

Specification For Approval

Date: 2011 / 04 / 28

File No.: 110428003

Version: 1.0

Customer : 磊科

Customer P/N : /

INVAX P/N : AN2400-92F19BO

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
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Product Number: AN2400-92F19BO

Product Name: Antenna



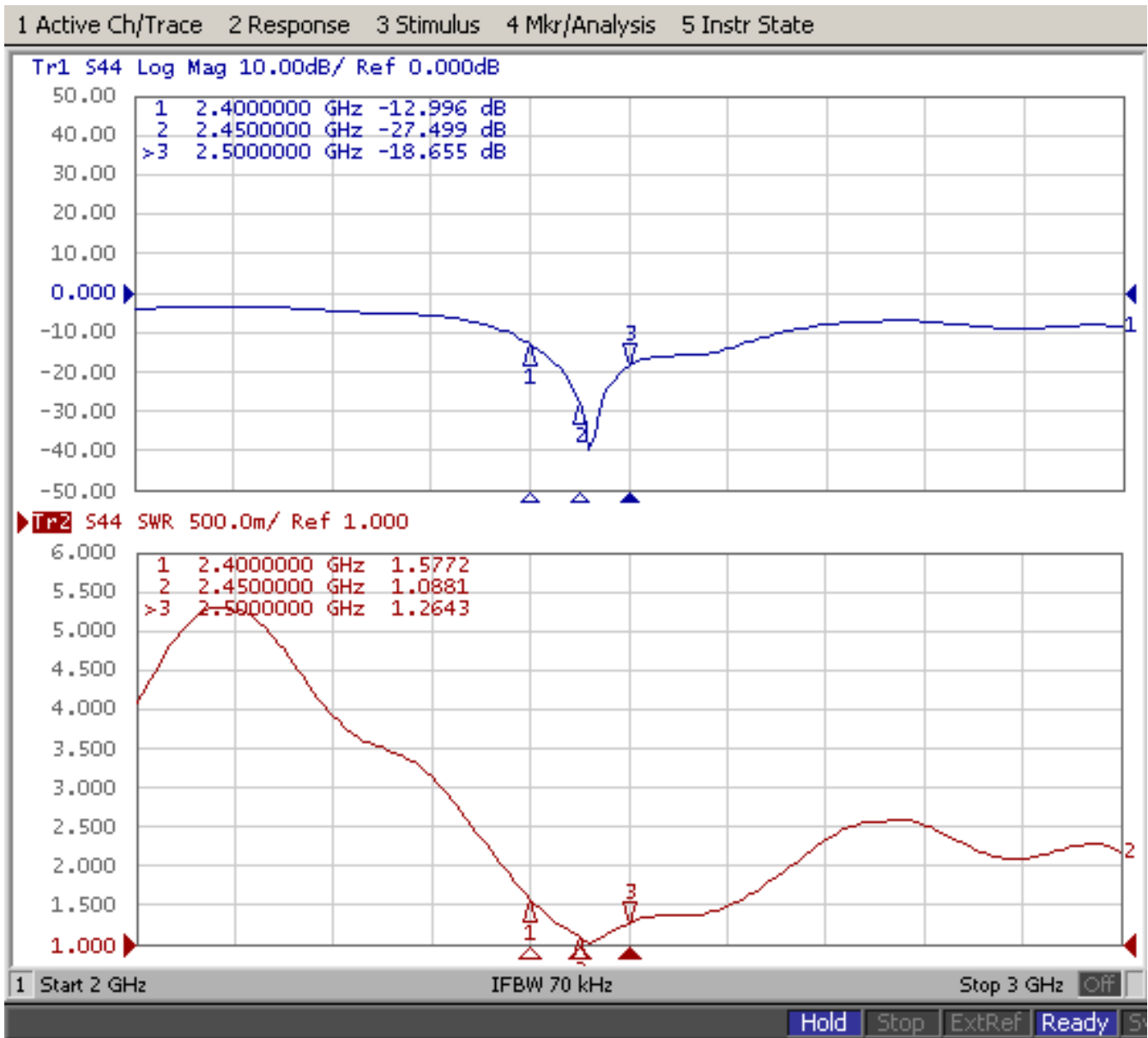
1. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
S.W.R.	≤ 2.0
Antenna Gain	5 dBi
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	Body: TPE Hinge: ABS Holder: PC+ABS
Cable Type	OD1.13mm
Connector Type	Mini Connector
Connector Pull Test	≥ 1 Kg
Connector Torque Test	/
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



