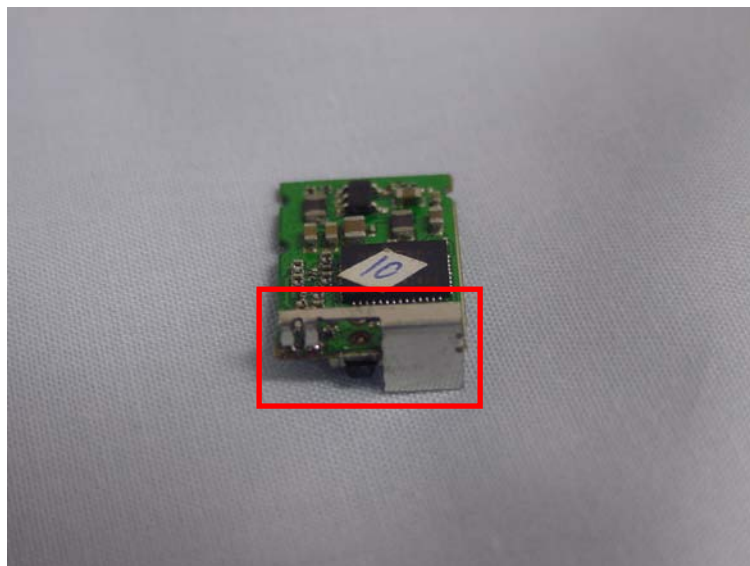


안테나특성 확인결과

항 목	결 과
공중선의 종류 및 길이	종류: Inverted F Antenna 길이: 1.7 cm
공중선의 이득 및 지향특성	-15 dBi, 무지향성
공중선의 편파특성	직선편파
송신장치와의 접속형태	고정형
공중선의 제작자 및 모델명	제작자: Cortec Technology Inc. 모델명: NB1014-G
이득 측정기관명	Cortec Technology Inc.



접속형태: 고정형
 길이: 1.7 cm

Product Number: NB1014-G
Product Name: Antenna



Specification For Approval

Date: 2011 / 11 / 08

File No.: 111108009

Version: 1.0

Customer : 磊科網絡

Customer P/N : /

INVAX P/N : NB1014-G

Description : Antenna

Cortec Checked By:

R@D Dept
2011.11.08
Jack

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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- 2. Characteristics and Reliability Test / Page 3**
- 3. Antenna - S Parameter Test Data / Page 4**
- 4. Antenna - Radiation Pattern Test Data / Page 5 ~ 7**
- 5. Mechanical and Packing Drawing / Page 8**
- 6. Material Description and RoHS Test Report / Page 9 ~ end**

Product Number: NB1014-G

Product Name: Antenna



1. Specification

Sample Photo	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
S.W.R.	≤ 3.0
Antenna Gain	$-15 \pm 0.7\text{dBi}$
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Tinplate
C. Environmental	
Operation Temperature	$-40\text{ }^{\circ}\text{C} \sim +65\text{ }^{\circ}\text{C}$
Storage Temperature	$-40\text{ }^{\circ}\text{C} \sim +80\text{ }^{\circ}\text{C}$

