

Specification for Approval

Customer Name : Lockin Technology (Beijing) Co., Ltd.
LOCKIN (U.S.) INC.

Part Name : Built-in antenna -2.4G- black 1.37 tin-tin wire-1st
generation terminal -L=320mm-FPC-30×20mm

Customer PN : 0184000088

Vendor PN : 74220120

Antenna type : FPC

Vendor confirmation					
department	compilation	verify	approval		
autograph	Qiucuping	Huchong	Liulihua		
date	2022.11.23	2022.11.23	2022.11.23		
Customer confirmation					
department					
autograph					
date					

Name of contractor: Sichuan B&T Technology Co., Ltd.

address: Room No. 2 and 3, 5F, Building 8, No. 218, Wenwu Middle Road, Tangxun Street, Economic Development Zone, Mianyang City, Sichuan Province

Contents

- 一、 Revision History
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revision History

Version	Date	Develop/revise content	Formulate	approval
A0	2024.09.09	First formulation	Huang feihui	Huchong/Liulihua
A0-1101	2022.11.01	Change hand and tear ear position	Huang feihui	Huchong/Liulihua
A0-1114	2022.11.14	Optimize the line and update the line length	Huang feihui	Huchong/Liulihua
A0-1117	2022.11.17	Update electrical performance report	Huang feihui	Huchong/Liulihua
A0-1123	2022.11.23	Update line length and screen printing	Huang feihui	Huchong/Liulihua

二、2D Drawings

Version		Modification date	Revised content
A0		22-11-22	

Front view

Screen printing font is bright white

BAT-AMG-PRO-BT-R-A5

Hand tear ear position

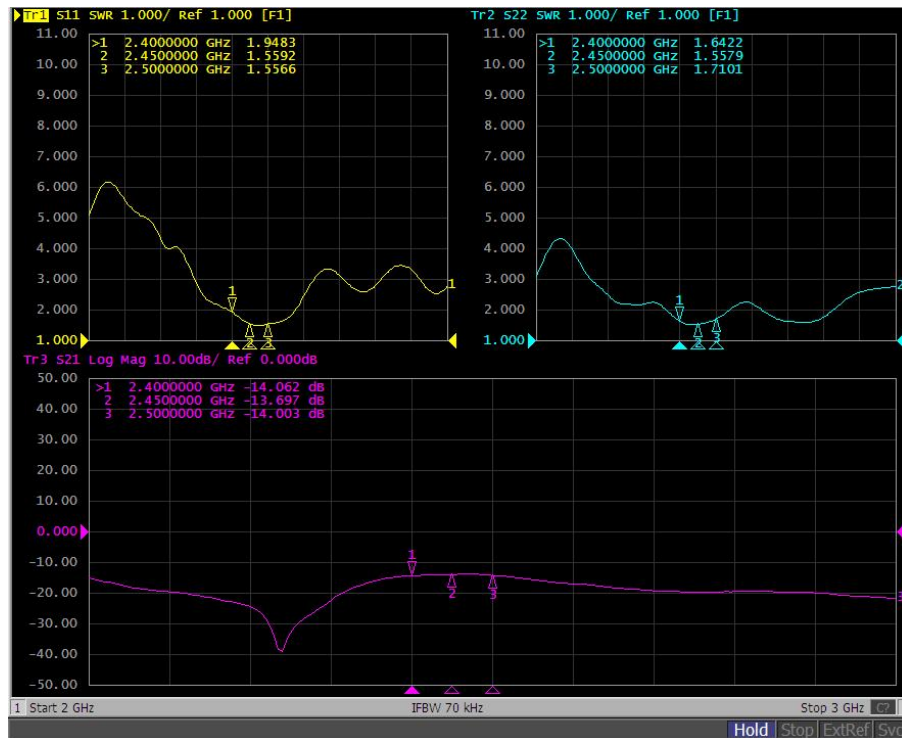
Technical requirements

1. The antenna welding part is firm and the cable size is accurate (the holding force of the connector is $\geq 1\text{kgf}$).
2. The silk screen color is the original color of the substrate, and the font is clear and not easy to fall off.
3. "*" indicates the dimensions that are key to IQC inspection.
4. The packaging and quality standards refer to the Boantong Packaging Specifications and B&T Quality Standards respectively.
5. The materials comply with ROHS.
6. Connector ports are not orientation sensitive.

