

Dong Guan Hai Heng Electronic Technology Co., Ltd.

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APPROVAL

JD

CUSTOMER:

DESCRIPTION:

2.4/5.8G dual-band built-in antenna

PART NO.:

PCB-N2425D

ANT TYPE :

2.4/5.8G dual-band built-in antenna

D A T E:

2020-03-12

Product Number: PCB-N2425D

Product Name: Embedded Antenna

1. Revision History

Revision	Date	Change Notification	Description
1.0	2020.03.12		

Product Number: PCB-N2425D

Product Name: Embedded Antenna

2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz 5150 ~ 5850 MHz
V.S.W.R.	≤ 3.0 @ 2400 ~ 2500 MHz ≤ 3.0 @ 5150 ~ 5850 MHz The data is tested with 1M cable
Antenna Gain	2.5 ± 0.5 dBi @ 2400 ~ 2500 MHz 3.0 ± 0.5 dBi @ 5150 ~ 5850 MHz
Efficiency	70 % @ 2400 ~ 2500 MHz 85 % @ 5150 ~ 5850 MHz
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	PCB
Material of Plastic	
Cable Type	1.13
Connector Type	IPEX
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

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3. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements	Result
C1	V.S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification	OK
C2	Insertion Loss	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification	N/A
C3	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification	OK
C4	Voltage Breakdown	Test voltage should be applied between insulated portions, or between ground as specified.	Max Voltage ≥ 500 V or directive material specification	N/A
C5	Insulation Resistance	Set Voltage: 500 ± 50 V; between the insulated portions, or between ground as specified.	Resistance ≥ 500 M ohm or directive material specification	N/A
C6	Contact Resistance	Air Temp: 26°C; measured with test equipment	Directive material specification	N/A
M1	Vibration	GB / T2423.48-2008 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol. $\leq 5\%$	OK
M2	Random Drop	GB / T2423.8-1995 Single : Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated · fracture 2. Frequency Tol. $\leq 5\%$	OK
		Packing : Height: 0.76 Meter; 1 corner, 3 edges, 6 surface		OK
		Antenna+Machine:Height: 0.76 Meter; 1 corner, 3 edges, 6 surface.		N/A
M3	Solderability	GB / T2423.28-2005	Tin evenly on full	N/A

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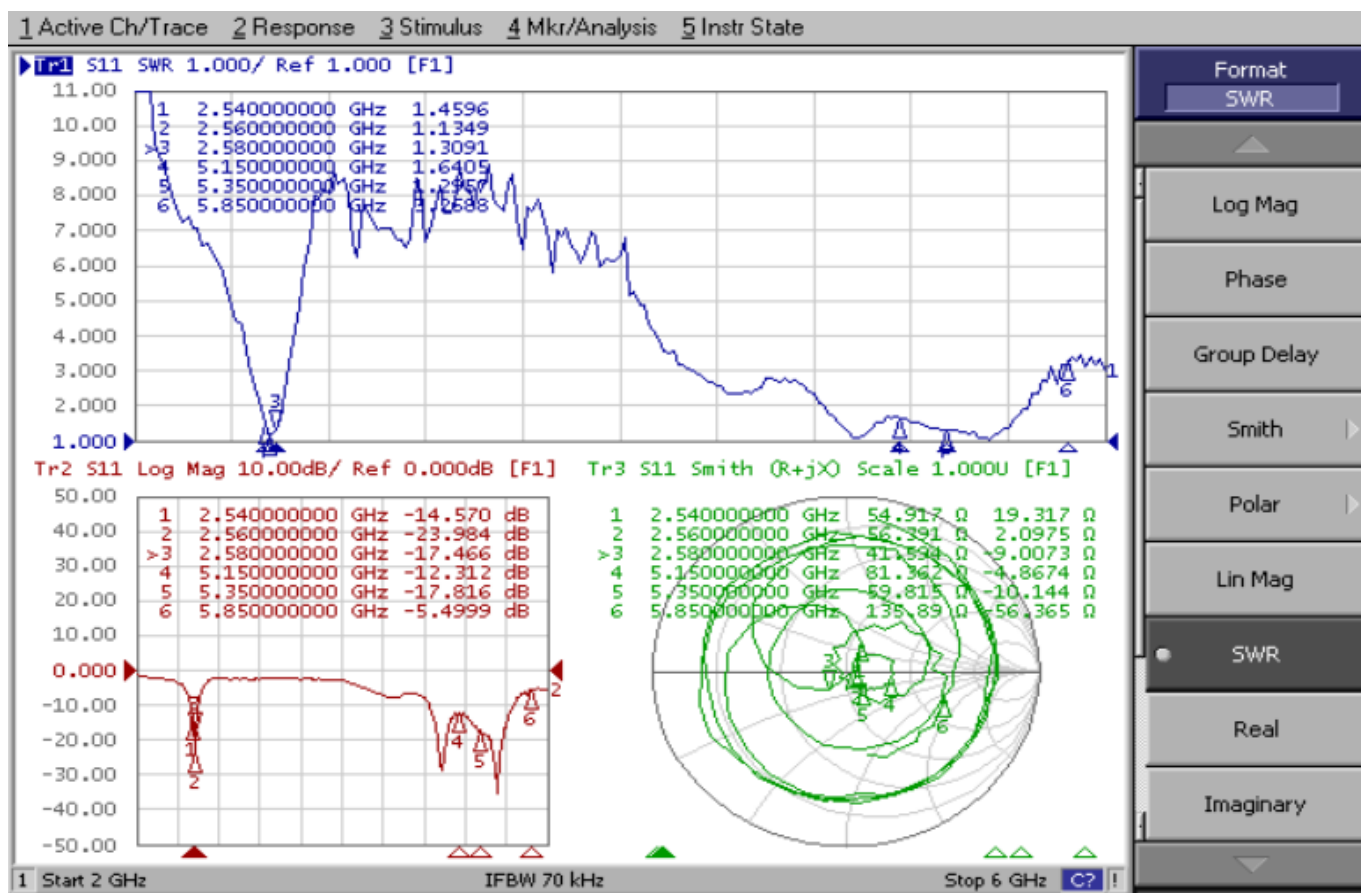
Product Name: Embedded Antenna

