

## ***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**

<b>FCC ID</b>	:	MSQAAM6KVIT4
<b>Product Name</b>	:	ADSL Wireless Modem Router
<b>Model Name</b>	:	AAM6XXXVI-T4
<b>Frequency Range</b>	:	2.412GHz ~ 2.462GHz
<b>Channel Spacing</b>	:	5MHz
<b>Support Channel</b>	:	11 Channels
<b>Modulation Skill</b>	:	DBPSK, DQPSK, CCK, OFDM
<b>Power Type</b>	:	Powered by the AC to AC adapter, Model: AA-1570 I/P: 120VAC, 60Hz, 15W O/P: 15VAC, 700mA 183cm length, non-shielded, no ferrite core

### 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	100	6
3.0-30	1842/f	4.89/f	900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	100	30
1.34-30	824/f	2.19/f	180/f <sup>2</sup>	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:

$$\text{Friis Transmission Formula: } S = \frac{PG}{4\pi R^2} = \frac{93.111 \times 1.514}{4\pi(20)^2} = 0.02805 \text{ mW/cm}^2$$

$$\text{Estimated safe separation: } R = \sqrt{\frac{PG}{4\pi}} = \sqrt{\frac{93.111 \times 1.514}{4\pi}} = 3.34933 \text{ cm}$$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 3.35cm"

Where: S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

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)

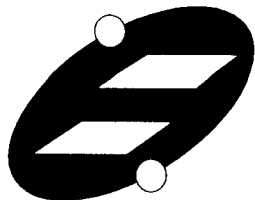
The Numeric gain G of antenna with a gain specified in dB is determined by:

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

$$G = \text{Log}^{-1} (1.8 / 10) = 1.51356$$

## *Appendix*

### **Antenna Specification**



WHA YU INDUSTRIAL CO., LTD. (HEAD OFFICE)  
TAI HWA ELECTRONIC CO., LTD.(CHINA)  
SHANGHAI HUA YU ELECTRONIC CO., LTD.(CHINA)  
AEON TECH CO., LTD. (CHINA)

## SPECIFICATION FOR APPROVAL

**CUSTOMER:** 華碩電腦股份有限公司

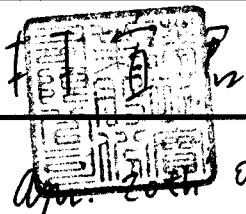
**PART NAME:** RF Antenna Cable Assembly

**PART NO.:**

**REVISION:**

**W. Y. P/NO.:** C660-510050-A

**REV.:** X1

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :	Apr. 20th 05	

### WHA YU GROUP

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

華裕實業股份有限公司

Address: #70 Shui Li Road, Hsin Chu City, Taiwan, R.O.C.

Tel: +886-3-5714225(REP.)

Fax: + 886-3-5713853 · + 886-3-5723600

TAI HWA ELECTRONIC CO., LTD. (CHINA)

台樺電業製品廠

Address: Pak Ho District, Hui Street Town, Dong Guan City, Guangdong, China

Tel: + 86-769-5599375 · + 86-769-5912375

Fax: + 86-769-5599376

HUA HONG INTERNATIONAL LTD.

華弘國際有限公司

Rm.1103A, President Commercial Centre, 608 Nathan Road, Mong Kok, Kowloon, Hong Kong

Tel: + 86-852-27712210

Fax: + 86-852-23843747

SHANGHAI HUA YU ELECTRONIC CO., LTD. (CHINA)

上海華裕電子有限公司

Address: 3586, Wai Qing Song Road, Qing Pu County, Shanghai China

Tel: + 86-21-59741348 · + 86-21-59744101~4

Fax: + 86-21-59741347

SU ZHOU AEON TECH CO., LTD. (CHINA)