Product Number: AN2400-92F19BO

Product Name: Antenna



4. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

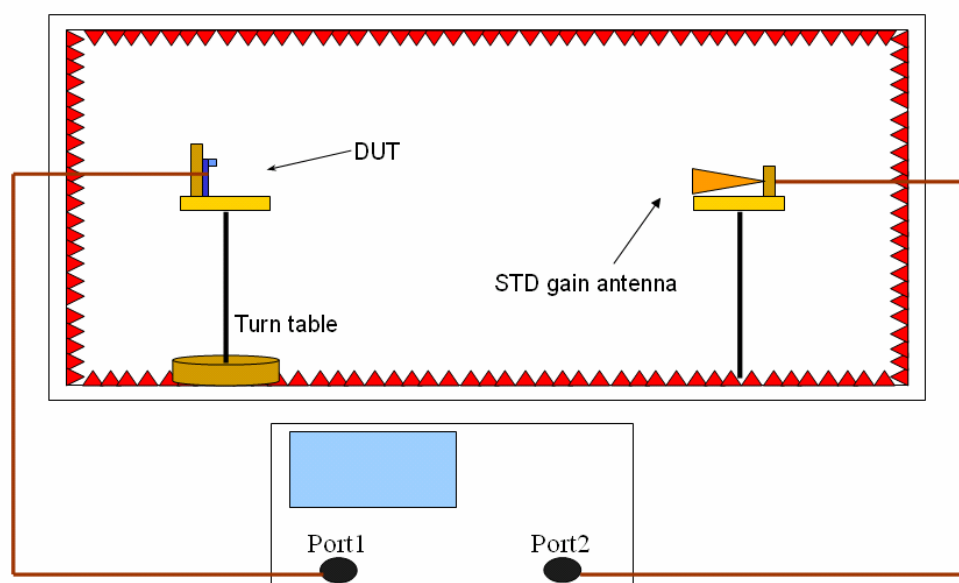
Quiet Zone: 600mm @1 GHz

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



Model : 2.4G Antenna
Remark : H-V
Tested by : CORTEC Antenna Lab // zhao yao rong

