

Product Number: AN2450B-92TGG

Product Name: Antenna

Specification For Approval

Date: 2019-12-16

File No.: 191216002

Version: 1.0

Customer : _____

Customer P/N : /

Hoogwell P/N : AN2450B-92TGG

Description : Antenna

HOOGWELL Checked By : _____

Customer Approved By: _____

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Product Number: AN2450B-92TGG
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Product Number: AN2450B-92TGG

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1. Revision History

| Revision | Date | Change Notification | Description |
|-----------------|-------------|----------------------------|--------------------|
| 1.0 | 2019-12-16 | | |
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Product Number: AN2450B-92TGG

Product Name: Antenna

2. Specification

| Sample Photo | |
|--|--|
|  | |
| A. Electrical Characteristics | |
| Frequency | 2400 ~ 2500 MHz 4800 ~ 5900 MHz |
| S.W.R. | ≤ 2.0 @ 2400 ~ 2500 MHz ≤ 3.0 @ 4800 ~ 5900 MHz |
| 2D Antenna Gain | $+5.0 \pm 0.7$ dBi @ 2400 ~ 2500 MHz $+5.0 \pm 0.7$ dBi @ 4800 ~ 5900 MHz |
| 3D Efficiency | 70%~ 80% @ 2400 ~ 2500 MHz 70%~ 80% @ 4800 ~ 5900 MHz |
| Polarization | Linear |
| Impedance | 50 Ohm |
| B. Material & Mechanical Characteristics | |
| Material of Radiator | CU |
| Material of Plastic | Body: TPE Hinge: ABS Holder: ABS |
| Cable Type | RG-178 |
| Connector Type | SMA Male |
| Connector Pull Test | ≥ 5 Kg |
| C. Environmental | |
| Operation Temperature | - 40 °C ~ + 65 °C |
| Storage Temperature | - 40 °C ~ + 80 °C |

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 | OK |
| C2 | Insertion Loss 插入損失 | 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 | N/A |
| 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 | OK |
| C4 | Voltage Breakdown 耐電壓 | Test voltage should be applied between insulated portions, or between ground as specified. 在絕緣部分測試電壓,或指定接地面之間 | Max Voltage \geq 500 V or directive material specification 最大電壓 \geq 500V 或符合材料規範 | N/A |
| C5 | Insulation Resistance 絕緣阻抗 | Set Voltage: 500 \pm 50V; between the insulated portions, or between ground as specified. 設置電壓 500 \pm 50V,在絕緣部份測試或指定接地面之間 | Resistance \geq 500 M ohm or directive material specification 阻抗 \geq 500M ohm 或符合材料規範 | N/A |
| C6 | Contact Resistance 接觸阻抗 | Air Temp: 26°C; measured with test equipment 室溫 26°C, 指定量測設備 | Directive material specification 符合材料規範 | N/A |
| 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. \leq 5% 無明顯外觀不良; 頻率偏移 \leq 5% | OK |
| 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. \leq 5% 產品無脫落、斷裂; 頻率偏移 \leq 5% | OK |
| | | 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 | | OK |
| | | Antenna+Machine: Height: 0.76 Meter; 1 corner, 3 edges, 6 surface. 整機 : 高 0.76m , 一角、三棱、六面各一次 | | N/A |
| M3 | Solderability | GB / T2423.28-2005 | Tin evenly on full | N/A |

