

承 認 書
SPECIFICATION FOR APPROVAL

客 戶
CUSTOMER

尚亞科技股份有限公司

日 期
DATE

92 年 09 月 17 日

品 名
DESCRIPTION

Swivel Type, 1/4λ Monopole Antenna
(Gray)
Reverse SMA Connector

客 戶 料 號
CUSTOMER P/N



萬旭電業股份有限公司

WANSHIH ELECTRONIC CO., LTD.

台北縣五股鄉五工六路 72 號 3 樓

3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT

TAIPEI HSIEN, TAIWAN, R.O.C.

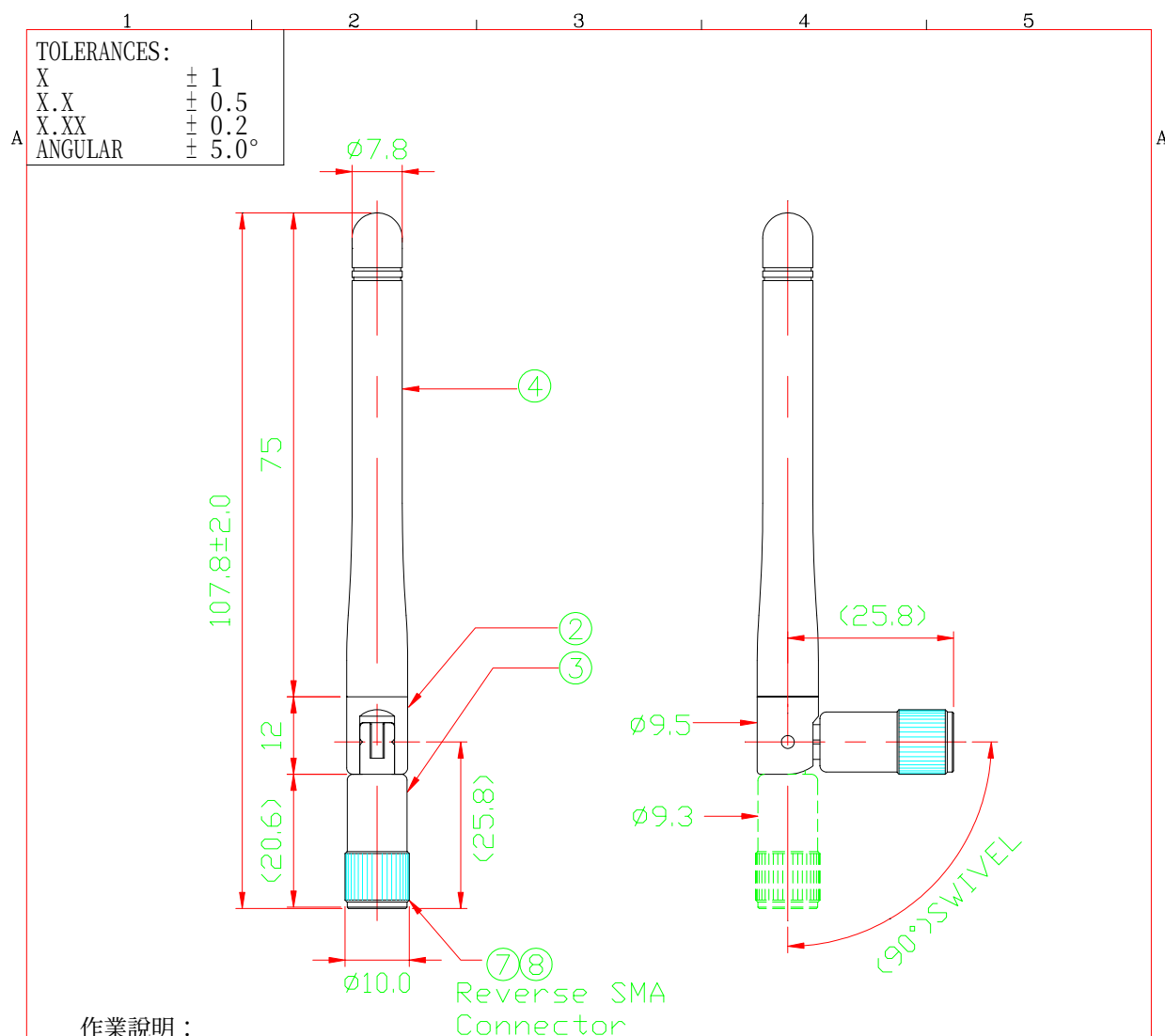
TEL : (02) 22988066 (5 LINE) FAX : (02)22981102

