

BASE ANT (Internal)

# SPECIFICATION

## 承認書

### APPLICATION FOR APPROVAL

客戶(CUSTOMER) 神腦國際企業股份有限公司  
 客戶機種(CS P/N) EP-236(7102001440000)  
 品名(PART NAME) 2.4GHz ANTENNA  
 開發單號(DEVE NO.) B-054(母機)  
 機種(AUDEN NO.) CR-6001BO-000 (PANTONE-532U)  
 日期(DATE) AUG 05, 2002

客戶承認印(CUSTOMER APPROVED)

Auden Techno Corp.			
RF ENGINEER CHECKED	MECHANICAL ENGINEER CHECKED	R&D MANAGER CHECKED	PRODUCT MANAGER CHECKED
楊玗 0807 0048	吳冬蕙 0807 1330	徐耀東 0807 1400	陳一峰 0807 1163

**auden**  
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 桃園縣八德市和平路 772 巷 19 號

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Subject: <b>Qualification Test Specification for 2.4GHz Antenna</b>	Deve No.: <u>B-054(母機)</u>	Rev: 0
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1. ELECTRICAL SPECIFICATIONS

1-1 FREQUENCY BAND

<i>Freq. Band</i>	<i>FREQUENCY</i>
2.4GHz	2.4~2.5GHz

1-2 IMPEDANCE

Nominal Impedance : 50 ohms

1-3 V.S.W.R

1-3-1 FREE SPACE  
ENGINEERING

<i>Freq. Band</i>	<i>FREQUENCY</i>
	<i>2.4~2.5 (GHz)</i>
2.4GHz	≤2dB

※ Measuring a 50Ω test jig is connected to a network analyzer to measure the V.S.W.R..

※※ All test value is done in customer approval fixture.

1-4 GAIN

Typical value:(Average Gain)

<i>Freq. Band</i>	<i>FREQUENCY</i>
	<i>2.4~2.5GHz</i>
2.4GHz	≥0dBi

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## ***2. MECHANICAL SPECIFICATIONS***

### ***2-1 MECHANICAL CONFIGURATION***

The appearance of the antenna is in according to drawing *FIG. 2-1*(Page 8)

### ***2-2 MECHANICAL TEST***

Please Fix the top of the antenna and apply 3kg pulling force at the cable for 5 sec.

The cable is no loosing with antenna cap.

