

Specification For Approval

Date: 2020 / 08 / 06

File No.: 200806002

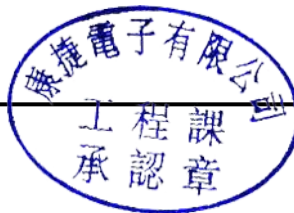
Version: 1.0

Customer : 魯邦通

Customer P/N : /

INVAX P/N : AN2400-92158BRS

Description : Antenna



Cortec Checked By:



Customer Approved By:



INVAX System Technology Corp.
4F. No. 815.Chung Hsiao East Rd.,Sec.5
Taipei, TAIWAN

TEL:886-2-2788-5218 FAX:886-2-2783-1658
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Province, China

TEL:86-769-85388261 FAX:86-769-85317869
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Index:

- 1. Revision History / Page 3**
- 2. Specification / Page 4**
- 5. Characteristics and Reliability Test / Page 5**
- 3. Antenna - S Parameter Test Data / Page 6**
- 5. Characteristics and Reliability Test / Page 7**
- 6. Mechanical and Packing Drawing / Page 8 ~ 9**
- 7. Material Description and RoHS Test Report / Page 10 ~ end**

Product Number: AN2400-92158BRS

Product Name: Antenna



1. Revision History

Revision	Date	Change Notification	Description
1.0	2020.08.06	初版	

Product Number: AN2400-92158BRS

Product Name: Antenna



2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
V.S.W.R	≤ 2.0
Peak Gain	5dBi / Max
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	CU
Material of Plastic	TPE / ABS
Cable Type	RG-178U
Connector Type	SMA Male Reverse
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

