

# APPROVAL SHEET

## (RoHS)

CUSTOMER : \_\_\_\_\_  
CUSTOMER'S PART NO. : \_\_\_\_\_  
DESCRIPTION : PCB DIPOLE ANTENNA ASSEMBLY  
PART NO. : PCA-3520-2G4C1-A6-EV  
DATE : \_\_\_\_\_  
AUTHORIZED BY : *Alvin Chen*

	FULLY APPROVED	PARTIALLY APPROVED	REJECTED
SIGN			
SUGGESTION			

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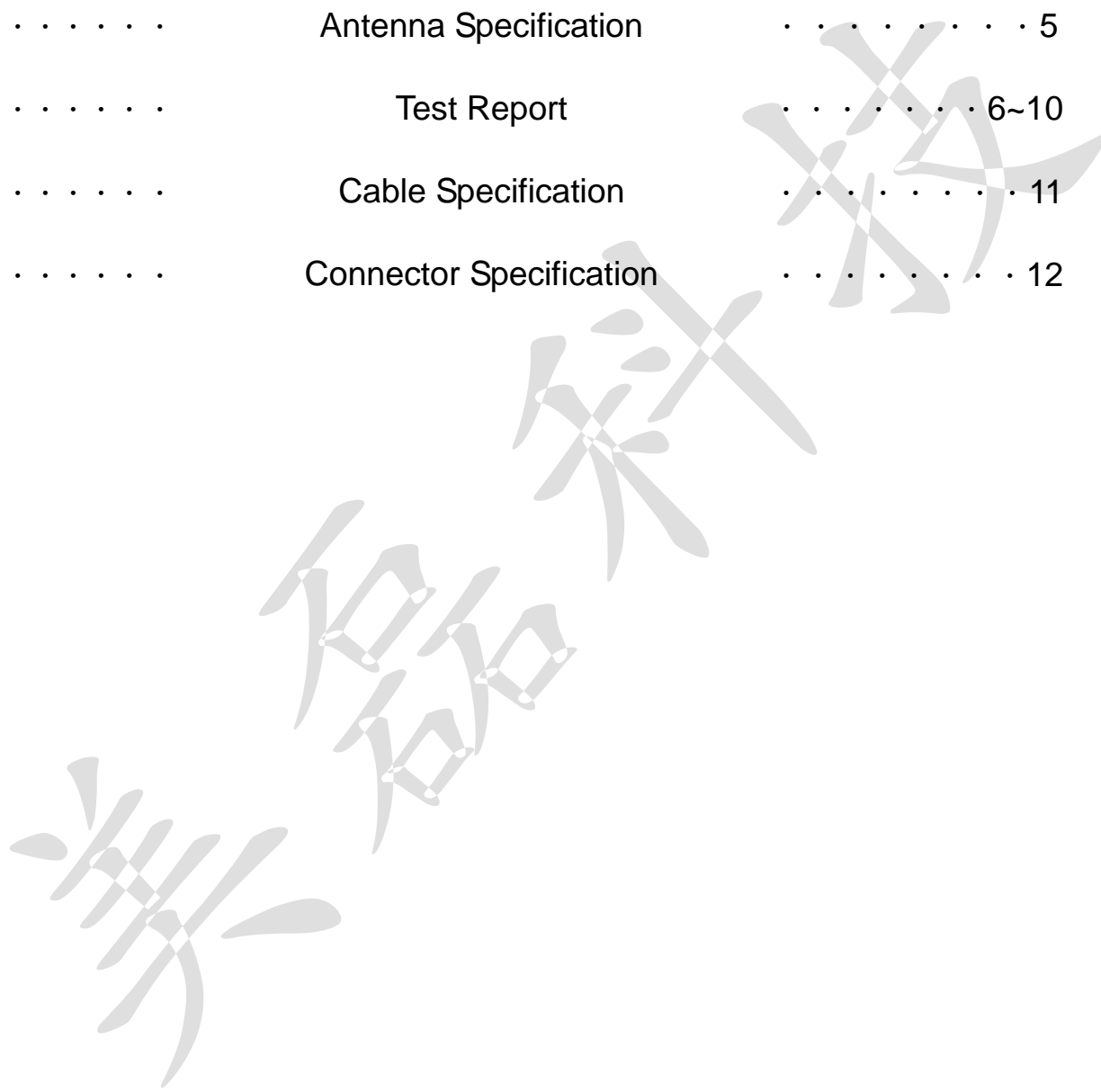


