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 DONGGUAN AEON TECH CO.,LTD.(CHINA)  
 SUZHOU AEON TECH CO.,LTD.(CHINA)  
 AEON TECH (SHANGHAI) CO.,LTD(CHINA)  
 DONGGUAN PARNER TECH CO.,LTD.(CHINA)



## SPECIFICATION FOR APPROVAL

**CUSTOMER:** 中怡

**PART NAME:** RF PCB Antenna Assembly

**PART NO:**

**REVISION:**

**W. Y. P/NO:** C147-510546-A

**REV:** XI

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :		

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# PCB Antenna Assembly

## Specification

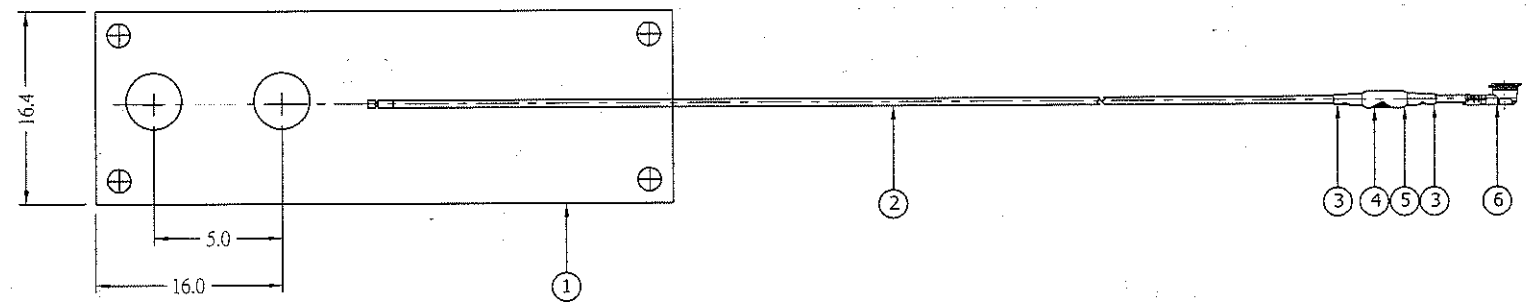
### 1. Electrical Properties(witch housing) :

- 1.1 Frequency Range.....2.4 ~ 2.5GHz/4.9~5.825GHz
- 1.2 Impedance .....50 Nominal
- 1.3 VSWR ..... 2.5:1 Max.
- 1.4 Return Loss..... -10 dB Max.
- 1.5 Radiation ..... Omni-directional
- 1.6 Gain(peak)A..... 3.0dBi/2.4 ~ 2.5GHz (excluding cable loss )  
Gain(peak)B..... 5.0dBi/4.9~5.825GHz (excluding cable loss )
- 1.7 Cable Loss..... 0.4dB Max.(2.4 ~ 2.5GHz)  
..... 0.7dB Max.(4.9~5.825GHz )
- 1.8 Polarization..... Linear ; Vertical
- 1.9 Admitted Power..... 1W
- 1.10 Cable..... 1.13 Cable
- 1.11 Connector..... MHF Plug
- 1.12 Core..... RH5\*10\*1.5

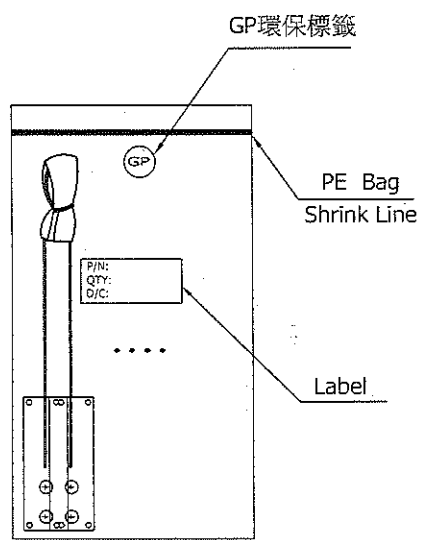
### 2. Physical Properties :

- 2.1 Operating Temp. .... -10 ~ +60
- 2.2 Storage Temp. .... -10 ~ +70

REV	DATE	DESCRIPTION
X1	2009.4.27	New Issue



Specification: Excluding PCB test, free space  
 Frequency Range: 2.4~2.5&4.9~5.85GHz  
 Return Loss: -7.5dB or less  
 VSWR: 2.5 or less  
 Gain: 3.0dbi/2.4~2.5GHz; 5.0dbi/4.9~5.85GHz