Location: **Chamber**

Date: **2010/8/5**

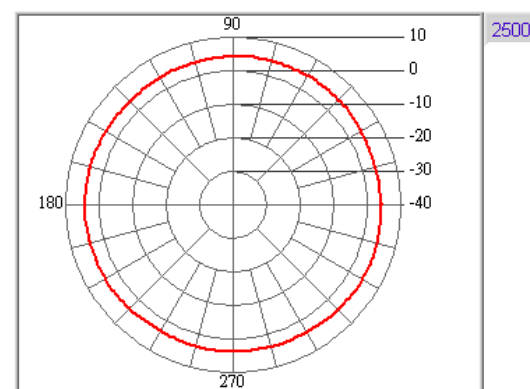
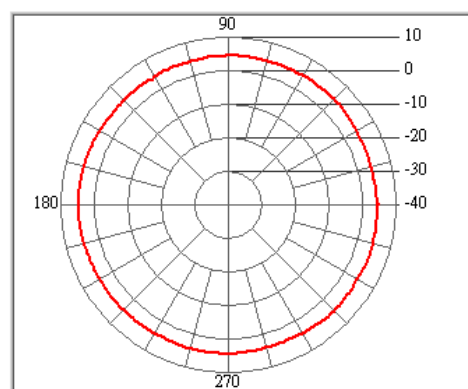
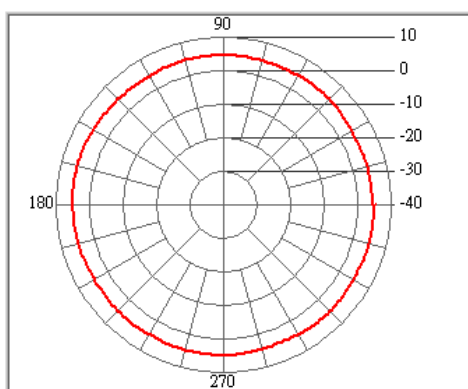
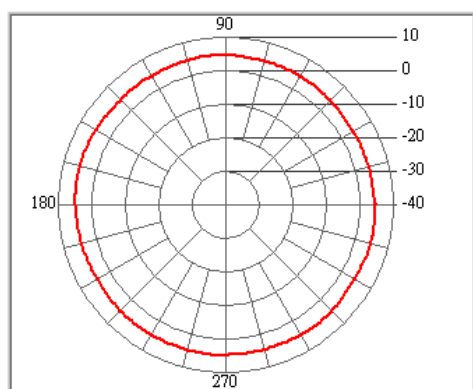
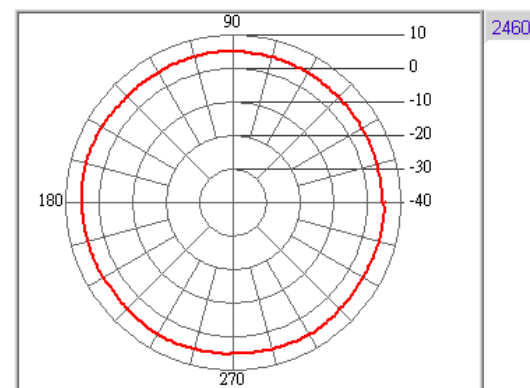
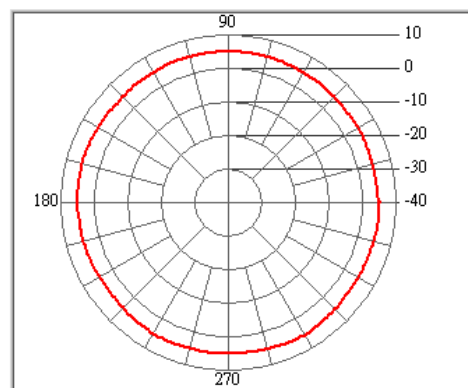
