

Measurement of MPE

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

EUT	:	External Conexant 56K Data/Fax Bluetooth Modem
Model No.	:	BT-56SA-SCD
FCC ID	:	JCHBT56SASCD
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	:	2401 MHz-2480 MHz
Support Channel	:	79 Channels
Channel Spacing	:	1 MHz
Modulation Skill	:	GFSK
Power Type	:	Powered by the AC Adapter (Model No.: MW41-0900800UA) (I/P: 230VAC, 50Hz; O/P: 9VAC, 800mA)
Applicant	:	WELL Communication Corp. 11F, No. 788, Chung Cheng Rd., Chung Ho City, Taipei Hsien, Taiwan, R.O.C.

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, by the *Friis Transmission Formula*:

$$\text{Power density at the specific separation (portable): } S = \frac{PG}{4pR^2} = \frac{2.12 \times 1.995}{4p(20)^2} = 8.414 \times 10^{-4} \text{ mW / cm}^2$$

$$\text{Estimated safe separation: } R = \sqrt{\frac{PG}{4p}} = \sqrt{\frac{2.12 \times 1.995}{4p}} = 0.58 \text{ cm}$$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 0.58 cm."

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

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

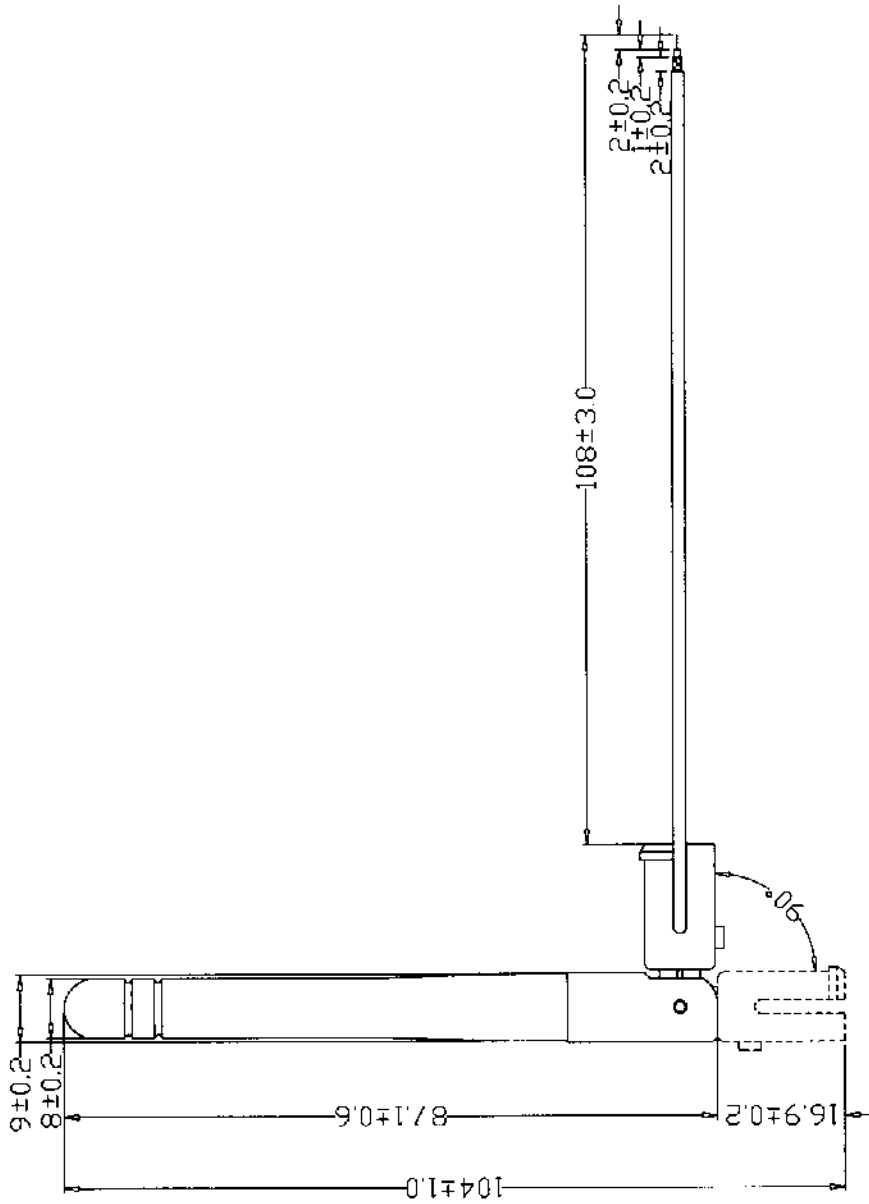
G = power gain of the antenna in the direction of interest relative to an isotropic radiator

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:

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

$$G = \text{Log}^{-1} (3 / 10) = 1.995$$



REVISONS		DATE
REV	BY	DESCRIPTION
1		

ITEM NO.	QTY REQD	PART NUMBER	DESCRIPTION
1			

PARTS LIST			
UNIT	QTY	DESCRIPTION	TITLE
INT			
INT			
INT			

REV	NO	SIZE	A4
1	2		

DO NOT SCALE DRAWING	1 OF 1	2

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:	
DECIMALS	ANGLES
± 0.50	1/2°
± 0.25	
± 0.15	

