

Specification For Approval

CUSTOMER NAME: 星迈创新科技（苏州）有限公司

CUSTOMER P/N:

PRODUCT SPEC: 2.4G 频段, RG178 加 TPU 外背, SR 成型, 接 1 代 IPEX

SUPPLIER P/N: NB2400-05003IX

REV: 1.3

DATE: 2024/07/04

DRAWING	CHECK	APPROVED
FENG	ZHU	FENG

CUSTOMER APPROVE:

DATE	CHECK	APPROVED

PRODUCTION COMPANY:

东莞市昶蒙电子有限公司

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1. Revision History

Revision	Date	Change Notification	Description
1.0	2024.06.03	初版	
1.1	2024.06.03	第二版	纠正增益值
1.2	2024.06.03	第三版	增加防水硅胶后塞

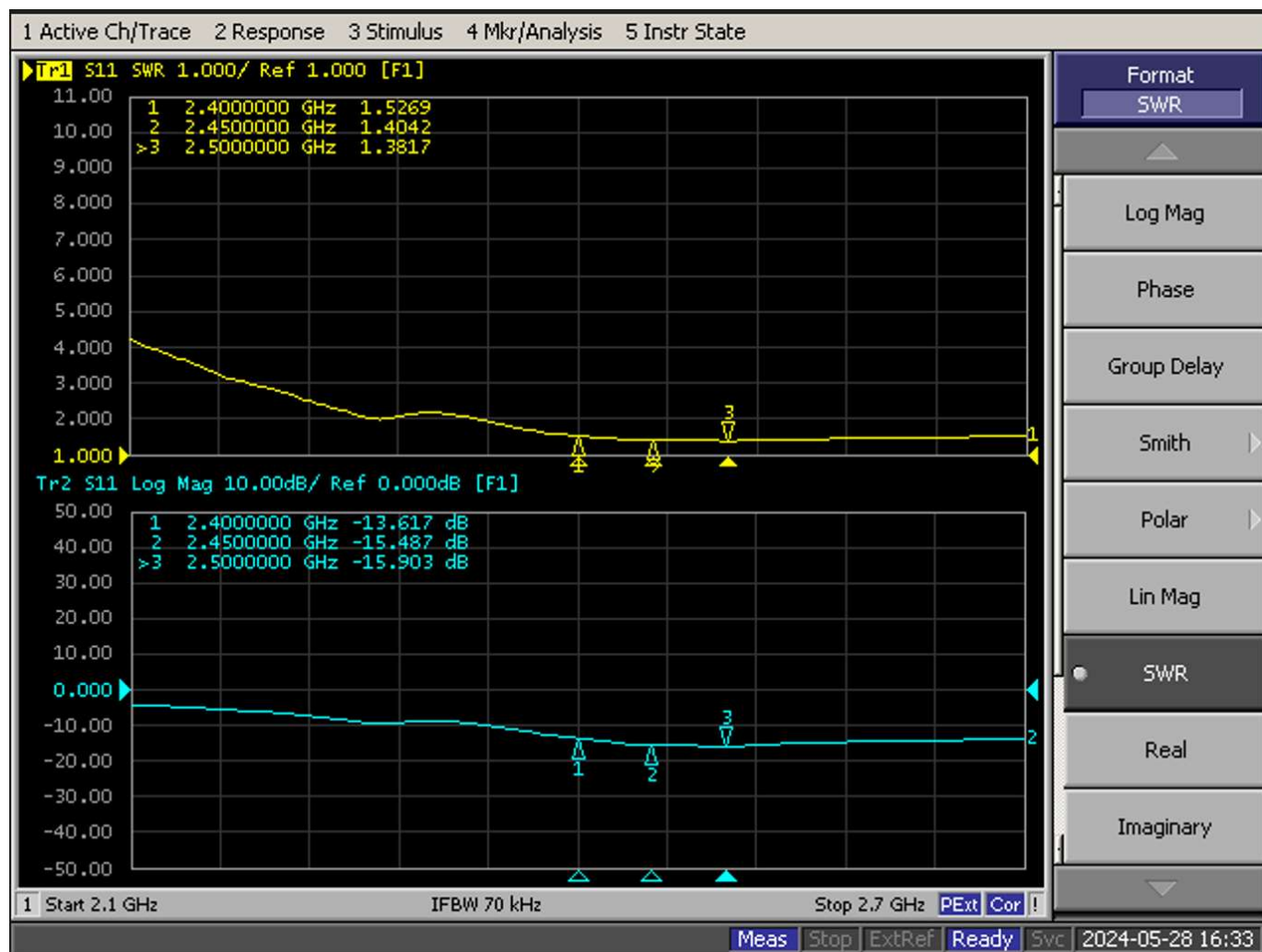
2. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
V.S.W.R.	≤ 2.0
Antenna Gain	2400 ~ 2500 MHz 5.67dBi
Efficiency	2400 ~ 2500 MHz 43.5%
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	PCB
Cable Type	O.D. 1.78/2.9mm
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