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SPECIFICATION

- | | |
|-------------------------------|--|
| 1. Description | : The antenna is a Swivel Type, Monopole Antenna |
| 2. Customer | : 尚亞科技股份有限公司 |
| 3. Model No. | : WSS002 |
| 4. Part No. | : SHW0001A |
| 5. Standard | : IEEE 802.11b 11Mbps Wireless LAN |
| 6. Antenna Profile | : 108 mm length (see Drawing) |
| 7. Color | : Gray |
| 8. Electrical Characteristics | |
| Operating Frequency | : 2.4~2.5Ghz |
| Antenna Type | : 1/4λ Dipole Sleeve |
| Polarization Type | : Linear |
| Type of Radiation | : Toroidal |
| Peak Gain | : 2.0 dBi Typical |
| Impedance | : 50 Ohm nominal |
| V.S.W.R. | : 2.0:1 Max. |
| 9. Mechanical Characteristics | |
| Action | : Swivel Type |
| Connector | : SMA Reverse Connector |
| Core | : N/A |
| 10. Raw Material | |
| Coaxial Cable | : MIL-C-17 RG-178 B/U |
| Housing | : TPU |
| Hinge | : Polycarbonate |



作業說明：		1. 天線本體，WSW0001A 2dBi 天線作業標準指導書規定製作。		依據 AQ-0001A QC管理工程圖，執行品質管制。	
9	Reverse SMA φ10 本體 Reverse SMA φ10 本體	(B02892200300ME) 250202BA1000VD	028922003SMA CONNECTOR 10 ψ 0202B-A Body Reverse SMA φ10 Connector		1 或同級品 或同級品
8	Reverse SMA φ10 PIN絕緣 Reverse SMA φ10 PIN絕緣	(B028922003A0ME) 250062BB2000VD	028922003SMA CONNECTOR 10 ψ 母 0062B-B PIN+TEFLON Reverse SMA φ10		1 或同級品 或同級品
7	Reverse SMA φ10 連接軸 Reverse SMA φ10 連接軸	(BREVESESMA10ME) 250202BC1000VD	L=8.7, ψ4.7 0202B-C1 銀連接軸 Reverse SMA φ10 Connector	金 銀	1 或同級品 或同級品
6	銅管 L19 銅管 L23.5	(252315300000YO) 250289220010ME	23-15-5 銅管<組合物> 028922001 φ5.2 天線銅管 L=23.5MM		1 或同級品 或同級品
5	固定鉚釘 固定鉚釘	(691451938L10YO) 6923151A0000SM	23-15-7 固定鉚釘<銅色> 23-15-1固定鉚釘鍍黑銀1.9*3.8(委星)	古銅 銅	2 或同級品 或同級品
4	外套<灰> 外套<灰>	(69950075L080IT) 69950075L080WA	IY072GR000 9.5 φ *75L 外套<灰> IY072GR000 9.5 φ *75L 外套<灰>	灰(424U) 灰(424U)	1 或同級品 或同級品
3	下座<灰> 下座<灰>	(699300000080IT) 699300000080WA	IY113GR000 9.3 φ 下座<灰> IY113GR000 9.3 φ 下座<灰>	灰 灰(424U)	1 或同級品 或同級品
2	上座<灰> 上座<灰>	(699500000080IT) 699500000080WA	IY114GR000 9.5 φ 上座<灰> IY114GR000 9.5 φ 上座<灰>	灰(424U) 灰(424U)	1 或同級品 或同級品
1	CABLE RG-178 Coaxial Cable	(B1RG17800030RC) 19RG17800030AE	RG-178 CABLE 橙(聯碩) RG-178 CABLE 105SV(萬泰)	橙 橙	92 1 或同級品 或同級品
NO	材料名稱	環材	電腦編號	零件規格	顏色 切斷尺寸 用量 備註

