



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:** 中磊科技股份有限公司

**PART NAME:** RF Antenna Cable Assembly

**PART NO.:** 61720084WY

**REVISION:**

**W. Y. P/NO.:** C147-510191-A

**REV.:** X4

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :		

### WHA YU GROUP

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

華裕實業股份有限公司

Address: No.326, Sec 2, Kung Tao 5 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, Hiu 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

# Contents

<i>Item</i>	<i>Description</i>	<i>Page</i>
1. ....	天線規格表	..... 1
2. ....	成品圖	..... 2
3. ....	測試報告	..... 3~5
4. ....	Cable 規格	..... 6~8
5. ....	SGS測試	..... 9~33

# RF Antenna Cable Assembly

## Specification

### 1. Electrical Properties :

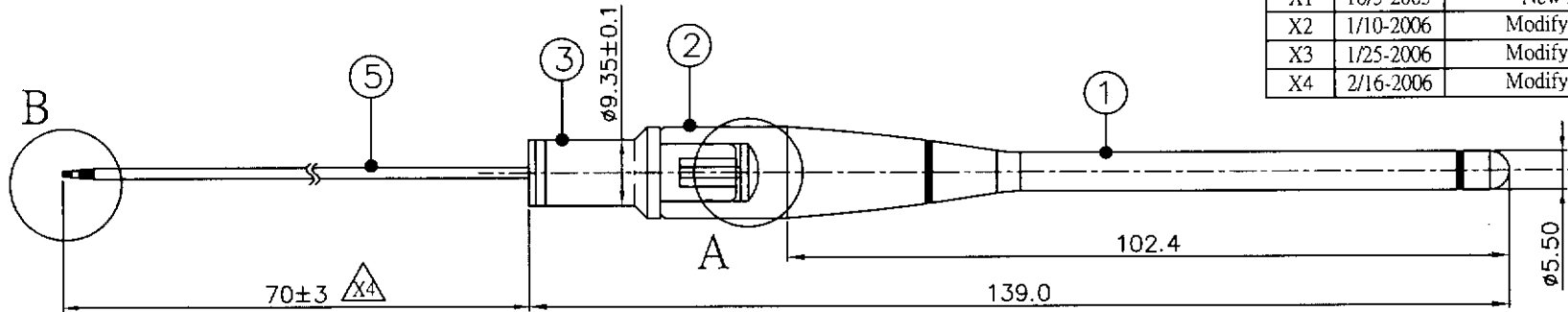
- 1.1 Frequency Range..... 2.4GHz ~ 2.5GHz
- 1.2 Impedance ..... 50Ω Nominal
- 1.3 VSWR ..... 1.92 Max.
- 1.4 Return Loss..... -10 dB Maximum
- 1.5 Radiation ..... Omni-directional
- 1.6 Gain(peak)..... 1.8dBi (excluding cable loss)
- 1.7 Cable Loss..... 0.6dB
- 1.8 Polarization..... Linear Vertical
- 1.9 Admitted Power..... 1W

### 2. Physical Properties :

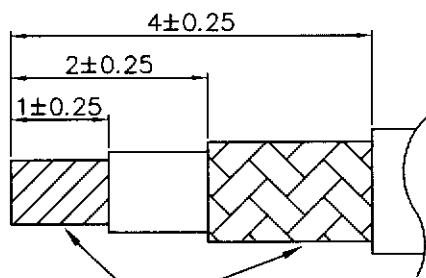
- 2.1 Cable..... φ1.13 Coaxial Cable
- 2.2 Antenna Cover..... TPE
- 2.3 Antenna Base..... PC
- 2.4 Operating Temp. .... -20 ~ +65
- 2.5 Storage Temp. .... -30 ~ +75
- 2.6 Color ..... Gray

CG-

REV	DATE	DESCRIPTION
X1	10/3-2005	New Issue
X2	1/10-2006	Modify length
X3	1/25-2006	Modify length
X4	2/16-2006	Modify length