2. Characteristics and Reliability Test

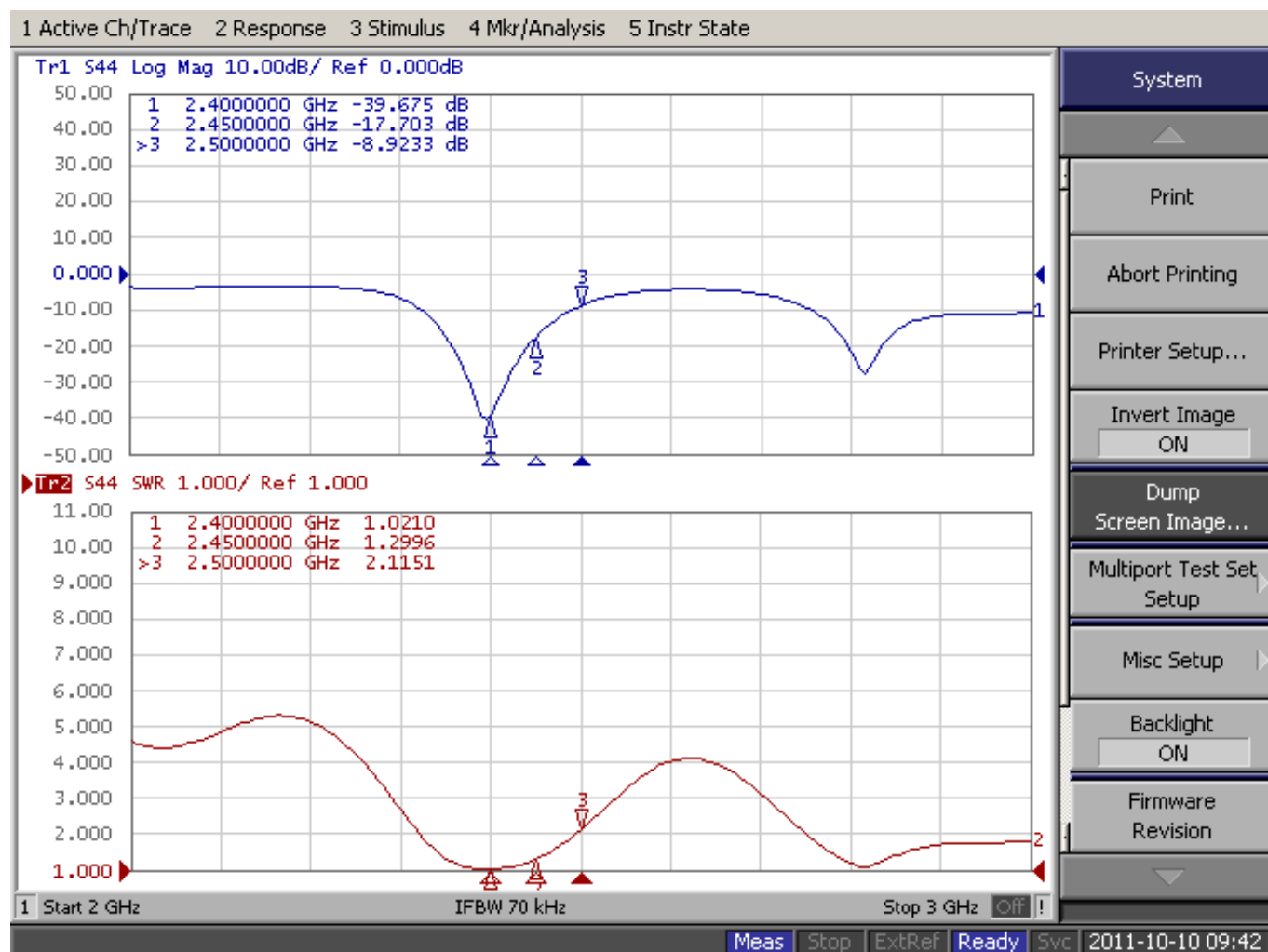
Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 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