MATERIAL	FINISH

PART NO.	DESCRIPTION
MCF003A-204-01	宏傳 MCF003A-204-01
MCF003A-204-01	欣格科技股份有限公司 Antenniques Corp. Ltd.
WR-R-AD0225-A1	

METRIC

THIRD ANGLE PROJECTION

TECHNICAL DATA

● Electrical Properties

Frequency Range : 2.4~2.5GHz

Impedance : 50 Ohm nominal

VSWR : ≤ 2.0

Gain : 3dBi

Radiation : Omni

Polarization : Vertical

Electrical Wave : $\lambda/4$ Dipole

● Mechanical Properties

Antenna Cover : PU

Color : Black

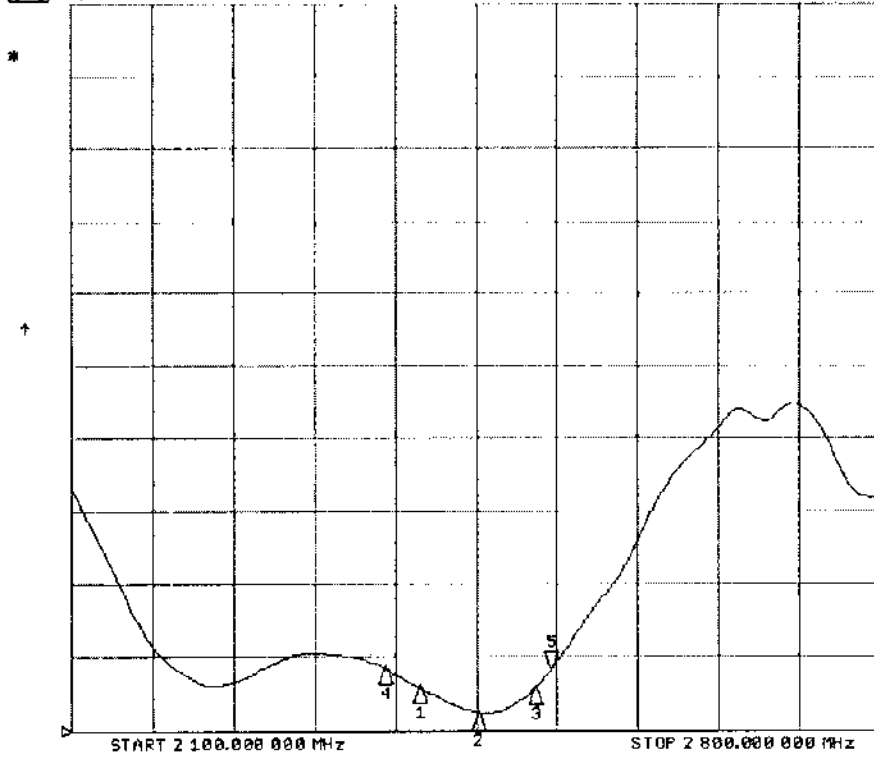
Operation Temperature : $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$

Storage Temperature : $-30^{\circ}\text{C} \sim +75^{\circ}\text{C}$

VSWR

23 Apr 2002 09:45:13

CH1 S22 SWR 1 / REF 1 S: 1.8128 2 513.560 009 MHz



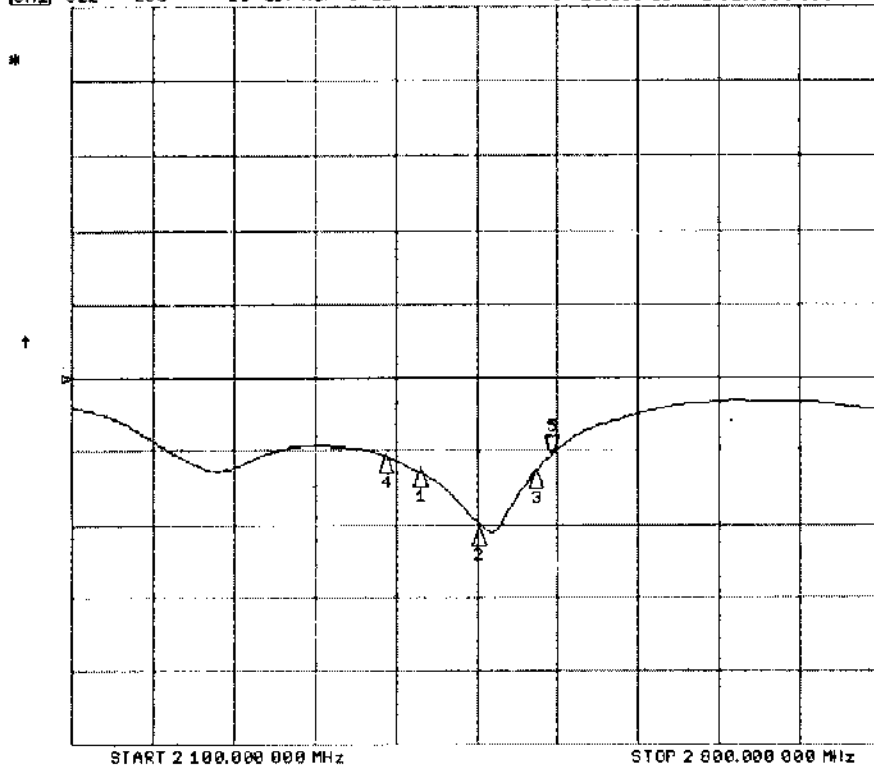
CH1 Markers

- 1: 1.5974
2.40000 GHz
- 2: 1.2194
2.45000 GHz
- 3: 1.5917
2.50000 GHz
- 4: 1.8539
2.35970 GHz

