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

SPECIFICATION FOR APPROVAL

CUSTOMER: ***Kiss Technology***

PART NAME: ***RF Antenna Cable Assembly***

PART NO.: ***REVISION:***

W. Y. P/NO.: ***C1046-510010-A(SSR-72582)*** ***REV.: X1***

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :	吳忠華	
DATE :	8/9-2007	

WHA YU GROUP

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)
譁裕實業股份有限公司
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DONGGUAN AEON TECH CO.,LTD.(CHINA)
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HUA HONG INTERNATIONAL LTD.
華弘國際有限公司
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SHANGHAI HUA YU ELECTRONIC CO., LTD. (CHINA)
上海譁裕電子有限公司
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

C1046-510010-A SPECIFICATION

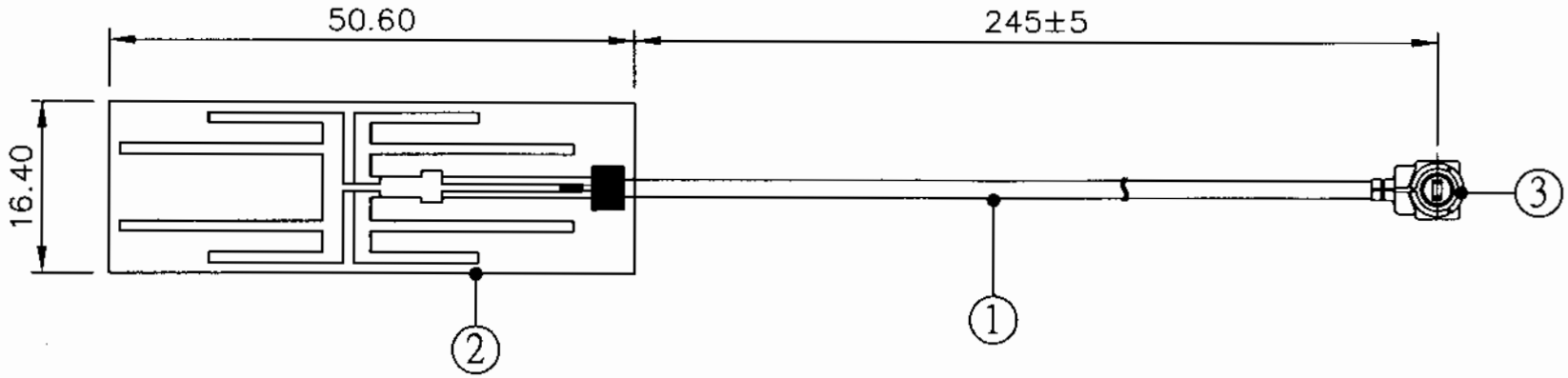
1. Electrical Specification

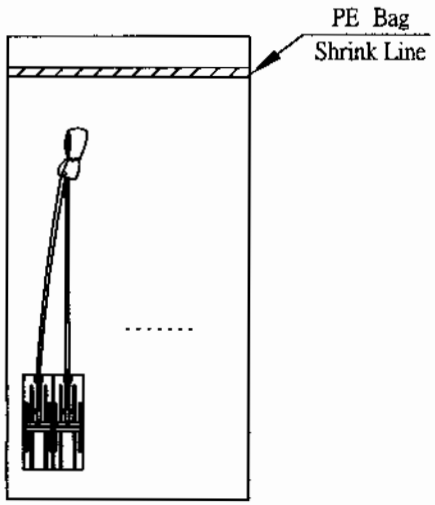
1.1	Frequency Range :	2.4 ~ 2.5GHz/4.9~5.85GHz
1.2	Gain:	1.8dBi typ. (excluding cable loss)
1.3	VSWR:	1.92 : 1 typ. (Antenna Stand alone)
1.4	HPBW/H:	TBD
1.5	HPBW/E:	TBD
1.6	Impedance:	50Ω
1.7	Polarization:	Linear; Vertical
1.8	Power Handling:	1 W
1.9	Connector:	MHF Connector
2.0	Extended Cable:	φ1.13 Coaxial Cable; L=25cm
2.1	Cable Loss:	0.7dB @2.4GHz 1.1dB @5GHz

2. Mechanical Specification

2.1	Operating Temperature:	-10℃~+60℃
2.2	Storage Temperature:	-10℃~+70℃
2.3	Humidity:	95% RH
2.4	PCB Material:	FR4
2.5	Dimension:	L50.6 x W16.4 x T0.6 (mm)
2.6	Weight:	1.82 gf

REV	DATE	DESCRIPTION
X1	8/3-2007	New Issue





Packing : 25 pcs/bag

NO	DESCRIPTION	QTY	REMARK
3	Connector MHF Connector	1	
2	PCB FR4 50.6*16.4mm	1	
1	Coaxial cable ⌀1.13 Coaxial Cable	1	

CUSTOMER'S SINGATURE

XX.	±5
X.	±3.0
.X	±1.0
.XX	±0.5
.XXX	±0.1

APPROVED

CHECKED

DRAWING

CUSTOMER:	KISS		
PART NO :			
PARTNAME:	RF Antenna Cable Assembly		
W.Y P/NO :	C1046-510010-A		
REV	UNIT	FILE :	SSR-72582
X1	m/m	SHEET :	1/1

Wha Yu Group

WHA YU INDUSTRIAL CO., LTD.
No. 326 Sec 2. Kung Tao 5 Road,
Hsin Chu City, Taiwan