Product Number: NB1014-G

Product Name: Antenna



3. Antenna - S Parameter Test Data



Product Number: NB1014-G

Product Name: Antenna



4. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

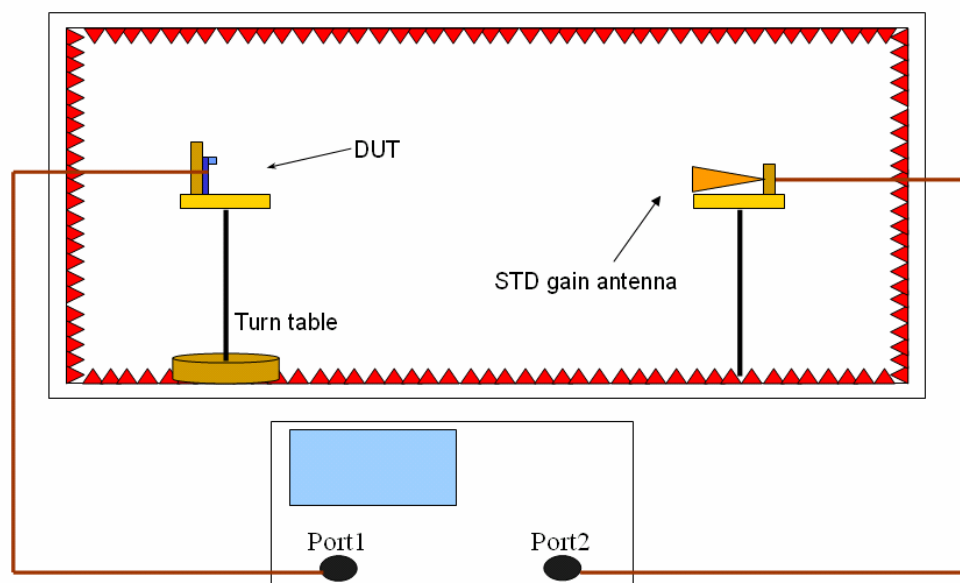
Quiet Zone: 600mm @1 GHz

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

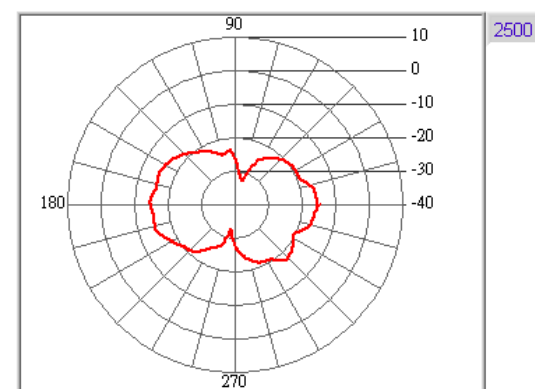
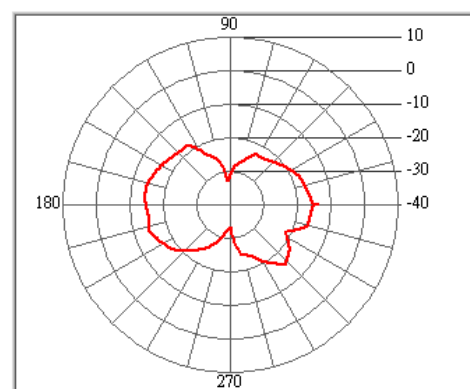
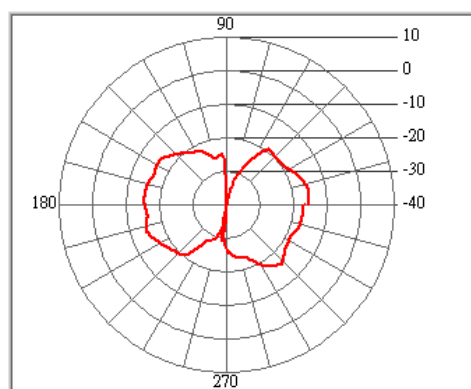