Return Loss

23 Apr 2002 09:44:47

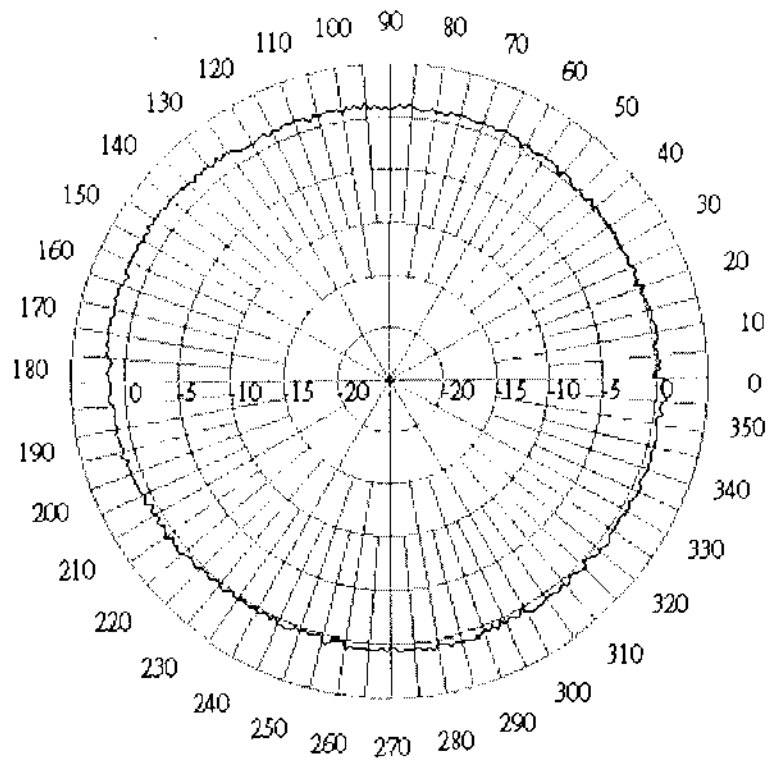
CH1 S22 LOG 10 dB/REF 0 dB S: -10.690 dB 2 513.560 009 MHz



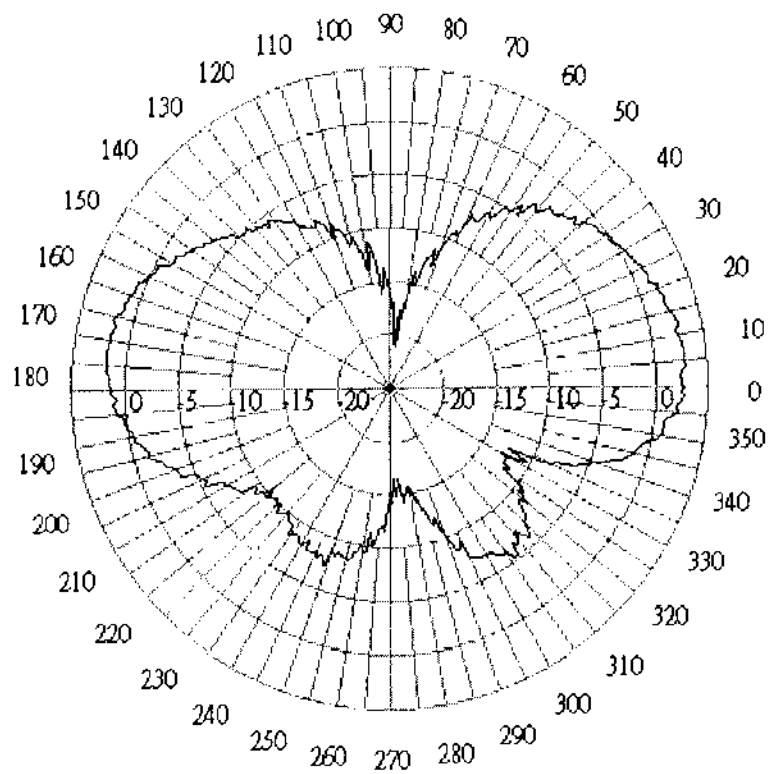
CH1 Markers

- 1: -12.525 dB
2.40000 GHz
- 2: -20.499 dB
2.45000 GHz
- 3: -12.510 dB
2.50000 GHz
- 4: -10.578 dB
2.35970 GHz