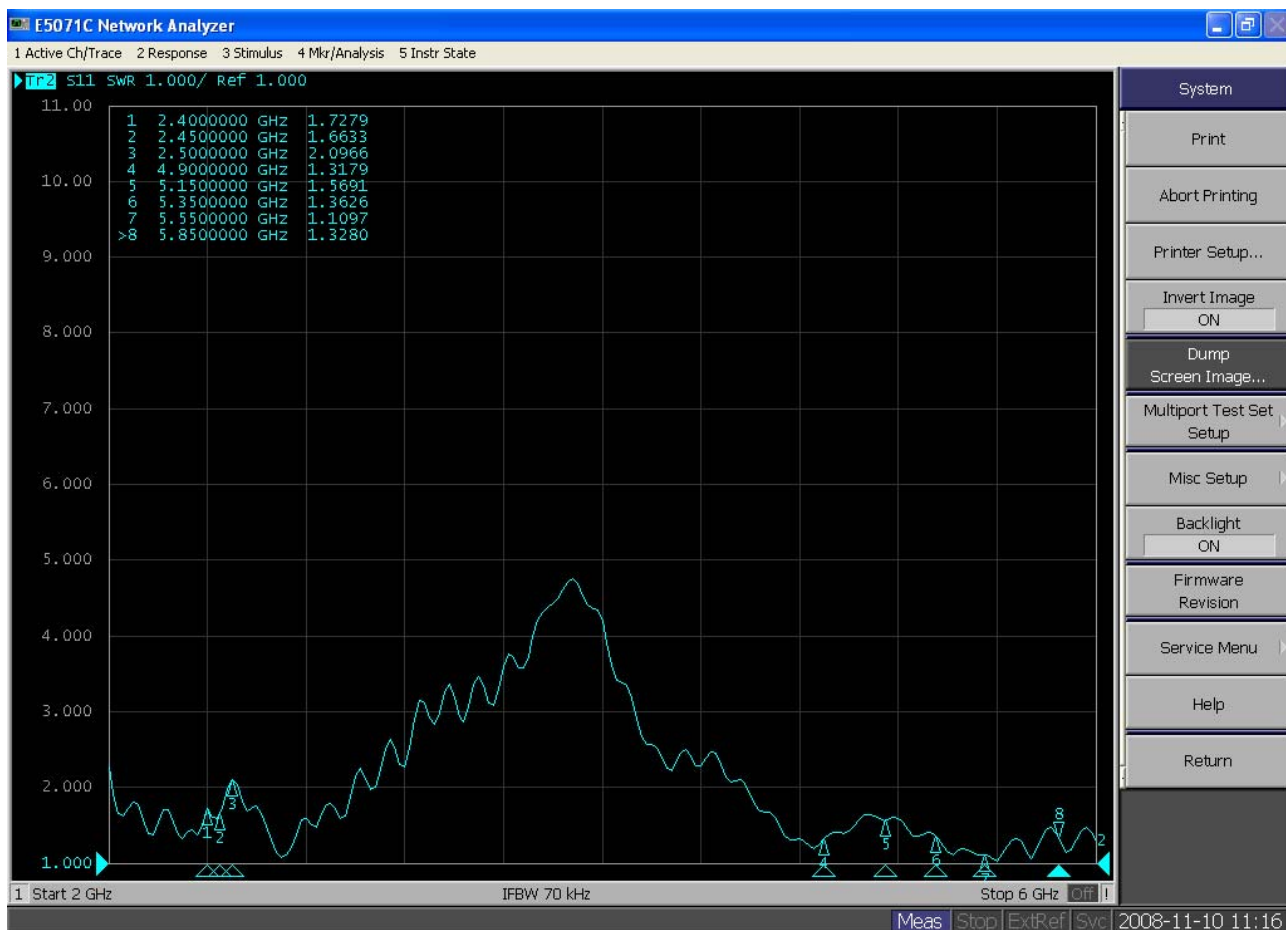


Packing : 25 pcs/bag


NO	DESCRIPTION	QTY	REMARK
7	H.S Tube	Heat Shrink Tube	2
6	CONNECTOR	MHF Plug FOR $\phi 1.13$ Cable	1
5	H.S Tube	Heat Shrink Tube	1
4	Core	RH5 * 10 * 1.5 mm	1
3	H.S Tube	Heat Shrink Tube	2
2	CABLE	$\phi 1.13$ , Color: Gray	1
1	PCB	FR4, 49.5*16.4*1.6	1

CUSTOMER'S SIGNATURE	XX	±5	APPROVED	CUSTOMER: 中怡	
	X	±3.0	刘福李幼		PART NO :
	.X	±1.0	CHECKED		PARTNAME: PCB Antenna
	.XX	±0.5	✓		W.Y P/NO : C147-510546-A
	XXX	±0.1	DRAWING		REV UNIT FILE : 0904-0036
			李幼		X1 m/m SHEET : 1/1

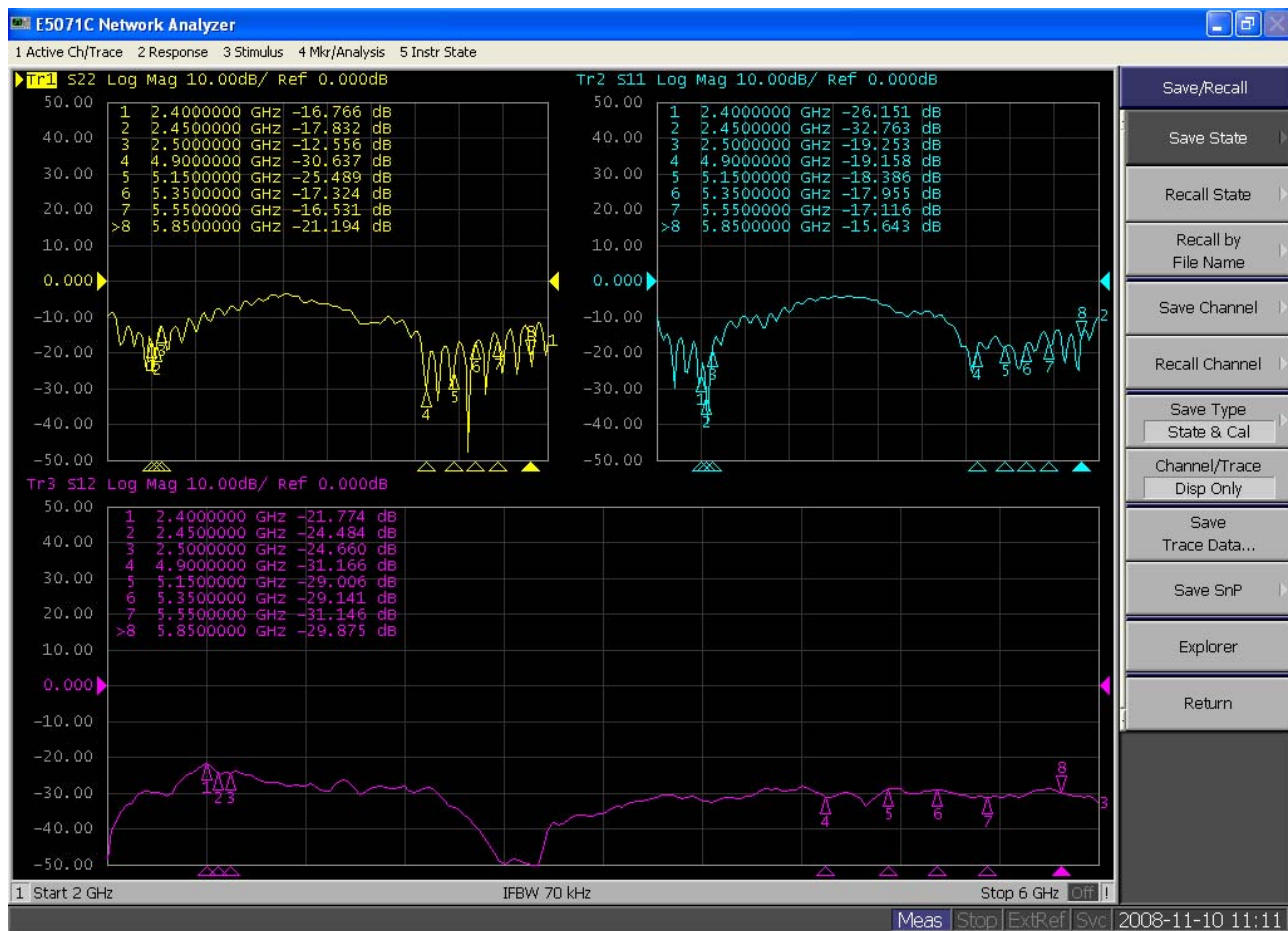
**M.gear Wha Yu Group**  
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### VSWR Test Reasult

Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			

## Mgear Antenna Isolation:



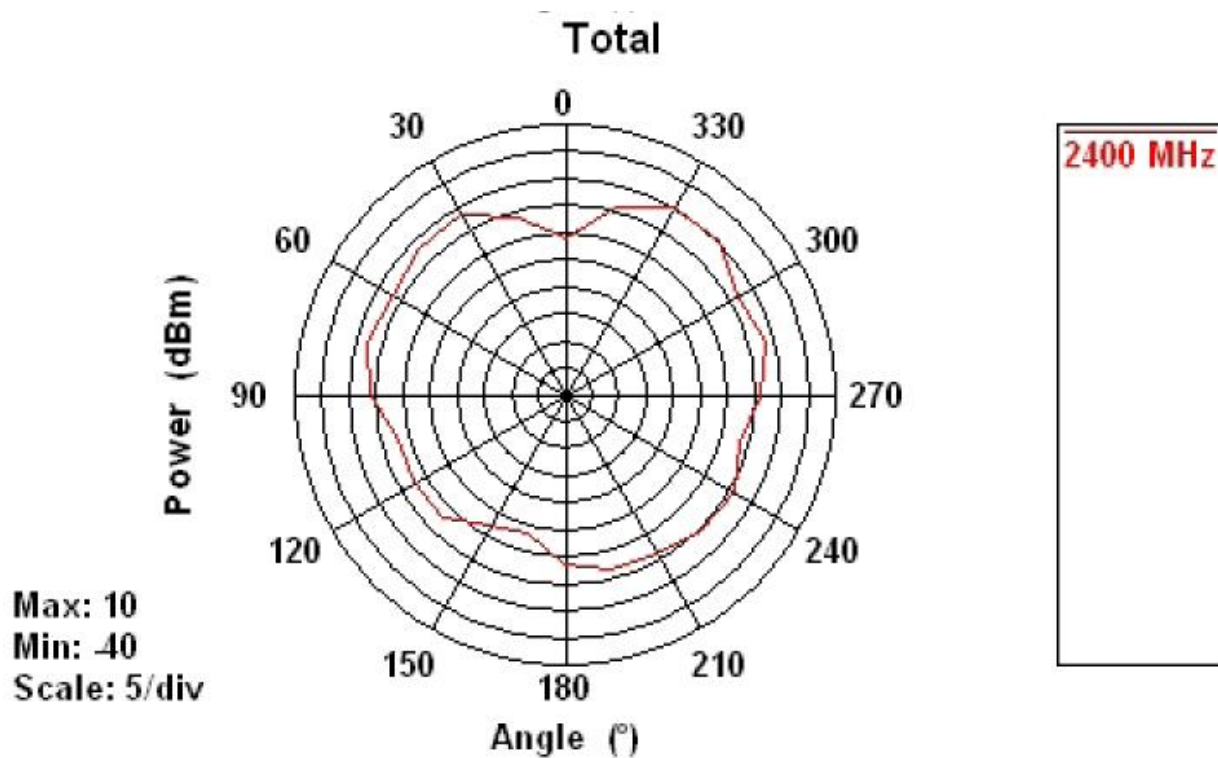
## S12 (Mgear Antenna Isolation Test Result)

Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			

## Appendix B


### H Plane 3D Patten:

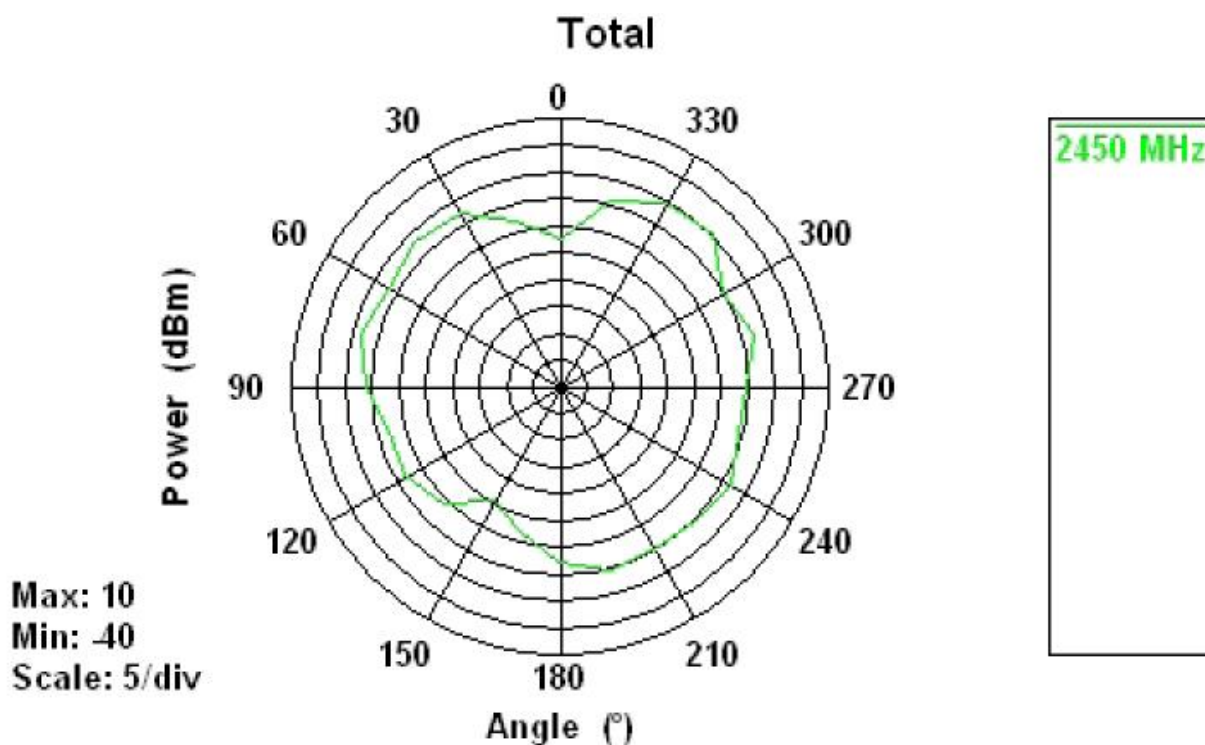
WNC



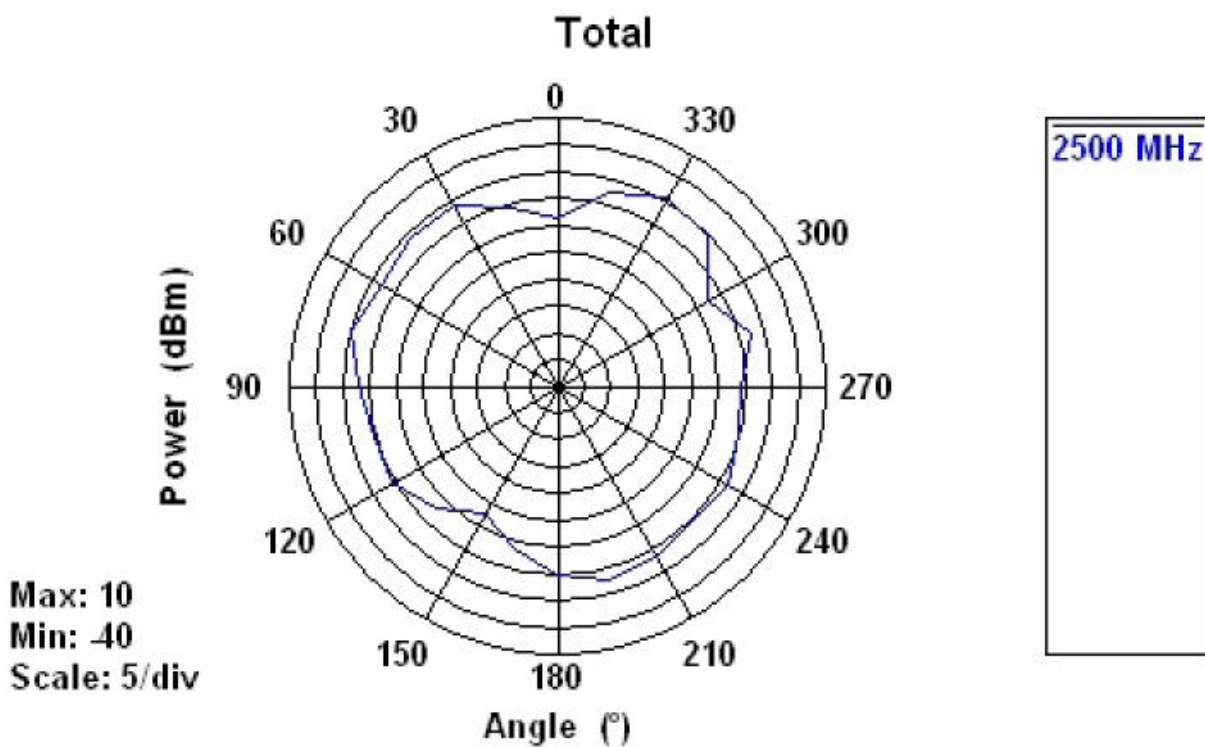
### H Plane 3D Patten:

WNC

Project:		Author: Jack		
Date: 2008/11/10		Check:		
Rev: C	Language: English			
Project No:				
AEON Technology(Shanghai) Co.,LTD.				