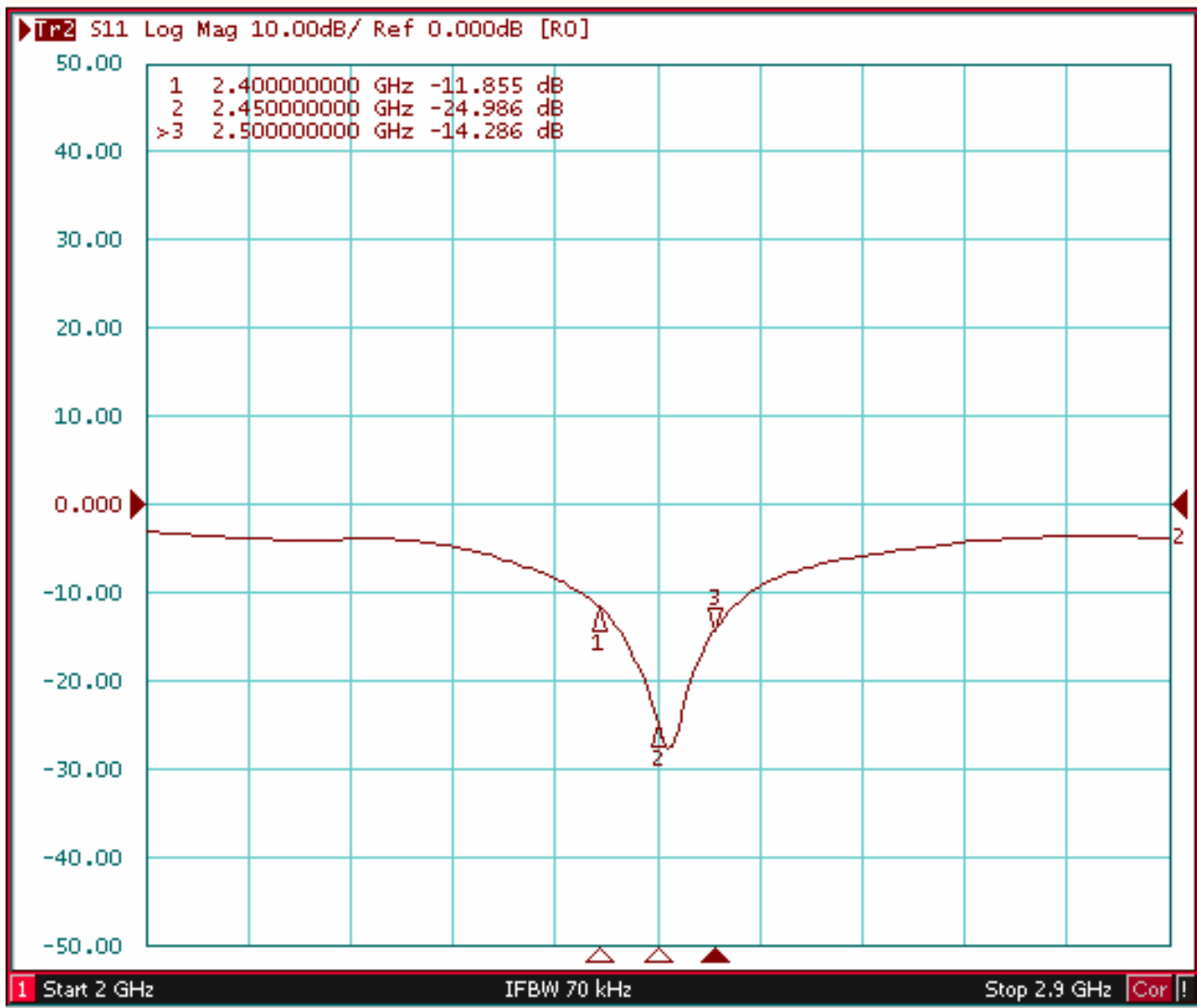
修訂日期：03/08/20		制訂日期：03/08/14		承認圖號	ENSHW0001A00	
頁數：1/3	核 准	審 查	作 成	品 名	SWIVEL TYPE, 1/4λ DIPOLE ANTENNA REVERSE SMA CONNECTOR	
第三角法			郭雅珍	成品編號	SHW0001	REV A
單位：mm						VERSION 1
比例：1:1						