H-Plane



E-Plane



BRASS

线

线是种类最多的铜产品，没有任何产品在应用上有线这样广泛。

圆线之使用包括：

- 长行程螺旋弹簧
- 小型机电插座
- 冷锻钉头紧固件
- 弹簧负载测试探针
- 轻量耐疲劳线缆
- BANDOLIERED 连接器接点
- 编织屏蔽布
- 防腐及防生物恶臭海上线及筛网结构
- 眼镜框

线拉直切成一定长度称为杆 (ROD)。

线之断面也可以不是圆形，“异形”线在特殊的应用中担任了重要的角色，如扁线用于可收缩天线及电报电缆。扁线也可用于代替窄带，虽然有宽度对厚度的比，如果超过此比就不可行。但在许多情形下可达到节约。扁线可减少剪裁毛边。

方线用于电子接点，特别是线的包封需要尖锐的角时，可以达到可靠的接触。偶尔，方形及长方形的线，需要斜角以定向。这些需求及其他较不普遍的形状的铜线均可以达到。

本公司所供应之线直径自12.7mm至1.3mm，其公差如表所示。较细的线可以向本公司定单或从本公司之许多再拉制商获得。

线可以退火态 (A) 或四分之一硬 (1/4H)、半硬 (1/2H) 或全硬 (H) 供应。但在特别情况下也供应预硬化 (亦称“预处理”) 线。本产品适用于各种强度与耐久性的产品，可达到柔软而严格的成型要求。

技术规格		
BRUSH 合金	UNS 编号	线材
25	C17200	ASTM B 197 QQ-C-630 AMS 4725 SAE J 461, SAE J 463 JIS H3270
M25	C17300	ASTM B 197 QQ-C-630
3	C17510	.
10	C17500	.

ASTM 美国材料试验学会
QQ 联邦规格
SAE 自动车辆工程师学会
AMS 太空材料规格 (SAE 规格)
JIS 日本工业规格
DIN 德国工业规格

注：除另有规定外，材料均按 ASTM 标准制造。
* 可获得产品，技术规格在制定中。

公差 (毫米)			
线直径		BRUSH WELLMAN 标准公差 (+或-)	
以上	以下	冷拉	退火
1.27	2	0.008	0.025
2	3	0.01	0.05
3	6	0.015	0.05
6	8	0.02	0.05
8	10	0.025	0.05
10	12	0.025	0.05

注：非圆形之公差为直径公差的一半。



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Beryllium Copper

铍铜线之机械及电学性质

合金 Alloy	状态 (*)	热处理	线直径 mm	抗拉强度 kg/mm ²	屈服强度 kg/mm ²	伸长百分比	导电百分比 IACS
25 C17200 和 M25 C17300	A (TB00)	-	1.3-12.7	42-55	14-22	30-60	15-19
	1/4H (TD01)	-	1.3-12.7	63-81	52-74	3-25	15-19
	1/2H (TD02)	-	1.3-12.7	77-95	63-88	2-15	15-19
	3/4H (TD03)	-	1.3-2.0	91-109	80-106	2-8	15-19
	H (TD04)	-	1.3-2.0	98-117	91-113	1-6	15-19
	AT (TF00)	3hr 315-330°C	1.3-12.7	112-141	101-127	3 以上	22-28
	1/4HT (TH01)	2hr 315-330°C	1.3-12.7	123-148	116-141	2 以上	22-28
	1/2HT (TH02)	1.5hr 315-330°C	1.3-12.7	130-152	119-148	2 以上	22-28
	3/4HT (TH03)	1hr 315-330°C	1.3-2.0	133-162	123-155	2 以上	22-28
	HT (TH04)	1hr 315-330°C	1.3-2.0	137-162	128-155	1 以上	22-28
3 C17510 和 10 C17500	A (TB00)	-	1.3-12.7	24-39	7-22	20-60	20-30
	H (TD04)	-	1.3-12.7	45-57	38-53	2-20	20-30
	AT (TF00)	3hr 480-495°C	1.3-12.7	70-92	56-78	10 以上	45-60
	HT (TH04)	3hr 480-495°C	1.3-12.7	77-99	66-88	10 以上	48-60

* ASTM之字母及数字表示的产品状态。



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PTFE MATERIAL

APPENDIX

LEO ME PTFE rod is manufactured with virgin PTFE powder by ram extrusion or compression molding and is conformed to meet the requirement of ASTM 1710 (Standard Specification for TFE FLUOROCARBON ROD) described in following table and JIS K 6889 (JAPANESE INDUSTRIAL STANDARD POLYTETRAFLUOROETHYLENE RODS) .