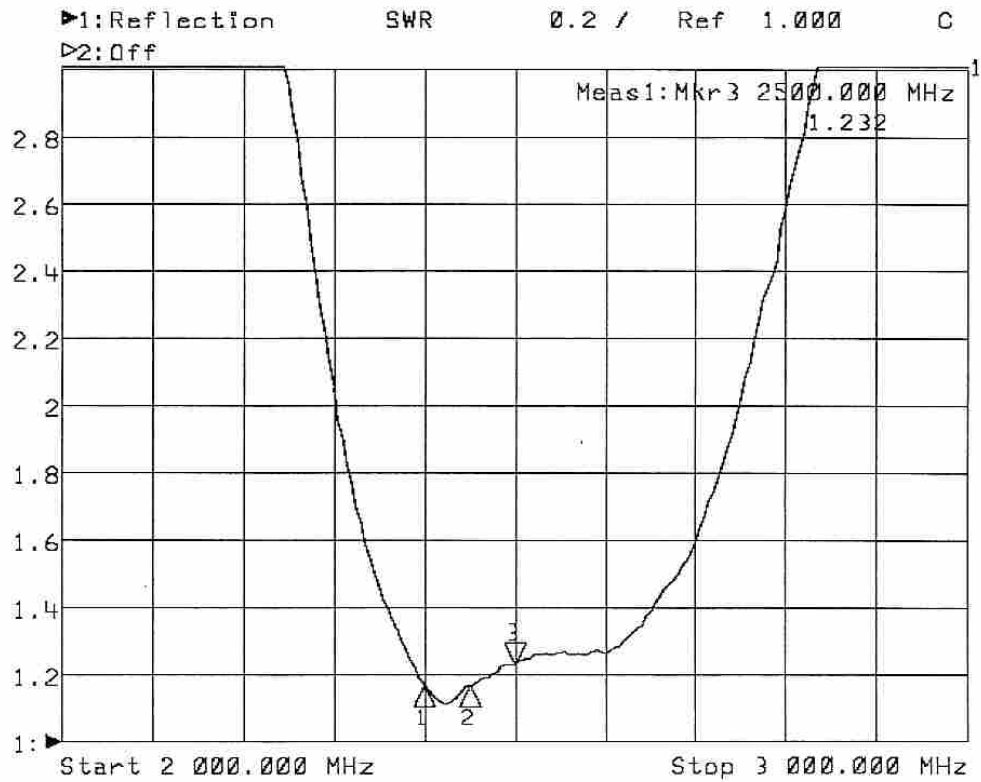
## ***3.PACKING DESCRIPTION***

Antenna to be packed in a number 5 polybag and one pcs per bag.

## ***4.APPENDIX***

Regarding the specifications of the cable please see the attached.

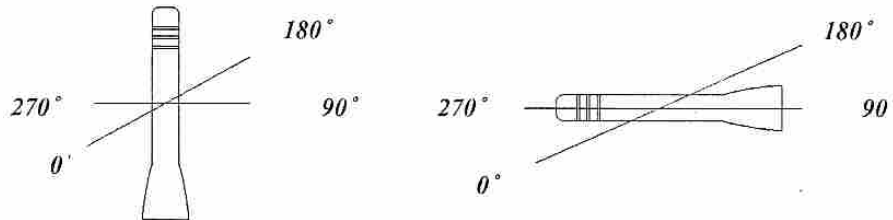
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1: Mkr (MHz)	2: Mkr (MHz)	dB
1: 2400.0000	1.172	
2: 2450.0000	1.169	
3> 2500.0000	1.232	

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Model No: 防火材質	File:2.4GHz 天線_B054_20020617
<b>Deve No: B054(母機)</b>	Note:
Sample No: Sample-2	
Test Condition: <b>Free space</b>	
	Matching: N/A
Confirmation: 李宇珊	Engineer: 楊玫姿



Frequency (MHz)	H - Plane		E - Plane
	MAX (dBi)	AVR (dBi)	MAX (dBi)
2400	1.45	-0.77	1.60
2450	1.65	-0.68	2.02
2500	1.55	-0.47	1.94

