

Product Number: AN2450-9210RS
Product Name: Antenna



Specification For Approval

Date: 2011 / 11 / 18

File No.: 111180006

Version: 1.0

Customer : Fortinet Technologies Inc.

Customer P/N : /

INVAX P/N : AN2450-9210RS

Description : Antenna

Cortec Checked By:



Customer Approved By:



INVAX System Technology Corp.

4F. No. 815.Chung Hsiao East Rd.,Sec.5
Taipei, TAIWAN

TEL:886-2-2788-5218 FAX:886-2-2783-1658
<http://www.invaxsystem.com>



Cortec Technology Inc.

Xian-Xi Industrial, Sha-Tou Administration Zone,
Chang-An Town, Dong-Guan City, Guangdong
Province, China

TEL:86-769-85388261 FAX:86-769-85317869
<http://www.cortec.com.cn>

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Product Number: AN2450-9210RS

Product Name: Antenna



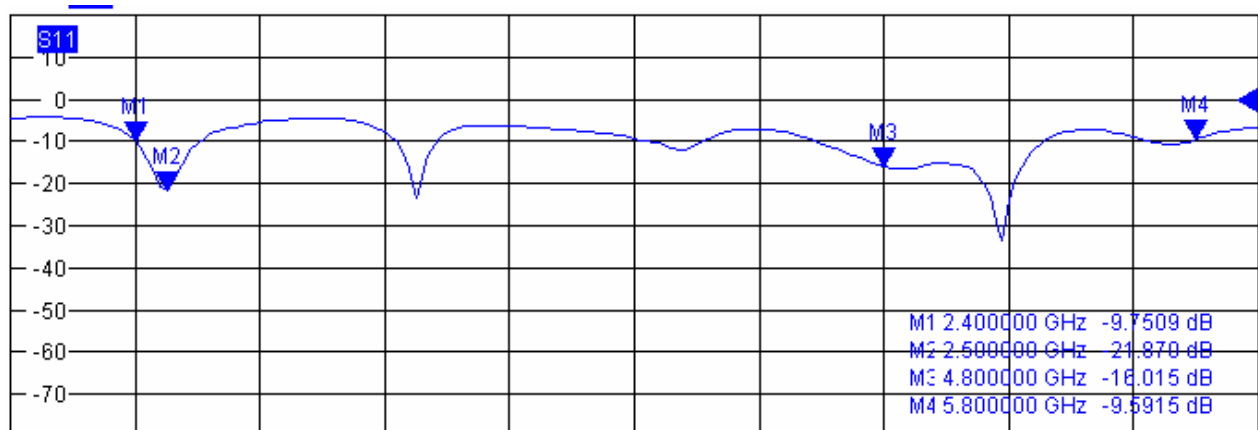
1. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz 4800 ~ 5900 MHz
S.W.R.	≤ 2.5 @ 2400 ~ 2500 MHz ≤ 3.0 @ 4800 ~ 5900 MHz
2D Antenna Gain	$+5.0 \pm 0.7\text{dBi}$ @ 2400 ~ 2500 MHz $+5.0 \pm 0.7\text{dBi}$ @ 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 Reverse
Connector Pull Test	≥ 5 Kg
Connector Torque Test	200 ~ 1000 g.cm
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

2. 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 Hz 3 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
R2	PFOS	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC
R3	PFOA	With Reference to USA EPA 3540C:1996 by LC/MS	Directive RoHS 2006/122/EC