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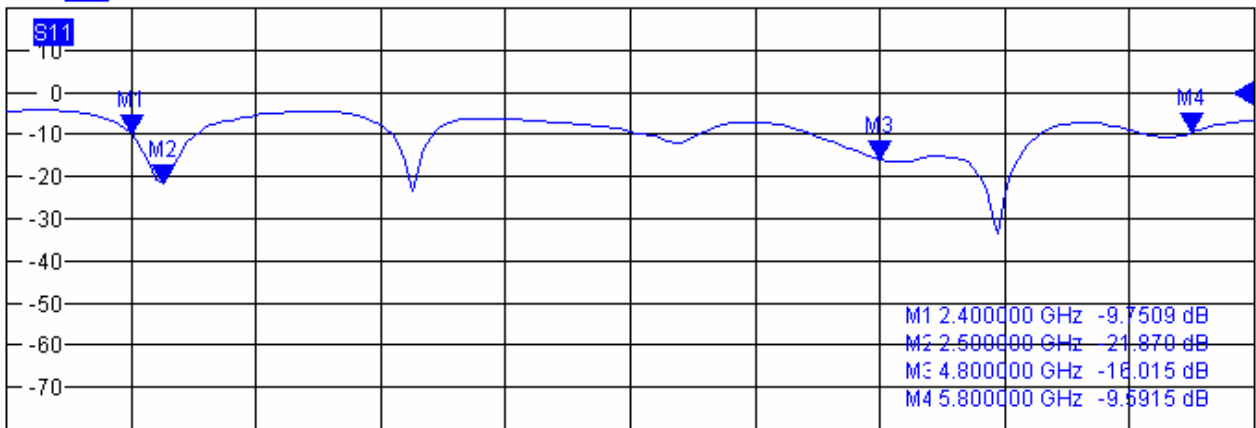
Product Name: Antenna

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|----|--|--|---|-----|
| | 可焊性 | Temp: 260±5° C;Duration: 5 seconds 溫度 260±5° C;持續 5 秒 | 上錫均勻飽滿 | |
| 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% | OK |
| M5 | Torque Test 扭力 | Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal 單獨定義產品端子之順時針及逆時針扭力 | 1. Directive DUT specification 2. Frequency Tol.≤ 5% 符合待測物規範;頻率偏移≤5% | N/A |
| 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 | OK |
| E1 | Waterproof 防水 | With Reference to IEC 60529 // IP Code Definition 參考 IEC60529 IP 定義 | Directive DUT specification 符合待測物規範 | N/A |
| E2 | Salt Spray 鹽霧 | GB / T 2423.17-2008 Temp: 35°C; RH: ≥ 95%; NaCl solution: ≥ 5%;Time: 24H 溫度 35°C ; 濕度≥95%;鹽水濃度≥5% ; 測試 24H | 1. No Visual Damage 2. Frequency Tol.≤5% 無明顯外觀不良;頻率偏移≤5% | N/A |
| 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% | OK |
| E4 | Thermal Shock 冷熱衝擊 | GB / T 2423.22 - 2008 - 40°C (30 minutes) to + 80°C (30 minutes) ; Cycles: 24 - 40°C 測試 30 分轉 80°C 測試 30 分爲一個週期; 共 24 週期 | 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% | N/A |
| 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% | OK |
| E6 | High Temp. 高溫 | Temp. 270±10°C ; Times : 120 seconds 溫度 270±10°C , 測試時間 120 秒 | No Visual Damage 無明顯外觀不良 | N/A |
| R1 | RoHS | With Reference to IEC 62321:2008 with flow chart 參考 IEC 62321 測試流程 | Directive RoHS 2011/65/EU 符合 RoHS 2011/65/EU 標準 | OK |
| R2 | PFOS | With Reference to USA EPA 3550C:1996 by LC/MS 參考 USA EPA 3550C 測試流程 | Directive RoHS 2006/122/EC 符合 RoHS 2011/65/EU 標準 | OK |

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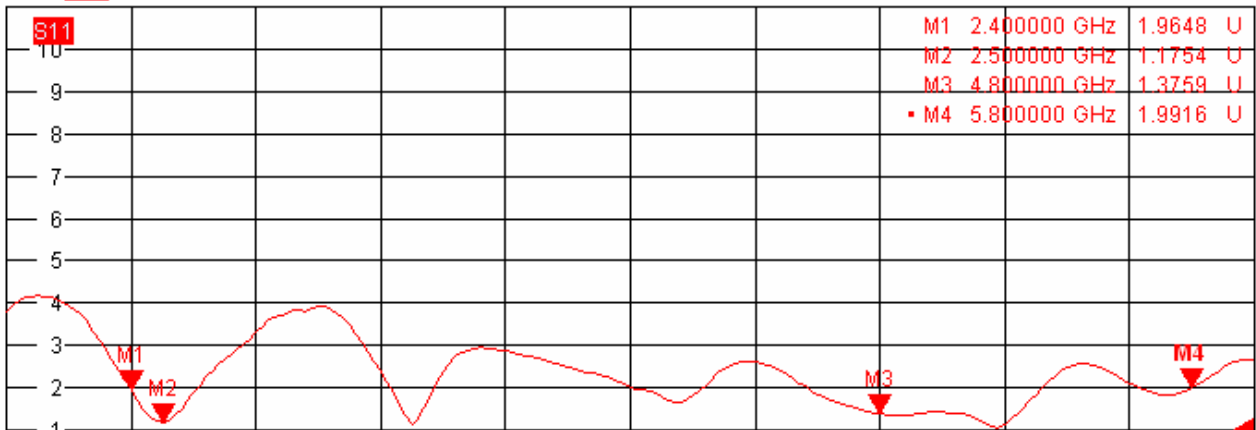
4. Antenna - S Parameter Test Data