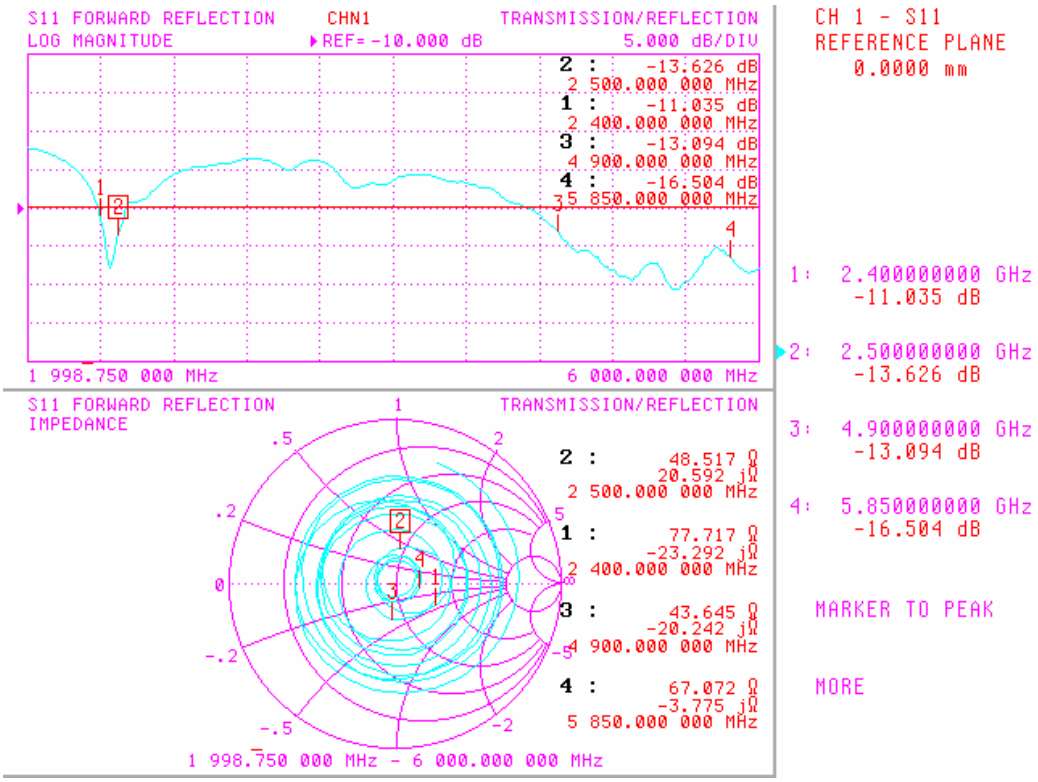
RF Antenna Assembly

P/N: C1046-510010-A

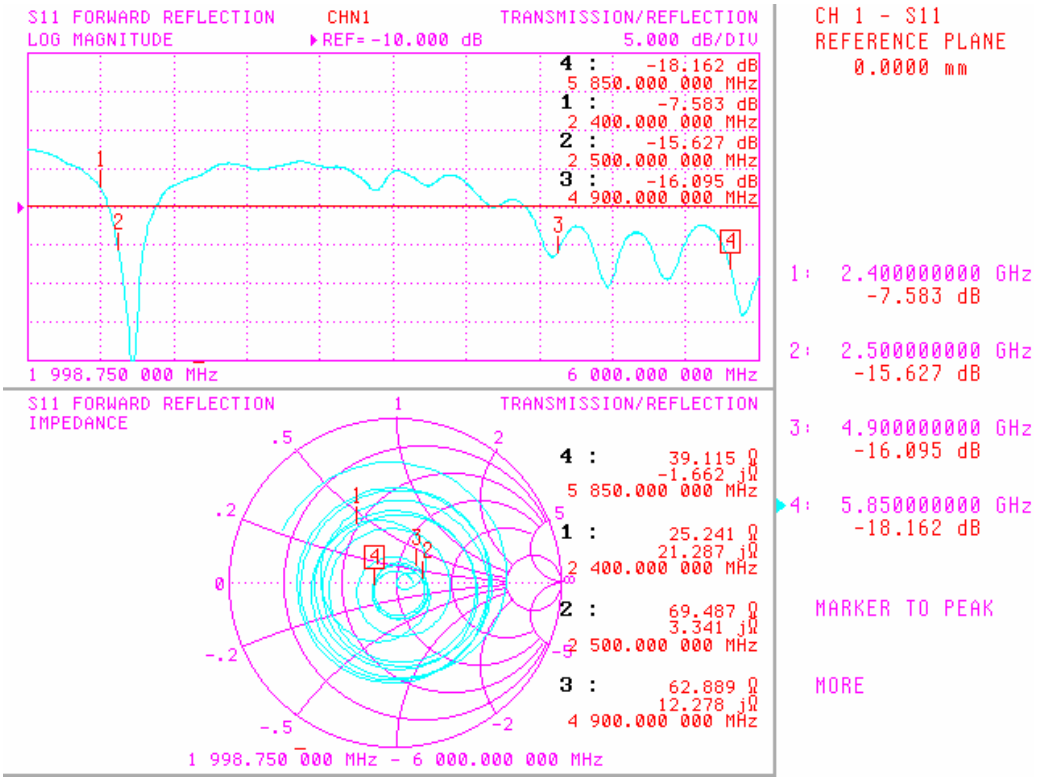
Frequency: 2.4~2.5(GHz)/4.9~5.85(GHz)

#Measurement

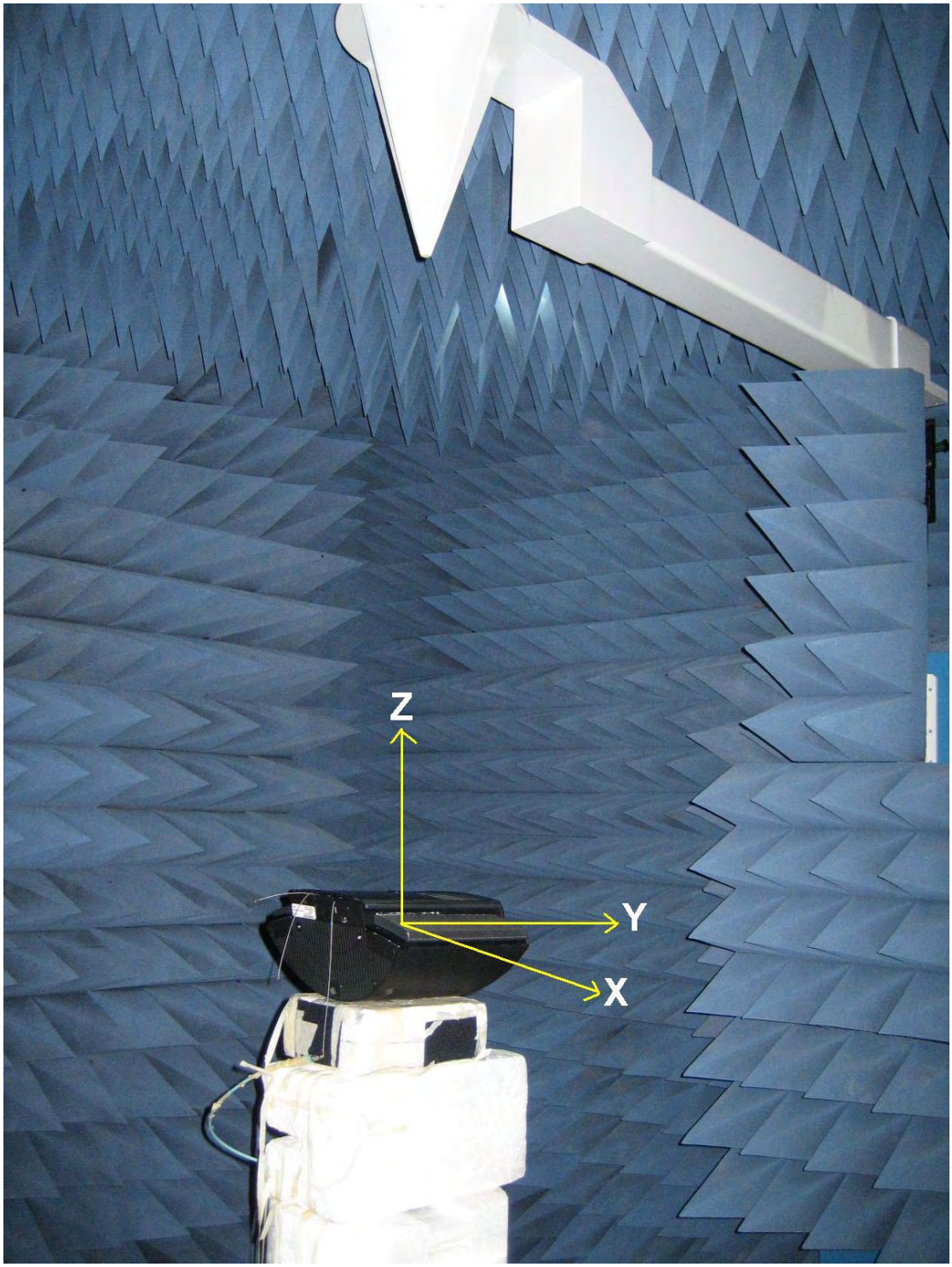
Return Loss(With Housing)



Return Loss(Antenna Stand alone)

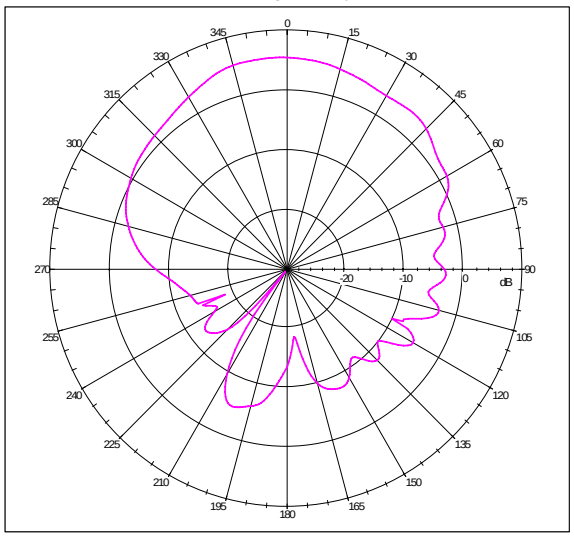


3D Chamber Test

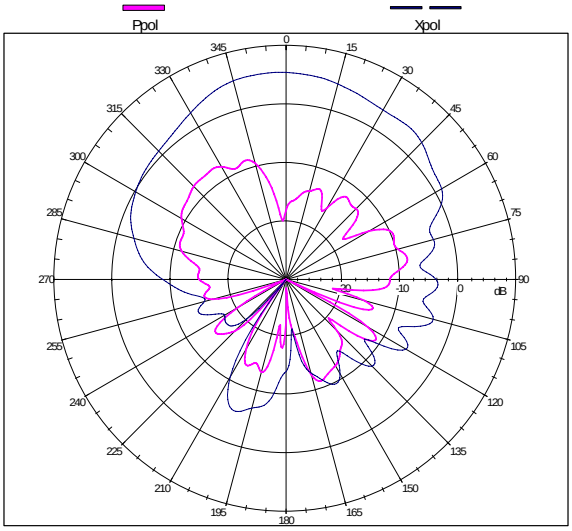


Pattern

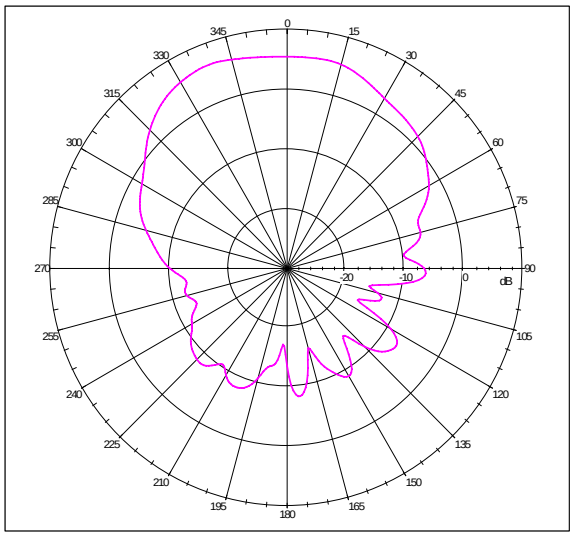
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=5.946 dBi; Total Radiating Efficiency: 62.444% @2.40000 GHz



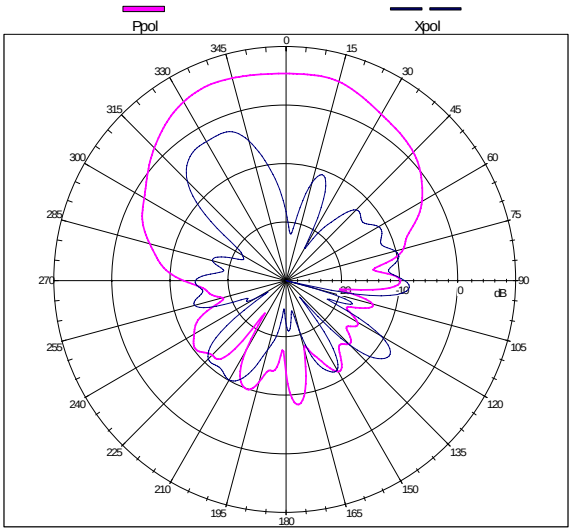
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=5.946 dBi; Co-Pol Efficiency: 53.101% @Freq: 2.40000 GHz



