



WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)
 DONGGUAN AEON TECH CO.,LTD.(CHINA)
 SUZHOU AEON TECH CO.,LTD.(CHINA)
 AEON TECH (SHANGHAI) CO.,LTD(CHINA)
 DONGGUAN PARNER TECH CO.,LTD.(CHINA)



SPECIFICATION FOR APPROVAL

CUSTOMER: 佳世達

PART NAME: WIFI PCB Antenna

PART NO:

REVISION:

W. Y. P/NO: C1365-510012-A(SZ1506-0007)

REV: X1

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :	子 芬	
DATE :	2015-6-9	

WHA YU GROUP

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WIFI PCB Antenna

Specification

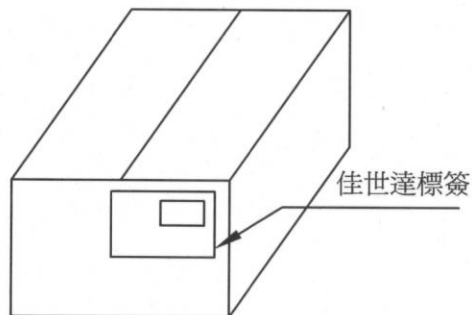
1. Electrical Properties :

- 1.1 Frequency Range..... 2.4GHz~2.5GHz/4.9GHz~5.85GHz
- 1.2 Impedance50Ω Nominal
- 1.3 VSWR1.92 :1Max.
- 1.4 Return Loss.....-10 dB Max.
- 1.5 RadiationOmni-directional
- 1.6 Gain(peak)..... 6.55dBi@2.4GHz~2.5GHz
8.14dBi@4.9GHz~5.85GHz
- 1.7 Polarization..... Linear
- 1.8 Admitted Power..... 1W
- 1.9 Cable.....1.13mm Cable
- 1.10 Connector.....MHF Plug

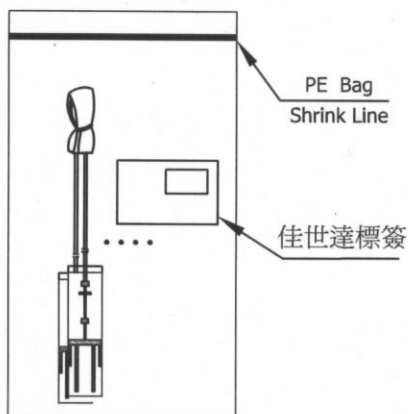
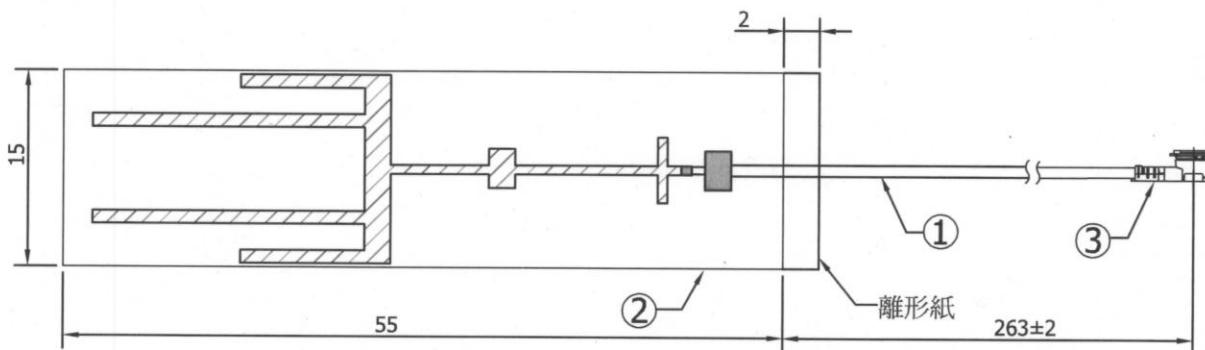
2. Physical Properties :

- 2.1 Operating Temp.-10°C ~ +60°C
- 2.2 Storage Temp.-10°C ~ +70°C

REV	DATE	DESCRIPTION
X1	03/23-2015	New Issue



Bar code標籤貼於外箱側麥1PCS



Packing : 10 pcs/bag



NO	DESCRIPTION	QTY	REMARK
4	EVA;G9000;50*13*18mm	1	
3	Connector MHF Plug	1	
2	PCB FR4 24mil,1/2 Oz;55*15*0.6mm	1	
1	Cable Φ1.13 Cable ;Gray	1	

CUSTOMER'S SIGNATURE

XX	±5	APPROVED
X	±3.0	<i>[Signature]</i>
.X	±1.0	CHECKED
.XX	±0.5	<i>[Signature]</i>
.XXX	±0.1	DRAWING
⊕	⊖	<i>[Signature]</i>

CUSTOMER: 佳世達		
PART NO :		
PARTNAME: WIFI PCB Antenna		
W.Y P/NO : C1365-510012-A		
REV	UNIT	FILE :
X1	m/m	SHEET : 1/1



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SGS Test Report

Product :RF Cable Assembly

Contents

NO.	Description		Report No.	Page
1	Φ1.13 Cable	外被	HKGEC1400859501	P.1~10
		編織	ECL01H006987001E	P.11~19
		絕緣	SHAEC1500664111	P.20~29
		導體	SHAEC1507036515	P.30~41
2	MHF Connector	絶縁	CE/2014/A3253	P.42~54
		导体	CE/2014/B2808	P.55~61
		外殼	CE/2014/B2813	P.62~68
3	PCB	FR4	SHAEC1500456411	P.69~77
		銅箔	CANEC1502137431	P.78~84
		Ink:White	ECL01G019825002	P.85~90
		鍍錫	RHS05G019431001	P.91~96
4	背膠	G9000	CE/2015/13117	P.97~103
		EVA	ECL01G028976001	P.104~110