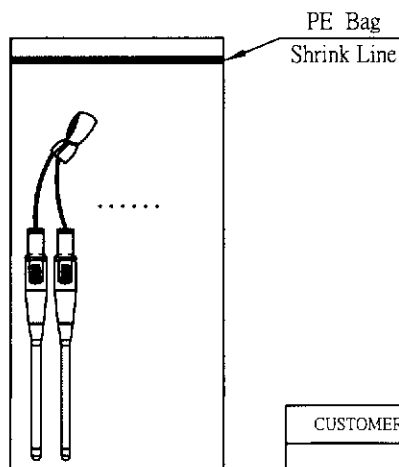
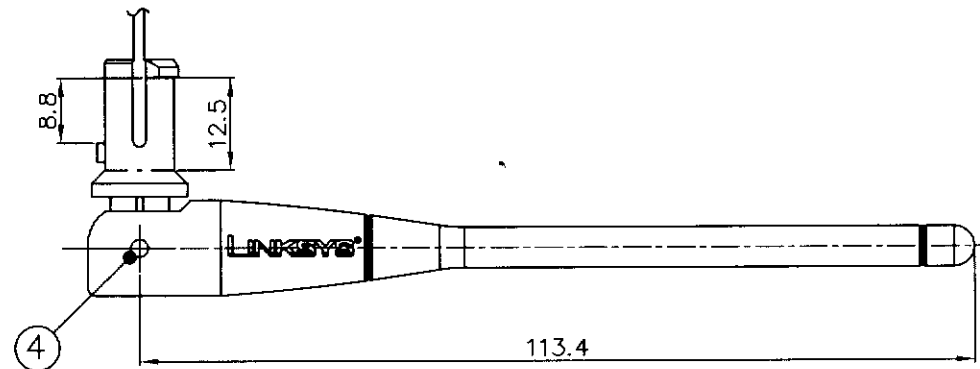
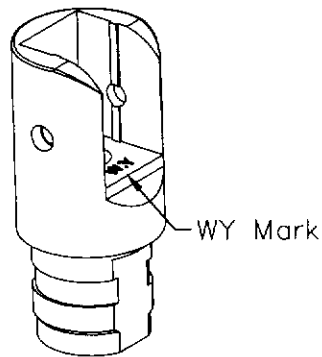


Detail B




Tin Plated

Detail A

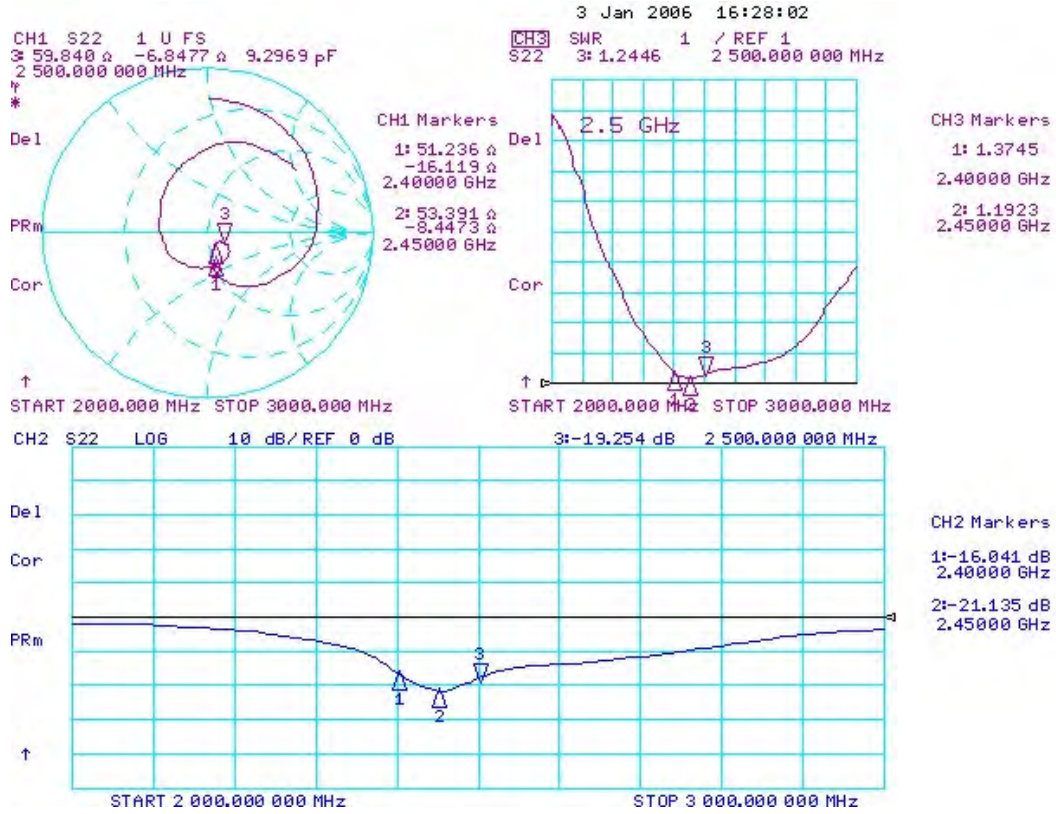


NO	DESCRIPTION	QTY	REMARK
5	Cable	1	∅1.13 Cable
4	Rivet	2	POM ; Color : Black
3	Antenna Base	1	PC ; Color : Gray
2	Antenna Base	1	PC ; Color : Gray
1	Antenna Cap	1	TPE ; Color : Gray