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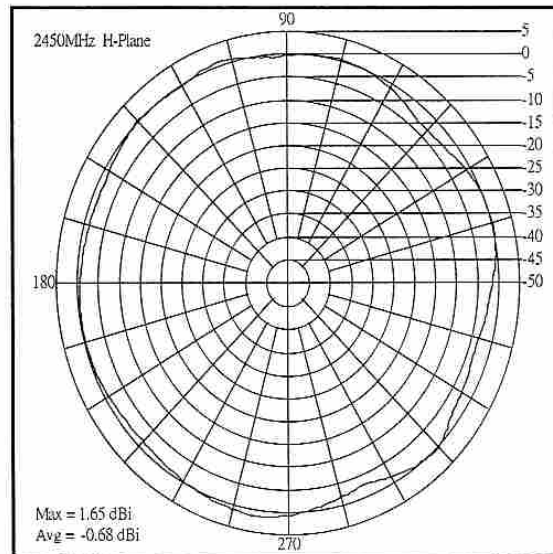
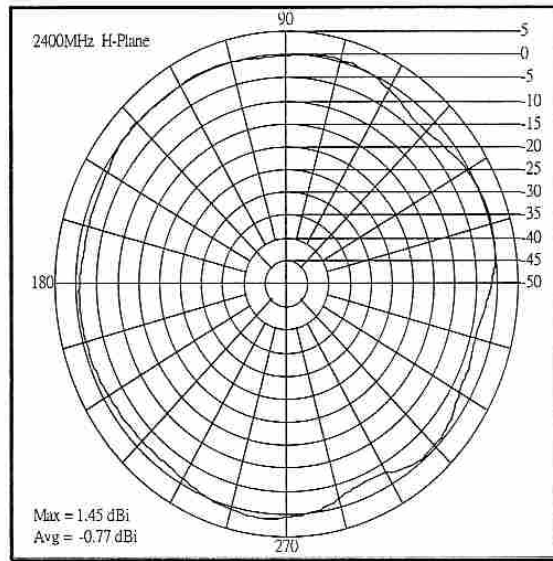
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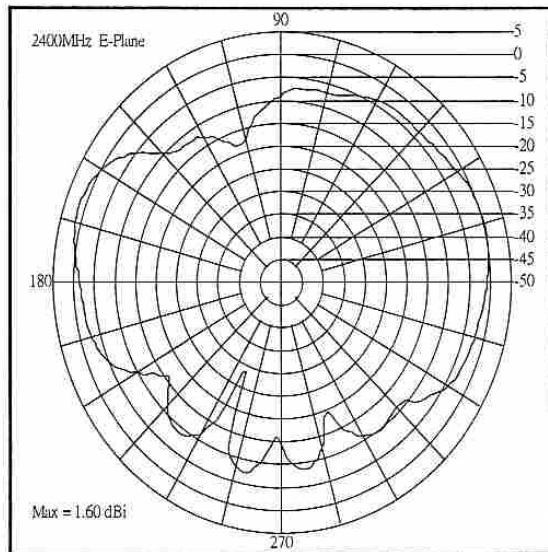
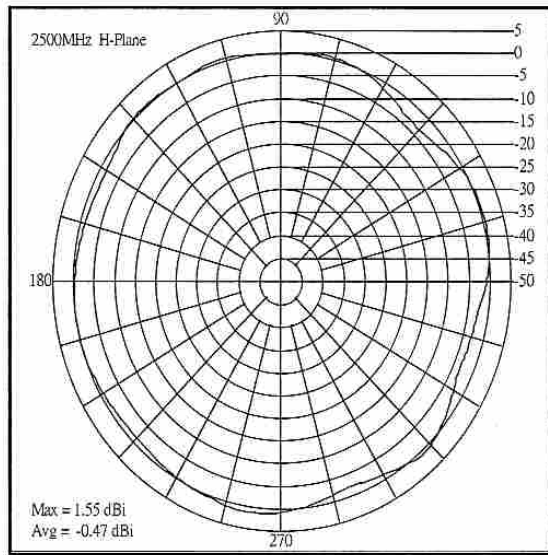
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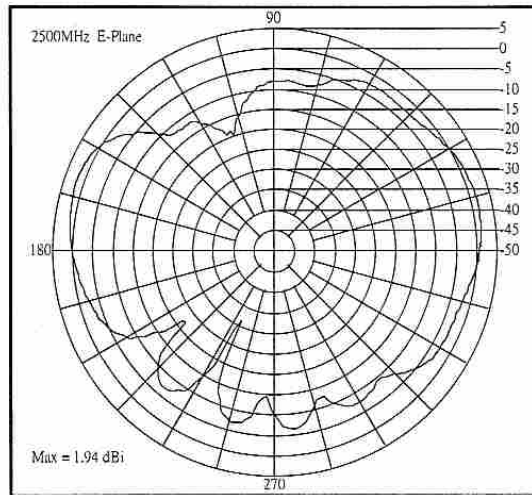
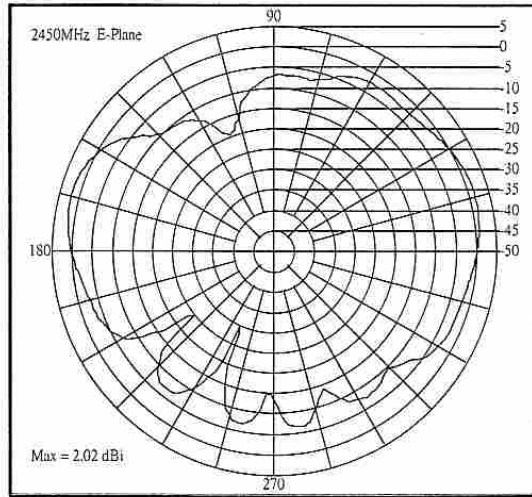
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Subject: **Qualification Test Specification for 2.4GHz Antenna**