蘇州華廣電通有限公司

Address: Limin North Road, LiLi Town, LiLi Industrial Park, LinHu Economic Zone

Wujiang City, Jiangsu Province, China

Tel: + 86-512-63627980

Fax: + 86-512-63627981

# RF Antenna Cable Assembly

## Specification

### 1. Electrical Properties :

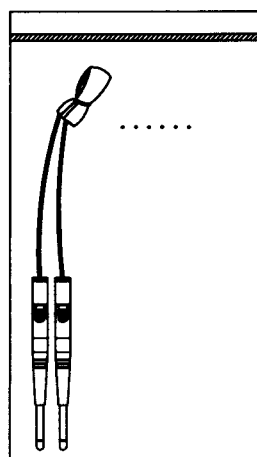
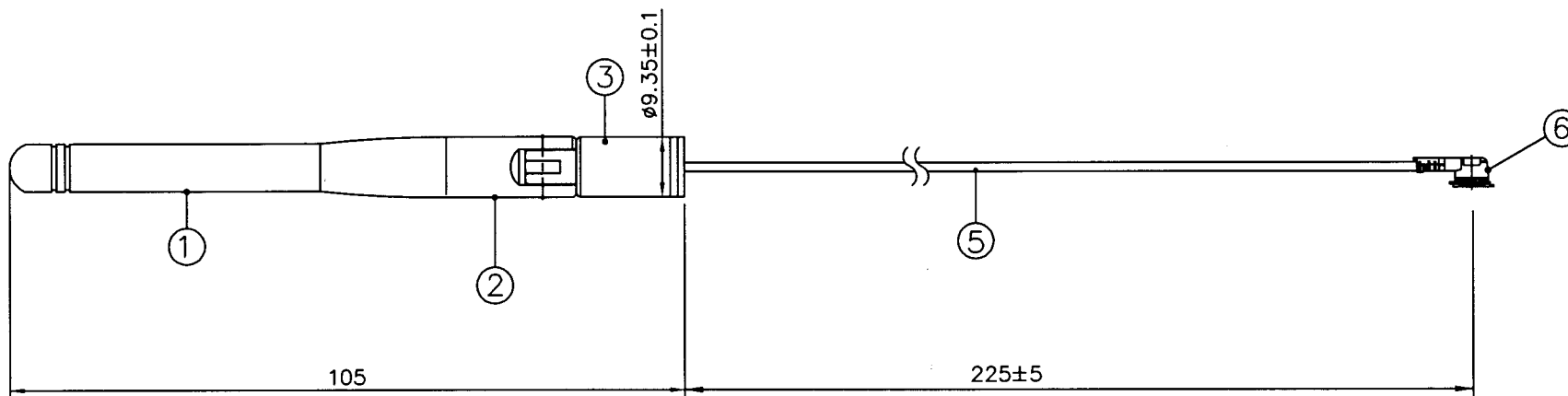
- 1.1 Frequency Range..... 2.4GHz ~ 2.5GHz
- 1.2 Impedance ..... 50Ω Nominal
- 1.3 VSWR ..... 1.92 Max.
- 1.4 Return Loss..... -10 dB Maximum
- 1.5 Electrical Wave..... 1/2λDipole
- 1.6 Gain(peak)..... 1.8dBi (exclude cable loss)
- 1.7 Admitted Power..... 1W

### 2. Physical Properties :

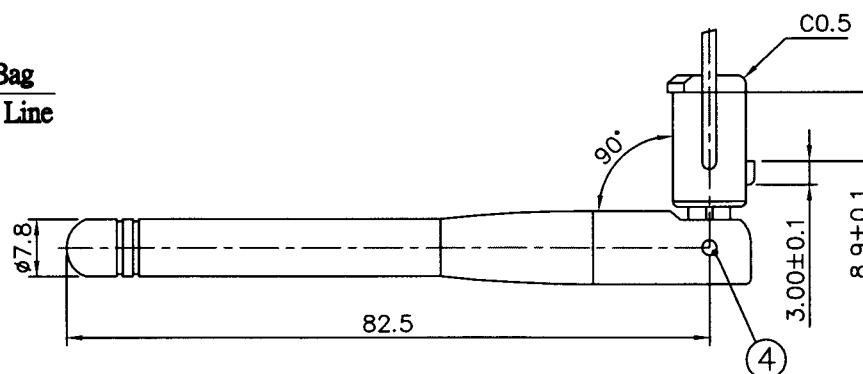
- 2.1 Cable..... φ1.13 Coaxial Cable
- 2.2 Antenna Cover..... TPE
- 2.3 Antenna Base..... PC
- 2.4 Operating Temp. .... -20°C ~ +65°C
- 2.5 Storage Temp. .... -30°C ~ +75°C
- 2.6 Color ..... Black
- 2.7 Connector..... I-PEX MHF Connector

CG-XX

REV	DATE	DESCRIPTION
X1	4/20-2005	New Issue



Packing : 25 pcs/bag

PE Bag  
Shrink Line

6	Connector	MHF Connector	1	
5	Cable	$\phi 1.13$ Coaxial Cable	1	
4	Rivet	Brass ; Zn Plated (Black)	2	
3	Antenna Base	PC Color : Black	1	
2	Antenna Base	PC Color : Black	1	
1	Antenna Body	TPE Color : Black	1	
NO	DESCRIPTION		QTY	REMARK

CUSTOMER'S SINGATURE

XX	±3.0
X	±2.0
X	±1.0
XX	±0.5
XXX	±0.1
⊕	

APPROVED

CHECKER

DRAWING

CUSTOMER: 華碩科技股份有限公司

PART NO :

PARTNAME: RF Antenna Cable Assembly

W.Y P/NO : C660-510050-A

REV UNIT FILE :

