

產品規格承認書

Specification For Approval

日期： 2007 / 04 / 13

Date

編號： 070413006

File No.

承認廠商： 研華股份有限公司

Customer

製造廠商： 英碩科技股份有限公司

Manufacturer

型號品名： TRI-BAND External Antenna

Part Number

Description

INVAX P/N:AN0919-0301RS

ADVANTECH P/N:1750001781

廠商審核：傅育仁

Approved By

Invax

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Cortec

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- =====

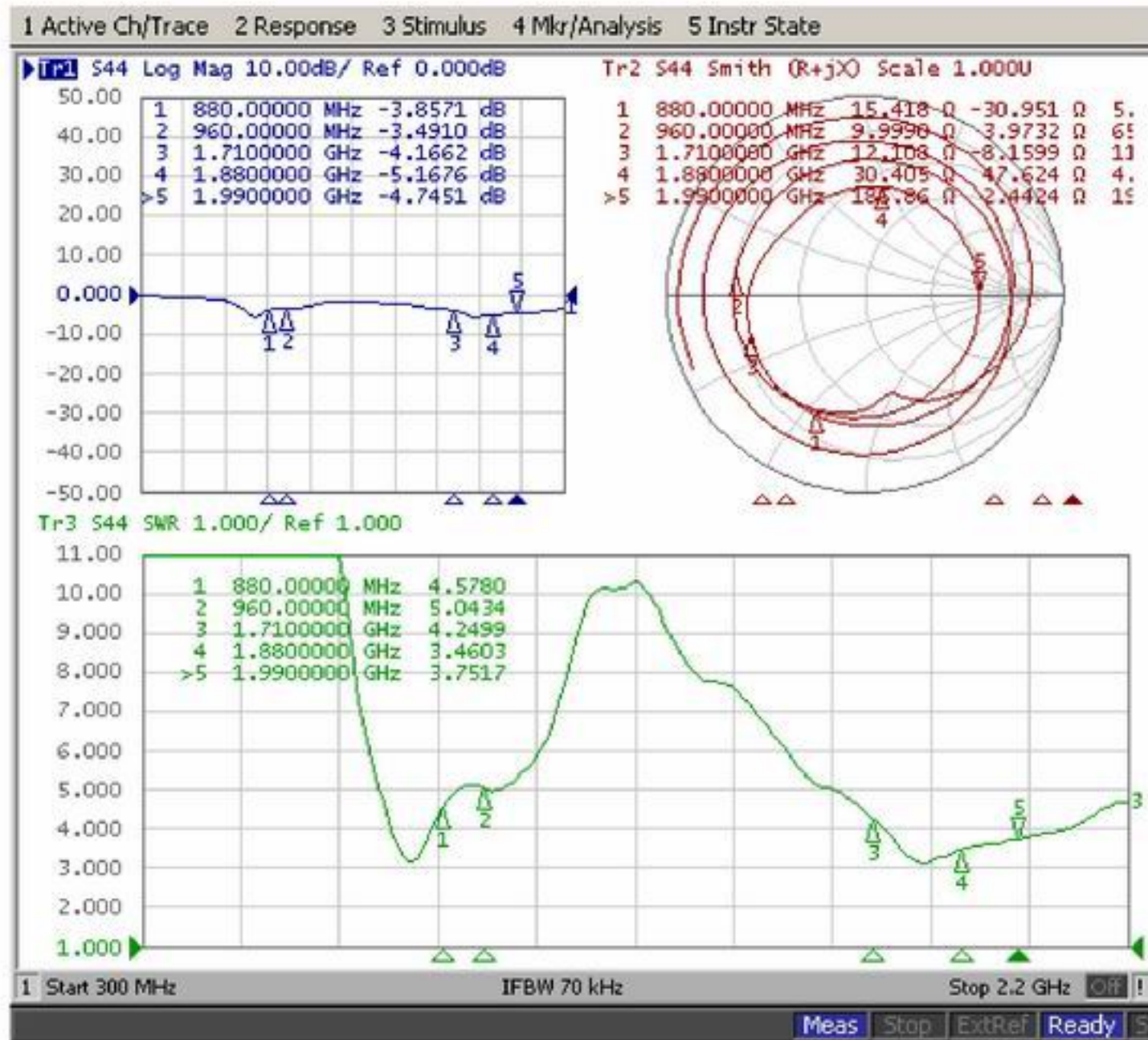
1. Reliability Testing

Test Item	Procedure	Requirement
1. Visual inspection and Dimension Check	Applicable methods using x5 magnification	follow specification
2. Rapid Changing of Temperature	-40°C (30minutes) to 90°C (30minutes); 24 cycles	After 2 hours recovery: 1. no visible damage 2. Freq. Tol.: < ±5%
3. Damp Heat	24 hours at 60°C; 90 ~ 95% RH	After 2 hours recovery: 1. no visible damage 2. Freq. Tol. : < ±5%
4. Endurance	24 hours at 90°C	After 2 hours recovery: 1. no visible damage 2. Freq Tol.: < ±5%