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文件編號：FMT-0513-C7

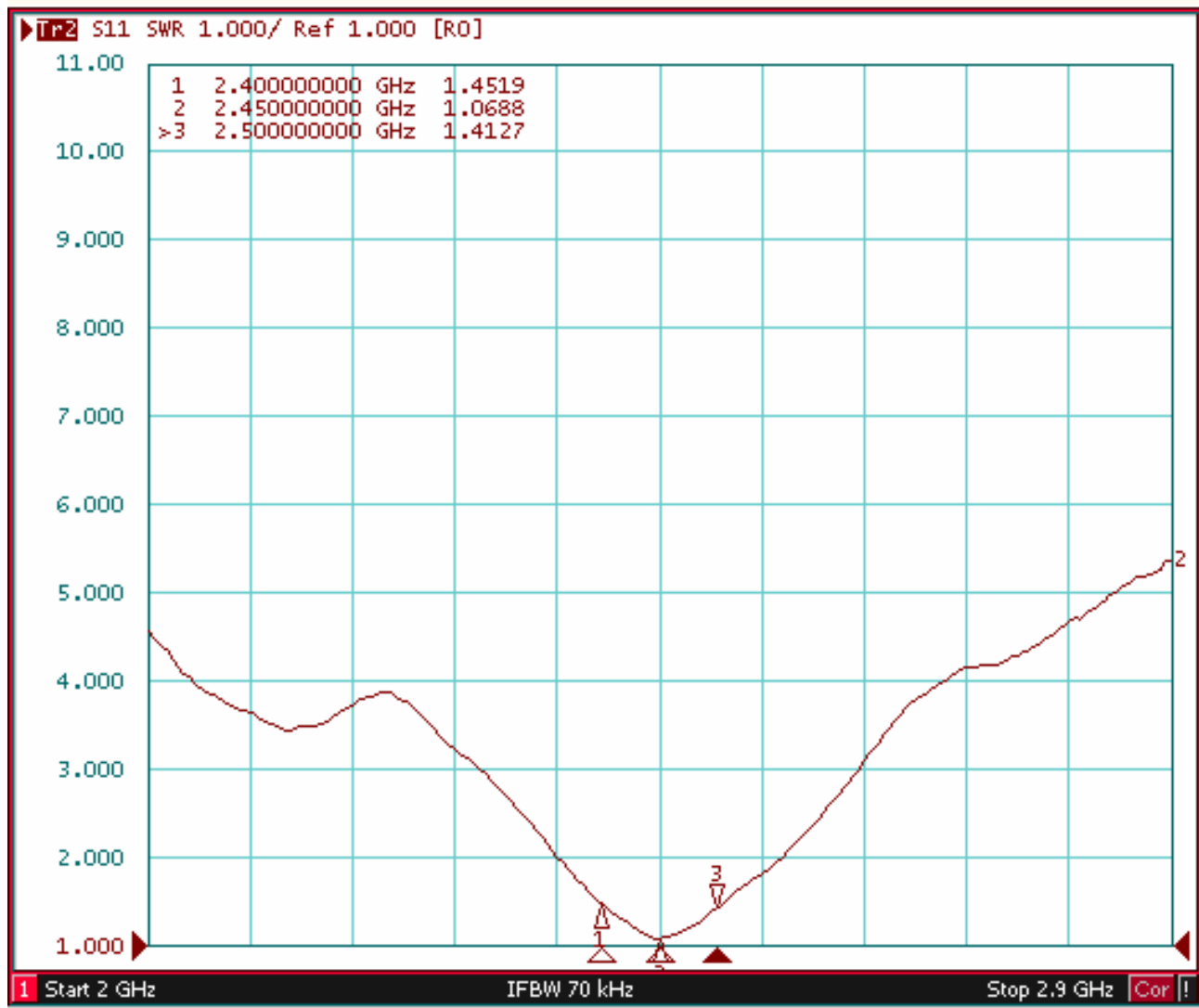
Electrical Properties

Return Loss



Electrical Properties

V.S.W.R



Electrical Properties

Radiation Pattern – H Plane

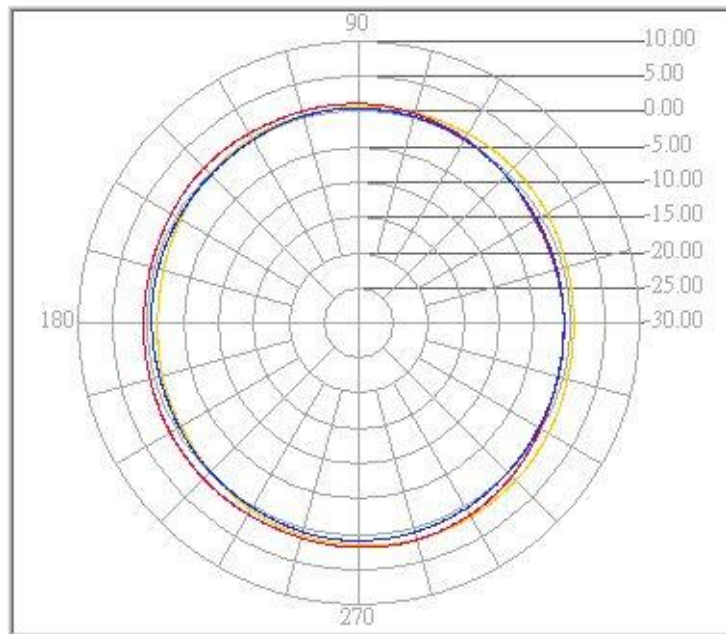


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Model No: SHW0001

Antenna Position: Vertical

Test Mode: H-PLANE



Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2400.00	1.89	291.61	0.62
Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2450.00	1.96	275.13	0.76
Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2490.00	0.94	265.49	-0.04

Test engineer: _____