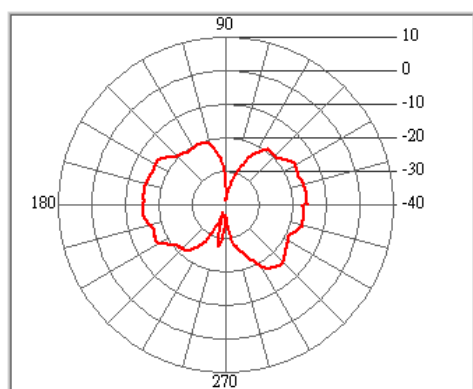
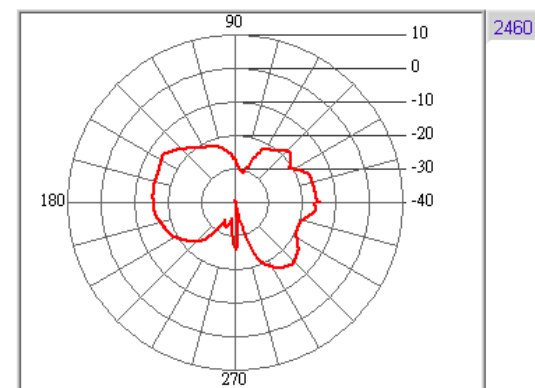
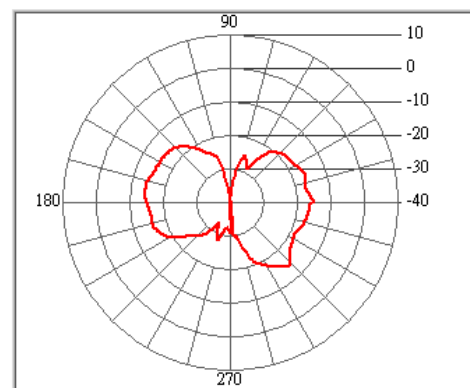
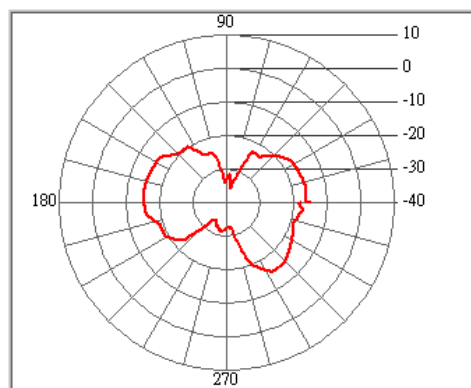
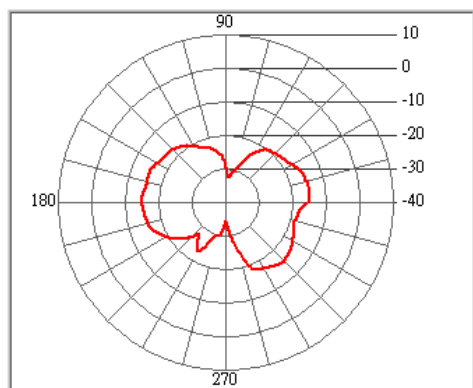
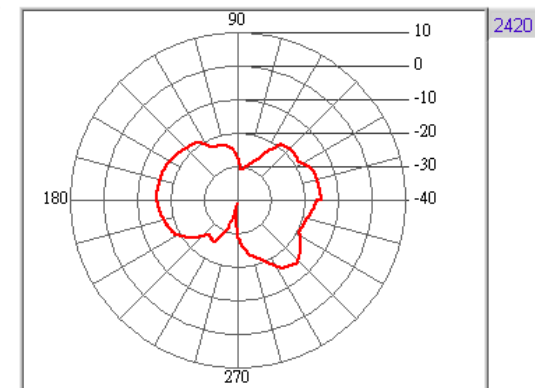
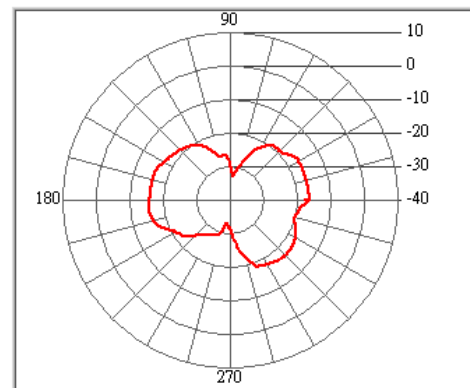
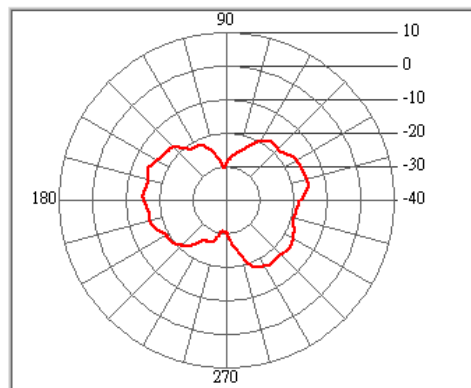
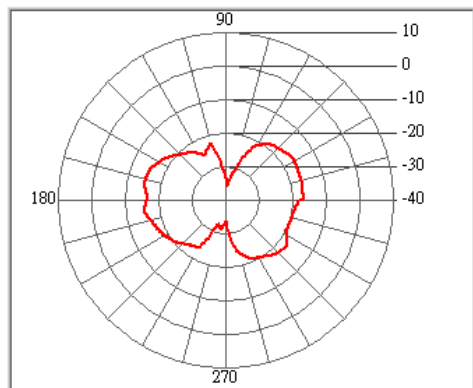
6. Material Description and RoHS Test Report

