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Specification For Approval

Date: 2010 / 10 / 19

File No.: 100319003

Version: 1.0

Customer : _____

Customer P/N : _____

P/N : ARS-N02

Description : Antenna

Cortec Checked By:

Customer Approved By:

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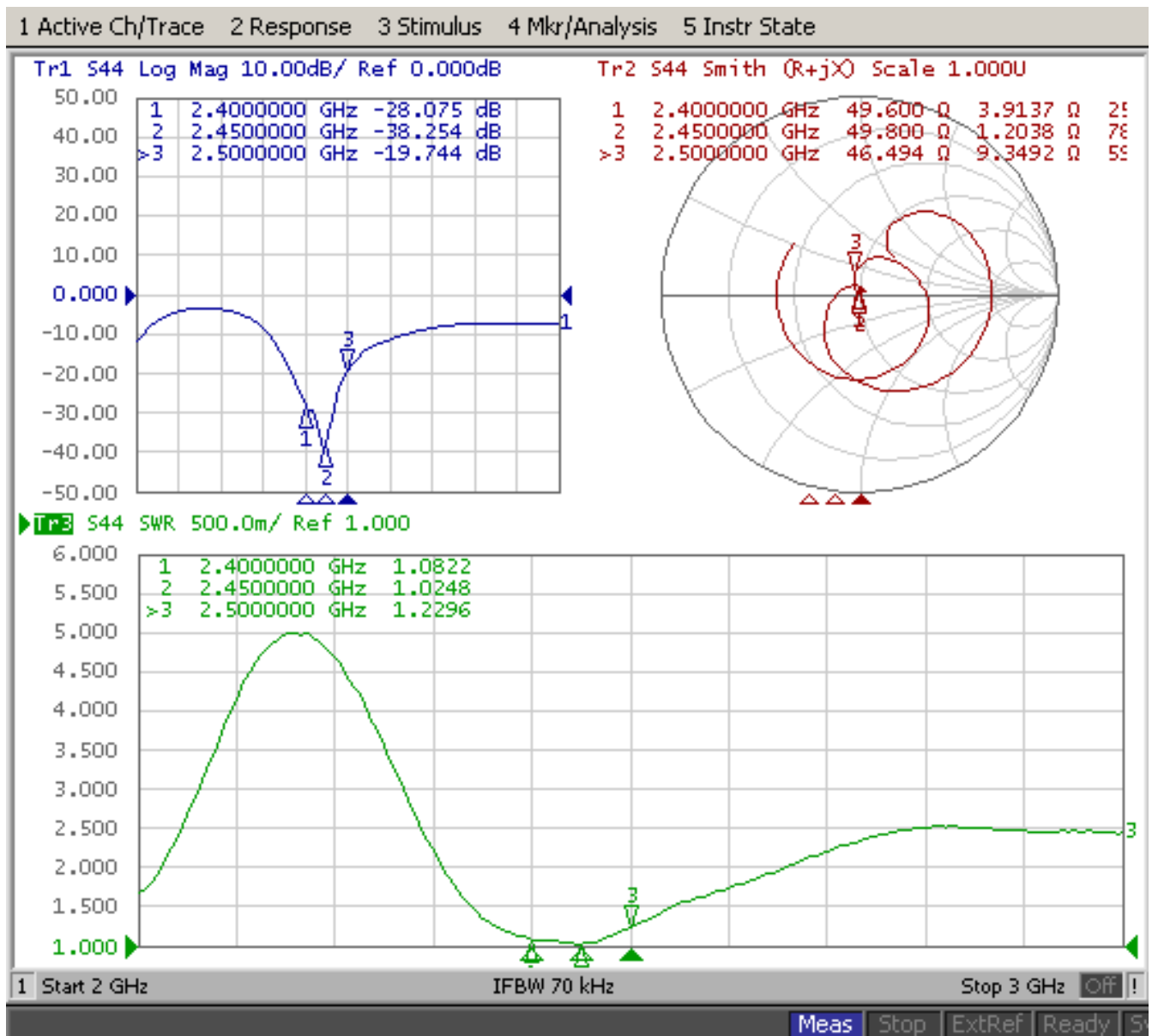
1. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
S.W.R.	≤ 2.0
Antenna Gain	$2.0 \pm 0.7 \text{dBi}$
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: TPE Hinge: PA+ABS Holder: PA+ABS
Cable Type	RG-178
Connector Type	SMA Male Reverse
Connector Pull Test	$\geq 3 \text{ Kg}$
Connector Torque Test	200~600g.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	MIL-STD-202G, 201A Amplitude: 0.03 inch (0.76mm); Freq: 10 to 55 Hz 3 directions; 2 hours for each direction	1. No Visual Damage 2. Frequency Tol.<= 5%
M2	Random Drop	Height: 1.5 Meter; 3 directions; 1 time for each direction	1. No parts separated 2. Frequency Tol.<= 5%
M3	Solderability	MIL-STD-202G, 210F, cond. A Solder iron: 350±10°C; Duration: 5 seconds	1. Mounted on PCB 2. No Visual Damage
M4	Terminal-Pull Test	MIL-STD-202G, 211A, cond. A Holding with individual specification; force applied to axis of terminal	1. Directive DUT specification 2. Frequency Tol.<= 5%
M5	Terminal-Torque Test	MIL-STD-202G, 211A, cond. E 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	MIL-STD-202G, 101E, cond. B Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%; Time: 48 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E2	Humidity	MIL-STD-202G, 103B, cond. B Temp: 40°C; RH: >= 95%; Time: 48 hours	After 2 Hours Recovery 1. No Visual Damage 2. Frequency Tol.<= 5%
E3	Thermal Shock	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.)	MIL-STD-202G, 108A, cond. A Temp: 85°C; Time: 96 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



4. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

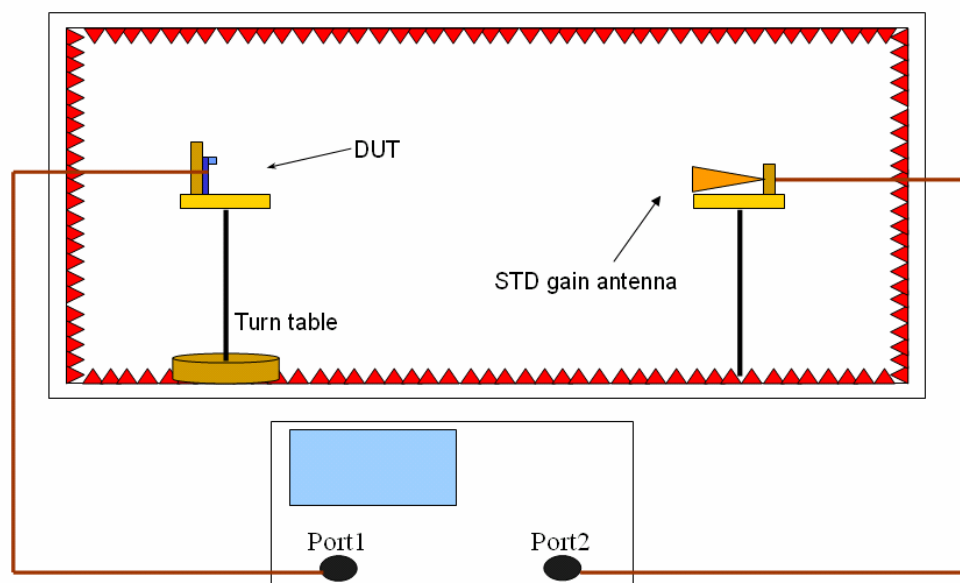
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 5071B