TABLE 1 Detail Specification for PTFE Rod

ITEM	PROPERTY	ASTM TEST METHOD	VALUE
1	Specific gravity	D792	2.15-2.2
2	Tensile strength	D638	280-350 kg/cm ²
3	Elongation	D638	200-400%
4	Dielectric strength	D149	30KV/mm
5	Deformation under load. 6.9Mpa, 50C, %	D621	3.5 - 6
6	Dissipation factor 1 KHz	D150	Less than 0.0005
7	Dielectric constant 1 KHz	D150	2.0 - 2.1
8	Volume resistivity	D257	> 10 ¹⁶
9	Surface resistivity	D257	10 ¹⁷
10	Flexural modulus	D790	430-500Mpa
11	Compressibility	D1147	16-20%
12	Hardness, durometer	D2240	D53 - D60
13	Impact strength	D256	16kg-cm/cm
14	Coefficient of linear thermal expansion, per C. 30C to 80C, 10 ⁻⁵ C	D696	12.3 to 11.6



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PTFE PROPERTY

Item	UNIT wt%	TEST METHOD (ASTM)	PTFE (NATURE)
Apparent density	g/lit	D-1457	260
Specific Gravity	g/cm ³	D-792	2.18
Tensile Strength	kg/cm ²	D-638	315
Elongation	%	D-638	400
Deformation (Total) MD	%	D-621 (23°C 140 kg/m ²)	—
60min. CD			—
24Hrs. CD			14.3
			16.7
Permanent MD			7.9
Deformation CD			8.4
Deformation MD		150°C 200 kg/cm ²	51.8
60min. CD			—
Flexural Strength CD (0.2% offset)	kg/cm ²	D-790	57
Flexural Modulus CD			3,500 ~ 6,300
Compressive Strength MD (0.2% offset) CD	kg/cm ²	D-695	77
Compressive MD			4,200
Modulus CD	—		
Hardness	Durometer "D"	D-2240	55
Impact Strength	kg-cm/cm	D-256	15.8
Coefficient of Thermal Conductivity	Kcal/m.hr.°C	Cenco Fitch	0.21
Coefficient of Linear Thermal Expansio	0.01m/°C	D-696	25-90°C MD
25-90°C CD			—
25-150°C MD			12.2
25-150°C CD			—
25-200°C MD			12.6
25-200°C CD			—
25-260°C MD			13.7
25-260°C CD			—
Water Adsorption	%	D-570	0
Coefficient of Friction(Dynamic)		P=7 kg/cm ² V=0.5 m/sec	—
Coefficient of Friction(Static)		P=35 kg/cm ²	0.05-0.08



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PTFE QUALITY CONTROL REPORT

We hereby state that the following material is in accordance with our specifications.

Date : November 6, 2001
Product : ICI PTFE G201
Lot No : FPIHRI 9001
Contents : 25kg * 35
Ref No :

Inspection Item	Unit	Data	Test Method
Bulk density	g/L	465	ASTM D 4895
Standard specific gravity		2.174	ASTM D 4895
Particle size(Avg.)	µm	500	ASTM D 4895
Melting point	°C	329	ASTM D 4895
Extrusion pressure	MPa	69.7	Asahi method
Water content	mas %	0.001	ASTM D 4895

ASAHI GLASS FLUOROPOLYMERS CO., LTD.

Tetsuya Higuchi

Production Engineering Group
Polymer Production Department
Chemical Division



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Antenna Cover Polyurethane

Elastogran GmbH
Geschäftsbereich TPU-Elastomere

Elastogran



Elastogran GmbH · Postfach 1140 · 40440 Lamfbrda · Germany
WGJ COMPANY LTD.

P.O. BOX 36 - 431
RC TAOYUAN HSIEN

ESAF Gruppe

Date 18.07.2001
No. 62046

Inspection Certificate EN 10 204-3.1 B (DIN 50048)

Product : ES 95 A 50 000 B No. : 15002939
Batch : 207672
Basic-Batch 207673

Property	Test method	Unit	Value
Dichte	DIN 53479	g/cm ³	1,24
Shore-Haerte D	DIN 53505	-	50
Zugfestigkeit	DIN 53504	MPa	53
Reissdehnung	DIN 53504	%	550
Abrieb	DIN 53516	mm ³	22

Dichte = Density/Densité, Shore Härte = Shore hardness/Shore Dureté, Zugfestigkeit = Tensile strength/Resistance traction,
Reißdehnung = Elongation at break/Allongement rupture, Weibereißwiderstand = Tear strength, Abrieb = Abrasion loss/Abrasion

The stated values are measured from a representative batch (basic-batch) of every product campaign.

Test platens are injection moulded from dry granulate with less than 0,05 % water content. Test platens tempered 20 hrs. at 100 °C,
then cooled to 23 °C / 50 % RH before testing. Test specimen cut from test platens.

We hereby certify, that the material described above complies with the terms of the order contract

Hübner Schoote

Works Inspector

The above information is derived from our quality checks. It does not relieve the purchaser from examining the product upon delivery
and gives no assurance of suitability of the product for any particular purposes.



