



Sample Acknowledgment
Letter

Specification For Approval

Rayleigh Material Code/Part No: RL1520064;

Factory Material Code/Part No: RT404-
10003-A; Material Name/Product: Antenna

Material Model/MFN: Built-in PCB antenna (RT-PCB165 V1.0) – 2.4 GHz

Manufacturer/MFG: Dongguan Ante

Communications Co., Ltd.; Agent/AGNT:

Project Model/Application: B
013; Software Version:

Material Classification: ☐ electronic component ☐ electroacoustic device ☐ structure

☐ Accessories/Supplies ☐ Packaging Material ☒ Other

Recognition Category: ☒ New Material Recognition ☐ Specification Change Approval (requires a change notice)

Customer Approval	Verify (Engineer)	Inspection (Quality)	Approval (Project)	Acknowledgment Date Date

Supplier Name:				
Supplier Confirmation – Provider Approval	Fabrication Drawn	Examine and verifyCheck	Approval Approval	Sample submission date Date
	Jiang Wenxiang	Song Yifeng	Liu Yunhai	April 19,2023

Supplier Address/Provider Add: Building E, Delang Industrial Innovation Park, Shalong Road, Shatang Industrial Zone, Houjie Town, Dongguan City

Tel: 0769-85833836
Fax: 0769-82582573

SPECIFICATION FOR APPROVAL

Customer (Customer Name)	Shenzhen Ruili Acoustic Technology Co., Ltd.	
CS P/N (Client Model)	RL1520064	
PART NAME	Built-in PCB antenna (RT-PCB165 V1.0), 2.4 GHz, ϕ 1.13 mm, Gray, L = 50 mm, with IPEX double-sided adhesive tape and loose foam backing – ROHS compliant	
Frequency	2.4-2.5GHz	
RTANT NO. (Material Number)	RT404-10003-A	
DATE (Date)	2023.04.19	
Sample Sign-off		
APPROVED BY – Approved	CHECKED BY – Conf- irm	DR-ED BY AWm- ake Do
Liu Yunhai	Song Yifeng	Wangxiang
Note:		
Customer Acknowledgment and Signature		
APPROVED BY – Approved	CHECKED BY – Conf- irm	TESTED BY
Sign (Customer Confirmation Signature and Seal): _____		

Dongguan Ante Communications Co., Ltd.

Tel: 0769-85833836

Fax: 0769-82582573

Http://www.rtant.com

Address: Building E, Delang Industrial Innovation Park, Shalong Road, Shatang Industrial Zone, Houjie Town, Dongguan City

