

Product Number: AN176RAM
Product Name: Antenna

Specification For Approval

Date: 2023-05-05

File No.: 230505001

Version: 1.0

Customer : _____

Customer P/N : PD-AN868-5SA

Description : Antenna

Checked By:

Customer Approved By:

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2. Specification

Sample Photo	
A. Electrical Characteristics	
Frequency	868 MHz
S.W.R.	<=3.0
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: TPEE
Cable Type	RG-178
Connector Type	SMA Male
Connector Pull Test	>= 5Kg
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

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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	PASS
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	PASS
C4	Voltage Breakdown	Test voltage should be applied between insulated portions, or between ground as specified.	Max Voltage \geq 500 V or directive material specification	N/A
C5	Insulation Resistance	Set Voltage: 500 \pm 50V; between the insulated portions, or between ground as specified.	Resistance \geq 500 M ohm or directive material specification \geq 500M ohm	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%	PASS
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%	PASS
		Packing : Height: 0.76 Meter; 1 corner, 3 edges, 6 surface		PASS
		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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		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%	PASS
M5	Torque Test	Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal	1. Directive DUT specification 2. Frequency Tol.≤ 5%	PASS
M6	Dimension	Inspection of dimension, color, material, package, surface process.	Directive DUT specification	PASS
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%	PASS
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%	PASS
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%	PASS
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%	PASS
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	PASS
R2	PFOS	With Reference to USA EPA 3550C:1996 by LC/MS	Directive RoHS 2006/122/EC	PASS

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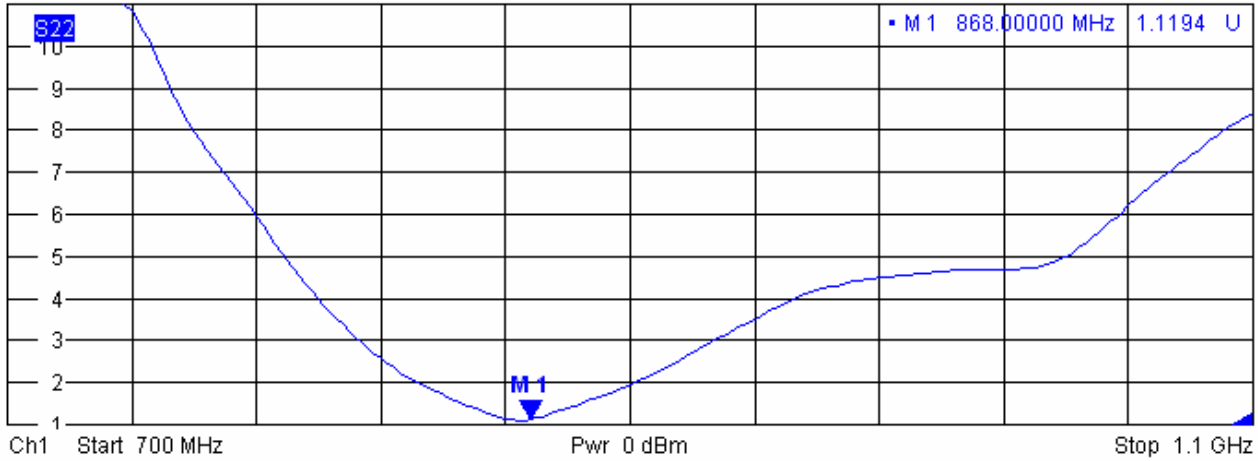
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4. Antenna - S Parameter Test Data