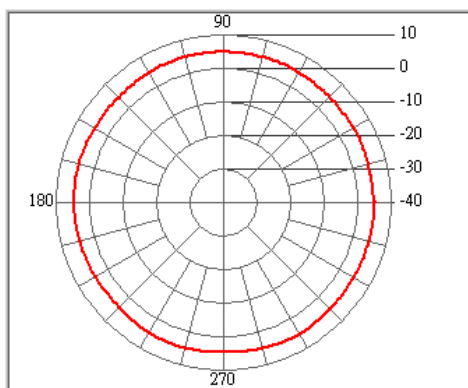
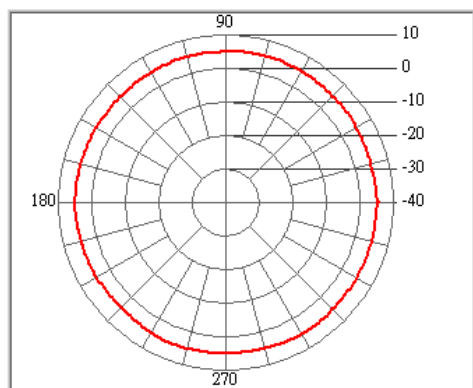
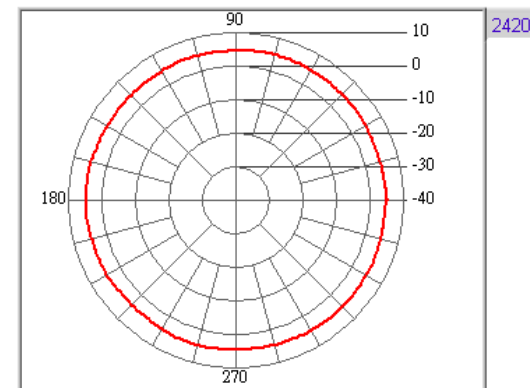
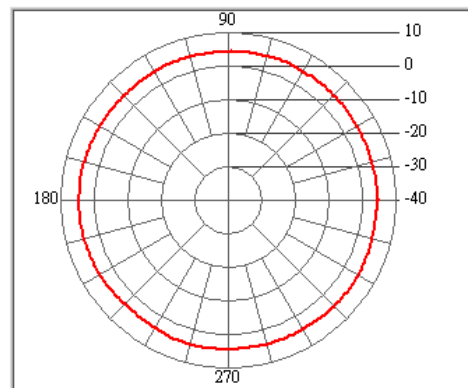
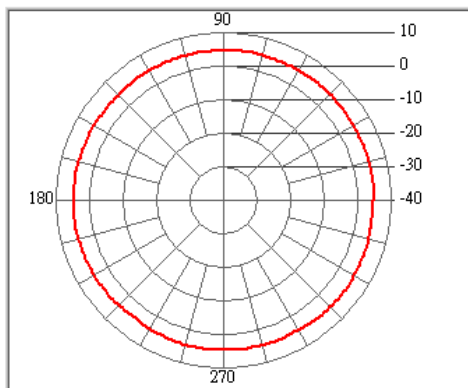
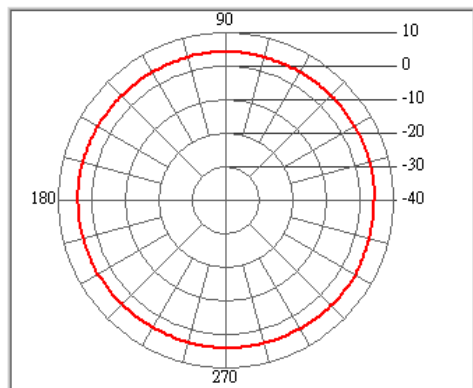
Time: **下午 03:37:00**