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2. Revision History

Revision Version	Datedate	Change Content
X0	23. 04. 19	New edition

3. Product Image



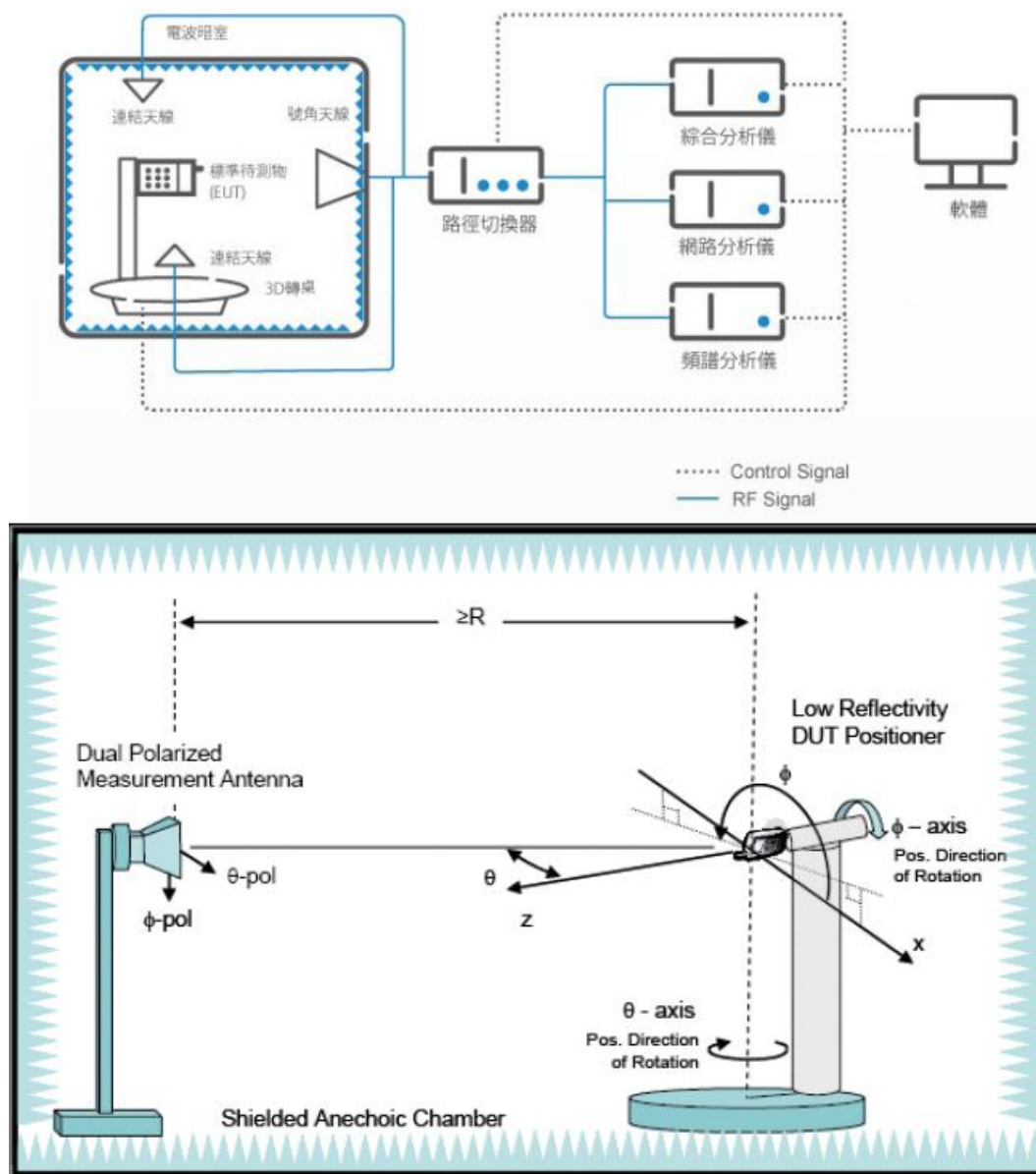
4. Specification Table

A. Electrical Properties	
Frequency Range	2.4-2.5GHz
Impedance – Characteristic Impedance	50 Ω Nominal
VSWR – Voltage Standing Wave Ratio	2.0Max.
Gain (Peak) Gain (Peak Value)	2.0dBi
Out of roundness	3.0dB (Max.)
Radiation method	Omni-Directional/Full-Directional
Polarization method	Linear Vertical
B. Physical Properties	
Connector Type – Connection Method	IPEX
Cablewire stock	Φ 1.13 mm – Gray
Antenna Radiator – Antenna Element Body	PCB
Antenna – Plastic Antenna	Body: Holder:
C. Environmental	
Storage Temp – Storage Environment Range	-40℃~+85℃
Operating Temperature – Work Environment	-10℃~+60℃
Storage humidity	95%
Working humidity	5%~95%

