

Specification For Approval

Date: 2014 / 02 / 28

File No.: 140228006

Version: 1.0

Customer : KIL

Customer P/N : /

INVAX P/N : AN0727-13A01BRS

Description : Antenna

Cortec Checked By:

R@D Dept
2014.02.28
Jack

Customer Approved By:



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Taipei, TAIWAN

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Product Number: AN0727-13A01BRS

Product Name: Antenna



1. Revision History

Revision	Date	Change Notification	Description
1.0			

Product Number: AN0727-13A01BRS

Product Name: Antenna



2. Specification

Sample Photo	
 A photograph of a black, cylindrical antenna with a SMA Male Reverse connector at one end and a tapered, pointed tip at the other.	
A. Electrical Characteristics	
Frequency	700 ~ 960 MHz 1710 ~ 2700 MHz
S.W.R.	≤ 5.0 @ 700 ~ 960 MHz ≤ 4.0 @ 1710 ~ 2700 MHz
Antenna Gain	1.0 ± 0.7 dBi @ low Band 1.0 ± 0.7 dBi @ High Band
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Material of Plastic	TPE & ABS
Cable Type	RG-178
Connecter Type	SMA Male Reverse
Pull Test	≥ 5 Kg
C. Environmental	
Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C

Product Number: AN0727-13A01BRS

Product Name: Antenna



3. Characteristics and Reliability Test

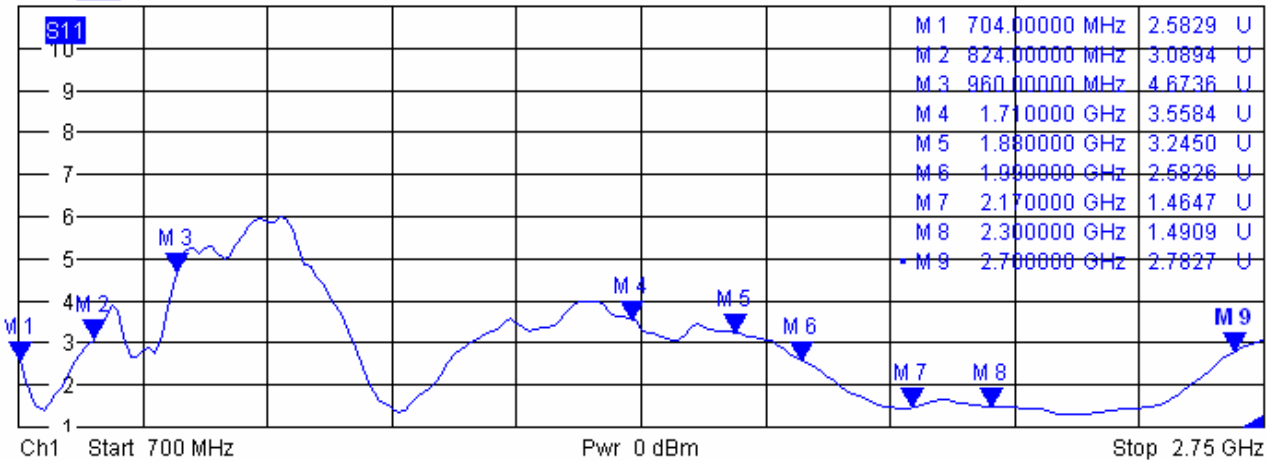
Test Items		Test Condition and Procedure	Requirements
C1	S.W.R.	Set DUT on Network Analyzer; make individual calibration to test	Directive DUT specification
C2	Antenna Gain	Set DUT on Antenna Chamber; make individual calibration to test	Directive DUT specification
M1	Vibration	GB / T2423 . 48-1997 Amplitude: 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 2011/65/EU
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

