

B Lucky®

东莞市芭乐电子科技有限公司

Dongguan bale Electronic Technology Co., Ltd.

东莞市长安镇乌沙社区兴二路15号巨峰德兴科技园六楼

6th Floor, Jufeng Dexing Technology Park, No. 15 Xing'er Road, Wusha Community, Chang'an Town, Dongguan

承 认 书

SPECIFICATION FOR APPROVAL

客户名称

CUSTOMER NAME:

产品名称

PRODUCT NAME: 915MHz Copper Tube Antenna (Monopole Antenna)

客户料号

CUSTOMER P/N:

芭乐料号

BL

P/N:

2.521.053B

REV: A1

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
CHECKED BY:	刘亮	
AUDITOR BY:	舒席良	
APPROVED BY:		
DATE:	2020-06-04	

Table of Content

<i>Item</i>	<i>Description</i>
1	-----Product specification
2	-----Mechanical drawing
3	-----Test report
4	-----Electrical characteristic
5	-----Reliability test



东莞市芭乐电子科技有限公司

Dongguan bale Electronic Technology Co., Ltd

东莞市长安镇乌沙社区兴二路15号巨峰德兴科技园六楼

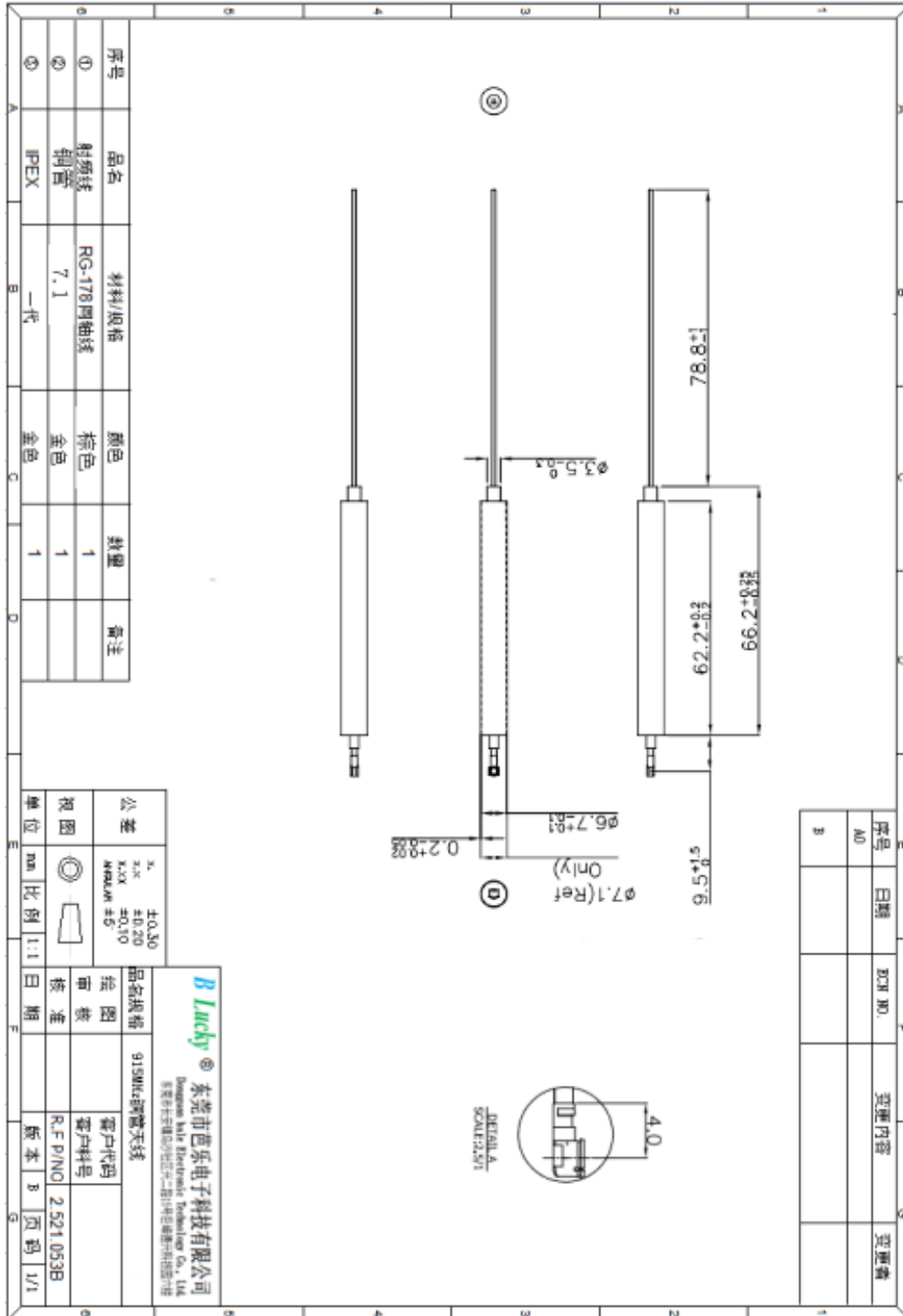
6th Floor, Jufeng Dexing Technology Park, No. 15 Xing'er Road, Wusha Community, Chang'an Town, Dongguan

