

Measurement of Maximum Permissible Exposure

1. Foreword

In adopt with the Human Exposure IEEE C95.1, and according to the FCC 1.1310. The *Maximum Permissible Exposure (MPE)* is obligated to measure in order to prove the safety of radiation harmfulness to the human body.

The *Gain* of the antenna used is measured in an *Anechoic chamber*. The *maximum total power to the antenna* is to be recorded. By adopting the ***Friis Transmission Formula*** and the *power gain of the antenna*, we can find the distance right away from the product, where the limit of the MPE is.

2. Description of EUT

FCC ID	: P6XSBX-11GWLAN-5
Product name	: 2.4G WLAN MINI PCI MODULAR
Model	: WLG-1302
Classification	: Mobile Device (i) Under normal use condition, the antenna is at least 20cm away from the user; (ii) Warning statement for keeping 20cm separation distance and the prohibition of operating next to the person has been printed in the user's manual
Frequency Range	: 2.412 GHz ~ 2.462GHz
Supported Channel	: 11 Channels
Modulation Skill	: DBPSK, DQPSK, CCK, OFDM
Power Type	: Powered by mini-PCI interface

3. Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	100	6
3.0-30	1842/f	4.89/f	900/f ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	100	30
1.34-30	824/f	2.19/f	180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

[The EUT is tested in transmit and receive modes and in the first, middle and the last channel separately. The following shows only our observation have the greatest emissions.]

According to OET BULLETIN 56 Fourth Edition/August 1999, Equation for Predicting RF Fields:

$$\text{Friis Transmission Formula: } S = \frac{PG}{4pR^2} = \frac{158.85 \times 2.13}{4p(20)^2} = 0.067 \text{ mW/cm}^2$$

$$\text{Estimated safe separation: } R = \sqrt{\frac{PG}{4p}} = \sqrt{\frac{158.85 \times 2.13}{4p}} = 5.19 \text{ cm}$$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 5.8cm"

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

The Numeric gain G of antenna with a gain specified in dB is determined by:

$$G = \text{Log}^{-1} (\text{dB antenna gain} / 10)$$

$$G = \text{Log}^{-1} (3.30 / 10) = 2.13$$

Appendix

Antenna Specification

產品規格承認書

Specification For Approval

日期：2006 / 02 / 27

Date

編號：STA - 1022

File No.

承認廠商：突破通訊股份有限公司

Customer

製造廠商：英碩企業股份有限公司

Manufacturer

型號品名：2.4GHz Antenna with SMA

Part Number

Description

INVAX P/N : AN2400-5701RS

廠商審核：

Approved By

Invax

英碩企業股份有限公司

台北市忠孝東路五段 815 號 4 樓

Tel: (8862)2788-5218 Fax: (8862)2783-1658

Cortec

東莞康捷電子有限公司

廣東省東莞市長安鎮振安路

沙頭段咸西工業區

Tel: 86-769-5317599 Fax: 86-769-5317869

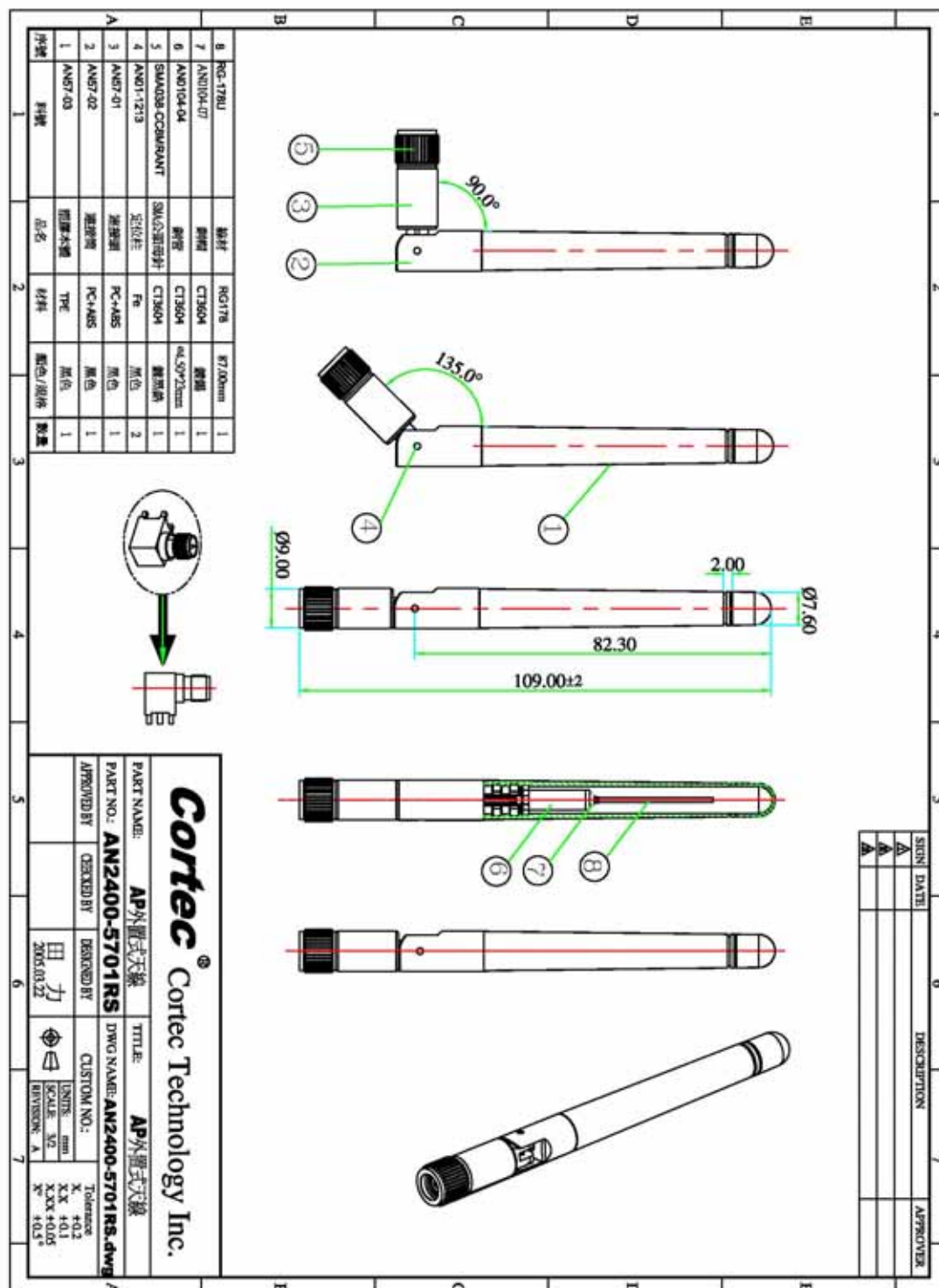
Index:

- 1. Mechanical Dimension Drawing**
- 2. Feature and Application**
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Product Number: AN2400-5701RS
Product Name: 2.4 GHz External Antenna



1. Mechanical Dimension Drawing



2. Feature and Application

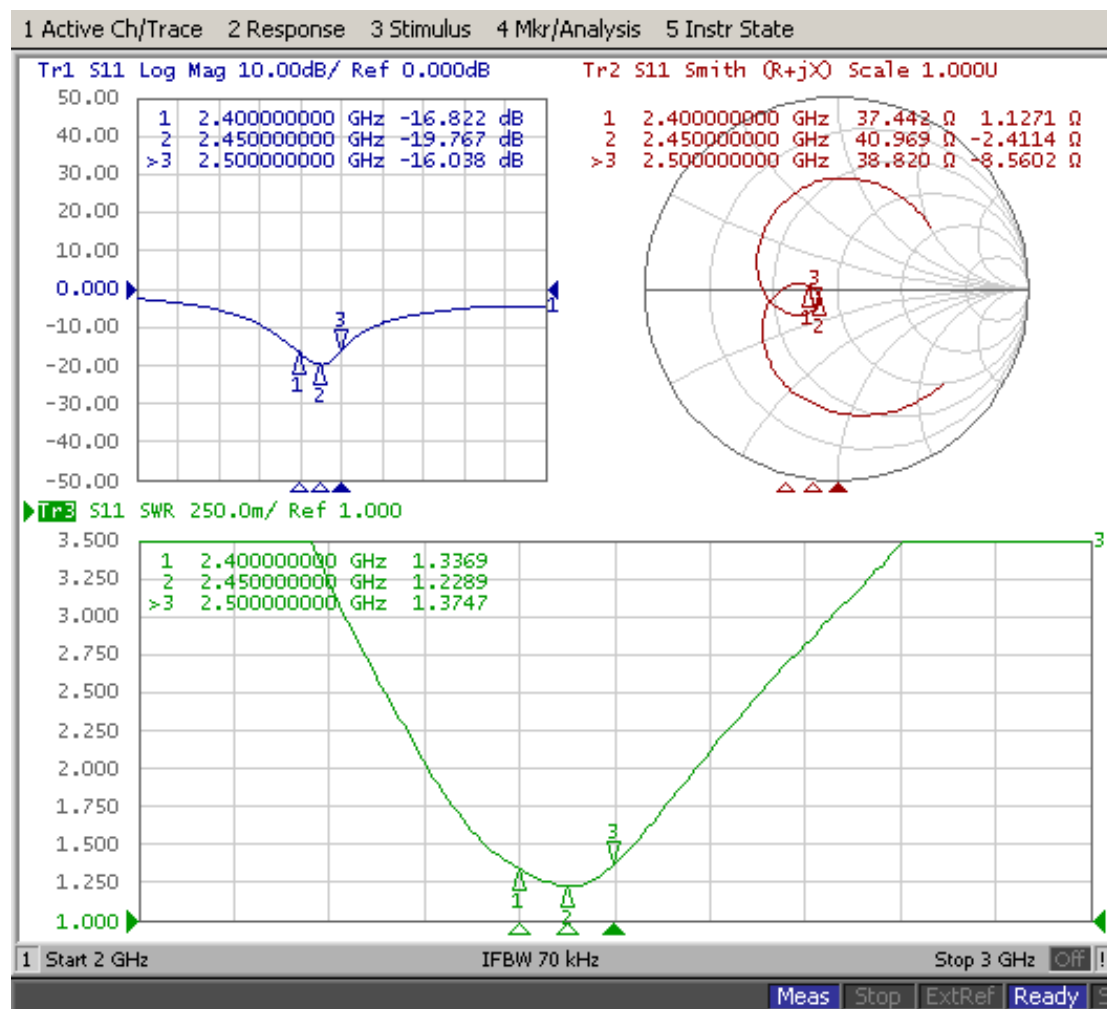
- . dipole antenna design
- . small size / high gain / omni-directional radiation pattern
- . IEEE 802.11 b / g WLAN AP (Access Point) application
- . Bluetooth / HomeRF / ISM Band and other 2.4 GHz wireless communication application