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Antenna Cover Polyurethane

Elastollan S規格系列

聚酯類Polyester，有良好機械特性，優異的耐腐性，高
 彈性，抗拉及撕裂強度用於運動鞋底、溜冰鞋及機械零
 件等，射出及押出成形

物 性	單位	DIN	S80A	S85A	S88A	S90A	S95A	S98A	S60D	S64D	S74D
用於射出 ▲ 押出 ■ 吹出 ●			▲■	▲■	▲	▲■	▲	▲	▲	▲	▲
硬度 蕭氏A Hardness	Shore A	53505	81	85	88	93	96				
硬度 蕭氏D Hardness	Shore D	53505			38	41	48	55	60	64	75
密度Density	g/cm ³	53479	1.22	1.23	1.23	1.24	1.24	1.25	1.25	1.26	1.26
抗拉強度Tensile strength *	N/mm ²	53604-S2	50	55	55	55	50	45	45	45	40
斷裂延伸率Elongation at break *	%	53504-S2	750	650	650	600	550	500	500	450	300
20% 抗拉模數 Tensile modulus *	N/mm ²	53504-S2	2	2	3	6	8	13	15	22	25
100% 抗拉模數 Tensile modulus *	N/mm ²	53504-S2	4	5	6	9	11	16	18	23	30
300% 抗拉模數 Tensile modulus *	N/mm ²	53504-S2	8	8	9	13	20	23	34	38	40
彈性模數—張力測試 (測試樣品3mm) Modulus of elasticity	N/mm ²	53457-1						200	250	410	800
撕裂強度 Tear strength	N/mm	53515	60	70	75	95	120	150	170	200	240
摩擦損耗 Abrasion loss	mm ³	53516	40	35	30	30	30	25	25	25	25
室溫壓縮變形率 Compression set	%	53517	25	25	25	25	25	30	40	45	55
70°C 壓縮變形率 Compression set	%	53517	35	35	35	45	45	45	50	55	60
凹口衝擊強度 +23°C	kJ/m ²	53453	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂
Notched impact strength (Charpy) -30°C			不破裂	不破裂	不破裂	不破裂	5	6	6	4	3

- *S2試片在100mm/min的應變速度下測量
- 厚度2或6mm射出試片，在100°C回火20小時後測驗
- 上列測驗值僅供參考，常因客戶製品設計而變
- 換算單位：1MPa=10.2kg/cm²=145PSI=1N/mm²
1kJ/m²=1.02kg.cm/cm²

- 加工條件
- 射出成形溫度176-240°C
 - 模溫20-70°C
 - 押出成形溫度175-230°C



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Antenna Base Polycarbonate

TEIJIN CHEMICALS LTD.

TEIJIN CHEMICALS LTD.
2-2, UCHISAIWAICHO 1-CHOME,
CHUYODA-KU, TOKYO, JAPAN

TELEPHONE: TOKYO (3506) 4780
FACSIMILE: TOKYO (3506) 4780

TO WHOM IT MAY CONCERN:

CERTIFICATE OF QUALITY

ITEM	UNIT	TEST METHOD	TEIJIN CHEMICALS QUALITY STANDARD	TEST RESULT
IMPACT STRENGTH (IZOD NOTCHED 3.2mm thick)	kgf/cm ²	ASTM D256	≥ 80	PASS
FLEXURAL MODULUS	kgf/cm ²	ASTM D790	23,600 ± 1,600	PASS
TENSILE STRENGTH (AT BREAK)	kgf/cm ²	ASTM D638	820 ± 140	PASS

NOTE : ALL FIGURES ENTERED IN THIS TABLE ARE FOR THIS SPECIFIC LOT AND, THEREFORE,
NO GUARANTEE.

TEIJIN CHEMICALS LTD.

M. Kikuchi

Y. KIKUCHI
MANAGER
SALES ADMINISTRATION DEPT.



欣格科技股份有限公司 Antenniques Co., Ltd

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Antenna Base Polycarbonate

QMFZ2

Component - Plastics

TEIJIN CHEMICALS LTD

E50075 (M)

(C - cont. from I:010 card)

L-1225LM(d),	All	0.40	94V-2	80	80	80	4	3	2	—	—
L-1225ZL(d)		0.75	94V-2	80	80	80	3	1	2	—	—
		1.5	94V-2	125	115	125	3	1	3	—	—
		2.1	94HB	125	115	125	3	1	3	—	—
		3.0	94HB	125	115	125	2	1	3	5	2
		6.0	94HB	125	115	125	1	1	4	—	—
L-1225LL(d)	All	0.4	94V-2	80	80	80	4	3	2	—	—
		0.75	94V-2	80	80	80	3	1	2	—	—
		1.5	94V-2	125	115	125	3	1	3	—	—
		3.0	94V-2	125	115	125	3	1	3	5	2
		3.3	94HB	125	115	125	2	1	3	—	—
		6.0	94HB	125	115	125	1	1	4	—	—
L-1250#(f2)(d),	All	0.40	94V-2	80	80	80	4	3	2	—	—
L-1250U#(d),		0.84	94V-2	80	80	80	4	—	4	—	—
L-1250V#(d),		1.5	94HB	125	115	125	4	0	3	—	—
L-1250Z#(d)		3.0	94HB	125	115	125	2	0	3	5	2
		6.0	94HB	125	115	125	1	0	4	—	—

Reports: February 10, 1989; February 10, 1989; September 24, 1990.

Replaces E50075C dated November 1, 1994.

(Cont. on C005 card)

699748006

N7047

Underwriters Laboratories Inc.®

D1E/0032918

QMFZ8

July 28, 1997

Component - Plastics Certified For Canada

TEIJIN CHEMICALS LTD

E50075 (M)

(C - cont. from B card)

(cc) 10 thru 30 incl.