X1 m/m SHEET : 1/1

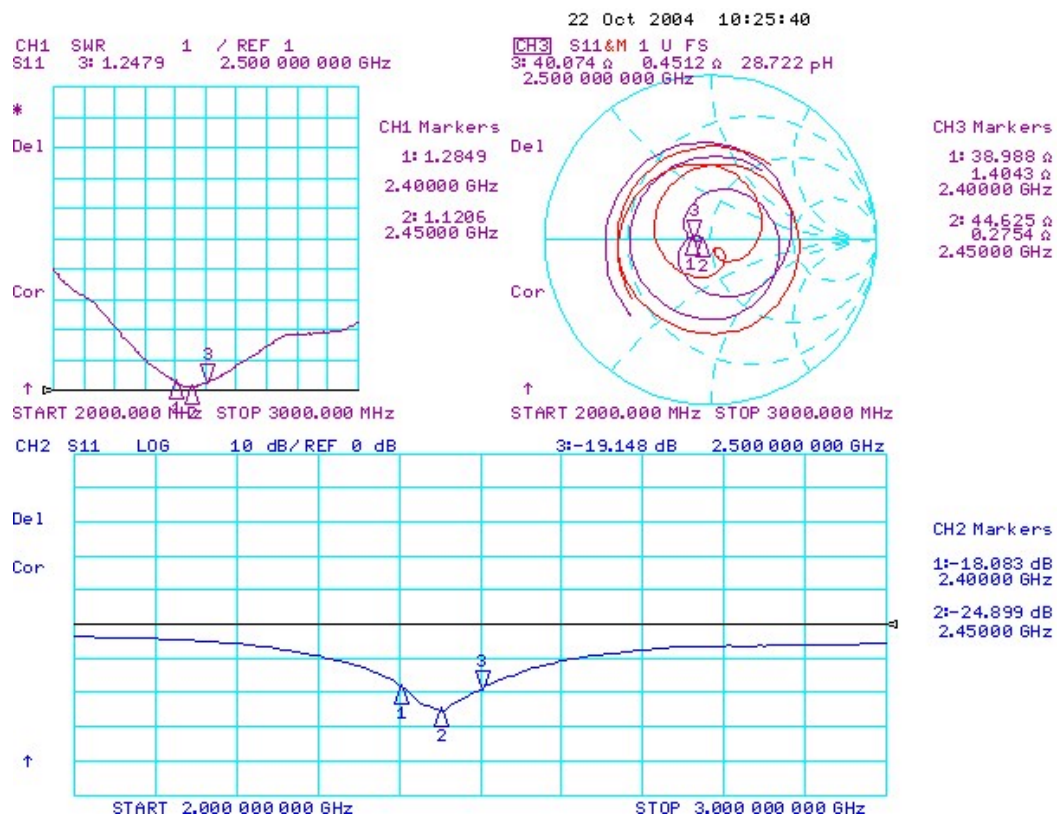
Wha Yu  
INDUSTRIAL CO.,LTD.

譚裕實業股份有限公司

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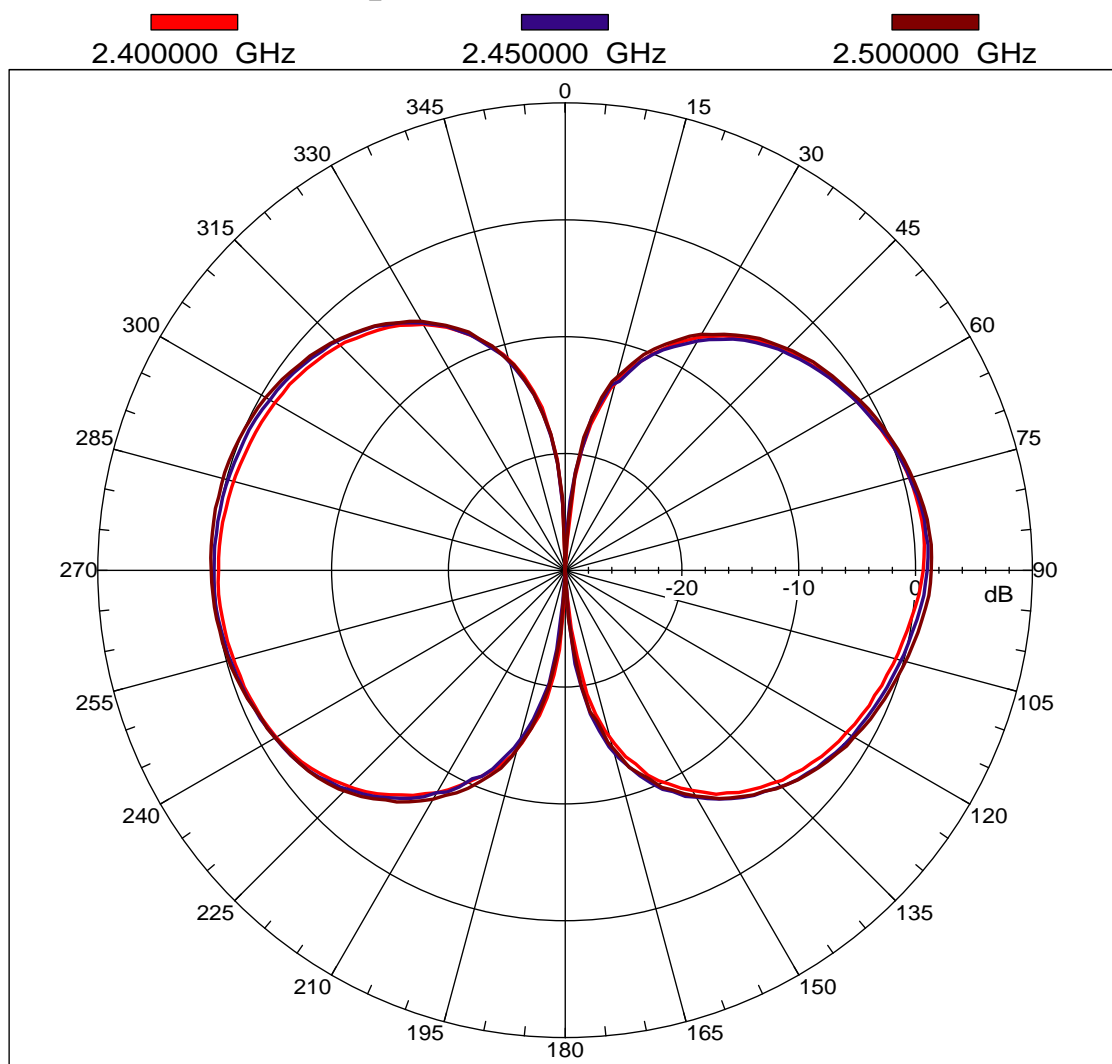
RF Antenna Assembly  
P/NO :C660-510050-A SPEC : 2.4GHz