3. Technical Specification

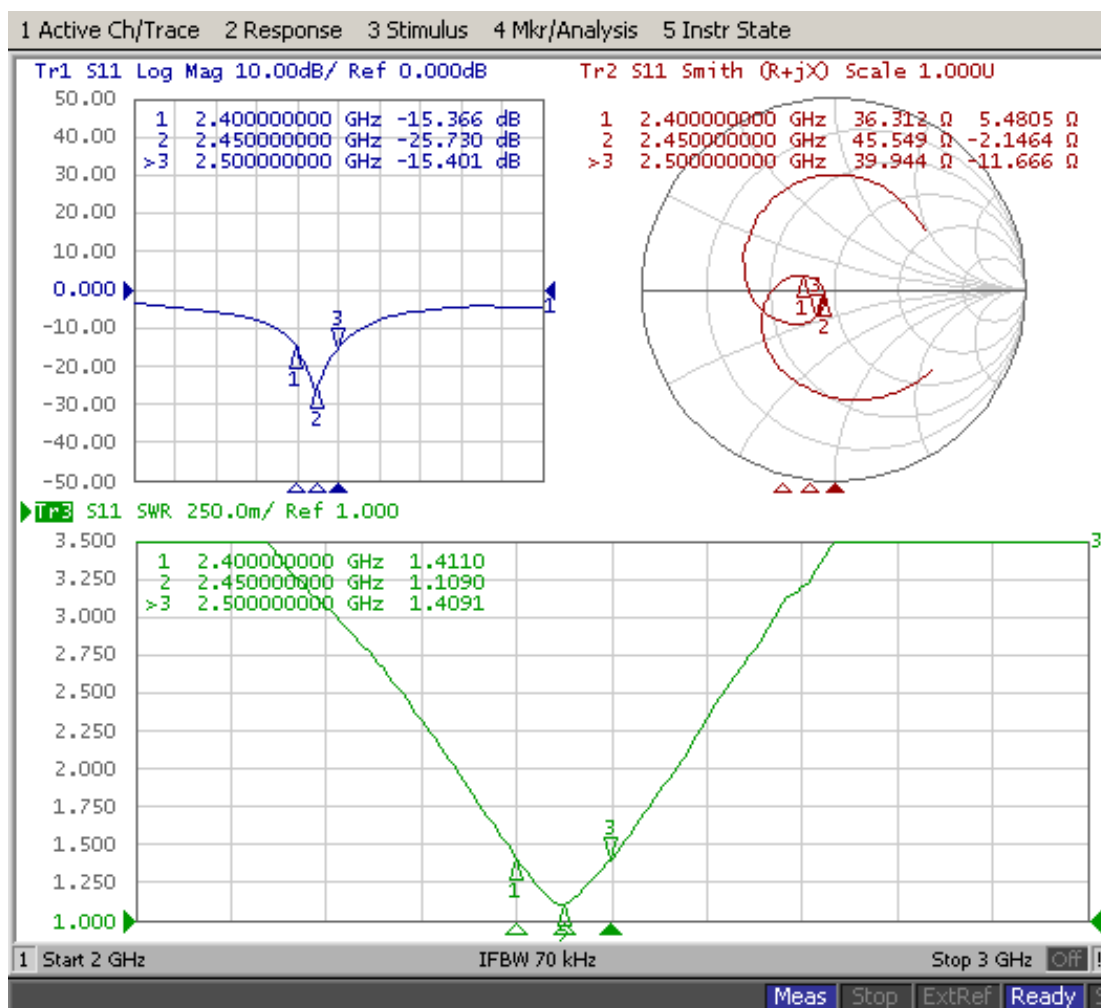
A. Electrical Characteristics	
Working Frequency Range	2400 ~ 2500 MHz
S.W.R.	< 2.0
Antenna Gain (Max)	3.3 dBi
Antenna Radiation Pattern	Omni-directional
Impedance	50 ohm
B. Material	
Color of Outer Cover	Black or (White and Gray)
Material of Outer Cover	TPE
Material of Hinge	PC
Material of Base	PC
Connector Type	50 Ohm SMA Male Reverse Cr plated or (Au plated)
Tube	Copper (CT3604), Sn Plated
Total Length	109 mm
C. Environmental	
Operation Temperature	- 30°C ~ + 85 °C
Storage Temperature	- 30°C ~ + 85°C

4. S11 Return Loss / S.W.R. / Impedance Testing Result

Antenna Hinge is 90 degree



Antenna Hinge is 180 degree



5. Antenna Radiation Pattern

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

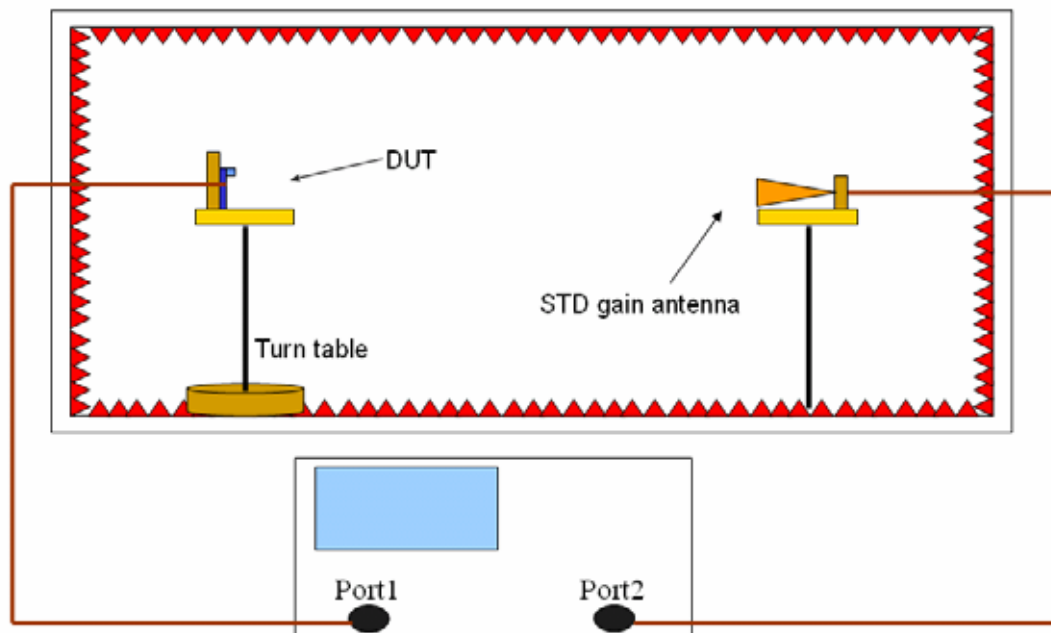
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 8720D

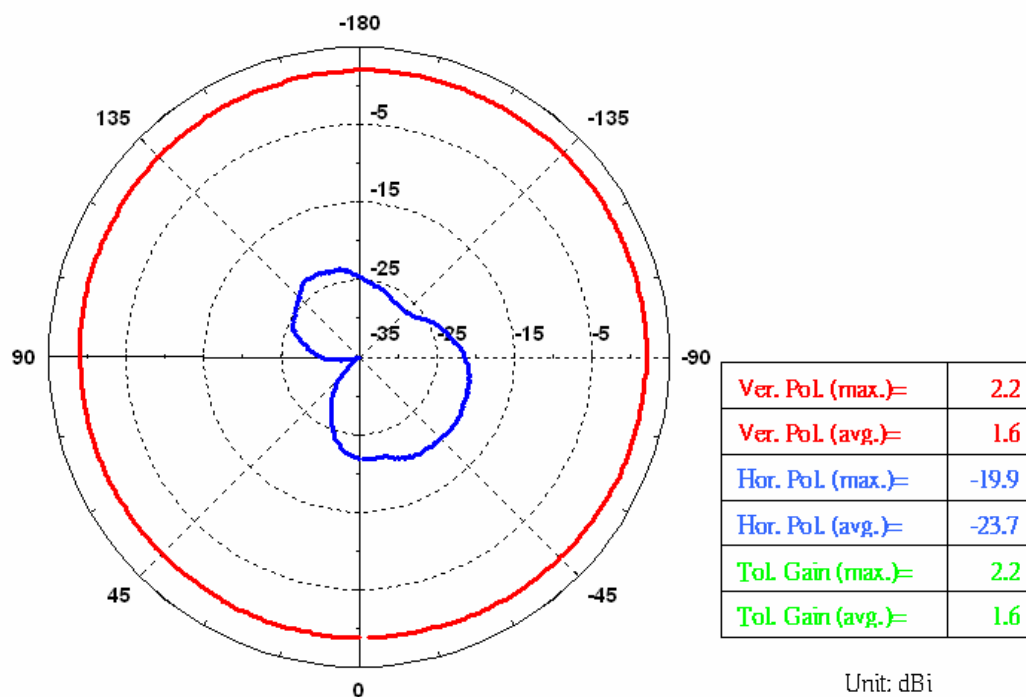
Received Antenna: 0.7~6.0 GHz for Gain Calibration