1. Product specification:

Main product technical parameters

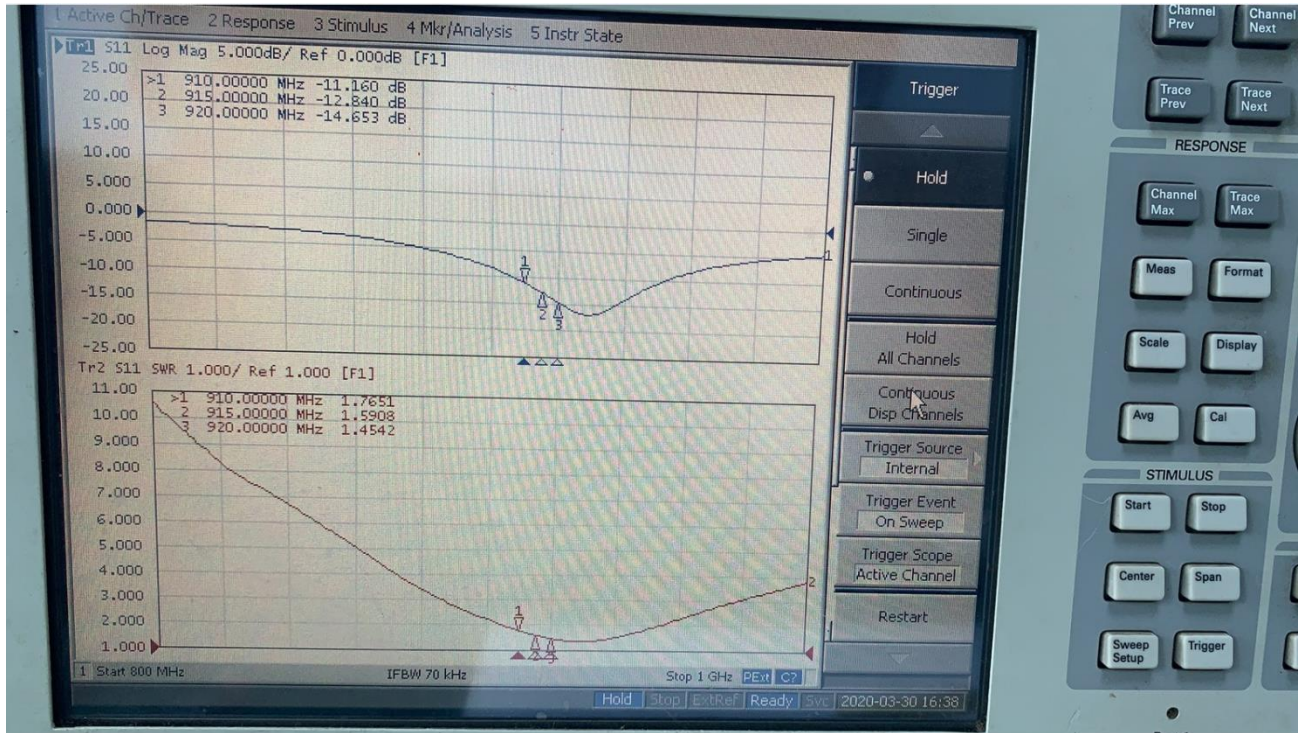
主要技术指标		Main technical specifications	
频率范围 (MHZ)	915	Frequency Range (MHz)	915
特性阻抗(Ω)	50 ± 10	Impedance(Ω)	50 ± 10
增益(dBi)	2	Peak Gain(dBi)	2
输出电压 驻波比	≤ 2.0	VSWR	≤ 2.0
极化方式	垂直&水平	Polarization	Vertical & Horizontal
方向性	全向性	Radiation	Omni-directional
连接方式	焊接	Connector Type	Soldering
物理性能		Physical Properties	
工作温度	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$	Operating Temp	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$
保存温度	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$	Storage Temp	$-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$