4. Antenna - S Parameter Test Data



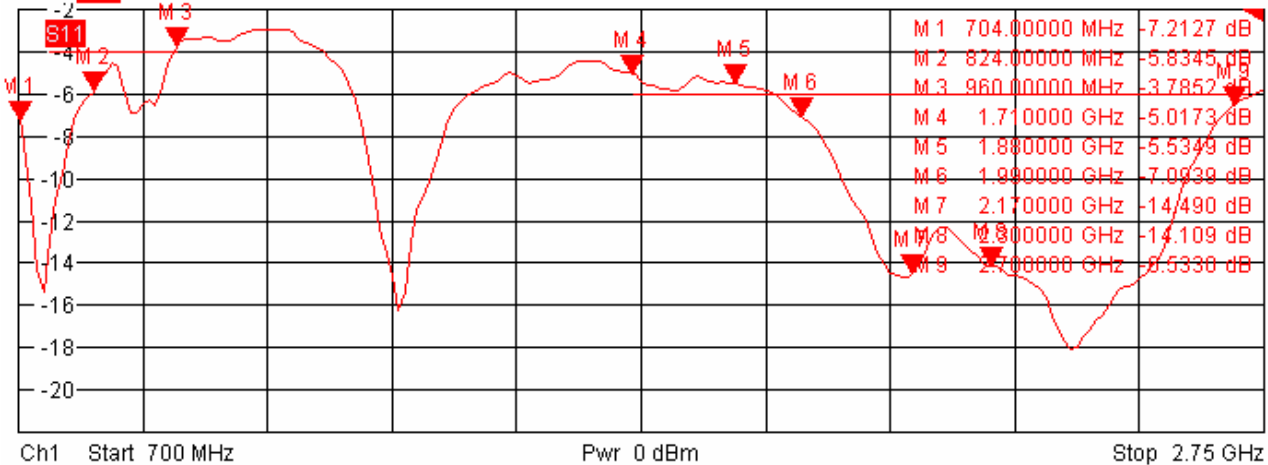
Trc1 S11 SWR 1 U / Ref1 U

1



Trc2 S11 dB Mag 2 dB / Ref-2 dB

2



2/27/2014, 3:55 PM

Product Number: AN0727-13A01BRS

Product Name: Antenna



5. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

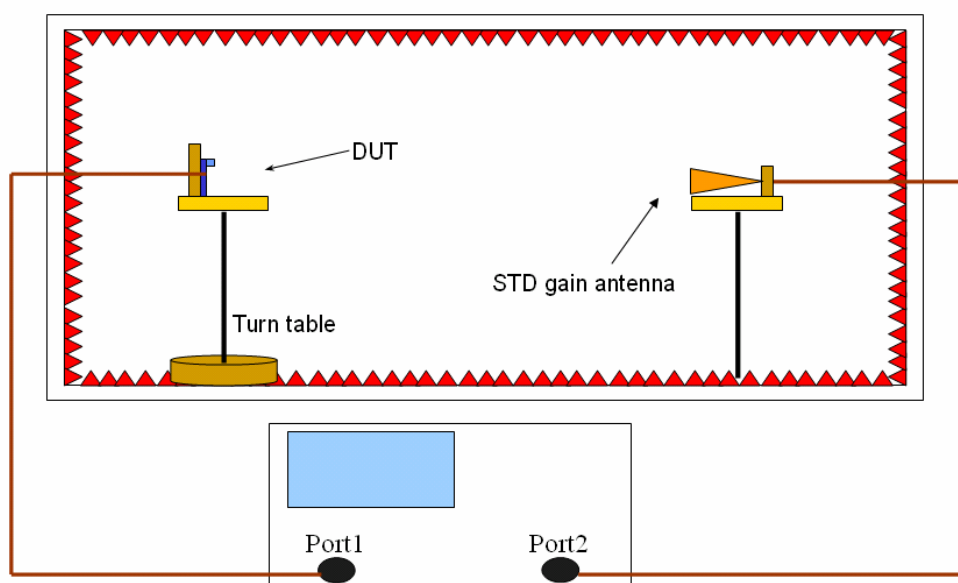
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 5071B