Double Ridged Horn Antenna

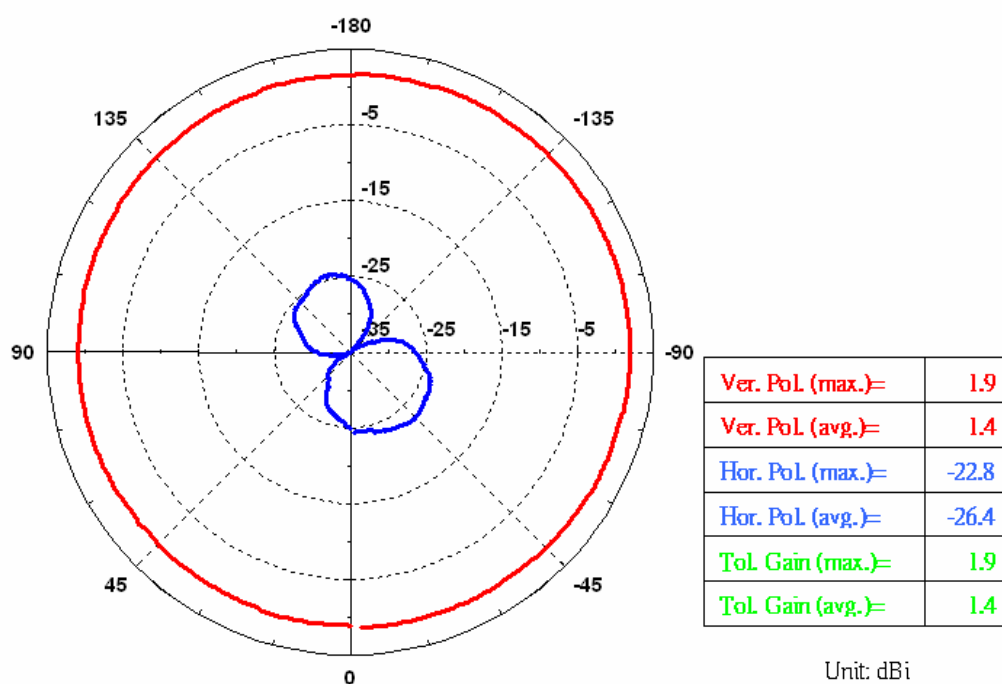


5-1. H-Plane

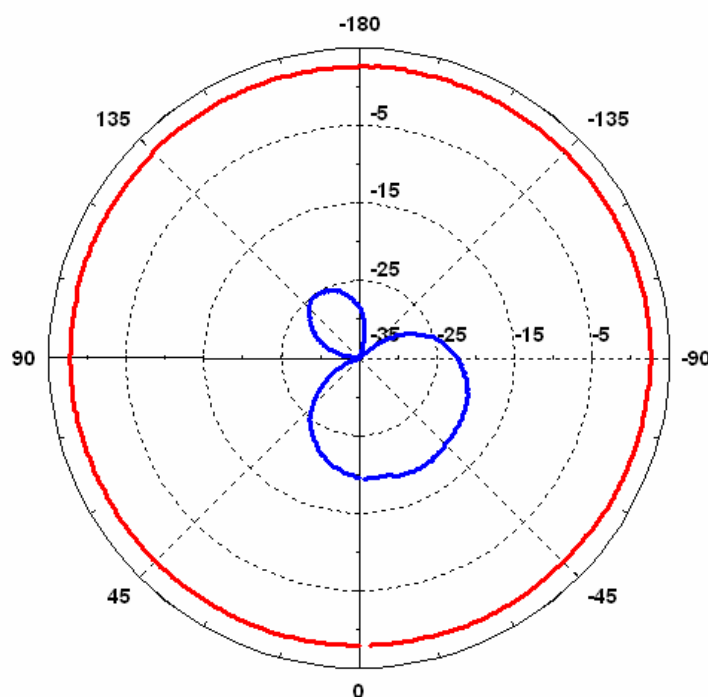
2400MHz Radiation Pattern



2450MHz Radiation Pattern



2500MHz Radiation Pattern

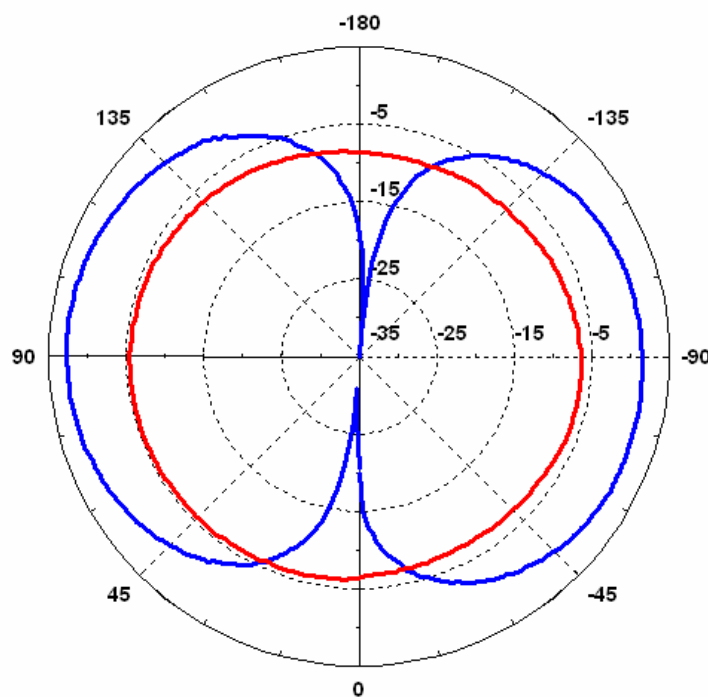


Ver. Pol (max.)=	2.7
Ver. Pol (avg.)=	2.4
Hor. Pol (max.)=	-18.8
Hor. Pol (avg.)=	-23.5
Tot. Gain (max.)=	2.7
Tot. Gain (avg.)=	2.4

Unit: dBi

5-2. E-Plane

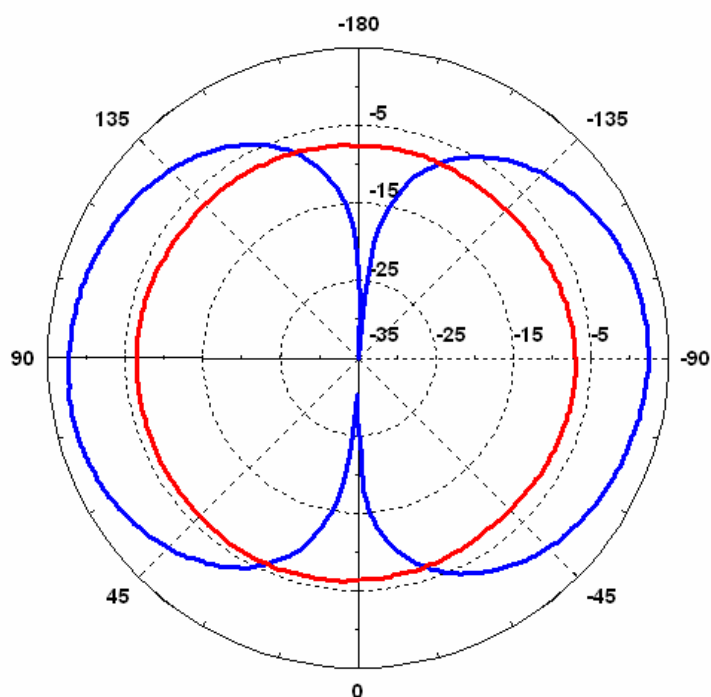
2400MHz Radiation Pattern



Ver. Pol (max.)=	-4.9
Ver. Pol (avg.)=	-6.6
Hor. Pol (max.)=	2.7
Hor. Pol (avg.)=	-0.6
Tot. Gain (max.)=	2.8
Tot. Gain (avg.)=	-0.3

Unit: dBi

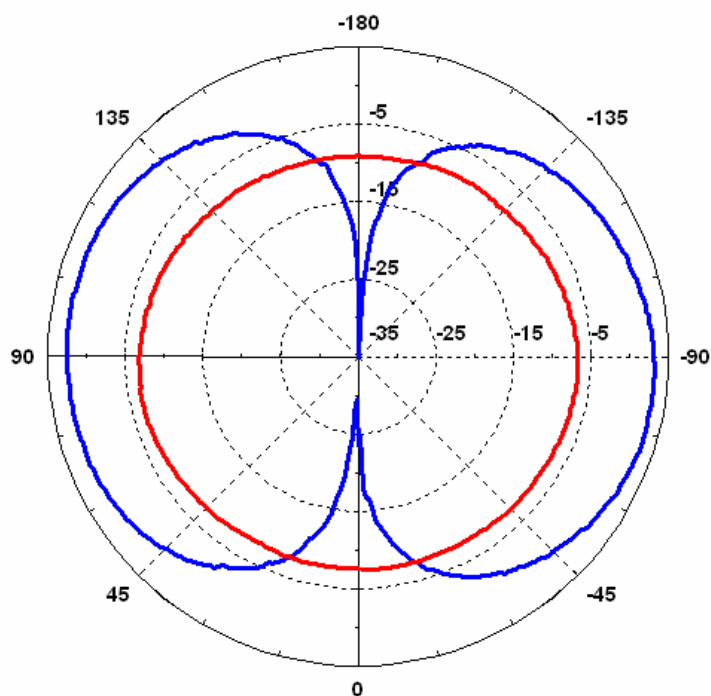
2450MHz Radiation Pattern



Ver. Pol (max.)=	-4.9
Ver. Pol (avg.)=	-6.8
Hor. Pol (max.)=	2.6
Hor. Pol (avg.)=	-0.8
Tot. Gain (max.)=	2.6
Tot. Gain (avg.)=	-0.5

Unit: dBi

2500MHz Radiation Pattern



Ver. Pol (max.)=	-4.9
Ver. Pol (avg.)=	-7.5
Hor. Pol (max.)=	3.2
Hor. Pol (avg.)=	-0.1
Tot. Gain (max.)=	3.3
Tot. Gain (avg.)=	0.1

Unit: dBi

6. Plastic Parts Material Datasheet

TEIJIN POLYCARBONATE SINGAPORE PTE. LTD.

#01-01 111 SAKRA AVE. SINGAPORE 627881 SINGAPORE

Material Designation: L-1250#(f2), L-1250U#, L-1250V#, L-1250Z#

Product Description: Polycarbonate (PC)

Color	Min. thick. (mm)	Flame Class	HWI	HAI	RTL Elec.	RTL Imp.	RTL Str.
ALL	0.40	V-2	4	3	80	80	80
	0.84	V-2	4	3	80	80	80
	1.5	HB	4	0	125	115	125
	3.0	HB	1	0	125	115	125
	6.0	HB	1	0	125	115	125
CXT:2, HVTR:2, D495:5							

Material designation may be suffixed with any one or two letters.

Subjected to one or more of the following tests; Ultraviolet Light,
Water Exposure in accordance with UL 746C, where the
acceptability for outdoor use is to be determined by UL Inc.

Report Date: 1999-07-29

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			

台灣台達化學工業股份有限公司
ABS 通用級(一般用)規格性質一覽表

性 質 Properties			試驗 方法 ASTM	通用級(一般用) General Purpose						
				3000H	3000D	3000	6000	1000	5000	5000s
M E C H A N I C A L	機 械 質	ZOD 沖擊強度 (IZOD Impact Strength)	D256	34 50	30 38	25 33	23 30	21 27	17 21	13 16
		抗張強度-降伏點 (Tensile Strength at Yield)	D638	400	410	380	400	430	460	480
		抗張強度-斷裂點 (Tensile Strength at Break)		340	360	310	340	340	360	380
		伸張率-斷裂點 (Elongation at Break)	D638	60	40	40	30	30	20	20
		抗折強度 (Flexural Yield)	D790	620	600	580	640	700	750	800
		抗折系數 (Flexural Modulus)	D790	21,000	21,000	20,000	22,000	24,000	26,000	30,000
T H E R M A L	熱 性 質	熱變形溫度 (Heat Distortion Temp)	D648	87	86	85	86	87	88	89
		Vicat 軟化溫度 (Vicat Softening Temp)	D1525	102	101	100	101	102	103	104
		流動指數 (Melt Flow index)	D1238	0.5 6.0	1.0 10.0	1.2 12.0	1.6 16.0	1.8 18.0	2.2 20.0	2.1 19.0
		燃燒性 (Flammability)	UL-94	94HB	94HB	94HB	94HB	94HB	94HB	94HB
E L E C T R I C A L	電 氣 性	相對溫度指數 (Relative Temp index)	UL-746B	-	-	60	60	60	60	60
		抗熱線燃燒性 (High Current Arc ignition)	UL-746A	-	-	15	13	17	18	15
		抗電弧性 (High Current Arc ignition)	UL-746A	-	-	200	200	200	200	15
		電弧產生速率 (Arc Tracking Rate)	UL-746A	-	-	0	0	0	0	0
O T H E R S	其 他	比重 (Specific Gravity)	D792	1.03	1.03	1.03	1.03	1.03	1.03	1.04
		硬度 (Rockwell Hardness)	D785	103	102	100	107	110	115	119
		成型收縮 (Mold shrinkage)	D955	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		吸水率 (Water Absorption)	D570	0.3	0.3	0.3	0.3	0.3	0.3	0.3