Ch1 Start 2 GHz Base Pwr 0 dBm Stop 6 GHz

Trc2 S11 SWR 1 U / Ref 1 U

2

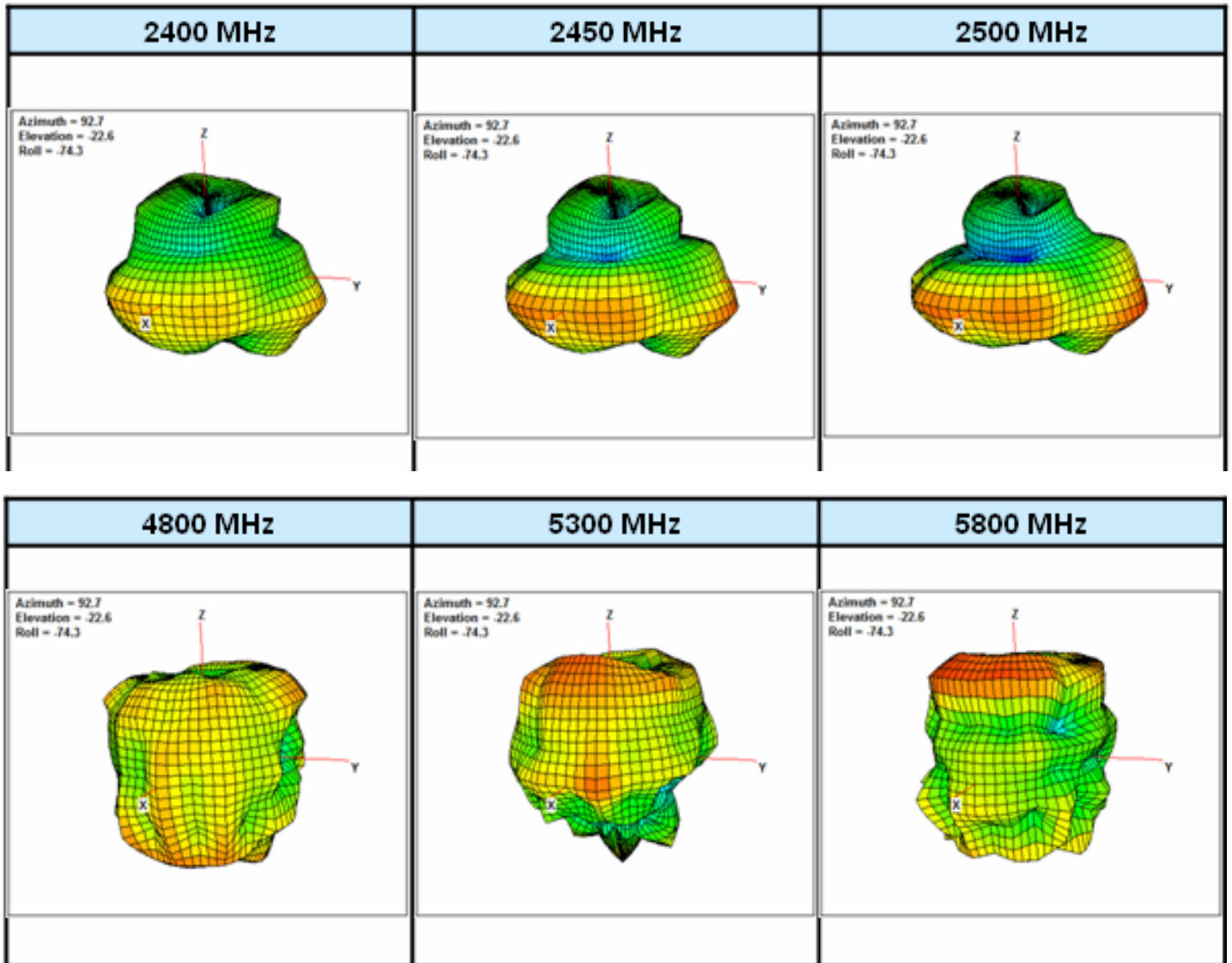


Ch1 Start 2 GHz Base Pwr 0 dBm Stop 6 GHz

Product Number: AN2450B-92TGG

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