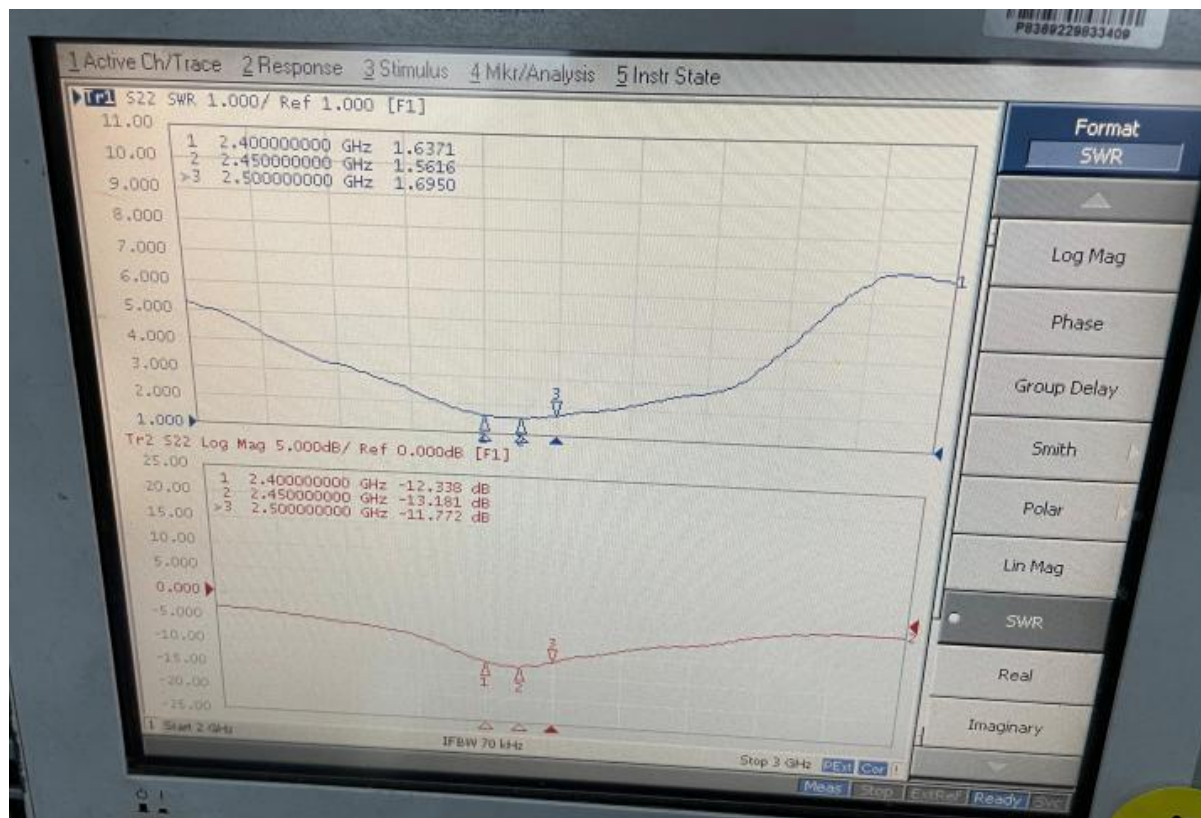
5. Electrical Test Report

5.1 Test equipment

OTA 系統架構圖

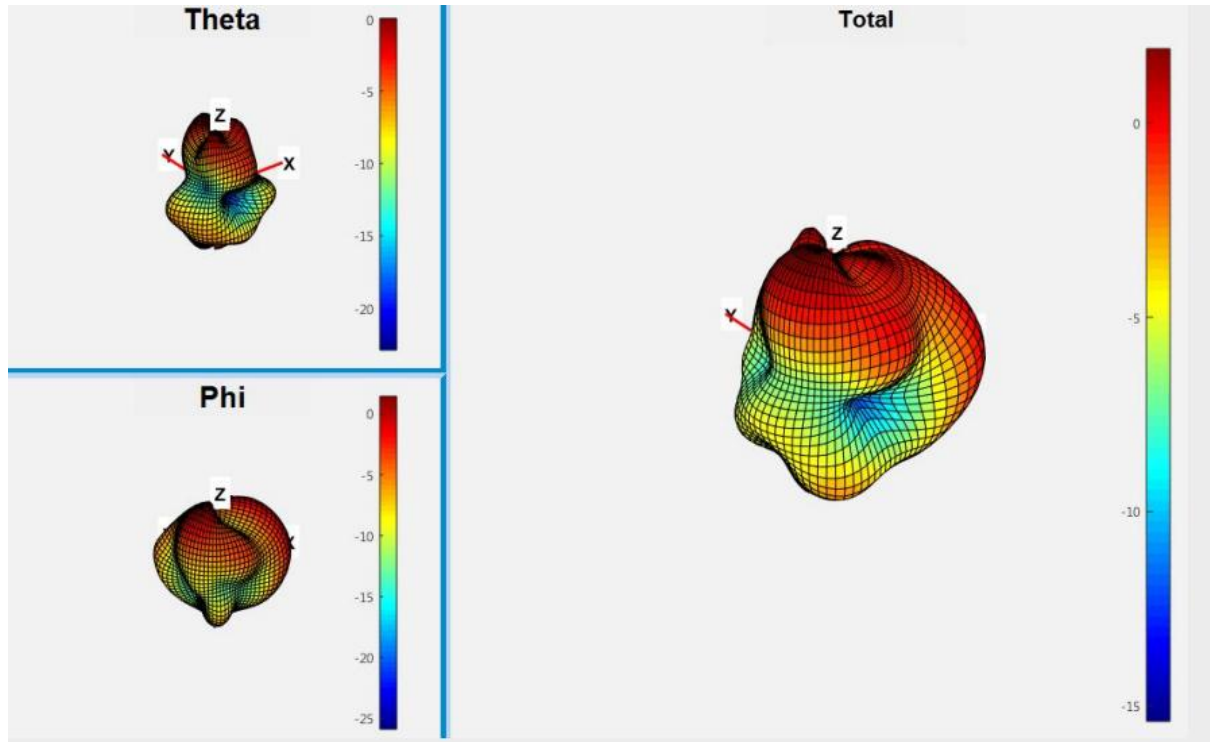


5.2 Network Analyzer Test Report



Frequency range	2. 4G	2. 45G	2. 5G
Standing wave ratio	1. 64	1. 56	1. 70

5.3 Darkroom 2D,3D Radiation Pattern



5.4 Darkroom Passive Test Data

频率 (MHz)	效率 (%)	增益 (dBi)
2400	48.76	1.89
2410	48.93	1.98
2420	50.29	2
2430	51.52	2
2440	50.58	1.88
2450	51.76	1.91
2460	48.53	1.68
2470	47.64	1.64
2480	48.75	1.7
2490	47.97	1.74
2500	46.71	1.62

6. Reliability Sample Inspection Report

Date: April 19,2023

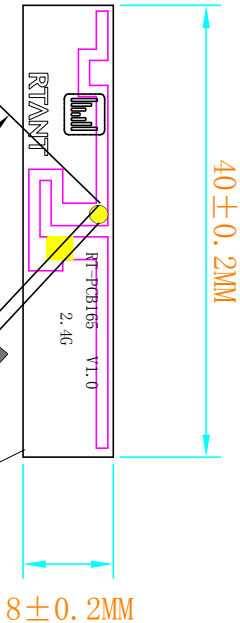
Sample submission quantity		5PCS	Qualified quantity		5PCS			
Inspecting item		Testing Standards and Instructions	Result					Judge
			No. 1	No. 2	No. 3	No. 4	No. 5	
Surface	Wire stock	No color variation, no dirt, no damage, and no scratches.	pass	pass	pass	pass	pass	☒ OK ☐ NG
	Connect	No color variation, no dirt, no damage, and no scratches.	pass	pass	pass	pass	pass	☒ OK ☐ NG