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# Contents

Item	Description	Page
1. . . . .	Mechanical Specification . . . . .	4
2. . . . .	Antenna Specification . . . . .	5
3. . . . .	Test Report . . . . .	6~10
4. . . . .	Cable Specification . . . . .	11
5. . . . .	Connector Specification . . . . .	12



# Mechanical Specification

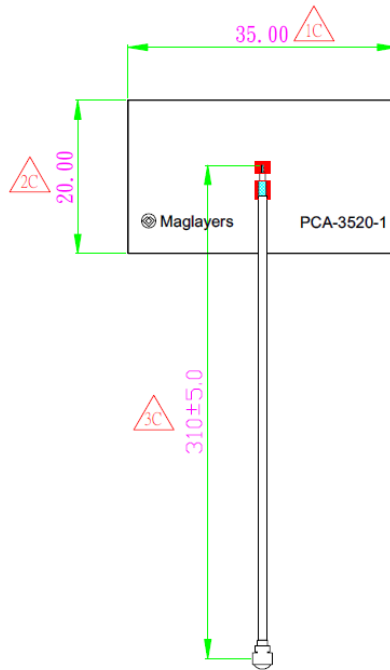
RoHS COMPLIANT

**MECHANICAL**

Body : FR4(黑漆OSP) T=0.4mm  
 Cable : Coaxial Cable  $\phi$ 1.13(Black)  
 Connector: IPEX 1

**ELECTRICAL**

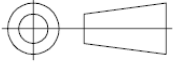
Frequency : 2.4GHz



IPEX方向管控	
單位: mm	
線長	角度
<199	±30°
≥200	不管控

△	New Release	09/09/20	Fchou
LTR	DESCRIPTION	DATE	REQ. BY

※凡標記△記號者, 為品管檢驗之尺寸

設計DR. Fchou 2020/09/09	核准APPD. Alvin 2020/09/09	容許公差 .XXX ±0.20 .XX ±0.35 .X ±0.50 X ±1.00 ANG ±5	TOLERANCE	品名 ARTICLE PCA-3520-2G4C1-A6-EV								
版本說明 REVISION NOTE												
<b>MAGLAYERS</b>		 <table border="1"> <tr> <th>單位 UNIT</th> <th>比例 SCALE</th> <th>張數 SHEET</th> <th>版本 REV.</th> </tr> <tr> <td>mm</td> <td>****</td> <td>1</td> <td>A</td> </tr> </table>			單位 UNIT	比例 SCALE	張數 SHEET	版本 REV.	mm	****	1	A
單位 UNIT	比例 SCALE	張數 SHEET	版本 REV.									
mm	****	1	A									

# Antenna Specification

## ELECTRICAL PROPERTIES

- 1.1 Frequency Range.....2.4~2.5GHz
- 1.2 Impedance.....50 Ohm Nominal
- 1.3 Return Loss.....-10dB
- 1.4 Radiation.....Omni-directional
- 1.5 Gain(peak)..... 5.5dBi
- 1.6 Polarization.....Linear

## PHYSICAL PROPERTIES

- 2.1 Antenna Body..... FR-4 (黒漆 OSP 板)
- 2.2 Operating Temp..... -20°C ~ +65°C
- 2.3 Storage Temp..... -30°C ~ +75°C
- 2.4 Connector..... IPEX 1
- 2.5 Cable..... § 1.13 (Black)