2. Mechanical drawing:



3. Test report:

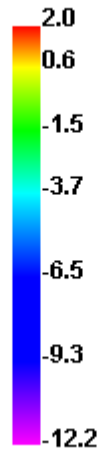
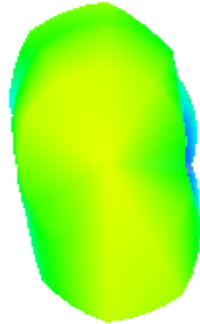
Return loss



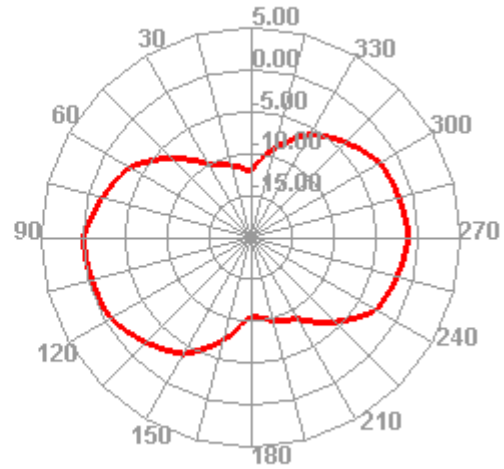
2D、3D Radiation Pattern:

Passive Test For 低频											
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver	
880	35.9	-4.45	-0.45	-2.6	19.02	16.883	-0.45	-14.15	42.02	42.11	
890	42.71	-3.69	0.53	-1.62	22.516	20.191	0.53	-13.51	42.28	42.28	
900	50.91	-2.93	1.37	-0.78	26.84	24.072	1.37	-12.1	42.27	42.27	
910	57.56	-2.4	2.03	-0.12	30.326	27.234	2.03	-12.18	42.5	42.5	
920	65.63	-1.83	2.65	0.5	34.425	31.208	2.65	-12.61	42.65	42.75	
930	66.17	-1.79	2.82	0.67	34.292	31.878	2.82	-14.2	42.8	42.8	
940	64.37	-1.91	2.91	0.76	32.686	31.682	2.91	-16.58	42.9	42.9	
950	62.86	-2.02	2.69	0.54	31.172	31.688	2.69	-19.24	43.05	43.05	
960	58.5	-2.33	2.36	0.21	28.407	30.088	2.36	-19.99	43	43	

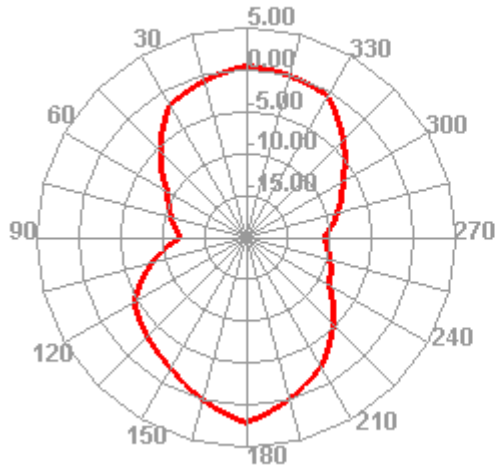
910.000MHz



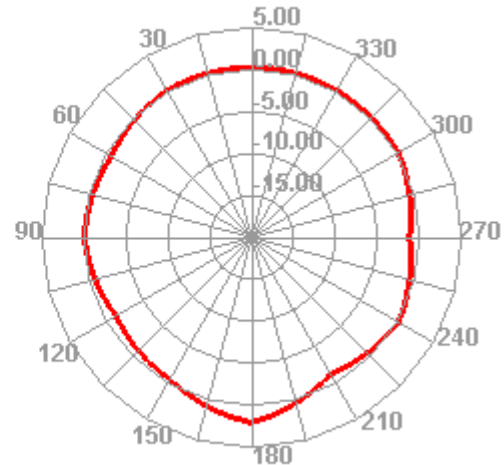
910.000MHz H



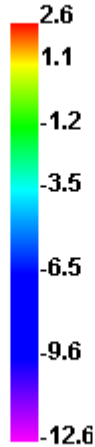
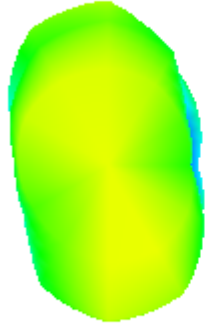
910.000MHz E1



