

Specification For Approval

Date: 2010 / 01 / 19

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Customer : 合勤科技有限公司

Customer P/N : 65-031-240114B

INVAX P/N : R-AN2400-0302RS

Description : Antenna

Cortec Checked By:

Customer Approved By:



INVAX System Technology Corp.
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Product Number: R-AN2400-0302RS

Product Name: Antenna



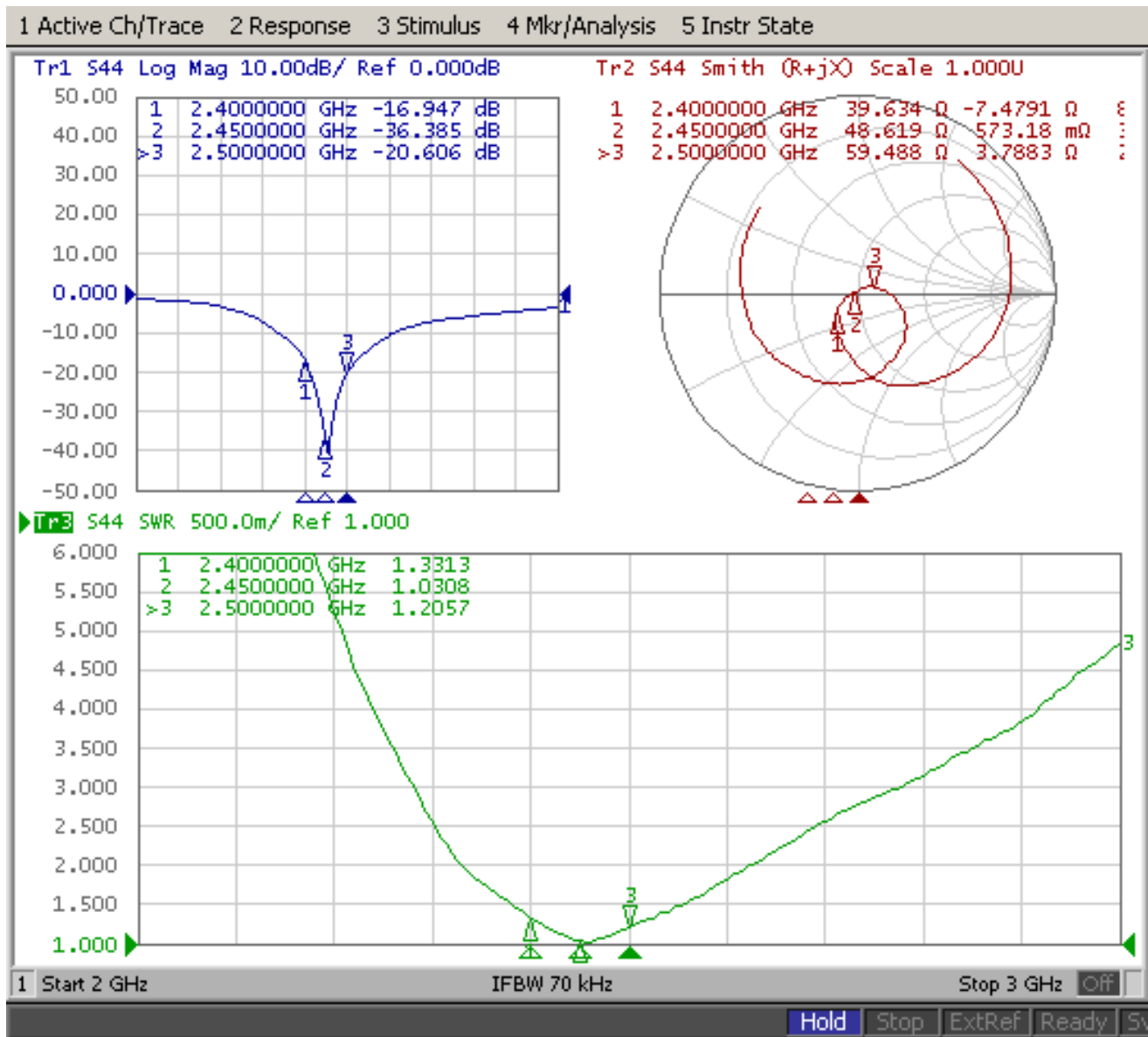
1. Specification

Sample Photo	
	
A. Electrical Characteristics	
Frequency	2400 ~ 2500 MHz
S.W.R.	≤ 2.0
Antenna Gain	2.0dBi @2450 MHz
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	≥ 3 Kg
Connector Torque Test	200 ~ 500 g.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