2. Specification

A. Electrical Characteristics	
S.W.R.	≤ 5.5 @ 880 ~ 960 MHz ≤ 4.0 @ 1710 ~ 1990 MHz
Antenna Gain	+1.0 \pm 0.7 dBi @ 880 MHz - 0.5 \pm 0.7 dBi @ 960 MHz - 3.0 \pm 0.7 dBi @ 1710 MHz - 6.0 \pm 0.7 dBi @ 1990 MHz
Impedance	50 Ohm
B. Material	
Material of Radiator	Cu (Plated)
Connector Type	50 Ohm SMA Male Reverse
C. Environmental	
Operation Temperature	- 30 °C ~ + 85 °C
Storage Temperature	- 30 °C ~ + 85 °C

3. S Parameter Test data



4. Antenna Radiation Pattern

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

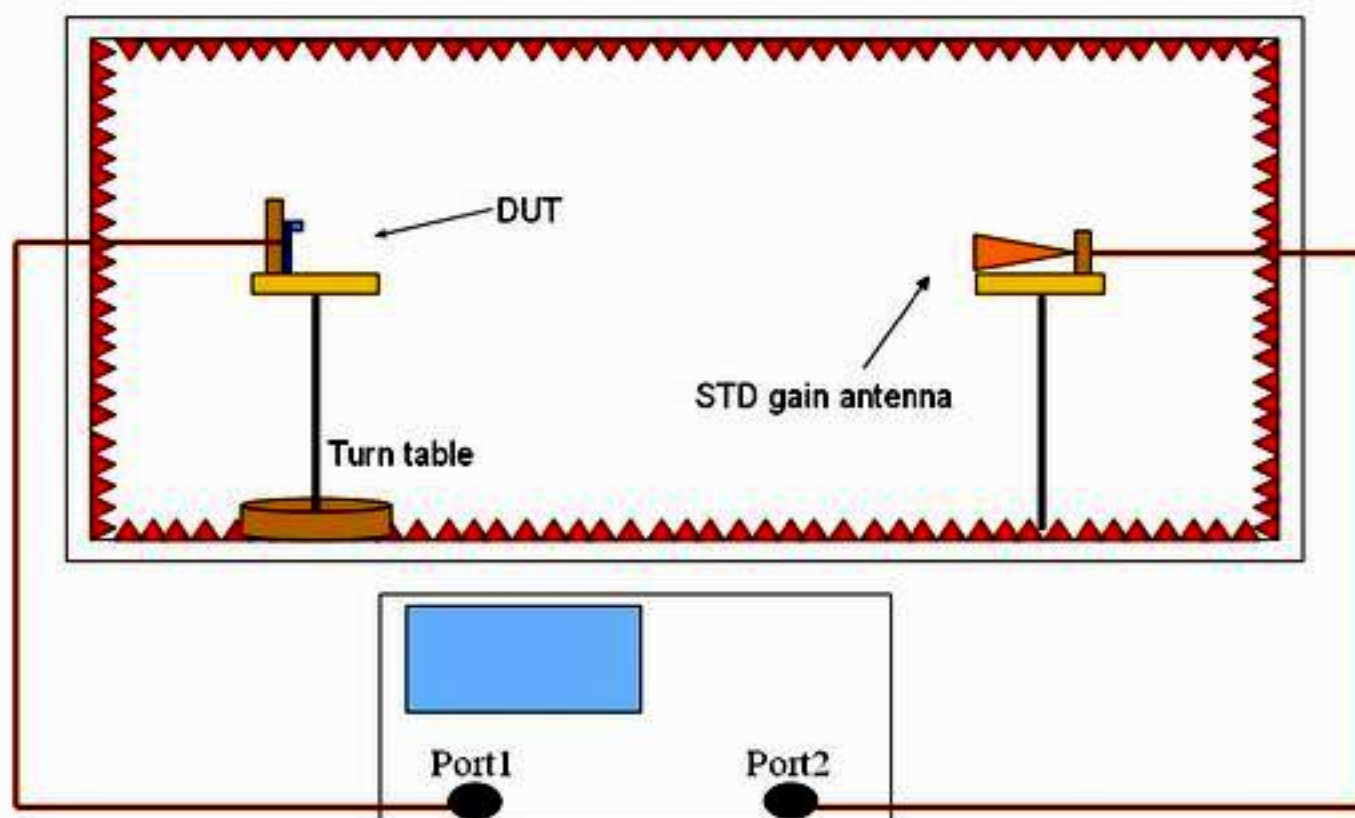
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 5071B