3. Characteristics and Reliability Test

Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	GB / T2423.8-1995 Height: 1.0 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M3	Solderability	GB 2423 . 28- 82 Solder iron: 260±5°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
M4	Terminal- Pull Test	Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal- Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M6	Dimension	Inspection of dimension, color, material, package, surface process	Directive DUT specification
E1	Salt Spray	GB / T 2423 . 17- 93 Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	GB / T 2423 . 4 - 93 Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	GB / T 2423 . 22 - 87 1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes) Cycles: 24	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E4	Life (High Temp.)	GB /T 2423 . 2 - 89 Temp: 80°C; Time: 24 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
R1	RoHS	With Reference to IEC 62321:2008 with flow chart	Directive RoHS 2002/95/EC

4. Antenna - S Parameter Test Data



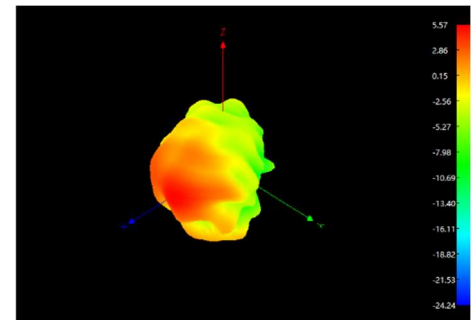
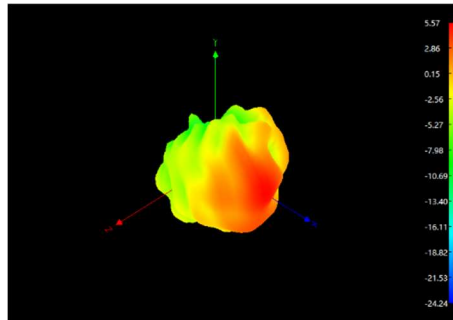
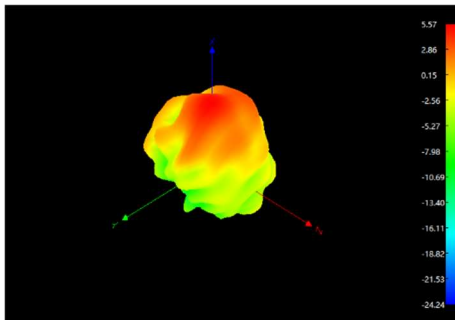
5. 1 Antenna - Radiation Pattern Test Data

Frequency/Mhz	Efficiency / dB	Efficiency / %
2400	-3.4	45.71
2410	-3.48	44.87
2420	-3.33	46.45
2430	-3.48	44.87
2440	-3.3	46.77
2450	-3.32	46.56
2460	-3.28	46.99
2470	-3.13	48.64
2480	-3.32	46.56
2490	-3.09	49.09
2500	-3.41	45.6