(i) A two digit number (10-15) denoting carbon filler content.

(j) A two digit number (10-40) denoting the total content of carbon fiber and glass fiber.

ww - A two digit number 10 thru 20 denoting content of carbon filler.

Any one or two letters may be suffixed to the grade.

Marking: Company name and material designation, generic polymer identification, color number where appropriate, and batch or lot number or date of manufacture on container, wrapper or molded on finished part.

See General Information Preceding These Recognitions.

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

699748006

Underwriters Laboratories Inc.®

C11/0251459



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Properties of Panlite[®]

Items	Unit	Test Method	Condition	Weather Resistant Grade (SAE approved)			
				L-1225ZL	L-1225Z	L-1250Z	
Specific gravity	—	ASTM D792	—	1.20	1.20	~ 1.20	
Water absorption	%	ASTM D570	24hr in 23°C water	0.20	0.20	0.20	
Light transmission	%	ASTM D1003	3mm thick	88	88	88	
Refractive index	—	ASTM D542	—	1.585	1.585	1.585	
Tensile strength	Yield	MPa (kgf/cm ²)	ASTM D638	—	65 (560)	63 (540)	62 (530)
	Break	MPa (kgf/cm ²)	ASTM D638	—	64 (555)	77 (790)	80 (820)
Tensile modulus	MPa (kgf/cm ²)	ASTM D638	—	2,190 (22,300)	2,130 (21,700)	2,120 (21,600)	
Tensile elongation	Yield	%	ASTM D638	—	6	6	6
	Break	%	ASTM D638	—	130	140	140
Flexural strength	MPa (kgf/cm ²)	ASTM D790	—	96 (980)	93 (950)	92 (940)	
Flexural modulus	MPa (kgf/cm ²)	ASTM D790	—	2,330 (23,800)	2,280 (23,000)	2,230 (22,700)	
Compressive strength	MPa (kgf/cm ²)	ASTM D695	—	77 (790)	76 (780)	76 (770)	
Impact strength	J/m (kgf-cm/cm)	ASTM D256	Izod notched 3.2mm thick	100 (10)	830 (85)	880 (90)	
	J/m (kgf-cm/cm)	ASTM D256	Izod notched 8.4mm thick	50 (5)	130 (13)	140 (14)	
Rockwell hardness	—	ASTM D785	M scale	77	77	77	
Mold shrinkage	%	ASTM D955	Flow direction	0.5-0.7	0.5-0.7	0.5-0.7	
			Transverse direction	0.5-0.7	0.5-0.7	0.5-0.7	
Heat distortion temperature	°C	ASTM D648	Load 0.451 MPa (4.6 kgf/cm ²)	138	141	142	
			Load 1.813 MPa (18.6 kgf/cm ²)	128	131	132	
Coefficient of linear expansion	× 10 ⁻³ cm/cm/°C	ASTM D696	Flow direction	7	7	7	
			Transverse direction	7	7	7	
Dielectric breakdown strength	kV/mm	ASTM D149	Quick voltage rise method 1.8mm thick	30	30	30	
Volume resistivity	× 10 ¹⁴ Ω-cm	ASTM D257	—	3	3	3	
Dielectric constant	—	ASTM D150	50 Hz	2.95	2.95	2.95	
			10 ⁶ Hz	2.9	2.9	2.9	
Dielectric loss tangent	—	ASTM D150	50 Hz	0.0004	0.0004	0.0004	
			10 ⁶ Hz	0.009	0.009	0.009	
Arc resistance	sec	ASTM D488	—	100	100	100	
Anti-tracking (CTI)	V	IEC 112	—	300	300	300	
Flame resistance	—	UL 94	1.47mm thick	94V-2	94V-2	94V-2	
			3.05mm thick	94V-2	94V-2	94V-2	
Temperature index	°C	UL 746B	Electric 1.47mm thick	125	125	125	
			Impact 1.47mm thick	115	115	115	
			Non-impact 1.47mm thick	125	125	125	

All figures entered in this table are the typical figures and, therefore, no guarantee is made.