Received Antenna: 0.7 ~ 6.0 GHz for Gain Calibration

Double Ridged Horn Antenna



6. Mechanical Drawing

See attached files

7. Material Description and RoHS Test Report

See attached files



Antenna LTE Antenna/bm
Remark: H-Plane/V-Pol
Tested by : Antenna 3D Lab

Location: **Chamber**

Date: **2012/8/23**

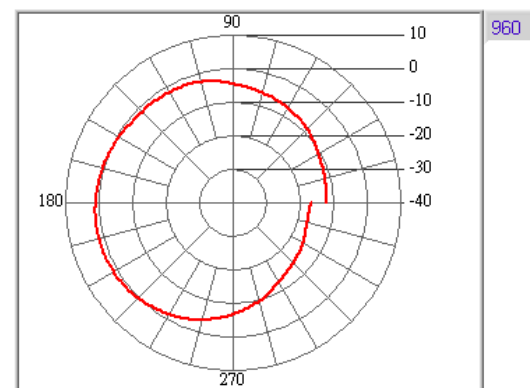
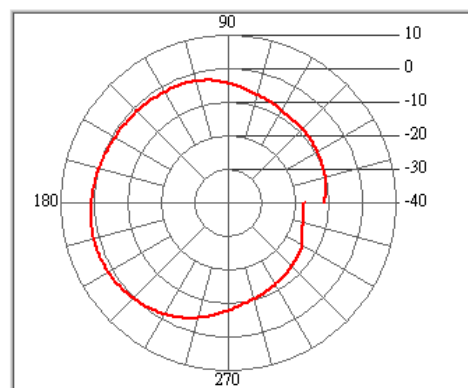
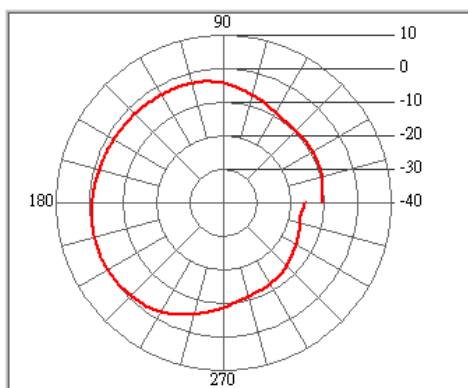
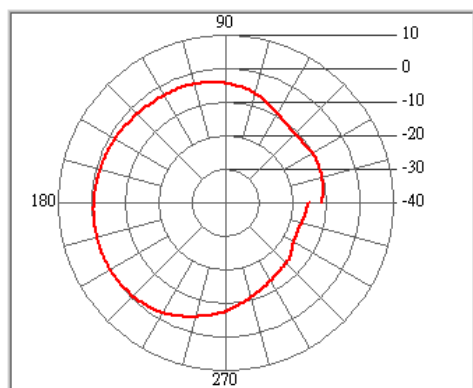
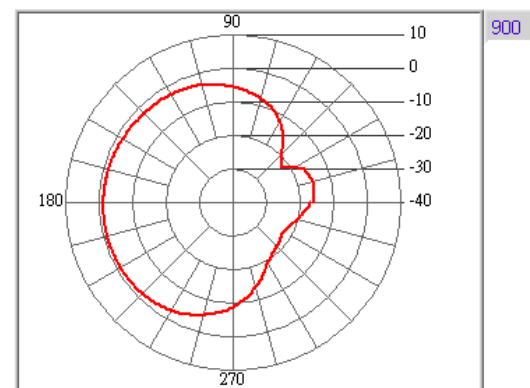
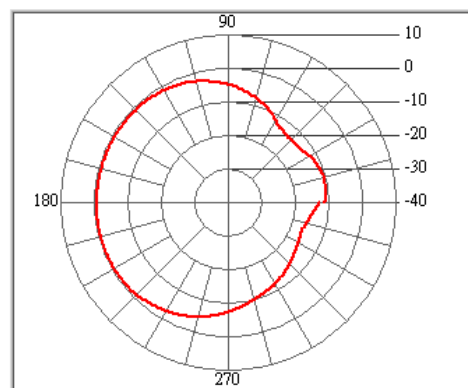
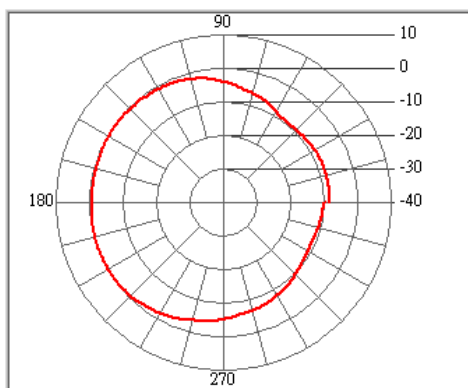
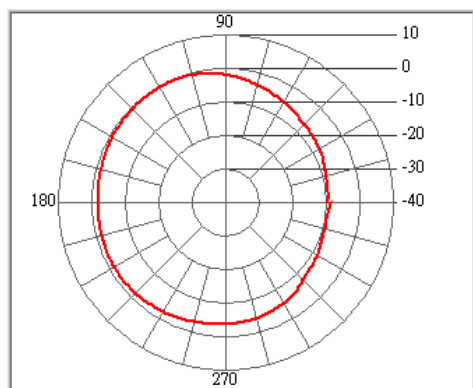
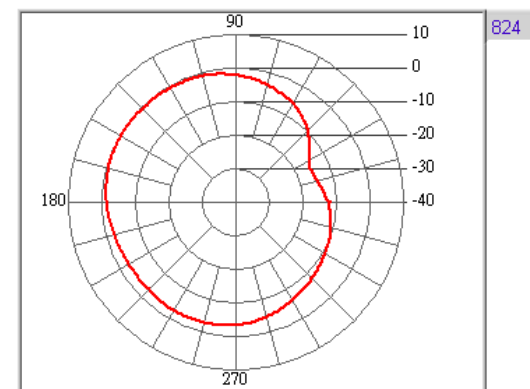
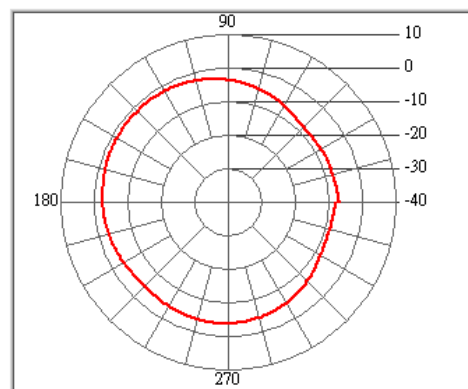
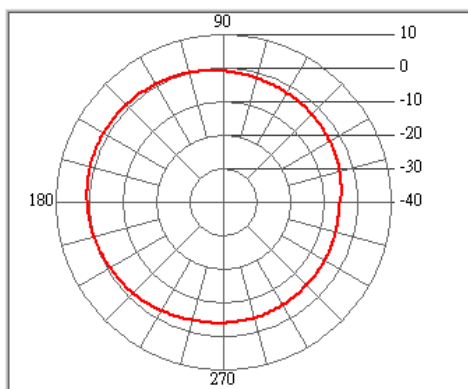
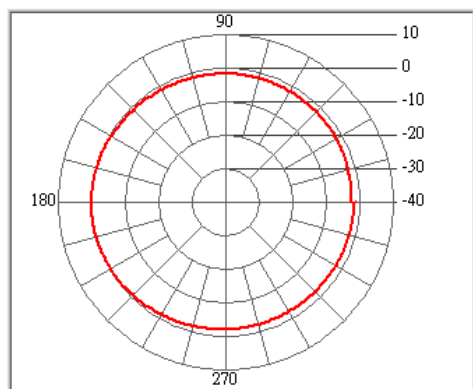
Time: **下午 04:59:48**