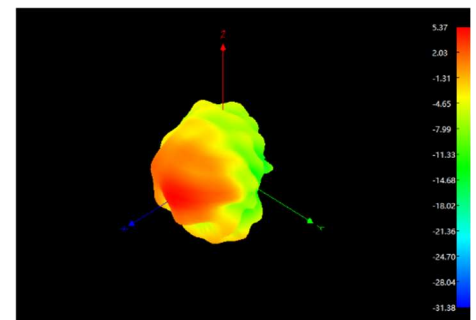
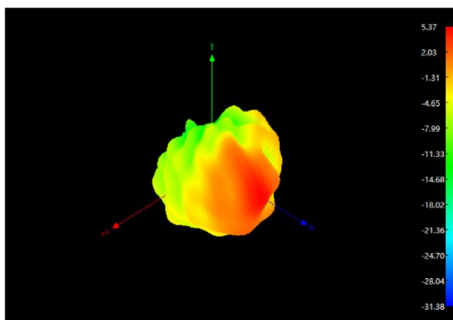
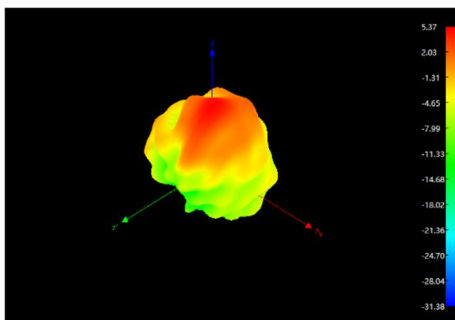
Frequency/MHz	MaxGain/dBi	AvgGain/dBi
2400	5.57	-3.4
2410	5.38	-3.48
2420	5.53	-3.33
2430	5.27	-3.48
2440	5.31	-3.3
2450	5.37	-3.32
2460	5.41	-3.28
2470	5.67	-3.13
2480	5.33	-3.32
2490	5.61	-3.09
2500	5.22	-3.41

5. 2 Antenna - Radiation Pattern Test Data

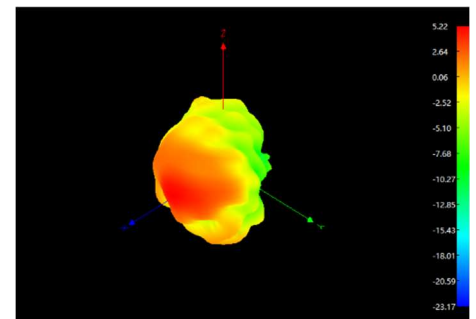
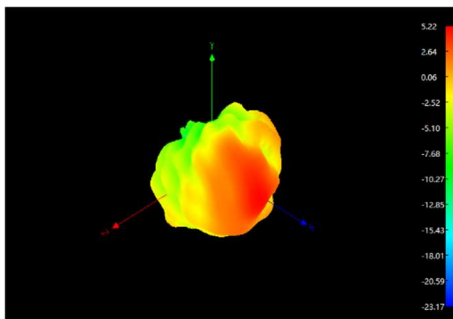
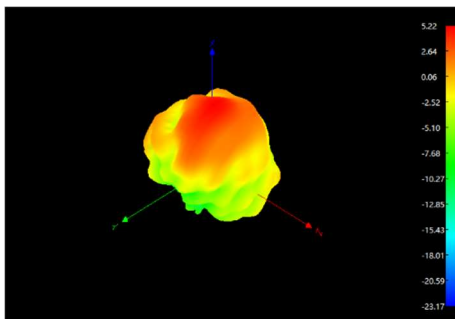
2400MHz



2450MHz



2500MHz



5. 3Antenna - OTA test data

Item	Measurement	Azimuths	Elevations	Standard	Band	Channel	Frequency	Max	Min	Total
1	TRP	Every30	Every30	WIFI (AP)	WIFI_B (11M)	1	2412	23.25	-0.97	15.71
2	TRP	Every30	Every30	WIFI (AP)	WIFI_B (11M)	6	2437	24.03	1.81	16.56
3	TRP	Every30	Every30	WIFI (AP)	WIFI_B (11M)	11	2462	23.68	0.7	16.18
4	TIS(EIRP)	Every30	Every30	WIFI (AP)	WIFI_B (11M)	1	2412	-71.72	-95.68	-88.11
5	TIS(EIRP)	Every30	Every30	WIFI (AP)	WIFI_B (11M)	6	2437	-73.48	-95.52	-88.03
6	TIS(EIRP)	Every30	Every30	WIFI (AP)	WIFI_B (11M)	11	2462	-72.89	-95.88	-88.37