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Grades of Panlite

Grades	Viscosity	Characteristics	Main molding methods	Principal applications
K-1300	High	Standard	Extruding/blow molding/ injection molding	<ul style="list-style-type: none"> • Sheet, film, pipe and other extruded products. • Bottles and other direct blow molded products.
K-1300Y	-	Mold release/ice color	Extruding/blow molding/ injection molding	
K-1300Z	-	Weather resistance/ ice color	Extruding/blow molding/ injection molding	
K-1300W	-	Powder	Extruding/rotational molding	
K-1285	-	Standard	Extruding/blow molding/ injection molding	
L-1250	Medium	Standard	Injection molding	<ul style="list-style-type: none"> • Machine parts, electric and electronics appliance parts, medical apparatuses, protective equipment parts, industrial parts in general. • Lighting fixture parts requiring transparency and heat resistance. • Table wares and mechanical parts requiring cold and heat resistance.
L-1250R	-	Mold release	Injection molding	
L-1250Y	-	Mold release/ice color	Injection molding	
L-1250Z	-	Weather resistance/ ice color	Injection molding	
L-1250J	-	Boiling water resistance	Injection molding	
L-1250T	-	Boiling water resistance/mold release/ice color	Injection molding	
L-1250W	-	Powder	Injection molding/ rotational molding	
L-1225	Low	Standard	Injection molding	
L-1225R	-	Mold release	Injection molding/ injection blow molding	
L-1225Y	-	Mold release/ice color	Injection molding/ injection blow molding	
L-1225Z	-	Weather resistance/ ice color	Injection molding	
L-1225J	-	Boiling water resistance	Injection molding	
L-1225T	-	Boiling water resistance/mold release/ice color	Injection molding/injection blow molding	
L-1225W	-	Powder	Injection molding/ rotational molding	
L-1225L	Ultra low	Mold release/ice color	Injection molding	• Ultra-thin wall parts of electric & electronics appliances.
L-1225ZL 100	-	Mold release/ weather resistance/ ice color	Injection molding	• Ultra-thin lamp lenses.
AD-5503	-	Optical properties/ low contamination	Injection molding	• Compact disks, CD-ROM, optical lenses.



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Cable M17/93-RG178

c:\files\cable\m17\m17.dwg

Rev	Change	Date

Construction:

A) Center Conductor:
30 7/38 SPCW
OD .012" ± .001"

B) Dielectric:
Extruded PTFE
OD .033" ± .002"

C) Shield:
J8 ANG SPC
OD .051" Nom

D) Jacket:
FEP - Brown Tint
OD .071" ± .004"
Surface Printed: "RG178HF HARBOUR INDUSTRIES 27478"

Electricals:

Impedance: 50 ± 2 Ohms
Capacitance: 32 pF/ft Max.
Velocity of Prop: 70% Nom.
Cut off Frequency: 116 GHz

Physical Properties:

Weight per 1000 ft: 6.3 lbs Max.
Minimum Bend Radius: .36"
Operating Temperature Range: -55°C to 200°C

Attenuation:

1.0 GHz	45.0 dB/100ft.
2.0 GHz	64.4 dB/100ft.
3.0 GHz	79.7 dB/100ft.
4.0 GHz	92.7 dB/100ft.
5.0 GHz	104.3 dB/100ft.
6.0 GHz	115.0 dB/100ft.

Harbour Industries		
Date: 12/17/01	Scale: None	Drawn By: MTPiner
Drawing Name: RG178HF		Approved By: MTPiner
Part Number: T80		Rev: Sheet 1 of 1
Drawing Number: 121701_1		



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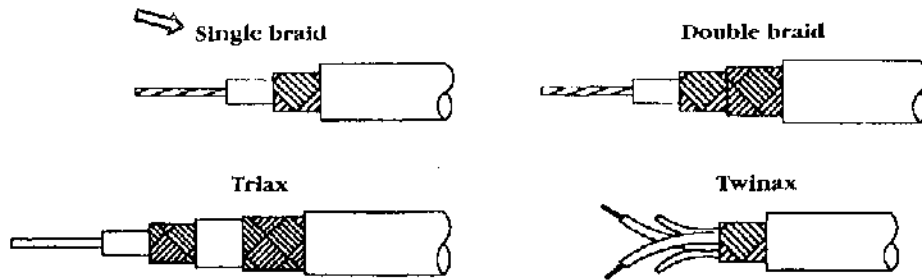
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Cable M17/93-RG178

MIL-C-17 Coax Cable – QPL Approved



Harbour supplies a complete line of high temperature, high performance QPL approved MIL-C-17 coax cables for the military, commercial and industrial markets. The specific MIL7 constructions referenced are manufactured in accordance with the most recent revision of the MIL-C-17 specification to ensure a quality product. The MIL-C-17 specification defines complete physical and electrical characteristics for each MIL7 part number, including diameter parameters, dielectric materials, braid coverage, maximum attenuation, and VSWR levels.

VSWR Sweep testing

When selecting a 50 ohm coaxial cable, constructions with VSWR requirements are recommended. Manufacturing and sweep testing cables with concern for VSWR ensures a quality cable free of spikes over the referenced frequency range. (Note the test frequencies specified in the electrical characteristics section.)

Precision PTFE Dielectrics

All of the high temperature, high performance coax cables listed have PTFE dielectrics with high dielectric strength and low capacitance in proportion to the dielectric constant. All PTFE dielectrics are manufactured with tolerances tighter than the MIL-C-17 specification to ensure uniformity of electrical characteristics, especially impedance, attenuation and VSWR.

Tape wrapped PTFE Constructions

Harbour also manufactures PTFE tape wrapped cables to a previous revision of the MIL-C-17 specification. These constructions can withstand operating temperatures up to 250° C. versus 200° C. for FEP jacketed cables. Also, PTFE tape wrapped cables are generally more flexible than their FEP jacketed counterparts.

UL Approvals

All of Harbour's MIL7 part numbers manufactured to the MIL-C-17 specification may be ordered with UL 1971 and FT4/FT6 approvals.



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