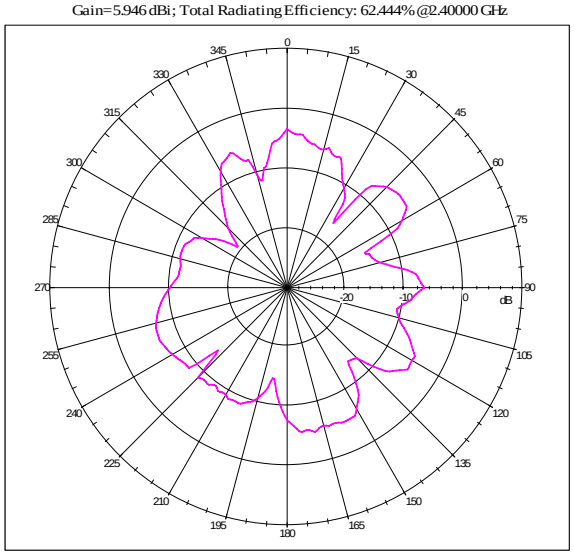
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=5.946 dBi; Total Radiating Efficiency: 62.444% @2.40000 GHz



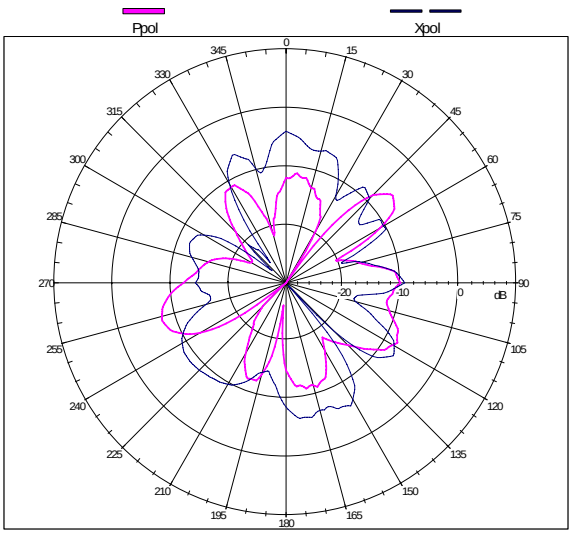
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=5.946 dBi; Co-Pol Efficiency: 53.101% @Freq: 2.40000 GHz



Far-field Power Distribution on X-Y Plane
Gain=5.946 dBi; Total Radiating Efficiency: 62.444% @2.40000 GHz

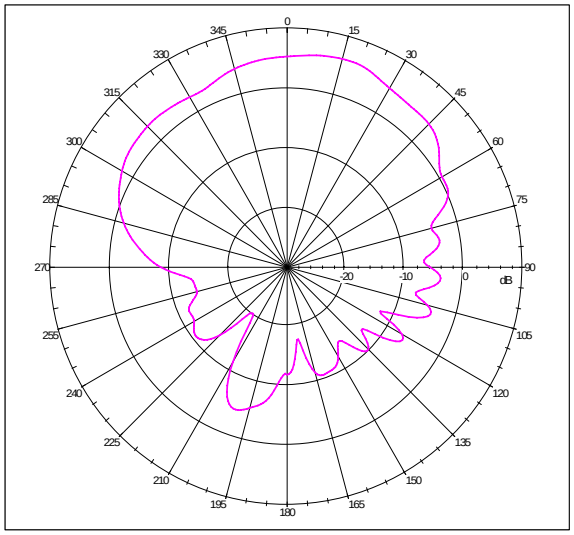


Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=5.946 dBi; Co-Pol Efficiency: 53.101% @Freq: 2.40000 GHz

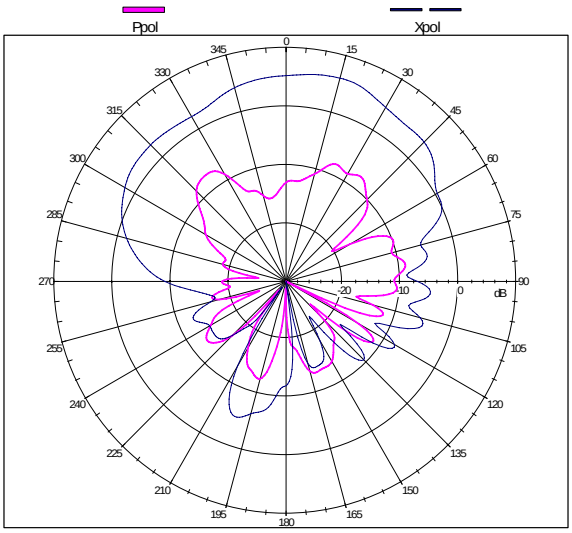


4/11

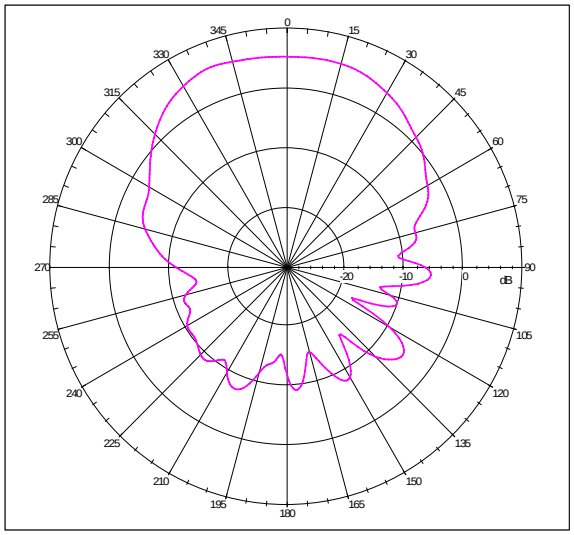
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=5.962 dBi; Total Radiating Efficiency: 67.119% @2.45000 GHz



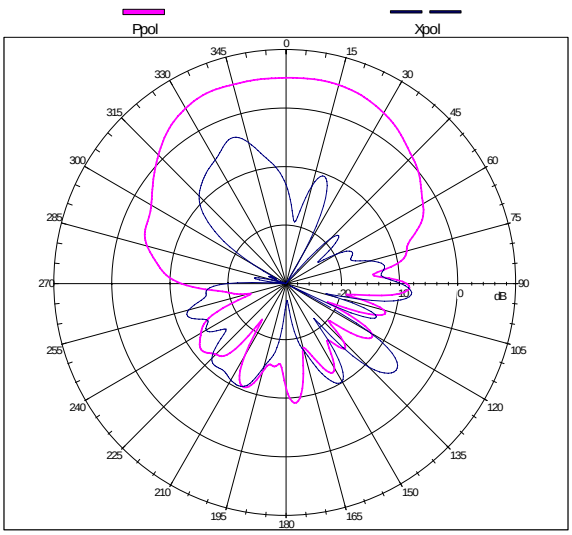
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=5.962 dBi; Co-Pol Efficiency: 62.042% @Freq: 2.45000 GHz



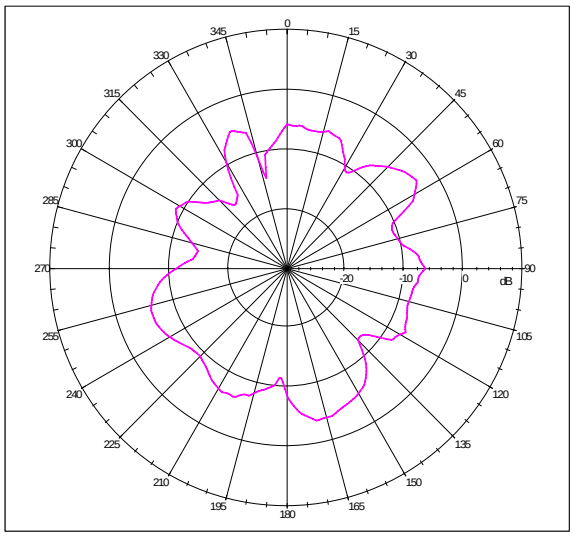
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=5.962 dBi; Total Radiating Efficiency: 67.119% @2.45000 GHz



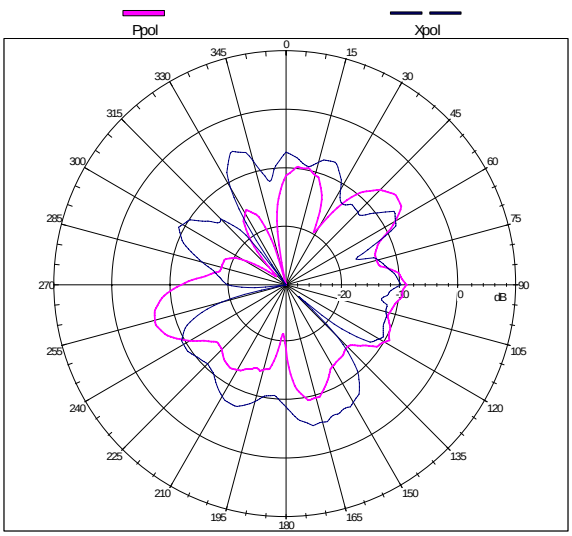
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=5.962 dBi; Co-Pol Efficiency: 62.042% @Freq: 2.45000 GHz