7. Metal Parts Material Datasheet

Copper Datasheet

合金編號 Copper Alloy CN & JIS No.	化學成分 Composition (%)									
	銅 Cu	鉛 Pb	鐵 Fe	錫 Sn	鋅 Zn	鋁 Al	錳 Mn	鎳 Ni	磷 P	銅+鋁+鐵 +錳+鎳 Cu+Al+Fe +Mn+Ni
C3501	60.0~64.0	0.7~1.7	0.2 以下 0.2max	Fe+Sn 0.4 以下 0.4max	殘余 Rem					
C3601	59.0~63.0	1.8~3.7	0.3 以下 0.3max	Fe+Sn 0.5 以下 0.5max	殘余 Rem					
C3602	59.0~63.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3603	57.0~61.0	1.8~3.7	0.35 以下 0.35max	Fe+Sn 0.6 以下 0.6max	殘余 Rem					
C3604	57.0~61.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3605	57.0~60.0	3.5~4.5	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3712	58.0~62.0	0.26~1.2	Fe+Sn 0.8 以下 0.8max		殘余 Rem					
C3771	57.0~61.0	1.0~2.5	Fe+Sn 1.0 以下 1.0max		殘余 Rem					
合金種類 Alloy CN & JIS No.	符號 Symbol	別類 Name	特性用途 Speciality and Utilities							
C3501	線(B)	Nipple 用黃銅 Nipple Using Brass	切削性、冷間鍛造性良好 機車、腳踏車、腳踏車用接頭螺帽 Excellent Cold Forging and Good Machine-ability Use Motorcycle and Bicycle Join Nut...							
C3601	(B)	快削黃銅 Free Cutting Brass	切削性良好，C3601,C3602 延展性也良好，電腦、電子、釣具、筆、燈飾、螺絲、小螺帽、齒輪、凡而、照相機各種五金零件 Excellent Machine-ability and C3601, C3602 Good Excellent to Use Computer, Electronic, Clock, Pen, Light and Fishing, Nut, Gear, Valve Camera Parts, Hardware Parts...							
C3602	(A)									
	(B)									
C3603	(B)									
C3604	(A)									
	(B)									
C3605	(A)									
	(B)									
C3712	(A)	Forging Brass	熱間性良好，精密鍛造亦適合機械零組件。 熱間鍛造性和切削性均佳，凡而，表殼，機械零件等 Excellent Hot Forging Uses Precision Forging, Machine Parts, Excellent Hot Forging and Good Machine-ability .							
	(B)									
C3771	(A)		Using Value, Watch, Machine Parts...							
	(B)									

東旭(迅昇集團)金屬表面處理有限公司

TEL: (0769)5565111

FAX (0769)5562446

CMI SmartLink Pro 讀數

App Name: CORTEC

數據	10 ^ -6 (Unit: inch)	日期/時間
1	3.91	2004/5/5 05:55
2	3.56	2004/5/5 05:55
3	3.38	2004/5/5 05:56
4	3.18	2004/5/5 05:57
5	3.57	2004/5/5 05:57
6	3.92	2004/5/5 05:58

To: 康碩康捷/ CORTEC

貴司物料: 鍍金金屬

經 X-RAY 膜厚測試儀測試

測試結果: 鍍層厚度已符合貴司要求

測試員	周慧
審核	李群英
確認	魏魯建

TONG HSU ENTERPRISE CO.LTD.-Machine: 98607 05:58, Wed, 2004-05-05

8. 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 cooper
	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 cooper
	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 (DC ~ 6GHz)	< 1.3	
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 Voltage	200°C / 30V	
13. Conductor Resistance	335 ohm / KM / 20°C max.	
14. Dielectric Resistance	3 G ohm / KM / 20°C min.	

9. 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); 120 cycles	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < $\pm 5\%$
3. Damp Heat	500 hours at 60°C; 90 ~ 95% RH	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < $\pm 5\%$
4. Endurance	500 hours at 90°C	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < $\pm 5\%$

Product Number: AN2400-5701RS
Product Name: 2.4 GHz External Antenna



10. SGS Test Report



Test Report

No.: GZSC0404132891LP

Date: APR 28, 2004

Page 1 of 1

DONGGUAN DONGXU METAL SURFACE HANDLE CO., LTD.
LUDONG INDUSTRY DISTRICT, HUMEN TOWN,
DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

Report on the submitted sample said to be NICKLE CHEMISTRY LIQUID MEDICINE (銀離子液)

SGS Ref. No. : SZ040404176EC-16.16
Buyer : SONY
Sample Receiving Date : APR 23, 2004
Testing Period : APR 25, 2004 To APR 28, 2004

Test Requested : As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium Content in the submitted sample

Test Method : Lead, Cadmium & Mercury content-In-house method
Hexavalent Chromium content-with reference to EPA 3060A&EPA 7196A
Analysis was performed by Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES)/UV-VIS Spectrophotometer

Results :	Green liquid
Lead content (Pb)	N.D.
Cadmium Content (Cd)	N.D.
Mercury Content (Hg)	N.D.
Hexavalent Chromium Content<Cr (VI)>	N.D.

Note + N.D. = Not Detected (<2ppm)
-ppm = mg/L

*** End of Report ***

Signed for and on behalf of
SGS-CSTC Ltd.

He Xiaoyan, Jane
Tech. Manager

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined there. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only, this test report shall not be reproduced except in full, without approval of the Company.

GZCM134015

SGS-CSTC Standards Technical Service Co., Ltd.
Guangzhou Branch/Chemical Laboratory

4F Block II YUJING Industrial Park Ling Shan Road, Zhu Cui Ding, Puzhou, Taishan District, Guangzhou, China 510000 (86-20) 21850000 (86-20) 21850001 www.sgs.com
中國廣州天可區江門路村園工業園八樓四樓 郵政編碼510660 (86-20) 21850000 (86-20) 21850001 www.sgs.com

Member of SGS Group (Societe Generale de Surveillance)

SGS

Test Report

No: GZSCR040100230/LP Date: JAN 08, 2004 Page 1 of 1

KAI BO WIRE & CABLE (SHEN ZHEN) CO, LTD
QIAO HERD, BK1, TONG FU YU ZONE
FU YONG TOWN, BAO'AN, SHEN ZHEN
GUANG DONG, CHINA

Report on the submitted sample said to be N813 (外鍍料)

SGS Ref. No. : SZ040100040EC-14.12
Buyer : SONY 供應商
Supplier : KAI JIE
Manufacturer : KAI JIE
Sample Receiving Date : JAN 05, 2004
Testing Period : JAN 05, 2004 To JAN 06, 2004

Test Requested : As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium Content in the submitted sample

Test Method : Lead Content-With reference to EPA method 3050B, 1996.
Cadmium content -with reference to EN1122, 2001 method B
Analysis was performed by Atomic Absorption Spectrometer
(ICP-AES) / UV-VIS Spectrophotometer

Results :	<u>Black plastic sheet</u>
Lead content (Pb) (ppm)	6
Cadmium Content (Cd)	N.D.
Note + N.D. = Not Detected (<2ppm)	
-ppm = mg/kg	
-Results shown are of the total weight of dry sample	

*** End of Report ***

Signed for and on behalf of
SGS-CSTC Ltd.

He Xiaoyan, Jane
Tech, Manager

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GZCM142401

SGS-CSTC Standards Technical Service Co. Ltd. 4R2 Road (YUJING Industrial Park) Ling Shui Road, Zhu Cui Dong, Fu Ping, Jiahe District, Guangzhou, China 510662 86-20-82193200 86-20-82193558 www.sgs.com
Guangzhou Branch Chemical Laboratory 中國廣州天可地產化學分析中心 廣州分廠 電話 510660 86-20-82193200 86-20-82193558 www.sgs.com

Member of SGS Group (Societe Generale de Surveillance)

Product Number: AN2400-5701RS
Product Name: 2.4 GHz External Antenna



11. Ordering Information

Part Number	Color	Connector
AN2400-5701RS	Black	SMA Male Reverse, Cr plated
AN2400-5701SM	Black	SMA Male, Cr plated
AN2400-5702RS	White	SMA Male Reverse, Cr plated
AN2400-5702SM	White	SMA Male, Cr plated
AN2400-5703RS	White	SMA Male Reverse, Au plated
AN2400-5703SM	White	SMA Male, Au plated
AN2400-5704RS	Gray (428C)	SMA Male Reverse, Cr plated
AN2400-5704SM	Gray (428C)	SMA Male, Cr plated

綠色產品聲明書

供應商基本資料

填表日期：2005/12/09 供應(代理)商名稱：英碩企業股份有限公司

(若貴公司為代理商，則請填寫上原廠商公司完整名稱) 公司(原廠)名稱：康捷電子有限公司

填表人：陳家仁 單位：業務部 職稱：經理

供應品基本資料

送樣種類：☒ 單料承認 ☐ 系列承認

該料(該系列)是否曾經進貨入庫：☐ 是，訊舟料號： ☒ 否。

單料承認請續填料品基本資料，系列承認請附上「系列料品基本資料」

料品編號：AN2400-5701RS 料品名稱：2.4G Antenna(黑) with SMA

料品狀態保證：

- ☐ A1：無鉛，但不符合 RoHS，未來也不提供符合 RoHS 的產品。
- ☐ A2：無鉛，但不符合 RoHS，預計： 年 月 日起供應符合 RoHS 的產品。
- ☐ B1：符合 RoHS，但無物質分析報告。預計： 年 月 日起補提供分析報告。
- ☒ B2：符合 RoHS，需檢附物質分析報告(第三公證單位)
- ☐ C：其他，請詳細說明：

正式聲明

本公司，供應予 訊舟科技以上之產品、零件、原物料、包裝材，皆如上所述，無任何隱匿。若本公司發現有違反事項，應立即通知 訊舟科技相關內容，並全力協助 訊舟科技採取補救措施。若本公司違反上述事項或故意隱匿，導致 訊舟科技名譽或產品損害時，則本公司應擔負所有損害賠償。

此聲明書連同本公司提供之承認書一併附上。

填表人簽名：陳家仁 公司用印：



產品規格承認書

Specification For Approval

日期：2006 / 04 / 24

Date

編號：060424007

File No.