Number	Part Name	Remarks	Design	Tang Hailin	Weight	Quantity	Proportion	Company	Name	Built-in antenna-2.4G-black 1.37 tin wire-first generation terminal-L=320mm-FPC-30×20mm
①	1st connector		Toexamine						Project number	Y2207060011
②	Coaxial line		Approval	Zeng Kang	±0.05	1~9.99	±0.10	1:1	Part number	74220120
③	FPC				±0.10	10~19.99	±0.15			
					±0.15	20~39.99	±0.20			
					±0.30	40~				
Page 1 1 in total										
B&T										

三、Electrical performance test report(Whole machine testing)

S11 Parameter



Standing wave ratio data

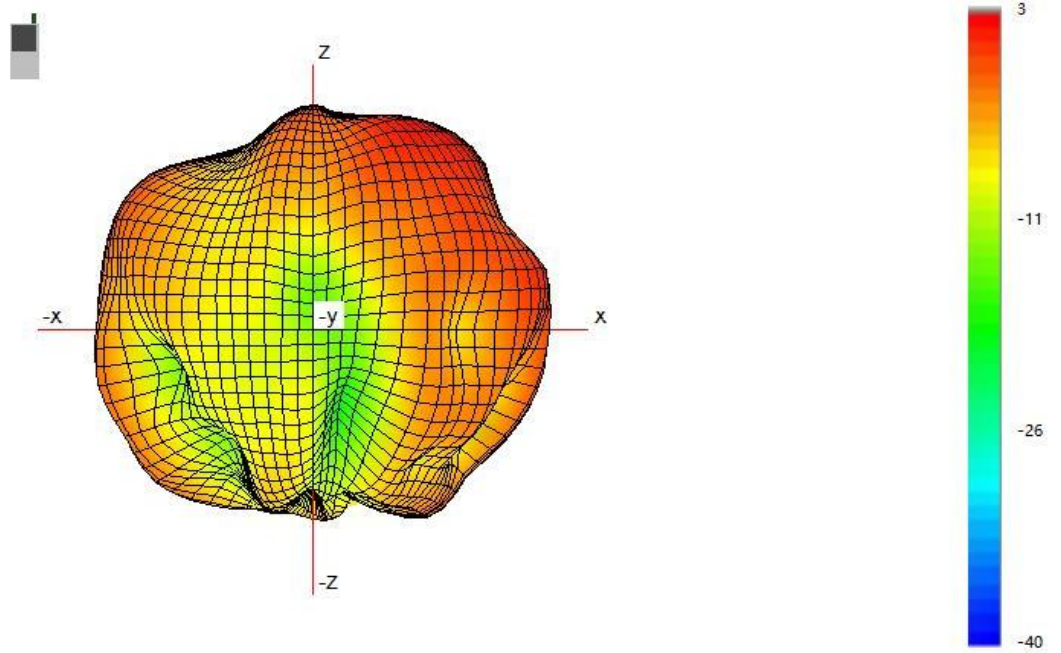
Freq/GHz	2.4	2.45	2.5
VSWR	1.94	1.55	1.55
Isolation(dB)	-14	-13	-14