Received Antenna: 0.7 ~ 6.0 GHz for Gain Calibration

Double Ridged Horn Antenna



4. Mechanical Drawing

5. MSDS & SGS Report

Model : AN0919-0301RS
 Remark : H-Plane // Vertical Polarization
 Tested by : CORTEC Antenna 3D Lab

Location: Chamber

Date: 2007/1/17

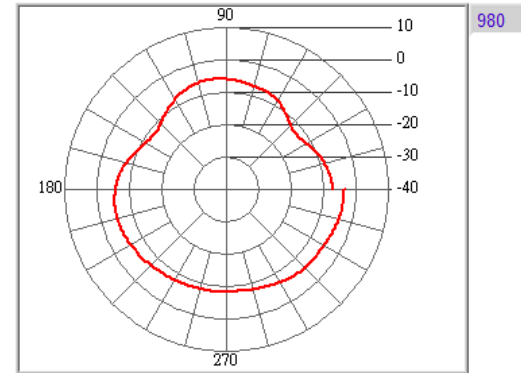
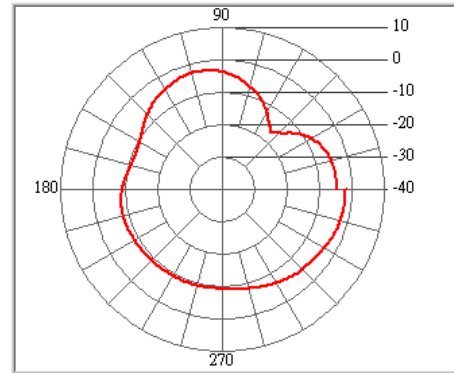
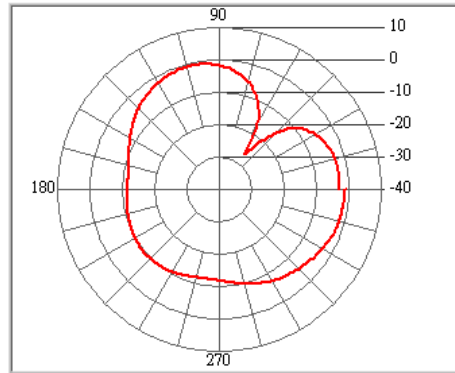
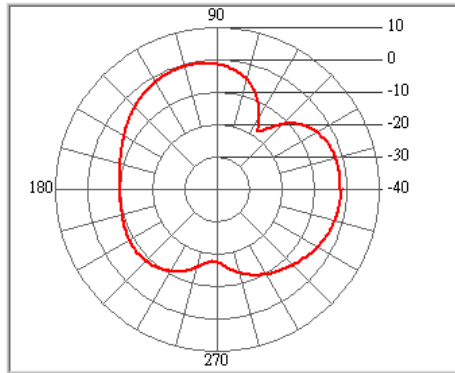
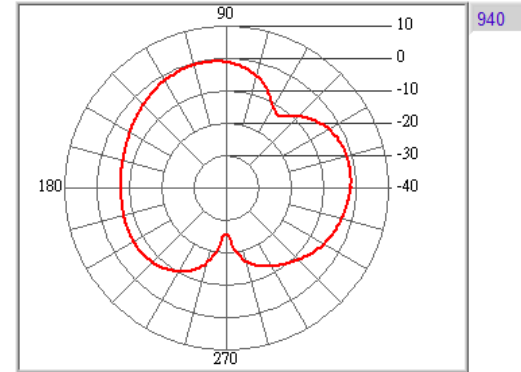
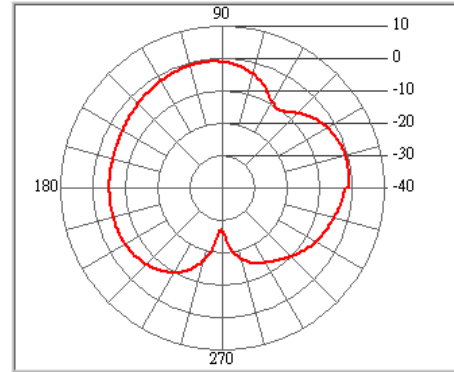
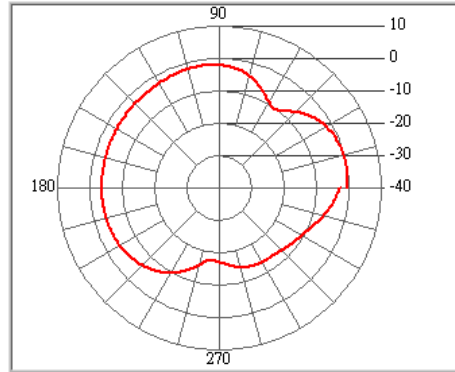
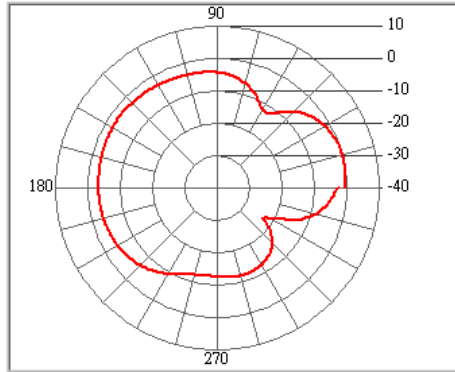
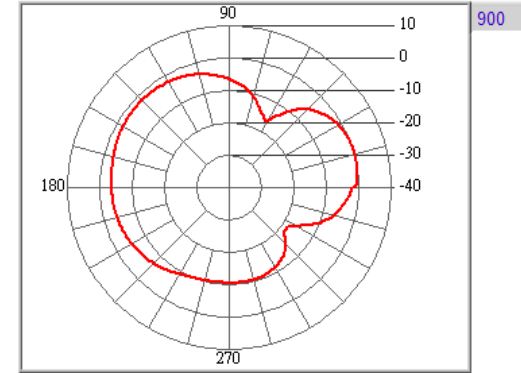
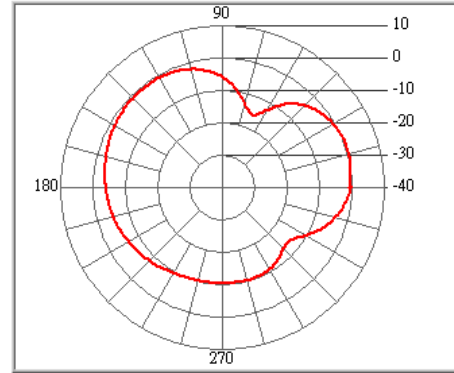
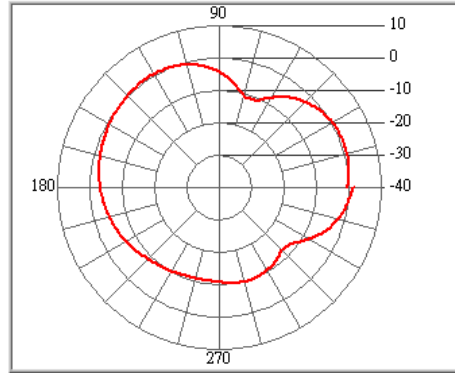
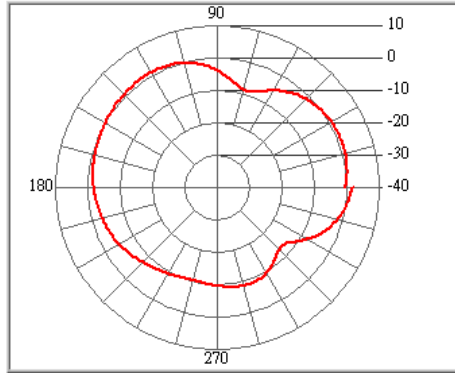
Time: 下午 09:14:18