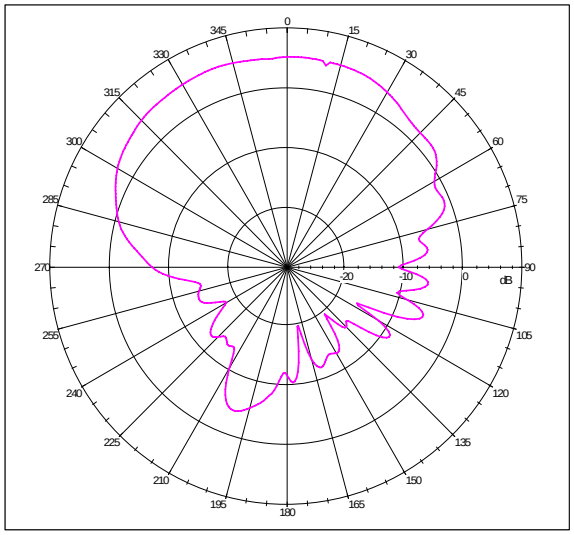
Far-field Power Distribution on X-Y Plane
Gain=5.962 dBi; Total Radiating Efficiency: 67.119% @2.45000 GHz



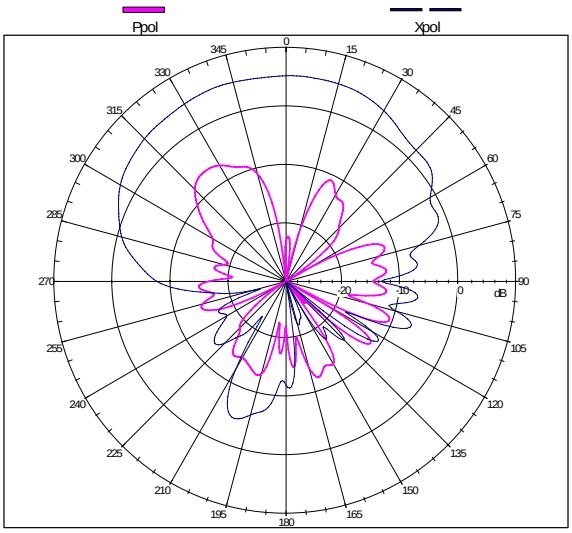
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=5.962 dBi; Co-Pol Efficiency: 62.042% @Freq: 2.45000 GHz



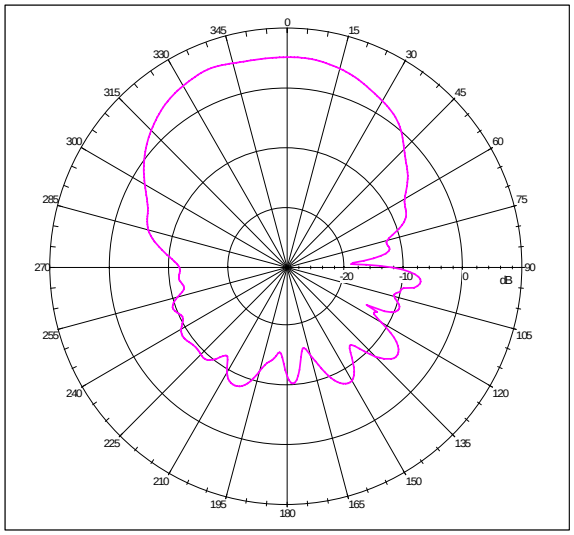
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=5.419 dBi; Total Radiating Efficiency: 64.707% @2.50000 GHz



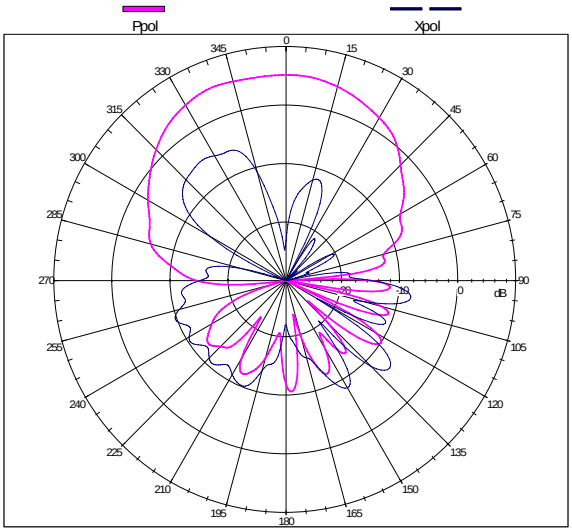
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=5.419 dBi; Co-Pol Efficiency: 60.013% @Freq: 2.50000 GHz



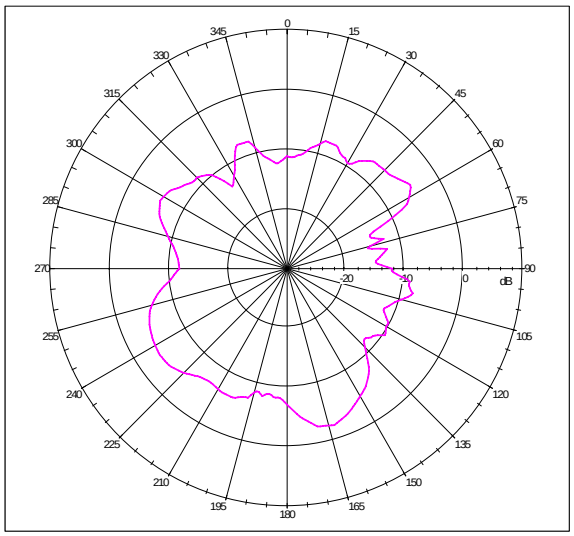
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=5.419 dBi; Total Radiating Efficiency: 64.707% @2.50000 GHz



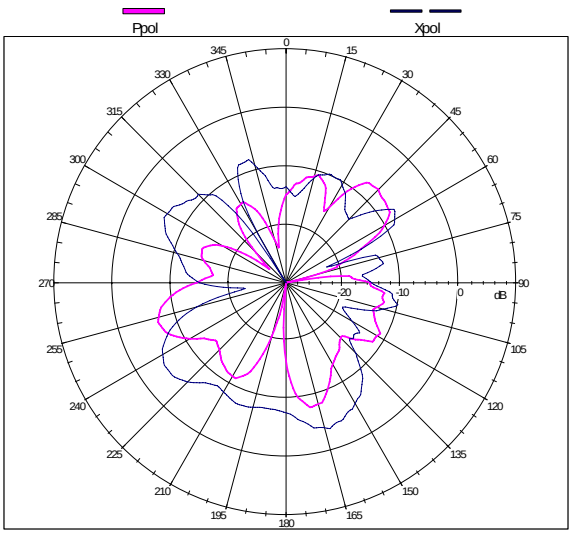
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=5.419 dBi; Co-Pol Efficiency: 60.013% @Freq: 2.50000 GHz



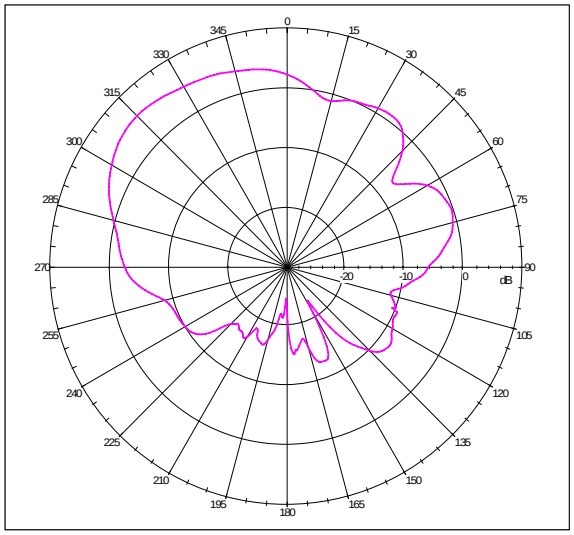
Far-field Power Distribution on X-Y Plane
Gain=5.419 dBi; Total Radiating Efficiency: 64.707% @2.50000 GHz



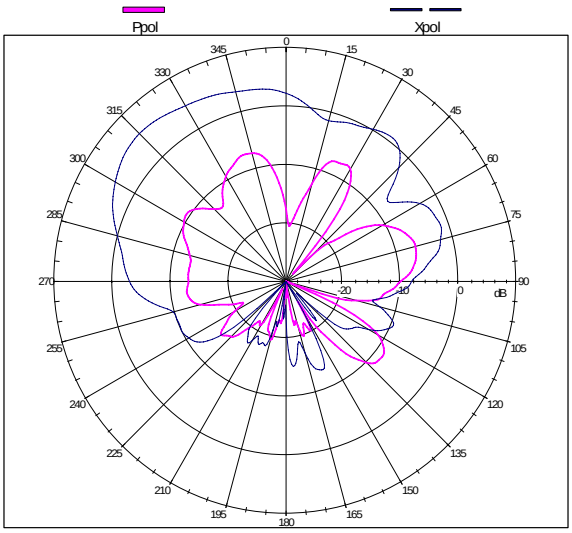
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=5.419 dBi; Co-Pol Efficiency: 60.013% @Freq: 2.50000 GHz