Product Number: R-AN2400-0302RS

Product Name: Antenna



4. Antenna - Radiation Pattern Test Data

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

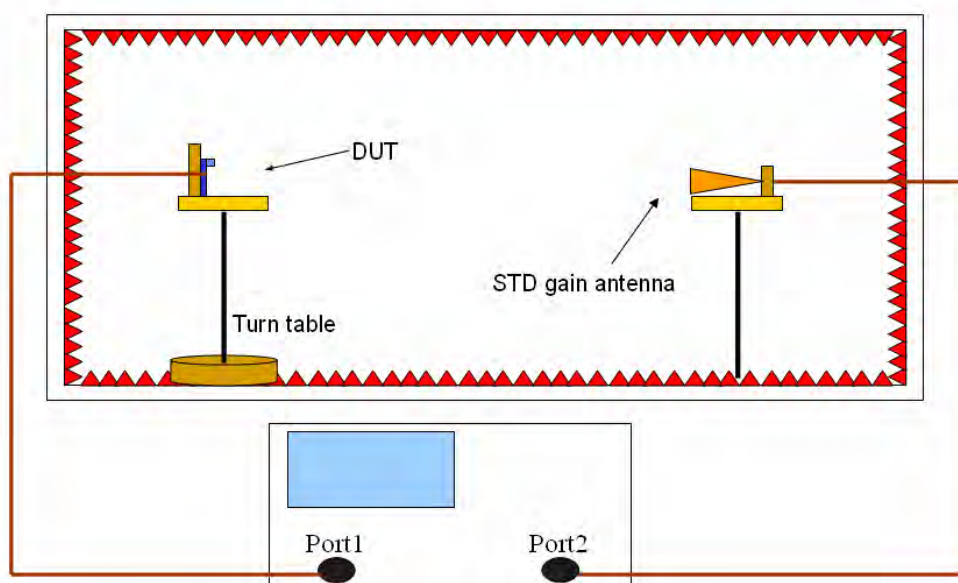
Quiet Zone: 600mm @1 GHz

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



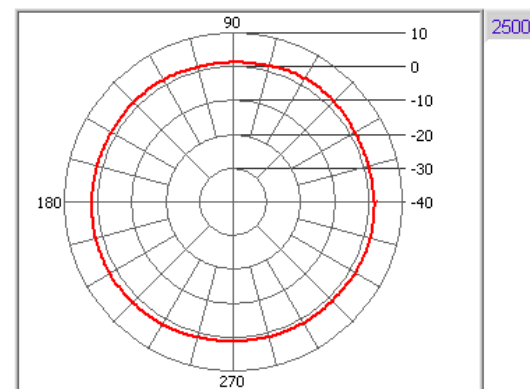
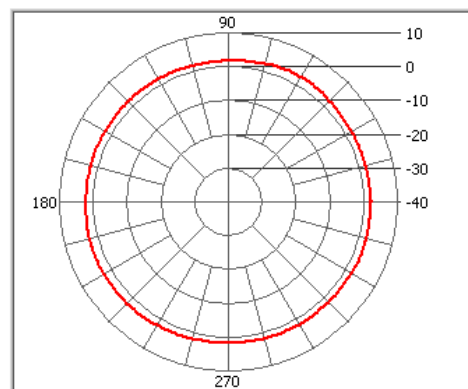
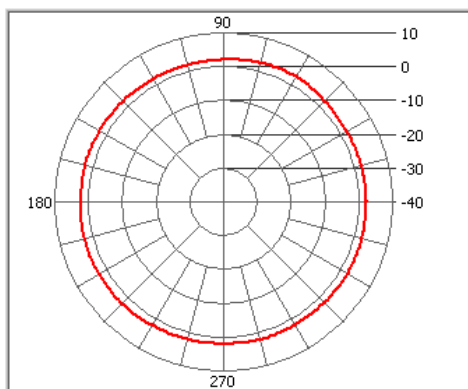
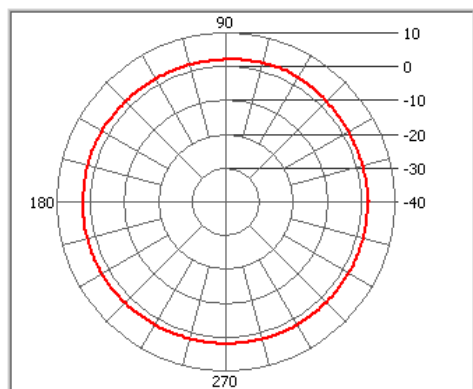