Temperatuer (°C): **25.00**

Humidity (%): **65.00**

Approved by:

Freq. (MHz)	704	750	800	824	850	870	880	900	920	930	950	960
Peak Gain (dBi)	0.06	1.37	-1.49	-0.33	-0.28	-0.25	-0.59	-1.14	-0.21	-0.02	1.49	1.38
Peak Degree	193	151	131	151	120	204	204	193	204	204	204	203
AV Gain (dBi)	-1.38	-1.62	-4.26	-3.58	-3.22	-3.38	-4.15	-5.11	-4.32	-4.37	-3.26	-3.22





Antenna LTE Antenna/bm
Remark: H-Plane/V-Pol
Tested by : Antenna 3D Lab

Location: **Chamber**

Date: **2012/8/23**

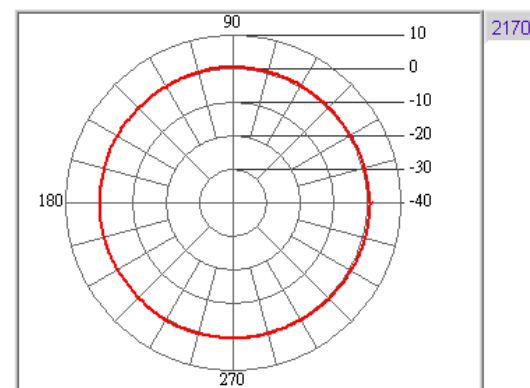
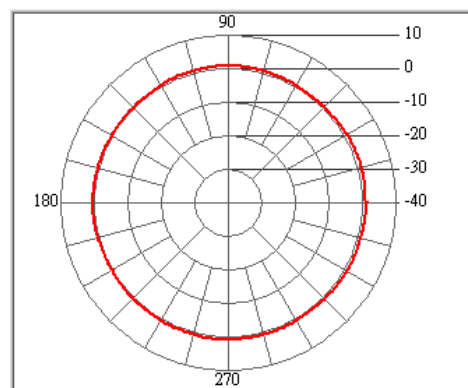
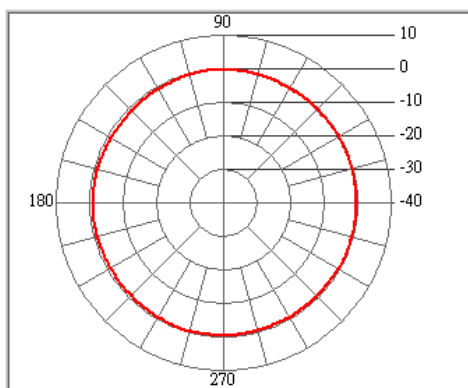
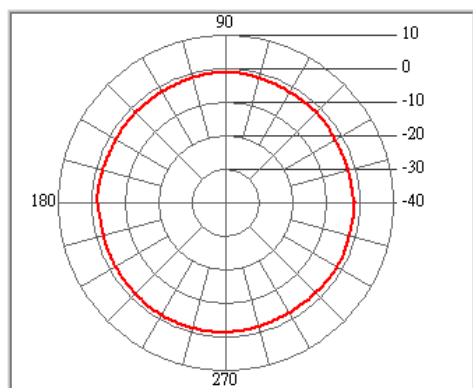
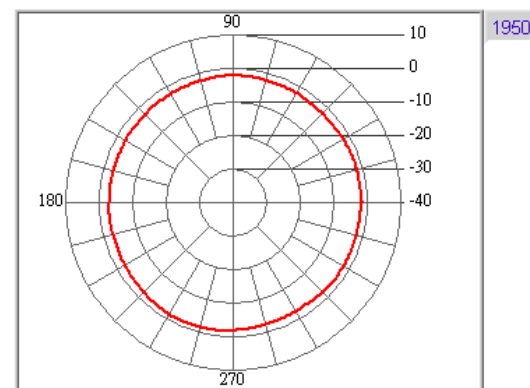
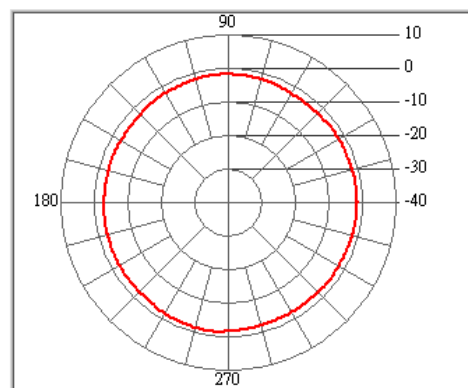
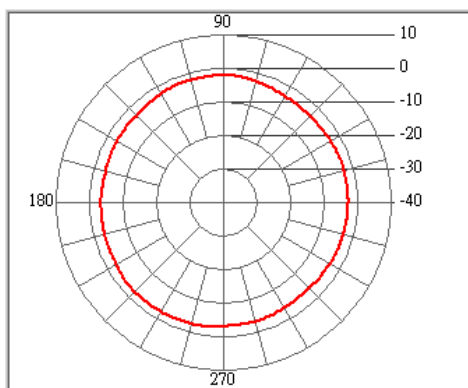
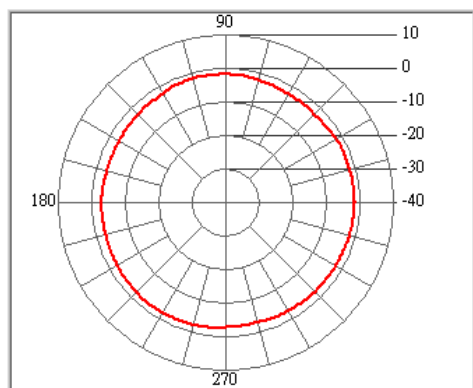
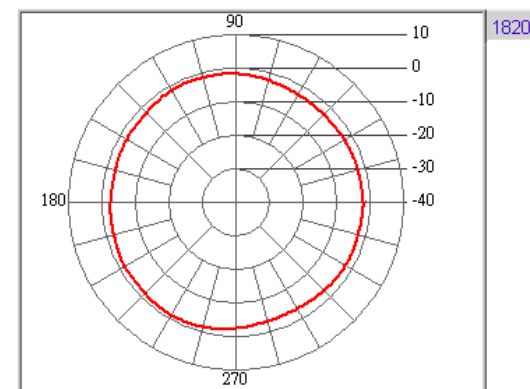
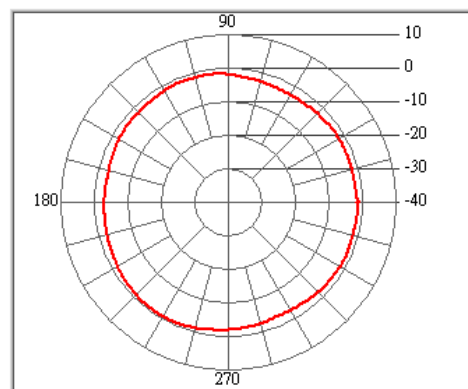
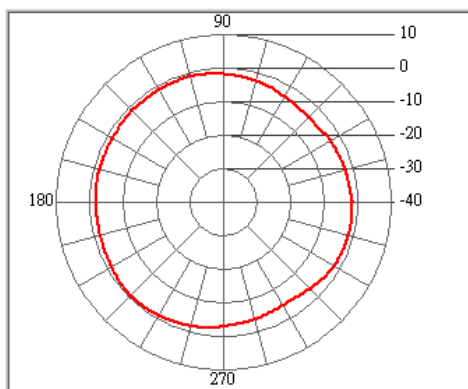
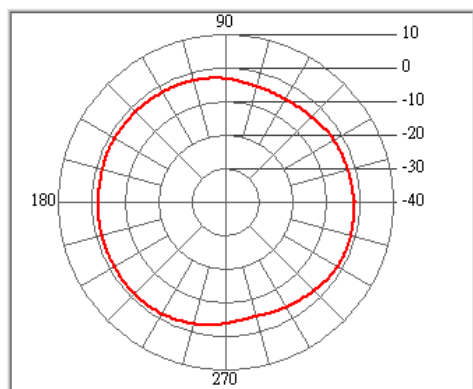
Time: **下午 04:32:58**

