



權億科技股份有限公司
Master Wave Technology Co., Ltd.

承認書

APPROVAL SHEET

Customers: 茂發科技股份有限公司

Customer Model No.:

Master Wave Model No.: 98P63MIPF000

Product Description: PCB Antenna

Issue Date: 2013/10/22

REV.: 00

<p>客戶承認用印 Customer Approved</p>	<p>權億承認用印 Confirmation Signature</p>	
		
<p>核准 Approve</p>	<p>主管 Chief</p>	<p>承辦 Responsible</p>
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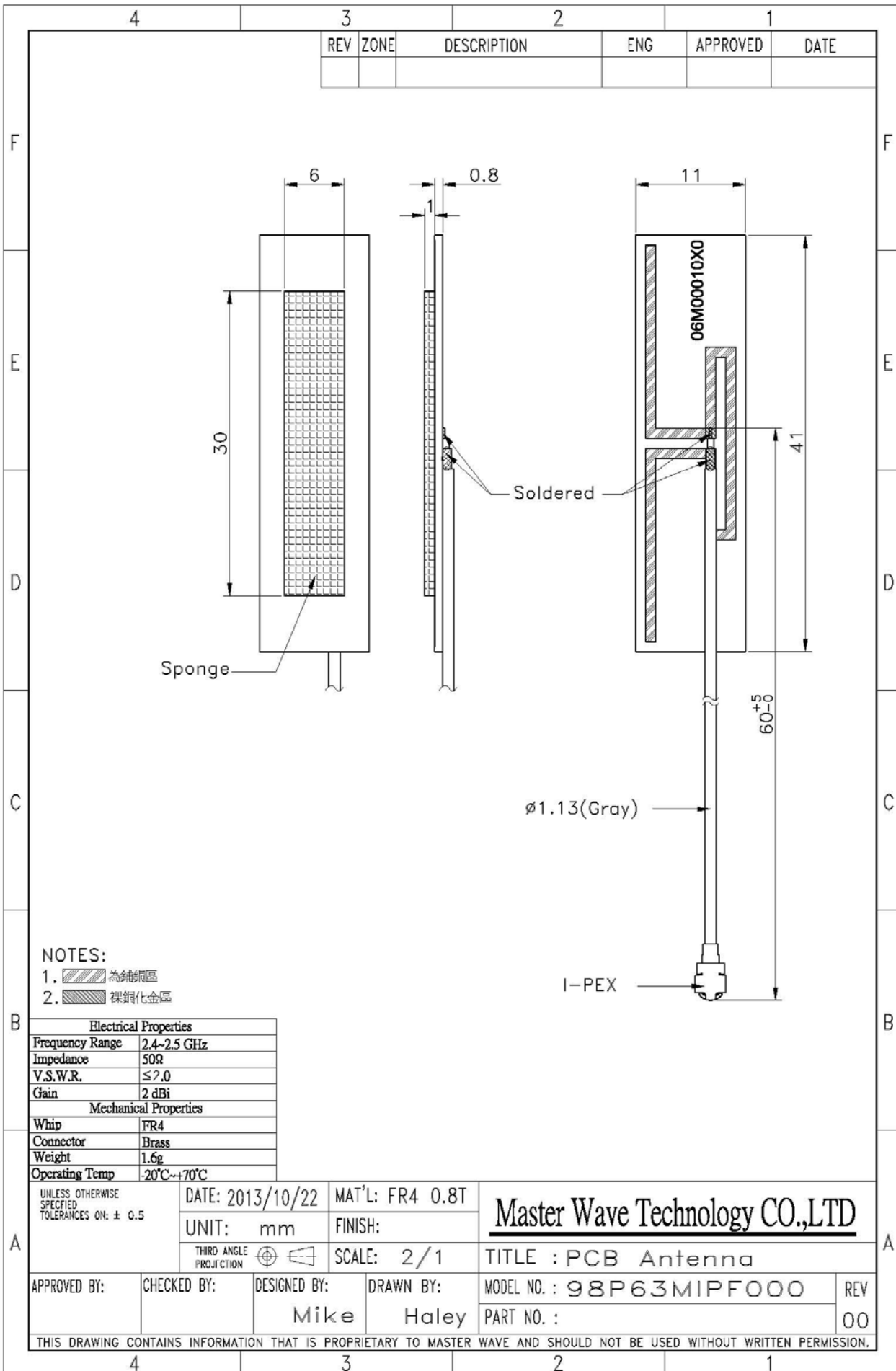
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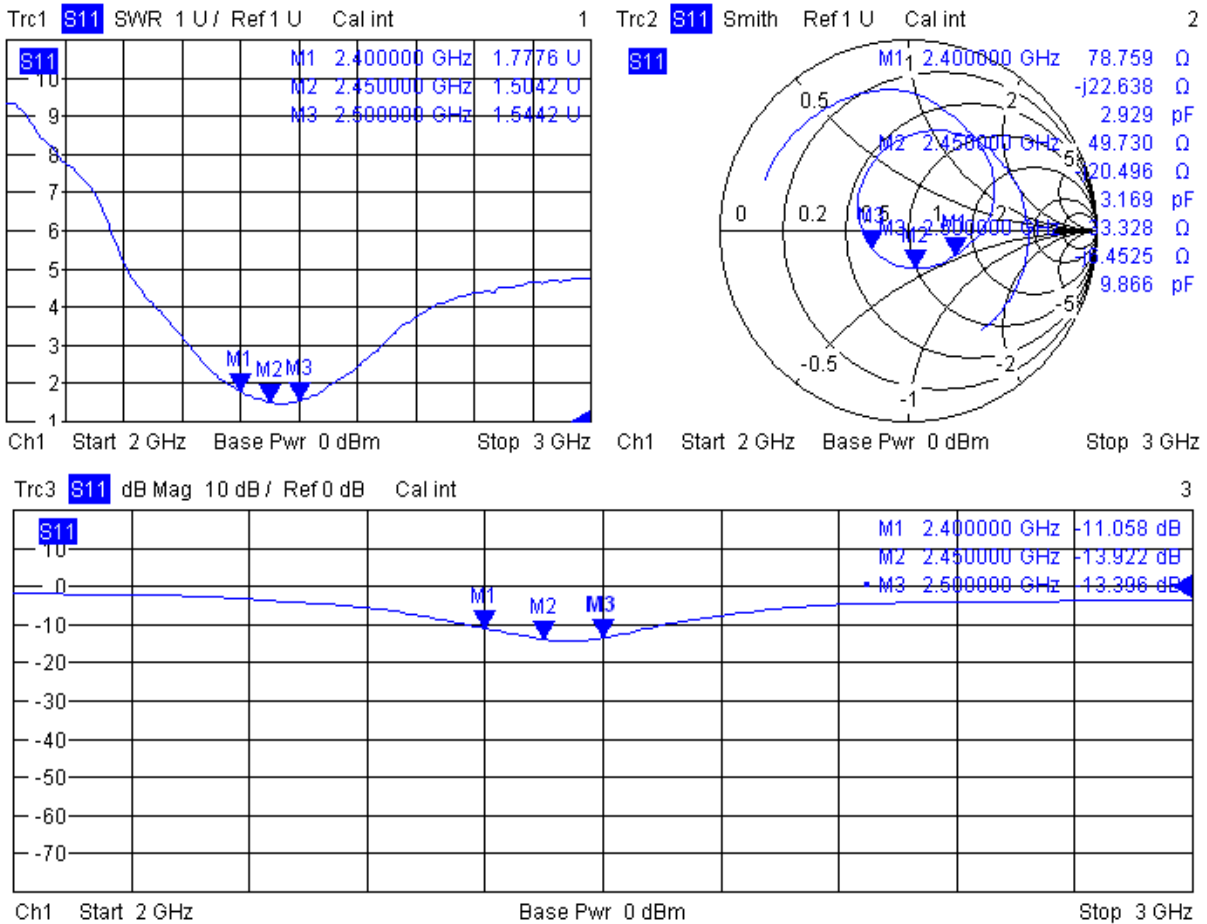
Modification History:

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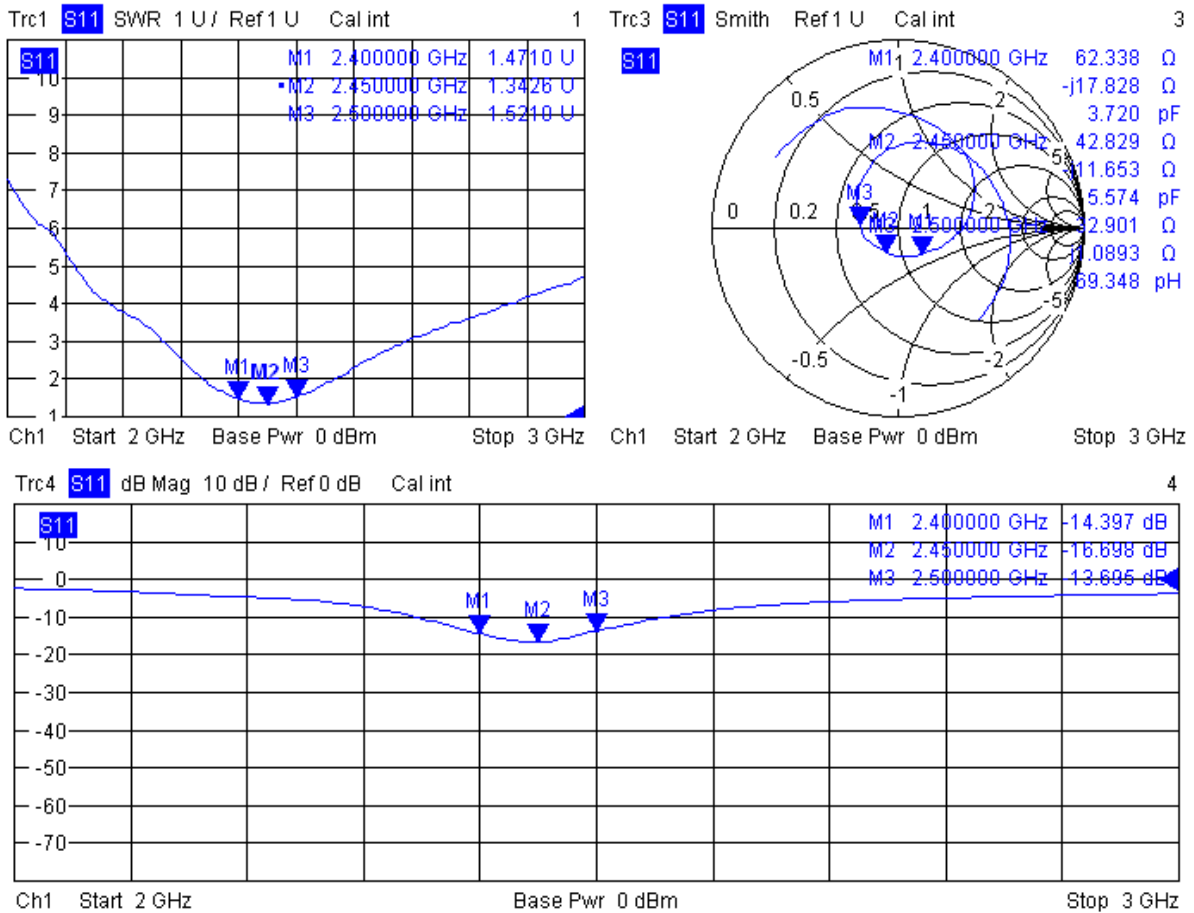


Electrical test (水平方向)