Result for RoHS :PASS

Antenna Design for Qisda

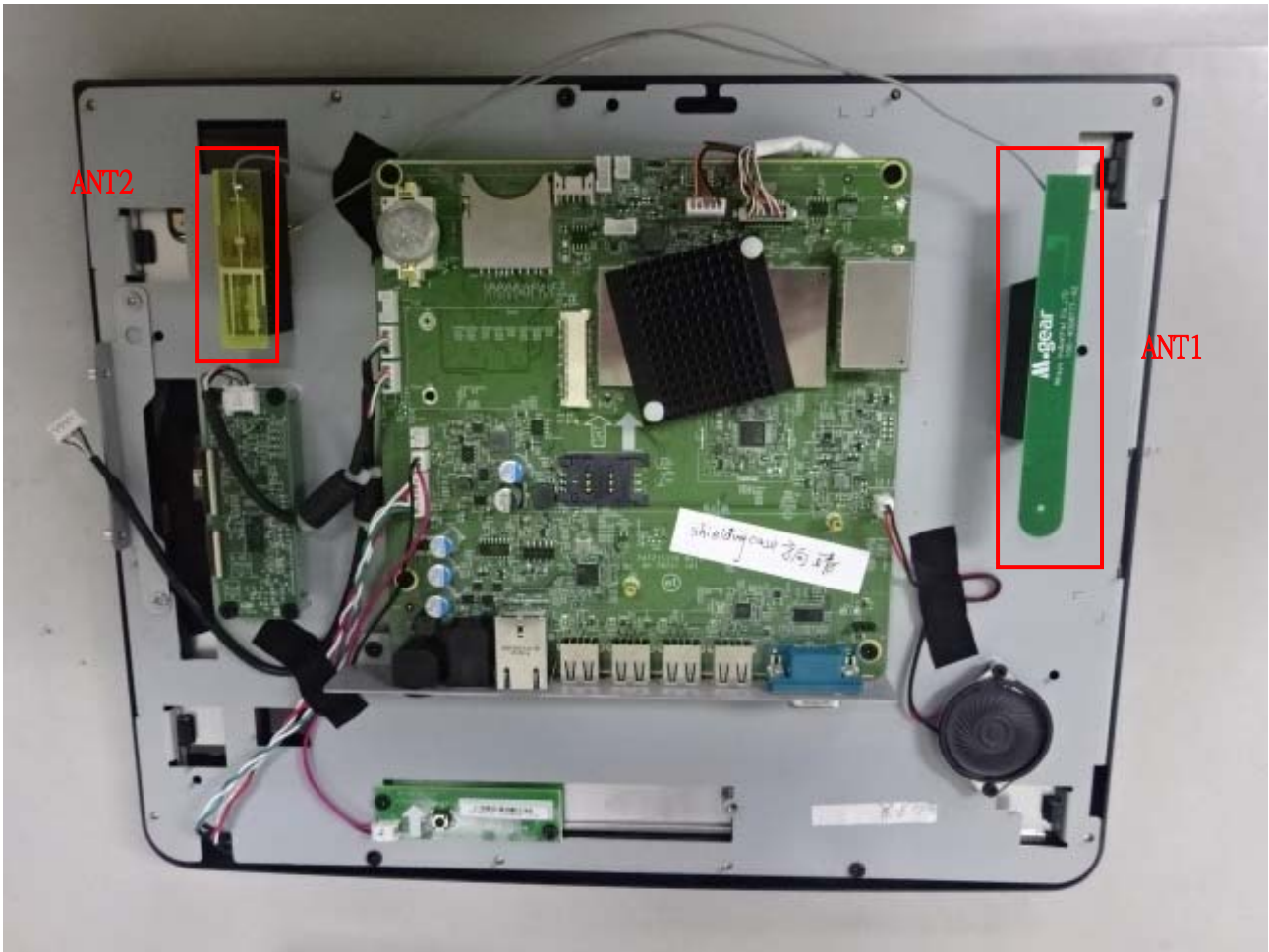
V1.02

Document Number	HG-15009
1st Released Date	2015-6-4
Last Released Date	2015-6-4
Author	平小東
Review by	JBM

Specification

Rough description		
Item	ANT1	ANT2
Dimensions	112mm*14mm*0.6mm	55mm*15mm*0.6mm
Impedance	50Ω	50Ω
Test environment	With housing	With housing
Spectrum	GSM/UMTS	WIFI
Freq. Range	824MHz~960MHz 1710MHz~2170MHz	2400MHz~2500MHz 4900MHz~5850MHz
Antenna type	PCB	PCB
Peak Gain	824MHz~960MHz :6.37dBi 1710MHz~2170MHz :5.88dBi	2400MHz~2500MHz: 6.55dBi 4900MHz~5850MHz :8.14dBi
Radiation	Non-Omin	Non-Omin
Polarization	Linear	Linear
Rad. efficiency	824MHz~960MHz >41.7% 1710MHz~2170MHz >42.1%	2400MHz~2500MHz >69.5% 4900MHz~5850MHz >41.6%
Retune Loss	<-5dB	<-10dB
Connector type	I-PEX	I-PEX
Cable length(Total)	OD:1.13mm L:280mm	OD:1.13mm L:260mm
Isolation	<-20dB	