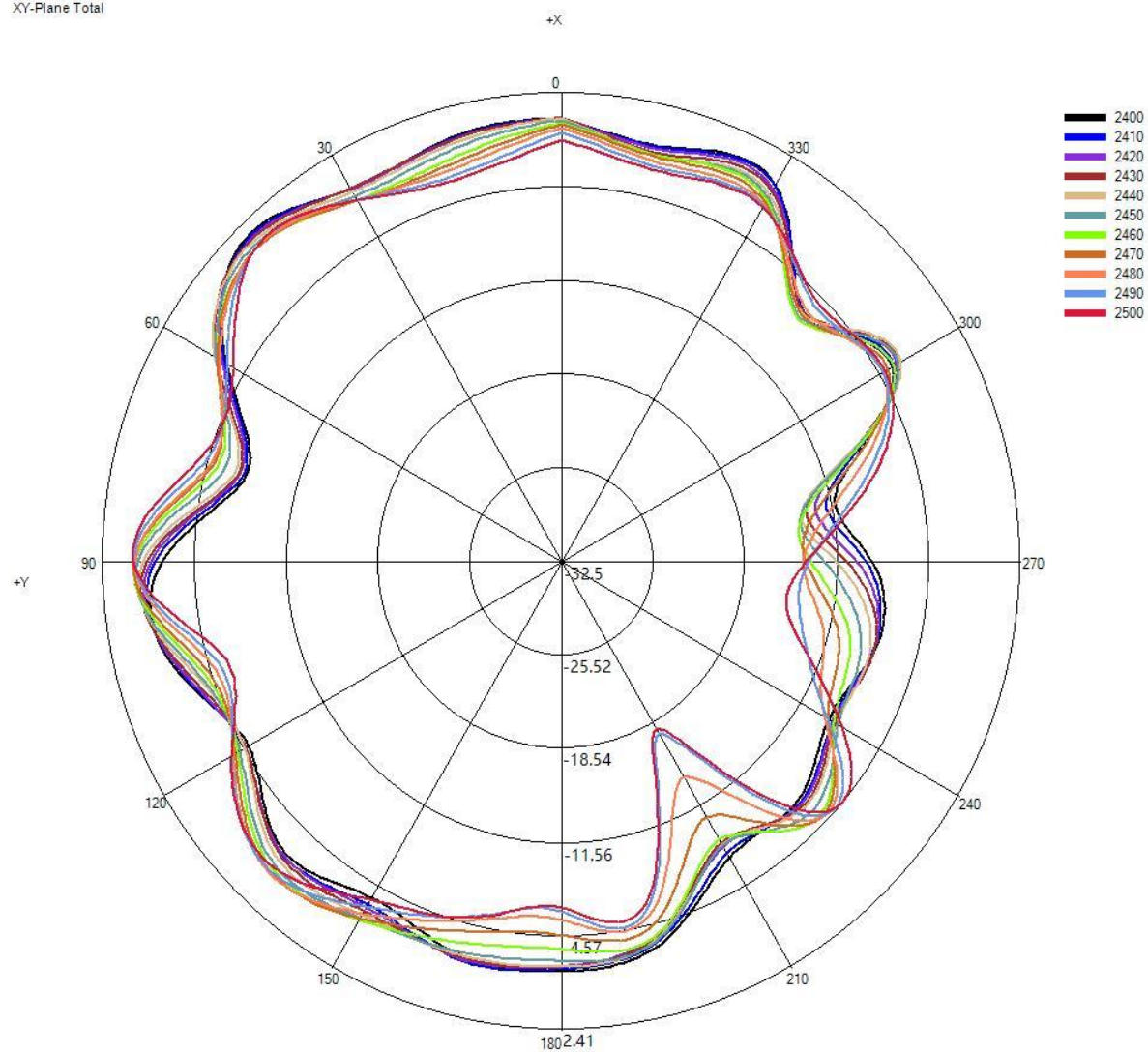
Antenna darkroom test data

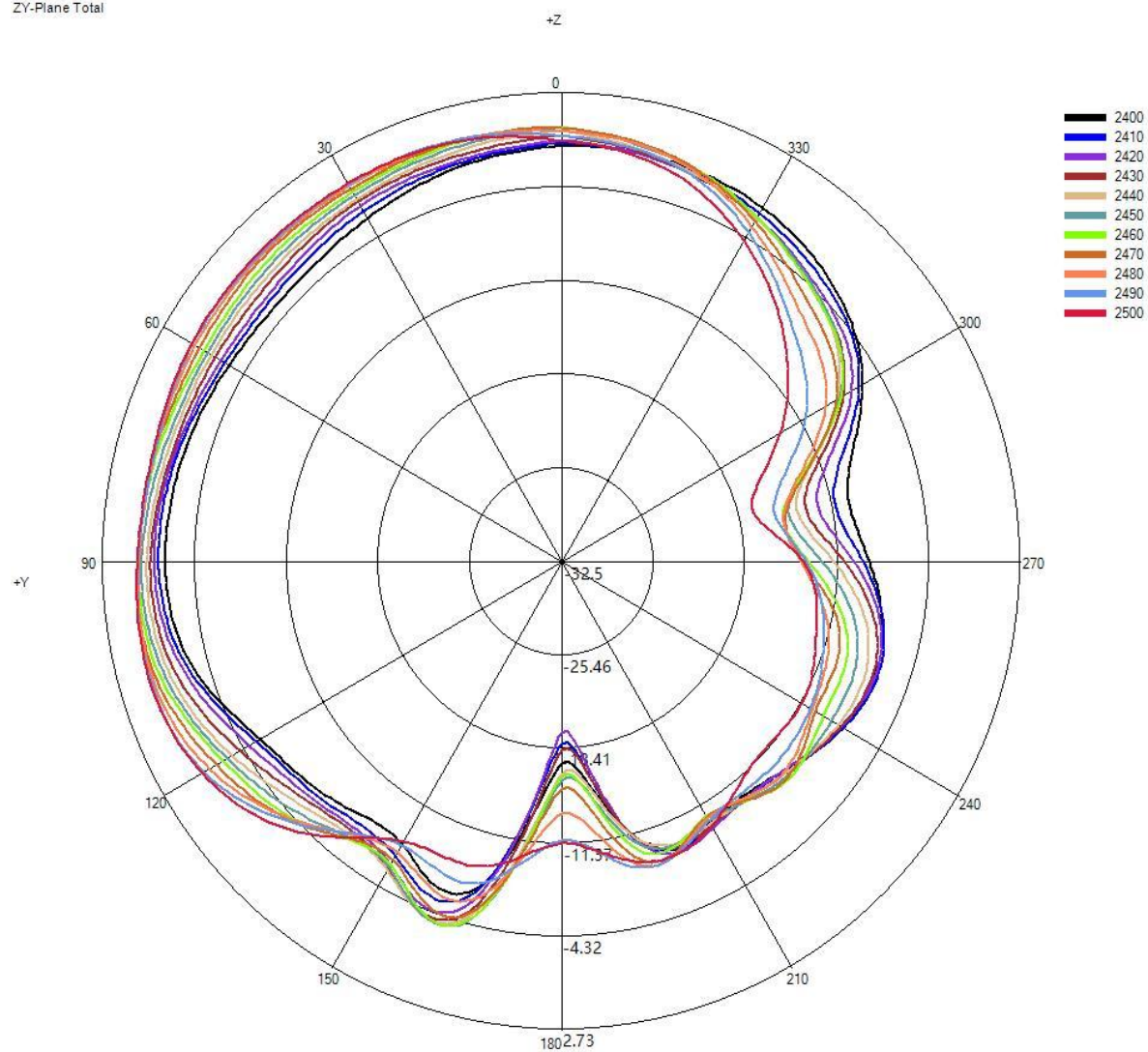
Frequency (MHz)	BLE	
	Gain (dBi)	Efficiency (%)
2400	2.46	51.78
2410	2.64	52.20
2420	2.80	51.95
2430	3.03	51.75
2440	3.23	50.91
2450	3.52	49.89
2460	3.80	48.69
2470	3.94	47.28
2480	3.95	45.34
2490	3.79	44.67
2500	3.43	45.00

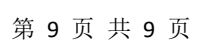
Antenna direction diagram

2450MHz









Specification for Approval

Customer Name : Lockin Technology (Beijing) Co., Ltd.
LOCKIN (U.S.) INC.

Part Name : Built-in antenna -2.4G- black 1.37 tin wire-1st generation
terminal-L = 320mm-FPC-28× 22.5mm

Customer PN : 0184000090

Vendor PN : 74220122

Antenna type : FPC

Vendor confirmation					
department	compilation	verify	approval		
autograph	Qiucuping	Huchong	Liulihua		
date	2022.11.23	2022.11.23	2022.11.23		
Customer confirmation					
department					
autograph					
date					

Name of contractor: Sichuan B&T Technology Co., Ltd.