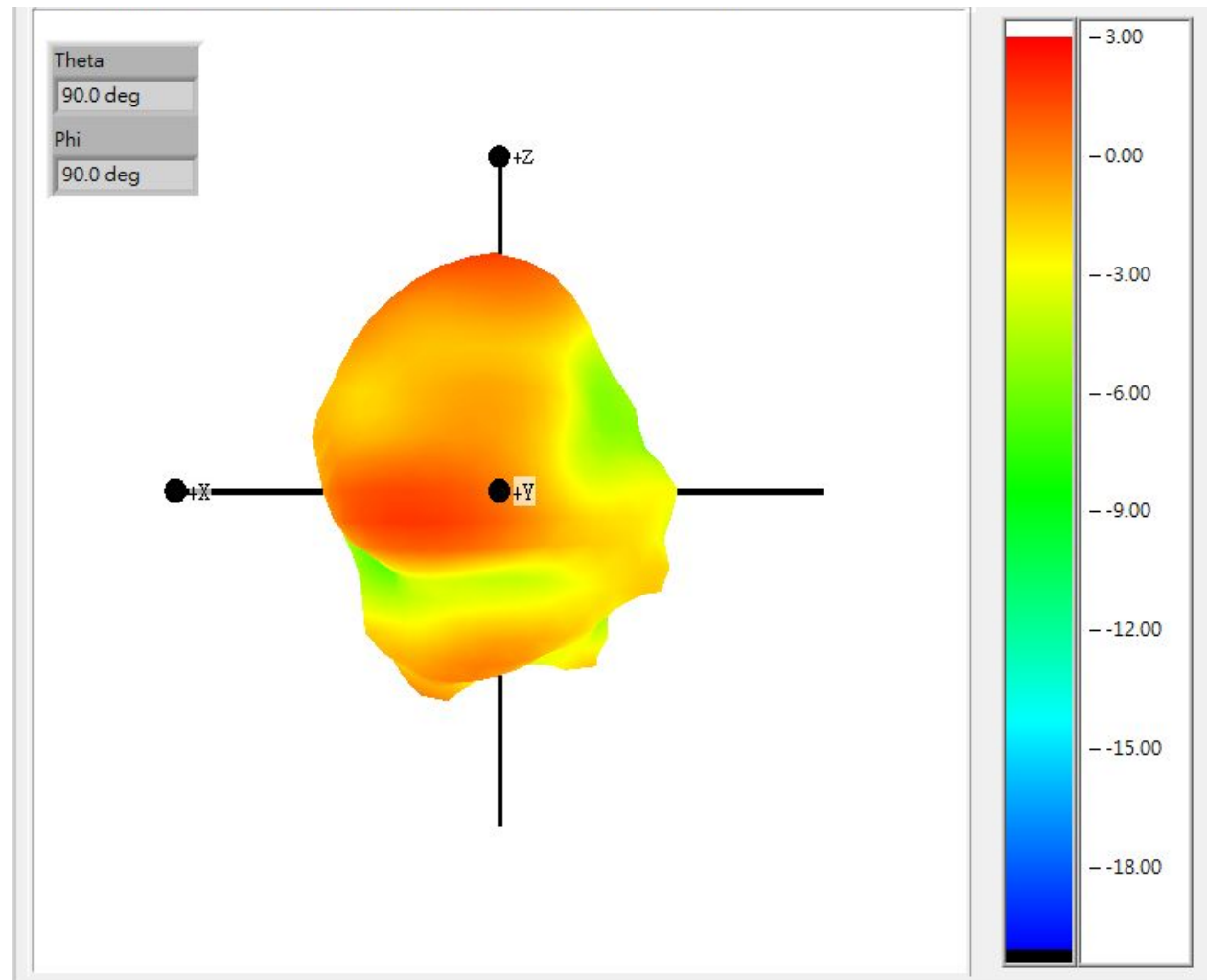


Electrical test(垂直方向)