Deve No.: **B-054(母機)**

Rev.: 0

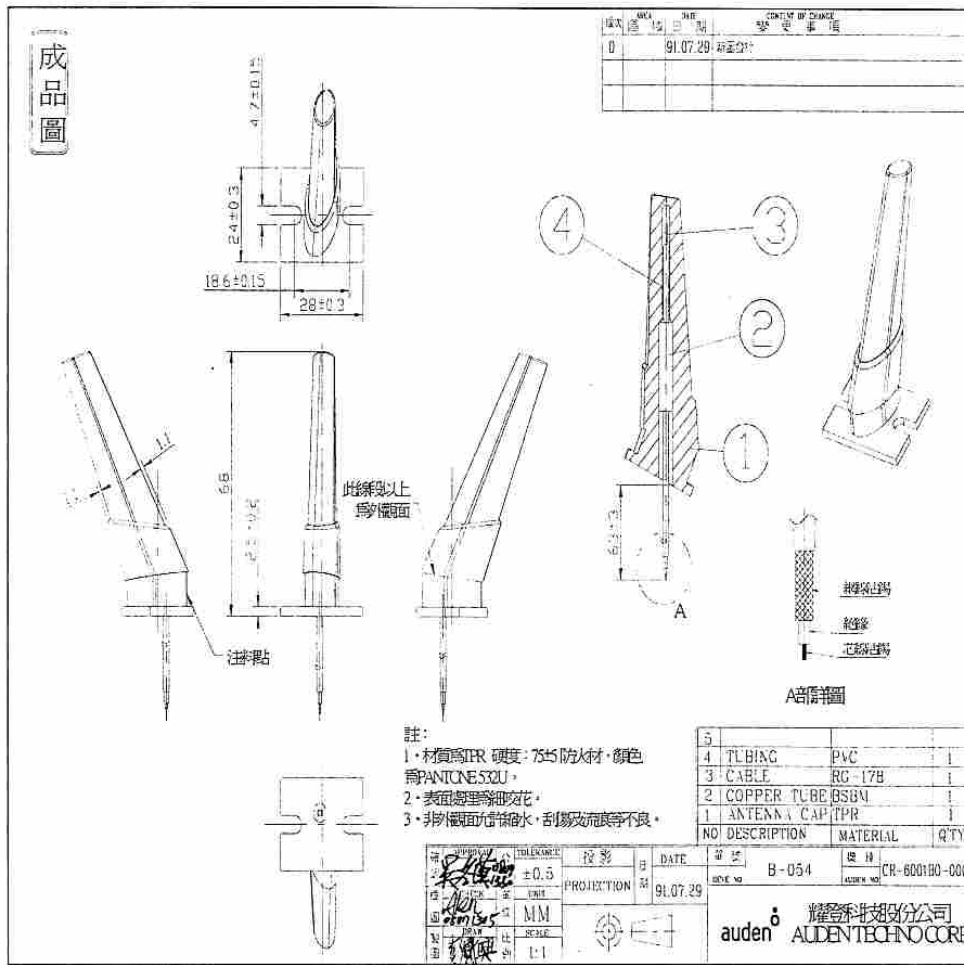
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FIG. 2-1