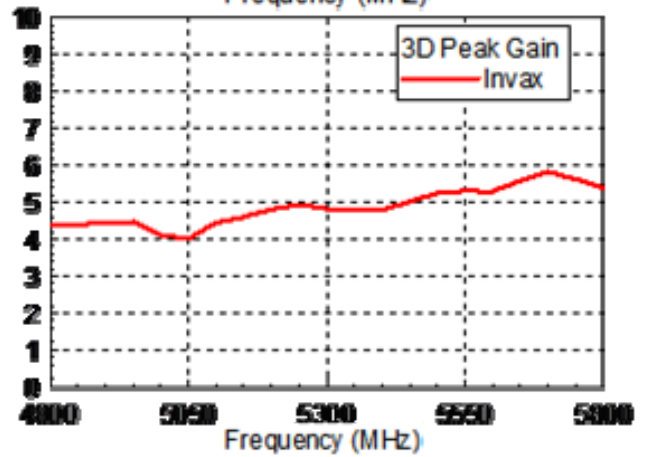
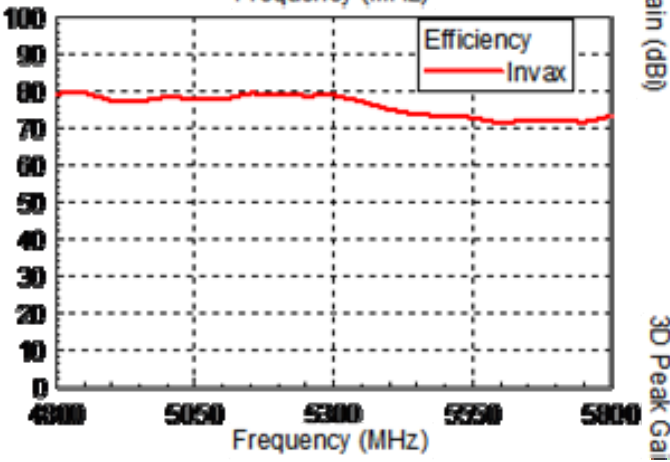
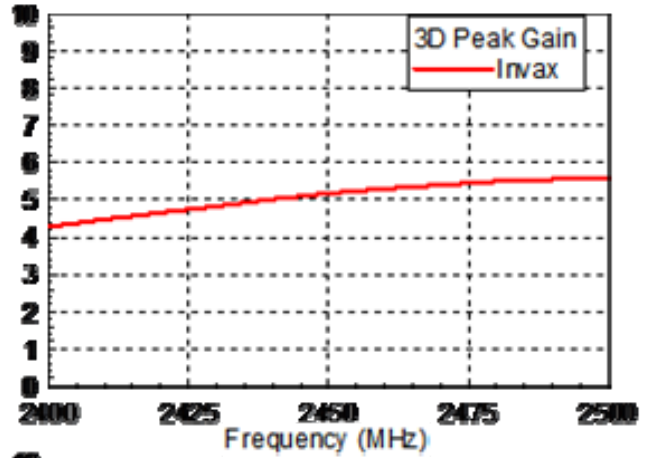
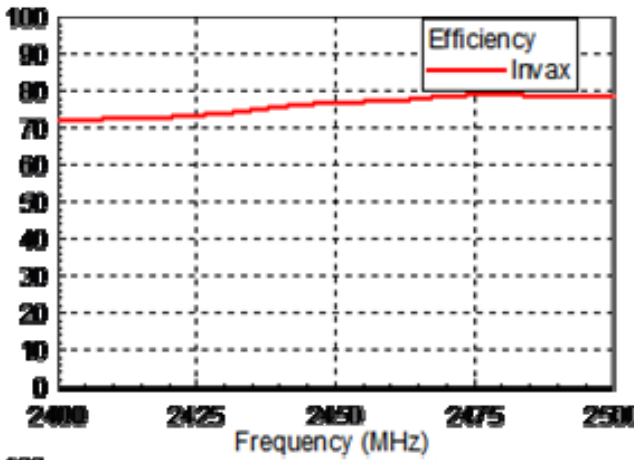
5. Antenna - Radiation Pattern Test Data