Temperatuer (°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)	4.65	5.16	4.83	5.01	5.42	5.35	5.55	5.5	5.09	5.1	4.88	4.7
Peak Degree	329	319	326	0	302	298	295	302	159	169	340	340
AV Gain (dBi)	4.17	4.7	4.39	4.63	4.93	4.73	4.89	4.95	4.54	4.67	4.39	4.05





Cortec Technology Inc.

广东省东莞市长安镇振安路沙头段咸西工业区

Model : 2.4G Antenna
Remark : E-H
Tested by : CORTEC Antenna Lab // zhao yao rong

Location: **Chamber**

Date: **2010/8/5**

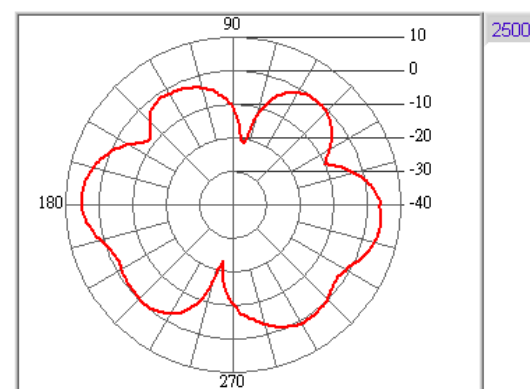