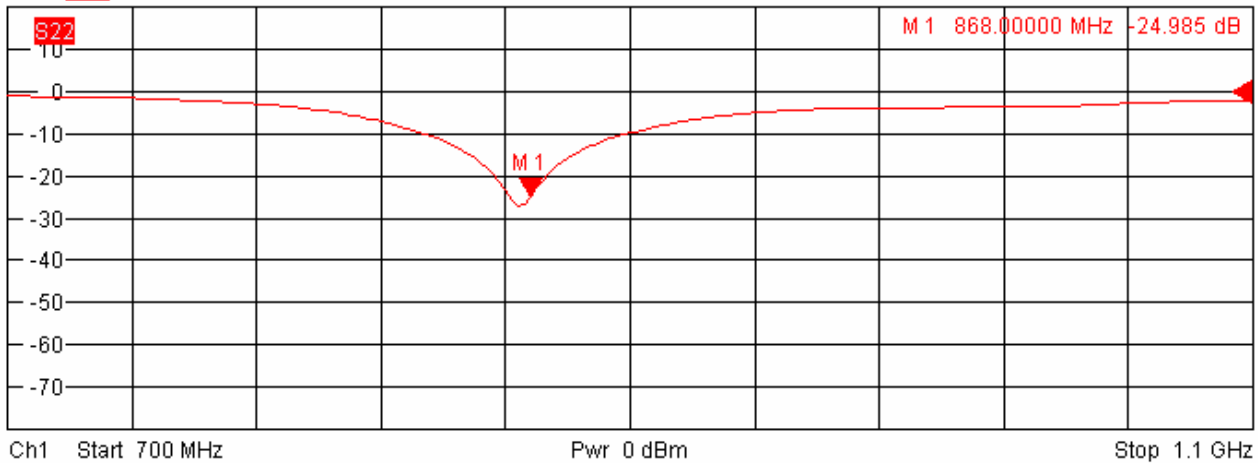
Trc1 S22 SWR 1 U / Ref1 U

1



Trc2 S22 dB Mag 10 dB / Ref0 dB

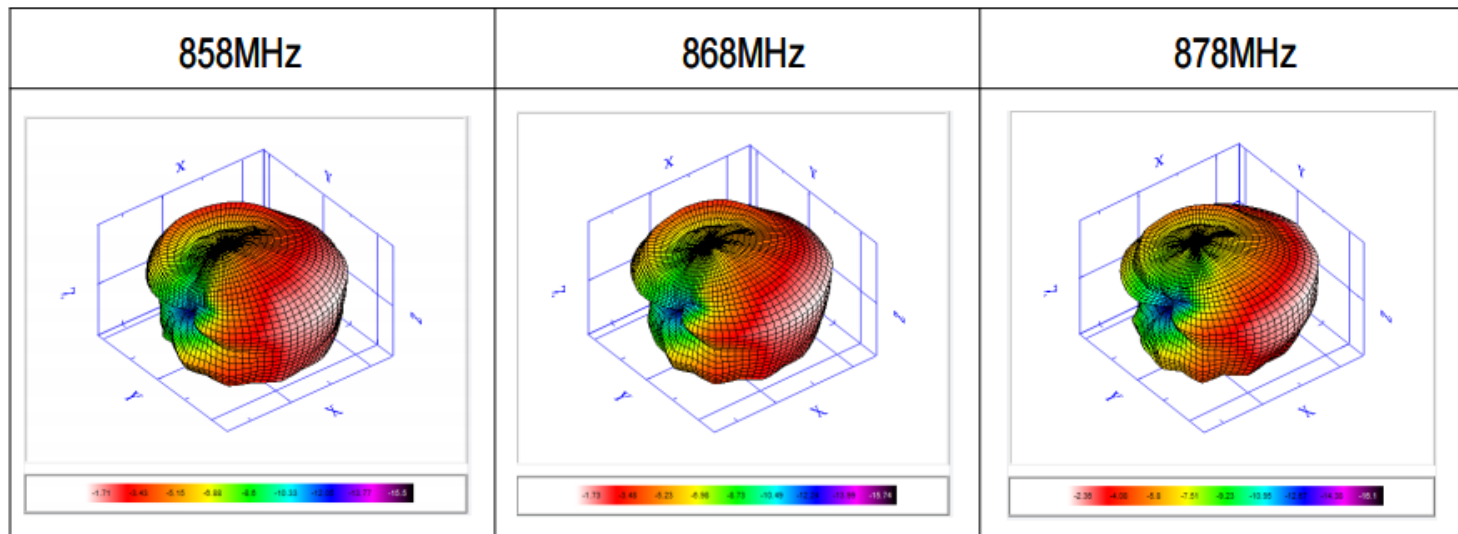
2



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5. Antenna - Radiation Pattern Test Data