3. Antenna - S Parameter Test Data



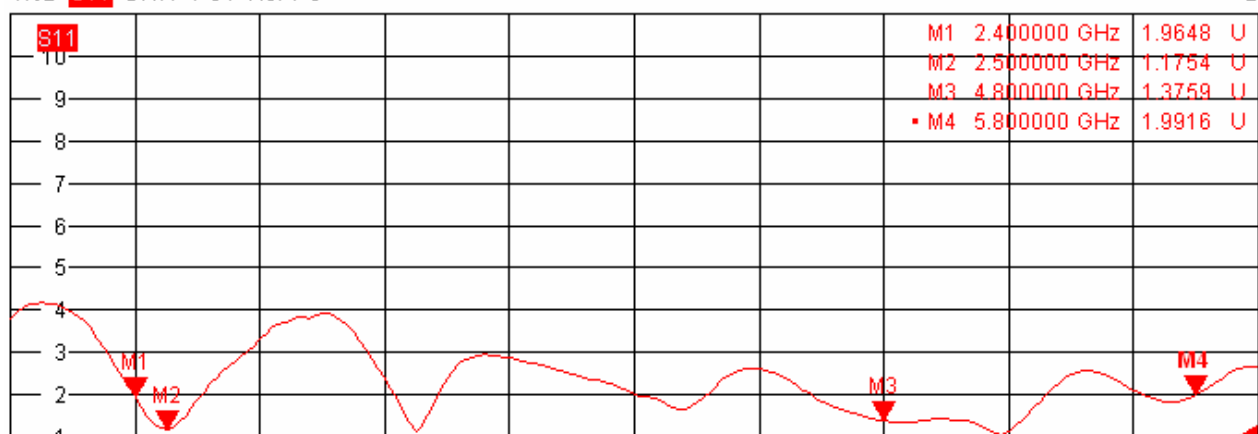
Ch1 Start 2 GHz

Base Pwr 0 dBm

Stop 6 GHz