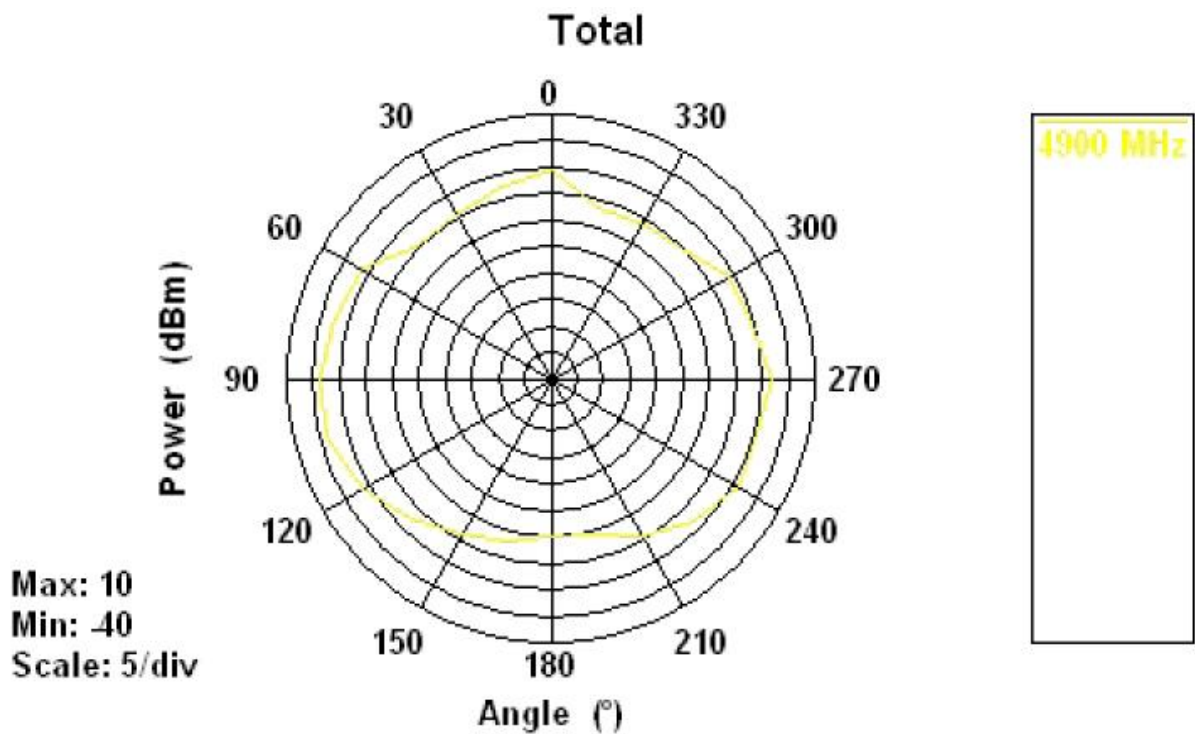
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WNC