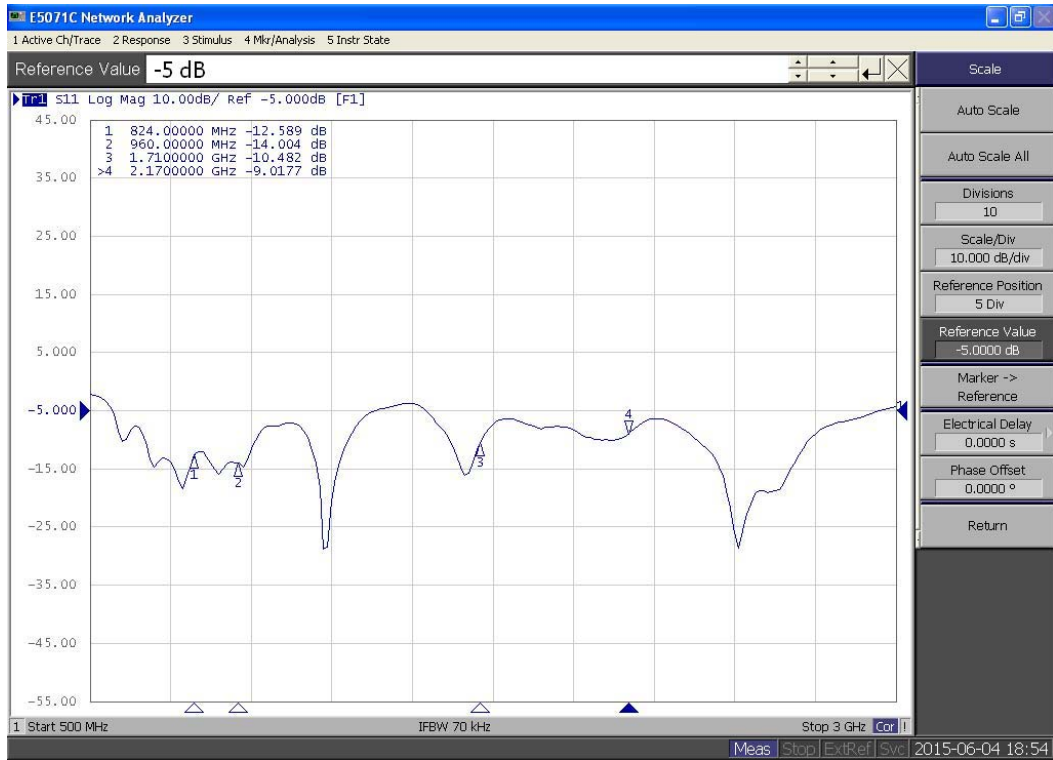
1. Antennas' setup and environment



2. Return Loss & Isolation test results

Return Loss

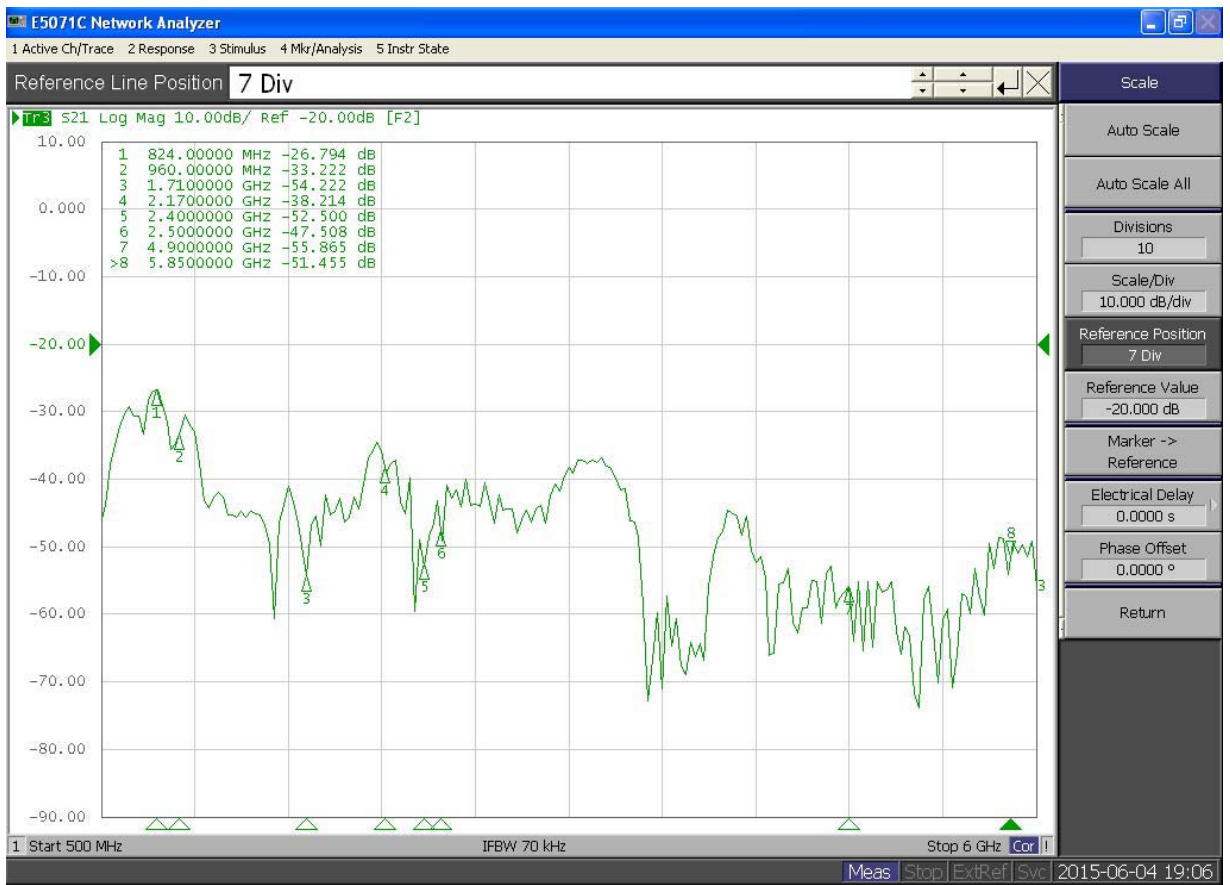
ANT1



ANT2

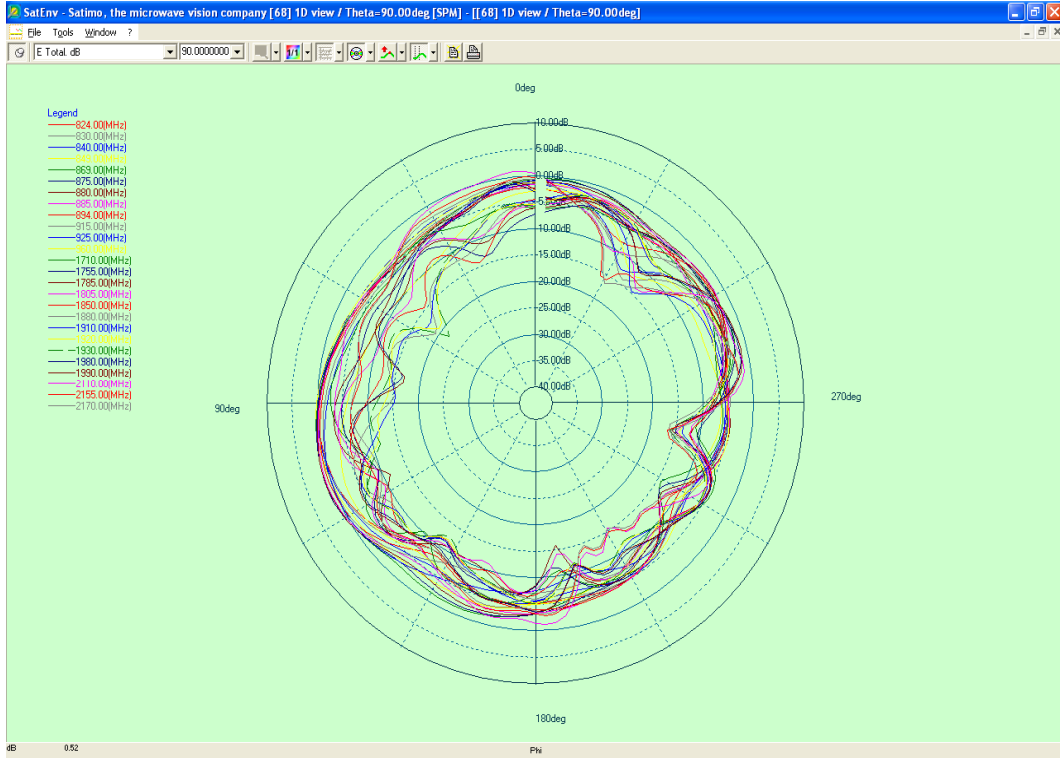


Isolation

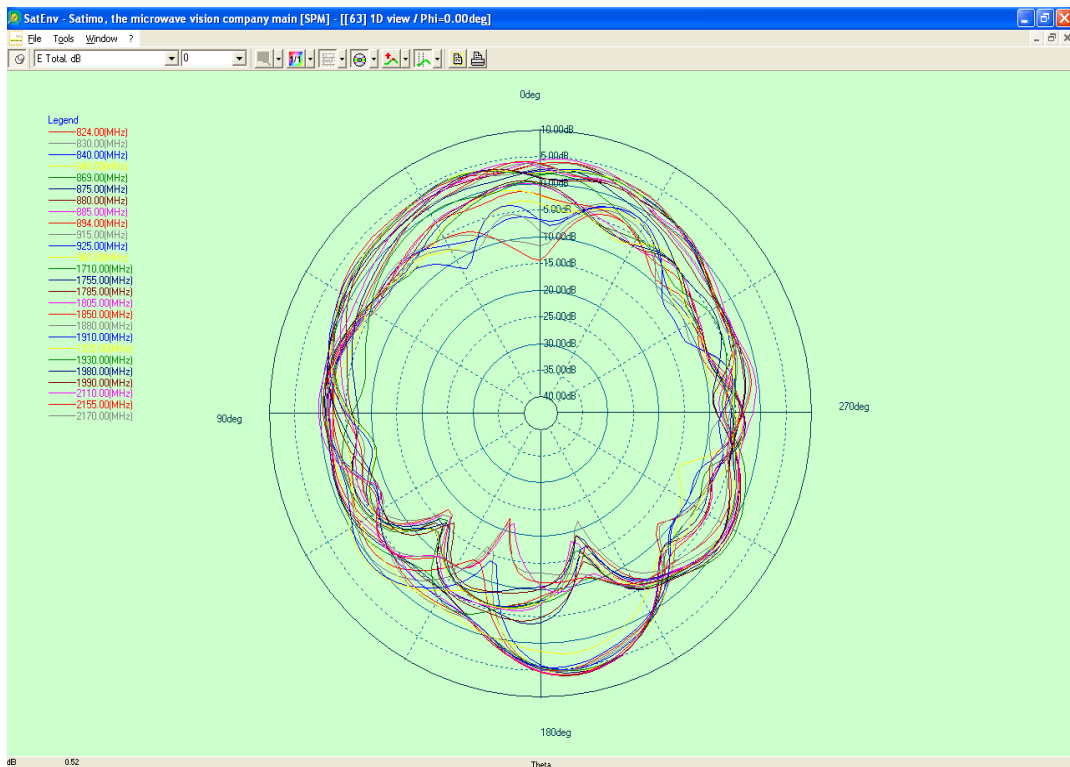


3.2D patterns

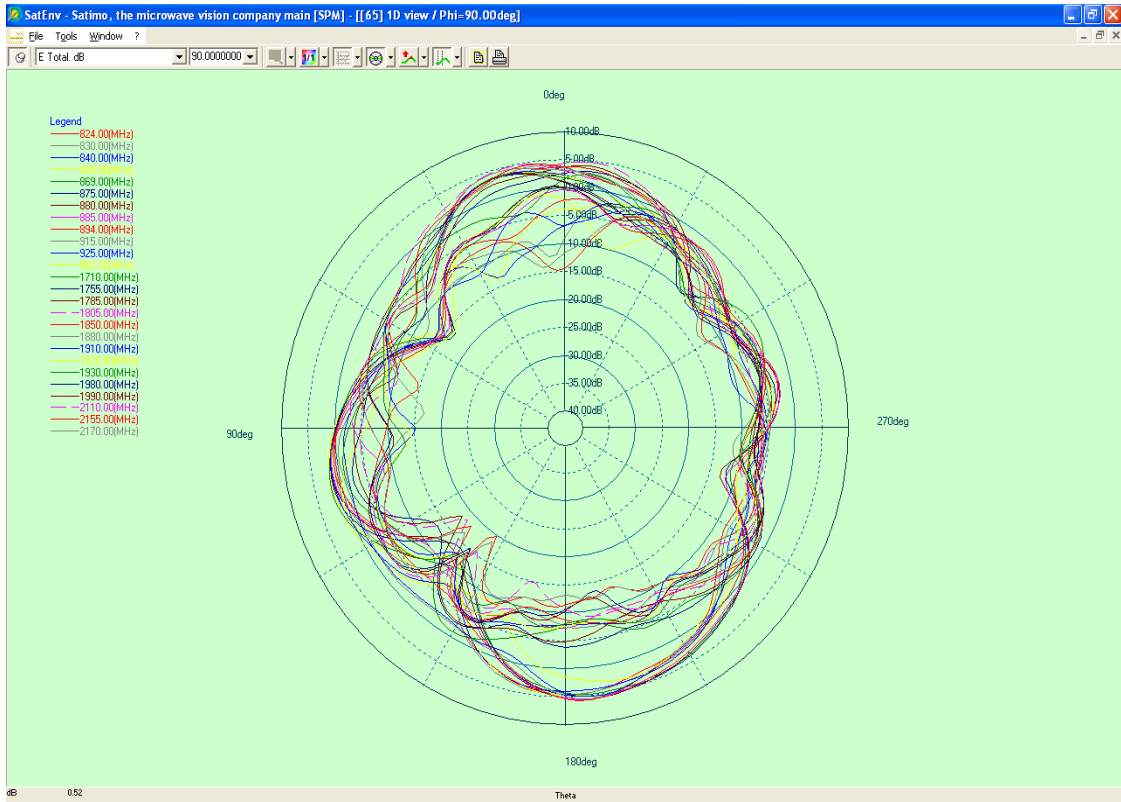
ANT1



X-Y Plane

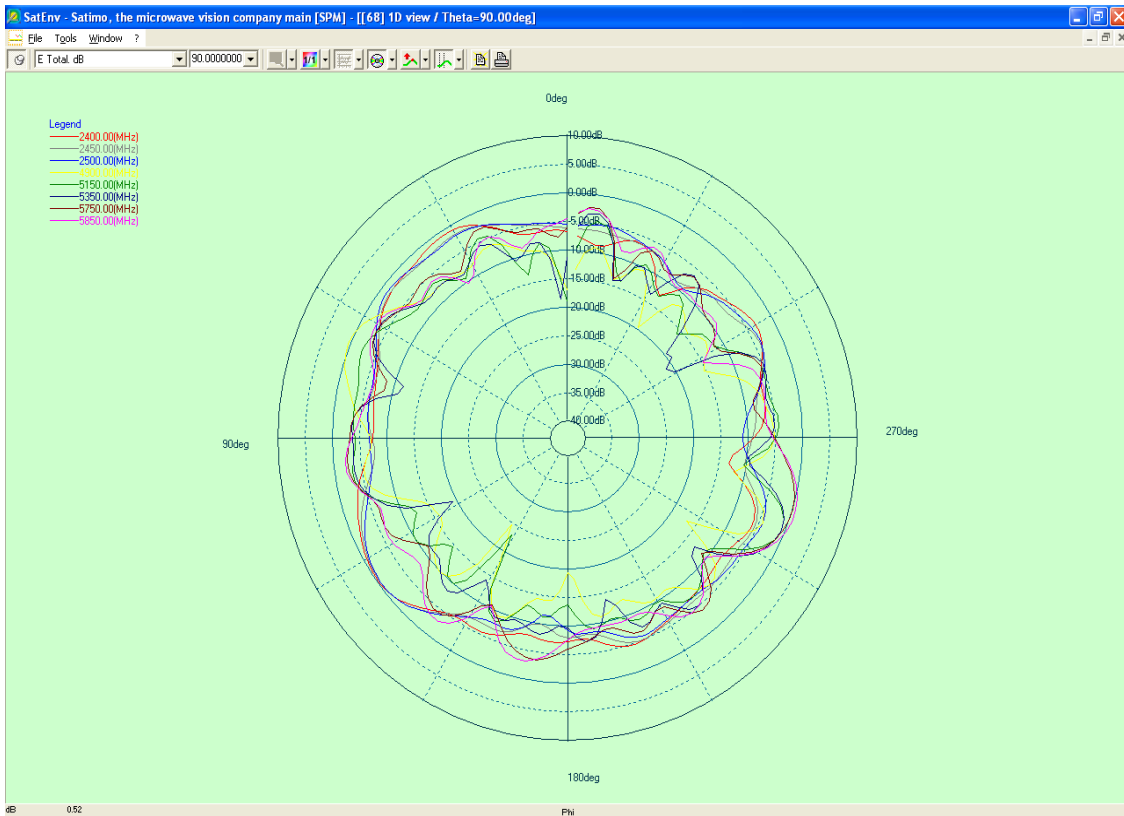


X-Z Plane

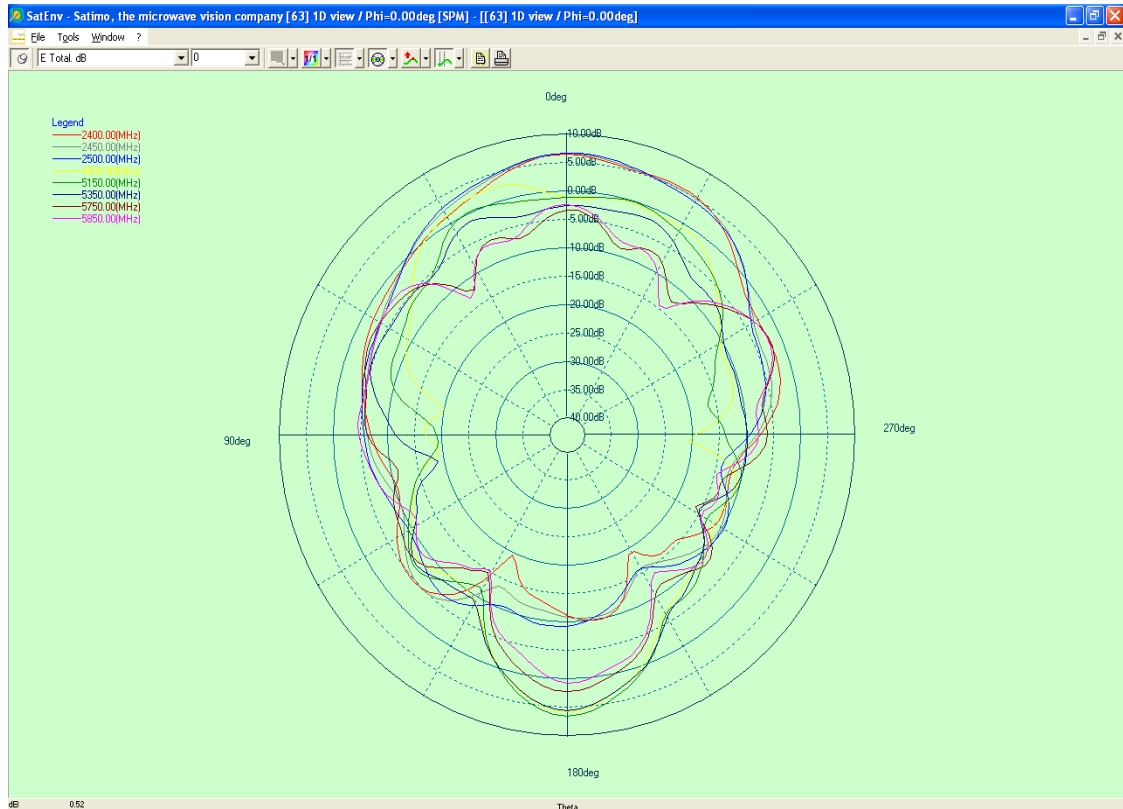


Y-Z Plane

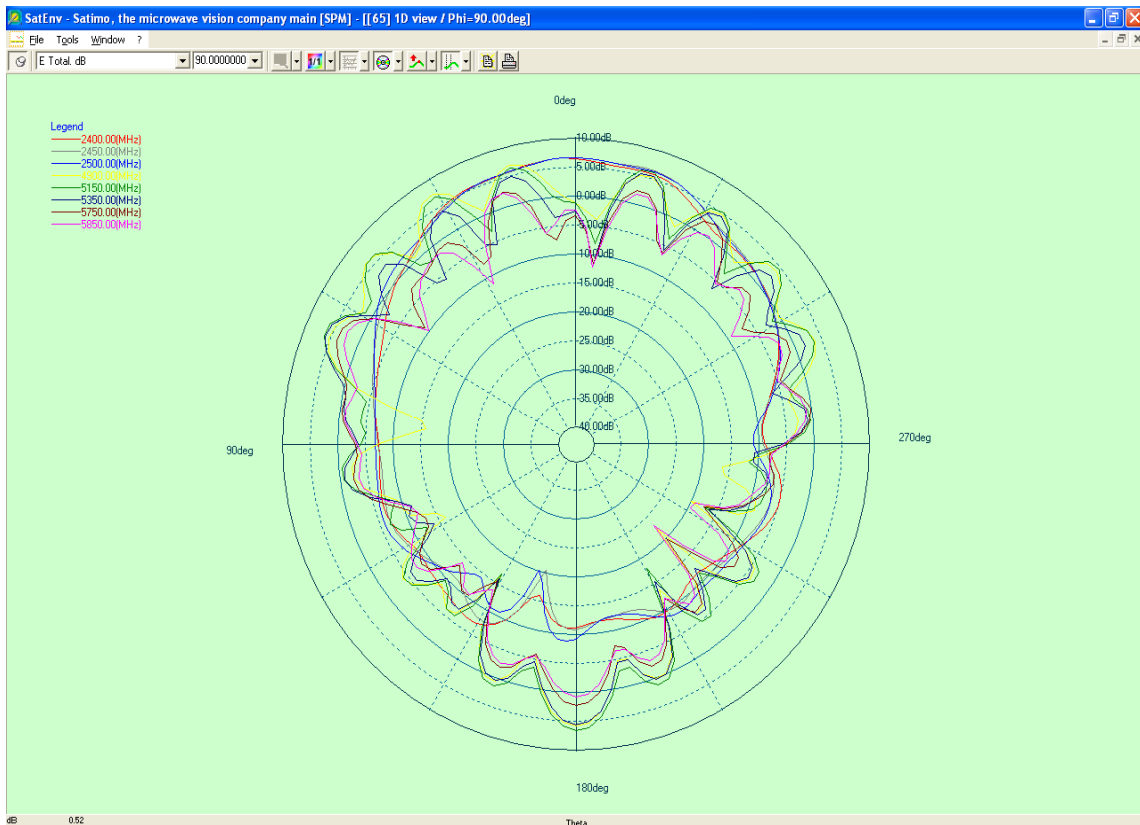
ANT2



X-Y Plane



X-Z Plane



Y-Z Plane

4. Summary

4.1 Retune Loss

Frequency	ANT 1(dB)
824MHz	-12.5
960MHz	-14.0
1710MHz	-10.4
2170MHz	-9.0

Frequency	ANT 2(dB)
2400MHz	-16.3
2450MHz	-24.4
2500MHz	-21.6
4900MHz	-20.5
5150MHz	-28.5
5350MHz	-18.2
5750MHz	-13.4
5850MHz	-11.1

4.2 Isolation

Frequency	Isolation (dB)
824MHz	-26.7
960MHz	-33.2
1710MHz	-54.2
2170MHz	-38.2
2400MHz	-52.5
2500MHz	-47.5
4900MHz	-55.8
5850MHz	-51.4

4.3 Gain & Efficiency

Frequency	ANT 1	
	Peak Gain(dBi)	Efficiency
824MHz	5.07	60.8%
830MHz	5.29	60.2%
840MHz	5.16	57.3%
849MHz	5.79	50.7%
869MHz	5.51	49.1%
875MHz	5.92	51.8%
880MHz	6.37	55.5%
885MHz	6.31	56.2%
894MHz	6.28	53.4%
915MHz	5.68	41.7%
925MHz	5.26	43.9%
960MHz	4.68	44.3%
1710MHz	4.45	49.2%
1755MHz	4.12	46.2%
1785MHz	4.22	47.7%
1805MHz	5.02	45.2%
1850MHz	4.34	48.7%
1880MHz	4.69	50.5%
1910MHz	4.73	52.1%
1920MHz	4.60	54.3%
1930MHz	5.12	50.4%
1980MHz	5.66	53.8%
1990MHz	5.56	46.6%
2110MHz	5.88	42.1%
2155MHz	4.58	47.4%
2170MHz	4.69	43.9%

Frequency	ANT 2	
	Peak Gain(dBi)	Efficiency
2400MHz	6.42	69.5%
2450MHz	6.55	70.4%
2500MHz	6.50	70.1%
4900MHz	8.14	61.9%
5150MHz	7.86	60.1%
5350MHz	6.32	46.5%
5750MHz	6.38	41.6%
5850MHz	5.69	43.2%

型号 Type	RF-1.13/50	料号 P/N	SY113/50-028(Gray)	
结构图 Structure drawing				