	可焊性	Temp: 260±5° C;Duration: 5 seconds		
M4	Pull Test	Holding with individual specification; force applied to axis of terminal .	1. Directive DUT specification 2. Frequency Tol.≤5%	OK
M5	Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.≤ 5%	N/A
M6	Dimension	Inspection of dimension, color, material, package, surface process.	Directive DUT specification	OK
E1	Waterproof	With Reference to IEC 60529 // IP Code Definition	Directive DUT specification	N/A
E2	Salt Spray	GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H	1. No Visual Damage 2. Frequency Tol.≤5%	N/A
E3	Temperature and Humidity Chamber	GB / T 2423.3-2006 Temp: 80°C / 12 H; -40°C / 12H RH: ≥ 90%; Time: 24H	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	OK
E4	Thermal Shock	GB / T 2423.22 - 2008 - 40°C (30 minutes) to + 80°C (30 minutes) ; Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	N/A
E5	Aging test	GB / T 2423.2 - 2008 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.≤5%	OK
E6	High Temp.	Temp. 270±10°C ; Times : 120 seconds	No Visual Damage	N/A
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2011/65/EU	OK
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS	Directive RoHS 2006/122/EC	OK

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4. Antenna - S Parameter Test Data



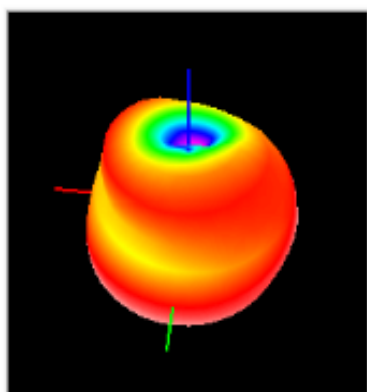
Dark room passive test data:

Frequency(GHz)	Peak Gain (dBi)	Low Gain (dBi)	Average Gain (dBi)	Efficiency Total (%)
2.40	1.28	0.91	1.17	42.66
2.45	2.44	1.03	1.82	60.67
2.50	2.77	1.57	2.42	72.95
5.15	2.84	1.31	2.22	50.47
5.35	1.52	1.01	1.69	46.56
5.825	2.76	1.16	2.28	61.80