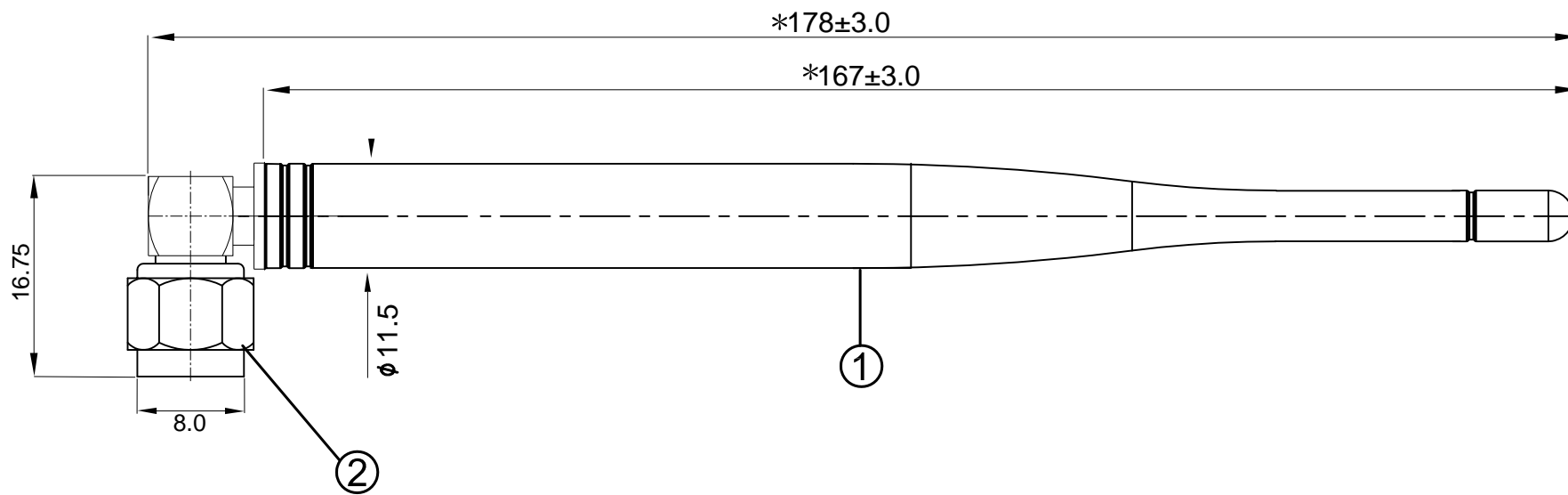
Frequency	858	860	862	865	868	870	872	875	878
TRP (dBm)	-5.27	-5.22	-5.33	-5.49	-5.49	-5.52	-5.7	-5.95	-6.32
Peak EIRP (dBm)	-1.71	-1.69	-1.74	-1.83	-1.73	-1.69	-1.78	-1.91	-2.36
NHPRP +/- 45 (degree)	-5.83	-5.79	-5.89	-6.04	-6.05	-6.09	-6.27	-6.53	-6.91
NHPRP +/- 30 (degree)	-6.83	-6.79	-6.89	-7.04	-7.04	-7.07	-7.24	-7.49	-7.86
E-Theta Peak Gain (dBi)	-7.93	-7.91	-8.12	-8.35	-8.79	-9.04	-9.4	-9.94	-10.31
E-Phi Peak Gain (dBi)	-2	-2	-2.05	-2.13	-2.04	-2.01	-2.08	-2.18	-2.67
E-Total Peak Gain (dBi)	-1.71	-1.69	-1.74	-1.83	-1.73	-1.69	-1.78	-1.91	-2.36
Directivity (dBi)	3.57	3.54	3.59	3.66	3.76	3.83	3.91	4.03	3.96
Efficiency (%)	29.72	30.03	29.3	28.27	28.24	28.03	26.93	25.42	23.34

RoHS

Compatible



SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:

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

TITLE: Antenna 868mHz					
PART NO.: AN176RAM			CUSTOMER P/N: /		
APP BY	CHK BY	RF BY	DES BY		Tolerance
LQ			DJC		X.X ±0.5 X.XX ±0.2 X° ±1
2023-05-05			2023-05-05	UNITS: mm SCALE: 1/1 REVISION: A	

No.	Part Number	Name	Material	Finish	Q'ty
2	SMA805-CBT5A56	SMA Male	CU		1
1	YNX-AN61-01B	Body1	TPEE		1



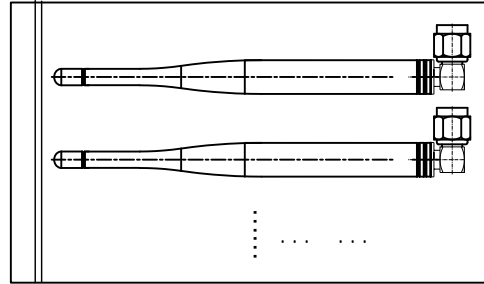
PACKING CRITERION

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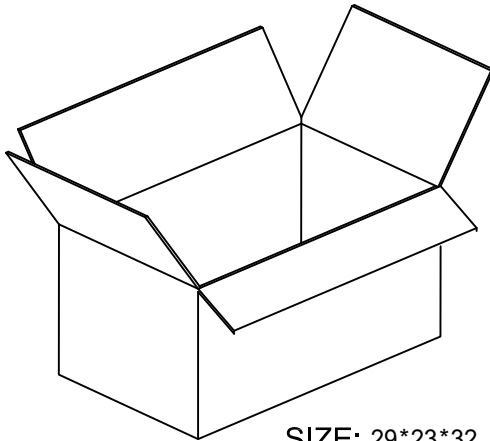
Part Number : AN176RAM	Revision : A
Name: Antenna	Customer : ALL

1.



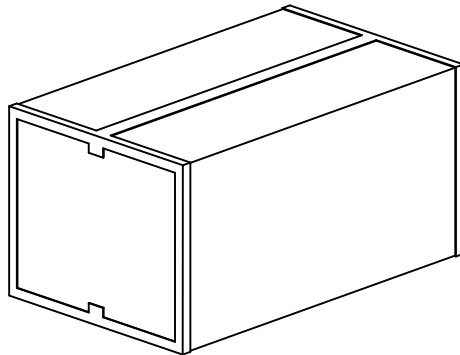
R-PE-BAG-300245006 50PCS/BAG

2.



SIZE: 29*23*32.5CM
600 PCS/BOX

3.



APPROVED BY : LQ

CHECKED BY : DJC

DESIGNED BY : _____