92
MaxPosRSSI	19.57	20.44	22.03
MaxPosSens	-75.52	-72.46	-75.95
MAX (dBm)	20.36	21.12	22.4
EIS peak	20.36	21.12	22.4
Min (dBm)	4.9	2.74	6.25
Attenuation Horizontal	24.22	24.36	24.65
Attenuation Vertical	25.39	25.69	25.78