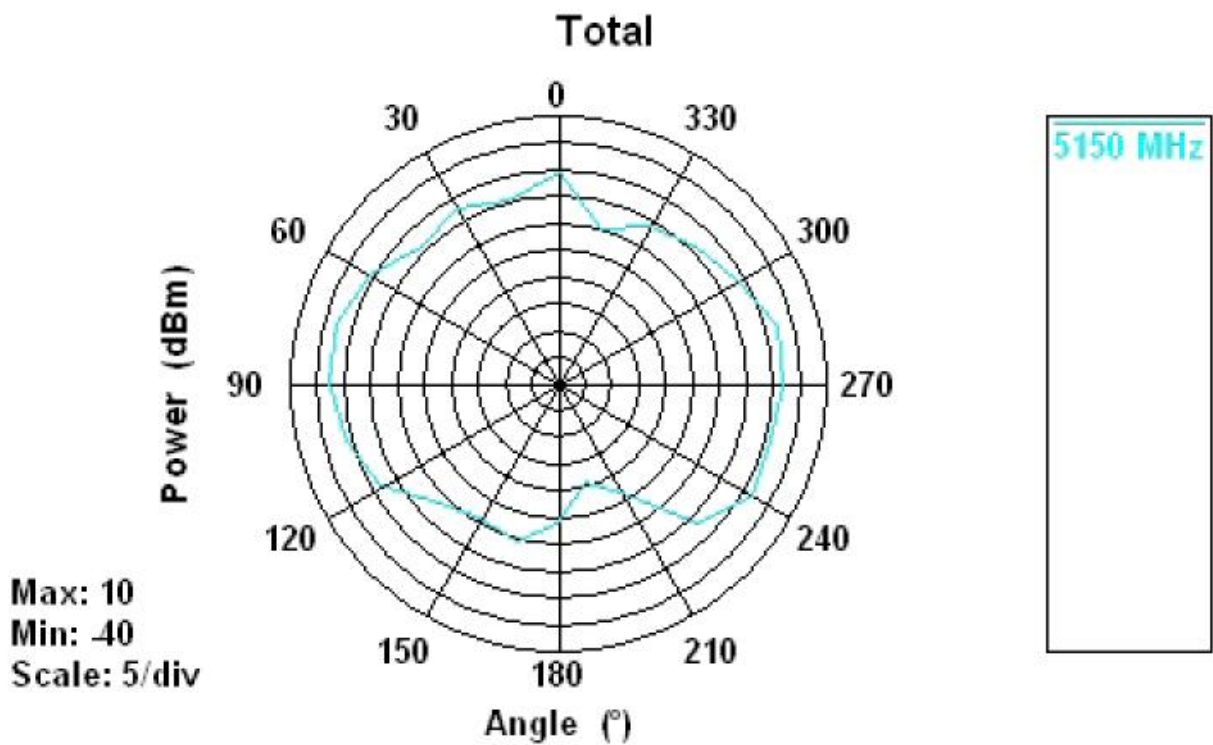
**H Plane 3D Patten: WNC**

Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			



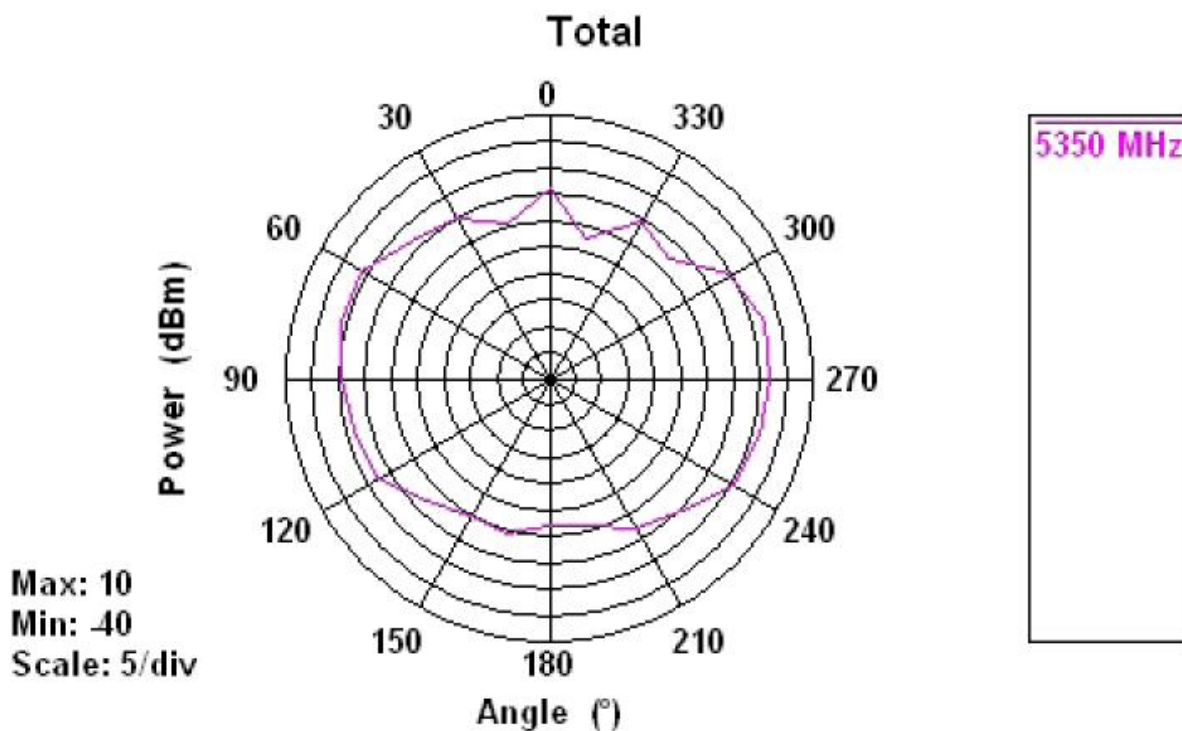


**H Plane 3D Patten:**  
WNC

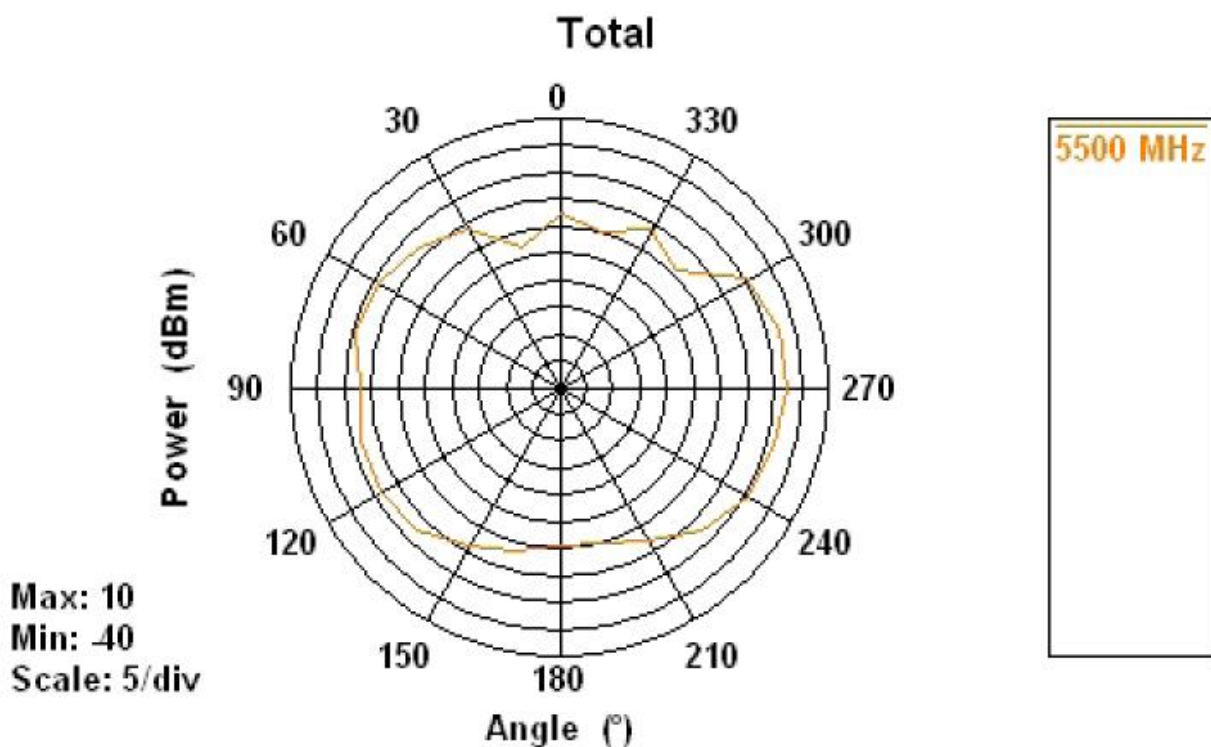


**H Plane 3D Patten:**  
WNC


Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			



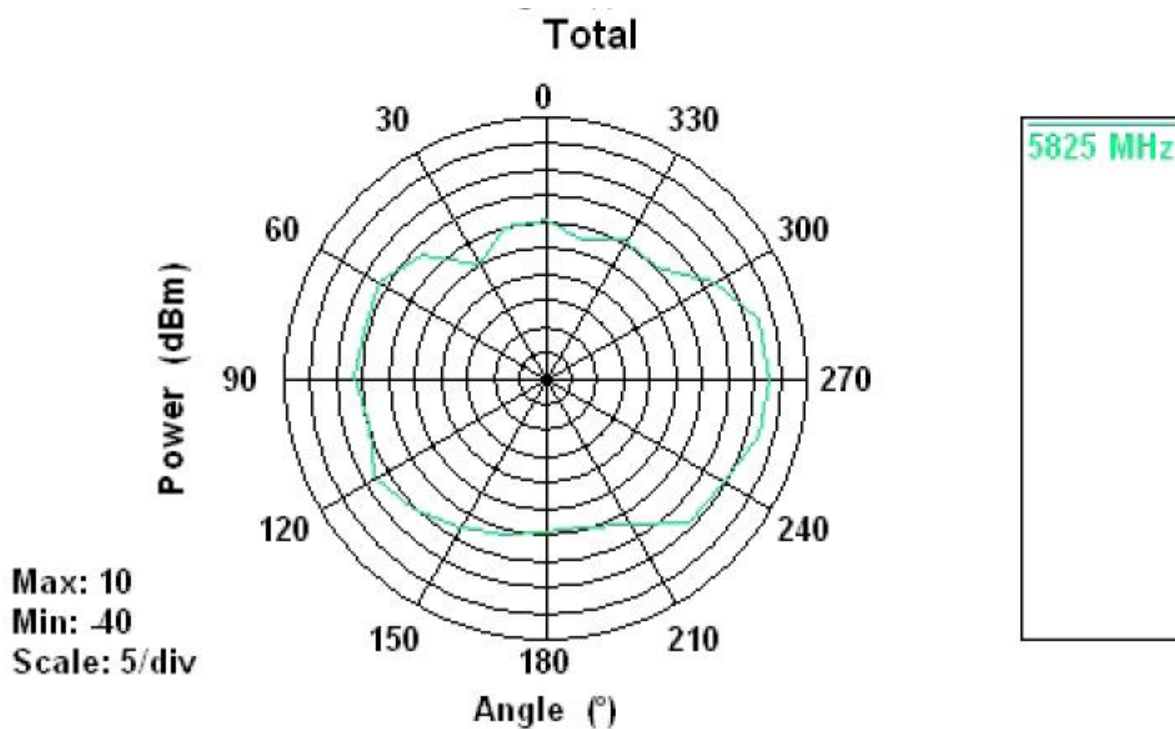
**H Plane 3D Patten:**  
WNC




**H Plane 3D Patten:**

Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			

WNC



Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			

### 3.1.2 Anechoic Chamber Test Setup

When we test Gain of the antenna ,we will use the SATIMO SG42 3D chamber. The chamber provides test frequency from 300MHz to 6GHz.The configuration and the test date of the chamber are showed in Figure ,Appendix B.