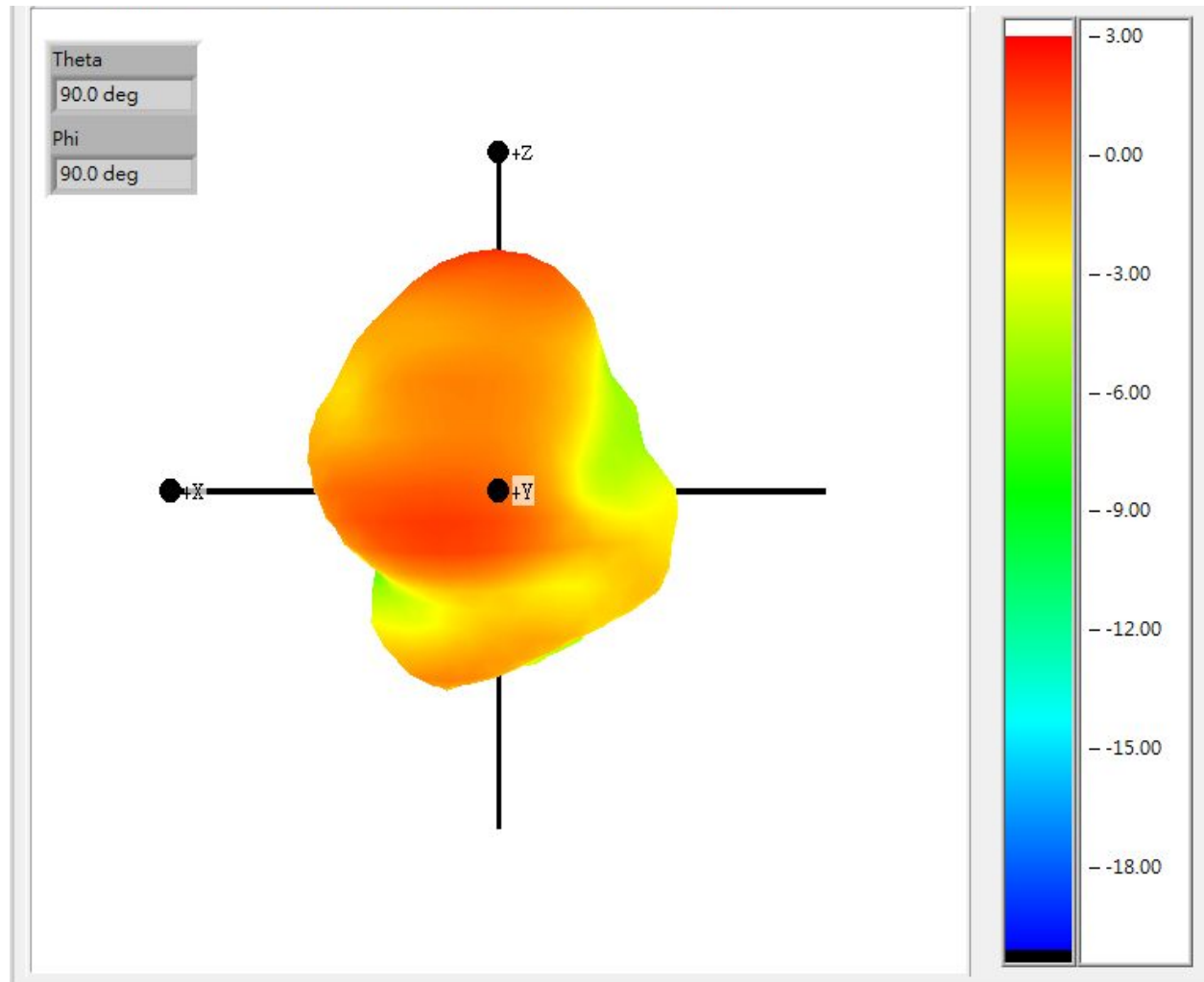


3D Radiation Pattern 2.4GHz (水平方向)