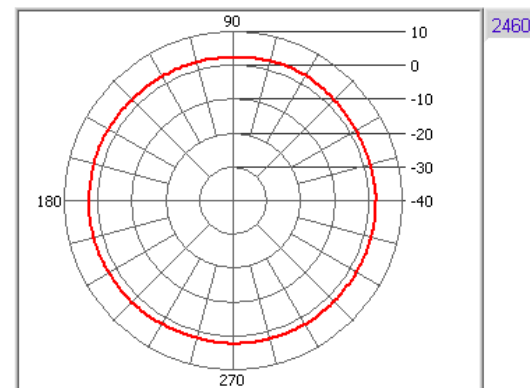
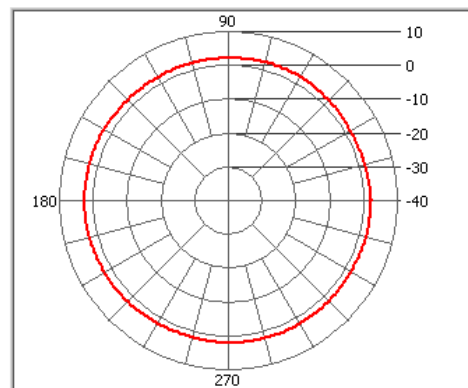
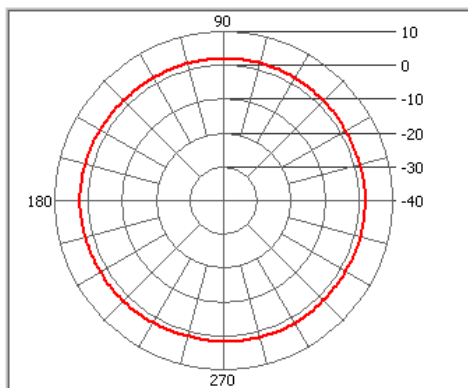
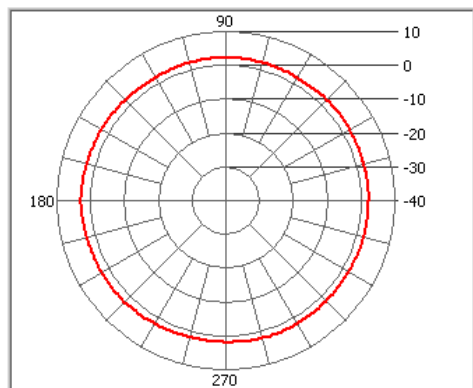
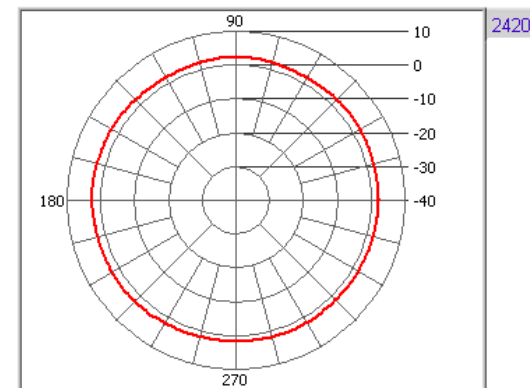
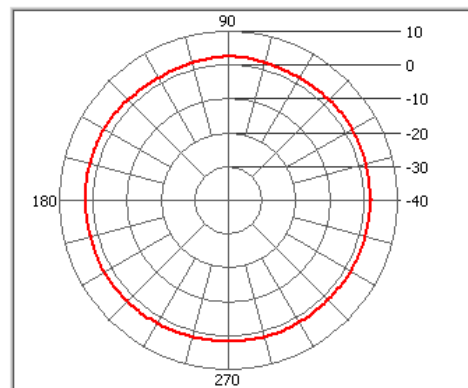
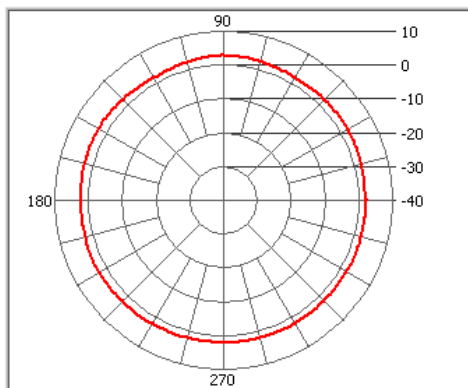
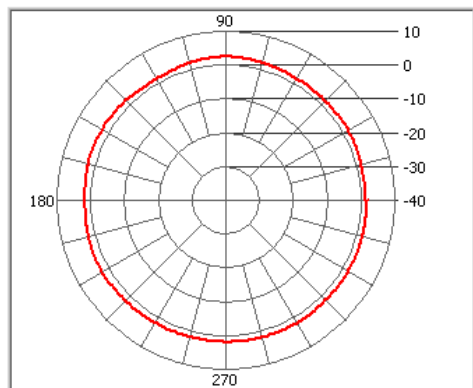
Model : 2.4G 2dBi Antenna //5
Remark : H-Plane // V-Pol
Tested by : CORTEC Antenna 3D Lab // Zhao Yao Rong