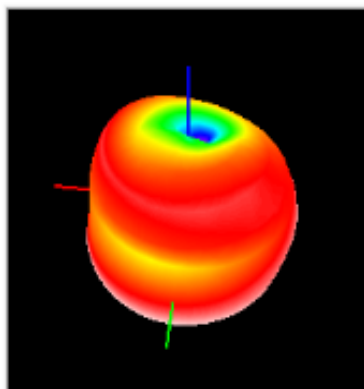
Product Number: PCB-N2425D

Product Name: Embedded Antenna

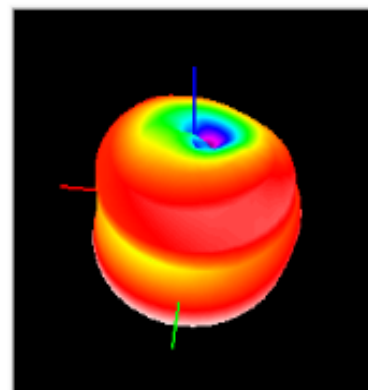
5. Antenna - Radiation Pattern Test Data



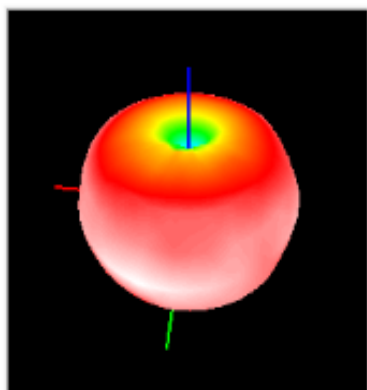
2400MHz



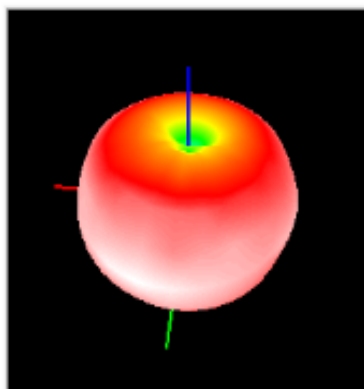
2450MHz



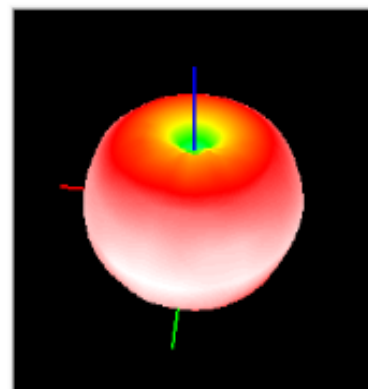
2500MHz



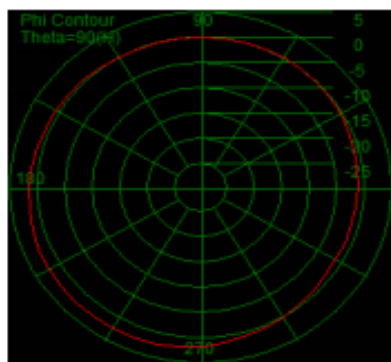
5700MHz



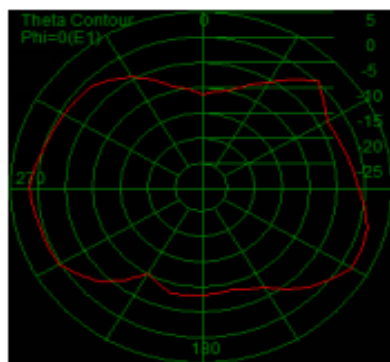
5750MHz



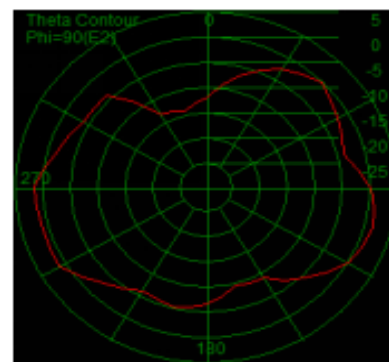
5800MHz



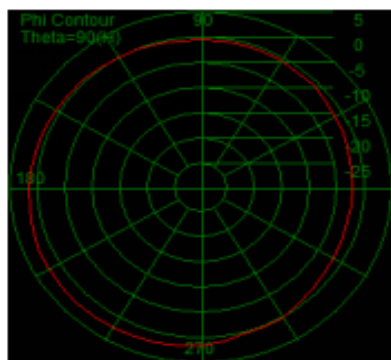