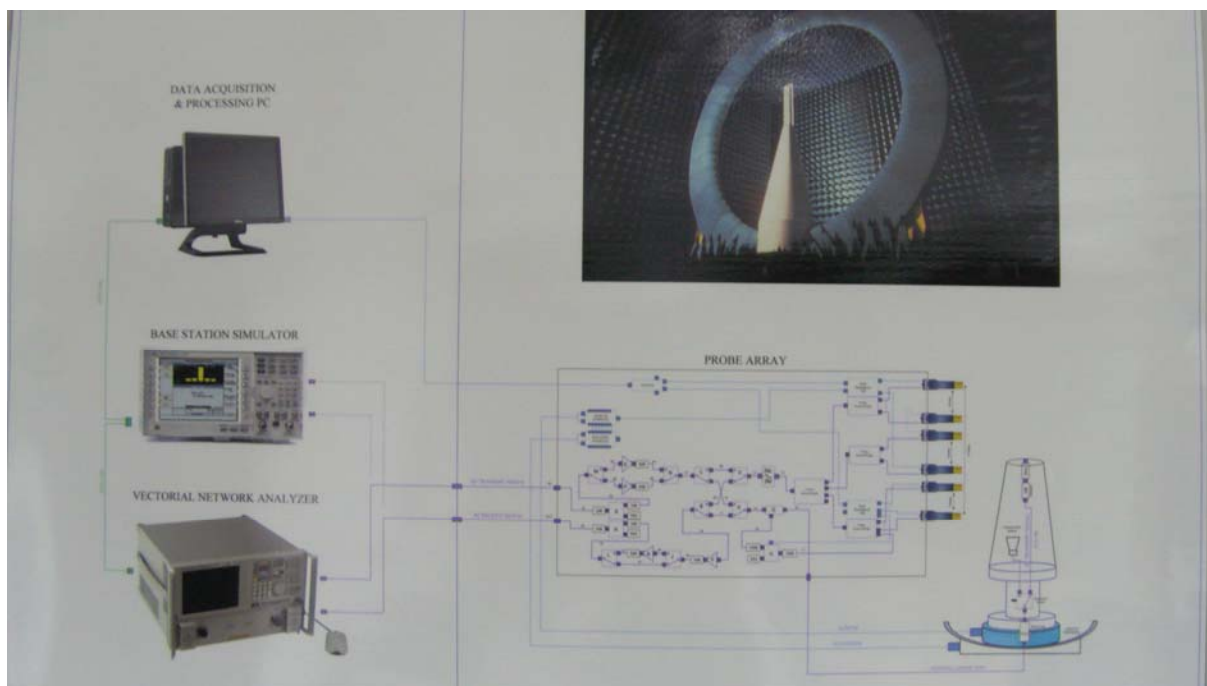



Figure 4 Configuration of SATIMO SG42 3D-Chamber

### Gain Total and Efficiency Compare

Fre (MHz)	Mgear NO.1			Mgear NO.2		
	Gain Total(dBi)	Ave(dBi)	Efficiency(%)	Gain Total(dBi)	Ave(dBi)	Efficiency(%)
2400	2.87	-2.76	62.94	2.77	-1.88	64.83
2450	2.54	-2.75	63.05	3.85	-1.91	64.44
2500	3.19	-1.82	65.77	4.67	-1.42	72.05
4900	4.21	-1.06	70.28	5.34	-1.63	69.63
5150	4.59	-0.98	72.80	4.94	-1.37	72.34
5350	5.32	-1.17	70.40	5.33	-1.48	68.40
5500	5.28	-1.40	70.48	5.56	-1.55	69.80
5850	4.40	-1.50	66.84	4.99	-1.56	65.32

Project:		Author: Jack	
Date:	2008/11/10		
Rev: C	Language: English	Check:	
Project No:			
AEON Technology(Shanghai) Co.,LTD.			