结构特性 Structure characteristics				
结构 Structure	项目 Item	标准值 Standard value		
①内导体 Inner conductor	材料 Material	镀银铜线 Silverplated copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	7/0.083		
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)	0.249±0.02		
②绝缘层 Insulation	材料 Material	聚全氟乙丙烯 FEP		
	颜色 Color	透明 Clarity		
	标称外径(mm) NOM.O.D.(mm)	0.7±0.03		
③外导体 Outer conductor	材料 Material	镀锡铜线 Tinned copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	4/0.05		
	标称外径(mm) NOM.O.D.(mm)	0.92±0.05		
	覆盖率(%) Coverage ratio(%)	90±5		
④护套层 Jacket	材料 Material	聚全氟乙丙烯 FEP		
	颜色 Color	灰 Gray		
	标称外径(mm) NOM.O.D.(mm)	1.13±0.05		
电性能特性 Electrical characteristics				
项目 Item	标准值 Standard value	项目 Item	频率 Frequency	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)	98	衰减 Attenuation	1GHz	≤2.2
速率(%) Velocity(%)	70		2GHz	≤3.1
阻抗(Ω) Impedance(Ω)	50±2		3GHz	≤3.8
驻波比 Standing wave ratio	≤1.3@0~6GHz		4GHz	≤4.4
最大工作电压(V) Max.operating voltage(V)	1000		5GHz	≤4.9
最大工作频率(GHz) Max.operating frequency(GHz)	6		6GHz	≤5.4
可靠性 Dependability				
项目 Item	单位 Unit	标准值 Standard value		
最小弯曲半径(一次) Min.bending radius static	mm	4		
最小弯曲半径(重复) Min.bending radius repeated	mm	—		
工作温度范围 Operating temperature	℃	-55~+200		
包装 Packing				
项目 Item	单位 Unit	标准值 Standard value		
每盘长度 The length of each plate	m	500		
每盘接头数 Each connector plate number	/	≤3		
每段最短长度 The shortest length of each root	m	≥10		



**AVLV2.E318898
Appliance Wiring Material - Component**

[Page Bottom](#)

Appliance Wiring Material - Component

[See General Information for Appliance Wiring Material - Component](#)

SHENYU COMMUNICATION TECHNOLOGY INC
275 E WAIHUAN RD
JIANGYIN, JIANGSU 214400 CHINA

E318898

Table of Recognized Styles							
Single-conductor, thermoplastic insulation.							
1226	1333	1591	1723	1857	1886	10064	10518