Temperature (°C): **25.00**

Humidity (%): **65.00**

Approved by:

Freq. (MHz)	1710	1750	1790	1820	1860	1880	1920	1950	1990	2050	2100	2170
Peak Gain (dBi)	-1.29	-0.66	-0.75	-1.08	-1.51	-2.09	-1.14	-1.51	-1.16	-0.21	1.32	1.05
Peak Degree	345	230	241	241	0	93	262	251	93	93	360	360
AV Gain (dBi)	-2.44	-2.13	-1.99	-2.24	-2.38	-3	-2.16	-2.29	-1.8	-0.65	0.57	0.28





Antenna LTE Antenna/bm
Remark: H-Plane/V-Pol
Tested by : Antenna 3D Lab

Location: **Chamber**

Date: **2012/8/23**

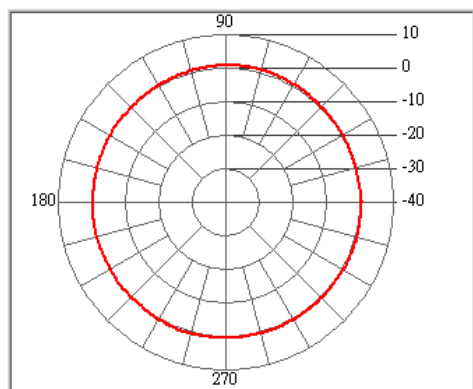
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Temperatuer (°C): **25.00**