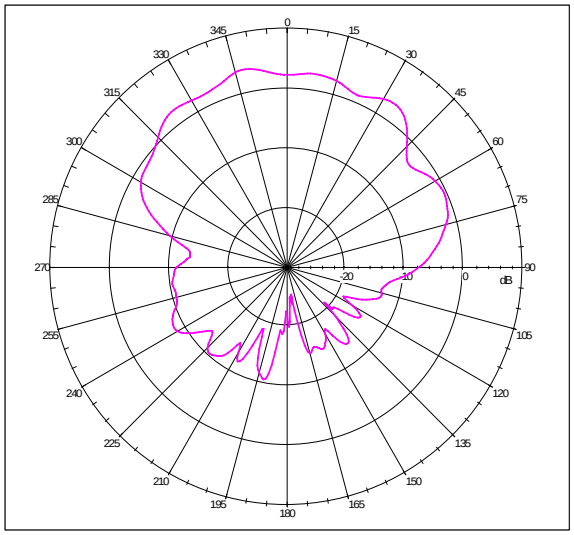
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=5.957 dBi; Total Radiating Efficiency: 57.070% @4.90000 GHz



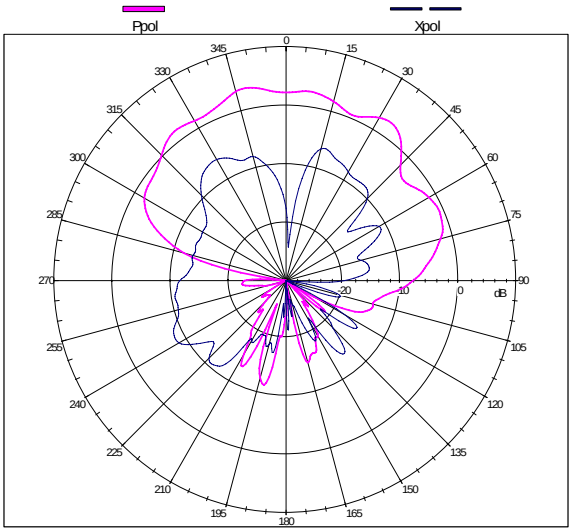
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=5.957 dBi; Co-Pol Efficiency: 56.064% @Freq: 4.90000 GHz



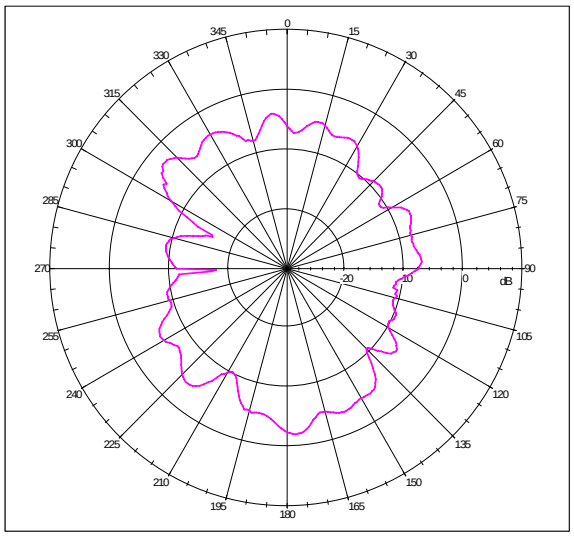
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=5.957 dBi; Total Radiating Efficiency: 57.070% @4.90000 GHz



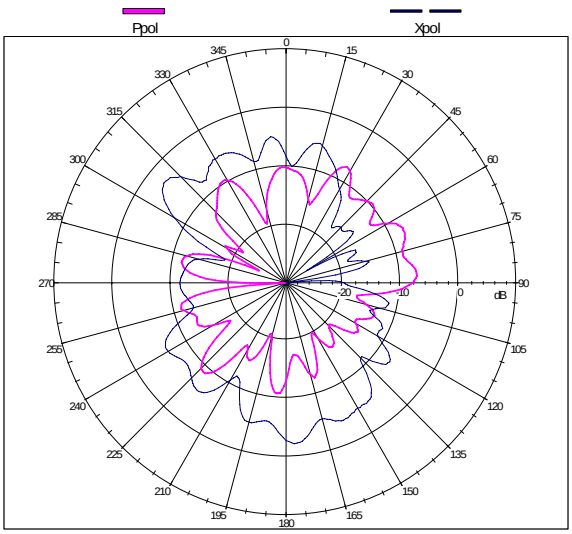
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=5.957 dBi; Co-Pol Efficiency: 56.064% @Freq: 4.90000 GHz



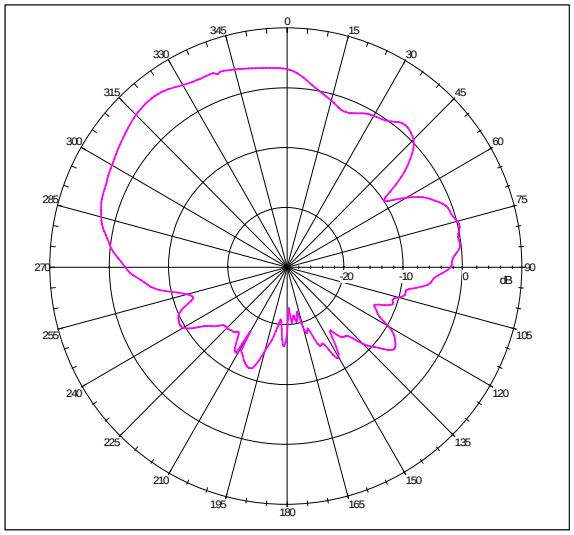
Far-field Power Distribution on X-Y Plane
Gain=5.957 dBi; Total Radiating Efficiency: 57.070% @4.90000 GHz



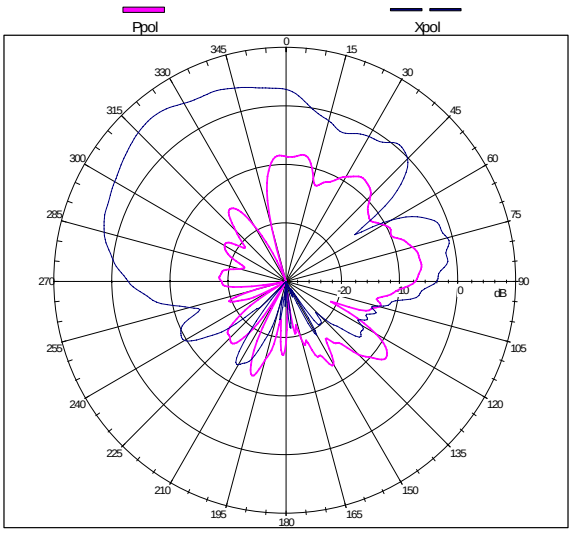
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=5.957 dBi; Co-Pol Efficiency: 56.064% @Freq: 4.90000 GHz



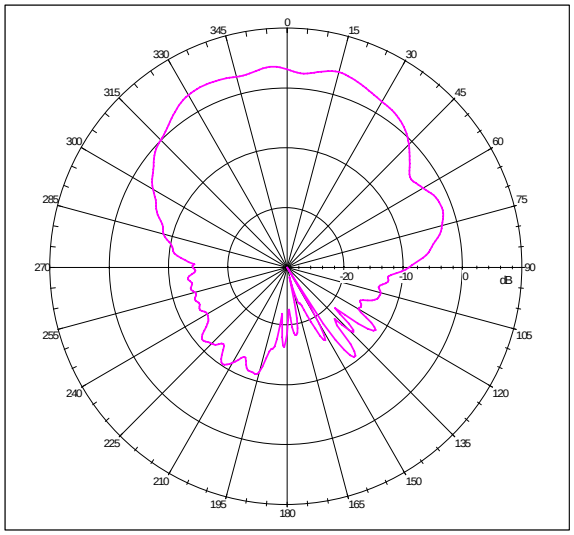
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=6.680 dBi; Total Radiating Efficiency: 58.889% @5.15000 GHz



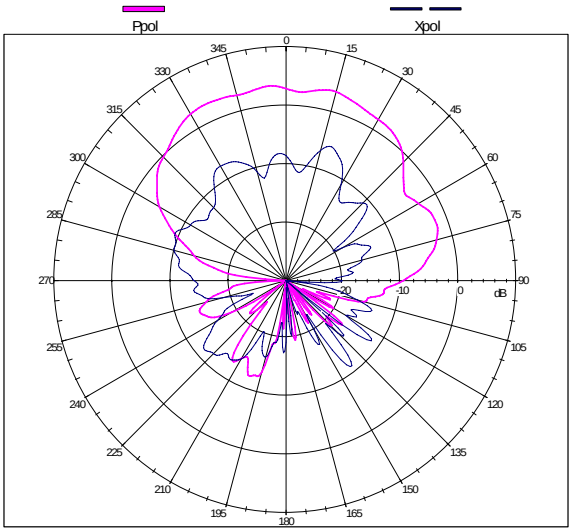
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=6.680 dBi; Co-Pol Efficiency: 56.150% @Freq: 5.15000 GHz