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Efficiency



6. Mechanical Drawing

See attached files

7. Material Description and RoHS Test Report

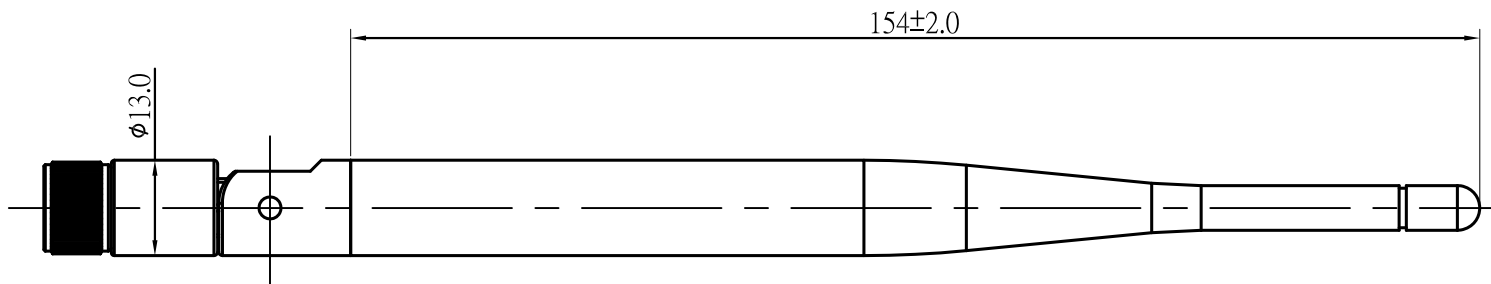
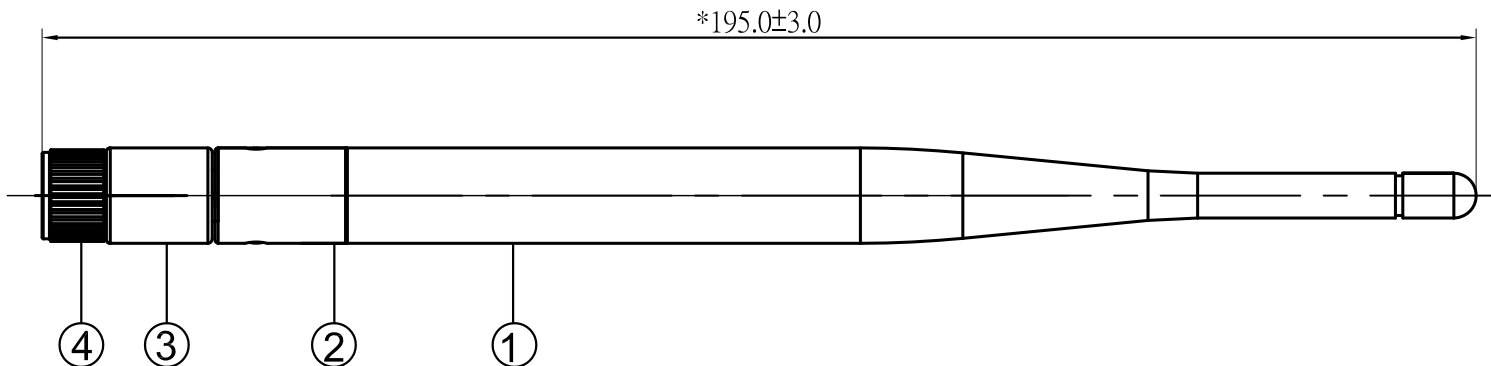
See attached files