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Attached

Harbour Industries MIL-C-17 Coaxial Cables

Physical Characteristics										
M17 Number	Center Conductor	PTFE Dielectric Diameter	Shield	Jacket	Overall Diameter	Minimum Recommended Bend Radius	Operating Temp. (°C)	Weight (lbs./MFT)	Comments	
M17/60-FG142	.037" SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	43.0		
M17/93-RG178	0120*(7.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3		
M17/93-00001	0120*(7.004")SCCS	.033"	SPC	PFA	.071"	0.4"	-55 +200	6.3	M17/93-RG178 w/extended temp. range	
M17/94-FG179	0120*(7.004")SCCS	.063"	SPC	FEP	.100"	0.4"	-55 +200	10.8		
M17/95-FG180	0120*(7.004")SCCS	.102"	SPC	FEP	.141"	0.7"	-55 +200	19.8		
M17/110-FG302	0253"SCCS	.146"	SPC	FEP	.202"	1.0"	-55 +200	40.0		
M17/111-FG303	037"SCCS	.116"	SPC	FEP	.170"	0.8"	-55 +200	31.0		
M17/112-FG304	059"SCCS	.185"	SPC(2)	FEP	.260"	1.4"	-55 +200	94.0		
M17/113-FG316	.0201*(7.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	12.2		
M17/127-FG393	.094*(7.0312")SC	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	165.0		
M17/128-FG400	.0364*(19.008")SC	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	50.0		
M17/131-FG403	0120*(7.004")SCCS	.033"	SPC(2)	FEP(2)	.116"	0.6"	-55 +200	15.0	Triaxial M17/93-RG178	
M17/152-0001	.0201*(7.0067")SCCS	.060"	SPC(2)	FEP	.114"	0.6"	-55 +200	18.5	Double shielded	
M17/152-00001	.037"SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	50.0	M17/113-RG316	
M17/169-00001	0120*(7.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3	Unswpt. M17/93-RG178	
M17/170-00001	037"SCCS	.116"	SPC	FEP	.170"	0.9"	-55 +200	39.0	Unswpt. M17/111-RG303	
M17/172-00001	.0201*(7.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	11.5	Unswpt. M17/113-RG316	
M17/174-00001	.094*(7.0312")SCCS	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	175.0	Unswpt. M17/127-RG393	
M17/175-00001	.0364*(19.008")SC	.116"	SPC(2)	FEP	.390"	1.0"	-55 +200	50.0	Unswpt. M17/128-RG400	
M17/176-00002	.0235*(19.005")SPA(2)	.042"	SPA	PFA	.129"	0.6"	-55 +200	16.0	Controlled impedance twinax	
PTFE Tape Wrap Jacketed RG Cables										
RG 187 A/U	0120*(7.004")SCCS	.063	SPC	PTFE	.100"	0.5"	-55 +250	10.0	Flexible, 250° C. rated	
RG 188 A/U	.0201*(7.0067")SCCS	.060	SPC	PTFE	.100"	0.5"	-55 +250	11.0	Flexible, 250° C. rated	
RG 195 A/U	0120*(7.004")SCCS	.102	SPC	PTFE	.141"	0.7"	-55 +250	18.0	Flexible, 250° C. rated	
RG 196 A/U	0120*(7.004")SCCS	.034	SPC	PTFE	.080"	0.4"	-55 +250	6.0	Flexible, 250° C. rated	
Electrical Characteristics										
M17 Number	Impedance (ohms)	Capacitance (pF/ft)	Max. Operating Voltage (RMS)	100 MHz	400 MHz	1 GHz	3 GHz	5 GHz	10 GHz	Max Frequency (GHz)
M17/60-FG142	50 +/- 2	29.4	1900	5.5	11.7	19.0	35.0	48.0	-	12.4
M17/93-FG179	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/93-00001	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/94-FG179	50 +/- 3	19.4	1200	-	21.0	-	-	-	-	-
M17/95-FG180	95 +/- 5	16.4	1500	-	17.0	-	-	-	-	-
M17/110-FG302	50 +/- 3	19.4	2300	-	6.0	-	26.0	-	-	-
M17/111-FG303	50 +/- 2	28.4	1600	3.9	8.0	15.0	28.0	-	-	-
M17/112-FG304	50 +/- 2	29.4	3000	2.7	5.4	11.1	22.0	30.0	-	8.0
M17/113-FG316	50 +/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
M17/127-FG393	50 +/- 2	28.4	2500	2.4	5.0	8.8	16.0	24.6	37.0	11.0
M17/128-FG400	50 +/- 2	29.4	1900	4.5	10.5	17.0	38.0	50.0	76.0	12.0
M17/131-FG403	50 +/- 2	28.4	1000	-	37.0	-	-	-	16.0	-
M17/152-00001	50 +/- 2	29.4	1200	11.5	24.0	40.0	75.0	110.0	170.0	12.0
M17/152-00001	50 +/- 2	29.4	1900	-	9.5	-	-	-	-	-
M17/169-00001	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	-
M17/170-00001	50 +/- 2	29.4	1900	-	8.6	-	-	-	-	-
M17/172-00001	50 +/- 2	29.4	1200	-	21.0	-	-	-	-	-
M17/174-00001	50 +/- 2	29.4	2500	-	5.0	-	-	-	-	-
M17/175-00001	50 +/- 2	29.4	1900	-	10.5	-	-	-	-	-
M17/176-00002	77 +/- 7	19.0	1000	-	-	-	-	-	-	-
PTFE Tape Wrap Jacketed RG Cables										
RG 187 A/U	75 +/- 3	19.4	1200	-	21.0	-	-	-	-	3
RG 188 A/U	50 +/- 2	29.4	1200	11.0	21.0	36.0	58.0	-	-	3
RG 195 A/U	95 +/- 5	15.4	1500	-	17.0	-	-	-	-	3
RG 196 A/U	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	3