Received Antenna: 0.7 ~ 6.0 GHz for Gain Calibration

Double Ridged Horn Antenna



5. Mechanical Drawing

See attached files

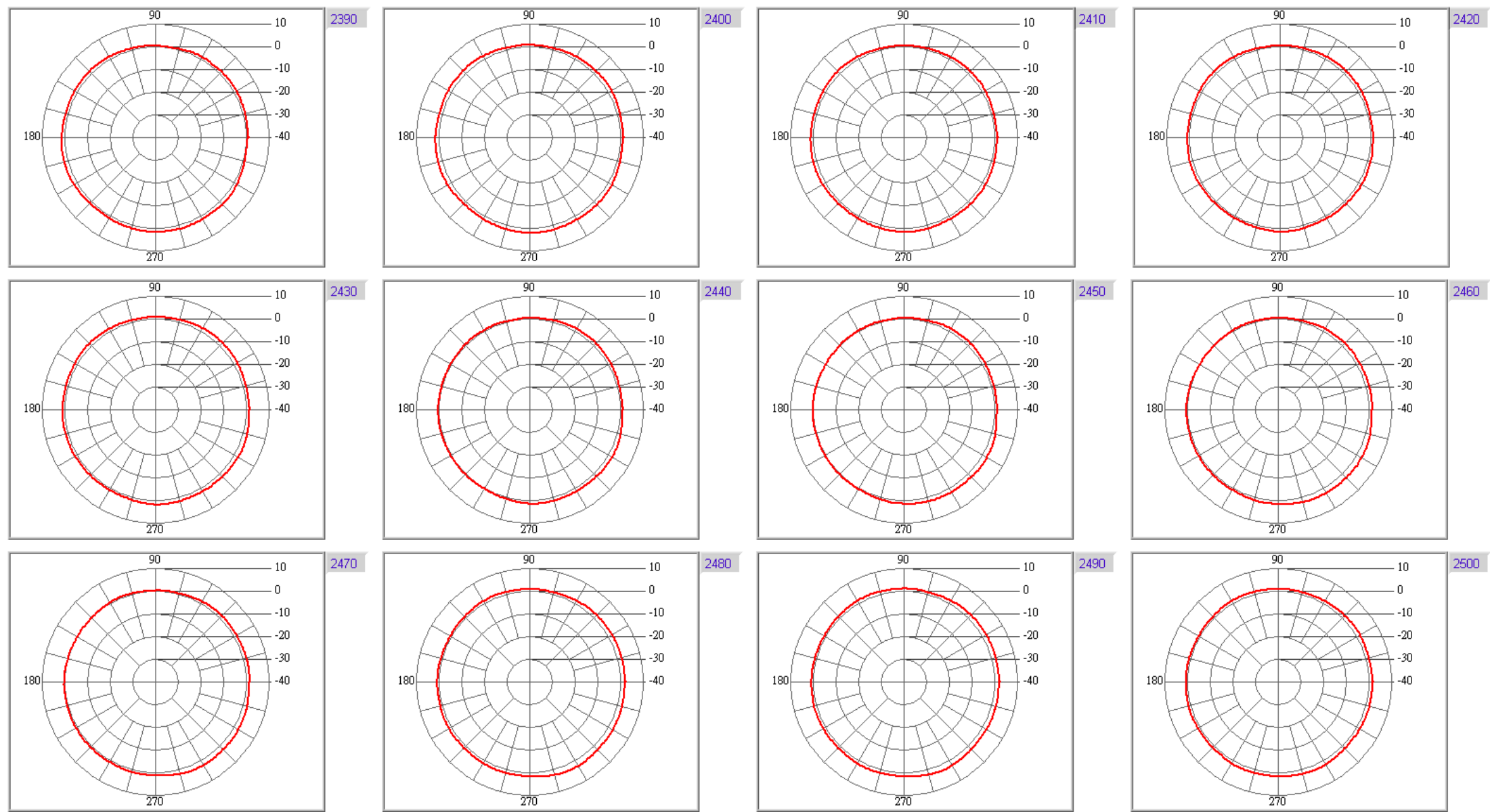
6. Material Description and RoHS Test Report

See attached files

Model : ARS-N02
 Remark : H-Plane // Vertical Polarization
 Tested by : Antenna 3D Lab

Location: **Chamber** Date: **2009/4/1** Time: **下午 07:30:21**
 Temperatur (°C): **22.00** Humidity (%): **55.00** Approved by:

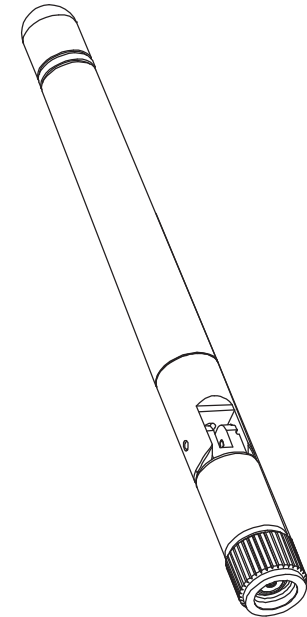
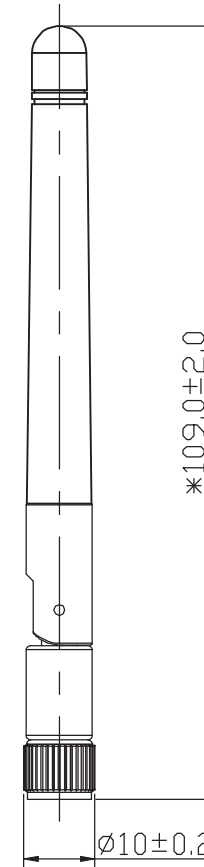
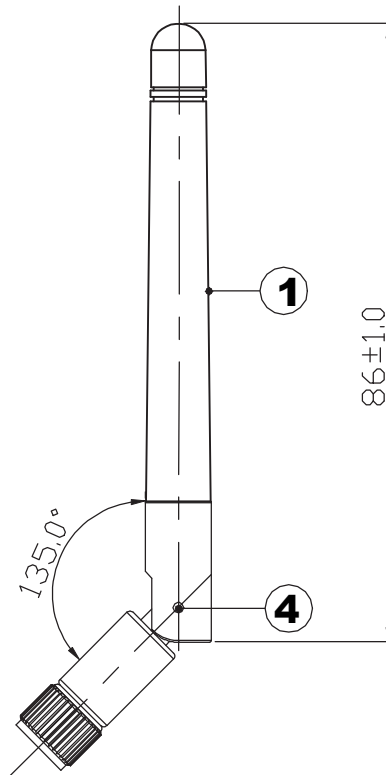
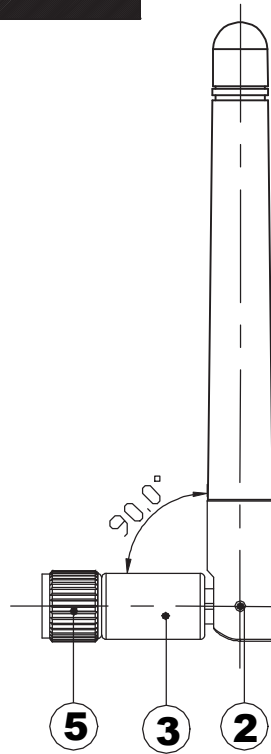
Freq. (MHz)	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	1.73	2.08	1.77	1.64	2.12	1.91	2.16	2.51	2.3	2.71	2.58	2.06
Peak Degree	270	276	270	270	332	332	337	325	295	295	294	294
AV Gain (dBi)	1.13	1.43	1.16	1.04	1.3	0.86	0.92	1.15	1	1.47	1.47	1.24



RoHS

Compatible

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:
 1.Dimension: Take is the important dimension
 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.

5	SMA	SMA Male Reverse	Cu	Eletrodeposition	1
4	AN-1	Pin	Cu	Zn Black plated	2
3	AN-10B	Body-2	PA+ABS	Black	1
2	AN-02	Body-3	PA+ABS	Black	1
1	AN-03	Body-1	TPE	Black	1
NO.	Part Number	Description	Material	Finish	Q'ty

TITLE: 2.4GHz Antenna

APPROVED BY	CHECKED BY	DESIDNED BY	 UNITS: mm SCALE: 1:1 REVISION: A	Tolerance
2010.02.05	2010.02.05	2010.02.05		X.X ±0.3
				X.XX ±0.1
				X° ±1°

Packing Criterion

Date : 2010/10/23

page: 1 of 1

Part Number : ARS-N02	Revision : A
Part Name :AP Antenna	Customer :