版本：A

Revision

承認廠商：突破通訊科技股份有限公司

Customer

製造廠商：英碩科技股份有限公司

Manufacturer

型號品名：I-PEX/ MHF to SMA Female Reverse with

Part Number

Description O.D. 1.13mm Cable

INVAX P/N : R-SMASFR8-3110A-00X000-2

廠商審核：

Approved By

Invax

英碩科技股份有限公司

台北市忠孝東路五段 815 號 4 樓

Tel: 886-2-2788-5218 Fax: 886-2-2783-1658

Cortec

東莞康捷電子有限公司

廣東省東莞市長安鎮振安路

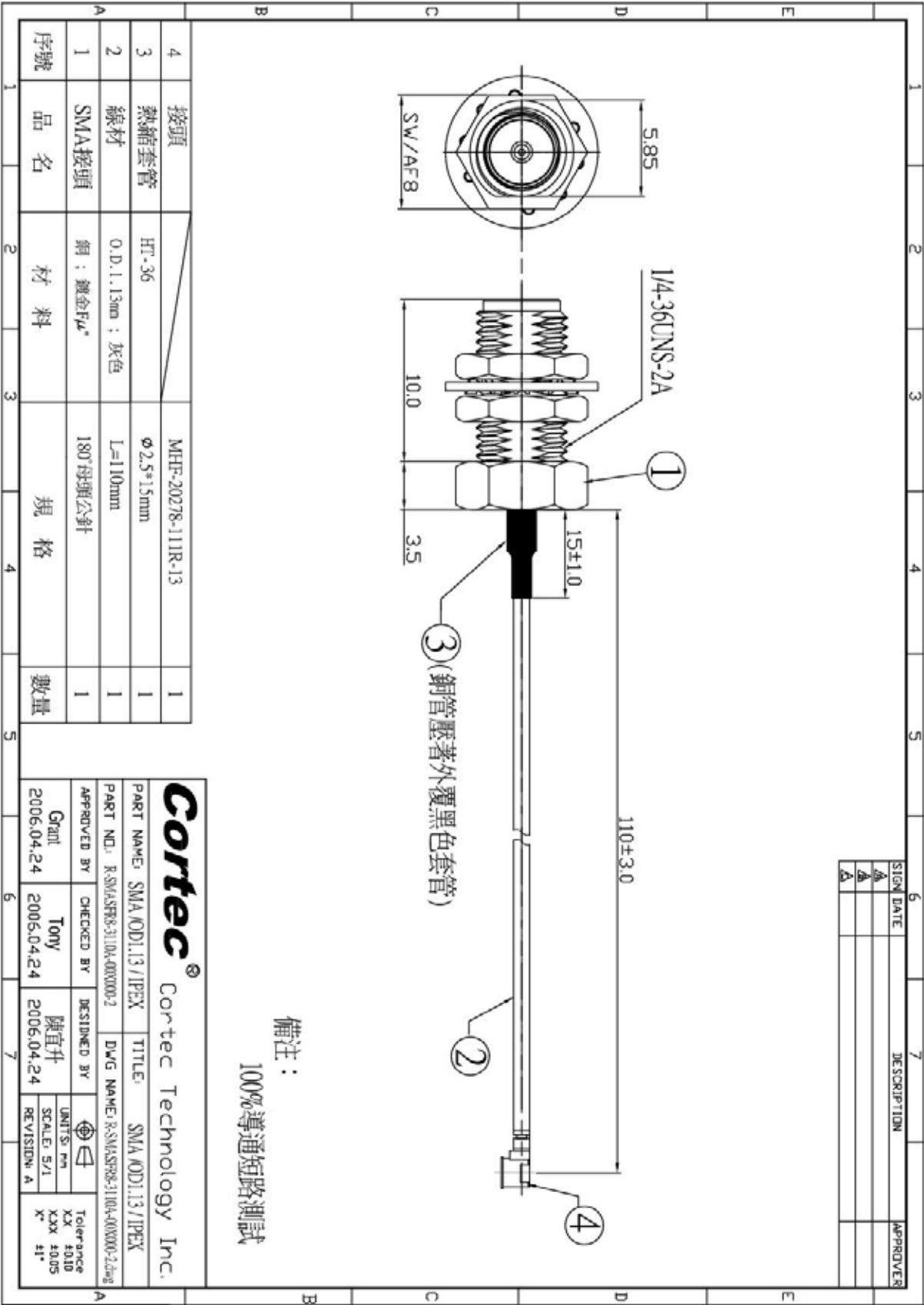
沙頭段咸西工業區

Tel: 86-769-85388261 Fax: 86-769-85397133

Product Number 產品料號	R-SMASFR8- 3110A-00X000-2	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
Index: 1. Drawing of Mechanical and Dimension/..... Page 1 工程規格尺寸定義 2. Specification/..... Page 2 規格 3. Reliability Testing/..... Page 3 可靠度測試 4. O.D. 1.13mm Coaxial Cable Data Sheet/ O.D. 1.13mm 同軸線材材質規格 4-1. Data Sheet/ 材質與規格 Page 4 4-2. S Parameter Testing Data/ S 參數規格 Page 5 5. I-PEX MHF 20278 -111R-13 Coaxial Connector Data Sheet/ ... Page 6 I-PEX MHF 20278-111R-13 同軸接頭材質規格 6. Coaxial Connector Data Sheet/ Page 7~8 同軸接頭材質規格			

Product Number 產品料號	R-SMASFR8-3110A-00X000-2	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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1. Drawing of Mechanical and Dimension



Product Number 產品料號	R-SMASFR8- 3110A-00X000-2	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
2. Specification			
A. Material List			
1. Coaxial Cable Type/ 同軸線材種類		O.D. 1.13 mm	
2. Length of Coaxial Cable/ 同軸線材長度		110 mm	
3. Color of Coaxial Cable/ 同軸線材顏色		Gray 灰色	
		SMA Female Reverse	
5. Material of Connector 1/ 接頭材料		Gold (Au) -coated Cooper Thickness: 3E-6 (inch) or 76.2E-6 (mm) 青銅，鍍金 鍍金厚度: 3E-6 (inch) or 76.2E-6 (mm)	
6. Connector 2 Type/ 接頭種類		I-PEX MHF 20278-111R-13	
7. Material of Connector 2/ 接頭材料		Gold (Au) -coated Cooper Thickness: 3E-6 (inch) or 76.2E-6 (mm) 青銅，鍍金 鍍金厚度: 3E-6 (inch) or 76.2E-6 (mm)	
8. Other Parts		None	
B. Electrical Testing Data			
9. Application Frequency Range/ 適用頻率範圍		DC ~ 6GHz	
10. V.S.W.R. 駐波比		< 1.3 @ DC ~ 3.0 GHz < 1.8 @ 3.0 ~ 6.0 GHz	
11. S11 Return Loss 返回損失		> 20dB @ DC ~ 3.0 GHz > 12dB @ 3.0 ~ 6.0 GHz	
12. Impedance 特性阻抗		50 ohm	
13. Operation Temperature Range 操作溫度範圍		- 40 degree C ~ + 90 degree C	
14. Maximum Power 適用最大功率		33dBm / 2 W	
15. Pull Strength of I-PEX MHF 20278-111R-13 拉力測試		<= 0.4 Kgw	
16. Pull Strength of Connector 拉力測試		<= 3.0 Kgw	

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Product Number
產品料號

R-SMASFR8-
3110A-00X000-2

Product Name
產品名稱

I-PEX/ MHF to SMA Female Reverse with
O.D. 1.13mm Cable

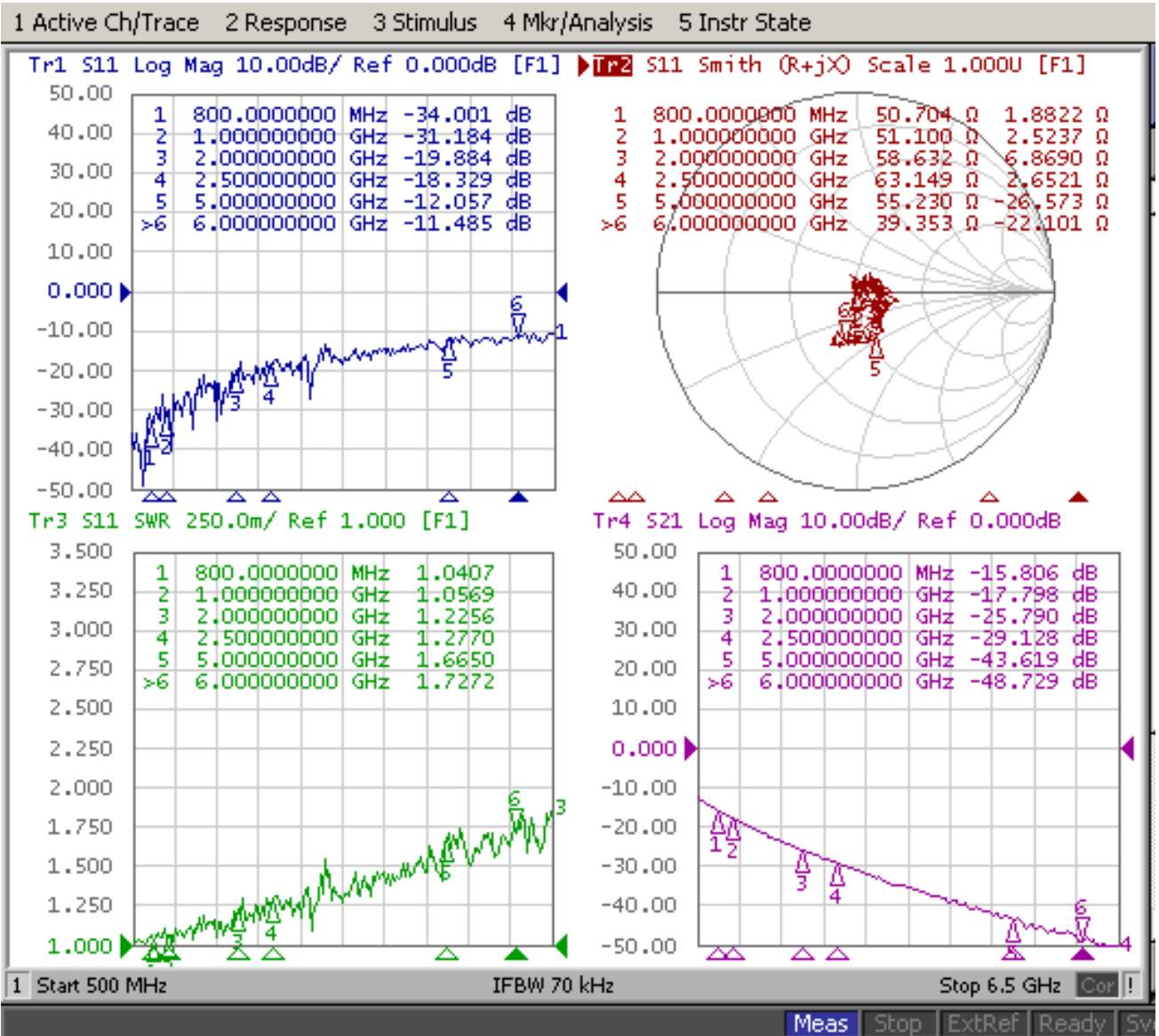
3. Reliability Testing

Test Item	Test Condition	Request
1. Low Temperature 低溫試驗	Temp.: -40 degree C Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
2. High Temperature 高溫試驗	Temp.: +90 degree C Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
3. Rapid of changing temperature 冷熱衝擊	-40 degree C (30 min) +90 degree C (30 min) 120 cycles	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
4. Damp Heat 恆溫恆濕	Temp.:+40 degree C Humidity: 90 % Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
5. Salt Moist 鹽霧試驗	5% Salt water Time: 48 hrs Recover Time: 2hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%