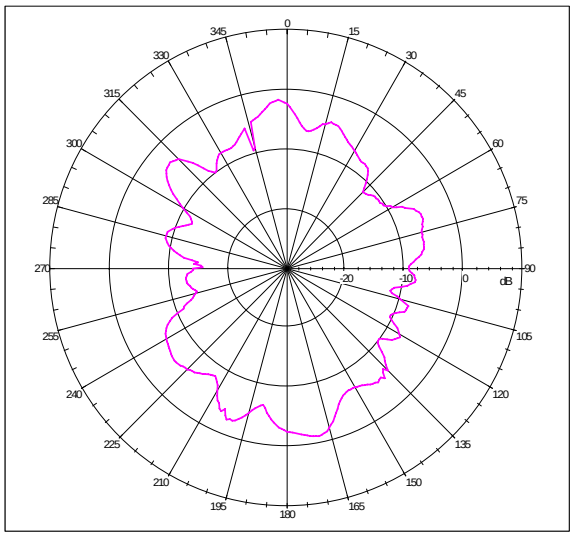
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=6.680 dBi; Total Radiating Efficiency: 58.889% @5.15000 GHz



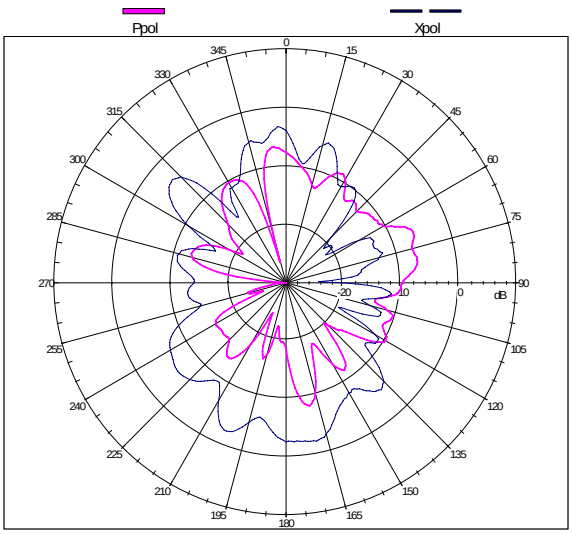
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=6.680 dBi; Co-Pol Efficiency: 56.150% @Freq: 5.15000 GHz



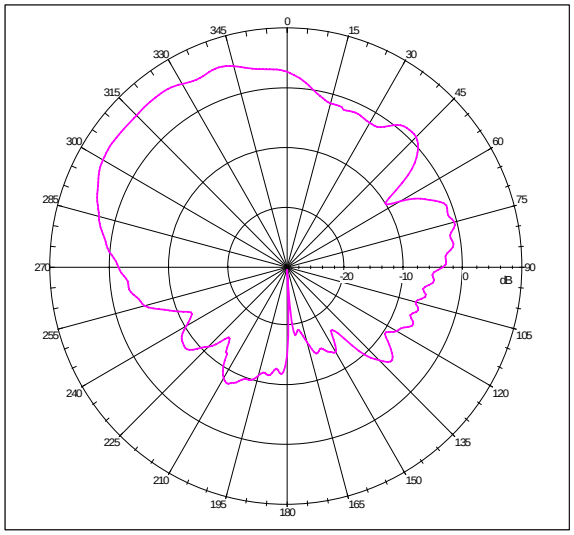
Far-field Power Distribution on X-Y Plane
Gain=6.680 dBi; Total Radiating Efficiency: 58.889% @5.15000 GHz



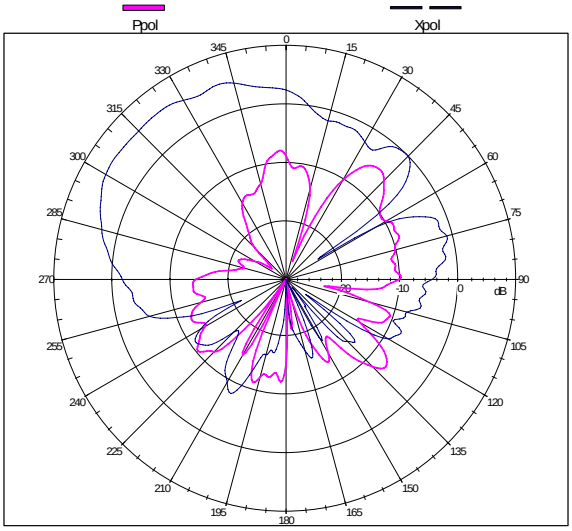
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=6.680 dBi; Co-Pol Efficiency: 56.150% @Freq: 5.15000 GHz



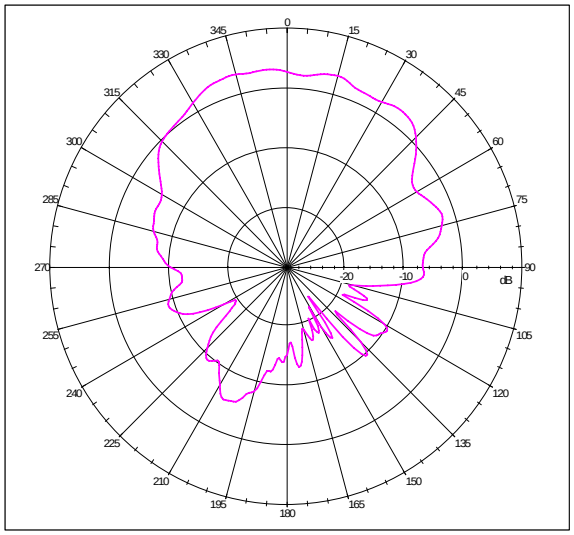
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=6.393 dBi; Total Radiating Efficiency: 63.521% @5.35000 GHz



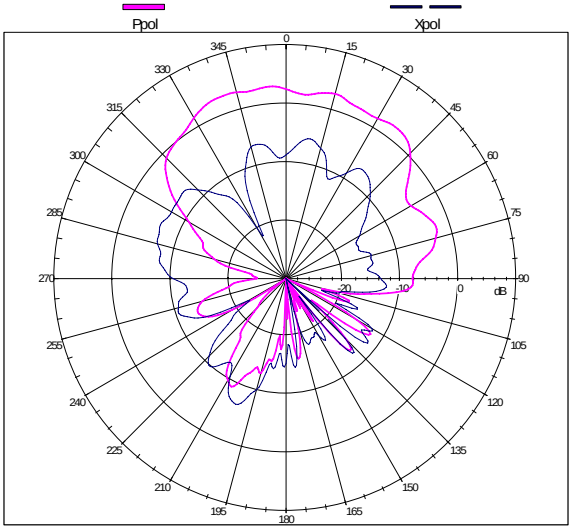
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=6.393 dBi; Co-Pol Efficiency: 62.335% @Freq: 5.35000 GHz



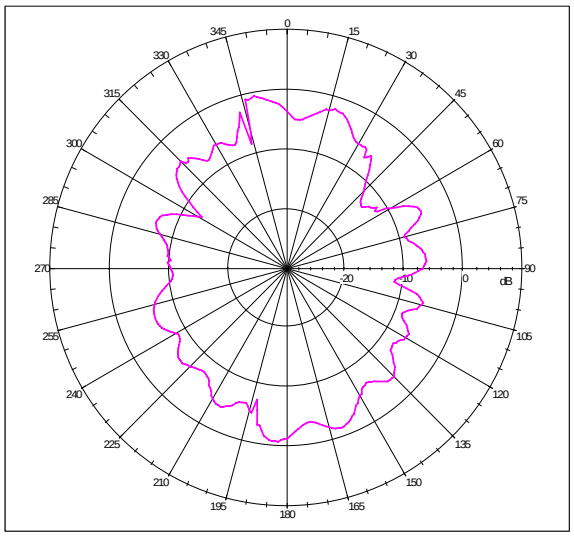
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=6.393 dBi; Total Radiating Efficiency: 63.521% @5.35000 GHz



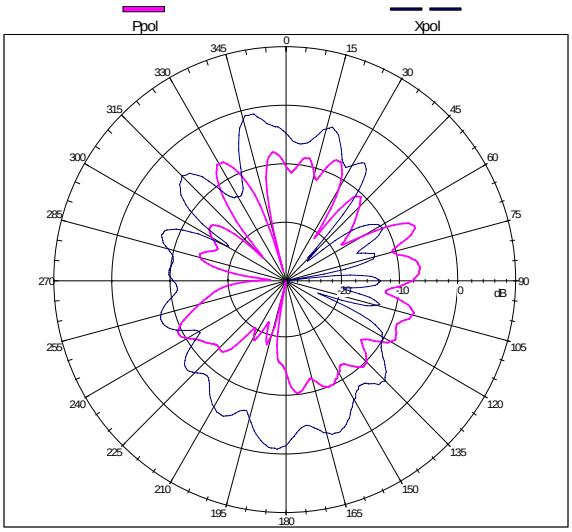
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=6.393 dBi; Co-Pol Efficiency: 62.335% @Freq: 5.35000 GHz



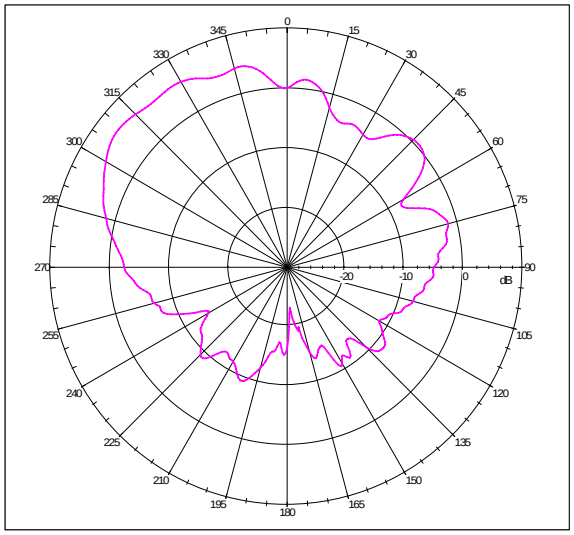
Far-field Power Distribution on X-Y Plane
Gain=6.393 dBi; Total Radiating Efficiency: 63.521% @5.35000 GHz