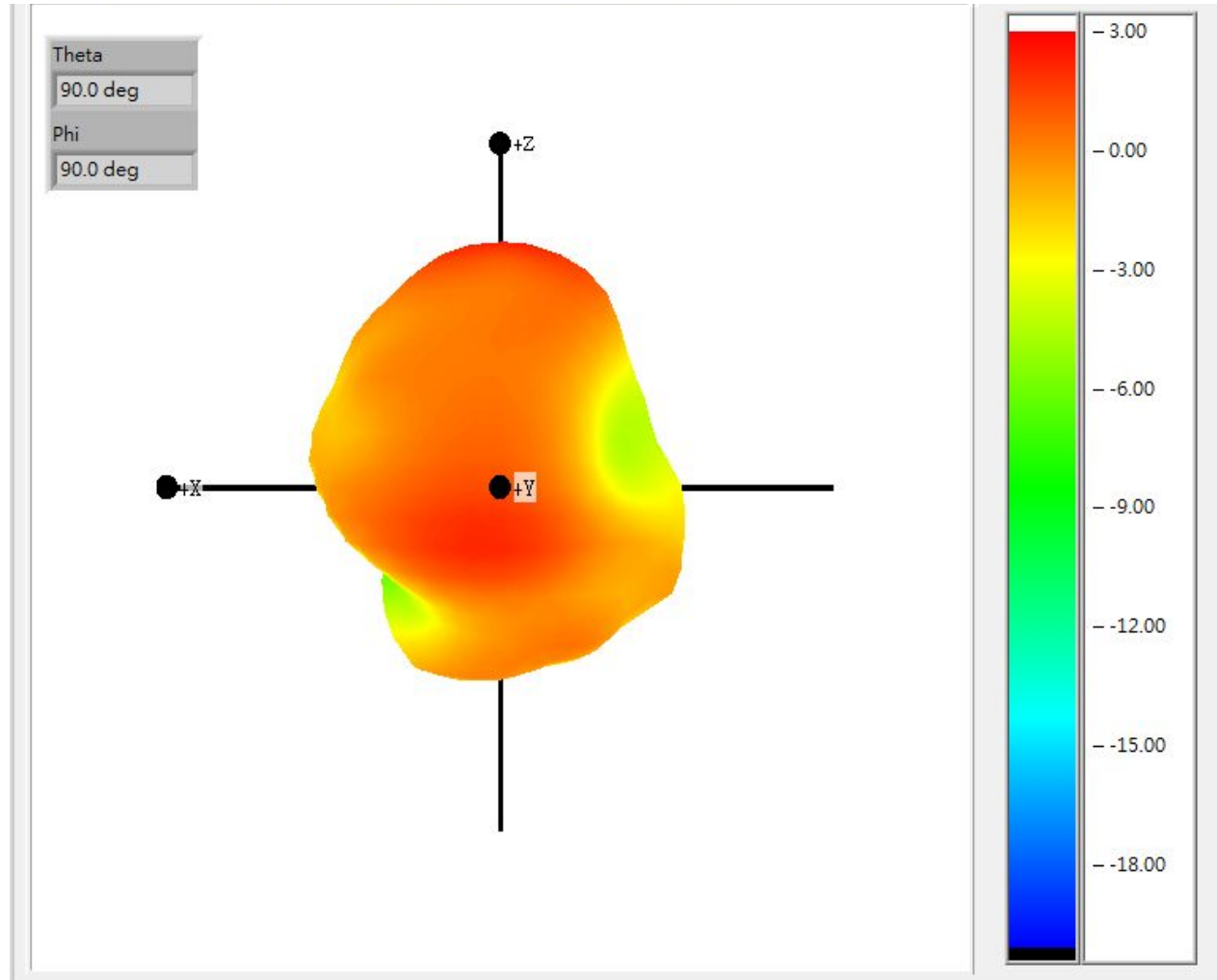


3D Radiation Pattern 2.45GHz (水平方向)