Product Number 產品料號	R-SMASFR8- 3110A-00X000-2	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable																																																																											
4-1. Data Sheet <table><tr><td colspan="3">O.D. 1.13 mm (AWG32) Coaxial Cable Specification</td></tr><tr><td>1. Cable Type</td><td colspan="2">O.D. 1.13 mm (AWG32)</td></tr><tr><td>2. Impedance</td><td colspan="2">50 ± 3 ohm</td></tr><tr><td rowspan="4">3. Inner Conductor</td><td>Material</td><td>silver-coated cooper</td></tr><tr><td>Conductor Numbers</td><td>7</td></tr><tr><td>Conductor Size</td><td>0.08 mm</td></tr><tr><td>Outer Diameter</td><td>0.24 mm</td></tr><tr><td rowspan="4">4. Dielectric Layer</td><td>Material</td><td>FEP</td></tr><tr><td>Color</td><td>Clear</td></tr><tr><td>Average Thickness</td><td>0.22 mm</td></tr><tr><td>Diameter</td><td>0.68 mm</td></tr><tr><td rowspan="3">5. Braid (Shielding)</td><td>Material</td><td>tin-coated cooper</td></tr><tr><td>Construction</td><td>16-4-0.05 mm</td></tr><tr><td>Coverage</td><td>90 %</td></tr><tr><td rowspan="4">6. Outer Cover</td><td>Material</td><td>FEP</td></tr><tr><td>Color</td><td>Black / white / gray</td></tr><tr><td>Average Thickness</td><td>0.10 mm</td></tr><tr><td>Diameter</td><td>1.13 ± 0.05 mm</td></tr><tr><td>7. V.S.W.R. Testing</td><td colspan="2">< 1.3</td></tr><tr><td rowspan="5">8. Attenuation (dB / 1 meter)</td><td>100 MHz</td><td>0.60</td></tr><tr><td>400 MHz</td><td>1.25</td></tr><tr><td>1800 MHz</td><td>2.23</td></tr><tr><td>2400 MHz</td><td>2.70</td></tr><tr><td>5200 MHz</td><td>4.15</td></tr><tr><td>9. Capacitance</td><td colspan="2">97 ± 3 (pF / meter)</td></tr><tr><td>10. Maximum Power</td><td colspan="2">33 dBm</td></tr><tr><td>11. Spark Test</td><td colspan="2">500 V</td></tr><tr><td>12. Rating Temp. and Voltage</td><td colspan="2">200°C / 30V</td></tr><tr><td>13. Conductor Resistance</td><td colspan="2">520 ohm / KM / 20°C max.</td></tr><tr><td>14. Dielectric Resistance</td><td colspan="2">1500 M ohm / KM / 20°C min.</td></tr></table>				O.D. 1.13 mm (AWG32) Coaxial Cable Specification			1. Cable Type	O.D. 1.13 mm (AWG32)		2. Impedance	50 ± 3 ohm		3. Inner Conductor	Material	silver-coated cooper	Conductor Numbers	7	Conductor Size	0.08 mm	Outer Diameter	0.24 mm	4. Dielectric Layer	Material	FEP	Color	Clear	Average Thickness	0.22 mm	Diameter	0.68 mm	5. Braid (Shielding)	Material	tin-coated cooper	Construction	16-4-0.05 mm	Coverage	90 %	6. Outer Cover	Material	FEP	Color	Black / white / gray	Average Thickness	0.10 mm	Diameter	1.13 ± 0.05 mm	7. V.S.W.R. Testing	< 1.3		8. Attenuation (dB / 1 meter)	100 MHz	0.60	400 MHz	1.25	1800 MHz	2.23	2400 MHz	2.70	5200 MHz	4.15	9. Capacitance	97 ± 3 (pF / meter)		10. Maximum Power	33 dBm		11. Spark Test	500 V		12. Rating Temp. and Voltage	200°C / 30V		13. Conductor Resistance	520 ohm / KM / 20°C max.		14. Dielectric Resistance	1500 M ohm / KM / 20°C min.	
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4-2. S Parameter Testing Data

Return Loss/ S.W.R./ Impedance/ Insertion Loss



Product Number
製品料號

R-SMASFR8-
3110A-00X000-2

Product Name
產品名稱

I-PEX/ MHF to SMA Female Reverse with
O.D. 1.13mm Cable

5. I-PEX/ MHF 20278-111R-13

Coaxial Connector Data Sheet

GENERAL TOLERANCE	
6 MAX. ± 0.2	
6 OVER MAX. 30 ± 0.3	
30 OVER MAX. 120 ± 0.5	
ANGLE $\pm 2^\circ$	

FORM REV. 4

Notes

1. Material
(1) Housing : PBT, UL94V-0, black
(2) Contact
Phosphor bronze
gold plating 0.1 μ m MIN.
over nickel 1.27 μ m MIN.
(3) Ground contact
Phosphor bronze
gold plating 0.05 μ m MIN.
over nickel 1.27 μ m MIN.
2. Packing : reel
3. Mating partner Part No.
: 20279-001E-01
4. Permissible load of cable at mating

1. 材料
(1) ハウジング:PBT, UL94V-0, 黒色
(2) コンタクト
銅合金
金メッキ0.1 μ m MIN.
下地 ニッケル1.27 μ m MIN.
(3) グランドコンタクト
銅合金
金メッキ0.05 μ m MIN.
下地 ニッケル1.27 μ m MIN.
2. 梱包 : リール
3. mating 相手 Part No.
: 20279-001E-01
4. コネクタ結合後のケーブルに対する荷重

5. Suggestions for mating & unmating operation.

5-1 Mating.
Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle.
As excessive slant angle mating may break the connector, please don't do it.

5. コネクタ結合および抜去時の注意

5-1 コネクタ挿入時
PlugとReceptacleの軸を合わせ、できるだけ垂直に挿入して下さい。
極端な斜め挿入は行わないで下さい。
コネクタ破損の原因となりますので、過度なこじり挿入は行わないで下さい。

5-2 Unmating.
(1) In case of unmating by pulling tool.
Please use the following drawings, and please pull plug to vertical direction as directly as possible.

5-2 コネクタ抜去時
(1) 抜き工具を用いる場合
下図のようにできるだけ垂直に引き抜いて下さい。

(2) In case of unmating directly by hand
Please catch the catching area of plug, and please pull plug to vertical direction as directly as possible.

(2) 手で直接引き抜く場合
下図の保持部分を掴み、できるだけ垂直に引き抜いて下さい。

5-3 Crimp over standards of outer conductor
Standards: Less than 10% from total numbers of outer conductor (Numbers of outer conductor's crimp over from outer conductor's barrel)

5-3 外部導体はみだし量
外部導体はみだし量規定 : 外部導体総数に対する10%以下 (外部導体バレルの外にはみ出した量)

5-4 Caution about Heat shrinkage tubes
Please be careful not to melt housing when using heat shrinkage tubes.
It will become cause of open circuit.

5-4 熱収縮チューブについて
熱収縮チューブを外部導体を通う場合は、導体不良の原因になりますので、熱によりハウジングを溶融させないよう注意してください。

DESIGN'D BY DATE
CHK'D BY DATE
REV. ECN BY DATE APP
REV. RECORD
SERIES No. 2814
CUSTOMER COPY PRODUCTION SCALE UNIT Dwg. No. 20278 SHEET REV. 3/3 13C

TITLE
I-PEX Interconnect
MHF series micro coaxial connector plug
vertical (ground contact : gold plating)
TOKYO, JAPAN

Product Number 產品料號	R-SMASFR8- 3110A-00X000-2	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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6. Coaxial Connector Data Sheet

Copper Datasheet

合金編號 Copper Alloy CN & JIS No.	化學成分 Composition (%)									
	銅 Cu	鉛 Pb	鐵 Fe	錫 Sn	鋅 Zn	鋁 Al	錳 Mn	鎳 Ni	磷 P	銅+鋁+鐵 +錳+鎳 Cu+Al+Fe +Mn+Ni
C3501	60.0~64.0	0.7~1.7	0.2 以下 0.2max	Fe+Sn 0.4 以下 0.4max	殘余 Rem					
C3601	59.0~63.0	1.8~3.7	0.3 以下 0.3max	Fe+Sn 0.5 以下 0.5max	殘余 Rem					
C3602	59.0~63.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3603	57.0~61.0	1.8~3.7	0.35 以下 0.35max	Fe+Sn 0.6 以下 0.6max	殘余 Rem					
C3604	57.0~61.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3605	57.0~60.0	3.5~4.5	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3712	58.0~62.0	0.26~1.2	Fe+Sn 0.8 以下 0.8max		殘余 Rem					
C3771	57.0~61.0	1.0~2.5	Fe+Sn 1.0 以下 1.0max		殘余 Rem					
合金種類 Alloy CN & JIS No.	符號 Symbol	別類 Name	特性用途 Speciality and Utilities							
C3501	線(B)	Nipple 用黃銅 Nipple Using Brass	切削性、冷間鍛造性良好 機車、腳踏車、腳踏車用接頭螺帽 Excellent Cold Forging and Good Machine-ability Use Motorcycle and Bicycle Join Nut...							
C3601	(B)	快削黃銅 Free Cutting Brass	切削性良好，C3601,C3602 延展性也良好，電腦、電子、釣具、筆、燈飾、螺絲、小螺帽、齒輪、凡而、照相機各種五金零件 Excellent Machine-ability and C3601, C3602 Good Excellent to Use Computer, Electronic ,Clock, Pen, Light and Fishing, Nut, Gear, Valve Camera Parts, Hardware Parts...							
C3602	(A)									
	(B)									
C3603	(B)									
C3604	(A)									
	(B)									
C3605	(A)									
	(B)									
C3712	(A)	Forging Brass	熱間性良好，精密鍛造亦適合機械零組件。 熱間鍛造性和切削性均佳，凡而，表殼，機械零件等 Excellent Hot Forging Uses Precision Forging, Machine Parts, Excellent Hot Forging and Good Machine-ability . Using Value, Watch, Machine Parts...							
	(B)									
C3771	(A)									
	(B)									

Product Number
產品料號

R-SMASFR8-
3110A-00X000-2

Product Name
產品名稱

I-PEX/ MHF to SMA Female Reverse with
O.D. 1.13mm Cable

東旭(迅昇集團)金屬表面處理有限公司

TEL: (0769)5565111

FAX (0769)5562446

CMI SmartLink Pro 讀數

App Name: CORTEC

數據	10 ⁻⁶ (Unit: inch)	日期/時間
1	3.91	2005/8/5 05:55
2	3.56	2005/8/5 05:55
3	3.38	2005/8/5 05:56
4	3.18	2005/8/5 05:57
5	3.57	2005/8/5 05:57
6	3.92	2005/8/5 05:58

To: 康碩康捷/ CORTEC

貴司物料: 鍍金金屬

經 X-RAY 膜厚測試儀測試

測試結果: 鍍層厚度已符合貴司要求

測試員	周慧
審核	李群英
確認	魏魯建

TONG HSU ENTERPRISE CO.LTD.-Machine: 98607 05:58, Wed, 2005-08-05

產品規格承認書

Specification For Approval

日期：2006 / 08 / 08

Date

編號：060808010

File No.