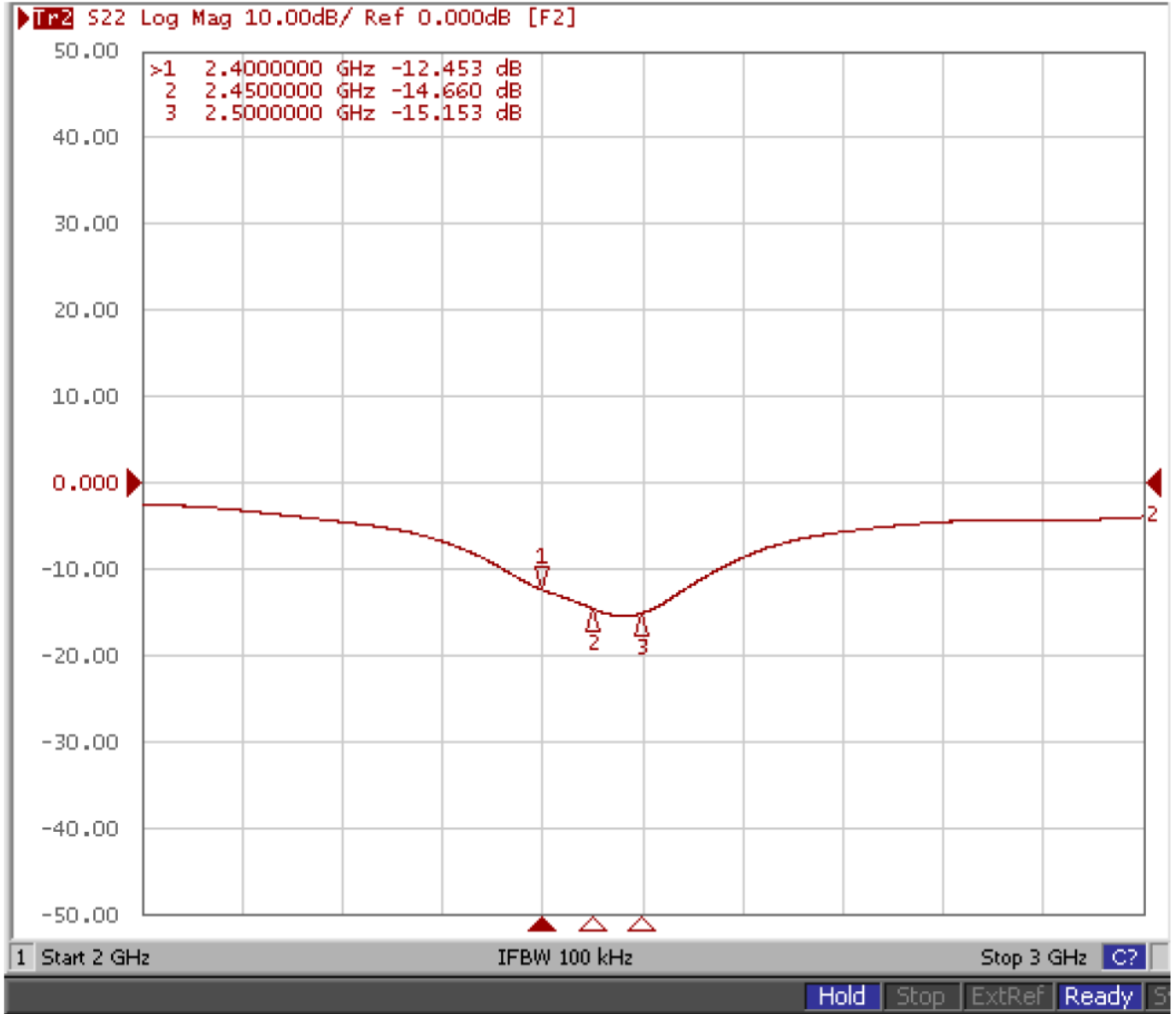
# Test Report

## ELECTRICAL CHARACTERISTICS

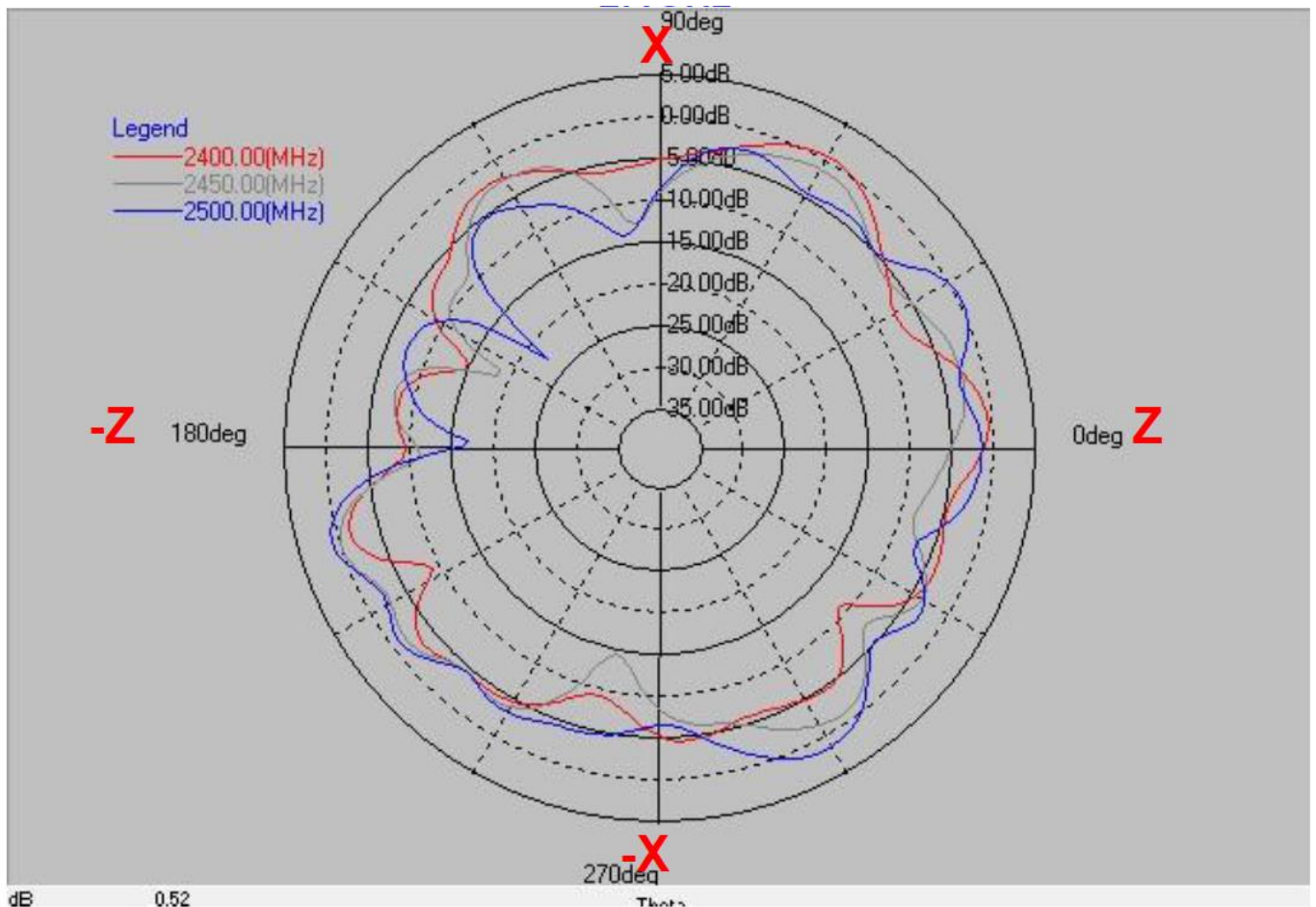
P/NO: PCA-3520-2G4C1-A6-EV

Spec: 2.4GHz~2.5GHz