Temperatur (°C): 22.00

Humidity (%): 55.00

Approved by:

Freq. (MHz)	870	880	890	900	910	920	930	940	950	960	970	980
Peak Gain (dBi)	1.83	1.27	0.51	0.21	0.1	-0.08	-0.56	-0.68	-0.59	-0.8	-1.94	-3.69
Peak Degree	360	360	18	13	12	12	12	103	103	103	355	355
AV Gain (dBi)	-2.48	-3.2	-4.15	-4.8	-4.92	-4.66	-4.61	-5.02	-5.33	-5.51	-6.4	-7.06



Model : AN0919-0301RS
 Remark : H-Plane // Vertical Polarization
 Tested by : CORTEC Antenna 3D Lab

Location: Chamber

Date: 2007/1/17

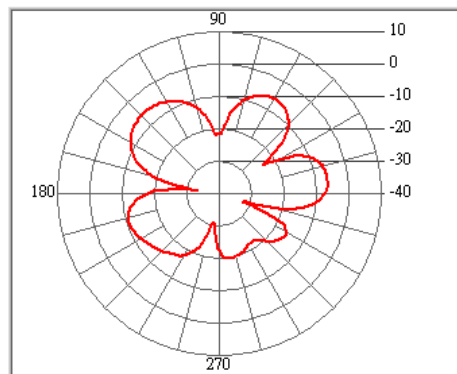
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Temperatur (°C): 22.00