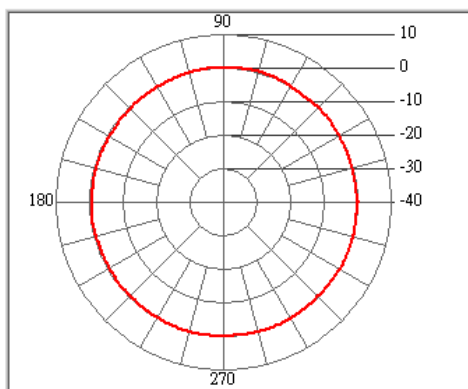
Humidity (%): **65.00**

Approved by:

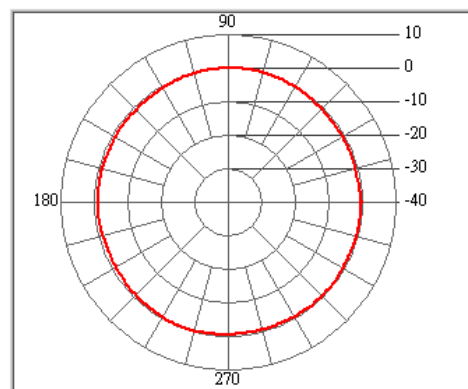
Freq. (MHz)	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2680	2700
Peak Gain (dBi)	0.91	0.4	0.09	0.03	-0.3	0.85	0.68	0.26	0.41	1.74	2.33	2.46
Peak Degree	74	74	84	105	74	64	189	22	168	1	2	0
AV Gain (dBi)	0.28	-0.22	-0.63	-0.67	-1.55	-0.96	-0.3	-0.91	-1.19	-0.78	-0.38	-0.48