Product Number: AN2400-92158BRS

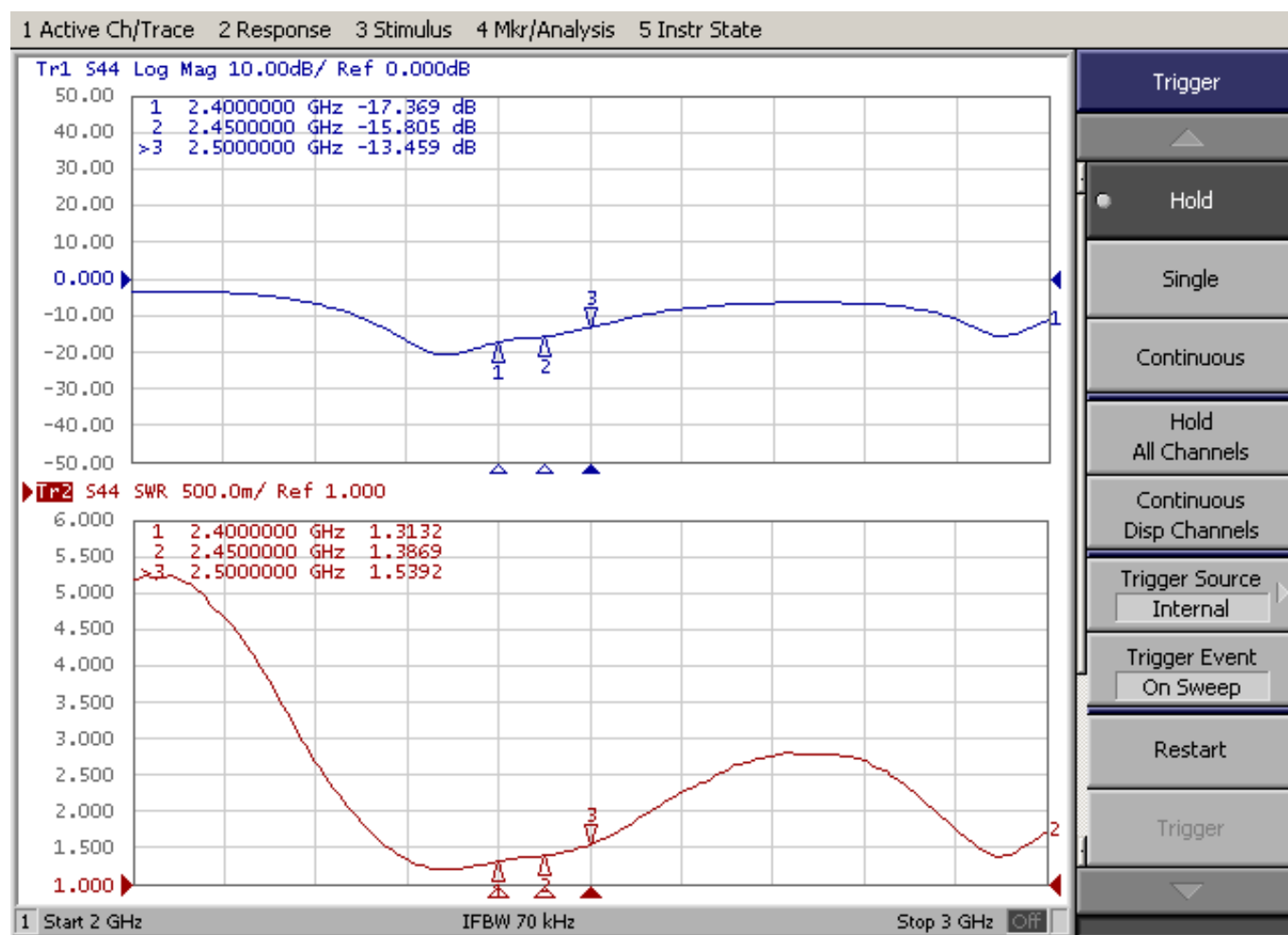
Product Name: Antenna



3. Characteristics and Reliability Test

Test Items 測試項目		Test Condition and Procedure 測試方法	Requirements 要求	Result 結果
C1	V.S.W.R. 電壓駐波比	Set DUT on Network Analyzer; make individual calibration to test 設置網路分析儀參數進行測試	Directive DUT specification 符合待測物規範	PASS
C3	Antenna Gain 天線增益	Set DUT on Antenna Chamber; make individual calibration to test 設置天線暗室參數進行測試	Directive DUT specification 符合待測物規範	PASS
M1	Vibration 震動	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction 振幅 1.5mm ; 頻率 20~80~20Hz ; 3 個方向各 2H	1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
M2	Random Drop 跌落	GB / T2423.8-1995 Single : Height: 1.0 Meter; 3 directions; 1 time for each direction 單支天線, 高 1m ; 3 個方向各 1 次	1. No parts separated 、 fracture 2. Frequency Tol.≤5% 產品無脫落、斷裂;頻率偏移≤5%	PASS
		Packing : Height: 0.76 Meter; 1 corner, 3 edges, 6 surface 包裝 : 高 0.76m , 一角、三棱、六面各一次		PASS
M4	Pull Test 拉力	Holding with individual specification; force applied to axis of terminal .單獨定義產品端子拉力	1. Directive DUT specification 2. Frequency Tol.≤5% 符合待測物規範;頻率偏移≤5%	PASS
M6	Dimension 尺寸	Inspection of dimension, color, material, package, surface process.检查尺寸,颜色,材料,包装,表面處理	Directive DUT specification 符合待測物規範	PASS
E3	Temperature and Humidity Chamber 恒溫恒濕	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90%; Time: 24H 溫度 80°C 測試 12H 轉-40°C 測試 12H; 濕度≥ 90% ; 時間 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 恢復 2H 后, 無明顯外觀不良;頻率偏移≤5%	PASS
E5	Aging test 老化	GB / T 2423.2 - 2008 Temp: 80°C; Time: 24 hours 溫度 80°C , 測試 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5%	PASS
R1	RoHS	With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程	Directive RoHS 2015/863/EU 符合 RoHS 2015/863/EU 標準	PASS
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS 參考 USA EPA 3550C 測試流程	Directive RoHS 2015/863/EU 符合 RoHS 2015/863/EU 標準	PASS