4/20/2005



# Far-field amplitude of C660-510050-A-H.nsi

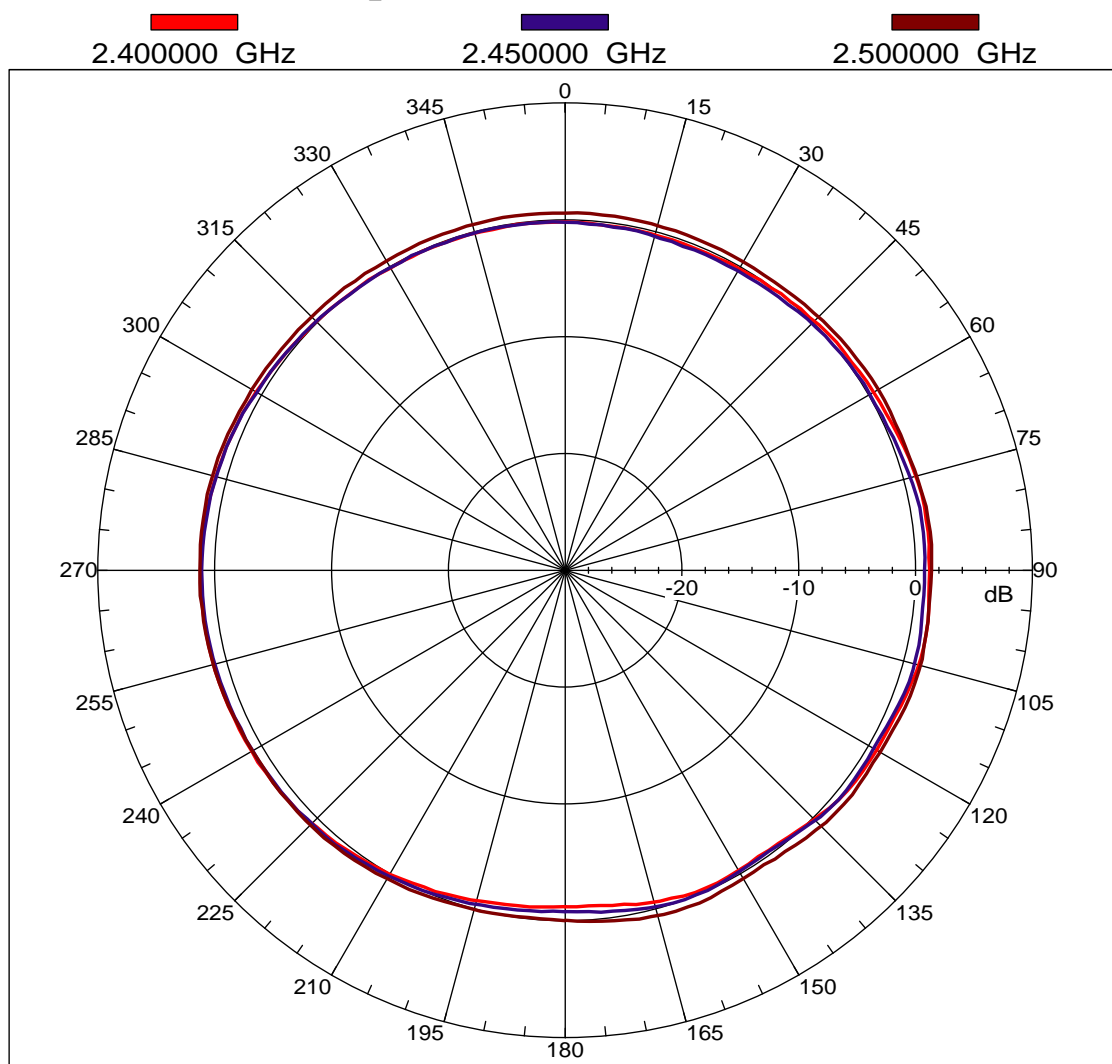


4/20/2005





# Far-field amplitude of C660-510050-A-V.nsi



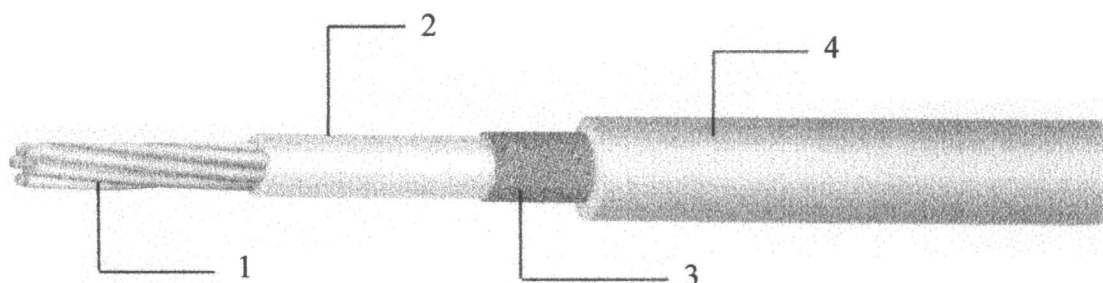
4/20/2005

A3132PS001	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	1 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

## I - Scope

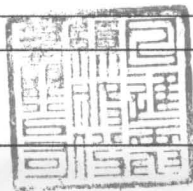
This specification presents a FEP insulated high-frequency coaxial cable AWG 32, 1.13 mm O.D. for internal wiring of electronic equipment, such as Computer / Notebook with wireless communication systems.

## II - Construction



Item		Unit	Details
1. Inner Conductor	Material	—	Silver coated copper
	Composition	No./mm	AWG 32 or 7 × 0.08
	Dia. (approx.)	mm	0.24
2. Dielectric	Material	—	Extruded FEP
	Thickness	mm	0.22
	Nom. O.D.	mm	0.68 ± 0.02
	Color	—	Natural
3. Outer Conductor	Material	—	Silver coated copper
	Composition	—	Braided (16 / 4 / 0.05)
	Dia. (approx.)	mm	0.90 ± 0.03
4. Jacket	Material	—	Extruded FEP
	Thickness	mm	0.10
	Dia.	mm	1.13 + 0.05 / -0.08
	Color	—	Standard colors are Light Grey, Black, Dark Grey

Note :



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A3132PS001	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	2 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