1227	1354	1592	1726	1858	1887	10072	11149
1330	1371	1708	1727	1859	1901	10111	
1331	1538	1709	1766	1860	1927	10248	
1332	1577	1710	1847	1882	10011	10362	

Marking: Company name, voltage rating, temperature rating, conductor size, conductor material if other than copper, and use.
[Last Updated](#) on 2010-11-09

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APPLIANCE WIRING MATERIAL

Subj.758 Section 1 Page 1354

Issued:1964-02-19

Revised:2009-04-30

Style 1354 Coaxial Cable.

Rating	60, 80 deg C, 30 Vac, Horizontal flame.
Conductor	44 AWG min., material not specified.
Insulation	2 mils minimum at any point, 125 mils maximum. The insulation may be: Extruded solid or cellular PE, FRPE, PP, PFA, FEP, ECTFE, PTFE, ETFE, or combination thereof with or without irradiation; or tape wrapped solid or cellular PTFE, PFA, or FEP. Applied as a spiral wrapped thread (5 mils minimum, 40 mils maximum) and enclosed in a tube of insulation.
Assembly	Insulated conductor with optional inner covering, optional inner shield, optional middle covering, required outer shield and required outer covering.
Shield	Optional. Outer Shield required.
Covering	Optional Inner Covering - Extruded PVC, PFA, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified. Optional Middle Covering - Extruded PVC, PFA, PP, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified. Required Outer Covering - Extruded Irradiated PE, Irradiated PVC, Polyurethane, PVC, PFA, PP, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PVC, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified.
Standard	Appliance Wiring Material UL 758.

Marking

General.

Use

Internal wiring of Class 2 circuits of electronic equipment or as insulated single in jacketed multiconductor cables.