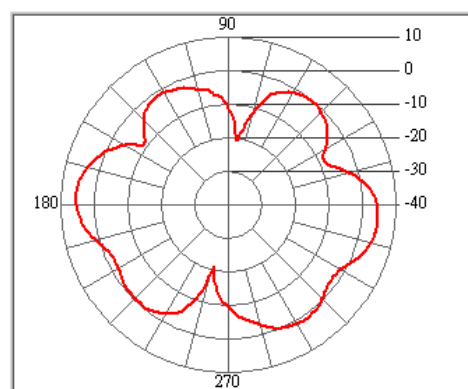
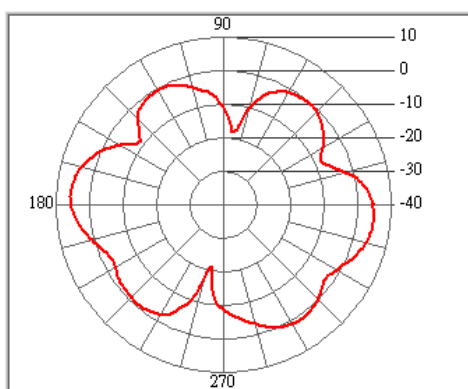
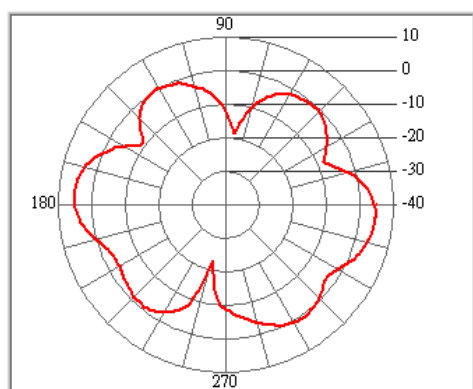
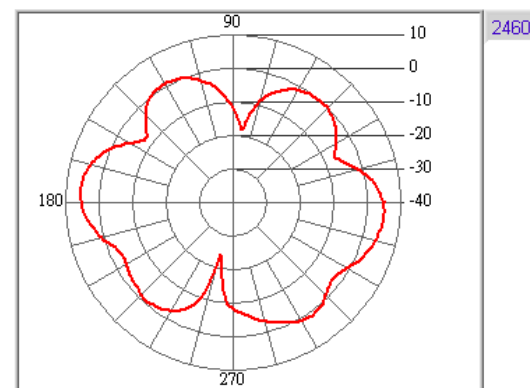
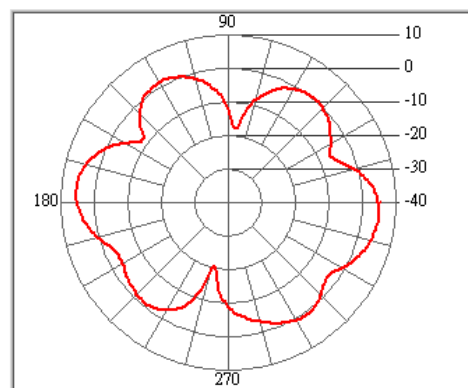
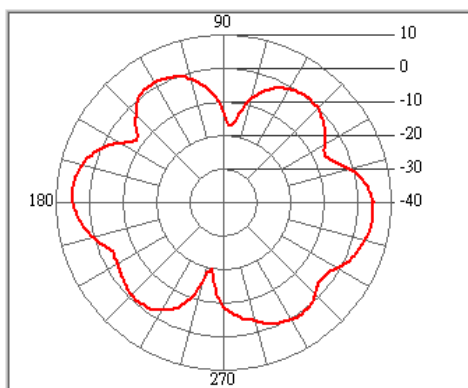
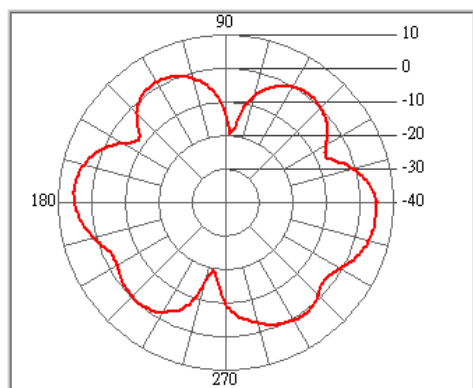
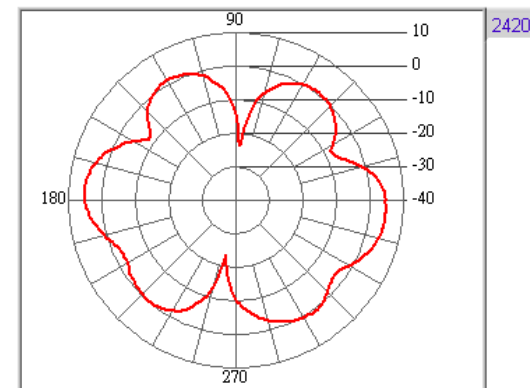
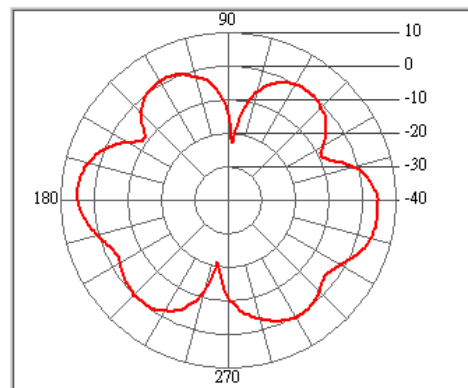
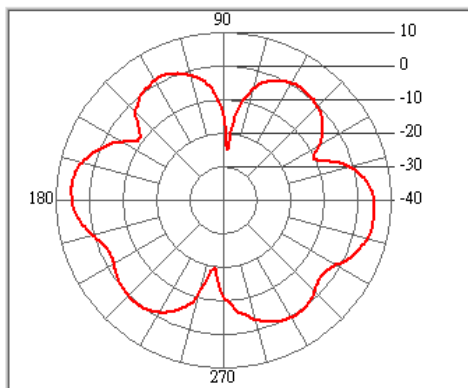
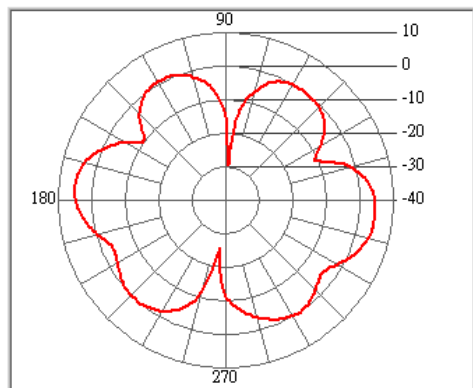
Time: **下午 03:37:00**