Location: **Chamber**
Temperatuer (°C): **22.00**

Date: **2009/9/30**
Humidity (%): **55.00**

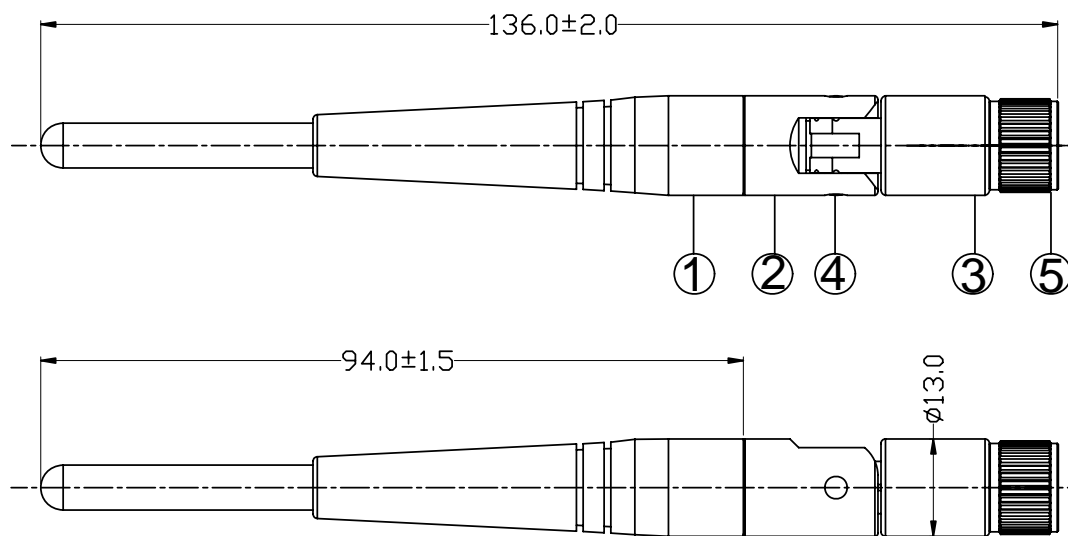
Time: **下午 02:17:48**
Approved by:

Freq. (MHz)	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain (dBi)	2.43	2.79	2.46	2.54	2.8	2.47	2.51	2.77	2.66	2.79	2.69	2.23
Peak Degree	91	91	90	176	180	179	183	63	66	66	62	53
AV Gain (dBi)	1.87	2.24	2.05	2.1	2.22	1.94	2.14	2.35	2.1	2.25	2.11	1.68



**RoHS
Compatible**

SIGN	DATE	DESCRIPTION	APPROVER
△			
△			
△			



5	R-SMA324-ZC8MRANT	SMAMale Reverse	Zn Alloy	Eletrodeposition	1
4	R-AN03-514CZ	Pin	Cu	Black Zn Plated	2
3	R-AN03-T01	Body-1	PA+ABS	Black	1
2	R-AN03-T02	Body-2	PA+ABS	Black	1
1	R-AN03-T03	Body-3	TPE	Black	1
NO.	Part Number	Description	Material	Finished	Q'ty

Invax System Group.
Cortec

Cortec Technology Inc.
[Http://www.invaxsystem.com](http://www.invaxsystem.com) Tel :886-2-27885218
 E-mail:info@invax.com.tw Fax:886-2-27831658

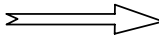
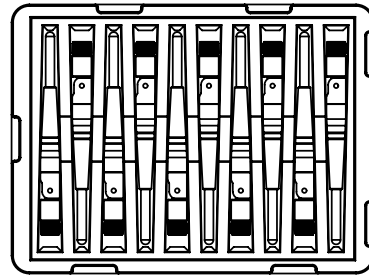
TITLE: 2.4GHz 2dBi Antenna

PART NO.: R-AN2400-0302RS DWG NAME: R-AN2400-0302RS.dwg

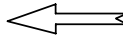
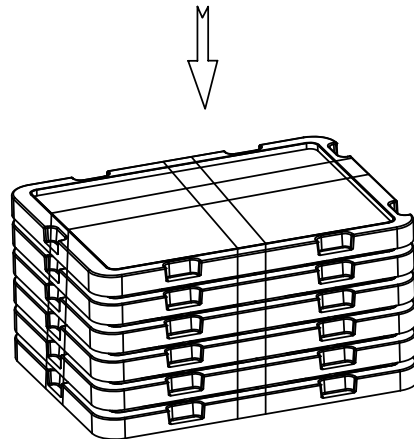
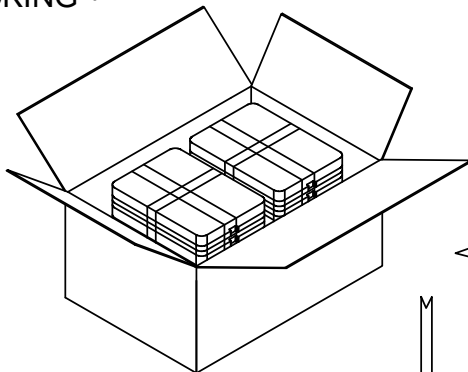
APPROVED BY	CHECKED BY	DESIGNED BY		Tolerance
Grant 2008.04.17	Liu Kui 2008.04.17	Zhang yue xin 2008.04.17	UNITS: mm SCALE: 1/1 REVISION: A	X.X ±0.3 X.XX ±0.05 X° ±1°

Part Number : R-AN2400-0302RS	Revision : A
Name: 2.4GHz 2dBi Antenna	Customer : ALL