版本：1.0

Revision

承認廠商：突破通訊科技股份有限公司

Customer

製造廠商：英碩科技股份有限公司

Manufacturer

型號品名 I-PEX/ MHF to SMA Female Reverse with

Part Number

Description

O.D. 1.13mm Cable

INVAX : SMASFR8-3200A-00X003

廠商審核：

Approved By

Invax

英碩科技股份有限公司

台北市忠孝東路五段 815 號 4 樓

Tel: 886-2-2788-5218 Fax: 886-2-2783-1658

Cortec

東莞康捷電子有限公司

廣東省東莞市長安鎮振安路
沙頭段咸西工業區

Tel: 86-769-85388261 Fax: 86-769-85397133

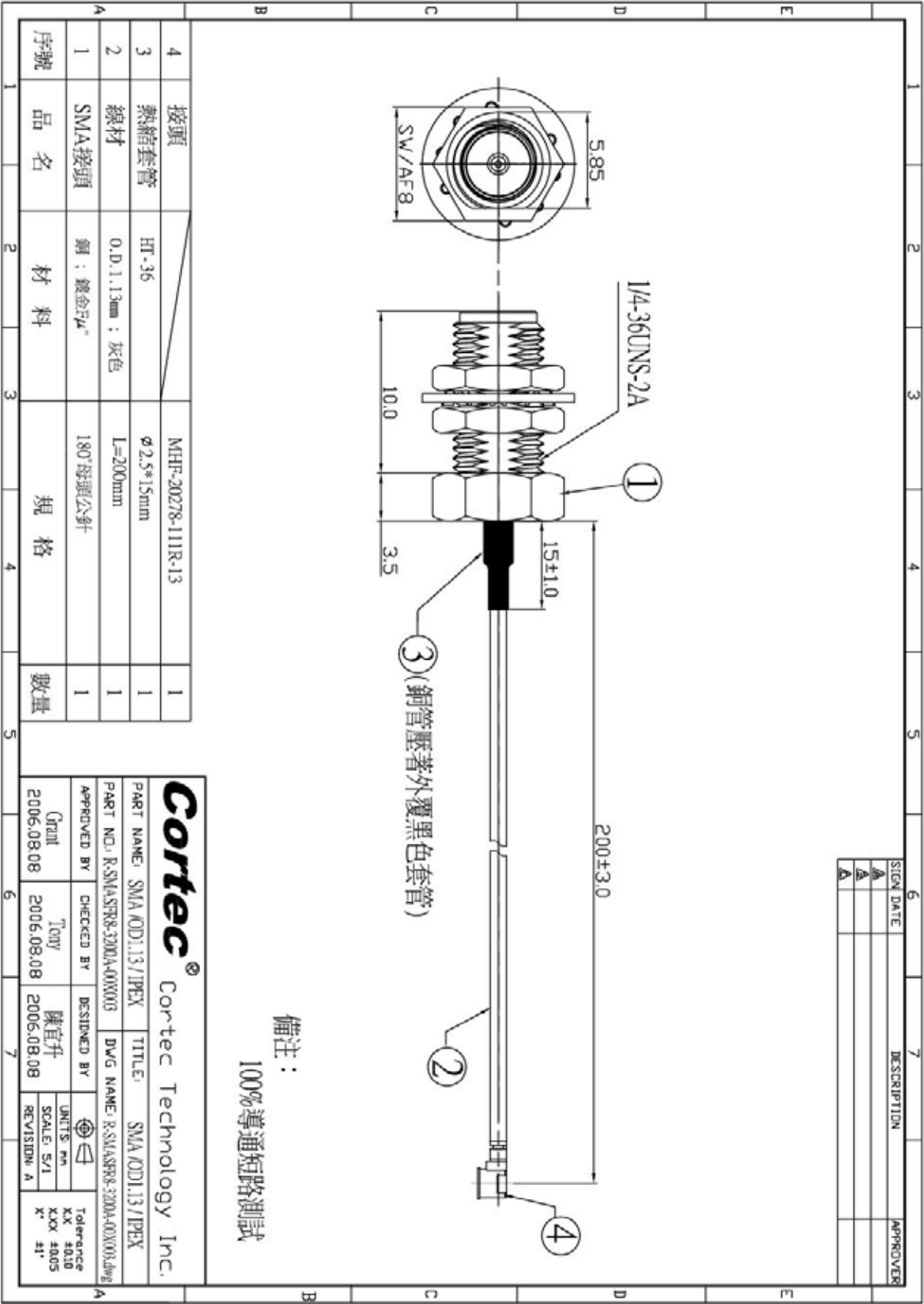
Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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- 3. Reliability Testing/..... Page 3**
可靠度測試
- 4. O.D. 1.13mm Coaxial Cable Data Sheet/
O.D. 1.13mm 同軸線材材質規格**
 - 4-1. Data Sheet/ 材質與規格 Page 4**
 - 4-2. S Parameter Testing Data/ S 參數規格 Page 5**
- 5. I-PEX MHF 20278 -111R-13 Coaxial Connector Data Sheet/ ... Page 6**
I-PEX MHF 20278-111R-13 同軸接頭材質規格
- 6. Coaxial Connector Data Sheet/ Page 7~8**
同軸接頭材質規格

Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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1. Drawing of Mechanical and Dimension



Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
2. Specification			
A. Material List			
1. Coaxial Cable Type/ 同軸線材種類		O.D. 1.13 mm	
2. Length of Coaxial Cable/ 同軸線材長度		200mm	
3. Color of Coaxial Cable/ 同軸線材顏色		Gray 灰色	
4. Connector 1 Type/ 接頭種類		SMA Female Reverse	
5. Material of Connector 1/ 接頭材料		Gold (Au) -coated Cooper(3604) Thickness: 3E-6 (inch) or 76.2E-6 (mm) 青銅(3604)鍍金 鍍金厚度: 3E-6 (inch) or 76.2E-6 (mm)	
6. Connector 2 Type/ 接頭種類		I-PEX MHF 20278-111R-13	
7. Material of Connector 2/ 接頭材料		Gold (Au) -coated Cooper Thickness: 3E-6 (inch) or 76.2E-6 (mm) 青銅(3604)鍍金 鍍金厚度: 3E-6 (inch) or 76.2E-6 (mm)	
8. Other Parts		None	
B. Electrical Testing Data			
9. Application Frequency Range/ 適用頻率範圍		DC ~ 6GHz	
10. V.S.W.R. 駐波比		< 1.3 @ DC ~ 3.0 GHz < 1.8 @ 3.0 ~ 6.0 GHz	
11. S11 Return Loss 返回損失		> 20dB @ DC ~ 3.0 GHz > 12dB @ 3.0 ~ 6.0 GHz	
12. Impedance 特性阻抗		50 ohm	
13. Operation Temperature Range 操作溫度範圍		- 40 degree C ~ + 90 degree C	
14. Maximum Power 適用最大功率		33dBm / 2 W	
15. Pull Strength of I-PEX MHF 20278-111R-13 拉力測試		<= 0.4 Kgw	
16. Pull Strength of Connector 拉力測試		<= 3.0 Kgw	

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Product Number
產品料號

SMASFR8-3200A-
00X003

Product Name
產品名稱

I-PEX/ MHF to SMA Female Reverse with
O.D. 1.13mm Cable

3. Reliability Testing

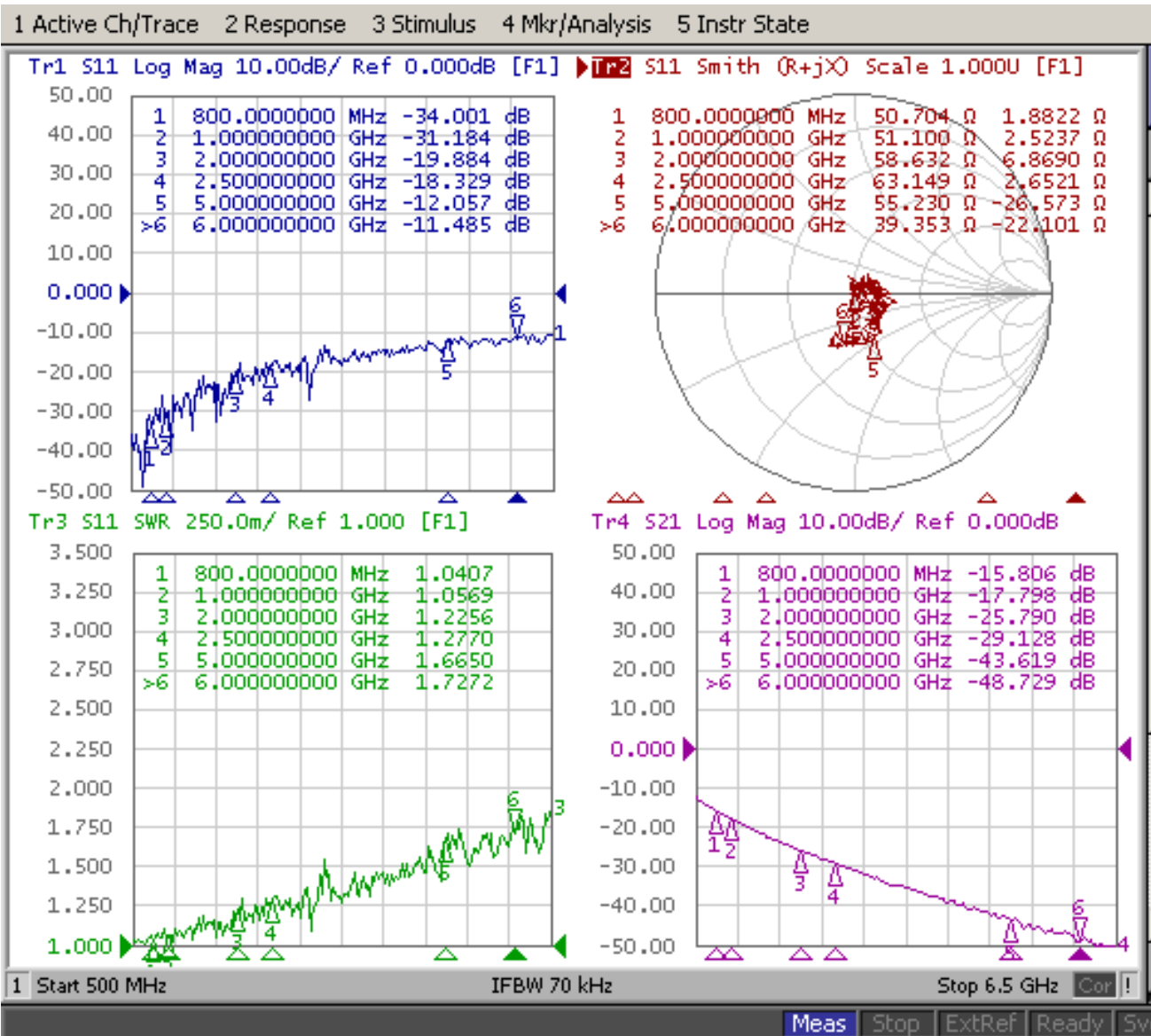
Test Item	Test Condition	Request
1. Low Temperature 低溫試驗	Temp.: -40 degree C Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
2. High Temperature 高溫試驗	Temp.: +90 degree C Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
3. Rapid of changing temperature 冷熱衝擊	-40 degree C (30 min) +90 degree C (30 min) 120 cycles	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
4. Damp Heat 恆溫恆濕	Temp.:+40 degree C Humidity: 90 % Time: 48 hrs Recover Time: 2 hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%
5. Salt Moist 鹽霧試驗	5% Salt water Time: 48 hrs Recover Time: 2hrs	1. No Visible Damage 2. V.S.W.R. Tolerance is less 5%

Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable																																																																											
4-1. Data Sheet <table><tr><td colspan="3">O.D. 1.13 mm (AWG32) Coaxial Cable Specification</td></tr><tr><td>1. Cable Type</td><td colspan="2">O.D. 1.13 mm (AWG32)</td></tr><tr><td>2. Impedance</td><td colspan="2">50 ± 3 ohm</td></tr><tr><td rowspan="4">3. Inner Conductor</td><td>Material</td><td>silver-coated cooper</td></tr><tr><td>Conductor Numbers</td><td>7</td></tr><tr><td>Conductor Size</td><td>0.08 mm</td></tr><tr><td>Outer Diameter</td><td>0.24 mm</td></tr><tr><td rowspan="4">4. Dielectric Layer</td><td>Material</td><td>FEP</td></tr><tr><td>Color</td><td>Clear</td></tr><tr><td>Average Thickness</td><td>0.22 mm</td></tr><tr><td>Diameter</td><td>0.68 mm</td></tr><tr><td rowspan="3">5. Braid (Shielding)</td><td>Material</td><td>tin-coated cooper</td></tr><tr><td>Construction</td><td>16-4-0.05 mm</td></tr><tr><td>Coverage</td><td>90 %</td></tr><tr><td rowspan="4">6. Outer Cover</td><td>Material</td><td>FEP</td></tr><tr><td>Color</td><td>Black / white / gray</td></tr><tr><td>Average Thickness</td><td>0.10 mm</td></tr><tr><td>Diameter</td><td>1.13 ± 0.05 mm</td></tr><tr><td>7. V.S.W.R. Testing</td><td colspan="2">< 1.3</td></tr><tr><td rowspan="5">8. Attenuation (dB / 1 meter)</td><td>100 MHz</td><td>0.60</td></tr><tr><td>400 MHz</td><td>1.25</td></tr><tr><td>1800 MHz</td><td>2.23</td></tr><tr><td>2400 MHz</td><td>2.70</td></tr><tr><td>5200 MHz</td><td>4.15</td></tr><tr><td>9. Capacitance</td><td colspan="2">97 ± 3 (pF / meter)</td></tr><tr><td>10. Maximum Power</td><td colspan="2">33 dBm</td></tr><tr><td>11. Spark Test</td><td colspan="2">500 V</td></tr><tr><td>12. Rating Temp. and Voltage</td><td colspan="2">200°C / 30V</td></tr><tr><td>13. Conductor Resistance</td><td colspan="2">520 ohm / KM / 20°C max.</td></tr><tr><td>14. Dielectric Resistance</td><td colspan="2">1500 M ohm / KM / 20°C min.</td></tr></table>				O.D. 1.13 mm (AWG32) Coaxial Cable Specification			1. Cable Type	O.D. 1.13 mm (AWG32)		2. Impedance	50 ± 3 ohm		3. Inner Conductor	Material	silver-coated cooper	Conductor Numbers	7	Conductor Size	0.08 mm	Outer Diameter	0.24 mm	4. Dielectric Layer	Material	FEP	Color	Clear	Average Thickness	0.22 mm	Diameter	0.68 mm	5. Braid (Shielding)	Material	tin-coated cooper	Construction	16-4-0.05 mm	Coverage	90 %	6. Outer Cover	Material	FEP	Color	Black / white / gray	Average Thickness	0.10 mm	Diameter	1.13 ± 0.05 mm	7. V.S.W.R. Testing	< 1.3		8. Attenuation (dB / 1 meter)	100 MHz	0.60	400 MHz	1.25	1800 MHz	2.23	2400 MHz	2.70	5200 MHz	4.15	9. Capacitance	97 ± 3 (pF / meter)		10. Maximum Power	33 dBm		11. Spark Test	500 V		12. Rating Temp. and Voltage	200°C / 30V		13. Conductor Resistance	520 ohm / KM / 20°C max.		14. Dielectric Resistance	1500 M ohm / KM / 20°C min.	
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4-2. S Parameter Testing Data

Return Loss/ S.W.R./ Impedance/ Insertion Loss



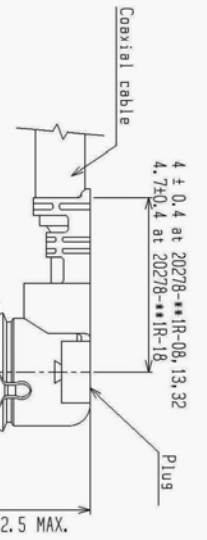
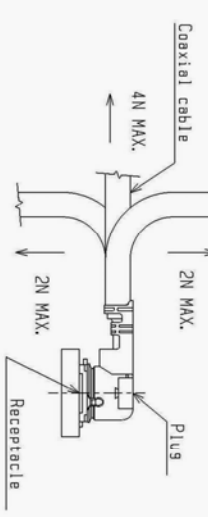
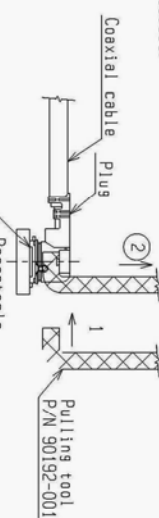
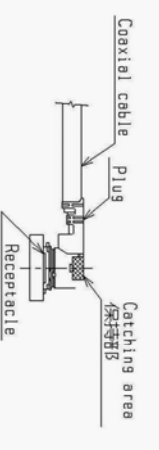
Product Number
製品料號

SMASFR8-3200A-
00X003

Product Name
產品名稱

I-PEX/ MHF to SMA Female Reverse with
O.D. 1.13mm Cable

5. I-PEX/ MHF 20278-111R-13 Coaxial Connector Data Sheet

Notes																													
1. Material (1) Housing : PBT, UL94V-0, black (2) Contact Phosphor bronze gold plating 0.1μm MIN. over nickel 1.27μm MIN. (3) Ground contact Phosphor bronze gold plating 0.05μm MIN. over nickel 1.27μm MIN. 2. Packing : reel 3. Mating partner Part No. : 20279-001E-01 4. Permissible load of cable at mating	1. 材料 (1) ハウジング:PBT, UL94V-0, 黒色 (2) コンタクト 銅合金 金メッキ0.1μm MIN. 下地 ニッケル1.27μm MIN. (3) グランドコンタクト 銅合金 金メッキ0.05μm MIN. 下地 ニッケル1.27μm MIN. 2. 梱包 : リール 3. mating相手 Part No. : 20279-001E-01 4. コネクタ合装後のケーブルに対する荷重																												
5. Suggestions for mating & unmating operation.	5. コネクタ合装および抜去時の注意																												
5-1 Mating. Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle. As excessive slant angle mating may break the connector, please don't do it.	5-1 コネクタ挿入時 PlugとReceptacleの軸を合わせ、できるだけ垂直に挿入して下さい。 極端な斜め挿入は行わないで下さい。 コネクタ破損の原因となりますので、過度な（斜め）挿入は行わないで下さい。																												
																													
GENERAL TOLERANCE 6 MAX. ±0.2 6 OVER MAX. 30 ±0.3 30 OVER MAX. 120 ±0.5 ANGLE ±2°	MATING Receptacle P/N 20279-001E-01																												
FORM REV. 4	WAS T																												
<table border="1"><thead><tr><th>DESIGN'D BY</th><th>DATE</th><th>CHK'D BY</th><th>DATE</th><th>REV. ECN</th><th>BY</th><th>DATE</th><th>APP</th><th>CUSTOMER COPY</th><th>PRODUCTION</th><th>SCALE</th><th>UNIT</th><th>DWG. No.</th><th>SHEET REV.</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>20278</td><td>3/3 13C</td></tr></tbody></table> I-PEX Interconnect TOKYO, JAPAN MHF series micro coaxial connector plug vertical (ground contact : gold plating)		DESIGN'D BY	DATE	CHK'D BY	DATE	REV. ECN	BY	DATE	APP	CUSTOMER COPY	PRODUCTION	SCALE	UNIT	DWG. No.	SHEET REV.													20278	3/3 13C
DESIGN'D BY	DATE	CHK'D BY	DATE	REV. ECN	BY	DATE	APP	CUSTOMER COPY	PRODUCTION	SCALE	UNIT	DWG. No.	SHEET REV.																
												20278	3/3 13C																
5-2 Unmating. (1) In case of unmating by pulling tool. Please use the following drawing, and please pull plug to vertical direction as directly as possible.		5-2 コネクタ抜去時 (1) 抜き工具を用いる場合 下図のようにできるだけ垂直に引き抜いて下さい。																											
(2) In case of unmating directly by hand Please catch the catching area of plug, and please pull plug to vertical direction as directly as possible.		(2) 手で直接引き抜く場合 下図の保持部分を掴み、できるだけ垂直に引き抜いて下さい。																											
																													
5-3 Crimp over standards of outer conductor Standards: Less than 10% from total numbers of outer conductor (Numbers of outer conductor's crimp over from outer conductor's barrel)		5-3 外部導体はみだし量 外部導体はみだし量規定 : 外部導体総数に対する10%以下 (外部導体バレルの外にはみ出した量)																											
5-4 Caution about Heat shrinkage tubes Please be careful not to melt housing when using heat shrinkage tubes. It will become cause of open circuit.		5-4 熱収縮チューブについて 熱収縮チューブを外部導体を通う場合は、導体不良の原因になりますので、熱によりハウジングを溶融させないよう注意してください。																											

Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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6. Coaxial Connector Data Sheet

Copper Datasheet

合金編號 Copper Alloy CN & JIS No.	化學成分 Composition (%)									
	銅 Cu	鉛 Pb	鐵 Fe	錫 Sn	鋅 Zn	鋁 Al	錳 Mn	鎳 Ni	磷 P	銅+鋁+鐵 +錳+鎳 Cu+Al+Fe +Mn+Ni
C3501	60.0~64.0	0.7~1.7	0.2 以下 0.2max	Fe+Sn 0.4 以下 0.4max	殘余 Rem					
C3601	59.0~63.0	1.8~3.7	0.3 以下 0.3max	Fe+Sn 0.5 以下 0.5max	殘余 Rem					
C3602	59.0~63.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3603	57.0~61.0	1.8~3.7	0.35 以下 0.35max	Fe+Sn 0.6 以下 0.6max	殘余 Rem					
C3604	57.0~61.0	1.8~3.7	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3605	57.0~60.0	3.5~4.5	0.5 以下 0.5max	Fe+Sn 1.2 以下 1.2max	殘余 Rem					
C3712	58.0~62.0	0.26~1.2	Fe+Sn 0.8 以下 0.8max		殘余 Rem					
C3771	57.0~61.0	1.0~2.5	Fe+Sn 1.0 以下 1.0max		殘余 Rem					
合金種類 Alloy CN & JIS No.	符號 Symbol	別類 Name	特性用途 Speciality and Utilities							
C3501	線(B)	Nipple 用黃銅 Nipple Using Brass	切削性、冷間鍛造性良好 機車、腳踏車、腳踏車用接頭螺帽 Excellent Cold Forging and Good Machine-ability Use Motorcycle and Bicycle Join Nut...							
C3601	(B)	快削黃銅 Free Cutting Brass	切削性良好，C3601,C3602 延展性也良好，電腦、電子、釣具、筆、燈飾、螺絲、小螺帽、齒輪、凡而、照相機各種五金零件 Excellent Machine-ability and C3601, C3602 Good Excellent to Use Computer, Electronic ,Clock, Pen, Light and Fishing, Nut, Gear, Valve Camera Parts, Hardware Parts...							
C3602	(A)									
	(B)									
C3603	(B)									
C3604	(A)									
	(B)									
C3605	(A)									
	(B)									
C3712	(A)	Forging Brass	熱間性良好，精密鍛造亦適合機械零組件。 熱間鍛造性和切削性均佳，凡而，表殼，機械零件等 Excellent Hot Forging Uses Precision Forging, Machine Parts, Excellent Hot Forging and Good Machine-ability . Using Value, Watch, Machine Parts...							
	(B)									
C3771	(A)									
	(B)									

Product Number 產品料號	SMASFR8-3200A-00X003	Product Name 產品名稱	I-PEX/ MHF to SMA Female Reverse with O.D. 1.13mm Cable
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東旭(迅昇集團)金屬表面處理有限公司

TEL: (0769)5565111

FAX (0769)5562446

CMI SmartLink Pro 讀數

App Name: CORTEC

數據	10 ^ -6 (Unit: inch)	日期/時間
1	3.91	2004/5/5 05:55
2	3.56	2004/5/5 05:55
3	3.38	2004/5/5 05:56
4	3.18	2004/5/5 05:57
5	3.57	2004/5/5 05:57
6	3.92	2004/5/5 05:58

To: 康碩康捷/ CORTEC

貴司物料: 鍍金金屬

經 X-RAY 膜厚測試儀測試

測試結果: 鍍層厚度已符合貴司要求

測試員	周慧
審核	李群英
確認	魏魯建

TONG HSU ENTERPRISE CO.LTD.-Machine: 98607 05:58, Wed, 2004-05-05