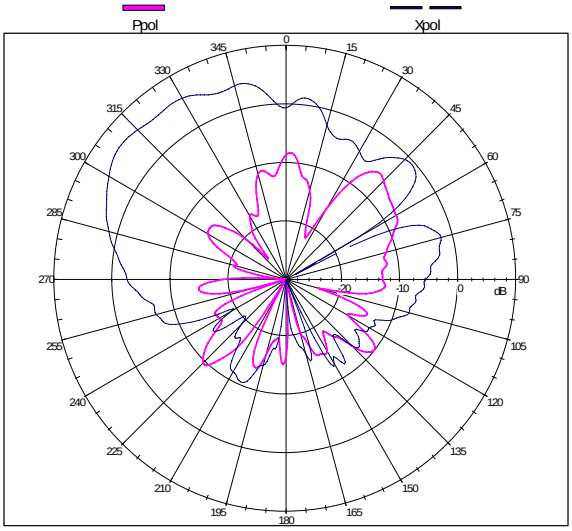
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=6.393 dBi; Co-Pol Efficiency: 62.335% @Freq: 5.35000 GHz



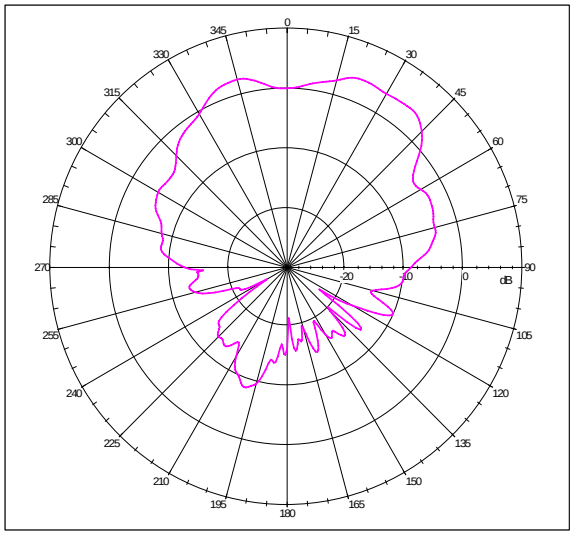
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=6.556 dBi; Total Radiating Efficiency: 58.481% @5.60000 GHz



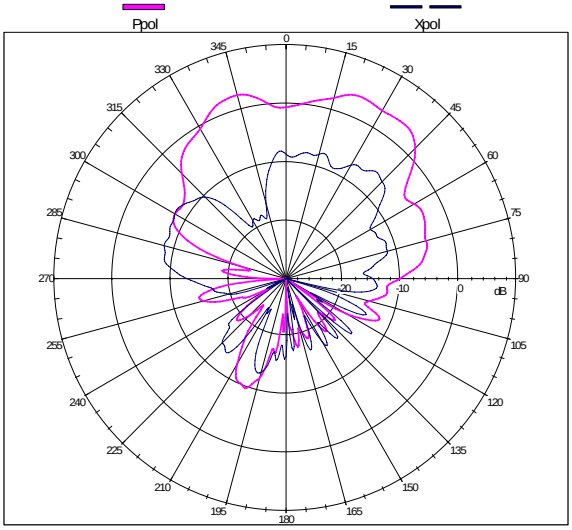
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=6.556 dBi; Co-Pol Efficiency: 57.583% @Freq: 5.60000 GHz



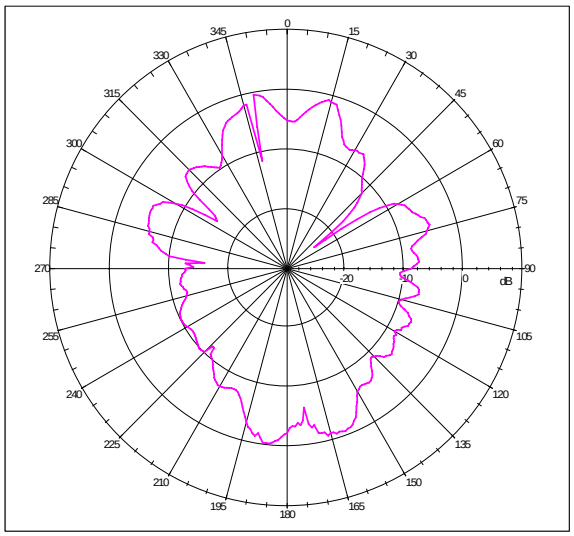
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=6.556 dBi; Total Radiating Efficiency: 58.481% @5.60000 GHz



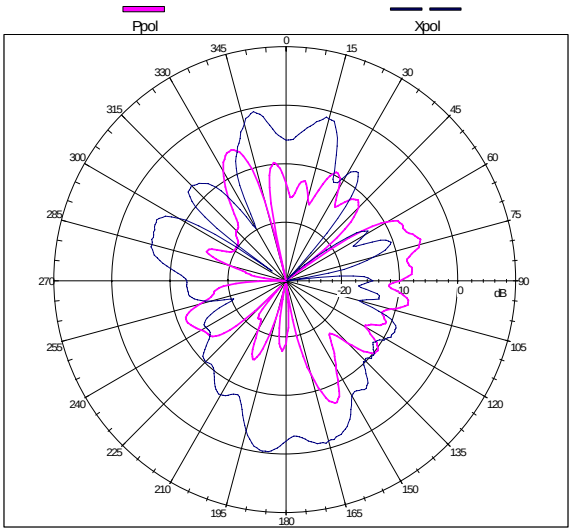
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=6.556 dBi; Co-Pol Efficiency: 57.583% @Freq: 5.60000 GHz



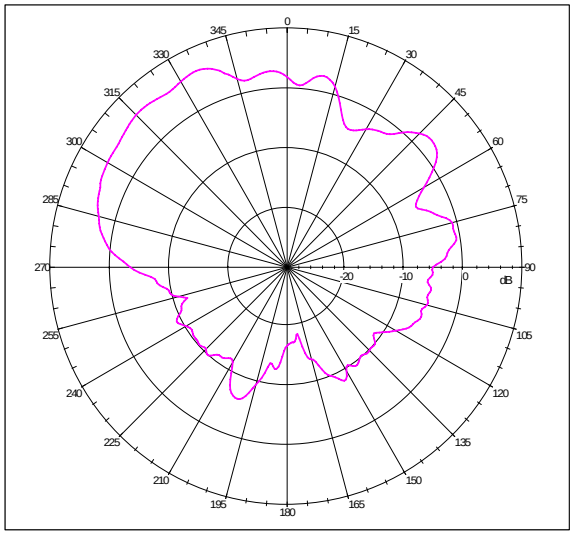
Far-field Power Distribution on X-Y Plane
Gain=6.556 dBi; Total Radiating Efficiency: 58.481% @5.60000 GHz



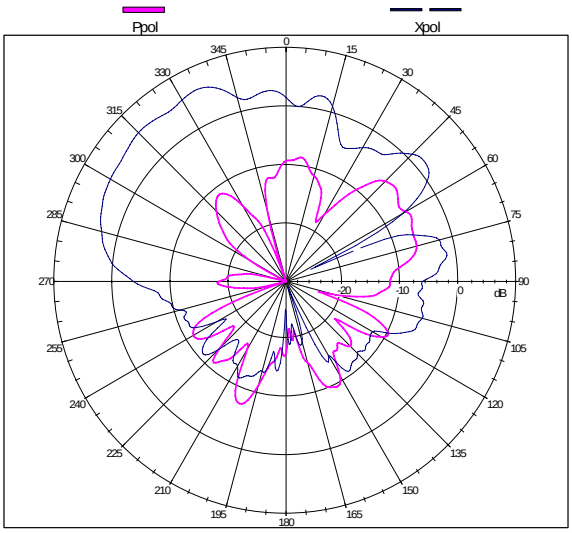
Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=6.556 dBi; Co-Pol Efficiency: 57.583% @Freq: 5.60000 GHz



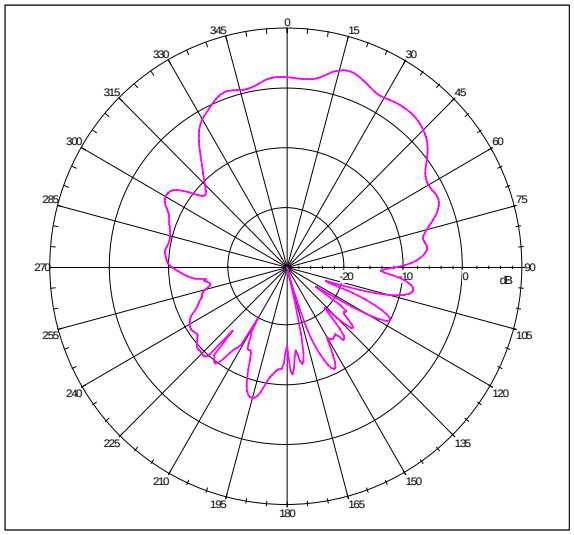
Far-field Power Distribution on X-Z Plane(E-Plane of L3 Pol Sense)
Gain=6.636 dBi; Total Radiating Efficiency: 60.308% @5.85000 GHz