Trc2 S11 SWR 1 U / Ref 1 U

2

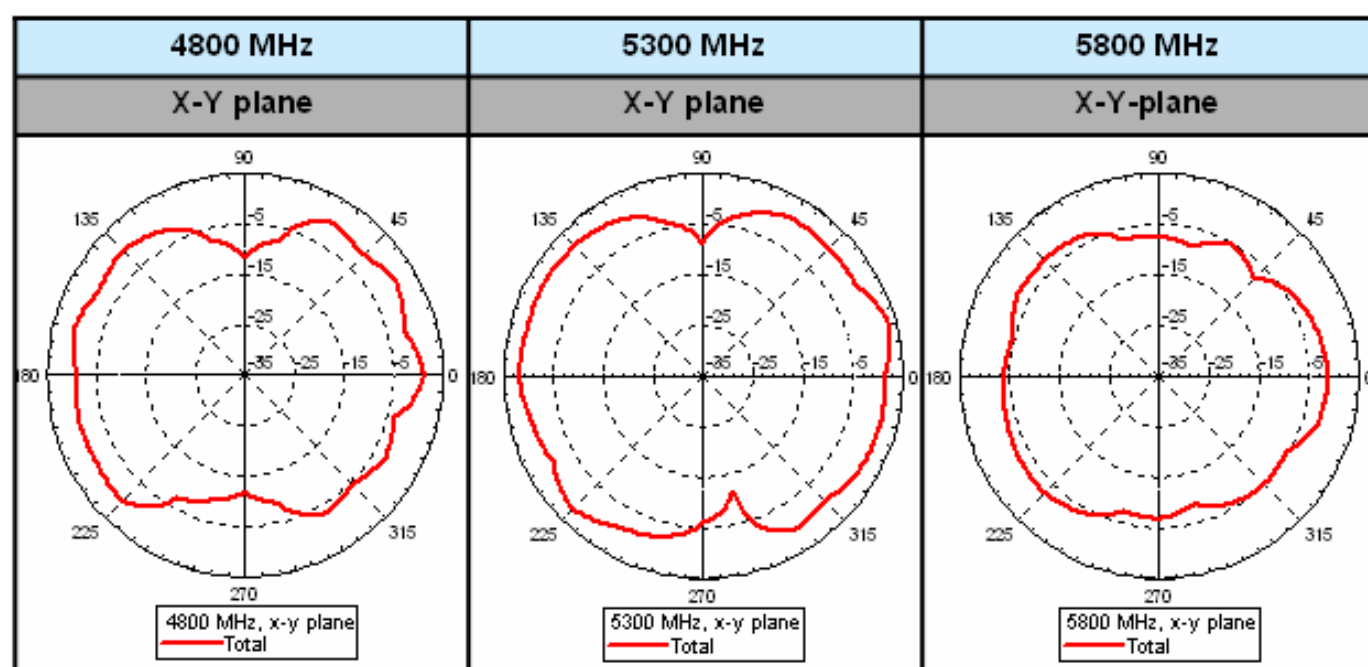
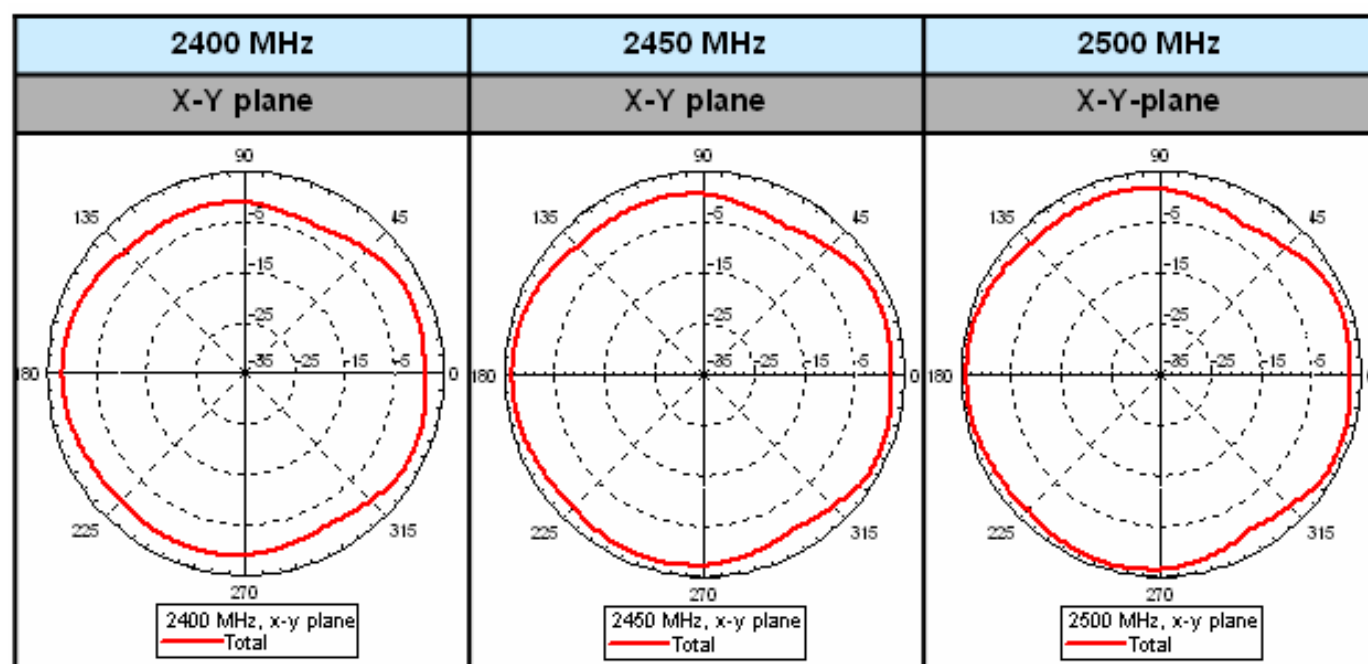