CUSTOMER'S SIGNATURE	XXX.	±2.0	APPROVED	CUSTOMER: 中磊科技股份有限公司 PART NO : PARTNAME: RF Antenna Assembly W.Y P/NO : C147-510191-A REV UNIT FILE : X4 m/m SHEET : 1/1
	XX.	±1.0	CHECKED	
	X.	±0.5		
	.X	±0.2		
	.XX	±0.1		
			DRAWING	

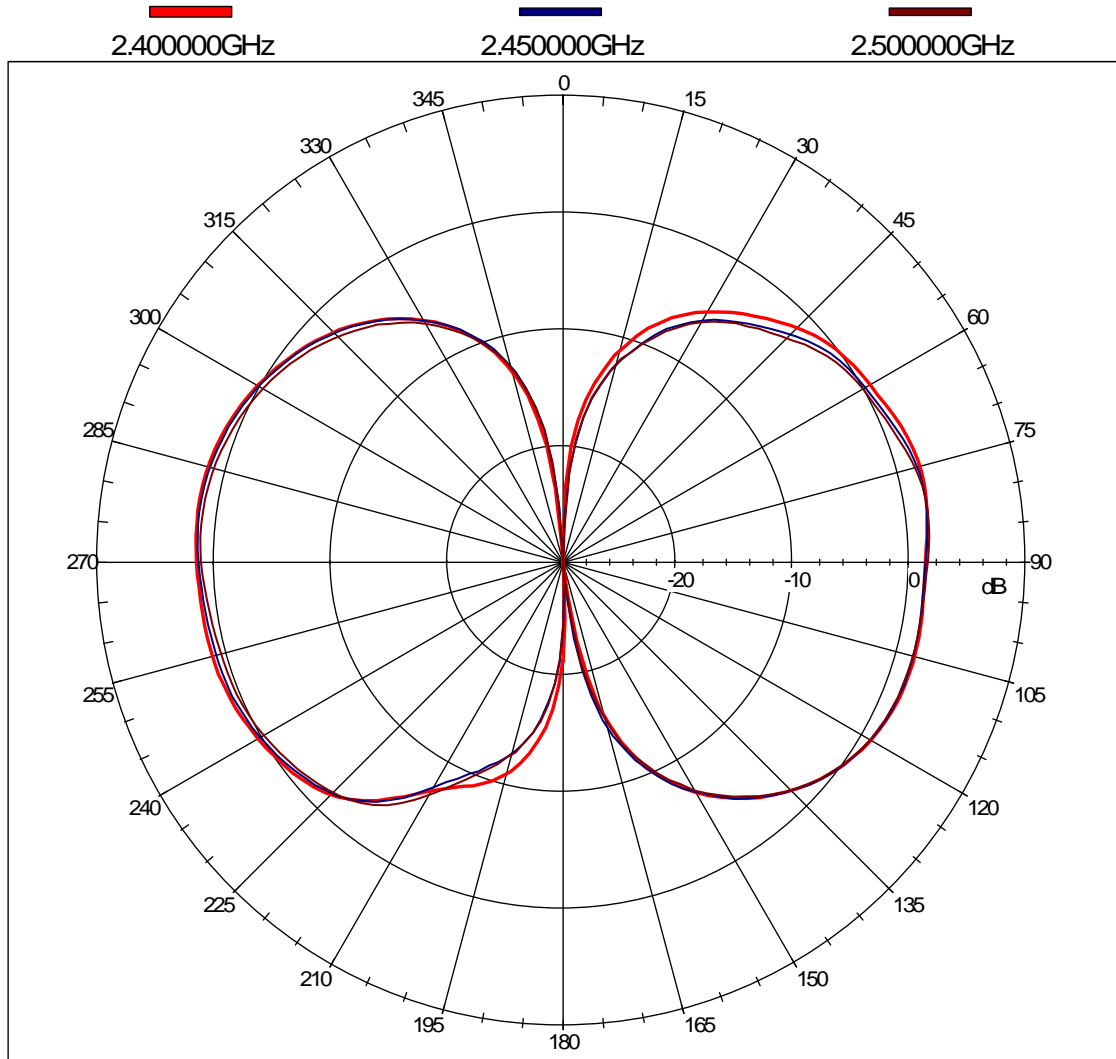

**Wha Yu INDUSTRIAL CO.,LTD.**  
 誨裕實業股份有限公司  
 THIS DRAWING, AND ITS INHERANT DESIGN CONCEPTS, ARE THE PROPERTY OF WHA YU AND AS SUCH MAY NOT BE COPIED, REPRODUCED, OR GIVEN TO THIRD PARTIES WITHOUT THE WRITTEN CONSENT OF WHA YU.