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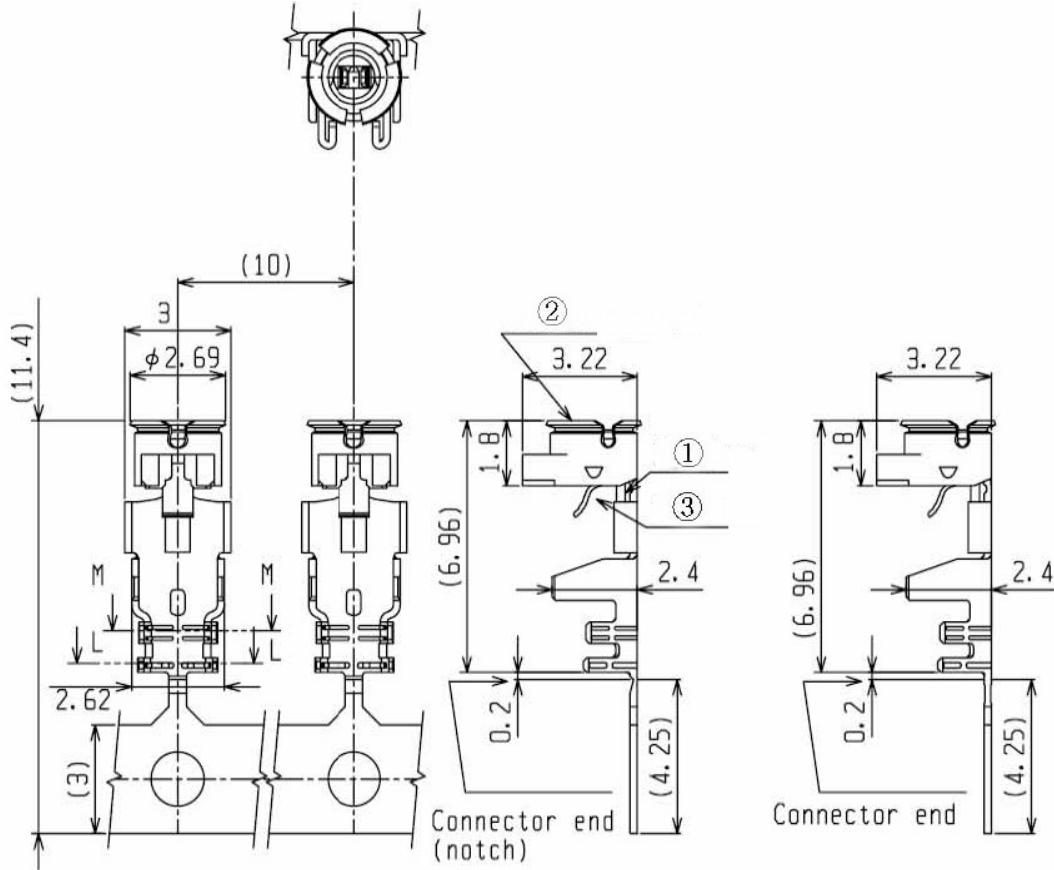
譚裕實業股份有限公司

WHA YU INDUSTRIAL CO., LTD

Connector Material Data Sheet

譚裕料號 Whayu P/N	Z101-02110002-B1	產品名稱 Product Name	MHF Plug for φ 1.13 Coaxial Cable
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Structural Drawing



Material								Surface
1	Isolation	PBT	Polybutylene Terephthalate(UL 94V-0)					Black
2	Shell	Phosphor Bronze	Cu	Sn	P	Zn	Pb	Gold Plated 0.05~0.1 μ m
3	Crimp Pin	Phosphor Bronze	Cu	Sn	P	Zn	Pb	Gold Plated 0.1~0.13 μ m

Remark : 插拔次數 30 次



No.06027-1
Feb / 26/'08

材料証明書
MATERIAL CERTIFICATE

当社製品には下記の材料が使われている事を証明致します。
WE HEREBY CERTIFY THAT THE FOLLOWING MATERIALS ARE USED IN OUR PRODUCT.

PRODUCT NAME : MHF series micro coaxial connector PLUG & RECEPTACLE VERTICAL

Plug, Non halogen free type

Part No.	Contents	Housing	Contact	Ground contact
20278-101R-08	材質名/ Material	PBT	Phosphor bronze	Phosphor bronze
20278-111R-08				
20278-101R-13	型名/ Cat No.	DURANEX 3116	C5210R-H	C5191R-1/2H
20278-111R-13				
20278-101R-32	材料メーカー	WINTECH POLYMER LTD.	Nippon Mining & Metals Co.,Ltd.	HARADA METAL INDUSTRY Co.,Ltd.
20278-111R-32	Manufacturer			
20278-101R-18				
20278-111R-18	UL94難燃性	V-0	-----	-----
20308-101R-13	UL94 flame			
20308-111R-13	class			
20308-101R-32				
20308-111R-32	UL file No.	E213445	-----	-----
20351-101R-37				
20351-111R-37				

※添付資料：ULカード写し/UL CARD COPY

APPROVAL	CHECK	ORIGINATOR
T.Harada Feb/26/'08	T.Tagawa Feb/26/'08	K.Ohbayashi Feb/26/'08

FORM REV.0

Plug, Halogen free type

Part No.	Contents	Housing	Contact	Ground contact
20278-102R-08	材質名/ Material	PBT	Phosphor bronze	Phosphor bronze
20278-112R-08	型名/ Cat No.	XFR4840 GF10	C5210R-H	C5191R-1/2H
20278-102R-13	材料メーカー	WINTECH POLYMER LTD.	Nippon Mining & Metals Co.,Ltd.	HARADA METAL INDUSTRY Co.,Ltd.
20278-112R-13	Manufacturer		-----	-----
20278-102R-32	UL94難燃性	V-0		
20278-112R-32	UL94 flame class			
20278-102R-18	UL file No.	E213445	-----	-----
20278-112R-18				
20351-102R-37				
20351-112R-37				

※添付資料：ULカード写し/UL CARD COPY

Receptacle

Part No.	Contents	Housing	Contact	Ground contact
20279-001E-01	材質名/ Material	LCP	Brass	Phosphor bronze
20314-001E-01	型名/ Cat No.	VECTRA E130i	C2680R-o	C5191R-1/2H
	材料メーカー	Polyplastics Co.,Ltd	Nippon Mining & Metals Co.,Ltd.	HARADA METAL INDUSTRY Co.,Ltd.
	Manufacturer		-----	-----
	UL94難燃性	V-0		
	UL94 flame class			
	UL file No.	E 106764	-----	-----

※添付資料：ULカード写し/UL CARD COPY

QMFZ2 Component - Plastics

Friday, October 24, 2003

E213445

WINTECH POLYMER LTD

18-1 KONAN 2-CHOME MINATO-KU TOKYO 108-8280 JP

Material Designation: 3116(e)

Product Description: Polybutylene Terephthalate (PBT), designated "Duranex" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HAI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
ALL	0.75	V-0	4	0	130	-	130	-	-
	1.5	V-0	3	0	130	120	130	-	-
NC, BK	3	5VA	2	0	130	120	130	-	-
CTI: 2	IEC CTI (V): -	HVTR: 3			D495: 6			IEC Ball Pressure (° C): -	
Dielectric Strength (kV/mm): 23		Volume Resistivity (10 ¹⁰ ohm-cm): 16						Dimensional Stability(%):0.0	
ISO Tensile Strength (MPa): -		ISO Flexural Strength (MPa): -						ISO Heat Deflection (C): -	
ISO Tensile Impact (kJ/m ²): -		ISO Izod Impact (kJ/m ²): -						ISO Charpy Impact(kJ/m ²): -	

(e) Virgin and grind from 1 to 50 by weight incl. have the same basic material characteristics (at a minimum thickness of 0.75 mm), except for 310EP which has a lower as received Tensile Impact value from 26 to 50 percent grind.

Report Date: 11/15/2000

Underwriters Laboratories IncR

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.