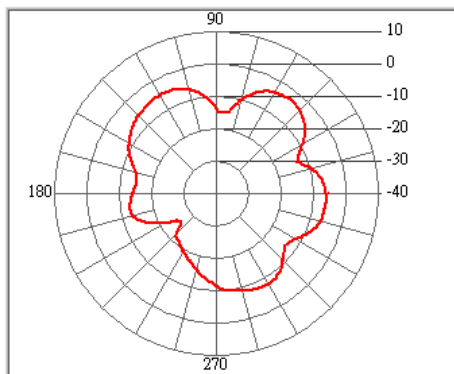
Humidity (%): 55.00

Approved by:

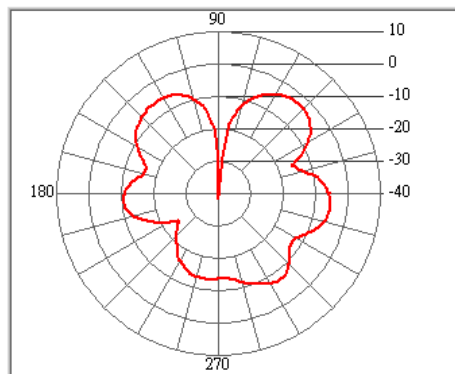
Freq. (MHz)	1710	1750	1780	1800	1820	1850	1880	1900	1920	1940	1960	1990
Peak Gain (dBi)	-5.93	-3.06	-2.76	-3.67	-2.75	-2.76	-3.22	-2.98	-2.91	-4.27	-6.38	-7.58
Peak Degree	135	51	46	45	39	33	27	27	27	27	21	21
AV Gain (dBi)	-11.33	-8.65	-9.04	-9.25	-8.31	-7.86	-9.36	-9.98	-9.52	-9.45	-11.27	-13.18