4. Antenna - S Parameter Test Data

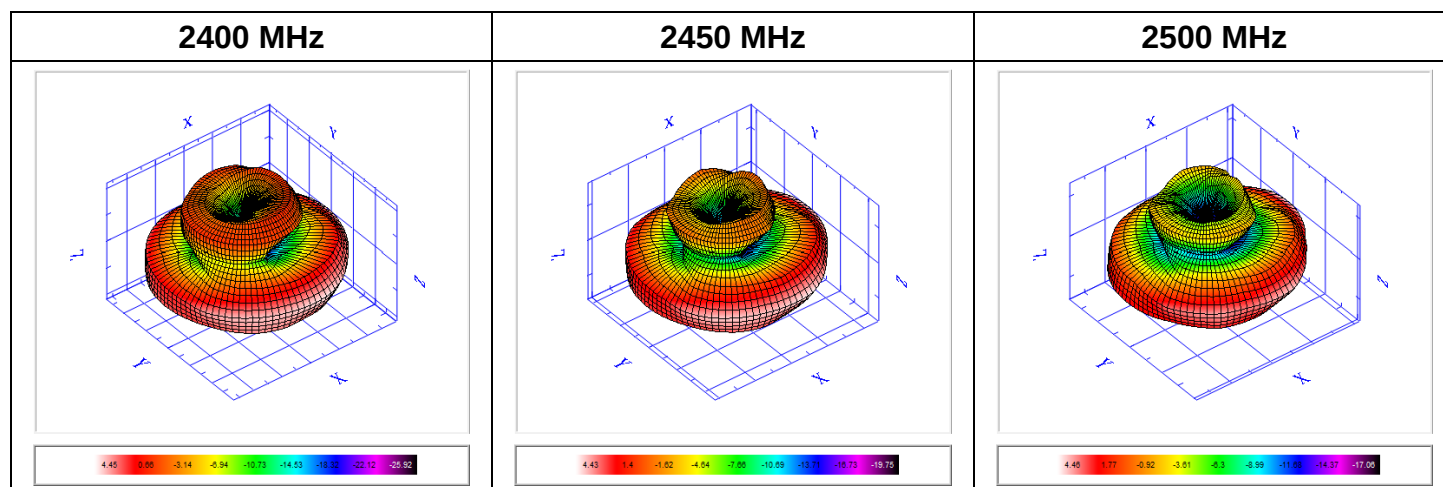


Product Number: AN2400-92158BRS

Product Name: Antenna



5. Antenna - Radiation Pattern Test Data



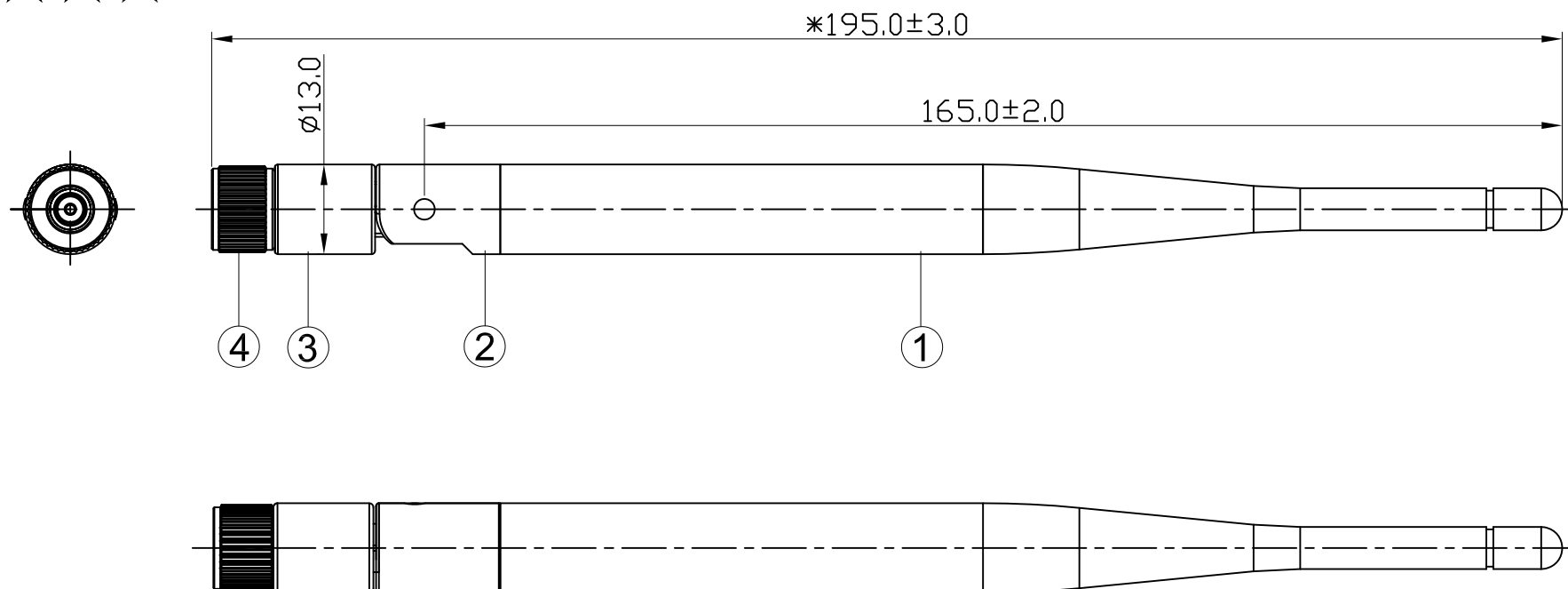
Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
TRP (dBm)	-1.36	-1.34	-1.35	-1.33	-1.62	-1.34	-1.33	-1.26	-1.26	-1.36	-1.3
Peak EIRP (dBm)	4.45	4.46	4.49	4.43	4.23	4.43	4.55	4.52	4.48	4.32	4.46
NHPRP +/- 45 (degree)	-1.81	-1.79	-1.82	-1.8	-2.08	-1.78	-1.75	-1.67	-1.67	-1.77	-1.71
NHPRP +/- 30 (degree)	-2.32	-2.31	-2.33	-2.31	-2.57	-2.27	-2.25	-2.2	-2.23	-2.35	-2.3
E-Theta Peak Gain (dBi)	-6.88	-7.63	-8.35	-8.76	-9.5	-10.07	-9.93	-9.74	-10.85	-11.44	-11.31
E-Phi Peak Gain (dBi)	4.44	4.42	4.46	4.4	4.22	4.4	4.51	4.47	4.46	4.25	4.39
E-Total Peak Gain (dBi)	4.45	4.46	4.49	4.43	4.23	4.43	4.55	4.52	4.48	4.32	4.46
Directivity (dBi)	5.82	5.8	5.84	5.76	5.85	5.77	5.89	5.77	5.74	5.67	5.76
Efficiency (%)	73.08	73.51	73.35	73.61	68.8	73.38	73.55	74.9	74.86	73.18	74.07