### S22

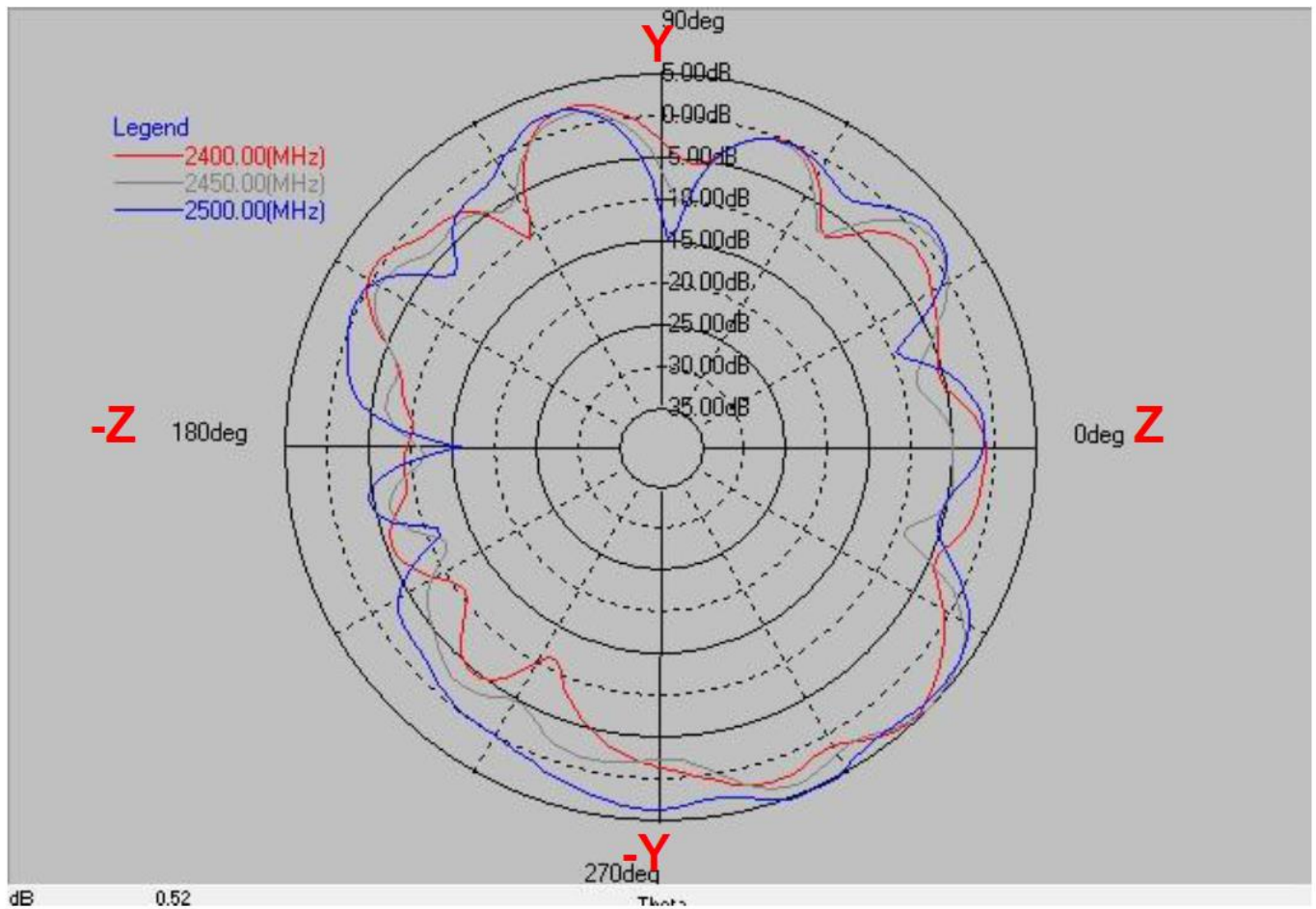


Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane



Layer	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	0.34	-14.84	-4.39