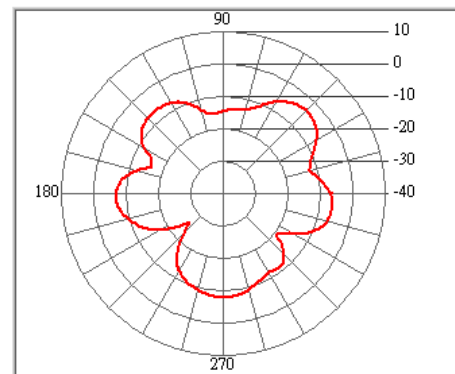
1710



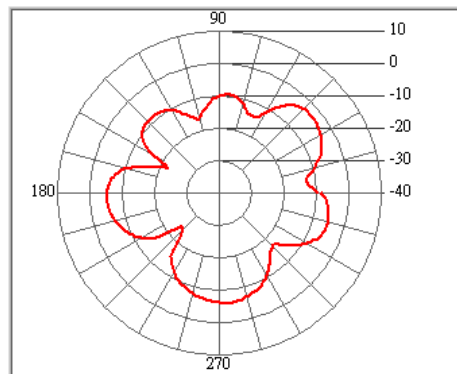
1750



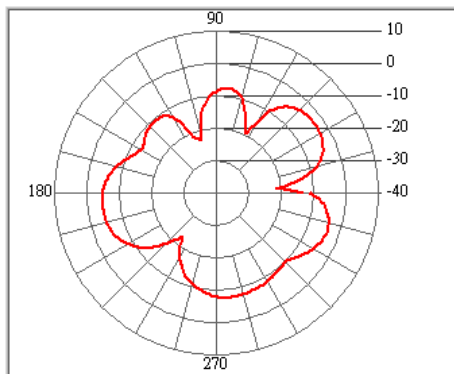
1780



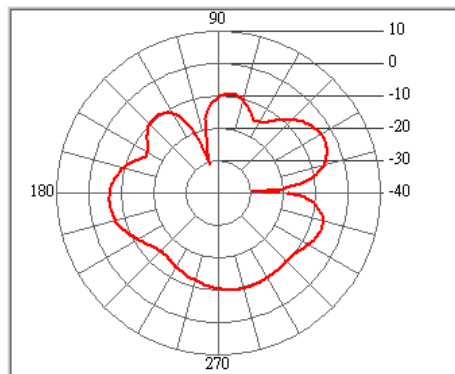
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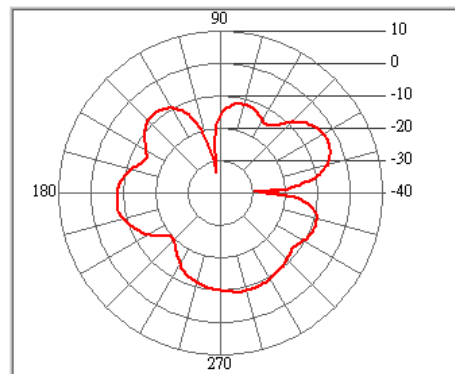
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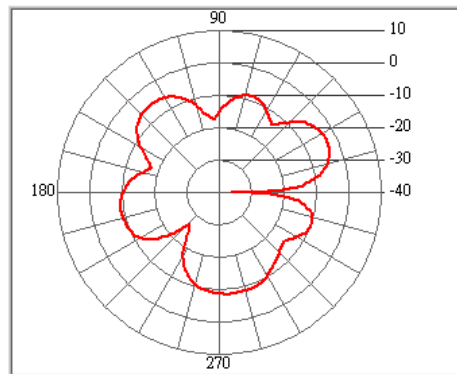
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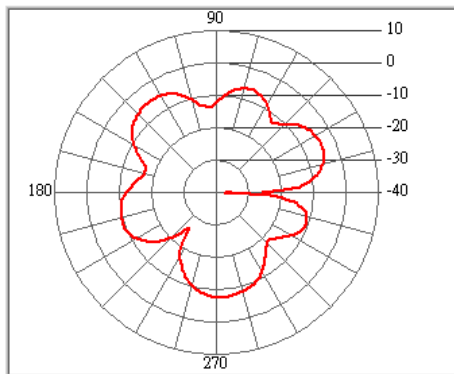
1880



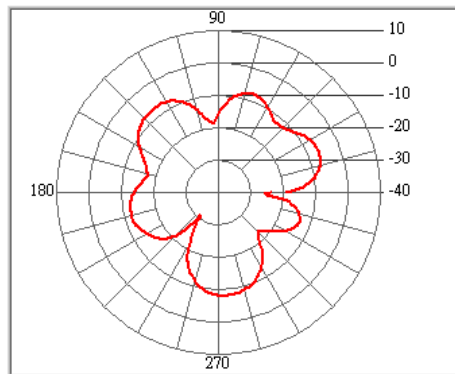
1900



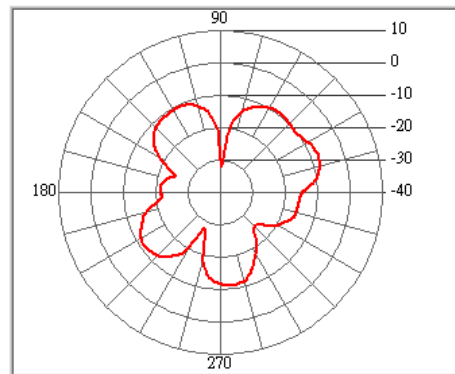
1920



1940



1960

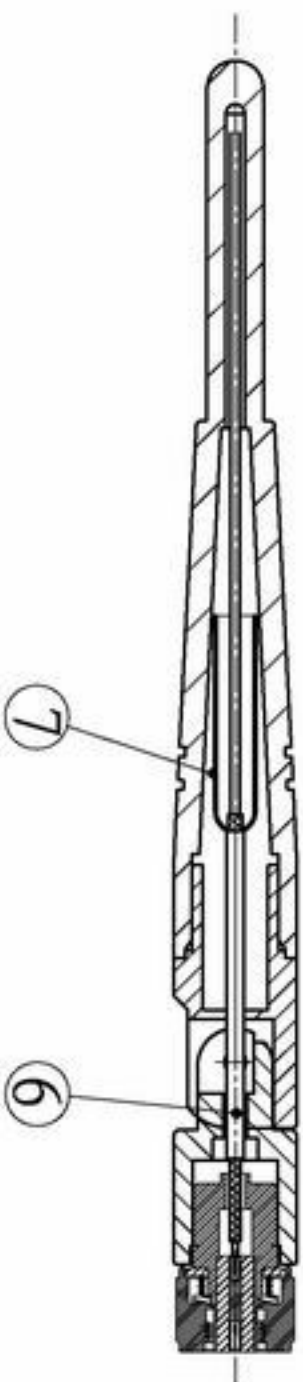
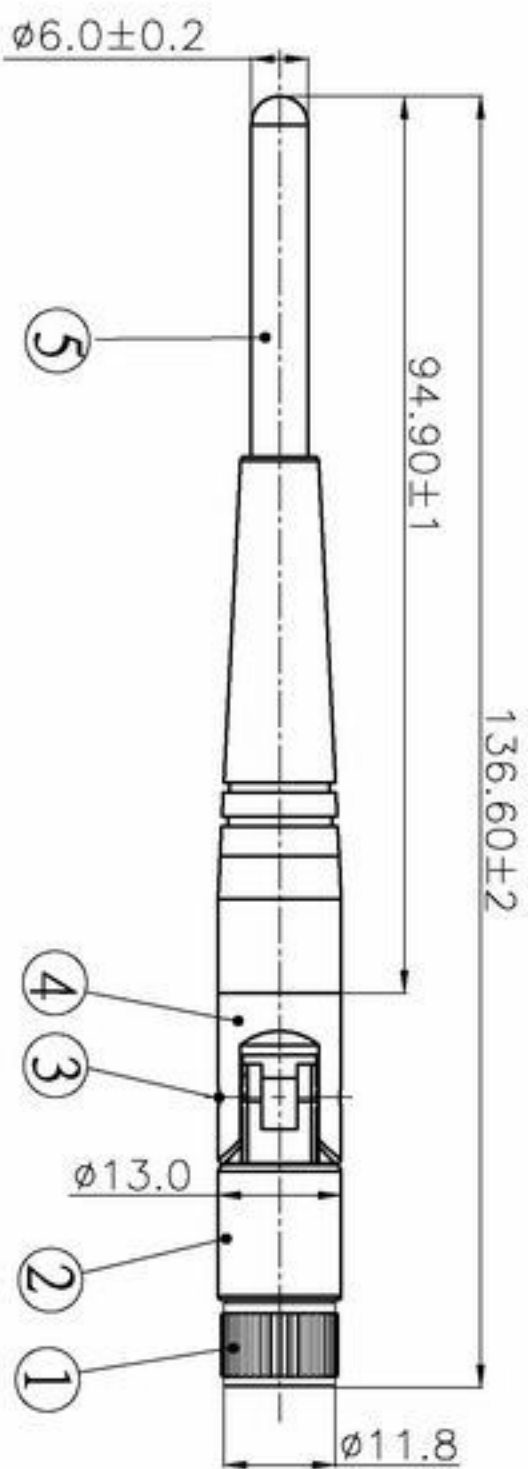