RoHS

Compatible



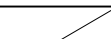
SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:

- 1.Take" * "is the important dimension.
- 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.

4	SMA306-CPR5A03-HC	SMA公頭母針	POM	黑色	1
3	AN0304-T07B	連接頭	ABS	黑色	1
2	AN9201-06B	連接筒	ABS	黑色	1
1	AN9201-04B	天線塑膠外套	TPE	黑色	1
No.	Part Number	Description	Material	Finished	Q'ty

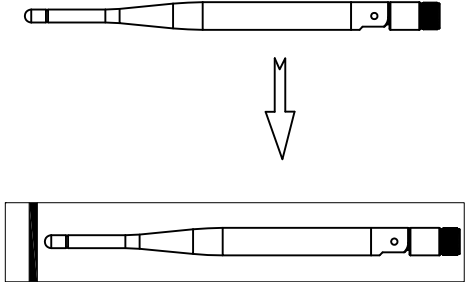
Invax System Group.			Cortec Technology Inc.		
Cortec			Http://www.Invaxsystem.com		Tel :886-2-27885218
			E-mail:info@invax.com.tw		Fax:886-2-27831658
TITLE: 2.4GHz 5dBi Antenna					
PART NO.: AN2400-92158BRS			CUSTOMER P/N: /		
APP BY	CHK BY	RF BY	DES BY		Tolerance
Grant	Kenny		WS	UNITS: mm	X.X ±0.3
2017/09/20	2017/09/20		2017/09/20	SCALE: 1/1	X.XX ±0.2
				REVISION: A	X° ±1

Date: 2017.09.20

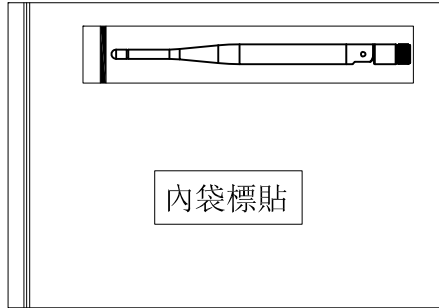
Page: 1 of 1

Part Number : AN2400-92158BRS	Revision : A
Name: 2.4GHz 5dBi Antenna	Customer : All