### III – Characteristics

Item	Unit	Specified Value	Note
Temperature Rating	°C	200	
Voltage Lasting	V	250	
Dielectric strength	—	Dielectric core: No breakdown at AC 1.5 kV for 0.15 sec.	Spark test
		Jacket: No breakdown at AC 1.5 kV for 0.15 sec.	Spark test
		No breakdown at AC 500V for 1 min.	Outer conductor to inner conductor
Inner conductor resistance	$\Omega / \text{km}$	525	at 20°C
Insulation resistance	$M\Omega / \text{km}$	Min. 1500	at 20°C
Characteristic Impedance	$\Omega$	$50 \pm 2$	TDR method
Capacitance	$\text{pF} / \text{m}$	98	at 1 kHz
Attenuation. (nom.)	$\text{dB} / \text{m}$	2.0	1.0 GHz
		2.9	2.0 GHz
		3.6	3.0 GHz
		4.2	4.0 GHz
		4.7	5.0 GHz
		5.2	6.0 GHz
Approx. Weight	$\text{g} / \text{m}$	3.15	

Note :



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SP3831K		PAGE	1/4
PRODUCT STANDARD		ISSUED	17-10-2003

**1. SCOPE**

This standard covers "FEP insulated High-Frequency coaxial cable".

These cable are approved by UL as Style 1979 AWM (File E-46702)

[UL1979:105°C、30V]

Use: Internal wiring of Class 2 Circuits of Electronic Equipment.

**2. CONSTRUCTION**

Construction and dimensions of the cable are shown in Figure.1 and Table 1.

**3. PERFORMANCE**

Performance of the finished cable is shown in Table 2. The test methods are in accordance with applicable test methods described in JIS C 3005.