2450(MHz)	-0.04	-18.78	-4.62
2500(MHz)	1.30	-22.86	-3.52

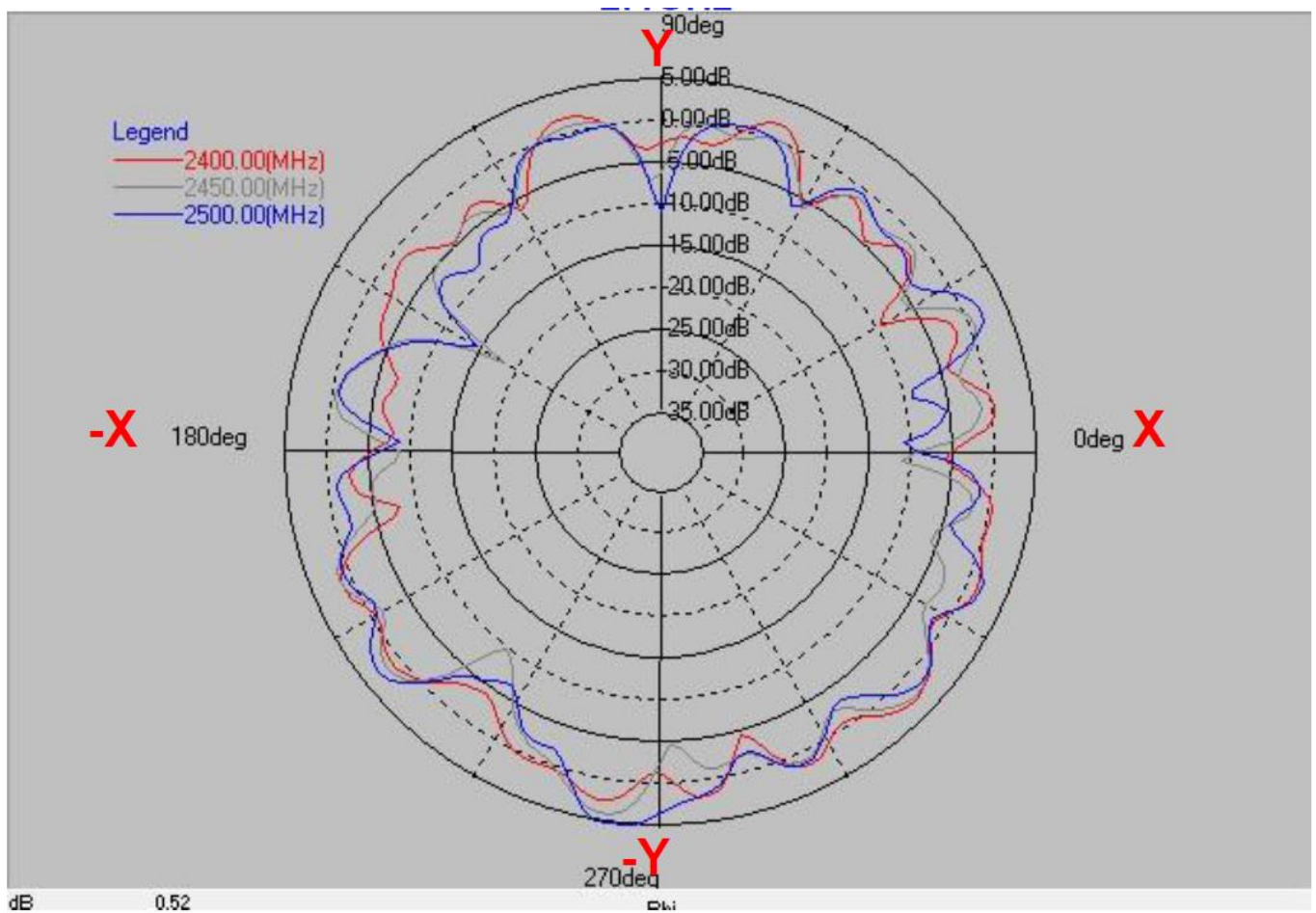
Frequency(MHz) : 2400~2500. Pattern Field : Z-Y plane