1.Enter OPP bag ◦

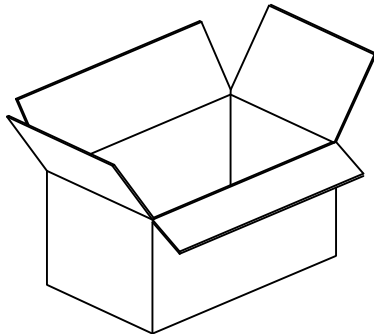


1PCS/bag



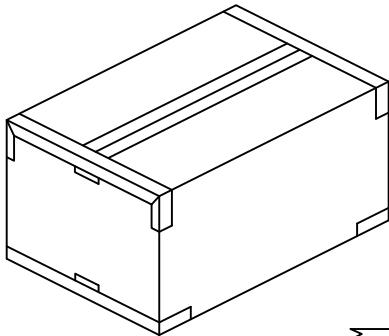
50PCS/bag

2.PACKING ◦



SIZE:29.0x23.0x32.5cm
300PCS/CARTON

3. SEALING ◦



SIDE

RoHS Label ●

ITEM NO.:
Q'TY: ### PCS
N.W.: ### KGS
G.W.: ### KGS
MEAS:

FRONT



C/NO.:
MADE IN CHINA

APPROVED BY : GrantCHECKED BY : KennyDESIGNED BY : ws

SGS 台灣網站 → http://twap.sgs.com/sgsrsts/chn/cheres_tw.asp
SGS 大陸網站 → http://rsts.cn.sgs.com/chn/cheres_cn.asp
SGS 韓國網站 → http://rohs.kr.sgs.com/sgsrsts/en/cheres_en.asp

COR/F-G-47a

請輸入以下報告正確資料及檢查碼以便查核

1. 報告編號
2. 報告日期 (YYYY/MM/DD)
3. 產品名稱 (輸入前 10 個字不含空白)
4. 圖示檢查碼 (依指示畫面)



物料中HSF對象物質含量調查表

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料名稱：AN2400-92158BRS

序號	物料型號	物料各構成名稱	各構成物料的材料質	測試報告裡RoHS對應物質測試結果										檢測報告編號	測試日期	測試名稱	測試機構名稱
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	DBP	BBP	DIBP	DEHP				
1	AN9201-04B	Body	TPEE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC2003075602	2020.03.20	TPEE	SGS
2	AN9201-0B	Body-1	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	238113368s1 001	2019.12.09	POLYLAC® PA-757	TuvRheinland
3	AN0304-T07B	Body-2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	238113368s1 001	2019.12.09	POLYLAC® PA-757	TuvRheinland
4	SMA306-CPR5A03-HC	SMA Male Reverse	銅	7	32372	N.D.	N.D.							SHAEC2007013705	2020.05.09	Brass Meta	SGS
5			鍍金	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	A2200002810101003	2020.01.11	Cu+Ni+Au plating	CTI
6			POM	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	690101/LF-CTSAYAA20-016	2020.01.16	KEPITAL 1	SGS
7	AN068250	TUBE	銅	N.D.	8	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1920469801	2019.10.24	Apply to(C2680,C2700)H6	SGS
8	ANS1206-002-B	Spring	不銹鋼	N.D.	N.D.	N.D.	N.D.							SZxec2000747801	2020.04.27	SUS304	SGS
9	AN20-39	Foam	EVA	N.D.	33	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC2001834614	2020.02.28	Environmental protectio	SGS
10	R-AN5225013-Z	Tube	鋅合金	N.D.	15	N.D.	N.D.							SZxec2000211901	2020.03.05	3# Zinc Alloy	SGS
11	R-HSTUBE-0079N-1	HST	EVA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1925862106	2020.01.20	HEAT SHRINKABLE TUBING (BK)	SGS
12	R-RG-178U-03	Cable RG178	FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	NGBML2000312802	2020.01.22	聚全氟乙丙烯樹脂.	SGS
13			PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	NGBML2000309802	2020.01.22	聚四氟乙稀模壓粉	SGS
14			鍍銀銅	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC2002004901	2020.03.05	SC	SGS
15			鍍錫銅	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	A2200069617101001C	2020.04.01	鍍錫圓銅線	CTI

根據測試報告如實填寫鉛、鎘、汞、六價鉻、PBBs和PBDEs六項禁用物質的含量

包裝材料中鉛、鎘、汞、六價鉻總含量不超過100ppm，鎘的允許濃度為5ppm

歐盟ROHS指令豁免條款2015/863/EU、鋼中合金元素中的鉛含量達0.35%、鋁含量達0.4%、銅合金中的鉛含量達4%



东莞市一佳电子通讯科技有限公司

Dongguan YiJia Electronics Communication Technology Co.,Ltd.