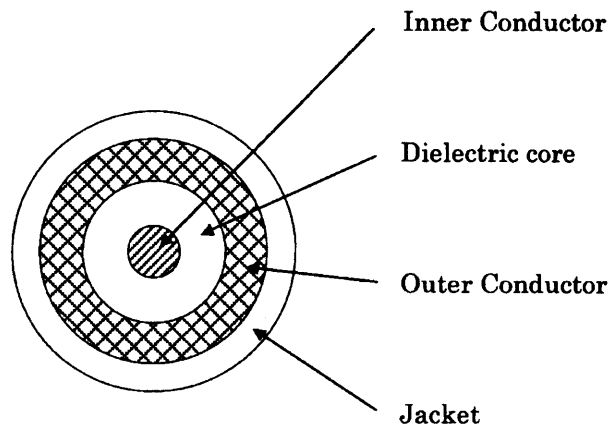


Figure 1.

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SP3831K		PAGE	2/4
PRODUCT STANDARD		ISSUED	17-10-2003

Table 1. Construction

Item	Unit	Specified Value
Inner Conductor	Material	Silver coated annealed copper wire
	Stranding	No./mm
	Dia.(approx.)	7/0.08
Dielectric Core	Material	FEP
	Thick.(nom.)	mm
	Dia.	mm
	Color	Natural
Outer Conductor	Material	Tinned annealed copper wire
	Type	Braid (16/4/0.05)
	Dia.(approx)	mm
Jacket	Material	FEP
	Thick.(nom.)	mm
	Dia.	mm
	Color	Standard colors are white,black,brown,and gray.

Table 2. Performance

Item	Unit	Specified Value	Note
Appearance	—	Faultless in visible	—
Inner conductor resistance	$\Omega/\text{km}$	Max.597	at 20°C
Insulation resistance	$M\Omega \cdot \text{km}$	Min.1500	at 20°C
Dielectric strength	—	Dielectric core: No breakdown at AC1.5kV for 0.15sec.	Spark test
		Jacket: No breakdown at AC1.5kV for 0.15sec.	Spark test
		No breakdown at AC500V for 1min.	Outer conductor to inner conductor
Heat resistance for solder	—	Shrink or expansion of dielectric core are not more than 0.5mm	※
Capacitance	pF/m	nom. 98	at 1kHz
Characteristic impedance	$\Omega$	$50 \pm 2$	TDR method
Attenuation (nom.)	dB/m	2.0	1.0GHz
		2.9	2.0GHz
		3.2	2.4GHz
		3.7	3.0GHz
		4.3	4.0GHz
		4.8	5.0GHz
		5.3	6.0GHz

※ After immersion of dielectric core, 10mm into soldering pot which is  $255^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for 5 seconds, shrinkage or expansion of the dielectric core must not exceed 0.5mm.

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SP3831K		PAGE	3/4
PRODUCT STANDARD		ISSUED	17-10-2003
<p><b>4. INSPECTION</b></p> <p>An inspection is took place in accordance with applicable test methods. The cable has to pass the specifications described Table 1 and Table 2.</p> <p><b>5. TEST METHOD</b></p> <p>The test methods are in accordance with applicable test methods described in JIS C 3005 (Test methods for rubber or plastic insulated wires and cables).</p> <p><b>6. TEMPERATURE RATING</b></p> <p style="padding-left: 40px;">105 °C</p> <p><b>7. VOLATGE RATING</b></p> <p style="padding-left: 40px;">30 V</p> <p><b>8. MARKING ON TAG</b></p> <p>Each reel of finished cable is tagged to indicate following information:</p> <ul style="list-style-type: none"> <li>(1) Designation of the cable (Style No. designation),,</li> <li>(2) Maximum working voltage,</li> <li>(3) Maximum working temperature,</li> <li>(4) Conductor size,</li> <li>(5) Nominal insulation thickness,</li> <li>(6) Length,</li> <li>(7) Date of manufacture or LOT No.,</li> <li>(8) Manufacture's name,</li> <li>(9) Specification No.,and</li> <li>(10) Use of cable, and</li> </ul> <p><b>9. PACKAGE</b></p> <p>The finished cables are cut into a shipping length of 200 meters, reeled to paper bobbin and packed securely to prevent injuries during transportation.</p> <p>Note: Odd length of the finished wires, which are not shorter than 50 meters may be accepted for shipping.</p>			
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		APPROVALS	

KURABE INDUSTRIAL CO., LTD

SP3831K	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE (FWS 5030) UL 1979	PAGE	4/4
PRODUCT STANDARD		ISSUED	17-10-2003
		REVISED	

10. APPLICATION NOTES

10-1. For use other than the use mutually agreed, compatibility should be carefully confirmed in each practical use by user.

10-2. It is recommended to make a trial run for each practical application.

10-3. In case a design for use of cable is changed, please contact our sales department, if necessary. Do not use under extreme mechanical stress such as hard bending, tightening, and twisting. The use under extreme mechanical stress may cause not only shortening the life span of cable but also troubles such as decline of dielectric strength.

10-4. Handling precautions

① Do not hurt the insulation and sheath of the cable by making holes and scratches. And avoid any sharp edge when wiring so as not to injure cables.