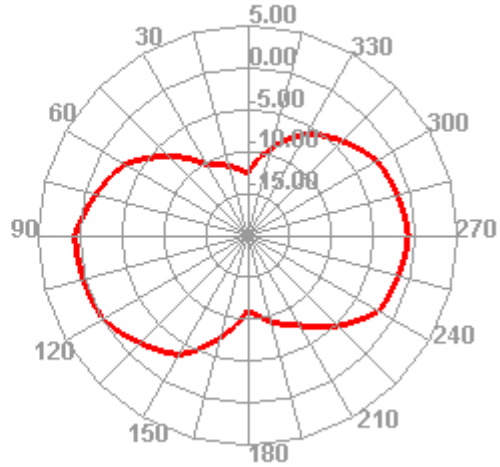
910.000MHz E2



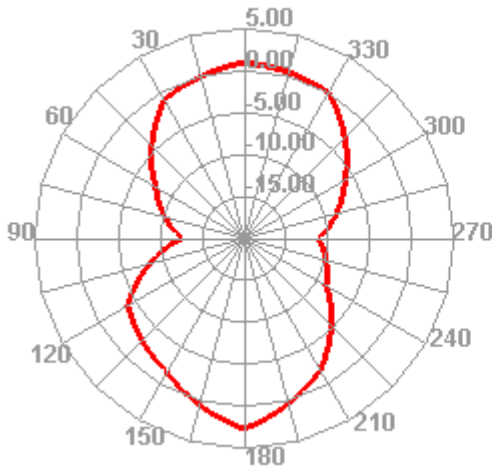
920.000MHz



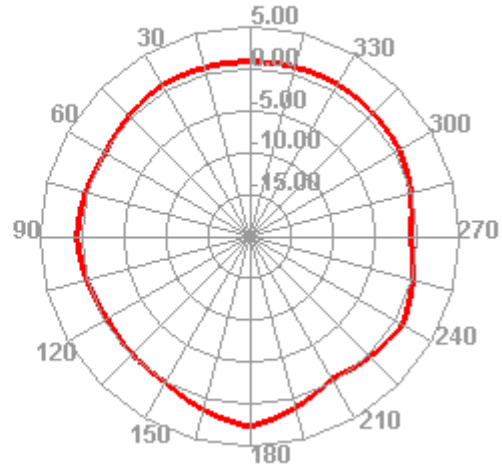
920.000MHz H



920.000MHz E1



920.000MHz E2



4. Electrical characteristic:

Item	Testing method and condition	Specification & requirement	Result
1. Characteristic Impedance	Use TDR to test antenna impedance	Impedance = 50 Ohm ± 10 Ohm	PASS
2. VSWR	Use Network analyzer to test VSWR at frequency range 800-1000MHz	VSWR = 2.0 : 1 (Maximum)	PASS
3. Antenna gain	Test radiation pattern in Microwave chamber at frequency range 910-960MHz	Base on standard radiation pattern requirement	PASS



东莞市芭乐电子科技有限公司

Dongguan bale Electronic Technology Co., Ltd

东莞市长安镇乌沙社区兴二路15号巨峰德兴科技园六楼

6th Floor, Jufeng Dexing Technology Park, No. 15 Xing'er Road, Wusha Community, Chang'an Town, Dongguan

5. Reliability test:

Item	Testing method and condition	Specification & requirement	Result
Salt fog	Salt water concentration: 50+/-10g/L (~5% concentration); PH: 6.5-7.2; Temperature: 35+/-1 degree Celcius; Testing period: 16 Hours	Judgement: After test using 20X magnifying glass to observe. No oxidation is found is classified as pass	PASS
Vibration test	Vibration frequency: 10 – 2000 - 10HZ Amplitude: 1.52mm along X, Y and Z direction 10 times for each direction	Judgement: No cosmetic change. All parameter within specification	PASS
Drop test	Drop from 1 meter high on wooden surface	Judgement: No cosmetic change. All parameter within specification	PASS
Temperature cycle test	High temperature: 70°C Low temperature: -20°C Duration: stay for 30 minutes for each temperature Transition time: 10 minutes Cycle time: 5 times Recovery time: 4 to 6 hours	Judgement: No cosmetic change. All parameter within specification	PASS
Constant temperature constant humidity test	Temperature and humidity: 40°C ± 2°C, 90-95%RH Duration: 500hrs Recovery time: 4 to 6 hours Sample time: 240 & 500 hours	Judgement: No cosmetic change. All parameter within specification	PASS
High temperature test	Temperature: 85°C Duration: 240 hours Recovery time: 4 to 6 hours Sample time: 240 hours	Judgement: No cosmetic change. All parameter within specification	PASS
Low temperature test	Temperature: -20°C Duration: 240 hours Recovery time: 4 to 6 hours Sample time: 240 hours	Judgement: No cosmetic change. All parameter within specification	PASS