5. Testing Equipment and Principle

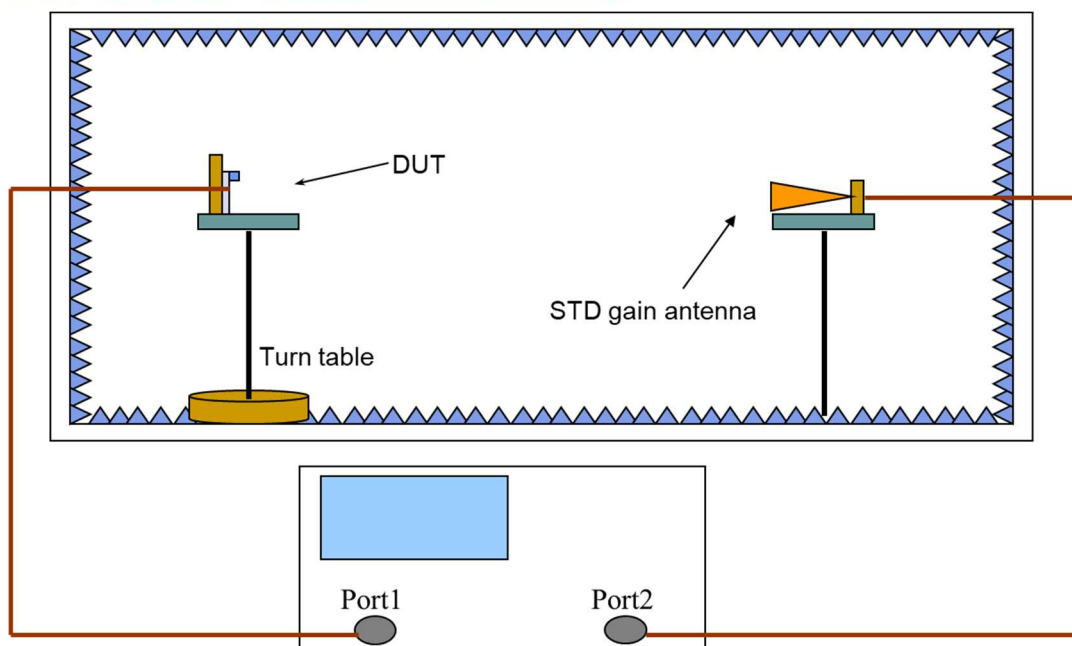
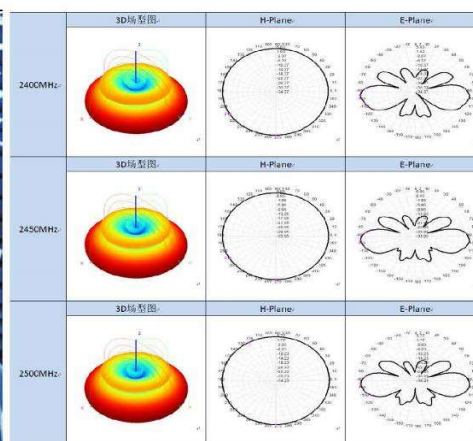
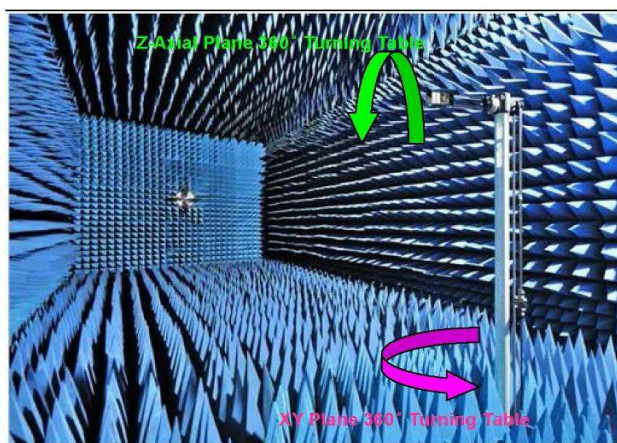
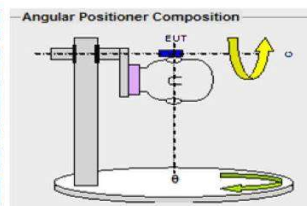
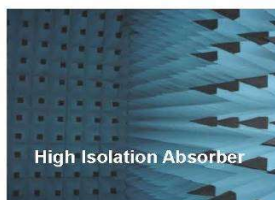
1. 测试设备:

网络分析仪 Network Analyzers :Agilent 8753D 5071B

综合测试仪 Communications Test Set:Agilent E5515C

3D 暗室测试系统 3D Chamber Test System:

.Chamber Size: 9 x 5 x 4 m³
.Freq. Range: 0.4 ~ 18.0 GHz
.Double Ridge Horn Antenna
.VNA: Agilent E5071C
.3D Turning Table and Positioner
.ADT Solution 3D Testing Software

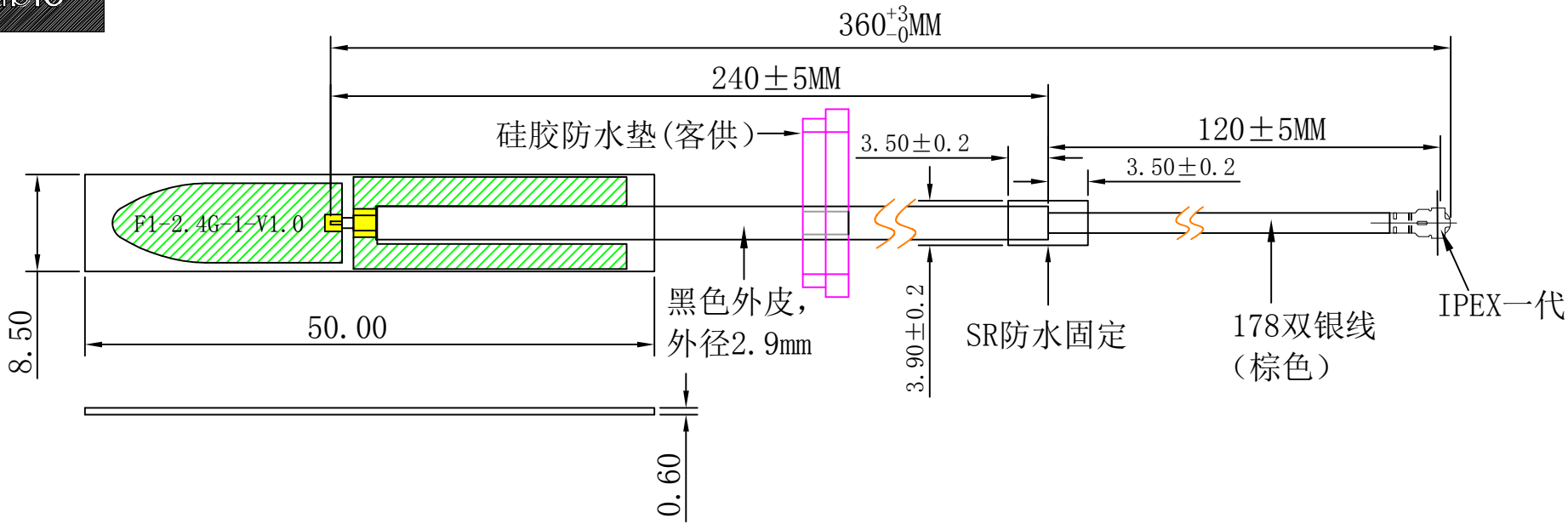


6. Mechanical Drawing See attached files

RoHS

Compatible

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



- NOTES:
- 绿色为铜材质部分; 红色为基材; 黄色部分为镀镍区; 蓝色为背胶区域;
 - 刀模不可伤到线路, 镀镍区要与线路导通;
 - 表面不可以有污物、擦伤、黑点、镀金后断裂及脱落等不良现象;