XY_Plane_2400



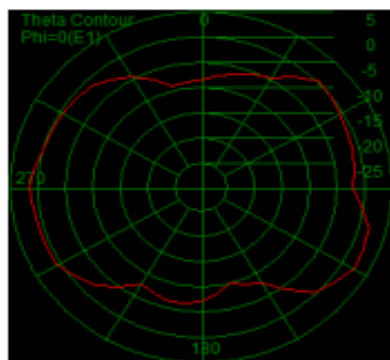
XZ_Plane_2400



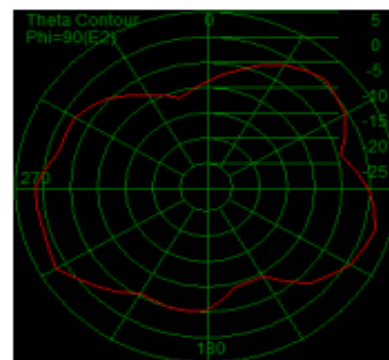
YZ_Plane_2400



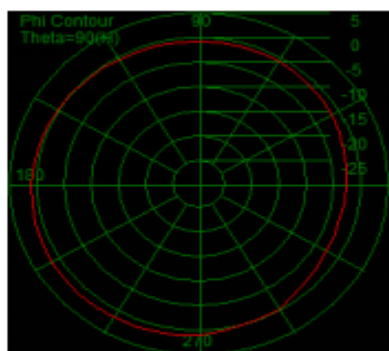
XY_Plane_2450



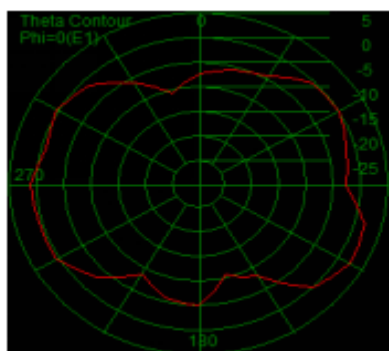
XZ_Plane_2450



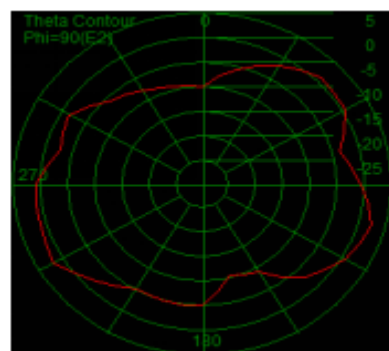
YZ_Plane_2450



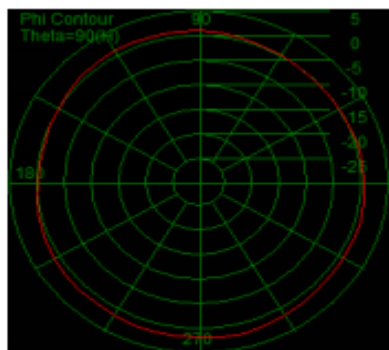
XY_Plane_2500



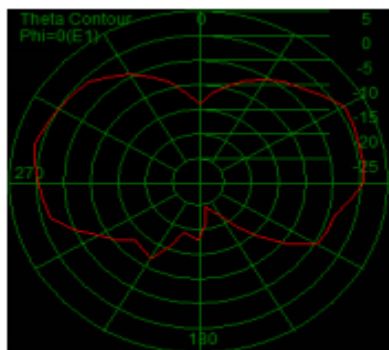
XZ_Plane_2500



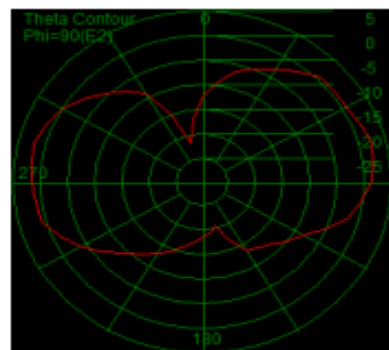
YZ_Plane_2500



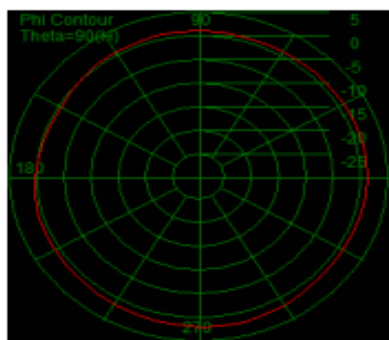