② Avoid unnecessary excessive force to cable, such as pulling, twisting, bending or tightening.

10-5. Storage precautions

Avoid continuous exposure to sunlight.

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## Test Report

TELJIN KASEI TAIWAN CO., LTD.

10F-2., NO. 87, SONG JIANG ROAD, (EMPIRE BLDG)

TAIPEI, TAIWAN, R. O. C.

Report No. : CE/2004/C2403

Date : 2004/12/20

Page : 3 of 3





# Test Report

K'UAN HONG ENTERPRISE CO., LTD.

Report No. : CE/2005/12479A

Date : 2005/01/21

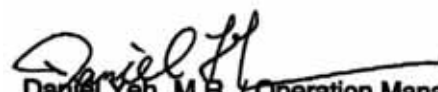
Page : 1 of 3

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : 透明電鍍液-黑鋅  
Sample Received : 2005/01/14  
Testing Date : 2005/01/14 TO 2005/01/21

=====

**Test Result** : - Please see the next page -

  
Daniel Yeh, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

# Test Report

K'UAN HONG ENTERPRISE CO., LTD.

Report No. : CE/2005/12479A

Date : 2005/01/21

Page : 2 of 3

## Test Result

PART NAME NO.1 : SEMI-TRANSPARENT LIQUID (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result
				No.1
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.

NOTE : (1) N.D. = Not detected (<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit

# Test Report

K'UAN HONG ENTERPRISE CO., LTD.

Report No. : CE/2005/12479A

Date : 2005/01/21

Page : 3 of 3



# Test Report

K'UAN HONG ENTERPRISE CO., LTD.

Report No. : CE/2004/B4814B

Date : 2004/12/02

Page : 1 of 2

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : 鉚釘  
Sample Received : 2004/11/25  
Testing Date : 2004/11/25 TO 2004/12/02

## Test Result

PART NAME NO.1 : BLACK METAL (PLEASE REFER TO THE PHOTO ATTACHED)  
PART NAME NO.2 : GOLDEN METAL (PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	75.9	64.9
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid	2	N.D.	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	24987.5	23307.2

NOTE : (1) N.D. = Not detected (<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit

  
Daniel Yeh, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

# Test Report

K'UAN HONG ENTERPRISE CO., LTD.

Report No. : CE/2004/B4814B

Date : 2004/12/02

Page : 2 of 2





## Test Report

I-PEX JP CO., LTD. TAIWAN BRANCH (JAPAN)  
15F-6, NO. 700, JUNG-JENG ROAD, CHUNG HO CITY,  
TAIPEI 235, TAIWAN, R. O. C.


Report No : CE/2004/B1244B  
Date : 2004/11/12  
Page : 1 of 10

**The following merchandise was(were) submitted and identified by the client as :**

Type of Product : MHF SERIES CONNECTORS  
Style/Item No : 20278-XXXX-XX / 20311-XXXX-XX / 20351-XXXX-XX / 20367-XXXX / 20279-001E-01 / 20369-001E  
Sample Received : 2004/11/05.  
Testing Date : 2004/11/05 TO 2004/11/12

=====

**Test Result** : - Please see the next page -

  
Daniel Yeh, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.



# Test Report

I-PEX JP CO., LTD. TAIWAN BRANCH (JAPAN)  
15F-6, NO. 700, JUNG-JENG ROAD, CHUNG HO CITY,  
TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 2 of 10

## Test Result

PART NAME NO.1 : PLEASE REFER TO THE PHOTO(S) ATTACHED.(MIX ALL PARTS)

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Carbon tetrachloride	ppm	With reference to US EPA 8260. Analysis was performed by GC/MS linked Headspace.	1	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
CFC's(Chlorofluorocarbons)		With reference to US EPA 8260.						
Group I								
Chlorofluorocarbon-11(CAS No:000075-69-4)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-12(CAS No:000075-71-8)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-113(CAS No:000076-13-1)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-114(CAS No:000076-14-2)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-115(CAS No:000076-15-3)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Group III								
Chlorofluorocarbon-13(CAS No:000075-72-9)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-111(CAS No:000354-56-3)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				

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# Test Report

I-PEX JP CO., LTD. TAIWAN BRANCH (JAPAN)  
15F-6, NO. 700, JUNG-JENG ROAD, CHUNG HO CITY,  
TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 3 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Chlorofluorocarbon-112(CAS No:000076-12-0)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-211(CAS No:135401-87-5)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-212(CAS No:076564-99-3)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-213(CAS No:060285-54-3)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-214(CAS No:002268-46-4)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-215(CAS No:000076-17-5)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-216(CAS No:001652-80-8)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				
Chlorofluorocarbon-217(CAS No:000422-86-6)	ppm	Analysis was performed by GC/MS.(CFC's(Chlorofluorocarbons))	1	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
1,1,1-trichloroethane	ppm	Analysis was performed by GC/MS.	1	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Chlorinated Paraffin (C10~C13) (CAS NO:010871-26-2)	%	With reference to 83/264/EEC & EPA 8270D. Analysis was performed by GC/MS.	0.01	N.D.				