1990

ROHS

Compatible

SIGN	DATE	DESCRIPTION	APPROVER
Δ			
Δ			
Δ			



No.	Part Number	Name	Material	Finished	Qty
7	R-AN94-02S	Copper Tube	Cu	∅5.2*26.0mm	1
6	R-RG-178U	Cable	RG178	L=125.0mm	1
5	R-AN03-T03	Body	TPE	Black	1
4	R-AN03-T02	Hinge	PA-6	Black	1
3	R-AN03-514CZ	Rivet	Cu	Black Zn Plated	2
2	R-AN03-T01	Base	PA-6	Black	1
1	R-SMA324-ZC8MRANT	SMA Male Reverse	Zn Alloy	Electrodeposition	1

Cortec® Cortec Technology Inc.

PART NAME: 900/1800/1900 MHz Antenna TITLE: 900/1800/1900 MHz Antenna

PART NO.: AN0919-0301RS DWG NAME: AN0919-0301RS.dwg

APPROVED BY: Grant CHECKED BY: LiuKui DESIGNED BY: Seagold

2007/01/10 2007/01/10 2007/01/10

UNITS: mm	Tolerance
SCALE: 1/1	XX ±0.5
REVISION: A	XX ±0.1
	X ±1*

TPE Datasheet

物性項目 Property	單位 Unit	ASTM 試驗法 Test Method	TPE
比重 Specific Gravity	---	D792	0.88
模具收縮率 Shrinkage	%	D955	0.8-2.5
斷裂拉伸強度 Tensile Strength	Kg/ cm ³	D638	3.1
扭曲強度 Flexural Strength	Kg/ cm ³	D790	---
衝擊強度缺口 23°C Impact Strength	Kg om/om	D256	---
硬度 Hardness	A Shore	---	13
熱變形溫度 0.45 MPa Heat Deflection Temp.	°C	D648	80
熔融指數 Melt Flow Index	G/ min ²	D1238	10
燃燒性 Flammability	---	UL94	HB

Testing Data from

東莞市合春塑料有限公司 Tel:86-0769-2774772

台灣大雅國際股份有限公司 Tel:886-02-27775232

PA-6 Datasheet

納普工程塑料檢測報告單

QR-82401-04

A/1

NO : 06040401

品名	增韌增強尼龍	檢驗標準	QW-824-03	顏色	黑色
型號	PA6-EA	批號	----	數量	2T
檢驗項目	單位	檢驗標準	標準要求	實測數據	
拉伸強度	Mpa	GB/T1040-92	----	35.6	
拉伸模量	Mpa	GB/T1040-92	----	1363	
斷裂伸長率	%	GB/T1040-92	----	63.6	
簡支梁沖擊強度(缺口)	KJ/M2	GB/T1043-93	----	20.0	
簡支梁沖擊強度(非缺口)	KJ/M2	GB/T1043-93	----	NB	
<p>結論:</p> <p>以上數據均為實測數據</p>					
檢驗員：李興華		日期：2006-05-07		審核：汪文	
				日期：2006-05-07	