	Plastic	No color variation, no dirt, no damage, and no scratches.						☐ OK ☐ NG
	Weld	After welding, cold welding, false soldering, solder spiciness, solder beads, or missed soldering are not permitted.	pass	pass	pass	pass	pass	☒ OK ☐ NG
	Soldering	After soldering, there shall be no solder spicules or protruding solder balls; the surface shall be free from incomplete soldering or deformation.						☐ OK ☐ NG
	Other							☐ OK ☐ NG
Key dimension	1	$50 \pm 2\text{mm}$	50	50	50	50	50	☒ OK ☐ NG
	2	$40.0 \pm 0.2\text{MM}$	40.0	40.0	40.0	40.0	40.0	☒ OK ☐ NG
	3	$8.0 \pm 0.2\text{MM}$	8.0	8.0	8.0	8.0	8.0	☒ OK ☐ NG
Test								
Electrical and Functional Testing	Frequency Rang	2.4-2.5GHz						
	VSWR	<2.0	pass	pass	pass	pass	pass	☒ OK ☐ NG
Mechanical behavior	Terminal tension	>1.0KG	1.5	1.6	1.6	1.8	1.6	☒ OK ☐ NG
Remarks								
Final determination		☒ Qualified ☐ Non-compliant ☐ Conditional Approval						