Ch1 Start 2 GHz

Base Pwr 0 dBm

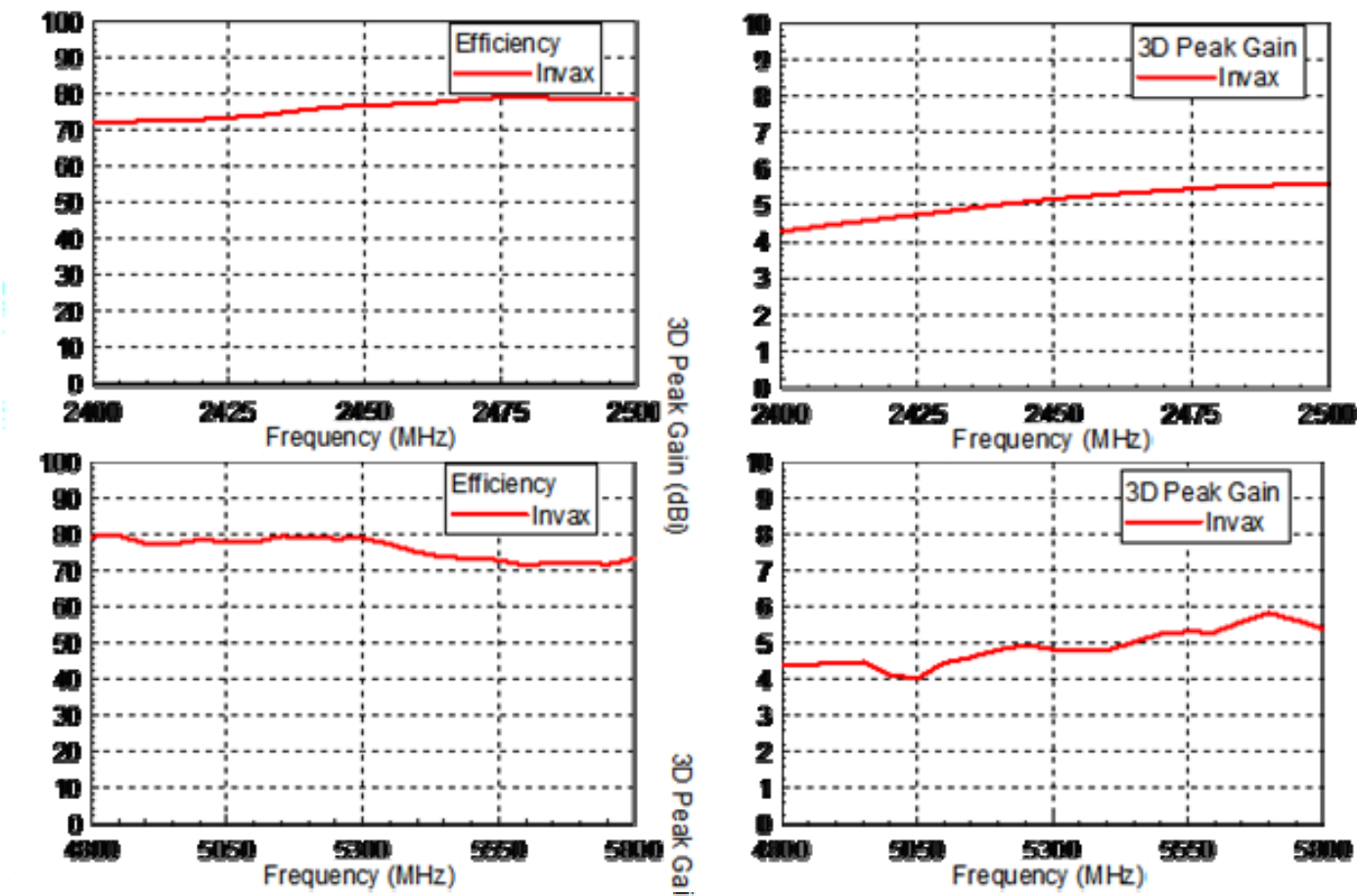
Stop 6 GHz