See attached files

Antenna : 2.4GHz // B
Remark : H-Plane // H-Pol
Tested by : CORTEC Antenna 3D Lab

Location: **Chamber** Date: **2011/10/10** Time: **上午 09:49:40**
Temperatuer (°C): **25.00** Humidity (%): **65.00** Approved by:

Freq. (MHz)	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	-15.17	-14.81	-15.58	-14.32	-14.8	-15.08	-14.04	-14.28	-15.16	-14.85	-13.9	-14.59
Peak Degree	167	157	188	313	11	313	313	146	167	199	0	178
AV Gain (dBi)	-19.39	-18.53	-19.19	-18.76	-18.51	-19	-18.66	-18.72	-18.65	-18.74	-18.7	-19.01



Antenna : 2.4GHz // B
Remark : H-Plane // V-Pol
Tested by : CORTEC Antenna 3D Lab

Location: **Chamber**

Date: **2011/10/10**

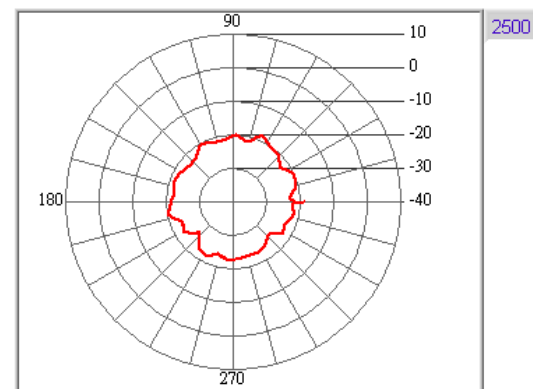
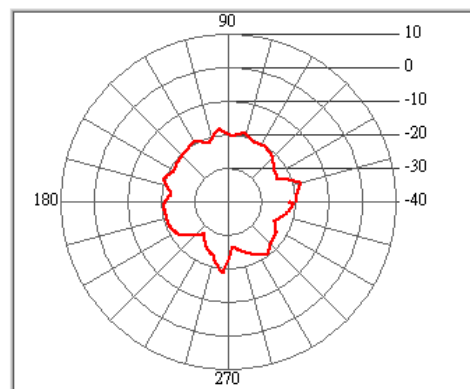
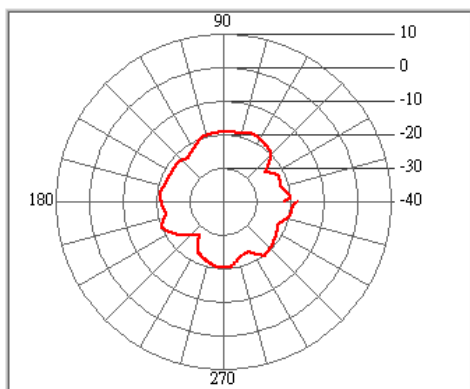
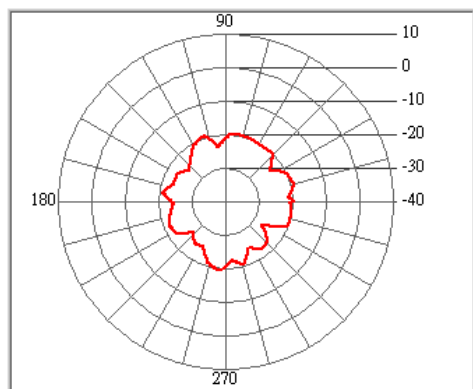
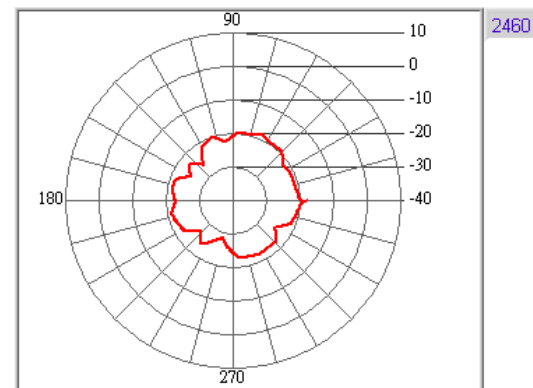
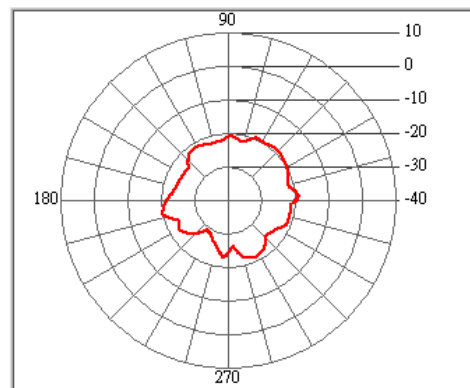
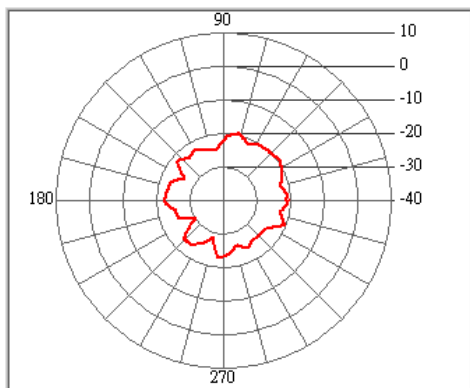
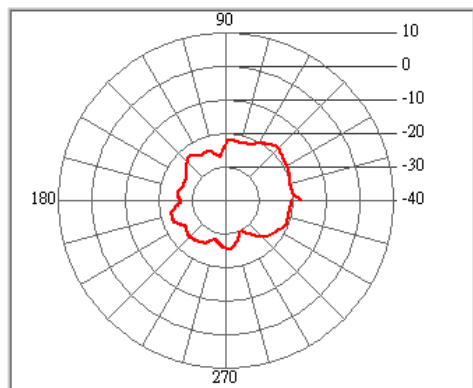
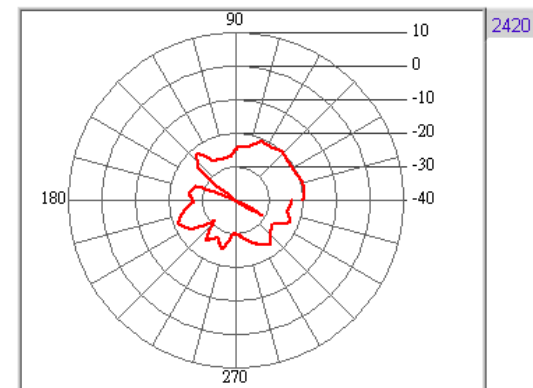
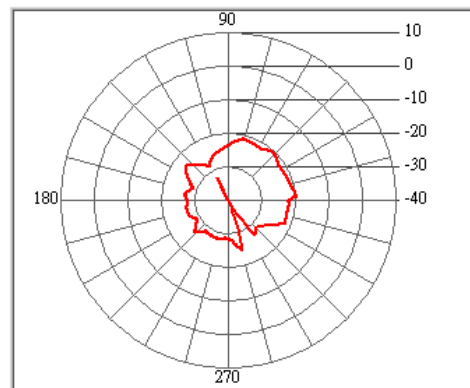
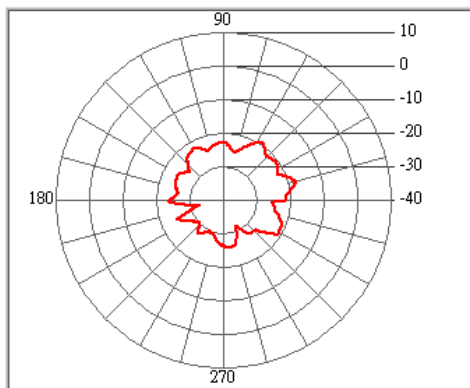
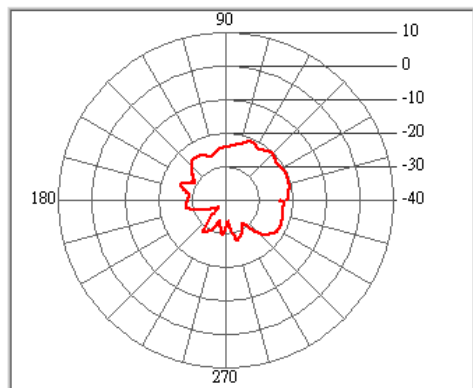
Time: **上午 09:51:08**