SHIYANG (ZHONG SHAN) METAL PRODUCTS CO.,LTD

世扬金属制品有限公司

TEST CERTIFICATE

材質证明书



CLIENT 客户	天诚		certificate NO. 证明书号	070127-15						
name article 品名	Brass									
LOT NO.	SIZE(MM) STANDARD	OUTW GT (KG)	DESIGNATION	Cu(%)	Pb(%)	Fe(%)	Fe+Sn(%)	Cd(%)	Zn(%)	REMARK
7916	14.5 φ		JISC3604 JISC3604	57-61 58.92	1.8-3.7 2.986	≤0.5 0.446	≤1.2 0.971	≤0.0075 0.0042	REM REM	
<p>兹证明本表所列产品,均依材料规格制造及试验,并符合规格之要求。 WE HEREBY CERTIFY THAT MATERIAL DESCRIBED JERE IN MAS BEEN MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENT OF THE ABOVE MATERIAL SPECIFICATION.</p>										

MANAGER: 曾敦毅

PABLE: 李玉奎

DATE:2007/02/27

THE THREE INDUSTRIAL AREA NAN LANG TOWN ZHONG SHAN CITY
 中国广东省中山市南朗镇第三工业区

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 E-Mail:sales@shiyangmetal.com

禧福工業股份有限公司材質分析報告

鋅合金

化學成份 Chemical Composition

元素	Element	國際標準	ASTMB240
鋁	(Al)		3.804%
鎂	(Mg)		0.0327%
銅	(Cu)		0.384%
鐵	(Fe)		0.0015%
鉛	(Pb)		0.0091%
錫	(Sn)		0.0017%
鎘	(Cd)		0.0010%
錳	(Mn)		0.00071%
鎳	(Ni)		0.0057%
矽	(Si)		0.0056%
鉻	(Cr)		0.0011%
鉍	(Bi)		0.00040%
鋅	(Zn)		95.8%
物理性能 Physical Properties			
密度	Density(g/cm ³ @21°C)		6.60
溶點範圍	Melting Range		381-387°C
凝固收縮	Solidification Shrinkage		1.17%
熱膨脹率	Thermal Expansion(m/mm/°C @20-100°C)		274
比熱	Specific Heat Capacity(J/kg/°C @20-100°C)		418.7
導熱率	Thermal Conductivity(W/m/br/m°C @70-140°C)		1130
導電率	Electrical Conductivity(%IACS)		2.0*E7
電阻率	Electrical Resistivity (μohm-cm@20°C)		6.3694
機械性能 Mechanical Properties			
極限抗拉強度	Ultimate Tensile Strength		283MPa
延伸率	Elongation(% in 51mm)		10%
硬度	Hardness(Brinell 500 kg)		82
抗剪強度	Sheet Strength		214 MPa
抗壓屈服強度	Compressive Yield Strength		414 MPa
抗衝擊強度	Impact Energy(Un-notched Bar 6.35*6.35mm)		58
疲勞強度	Fatigue Strength(5*10 ⁸ Cycles)		48 MPa

Coaxial Cable Datasheet

RG-178 Coaxial Cable Specification		
1. Cable Type	MIL – C – 17 / RG-178	
2. Impedance	50 ± 3 ohm	
3. Inner Conductor	Material	silver-coated copper
	Conductor Numbers	7
	Conductor Size	0.102 mm
	Outer Diameter	0.3 mm
4. Dielectric Layer	Material	FEP
	Color	Clear
	Average Thickness	0.28 mm
	Diameter	0.86 mm
5. Braid (Shielding)	Material	silver-coated copper
	Construction	16-3-0.1 mm
	Coverage	95 %
6. Outer Cover	Material	FEP
	Color	Brown
	Average Thickness	0.25 mm
	Diameter	1.80 ± 0.05 mm
7. V.S.W.R Testing	< 1.3 (DC ~ 6.0 GHz)	
8. Attenuation (dB / 100 meter)	100 MHz	46
	900 MHz	155
	1800 MHz	295
	2400 MHz	340
	5200 MHz	505
	6000 MHz	550
9. Capacitance	97 ± 3 (pF / meter)	
10. Maximum Power	30 dBm	
11. Spark Test	2.0 KV	
12. Rating Temp. and Volt.	200°C / 30V	
13. Conductor Resistance	335 ohm / KM / 20°C max.	
14. Dielectric Resistance	3 G ohm / KM / 20°C min.	