Layer	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	4.49	-11.49	-1.67
2450(MHz)	4.90	-11.93	-1.45
2500(MHz)	5.43	-16.12	0.13



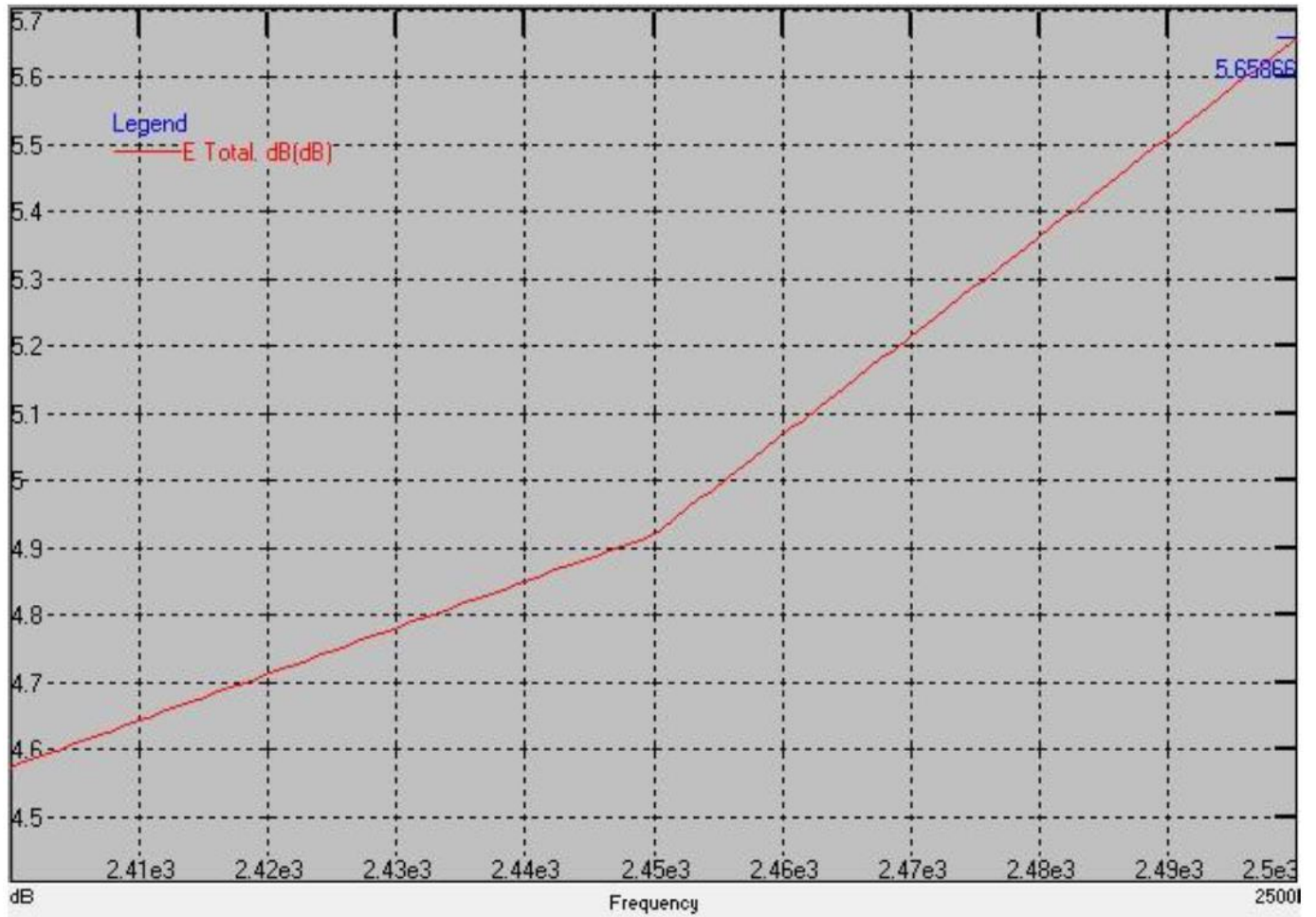
Frequency(MHz) : 2400~2500. Pattern Field : X-Y plane