上海南亚覆铜箔板有限公司

板材可靠性检验报告

客户名称		灯罩板		出货日期		2008-3-22		
品名		FR-4	板料规格:		0.6mm H/H OZ 1042mm×1245mm Yellow			
数量		20 sheets	板料等级		A级	基材编码		—
序号	试验项目		试验条件		单位	指标	测试结果	
1	板材厚度		A		mm	0.6±0.064	0.55~0.65	
2	剥离强度	接收态	A		kg/cm	≥1.07	1.32	
		热应力后				≥1.07	1.32	
3	表面电阻	C-96/35/90			MΩ	—	—	
		潮湿后	F			≥10 ⁴	≥10 ⁶	
		高温下	E-24/125			≥10 ³	≥10 ⁵	
4	体积电阻	C-96/35/90			MΩ.CM	—	—	
		潮湿后	F			≥10 ⁶	≥10 ⁸	
		高温下	E-24/125			≥10 ³	≥10 ⁵	
5	弯曲强度	纵向	A		Mpa	≥415	530	
		横向				≥345	425	
6	击穿电压(平行板面)		D-48/50+D-0.5/23		KV	≥40	42	
7	介电常数(1MHZ下)		A			≤5.4	4.5	
8	介质损耗因数		A			≤0.035	0.027	
9	耐电弧性				S	≥60	140	
10	吸水性		E-1/105+des		%	≤0.80	0.34	
11	阻燃性	单个值	A		S	≤10	3	
		平均值				≤5	1.6	
12	尺寸稳定性	烘板后	A		μm/cm	±3.0	±1.5	
		热应力后				±3.0	±1.5	
13	翘曲度		A		%	≤1.0	0.50~0.60	
14	热应力 (288°C、20秒)	未蚀刻样品	A			NO DEFECT	NO DEFECT	
		蚀刻后的样品				NO DEFECT	NO DEFECT	
15	压力容器热应力(260°C、20秒)		A			NO DEFECT	NO DEFECT	
16	相比漏电起痕指数CTI		A		V	≥200	250	
17	玻璃化转变温度Tg(DSC)		A		°C	≥128	135	
18	固化因数(ΔTg)		A		°C	≤3	1	

兹证明板料符合IPC-4101B/21及欧盟ROHS规范要求。





QMTS2.E213990

Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

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Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

See General Information for Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

SHANGHAI NANYA COPPER CLAD LAMINATES CO LTD
 158 CHANGXIANG RD
 NANXIANG
 210802 SHANGHAI, CHINA

E213990

Industrial laminates:

Mtl Dsg	ANSI Type	Color	Build up	Flame Class	R.T.I.		H			Meets 746E DSR	
			Min Thk (mm)		Elec (C)	Mech (C)	H W I	H A I	V T R		C T I
Industrial laminates, furnished as sheets, rods or tubes.											
SN-CEM-3	No ANSI	NC	0.63	V-0	50	50	-	-	-	-	-
SN-L1, SN-L2											
	FR-4	NC, YL	0.38	V-0	130	130	0	3	2	3	Yes
			0.63	V-0	130	140	0	3	2	3	Yes
			1.40	V-0	130	140	0	2	0	3	Yes
SN-L5 (LF)											
	No ANSI	YL	0.38	V-0	-	-	-	-	-	-	-
			0.63	V-0	-	-	-	-	-	-	-
			1.40	V-0	-	-	-	-	-	-	-
Industrial laminates.											
SN-L7(HF)	FR-4	NC	0.38	V-0	130	130	0	3	-	-	Yes
		NC	0.63	V-0	130	140	0	3	-	-	Yes

NC	1.40	V-0	130	140	0	2	-	3	Yes
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Ultrathin build ups:

Build Up					Laminate			Prepreg		
Mtl Dsg	ANSI Type	Min Thk (mm)	TI Elec	TI Mech	Mtl Dsg	Thk (mic)	TI Elec	Mtl Dsg	Thk (mic)	TI Elec
Ultrathin industrial laminates and bonding layers, furnished in sheet form, for use in multilayer printed wiring boards where the thickness is built up to the minimum specified.										
SN-L1, SN-L2	FR-4	0.63	130	140	SN-L1, SN-L2	50	90	SN-P1, SN-P2	50	90
SN-L5 (LF)	No ANSI	0.38	-	-	SN-L5 (LF)	75	-	SN-P3 (LF)	75	-

Metal clad industrial laminates:

Metal Clad Dsg	Lam-inate Dsg	Pre-preg Dsg	ANSI Type	Bld up	Clad Cond Thk			Max	Area Dia (mm)	Flame Class	Max	Solder Lts	
					Min Thk (mm)	Min Ext (mic)	Max Ext (mic)					Max Int (mic)	Oper Temp (C)
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides, furnished as sheets.													
SN-L1, SN-L2													
	SN-L1, SN-L2	SN-P1, SN-P2	FR-4	0.38	17	102	68	13.0	V-0	130	288	20	
				0.38	17	102	68	25.4*	V-0	130	288	20	
				0.63	17	102	68	50.8	V-0	130	288	20	
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides.													
SN-L7(HF)													
	SN-L7 (HF)	SN-P4 (HF)	FR-4	0.38	17	102	68	50.8	V-0	130	288	20	
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets.													
SN-L3, SN-L4													
	SN-L3, SN-L4	-	FR-4	0.38	17	102	-	25.4	V-0	130	288	20	
				0.63	17	102	-	50.8	V-0	130	288	20	
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides.													
SN-L8(HF)													
	SN-L7 (HF)	-	FR-4	0.38	17	102	-	50.8	V-0	130	288	20	

Metal clad industrial laminates (Flammability Only Recognition):

Metal	Lam-	Pre-	ANSI Type	Bld up	Clad Cond Thk			Max	Area	Flame Class	Max	Solder Lts	
					Min	Min	Max					Max	Oper

Clad Dsg	Inate Dsg	preg Dsg	ANSI Type	Thk (mm)	Ext (mic)	Ext (mic)	Int (mic)	Dia (mm)	Flame Class	Temp (C)	Temp (C)	Time (sec)
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides, furnished as sheets (Flammability Only Recognition).												
SN-L5 (LF)												
	SN-L5 (LF)	SN-P3 (LF)	No ANSI	0.38	-	-	-	-	V-0	-	288	20
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets (Flammability Only Recognition).												
SN-CEM-3												
	SN-CEM-3	-	No ANSI	0.63	-	-	-	-	V-0	-	260	10
SN-L6 (LF)												
	SN-L5 (LF)	-	No ANSI	0.38	-	-	-	-	V-0	-	288	20

* - With min. Lam/PP thickness : 0.062/0.050 mm

Marking: Company name and material designation on container or wrapper.
 Last Updated on 2008-05-26

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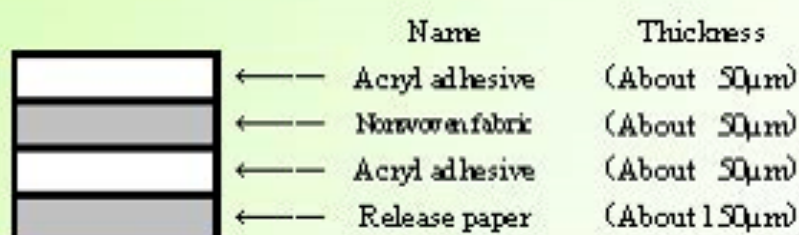
High-strength high-performance both-sided adhesive tape

G9000

Advantages

- On the acrylic double-sided adhesion tape containing nonwoven fabric base material,
- The balance of the adhesion characteristic is good and excellent in especially heat resistance.
- This is the next generation of adhesive tape, whose impact on the global environment is low, because the organic solvents used in conventional tape are not used at coating.

Basic structure



Specifications

Main component of the adhesive	Acrylic resin	Adhesive thickness (including base material)	0.15mm
Color	Transparent colorless	Shape	Stamped products
Base material	Nonwoven fabric		Rolled products

Characteristics

1. Bond strength (180° -degree peeling)

- Tape width: 20 mm
- Bonding condition: One stroke with 2 kg roller
- Leave the specimen for one hour at RT before the test.
- Atmosphere for measurement: RT ($23 \pm 5^{\circ}\text{C}$, $65 \pm 10\%$)
- Peeling speed: 300 mm/min.
- Backing material: 25 μm PET

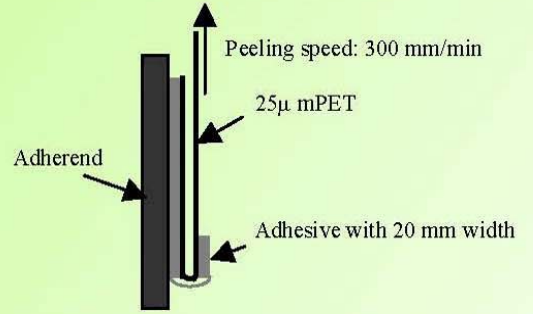


Fig. 1 Measurement method of 180° peeling

Adherend	SUS	AL	ABS	Acryl	PS	PP	PC
Bond strength (N/2cm)	13.7	8.8	11.6	12.4	11.5	5.1	11.9

Adherend	Hard-PVC	Soft-PVC	Grass	CR	NR
Bond strength	12.6	13.2	12.9	3.4	4.0

Jerky

2. Holding power

- The area of tape attached: 25 × 25 mm
- Adherend: SUS304
- Bonding condition: One stroke with 2 kg roller
- Load: 1 kg
- Measure the creep (mm) after one hour.