**RF Antenna Assembly**  
**P/NO : C147-510191-A SPEC : 2.4GHz**



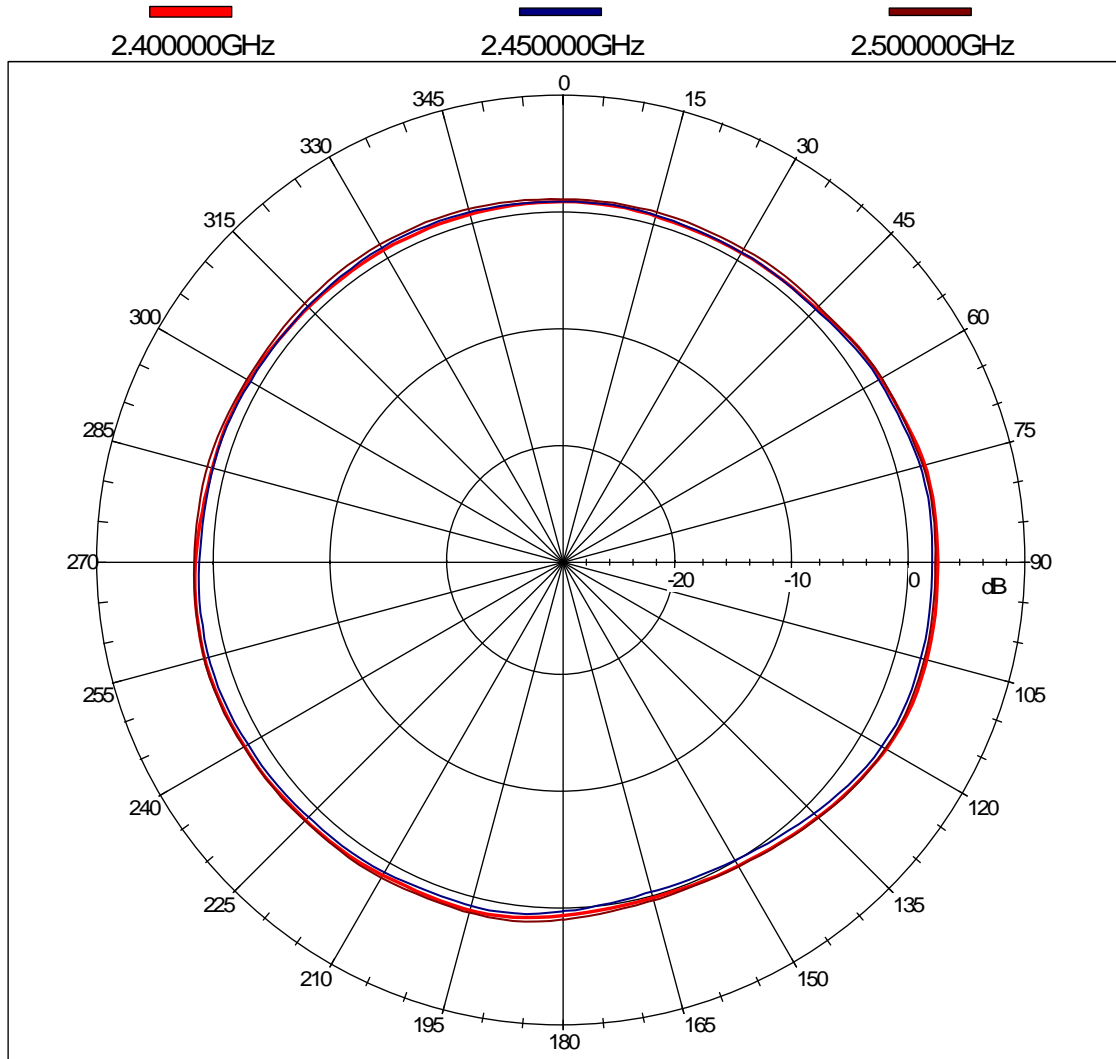
1/10/2006

Far-field amplitude of C147-510191-A-Hnsi



1/10/2006

Far-field amplitude of C147-510191-A-V.nsi



1/10/2006

Date : 2005/02/02

Our Spec. No. WS05-M016

MESSRS.

---

SPECIFICATION  
FOR  
HIGH FREQUENCY COAXIAL CABLE  
" KHCX - 32AWG - SB - TA " GRAY

---

SHOWA ELECTRIC WIRE & CABLE CO., LTD.