规格承认书

SPECIFICATION FOR APPROVAL

日期 Date	2023/04/21
编号 File No	23042101
版本 Revision	1.0

客户
CUSTOMER: 鲁邦通

客户料号
CUSTOMER NO:

品名
PART NAME: 2.4G Antenna

供方料号
SUPPLIER NO: YJQ01.039.018.102A

送样日期Date: 送样数量Q “TY:

客户确认CUSTOMER APPROVED BY		
APPROVAL	CHIEF	SUPERVISOR

供方确认 SUPPLIER SIGNATURE		
APPROVAL	CHECK	DESIGN
 ChenGuoqiang	XieLi	ChenXingyi

YJ-RD-F04-A

add: 东莞市长安镇沙头社区木鱼路59号元富工业区 Tel:0769-82586086 Fax:0769-82586086



天线规格

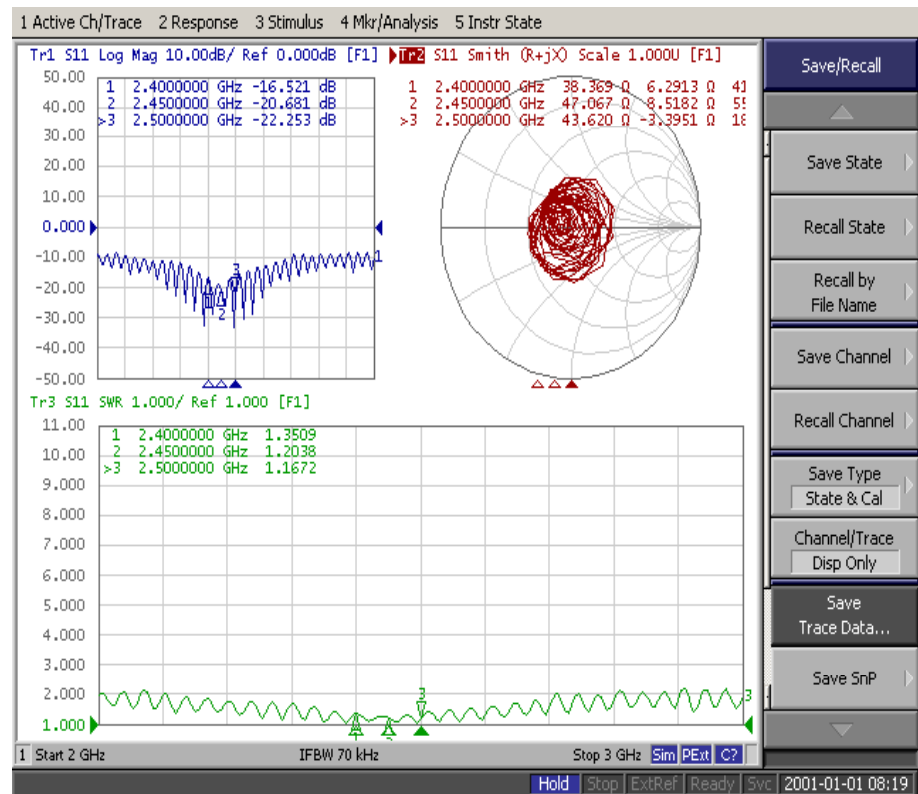
Antenna Specification

Electrical Properties	
Frequency	2.4-2.5GHz
Impedance	50 Ohm Nominal
V.S.W.R	2.0 Max
Gain	2.7 dBi
Radiation	Omni-directional
Polarization	Linear
Physical Properties	
Connector	SMA Male Reverse
Cable Type	302-3
Cable Length	3000mm
Cable Color	Black
Operating Temp.	-40 ~ +85 °C
Storage Temp / Humidity	25±5°C / <70%



Antenna Performance Test

**Agilent
E5071B
S11
Parameter
Test //
WiFi
Antenna**





Antenna Passive Test





Passive Test For WiFi Antenna(2.4G)			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	34.6	-4.6	2.6
2410	36.4	-4.4	2.7
2420	35.7	-4.5	2.2
2430	32.0	-5.0	1.5
2440	34.4	-4.6	1.6
2450	37.1	-4.3	1.9
2460	36.9	-4.3	1.8
2470	38.0	-4.2	1.9
2480	40.5	-3.9	2.0
2490	39.6	-4.0	1.9
2500	35.7	-4.5	1.3



WiFi Antenna