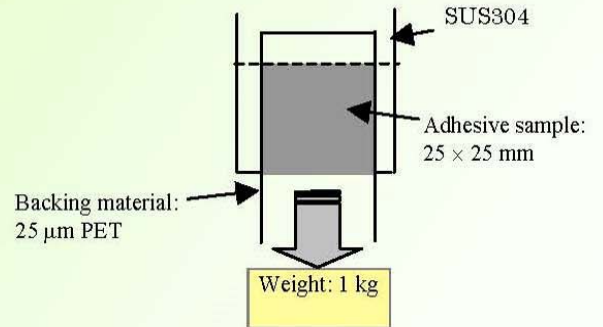


Fig. 2 Measurement method of holding power

Measurement temperature	40°C	60°C	80°C	100°C
Creep (mm)	0.2	0.3	0.3	0.6

3. Ball Tack (J. Dow method)

Ball Tack (Ball No.)	2~×
----------------------	-----

× : Less than one

4. Temperature characteristic Bond strength (180° -degree peeling)

- Tape width: 20 mm
- Bonding condition: One stroke with 2 kg roller
- Leave the specimen for one day at RT before the test.
- Atmosphere for measurement: Each temperature
- Peeling speed: 300 mm/min.
- Backing material: 100 μ m AL Foil(-20~5°C)、25 μ m PET (10~100°C)

(N/2cm)

Measurement temperature	-20°C	0°C	5°C	10°C	23°C	40°C	60°C	80°C	100°C
Bond Strength	AL	94.2	91.0	25.5	17.4	14.4	11.9	10.8	9.3

AL : AF from backing material

Both side AF

5. A constant load exfoliation examination

- Tape width: 20 mm
- Bonding condition: One stroke with 2 kg roller
- Leave the specimen for one hour at RT before the test.
- Atmosphere for measurement: RT (23 \pm 5°C, 65 \pm 10%)
- Backing material: 25 μ m PET
- Load : 100g
- Exfoliation distance is measured.

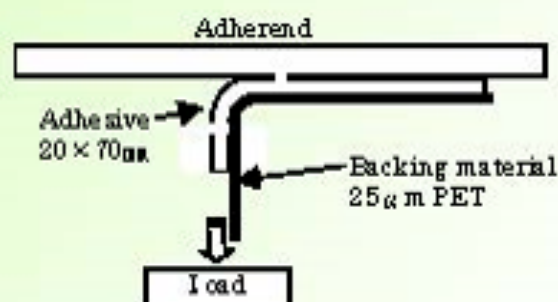


Fig 3. Measurement method of A constant load exfoliation examination

		SUS	AL	ABS	PS	PMMA	PP
Exfoliation distance(mm) 100g/2cm	1h after	1.0	2.0	2.0	2.5	2.0	3.5
	3h after	1.3	3.0	3.5	5.0	3.3	7.8
	5h after	1.3	2.8	4.5	7.5	4.5	11.0
	24h after	1.5	9.5	18.5	34.0	16.0	59.0

Note: This report is based on our reliable experiments. However, it does not mean that the performance described in this report is guaranteed. Use the product under your responsibility after sufficiently studying the intended use and service condition of the product.

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Creation April, 2004

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PGGU2.MH15431

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SONY CHEMICALS CORP

MH15431

KANUMA FACTORY
18 SATSUKI-CHO
KANUMA-SHI, TOCHIGI-KEN 322-8501 JAPAN

Pressure sensitive laminating adhesives:NP203, NP203W. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

NP303, NP303W. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

G4000, G9303S, T3500, T3500S, T3500SW, T3500W. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4000, T4000W. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4000B, T4000BW. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4500B, T4500BW. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4700M. For bonding aluminum (thickness 0.002 to 0.032 in) to aluminum, and galvanized steel, max temperature 150 C (302 F) min temperature -40 C (-40 F); Acrylonitrile Butadiene Styrene (ABS) and Polypropylene plastics; max temperature 80 C (176 F) min temperature -40 C (-40 F); Polystyrene plastics; max temperature 60 C (140 F) min temperature -40 C (-40 F). Suitable where exposed indoors to high humidity or occasional exposure to water.

G90XX\$. For bonding aluminum (thickness.007 to 0.020 in), polycarbonate (thickness.019 to.079 in) and acrylic (thickness.019 to.079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4700M. For bonding aluminum (thickness 0.002 to 0.032 in.) to aluminum, and galvanized steel, max temperature 150 C (302 F) min temperature -40 C (-40 F); Acrylonitrile Butadiene Styrene (ABS) and Polypropylene plastics; maximum temperature 80 C (176 F), minimum temperature -40 C (-40 F); polystyrene plastics, maximum temperature 60 C (140 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity or occasional exposure to water.

T4410, T4410W, T4411, T4411W, T4900, T4900W. For bonding aluminum (thickness 0.002 to 0.032 in.) to aluminum, stainless steel, galvanized steel, alkyd enamel and porcelain, maximum temperature 150 C (302 F), minimum temperature -40 C (-40 F); polycarbonate, maximum temperature 100 C (212 F), minimum temperature -40 C (-40 F); polyphenylene oxide, nylon and ABS plastic, maximum temperature 80 C (176 F), minimum temperature 40 C (-40 F). Suitable where exposed indoors to high humidity or occasional exposure to water. Also suitable where exposed outdoors, affixed to all the surfaces mentioned above except aluminum, stainless steel, polycarbonate, polyphenylene oxide and nylon.

T4720. For bonding aluminum (thickness 0.002-0.032 inch) to aluminum and galvanized steel, maximum temperature 150 C (302 F), minimum temperature -40 C (-40 F); ABS plastic, maximum temperature 80 C (176 F), minimum temperature -40 C (-

40 F) and polystyrene, maximum temperature 60 C (140 F), minimum temperature -40 C (-40 F). Suitable for indoor use where exposed to high humidity or occasional exposure to water.

T4720. For bonding aluminum (thickness 0.032 inch) to polypropylene, maximum temperature 80 C (176 F). Suitable for indoor use where exposed to high humidity or occasional exposure to water.

G91XX\$\$, for bonding aluminum thickness 0.008 thru 0.020 in., acrylic 0.020 thru 0.079 in. and polycarbonate 0.020 thru 0.079 in. to ABS plastic, maximum temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable for indoor use where exposed to high humidity or occasional exposure to water.

"G99XX\$\$". For bonding aluminum face stock 0.007 inch - 0.020 inch thick, polycarbonate face stock 0.020 inch - 0.079 inch thick and acrylic face stock 0.020 inch - 0.079 inch thick to ABS plastic, maximum temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable for indoor use where exposed to high humidity or occasional exposure to water.

Note:

\$\$- May be replaced by alpha characters denoting release liner type.

XX-Replaced by digits denoting product thickness.

Marking: Company name or trademark "SC" in a square and laminating adhesive designation on packaging, roll core or release liner.

Last Updated on 2003-12-02

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廠商名稱 Vendor name	譚裕實業股份有限公司	料號 Qisda P/N	2E.92FS0.002	測試日期 Test date	2015/6/9
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測試項目 Test Item		Test Result (Pass/Fail)	
1	FR4 : 24mil	PASS	
2	MHF Plug Connector	PASS	
3	Φ1.13mm Cable; Gray	PASS	
4	雙面背膠G9000	PASS	
			  

Result (Pass/Fail)	Pass	Qisda CE approved(Review) :	Zoey Wu.
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