1. Enter the frame ◦



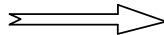
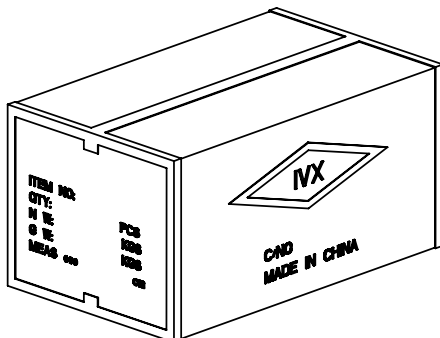
2. PACKING ◦



SIZE: 38.0x26.0x33.0cm
400PCS/BOX

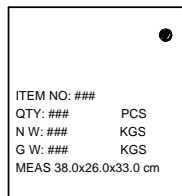


3. SEALING.



SIDE

FRONT



TPE Datasheet

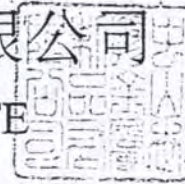
物性項目 Property	單位 Unit	ASTM 試驗法 Test Method	TPE
比重 Specific Gravity	---	D792	0.88
模具收縮率 Shrinkage	%	D955	0.8-2.5
斷裂拉伸強度 Tensile Strength	Kg/ cm ³	D638	3.1
扭曲強度 Flexural Strength	Kg/ cm ³	D790	---
衝擊強度缺口 23°C Impact Strength	Kg om/om	D256	---
硬度 Hardness	A Shore	---	13
熱變形溫度 0.45 MPa Heat Deflection Temp.	°C	D648	80
熔融指數 Melt Flow Index	G/ min ²	D1238	10
燃燒性 Flammability	---	UL94	HB
<p>Testing Data from</p> <p>東莞市合春塑料有限公司 Tel:86-0769-2774772</p> <p>台灣大雅國際股份有限公司 Tel:886-02-27775232</p>			

SHIYANG (ZHONG SHAN) METAL PRODUCTS CO.,LTD

世扬金属制品有限公司

TEST CERTIFICATE

材质证明书



CLIENT 客户	天诚							certificate NO. 证明书号	070127-15	
name article 品名	Brass									
LOT NO.	SIZE(MM)	OUTW GT	DESIGNATION	Cu(%)	Pb(%)	Fe(%)	Fe+Sn(%)	Cd(%)	Zn(%)	REMARK
	STANDARD	(KG)	JISC3604	57~61	1.8~3.7	≤0.5	≤1.2	≤0.0075	REM	
7916	14.5 φ		JISC3604	58.92	2.986	0.446	0.971	0.0042	REM	
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.										

MANAGER: 曾敦義

PABLE: 李玉奎

DATE:2007/02/27

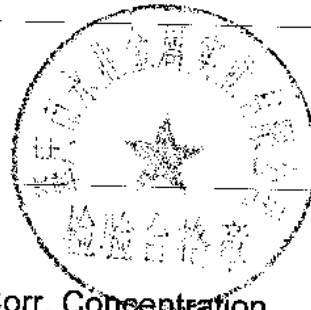
THE THREE INDUSTRIAL AREA NAN LANG TOWN ZHONG SHAN CITY
中国广东省中山市南朗镇第三工业区

TEL:0760-5214770 FAX:0760-5214769
E-Mail:sales@shiyangmetal.com



117941-04

5/11/2008 12:15:51 PM



Method: Zn-50
Comment: Zamak 400/410/430

Type Corr. Concentration

5/11/2008 12:15:49 PM

Sample Name:
X2 B7

	Al %	Cd %	Cu %	Fe %	Mg %	Mn %	Ni %	Pb %
1	3.926	0.00095	0.351	0.0026	0.0337	< 0.00040	0.0062	0.0083

	Sn %	Si %	Cr %	Bi %	Zn %			
1	0.0020	0.0037	0.00099	< 0.00040	95.7			