Reviewed by: Zhang Chaochao

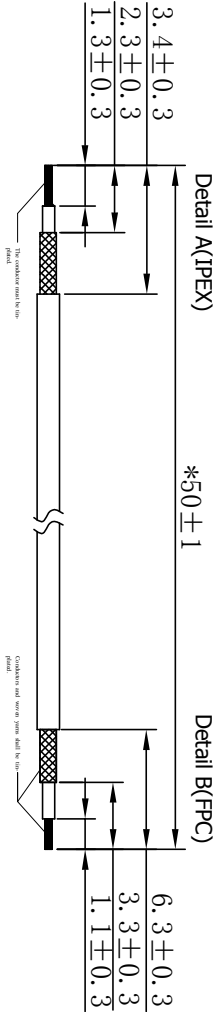
Inspection: Lei Juanlan

Engineering
Drawing

SIGN	DATE	DESCRIPTION	APPROVER
A0	23 04 19	New drawing	Jiang Wenxiang



② Note: Terminal
orientation

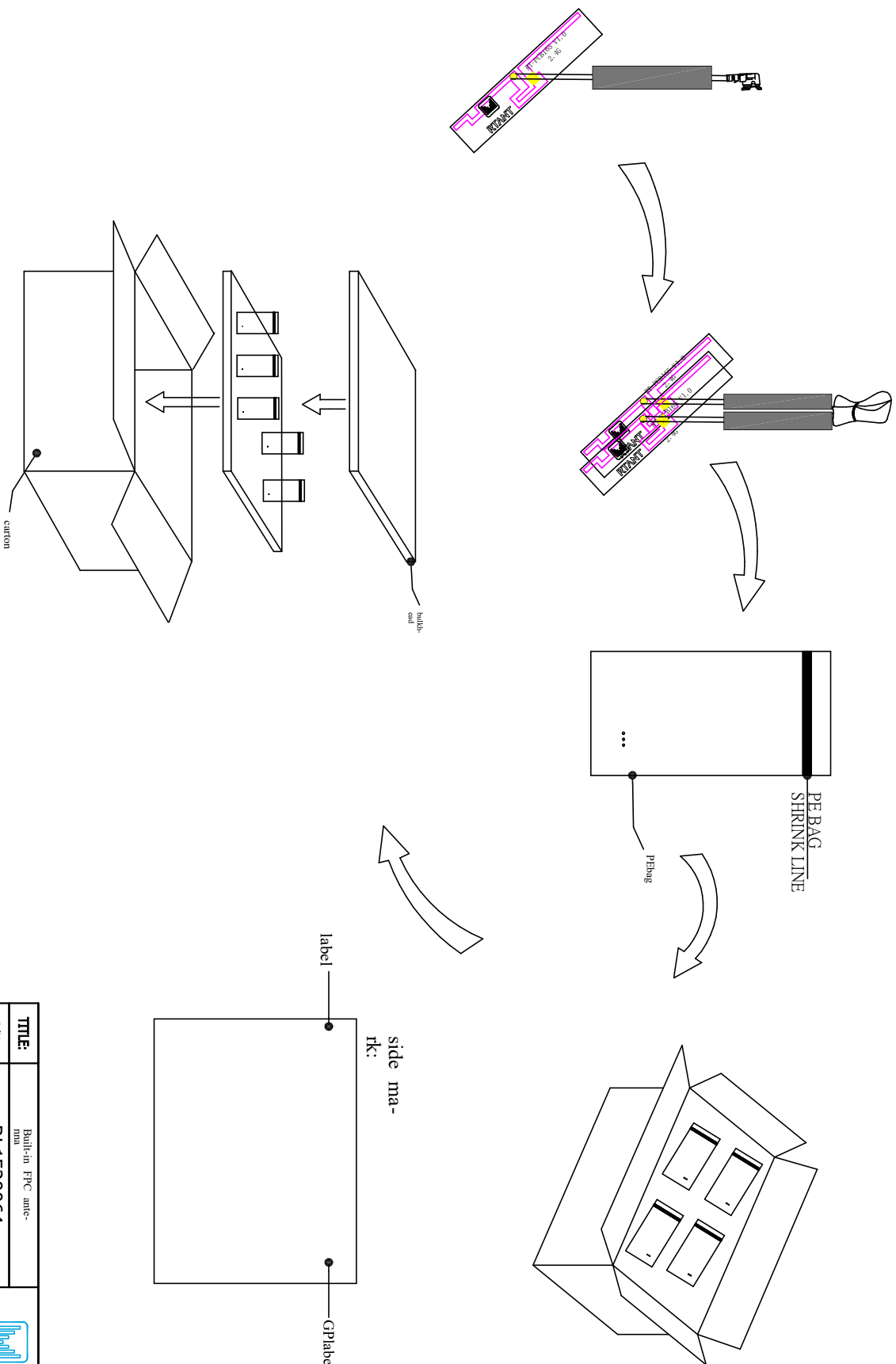


5	Q40-010079-A	Fuzzy foam		L32.0*W15.0*T3.0mm	1
4	Q40-010078-A	Double-sided adhesive backing		3M 300LSE	1
3	Q70-010184-A	PCB	FR4	Label: "RT-PCB165 V1.0, 2.4G"	1
2	W10-080009-A	Thin Cable - Tin-plated copper	50 R Grey	ROHS-compliant	1
1	Q20-160024-A	PEX CONN#	CJ 1 13	Gold-plated	1
No.	Part Number	Name	Material	Describe	Qty

TITLE:		Built-in FPC antenna			
P/N:		RL1520064 Ra-			
CUSTOMER:		yleigh RT			
DRAW NO.:		404-10003-A			
DIMENSIONS TOLERANCES UNLESS OTHERWISE NOTED					
一般公差 TOLERANCE		XXX ±0.1	XX ±5		
		XX ±0.5			
		.X ±1.0			
		X. ±3.0			
		RTANT COMMUNICATIONS CO., LTD.Dongguan Ant Communications Co., Ltd. http://www.rtant.com E-mail:dragon@rtant.com Tel: 0769-82583836 Fax: 0769-82582273			