				1
3	F1-2.4G-1-V1.0	PCB	FR-4,TG135, 0.6MM	1
2	R-CB-178RB	Coaxial Cable	RG178/50	1
1	CR-113-1	Connector	Mini Connector	1
No.	Part Number	Name	Material	Q'ty

东莞市昶蒙电子有限公司
Dongguan Chrungmung Electronics Co., Ltd.

TITLE: Embedded Antenna

PART NO.: NB2400-05003IX

DWG NAME:

APPROVED BY: XIONG
2024-07-03

CHECKED BY: ZHU
2024-07-03

DESIGNED BY: FENG
2024-07-03

Tolerance
X.X ±0.5
X.XX ±0.2
X° ±1°

UNITS: mm

SCALE: 1/1

REVISION: A

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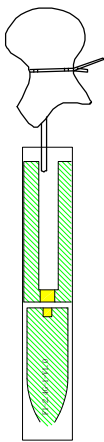
PACKING CRITERION

Date: 2024.06.03

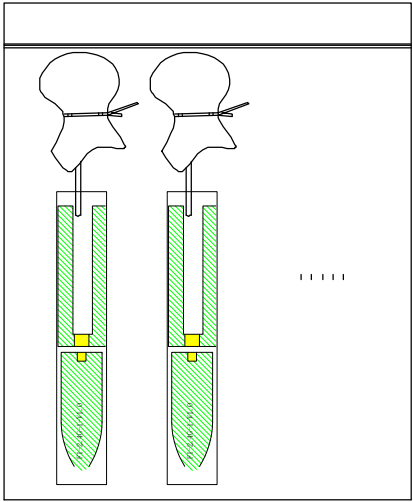
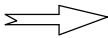
Page: 1 of 1

Part Number : NB2400-05003IX	Revision : A
Name: Embedded Antenna	Customer : ALL

1 .

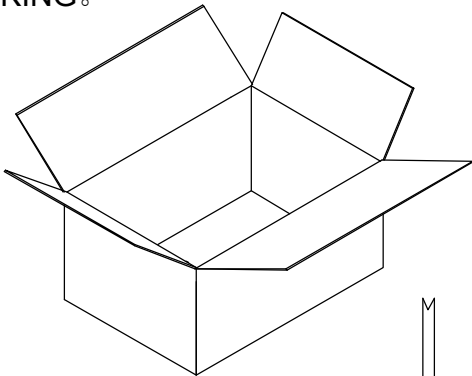


20pcs/扎

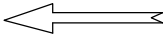


50PCS/PE BAG R-
NIP-BAG-360290

2.PACKING。

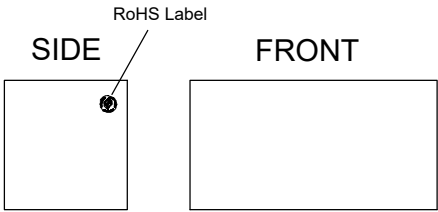
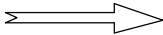
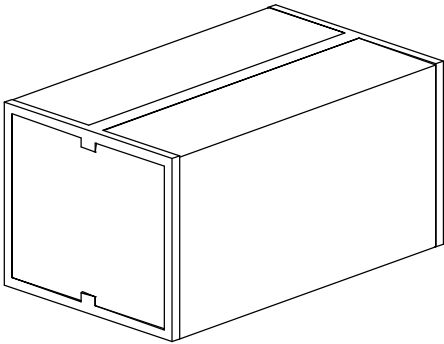


SIZE:29.0x21.0x16.5cm
500PCS/BOX



Pearl cotton :1pcs/BOX

3 . SEALING。



APPROVED BY: XIONG

CHECKED BY:

DESIGNED BY: FENG