RoHS

Compatible



| SIGN | DATE | DESCRIPTION | APPROVER |
|------|------|-------------|----------|
| △ | | | |
| △ | | | |
| △ | | | |



| 4 | SMA307-CCR5AN92-A | SMA Male | Cu | Eletrodeposition | 1 |
|-----|-------------------|-------------|----------|------------------|------|
| 3 | AN0304-T06B | Body1 | ABS | Black | 1 |
| 2 | AN9201-02B | Body2 | ABS | Black | 1 |
| 1 | AN9201-04B | Body | TPEE | Black | 1 |
| No. | Part Number | Description | Material | Finished | Q'ty |

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TITLE: 2.4~2.5 4.9~5.9GHz Antenna

PART NO.: AN2450B-92TGG

CUSTOMER P/N: /

| APP BY | CHK BY | RF BY | DES BY | UNITS: mm | Tolerance |
|------------|------------|-------|--------|-----------|-----------|
| LQ | DJC | | | X.X ±0.3 | |
| 2019.12.16 | 2019.12.16 | | | X.XX ±0.2 | |
| | | | | X° ±1 | |

SCALE: 1/1
REVISION: A

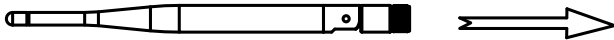
PACKING CRITERION

Date: 2019-12-16

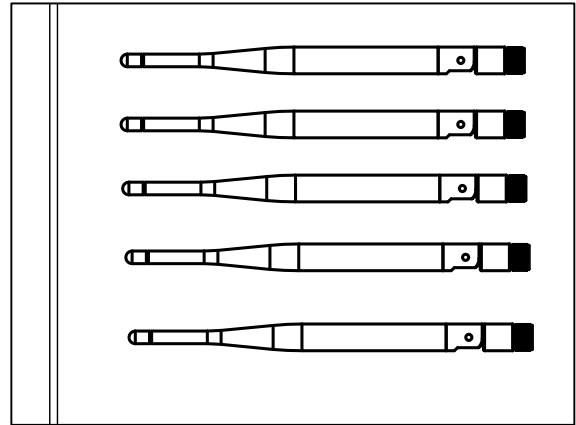
Page: 1 of 1

| | |
|----------------------------------|----------------|
| Part Number : AN2450B-92TGG | Revision : A |
| Name: 2.4~2.5 4.9~5.9GHz Antenna | Customer : ALL |

一.

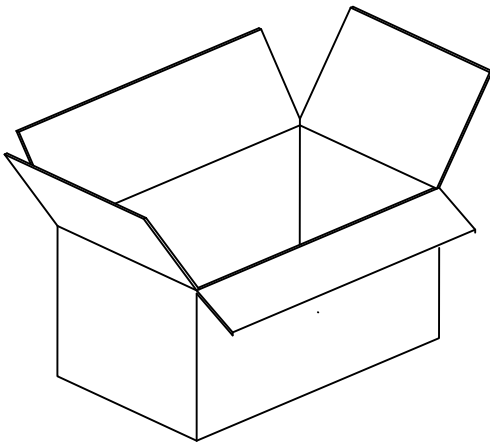


二.



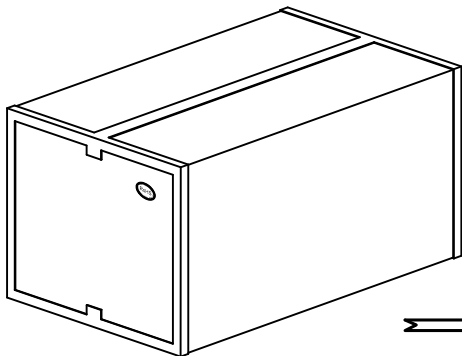
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三.



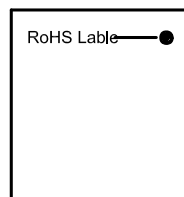
29*23*32.5CM 500pcs/Box

四.



SIDE

FRONT



APPROVED BY : LQ

CHECKED BY : DJC

DESIGNED BY : DJC