Date : 2005/02/02

Our Spec. No. WS05-M016

MESSRS.

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

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SHOWA ELECTRIC WIRE & CABLE CO., LTD.

TORANOMON

TOKYO JAPAN

*T. Mori*

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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.

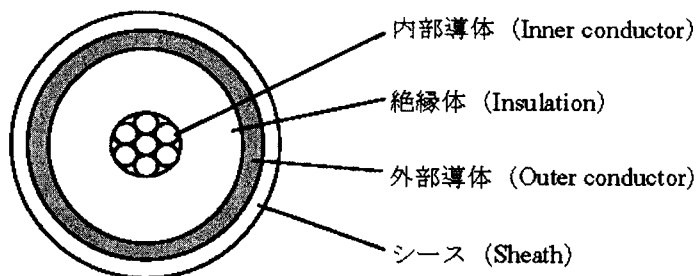


図 1 .ケーブル構造図

Fig.1. Cable Cross-Section





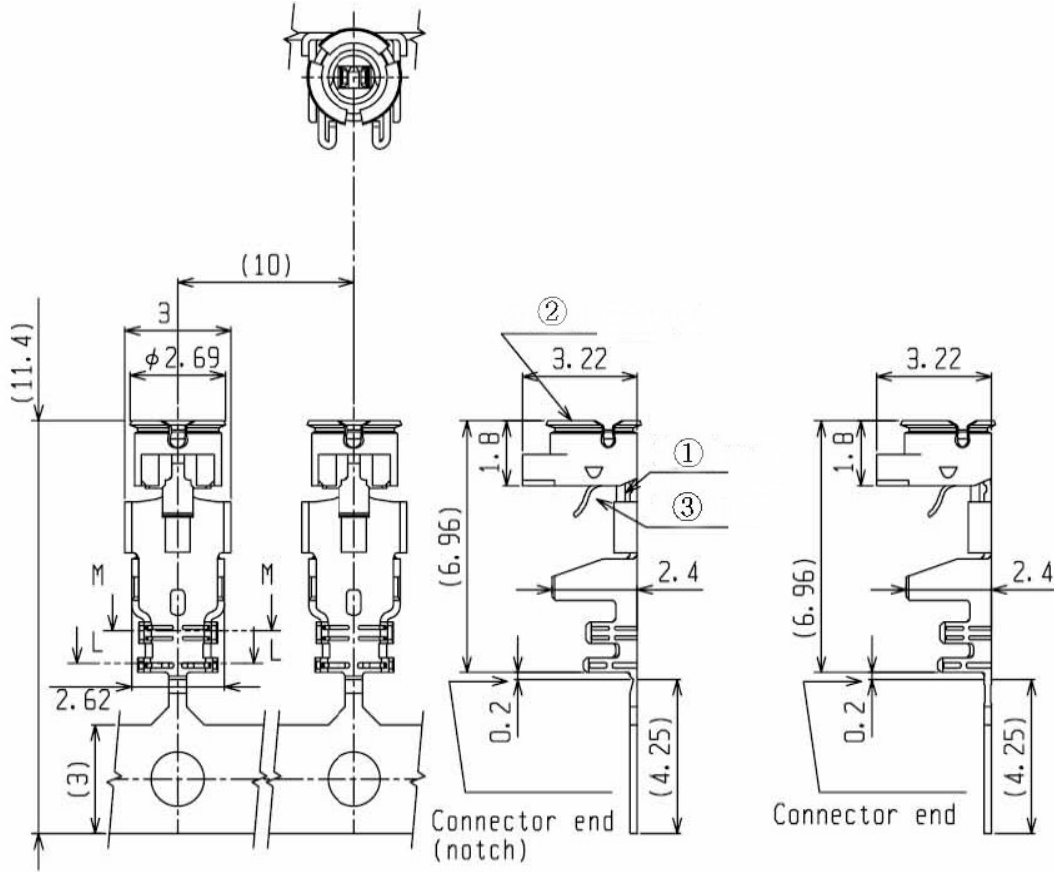
謹裕實業股份有限公司

WHA YU INDUSTRIAL CO., LTD

Connector Material Data Sheet

謹裕料號 Whayu P/N	Z101-02110002-B1	產品名稱 Product Name	MHF Plug for $\phi$ 1.13 Coaxial Cable
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Structural Drawing



Material								Surface
1	Isolation	PBT	Polybutylene Terephthalte(UL 94V-0)					Black
2	Shell	Phosphor Bronze	Cu	Sn	P	Zn	Pb	Gold Plated 0.05 $\mu$ m
3	Crimp Pin	Phosphor Bronze	Cu	Sn	P	Zn	Pb	Gold Plated 0.1 $\mu$ m

Remark : 插拔次數 30 次





# SGS Test Report

Product :RF PCB Antenna Assembly

## Contents

NO.	Description		Report NO.	Page
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			CE/2008/C1712	P.23~29
			CE/2008/C1713	P.30~36
			CE/2008/C1714	P.37~43
2	PCB	FR4	SH8102128/CHEM	P.44~49
		Ink:Green	CANEC0802635301	P.50~56
3	Connector	MHF Plug	CE/2008/95164	P.57~62
			CE/2009/32401	P.63~74
			CE/2008/95165	P.75~80
4	Core	RH5*10*1.5	CE/2008/66280	P.81~88
5	H.S Tube	Heat ShrinkTube	CE/2009/37980	P.89~96
			GZ0805081292/CHEM	P.97~101

Result for RoHS :PASS