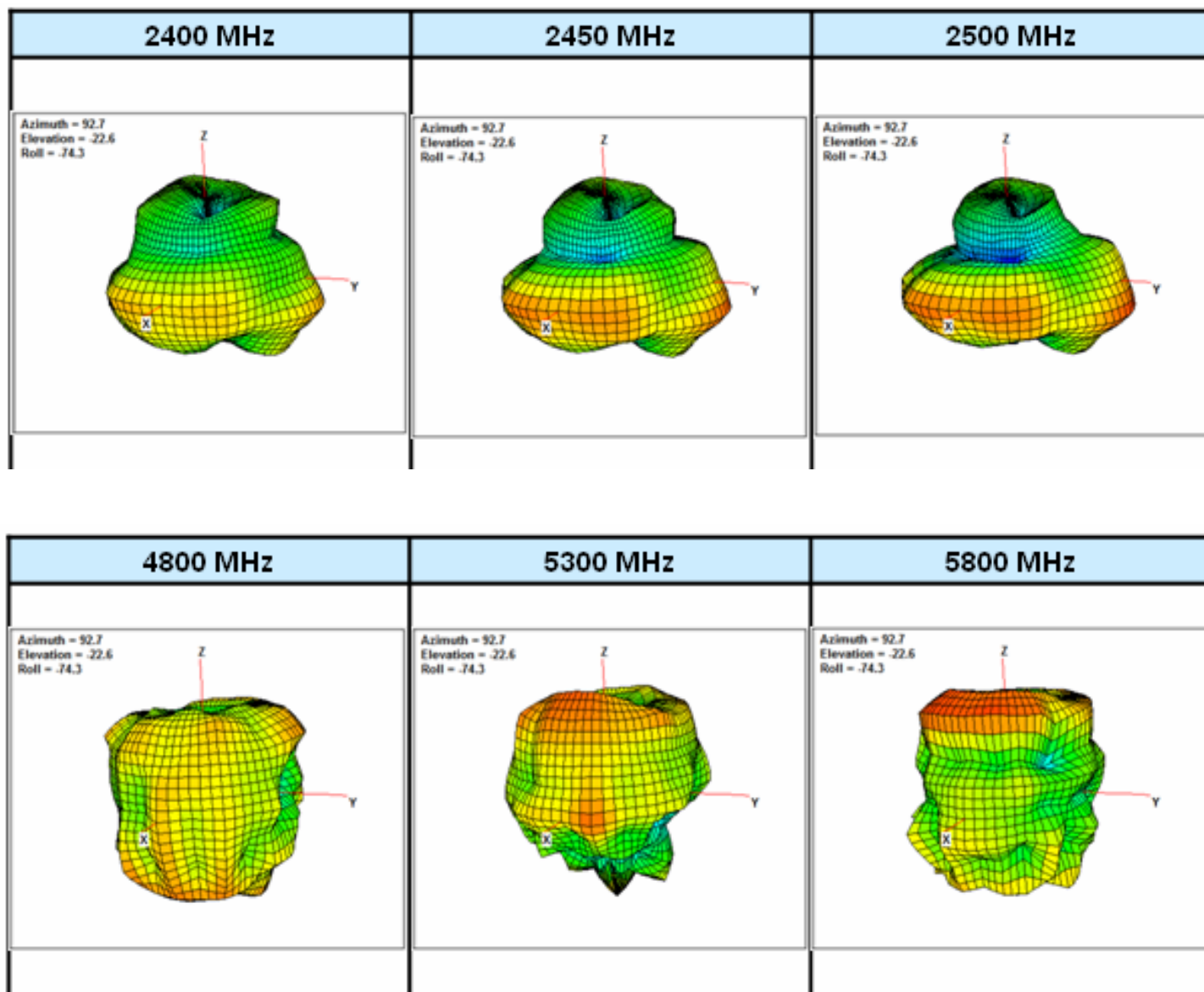
4. Antenna - Radiation Pattern Test Data