Layer	Max value(dBi)	Min value(dBi)	Average(dBi)
2400(MHz)	2.74	-9.39	-1.03
2450(MHz)	4.04	-18.44	-1.53
2500(MHz)	5.50	-14.53	-0.95

## Peak Gain

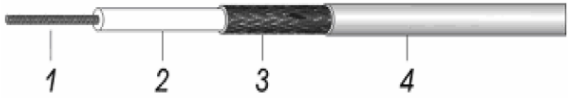
Frequency(MHz) : 2400~2500.



**Peak Gain : Max 5.5dBi @2500MHz**

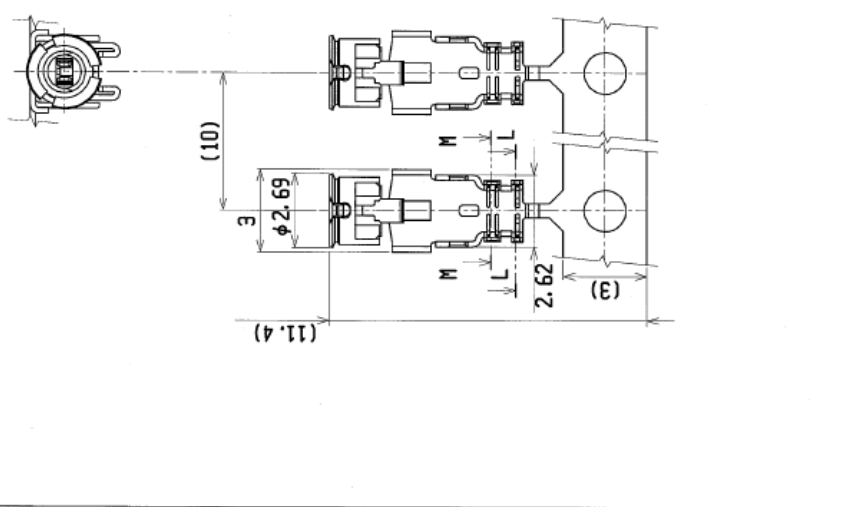
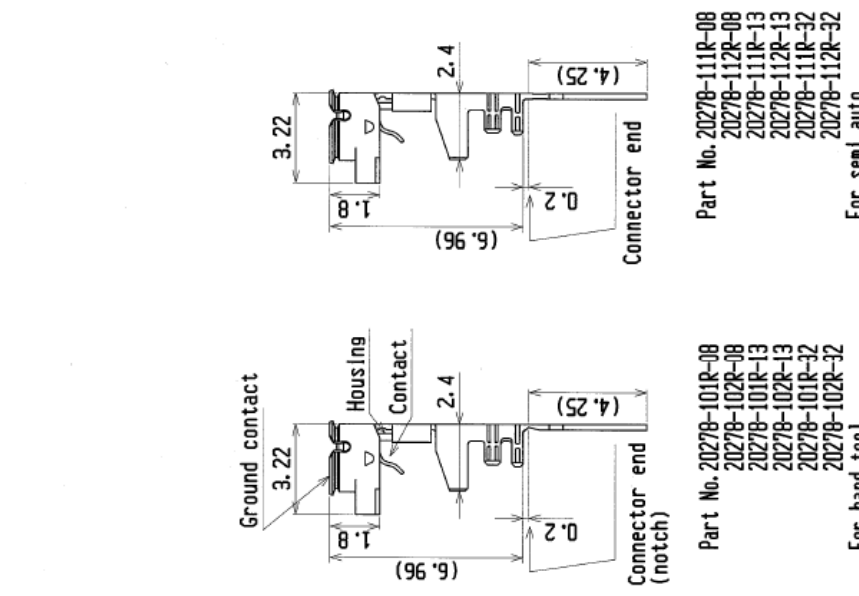
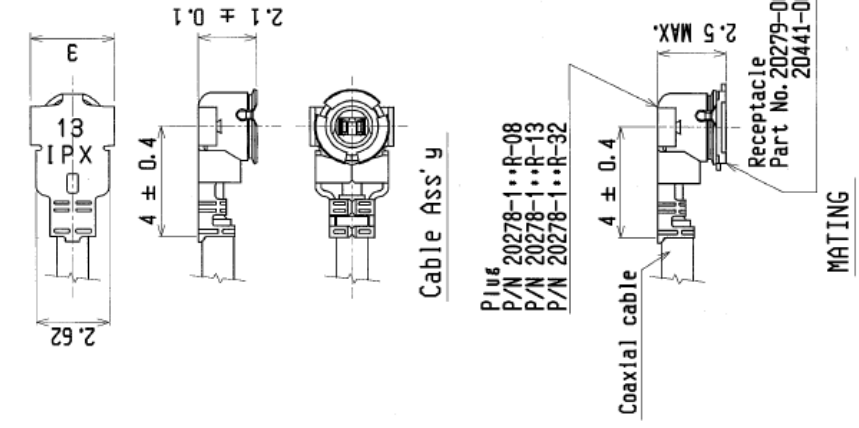