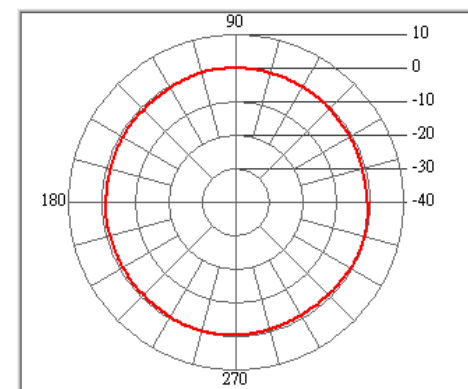
2200



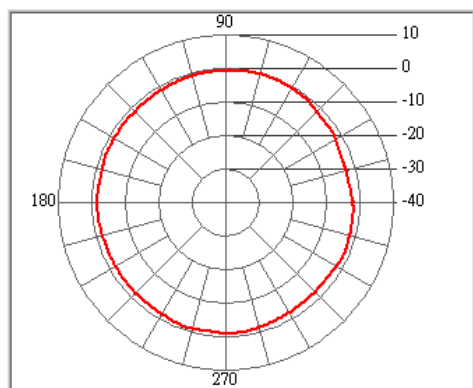
2250



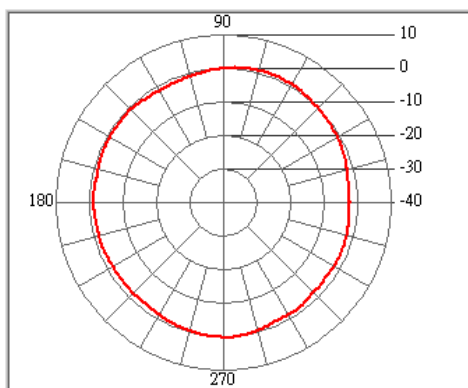
2300



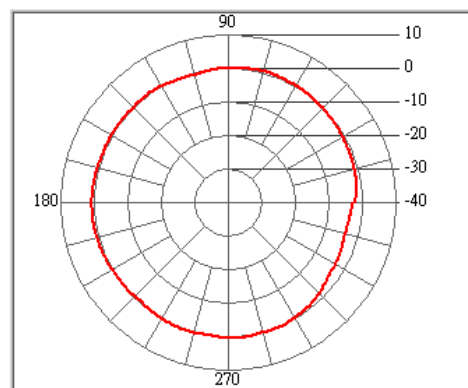
2350



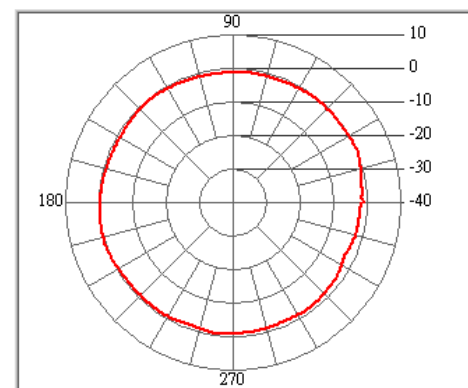
2400



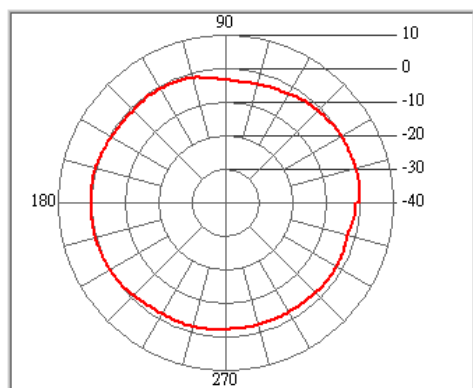
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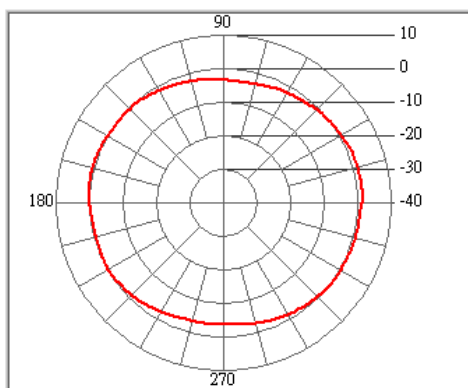
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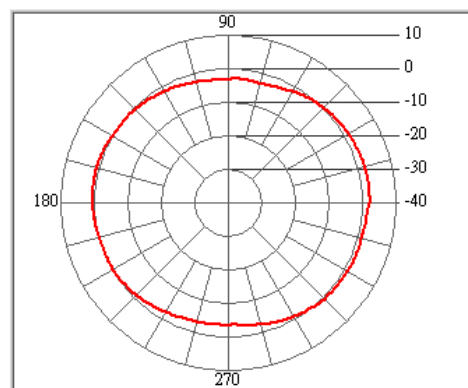
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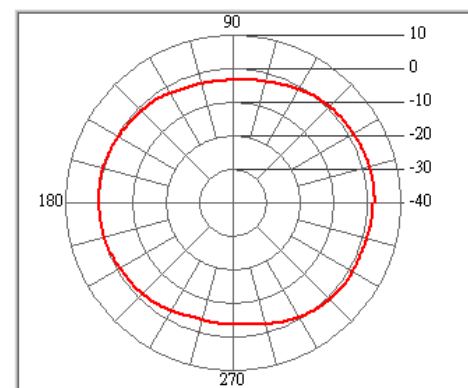
2600



2650



2680



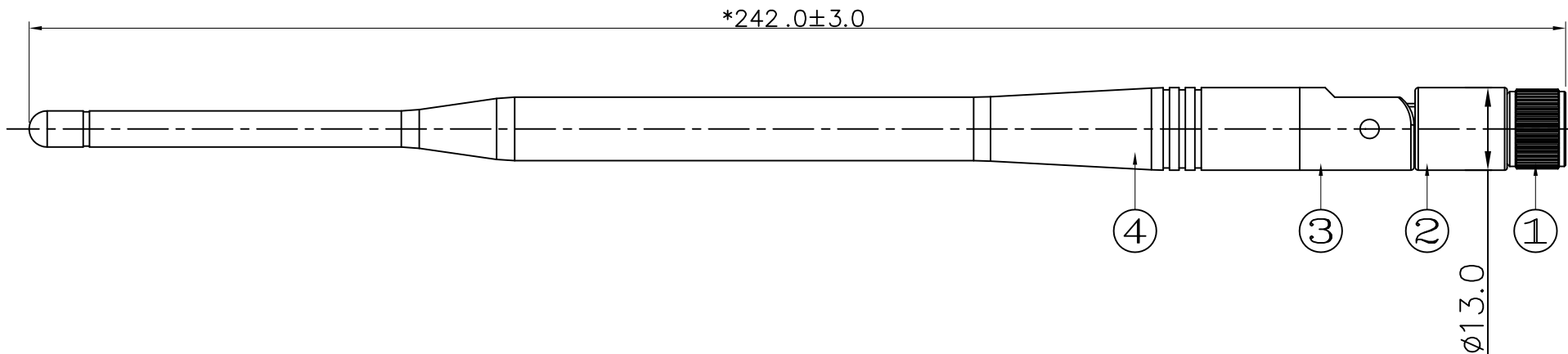
2700

RoHS

Compatible



SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



Note:

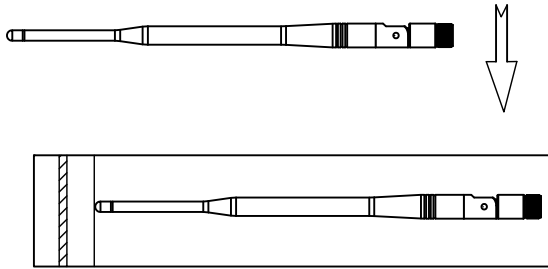
- 1.Take" * "is the important dimension.
- 2.Tolerance:Unmarked tolerance refer to the standard tolerance please.

4	AN13B-01B	本体	TPEE	黑色	1
3	AN9201-06B	连接筒	ABS	黑色	1
2	AN0304-T07B	连接头	ABS	黑色	1
1	SMA194-CCT5AN19-A	SMA公頭母針	銅	電著黑色	1
No.	Part Number	Name	Material	Finish	Q'ty

Invax System Group.			Cortec Technology Inc.		
Cortec			<small>Http://www.invaxsystem.com Tel :886-2-27885218 E-mail:info@invax.com.tw Fax:886-2-27831658</small>		
TITLE: Antenna					
PART NO.: AN0727-13A01BRS			CUSTOMER P/N: /		
APP BY	CHK BY	RF BY	DES BY		Tolerance
Grant	Jack		王偉	UNITS: mm	X.X ±0.5
2012/10/11	2012/10/11		2013/07/01	SCALE: 1/1	X.XX ±0.2
				REVISION: A	X° ±1