XY_Plane_5700



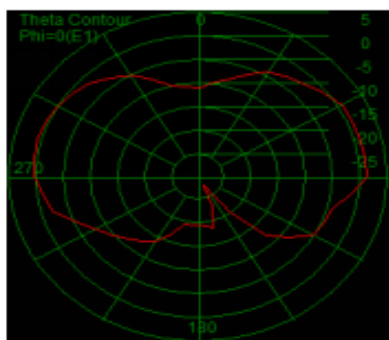
XZ_Plane_5700



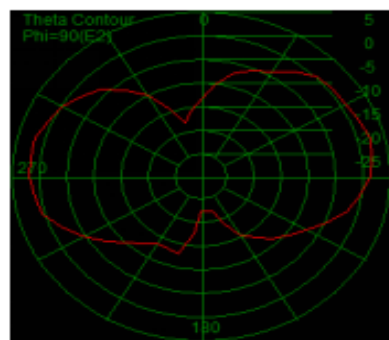
YZ_Plane_5700



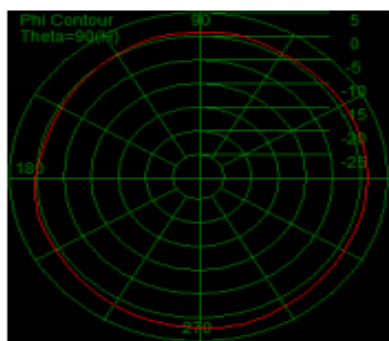
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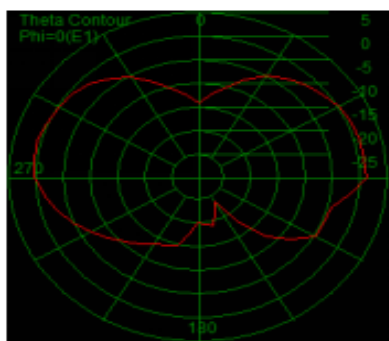
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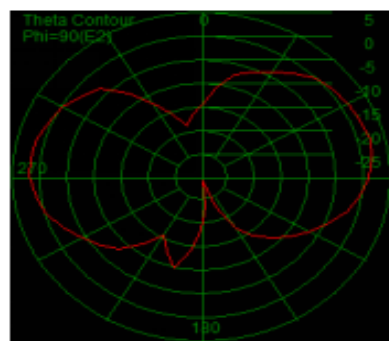
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XY_Plane_5800



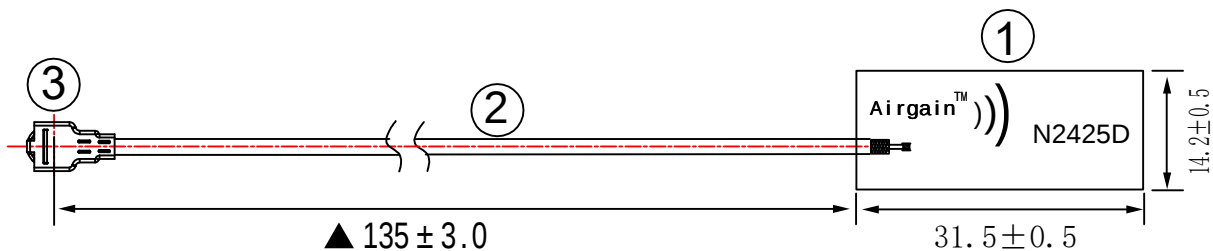
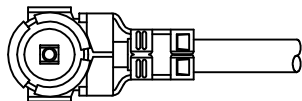
XZ_Plane_5800