Test date: 2003/6/30 at PM 01:38

Electrical Properties

Radiation Pattern – E Plane

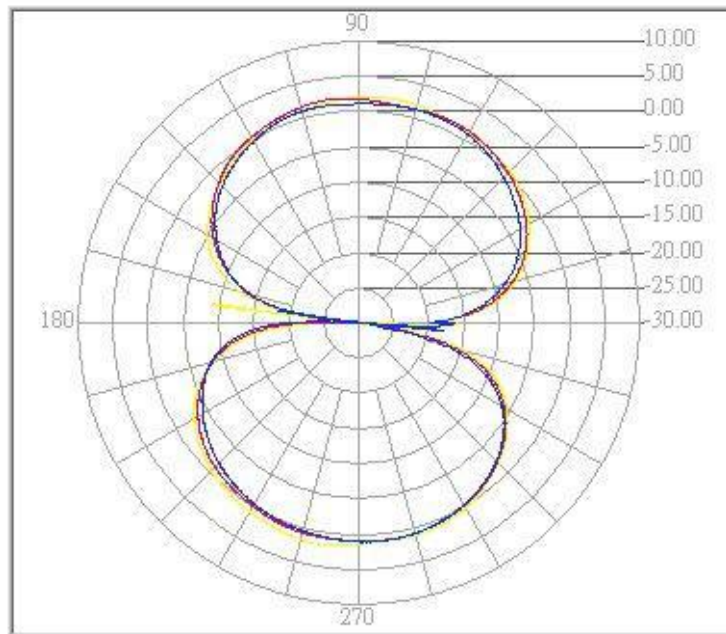


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Model No: SHW0001

Antenna Position: Horizontal

Test Mode: E PLANE



Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2400.00	2.20	83.79	-1.03
Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2450.00	2.01	96.52	-1.34
Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2490.00	1.38	73.55	-1.75

Test engineer: _____

Test date: 2003/6/26 at PM 04:48

Coaxial Cable Data Sheet
RG-178

SPECIFICATION FOR APPROVAL

DOCUMENT: A30178B001

STYLE : 200°C 30V
RG-178B/U

SIZE: 7/0.102 SCCS

RECOGNIZED:

WONDERFUL HI-TECH CO.,LTD

OFFICE : 72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN,TAIWAN

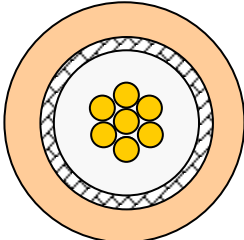
FACTORY : 17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL : (02)22988033
FAX : (02)22988031-2

TEL : (03)4527777
FAX : (03)4517214

WONDERFUL HI-TECH CO., LTD

SPECIFICATION

STYLE	200°C 30V COAXIAL	DOCUMENT NO : A30178B001
SIZE	RG-178B/U	ESTABLISHED DATE: 2003/02/13
STANDARD : MIL-C-17		
Conductor	Size	AWG 30
	Material	----- Silver-Coated Copper Clad Steel
	Conductors No.	----- 7
	Conductors Size	mm 0.102
	O.D.	mm 0.30
Insulation	Average Thickness	mm 0.28
	Diameter	mm 0.86
	Material	----- FEP
	Color	----- Clear
Braid	Material	----- Silver-Coated Copper
	Construction	mm 16 / 3 / 0.10
	Coverage	% 95
Jacket	Average Thickness	mm 0.25
	Diameter	mm 1.80 ± 0.05
	Material	----- FEP
	Color	----- Brown
Marking		
Drawing		

AK001/210X297/1.0

PAGE : 1

EDITION : 1.1

REVISED DATE :

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG

WONDERFUL HI-TECH CO., LTD

SPECIFICATION

Electrical & Physical Properties							
Item				RG-178B/U			
Rating Temp Voltage				200°C 30V			
Conductor Resistance				838 OHM/KM/20°C MAX.			
Insulation Resistance				3000 MEGA OHM/KM MIN.			
Dielectric Strength				AC 1.0 KV/Minute			
Spark Test				2.0 KV			
Insulation	Unaged	Tensile Strength		2500 PSI MIN.(1.76 Kg / mm ²)			
		Elongation		200% MIN.			
	Aged	Tensile Strength		UNAGED MIN 75%(168HRS×232°C)			
		Elongation		UNAGED MIN 75%(168HRS×232°C)			
Jacket	Unaged	Tensile Strength		2500 PSI MIN.(1.76 Kg / mm ²)			
		Elongation		200% MIN.			
	Aged	Tensile Strength		UNAGED MIN.75%(168HRS×232°C)			
		Elongation		UNAGED MIN.75%(168HRS×232°C)			
Nom. Impedance				50 Ohms			
Nom. Capacitance				95.8 pF/m			
Nom. Vel. of Prop.				69.5%			
VSWR (0 – 6 GHZ)				UNDER 1.3			
Attenuation (dB/100m)	100MHz	1GHz	1.8GHz	2.4GHz	5.2GHz	6GHz	
	46	155	295	340	505	550	

AK001/210X297/1.0

PAGE : 2

EDITION : 1.1

REVISED DATE :

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG

Housing Material Data Sheet

- Housing - TPU

Elastogran GmbH
Geschäftsbereich TPU-Elastomere



Elastogran GmbH - Postfach 1140 - 49440 Lemförde - Germany
WGJ COMPANY LTD.

P.O. BOX 36 - 431
RC TAOYUAN HSIEN

BASF Gruppe

Date 18.07.2001
No. 62046

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

Product :	ES 95 A 50 000	S	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, Weibensißwiderstand = 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

Höfner Schöts

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 purpose.

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49448 Lemförde
Deutschland
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Telefax (0 54 43) 12 - 25 55

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(BLZ 265 400 70) Kto.-Nr. 53 56001/00
IBAN: DE 36 2654 0070 0535 6001 00
S.W.I.F.T.-Code: Cobod333
Postbank München
(BLZ 700 100 80) Kto.-Nr. 1532 91 - 803

Sitz der Gesellschaft: 49448 Lemförde
Geschäftsführer:
Gerhard H.-J. Hellmann (Spracher)
Reinhard Leppkes
Registrierungsgericht: Amtsgericht Diepholz
Eintragungsnummer: HRB 2193

- Hinge(Base/Holder)- Polycarbonate(PC)