Temperatuer (°C): **25.00**

Humidity (%): **65.00**

Approved by:

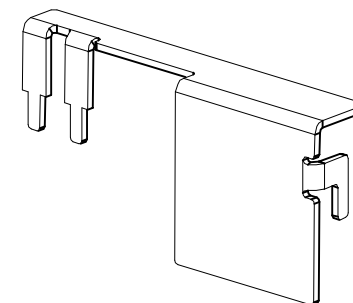
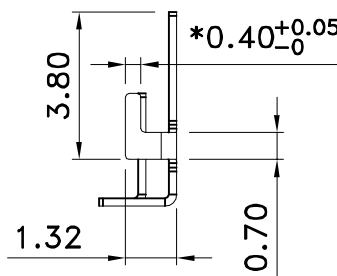
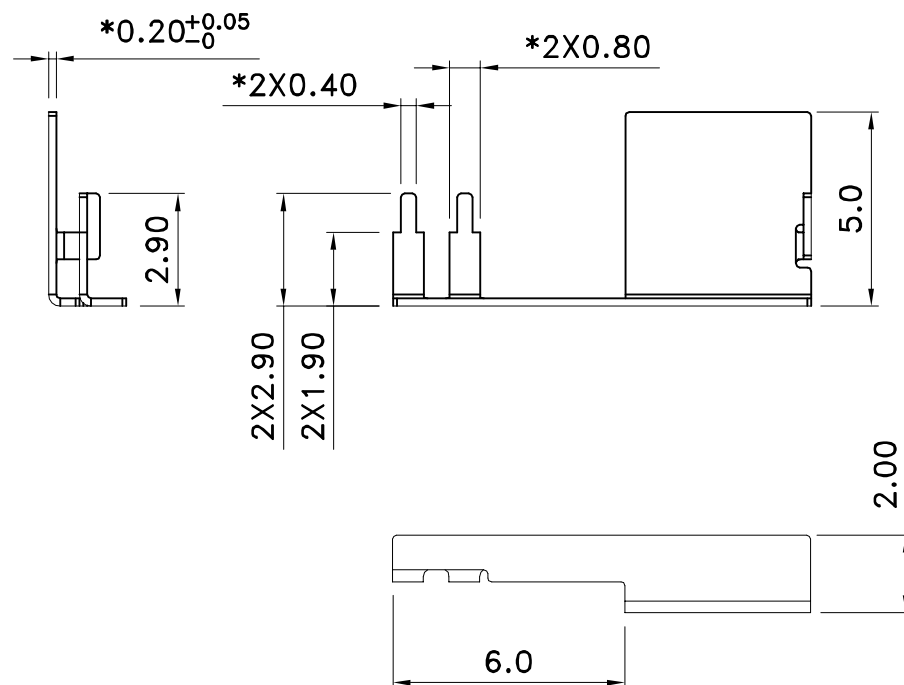
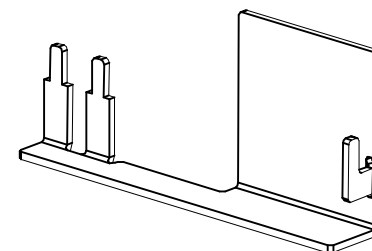
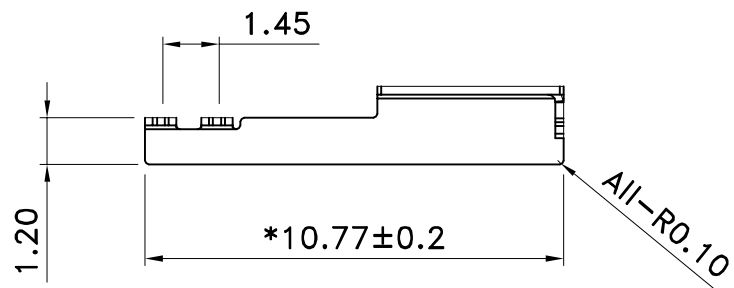
Freq. (MHz)	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	-20.17	-17.63	-19.66	-19.24	-17.35	-19.34	-18.69	-18.4	-19.04	-17.98	-17.8	-18.41
Peak Degree	25	14	4	14	0	35	4	360	14	66	14	66
AV Gain (dBi)	-24.56	-23.76	-24.39	-23.83	-22.76	-22.84	-22.02	-21.91	-21.73	-21.04	-21.36	-21.95



RoHS

Compatible

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Notes:

- 1.材质: 马口铁, 厚度0.2mm。
- 2.帶*的為重點檢驗尺寸。

Invax System Group.

Cortec

Cortec Technology Inc.

Http://www.invaxsystem.com
E-mail: info@invax.com.tw

Tel: 886-2-27885218
Fax: 886-2-27831658

TITLE: NB Antenna

PART NO.: NB1014-G

CUSTOMER P/N: /

APP BY	CHK BY	RF BY	DES BY		Tolerance
			LiLiQun 11/09/08	UNITS: mm SCALE: 5/1 REVISION: A	X.X ±0.2 X.XX ±0.1 X° ±1