# Cable Specification

型号 Type	RF-1.13/50	料号 P/N	SY113/50-001(Black)	
结构图 Structure drawing				
结构特性 Structure characteristics				
结构 Structure	项目 Item	标准值 Standard value		
①内导体 Inner conductor	材料 Material	镀银铜线 Silverplated copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	7/0.083		
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)	0.249±0.02		
②绝缘层 Insulation	材料 Material	聚全氟乙丙烯 FEP		
	颜色 Color	透明 Clarity		
	标称外径(mm) NOM.O.D.(mm)	0.7±0.03		
③外导体 Outer conductor	材料 Material	镀锡铜线 Tinned copper wire		
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	4/0.05		
	标称外径(mm) NOM.O.D.(mm)	0.92±0.05		
	覆盖率(%) Coverage ratio(%)	90±5		
④护套层 Jacket	材料 Material	聚全氟乙丙烯 FEP		
	颜色 Color	黑 Black		
	标称外径(mm) NOM.O.D.(mm)	1.13±0.05		
电性能特性 Electrical characteristics				
项目 Item	标准值 Standard value	项目 Item	频率 Frequency	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)	98	衰减 Attenuation	1GHz	≤2.2
速率(%) Velocity(%)	70		2GHz	≤3.1
阻抗(Ω) Impedance(Ω)	50±2		3GHz	≤3.8
驻波比 Standing wave ratio	≤1.3@0~6GHz		4GHz	≤4.4
最大工作电压(V) Max.operating voltage(V)	1000		5GHz	≤4.9
最大工作频率(GHz) Max.operating frequency(GHz)	6		6GHz	≤5.4
可靠性 Dependability				
项目 Item	单位 Unit	标准值 Standard value		
最小弯曲半径(一次) Min.bending radius static	mm	4		
最小弯曲半径(重复) Min.bending radius repeated	mm	—		
工作温度范围 Operating temperature	℃	-55~+200		

# Connector Specification

PART NO.  
20278-...R-...



Part No. 20278-111R-08  
20278-112R-08  
20278-111R-13  
20278-112R-13  
20278-111R-32  
20278-112R-32

For semi auto  
termination machine  
(without notch)

Part No. 20278-101R-08  
20278-102R-08  
20278-101R-13  
20278-102R-13  
20278-101R-32  
20278-102R-32

For hand tool  
(with notch)

<b>I-PEX</b>		Interconnect and Protection Electronics TOKYO, JAPAN	
TITLE		General	
MF series micro coaxial connector plug vertical (ground contact : gold plating)		SHEET REV. 1/4 19C	
SCALE UNIT		Dwg. No. 20278	
6/1 mm			

DESIGN D BY	DATE	DESIGN D BY	DATE
K. Ohbayashi	JUN/13/01	K. Ohbayashi	JUN/13/01
CHK'D BY	DATE	CHK'D BY	DATE
T. H		T. H	
APP'D BY	DATE	APP'D BY	DATE
K. Katabuchi	JUN/13/01	K. Katabuchi	JUN/13/01
REV. ECN	BY	DATE	APP
19C	Z#8056	K.O	Feb/04/98
18C	207346	K.O	Jan/10/08
17C	205233	K.O	May/16/05
16C	205024	K.O	Jan/20/05
15C	204398	K.O	Nov/12/04
REV. RECORD		SERIES No. 2814	
CUSTOMER COPY		WAS T	

GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2