TORANOMON

TOKYO JAPAN

*T. Mori*

---

T. Mori  
Manager, Engineering Section  
Engineering Dept.  
Electronic Wire Business Unit



## 1. 適用(SCOPE)

本仕様書は電子機器などの内部配線に使用される細径同軸“KHCX-32AWG-SB-TA”の構造と特性について定める。

This specification covers the construction and characteristics of coaxial cable “KHCX-32AWG-SB-TA” for internal wiring of electronic equipment.

## 2. ケーブル型名の説明 (EXPLANATION OF CABLE TYPE)

KHCX-32AWG-SB-TA

(1) (2) (3) (4)

(1) ケーブル略称 (Cable Abbreviation)

(2) 導体サイズ (Conductor Size)

(3) Inner Conductor Type (4) Outer Conductor Type.

## 3. 構造(CONSTRUCTION)

項目 Item		要求特性 Requirement
内部導体 Inner conductor	材質 Material	銀めっき軟銅線 Silver coated annealed copper wire
	構成 Stranding	7/0.08mm
	外径 Diameter	標準 0.24mm Nom. 0.24mm
絶縁体 Insulation	材質 Material	FEP
	色別 Color	自然色 Natural
	厚さ Thickness	標準 0.22mm Nom. 0.22mm
	外径 Diameter	0.68 +0.04/ -0.02mm
外部導体 Outer conductor	材質 Material	錫めっき銅合金線編組 Tinned copper alloy wire braid shield
	構成 Stranding	16/4/0.05 mm
	編組密度 Coverage	Approx. 90%
シース Sheath	材質 Material	FEP
	色別 Color	灰・白・黒 Gray・White・Black
	厚さ Thickness	標準 0.10mm Nom. 0.10mm
仕上外径 Overall diameter	1.13mm +0.08/ -0.05mm	
概算質量 Approximate mass	3 kg/km	

## 4. 特性 (CHARACTERISTICS)

項目 Item	単位 Unit	要求特性 Requirements
導体抵抗 Conductor Resistance	$\Omega$ /km	597 以下 (20°C) Max. 520 (at 20°C)
絶縁抵抗 Insulation Resistance	M $\Omega$ km	1,500 以上 (DC 500V 1 分間充電後, 20°C) Min. 1,500 (After charge DC 500V for 1 min. at 20°C)
耐電圧 Dielectric Strength	-	絶縁体 : AC.1.5kV/0.15 秒間 (スパークテスト) Dielectric core : No breakdown at AC.1.5kV for 0.15sec by spark test.
		シース : AC.1.5kV/0.15 秒間 (スパークテスト) Jacket : No breakdown at AC.1.5kV for 0.15sec by spark test.
		内部導体-外部導体間 : AC.500V/1 分間 No breakdown at AC.500V for 1 min between outer conductor and inner conductor.
静電容量 Capacitance	pF/m	標準 98 (at 1kHz) Nom. 98 (at 1kHz)
特性インピーダンス Characteristic Impedance	$\Omega$	50 $\pm$ 2 (at TDR)
減衰量 Attenuation	dB/m	2.0GHz : 2.9 以下 Max.2.9 2.4GHz : 3.2 以下 Max.3.2 3.0GHz : 3.7 以下 Max.3.7 4.0GHz : 4.3 以下 Max.4.3 5.0GHz : 4.8 以下 Max.4.8 6.0GHz : 5.3 以下 Max.5.3
VSWR	--	2.4~2.5GHz : 1.20 以下 Max.1.20 4.8~6.0GHz : 1.40 以下 Max.1.40
耐はんだ性 Heat resistance for solder	--	絶縁体およびシースの寸法変化は 0.2mm 以下のこと。 Shrink and expansion of dielectric core or jacket should not be more than 0.2mm. 試験条件(test condition) : 255°C $\pm$ 5°C * 3 sec.

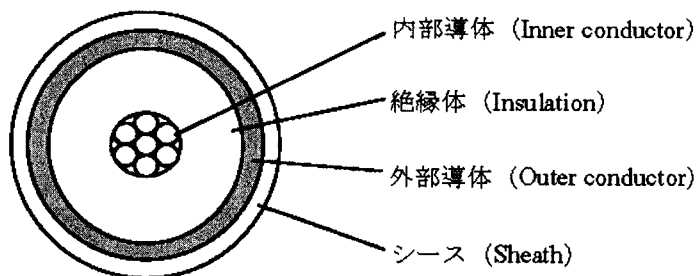


図 1 .ケーブル構造図

Fig.1. Cable Cross-Section