Temperature (°C): **22.00**

Humidity (%): **55.00**

Approved by:

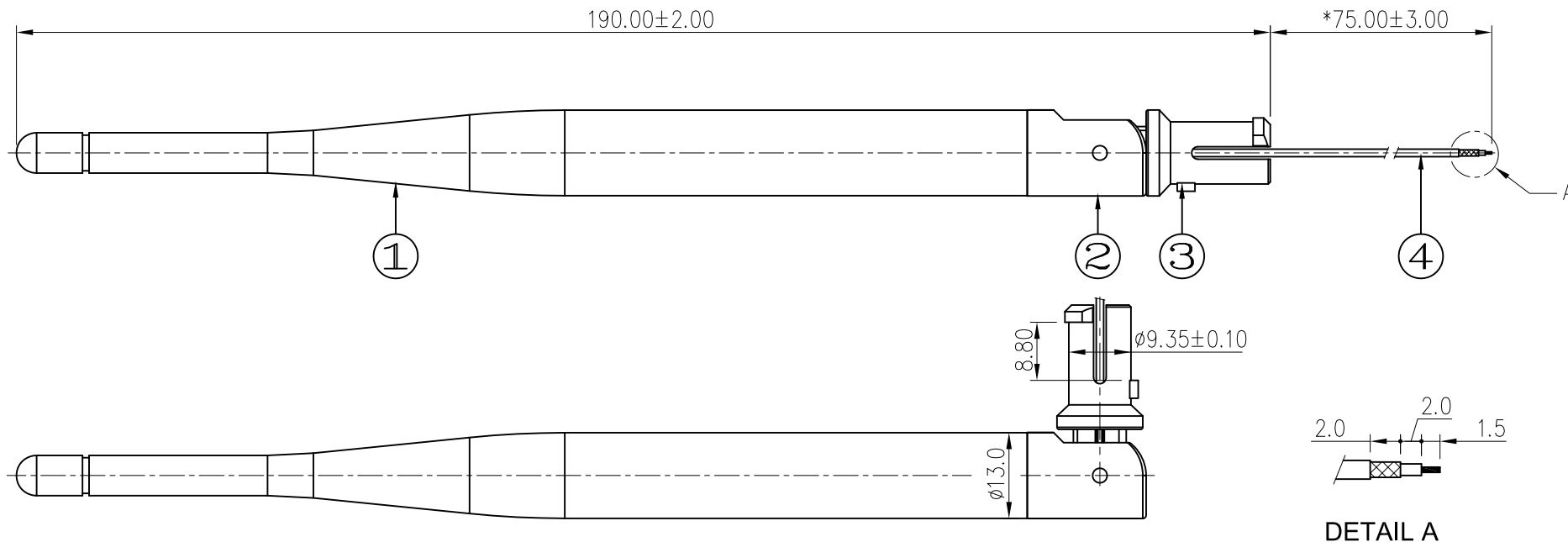
Freq. (MHz)	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	5.06	5.47	5.13	5.14	5.33	5.13	5.39	5.51	5.23	5.71	5.49	5.13
Peak Degree	174	176	177	176	176	174	174	176	177	177	177	180
AV Gain (dBi)	-0.39	0.08	-0.25	-0.09	0.09	-0.23	-0.1	-0.11	-0.5	-0.22	-0.33	-0.5



RoHS

Compatible


SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:

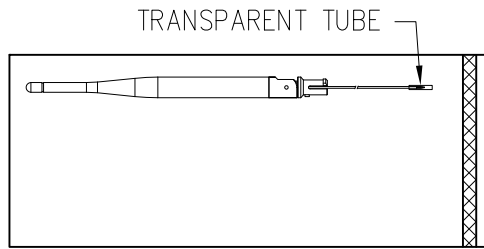
1. Dimension: Take * is the important dimension
2. Tolerance: Unmarked tolerance refer to the standard tolerance please

4	R-CB-113A	Cable		∅1.13 Gray	1
3	AN9201-08B	Body3	PC+ABS	Black	1
2	AN9201-07B	Body2	ABS	Black	1
1	AN9201-04B	Body1	TPE	Black	1
No.	Part Number	Description	Material	Finish	Q'ty

Invax System Group.		Cortec Technology Inc.	
Cortec		Http: //www.invaxsystem.com Tel: 886-2-27885218 E-mail: info@invax.com.tw Fax: 886-2-27831658	
PART NAME: ANTENNA-2.4GHz-5dBi			
PART NO.: AN2400-92F19BO		DWG NAME: AN2400-92F19BO.dwg	
APPROVED BY	CHECKED BY	DESIGNED BY	 Tolerance UNITS: mm X.X ±0.30 SCALE: 1/1 X.XX ±0.15 REVISION: A X° ±3°
Grant 2011.04.28	Jack 2011.04.28	Simon 2011.04.28	