\*Maximum frequencies are those as referenced on individual data sheets of the MIL-C-17 specification. No values are given for unswapped constructions as the specification recommends these cables should not be used above 400 MHz. (All figures referenced above are nominal unless otherwise specified.)

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421003/000

**PRODUCT DATA SHEET**

**Santoprene®**  
THERMOPLASTIC RUBBER

**251-80**

Storable thermoplastic flame retardant elastomer with good fluid resistance, formulated to replace thermoset Elastomers like EPDM, polychloroprene, chlorosulfonated polyethylene. It can be processed using injection molding, extrusion, blow molding or other melt processing techniques. Supplied as free-flowing pellets in 25 kilogram moisture barrier bags.

Property	Test Method	Test Units	Typical Value
Hardness, 5 sec.	TPE-0069 (ASTM D 2240)	Shore A	80
Specific Gravity	TPE-0005 (ASTM D 297)		1.24
Tensile Strength, Ultimate	TPE-0053 (ASTM D 412)	MPa (psi)	7.2 (1050)
Elongation, Ultimate	TPE-0053 (ASTM D 412)	percent	410
Modulus	TPE-0053 (ASTM D 412)	MPa (psi)	3.2 (460)
Compression set, 168 hrs.	TPE-0095 (ASTM D375, Method B)	percent @ 77°F(25°C) percent @ 212°F(100°C)	27.1 45.3
Tension set	TPE-0053 (ASTM D 412)	percent	10
Tear Strength	TPE-0056 (ASTM D624)	(kN/m @ 25°C) pli @ 77°F (kN/m @ 100°C) pli @ 212°F	23.6 135 9.3 55
Brittle point	TPE-0089 (ASTM D 746)	°C (°F)	<-56(<-69)

For order assistance, call 1-800-ELASTOMer (1-800-352-7855).

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QMF28 March 27, 1998  
Component - Plastics Certified For Canada

**ADVANCED ELASTOMER SYSTEMS, L.P.**

✓ **ES0017 (M)**  
(A008 - cont. from A card)

Material	Color	1.5	1.0	0.75	0.5	0.25	0.1	0.05	0.025	0.0125
251-90 W232	HC,WT	1.5	V-0	50	50	50	50	50	50	50
	BK	1.0	V-0	50	50	50	50	50	50	50
	HC,WT	1.5	V-0	50	50	50	50	50	50	50
251-92 W233	BK	1.0	V-1	50	50	50	50	50	50	50
	HC,WT	1.5	V-0	50	50	50	50	50	50	50
	BK	1.0	V-1	50	50	50	50	50	50	50
251-85 W234	BK	1.0	V-1	50	50	50	50	50	50	50
	AL	0.75	V-2	50	50	50	50	50	50	50
	AL	1.1	HB	100	90	90	90	90	90	90
2001-90	AL	3.0	HB	100	95	95	95	95	95	95

\* All colors except black.  
Reports: September 20, 1994; September 10, 1996; September 20, 1996; September 30, 1994; April 1, 1998.