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15F-6, NO. 700, JUNG-JENG ROAD, CHUNG HO CITY,  
TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 4 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Halon		With reference to US EPA 8260.						
Halon-1211(CAS No:000353-59-3)	ppm	Analysis was performed by GC/MS	1	N.D.				
Halon-1301(CAS No:000075-63-8)	ppm	Analysis was performed by GC/MS	1	N.D.				
Halon-2402(CAS No:000124-73-1)	ppm	Analysis was performed by GC/MS	1	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
PBBs(Polybrominated biphenyls)(CAS NO:67774-32-7)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC and 76/769/EEC)	0.0005	N.D.				
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC and 76/769/EEC)	0.0005	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Polychlorinated Naphthalene	ppm	With reference to 83/264/EEC & EPA 8270D. Analysis was performed by GC/MS.	5	N.D.				

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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 5 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
PCBs(Polychlorinated Biphenyls)(CAS NO:001336-36-3)	ppm	With reference to US EPA 8082,89/677/EEC. Analysis was performed by GC/ECD/MS.	0.5	N.D.				
PCTs(Polychlorinated Terphenyls)	ppm	With reference to US EPA 8082,89/677/EEC. Analysis was performed by GC/ECD/MS.	0.5	N.D.				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Halogen		As per prEN14582 method B.						
Halogen-Chlorine (Cl)(CAS No:007782-50-5)	ppm	Filling the oxygen and absorb solution in the flask and take sample in the flask and burn it , The absorb solution was analyzed by IC method	50	N.D.				
Halogen-Fluorine (F)(CAS No:007782-41-4)	ppm	Filling the oxygen and absorb solution in the flask and take sample in the flask and burn it , The absorb solution was analyzed by IC method	50	N.D.				
Halogen-Bromine (Br)(CAS No:007726-95-6)	ppm	Filling the oxygen and absorb solution in the flask and take sample in the flask and burn it , The absorb solution was analyzed by IC method	50	N.D.				
Halogen-Iodine (I)(CAS No:007553-56-2)	ppm	Filling the oxygen and absorb solution in the flask and take sample in the flask and burn it , analyzed by ICP	50	N.D.				



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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 6 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
HCFC's(Hydrogenated chlorofluorocarbons)		With reference to US EPA 8260.						
Hydrochlorofluorocarbon-21(CAS No.:000075-43-4)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-22(CAS No.:000075-45-6)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-31(CAS No.:000593-70-4)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-121(CAS No.:000354-14-3)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-122(CAS No.:000354-21-2)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-123(CAS No.:000306-83-1)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-124(CAS No.:002837-89-0)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-131(CAS No.:000359-28-4)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-131b(CAS No.:000471-43-2)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-133a(CAS No.:000075-88-7)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-141b(CAS No.:001717-00-6)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				

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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 7 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Hydrochlorofluorocarbon-221	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-222(CAS No.:000422-30-0)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-223	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-224	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-225ca(CAS No.:000422-56-0)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-225cb(CAS No.:000507-55-1)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-226(CAS No.:000431-87-8)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-231	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-232	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-233	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-234	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				

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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 8 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Hydrochlorofluorocarbon-235(CAS No.:013838-16-9)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-241	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-242	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-243(CAS No.:000338-75-0)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-244	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-251	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-252	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-253(CAS No.:000354-06-1)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-261(CAS No.:000420-97-3)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-262(CAS No.:000420-97-3)	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				
Hydrochlorofluorocarbon-271	ppm	Analysis was performed by GC/MS.(HCFC's(Hydrogenated chlorofluorocarbons))	1	N.D.				

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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 9 of 10

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
PVC free(CAS No:9002-86-2)	**	With reference to ASTM E1252 method. Analysis was performed by FTIR/ATR AND Pyro-GC/MS.	-	Negative				

Test Item(s):	Unit	Method	MDL	Result				
				NO.1				
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.				
Cadmium (Cd)	ppm	ICP-AES After As per EN 1122, Method B:2001 or other acid digestion.	2	N.D.				
Mercury (Hg)	ppm	ICP-AES After As per US EPA 3052 or other acid digestion.	2	N.D.				
Lead (Pb)	ppm	ICP-AES After As per US EPA 3050B or other acid digestion.	2	18.6				

NOTE : (1) N.D. = Not detected.(<MDL)

(2) ppm = mg/kg

(3) MDL= Method Detection Limit

(4) " ---" = Not Applicable

(5) " -" = Not Regulation

(6) \* = Results shown are of the adjusted analytical results.

(7) \*\*= Qualitative analysis(No Unit)

(8) Negative = Undetectable / Positive = Detectable.



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TAIPEI 235, TAIWAN, R. O. C.

Report No : CE/2004/B1244B

Date : 2004/11/12

Page : 10 of 10