		APPROVED			
SHEET: 1/1		SCALE: NONE			
UNIT: mm		RE/A0			
DRAWN		Design Worksheet			

NOTE:
1. This is a key controlled dimension;
2. electrical tolerance;
FREQUENCY: 2.4~2.5GHz
VSWR: 2.0 MAX (with housing)
3. Working environment: -40°C~+85°C
4. Environmental requirements: ROHS.

SIGN		DATE	DESCRIPTION	APPROVER
A0	23 04 18		New drawing	Jiang Wenxiang



TITLE:		Built-in PVC anti-rain		 RTANT COMMUNICATIONS CO.,LTD Guang An Teel Communications Co., Ltd Tel: 0769-85633506 Fax: 0769-85626712 E-mail: rtant@rtan.com http://www.rtant.com	
P/N:		RL1520064			
CUSTOMER:		Rolytech			
DRAW NO.:		RT404-10003-A			
DIMENSIONS TOLERANCES UNLESS OTHERWISE NOTED					
一般公差		XXX ±0.1 XX ±5			
TOLERANCE		XX ±0.5 X ±1.0			
		X ±1.0 X ±3.0			
SHEET: 1/1		SCALE: NONE		APPROVED CHECKED DRAINED Jiang Wenjiang	
UNIT: mm		REV: 0			