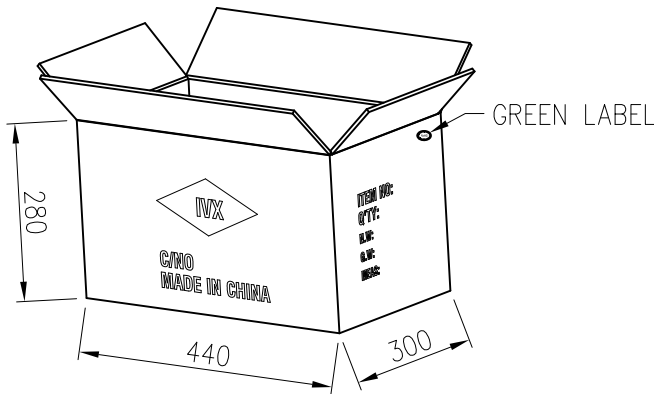
Part Number : AN2400-92F19BO	Revision : A
Name: ANTENNA-2.4GHz-5dBi	CUSTOMER : ALL

一. WITH THE ANT INTO THE PE BAG



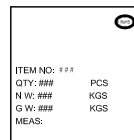
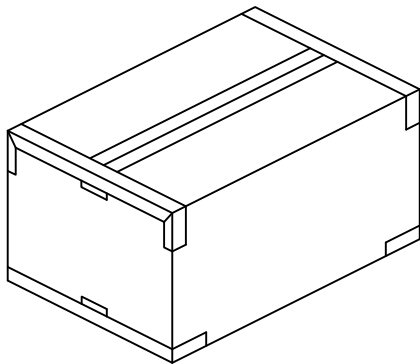
10PCS/PE BAG

二. PACKING



500PCS/CARTON

三. SEALING



UNITS: mm

SGS 台灣網站 → http://twap.sgs.com/sgsrsts/chn/cheres_tw.asp

SGS 大陸網站 → http://rsts.cn.sgs.com/chn/cheres_cn.asp

SGS 韓國網站 → http://rohs.kr.sgs.com/sgsrsts/en/cheres_en.asp

請輸入以下報告正確資料及檢查碼以便查核

1. 報告編號
2. 報告日期 (YYYY/MM/DD)
3. 產品名稱 (輸入前 10 個字不含空白)
4. 圖示檢查碼 (依指示畫面)



物料中HSF對象物質含量調查表

康捷電子有限公司	
填表：	時麗
部門：	研發部
職務：	文員

物料名稱：AN2400-92F19B0

序號	物料型號	物料各構成名稱	各構成物料的材質	測試報告裡RoHS對應物質測試結果						檢測報告編號	測試日期	測試名稱	測試機構名稱
				Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs				
1	AN9201-04WB	Body1	TPE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CE/2009/C4753	2009.12.25	THERMOPLASTIC	SGS
2	AN9201-07B	Body2	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RLSZC000730820008	2010.11.17	ABS	CTI
3	AN9201-05B	Body3	PC+ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1001721801	2010.04.28	PC/ABS	SGS
4	R-CB-113B	源達1.13灰 Cable	FEP	N.D.	7mg/kg	N.D.	N.D.	N.D.	N.D.	RLSHC000344580002	2010.07.06	Coaxial Cable	CTI
			FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RLSHC000344580002	2010.07.06	Coaxial Cable	CTI
			鍍錫銅線	N.D.	N.D.	N.D.	Negative			RLSHC000344580002	2010.07.06	Coaxial Cable	CTI
			鍍銀銅線	N.D.	N.D.	N.D.	Negative			RLSHC000344580002	2010.07.06	Coaxial Cable	CTI

根據測試報告如實填寫鉛、鎘、汞、六價鉻、PBBs和PBDEs六項禁用物質的含量

包裝材料中鉛、鎘、汞、六價鉻總含量不超過100ppm，鎘的允許濃度為5ppm