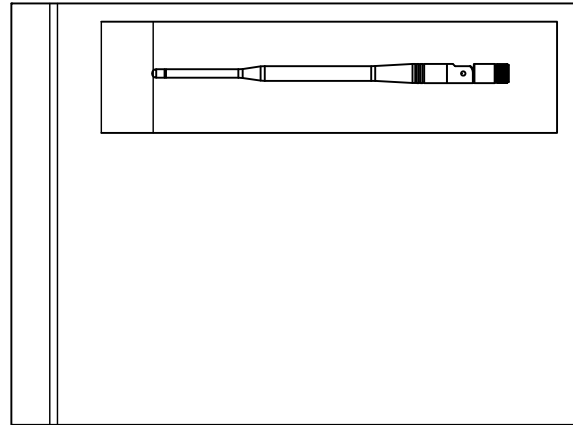
Part Number : AN0727-13A01BRS	Revision : B
Name: AP天線	Customer : ALL

一.入自粘袋。



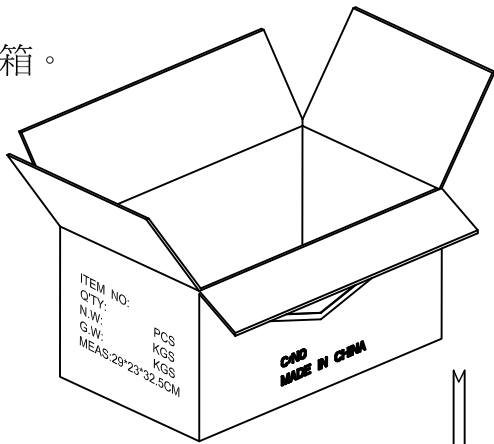
R-STI-BAG-30040 1PCS裝一自粘袋

二.入夾鏈袋。

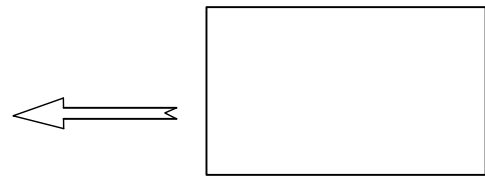


R-NIP-BAG-250320 50PCS/袋一夾鏈袋

三.裝箱。

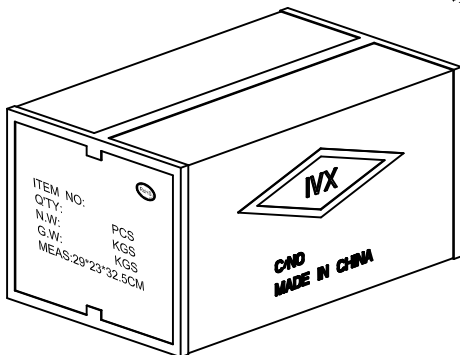


規格:29.0x23.0x32.5cm
300PCS/箱



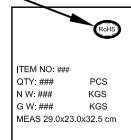
紙箱上下各放1PCS
隔板

四.封箱

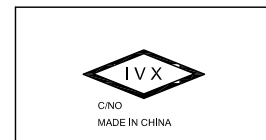


環保標籤

側麥



正麥



外箱側麥右上角貼一張ROHS標籤。
須填寫產品品號/數量/淨重/毛重。
或以實際重量填寫。

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

COR/F-G-47a

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：AN0727-13A01BRS

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	AN13B-01B	Body	TPEE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CE201343303	2013.04.22	THERMOPLASTIC	SGS
2	AN9101-06B AN0304-T07B	Body2 Body3	ABS	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10044908 034	2014.01.02	ABS-757	TuvRheinland
3	SMA207-CCT5AN19-A	SMA Male Reverse	銅	60	31000	N.D.	Negative			CE/2013/73960	2013.07.25	REECUTTINGBRASSBA	SGS
4	AN13B-TUBE-6780 AN93-TUBE-4425 AN93-TUBE-30505	Tube	鋁	N.D.	26	N.D.	Negative			CANEC1100770004	2011.03.16	国标6063 φ 18	SGS
5	R-HSTUBE-004N	HSTUBE	EVA	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	CANEC1303661001	2013.03.28	HEAT SHRINKABLE	SGS
6	AN13B-7070	HAT	鋅合金	2	25	N.D.	Negative	N.D.	N.D.	A001R131026002001-2	2013.10.31	ZN-3#	AOV
7	R-AN65-21	Hing Pin	PE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS01F007187001	2013.07.12	HDPE/XLPE/FPE	CTI
8	R-RG-178U-03	Cable (RG178)	FEP	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS05F011891001E	2013.08.26	电线电缆料	CTI
9			PTFE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	RHS05F011891002E	2013.08.26	电线电缆料	CTI
10			鍍銀銅	N.D.	N.D.	N.D.	Negative	N.D.	N.D.	RHS05F011891004E	2013.08.26	电线电缆料	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

歐盟ROHS指令豁免條款2009/95/BC、鋼中合金元素中的鉛含量達0.35%、鋁含量達0.4%、銅合金中的鉛含量達4%