3D Peak Gain & Efficiency





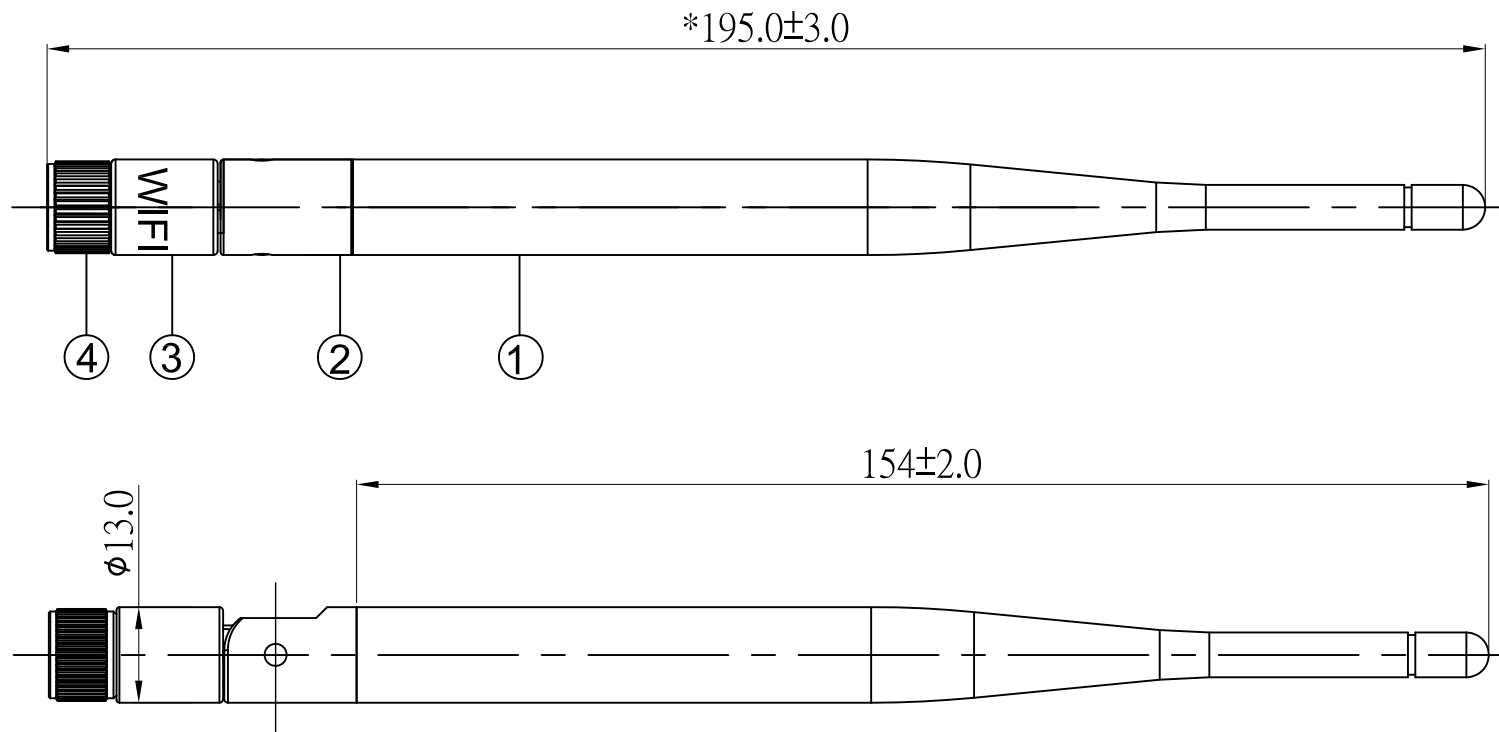
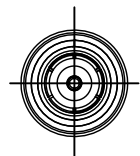
5. Mechanical Drawing
See attached files

6. Material Description and RoHS Test Report
See attached files

RoHS

Compatible

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



4	SMA307-CCR5AN92	SMA Male Reverse	Cu	Ni Plated	2
3	AN03-T07W10-BH	Body1	ABS	White	1
2	AN9201-07W10	Body2	ABS	White	1
1	AN9201-04W10	Body	TPE	White	1
No.	Part Number	Description	Material	Finished	Q'ty

Invax System Group.

Cortec

Cortec Technology Inc.

Http://www.invaxsystem.com Tel:886-2-27885218
E-mail:info@invax.com.tw Fax:886-2-27831658

TITLE:2.4~2.5 4.9~5.9GHz Antenna

PART NO.: AN2450-9210RS

DWG NAME: AN2450-9207RS.dwg

APPROVED BY	CHECKED BY	DESIGNED BY		Tolerance
Grant 2010.10.18	Jack 2010.10.18	Simon 2010.10.18	UNITS: mm	X.X ±0.3
			SCALE: 1/1	X.XX ±0.1
			REVISION: A	X° ±3°