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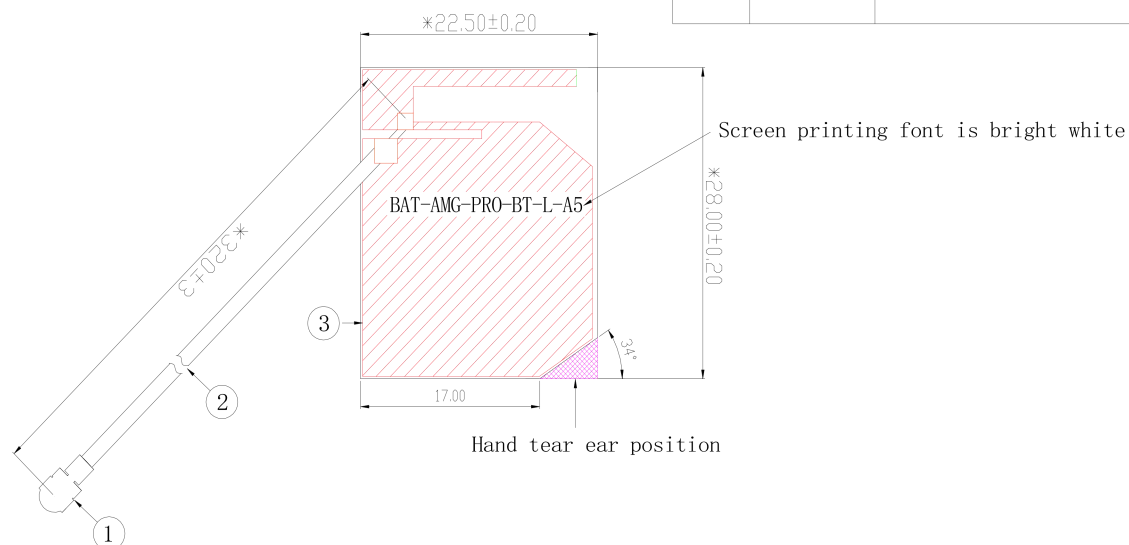
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revision History

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A0-1114	2022.11.14	Optimize the line and update the line length	Huang feihui	Huchong/Liulihua
A0-1117	2022.11.17	Update electrical performance report	Huang feihui	Huchong/Liulihua
A0-1123	2022.11.23	Update line length and screen printing	Huang feihui	Huchong/Liulihua
A0-0715	2025.07.15	Updated gain and band diagrams	Xuzhangjin	Huchong/Liulihua

Version	Modification date	Revised content
A0	22-11-22	

Front view



Technical requirements

1. The antenna welding part is firm and the cable size is accurate (the holding force of the connector is $\geq 1\text{Kg}$).
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Number	Part Name	Remarks	Design	Tang Hailin					Name	Built-in antenna-2. 4G-black 1.37 tin wire-first generation terminal-L=320mm-FPC-28×22. 5mm		
①	1st connector		Toexamine		Weight	Quantity	Proportion	Company	Project number	Y2207060011		
②	Coaxial line								Part number	74220122		
③	FPC		Approval	Zeng Kang								
			1 >X	±0.05							1:1	mm
			1~9.99	±0.10								
			10~19.99	±0.15								
			20~39.99	±0.20	Page 1 1 in total							
			40~	±0.30								
B&T												

三、Electrical performance test report(Whole machine testing)

S11 Parameter



Standing wave ratio data

Freq/GHz	2.4	2.45	2.5
VSWR	1.58	1.24	1.72
Isolation(dB)	-14	-12	-14

Antenna darkroom test data

Frequency (MHz)	BLE	
	Gain (dBi)	Efficiency (%)
2400	2.27	53.13
2410	2.22	53.47
2420	2.29	53.07
2430	2.35	53.81
2440	2.27	54.17
2450	2.29	54.49
2460	2.13	53.79
2470	2.08	52.40
2480	2.01	50.03
2490	1.71	47.70
2500	1.29	45.76

Antenna direction diagram

2450MHz