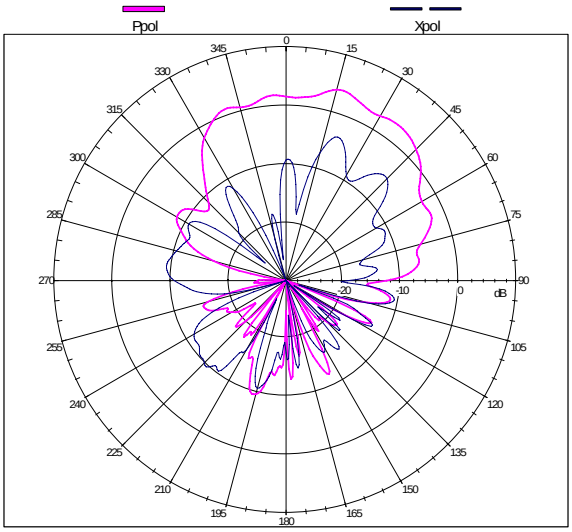
Far-field Pattern @Phi=0 deg(E-Theta Plane-Cut)
Gain=6.636 dBi; Co-Pol Efficiency: 56.642% @Freq: 5.85000 GHz



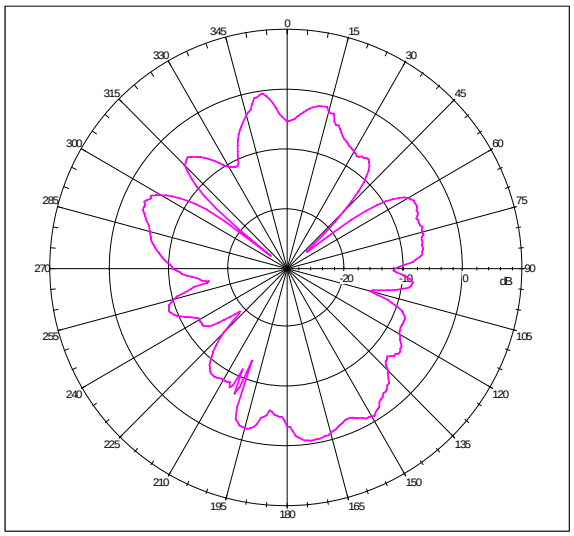
Far-field Power Distribution on Y-Z Plane(H-Plane of L3 Pol Sense)
Gain=6.636 dBi; Total Radiating Efficiency: 60.308% @5.85000 GHz



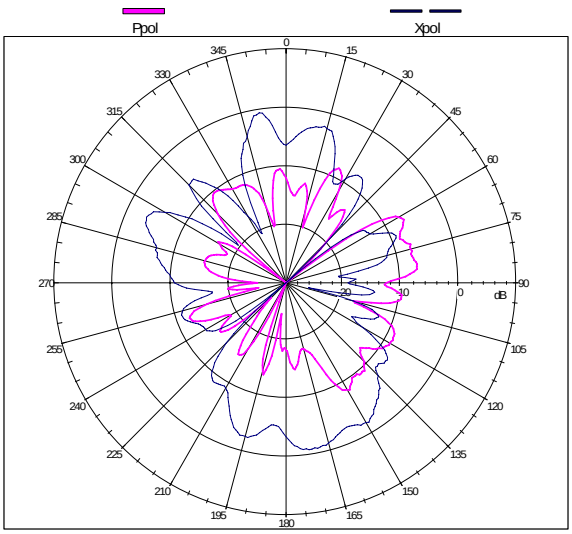
Far-field Pattern @Phi=90 deg(E-Theta Plane-Cut)
Gain=6.636 dBi; Co-Pol Efficiency: 56.642% @Freq: 5.85000 GHz



Far-field Power Distribution on X-Y Plane
Gain=6.636 dBi; Total Radiating Efficiency: 60.308% @5.85000 GHz



Far-field Pattern @Theta=90 deg(E-Phi Plane-Cut)
Gain=6.636 dBi; Co-Pol Efficiency: 56.642% @Freq: 5.85000 GHz



11/11

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
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	Ω/km	597 以下　(20℃) Max. 520　(at 20℃)
絶縁抵抗 Insulation Resistance	MΩkm	1,500 以上（DC 500V 1 分間充電後,20℃） Min. 1,500 (After charge DC 500V for 1 min. at 20℃)
耐電圧 Dielectric Strength	-	絶縁体：AC.1.5kV/0.15 秒間（ｽﾊﾟｰｸﾃｽﾄ） Dielectric core : No breakdown at AC.1.5kV for 0.15sec by spark test.
		シース：AC.1.5kV/0.15 秒間（ｽﾊﾟｰｸﾃｽﾄ） 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	Ω	50±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℃±5℃＊3 sec.

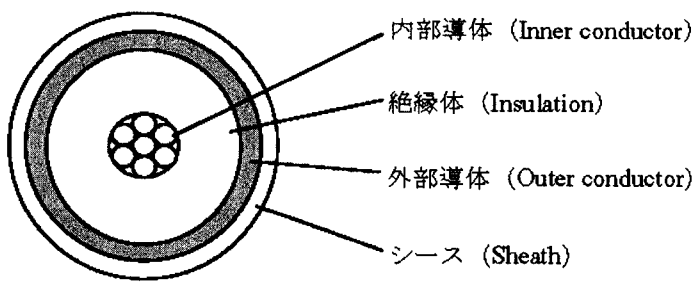


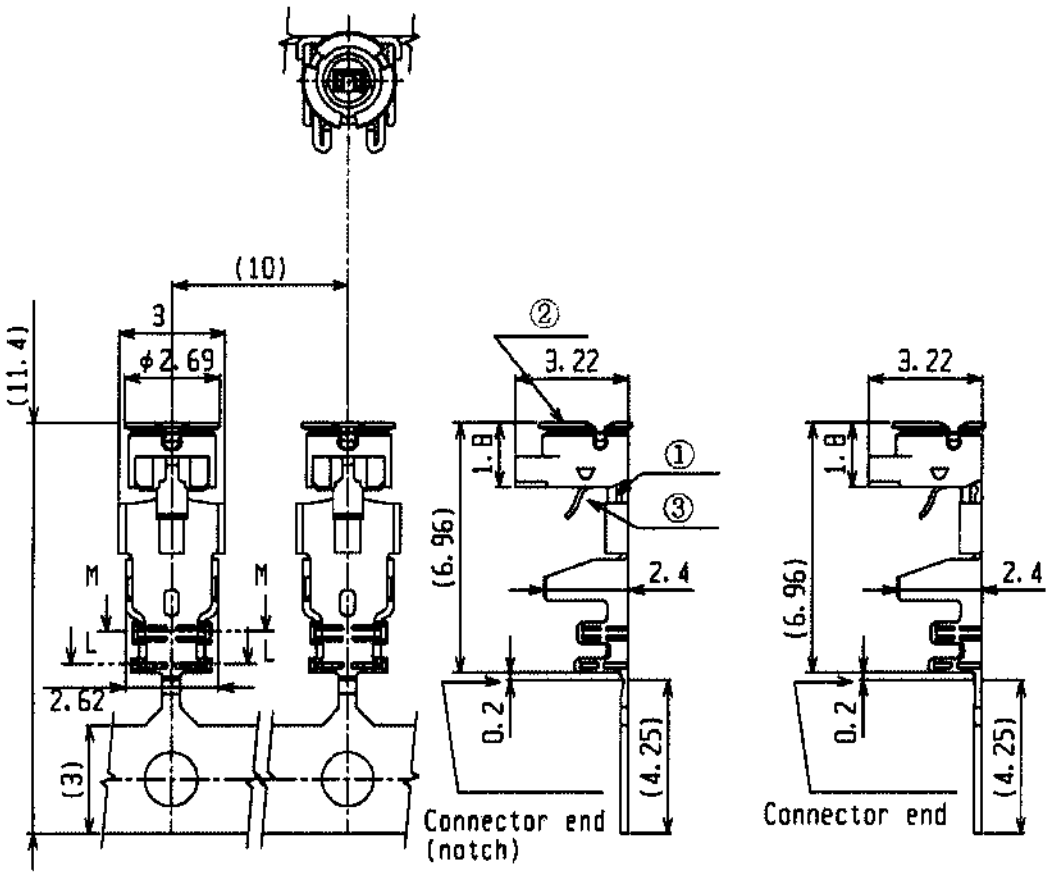
図１.ケーブル構造図

Fig.1. Cable Cross-Section

譁裕實業股份有限公司
WHA YU INDUSTRIAL CO., LTD
Connector 材質證明書

譁裕料號 Whayu P/N	Z101-02110002-A1	產品名稱 Product Name	MHF Plug for φ 1.13 Coaxial Cable

結構圖面



材質成份									表面處理
1	絕緣	PBT	Polybutylene Terephthalte(UL 94V-0)						Black
2	外殼	Phos. Bronze	Cu	Sn	P	Zn	Pb		鍍金 0.05 μm
3	中心夾持	Phos. Bronze	Cu	Sn	P	Zn	Pb		鍍金 0.1 μm

Remark：插拔次數 30 次