YZ_Plane_5800

RoHS

Compatible



SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			

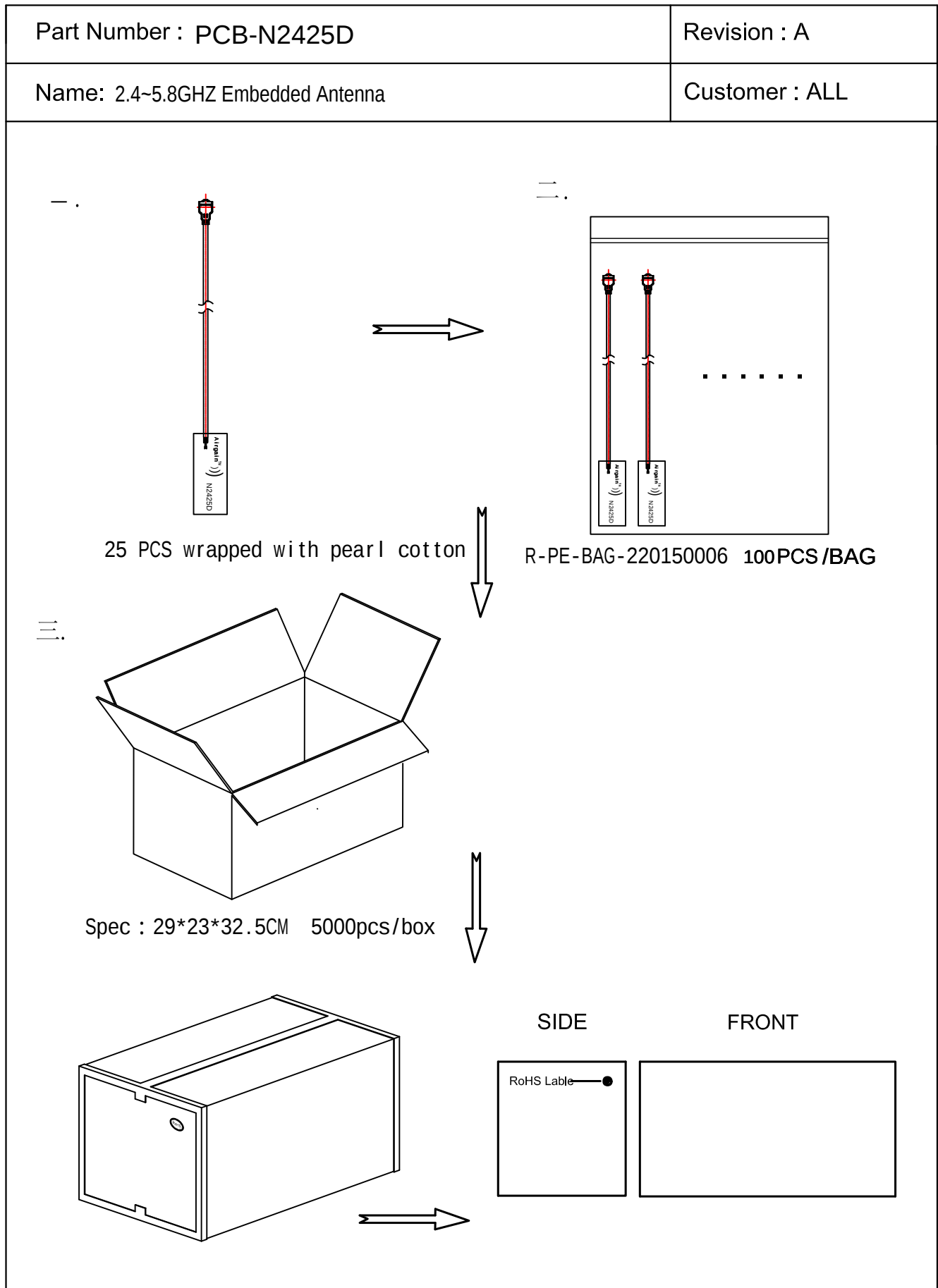
3	CR-113	IPEX			
2	R-CB-113B	Coaxial Cable	OD1.13 L=120mm	Black	1
1	PCB-N2425D	PCB	RF4	Red	1
No.	Part Number	Name	Material	Finish	Q'ty

TITLE: 2.4-5.8GHZ Embedded Antenna					
PART NO : PCB-N2425D			CUSTOMER P/N: /		
APP BY	CHK BY	RF BY	DES BY		Tolerance
LQ	DJC			UNITS: mm	X.X ±0.3
2020.03.12	2020.03.12			SCALE: 1/1	X.XX ±0.2
				REVISION: A	X° ±1

PACKING CRITERION

Date: 2020-03-12

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APPROVED BY : LQCHECKED BY : DJCDESIGNED BY : DJC