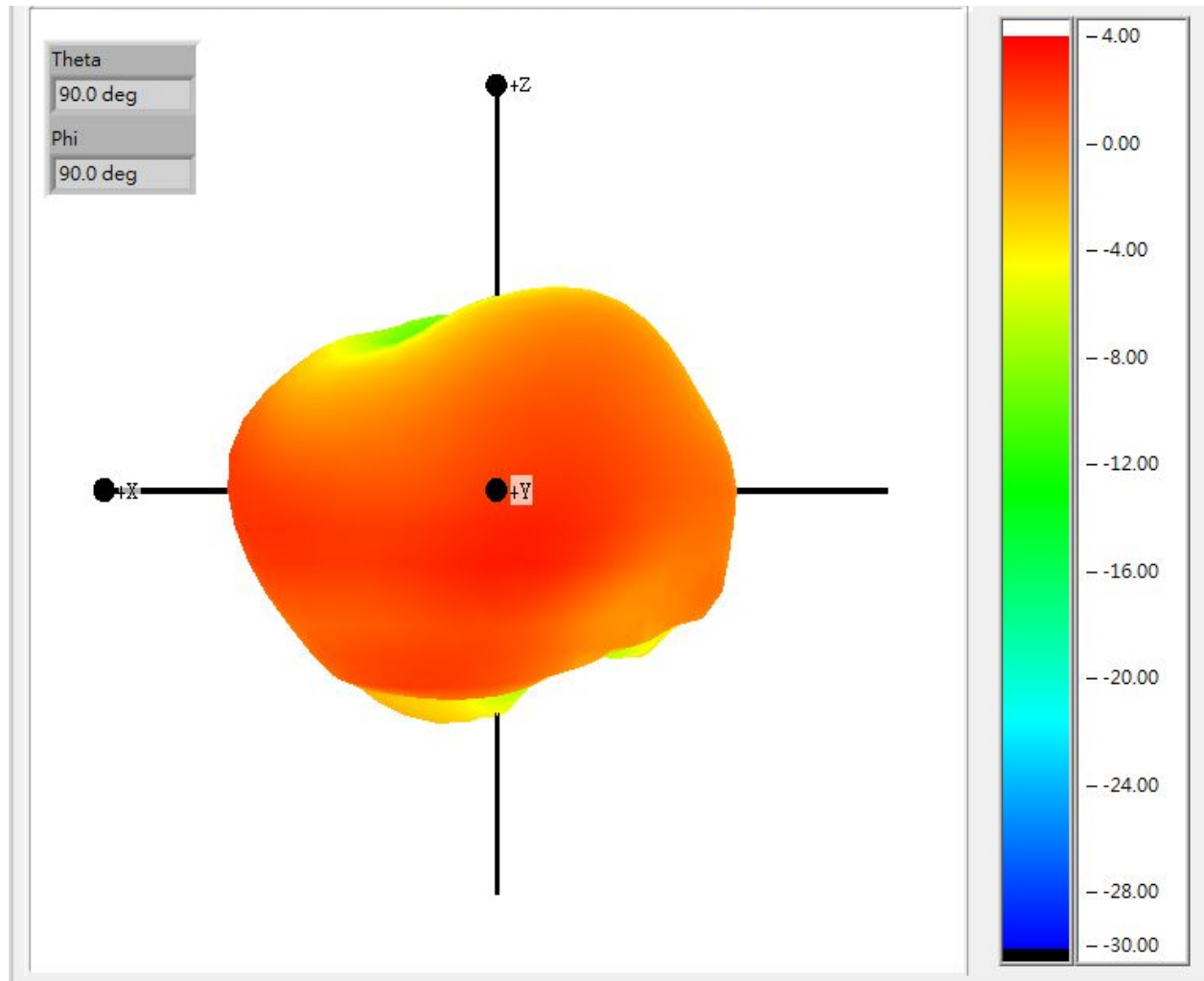


3D Radiation Pattern 2.5GHz (水平方向)



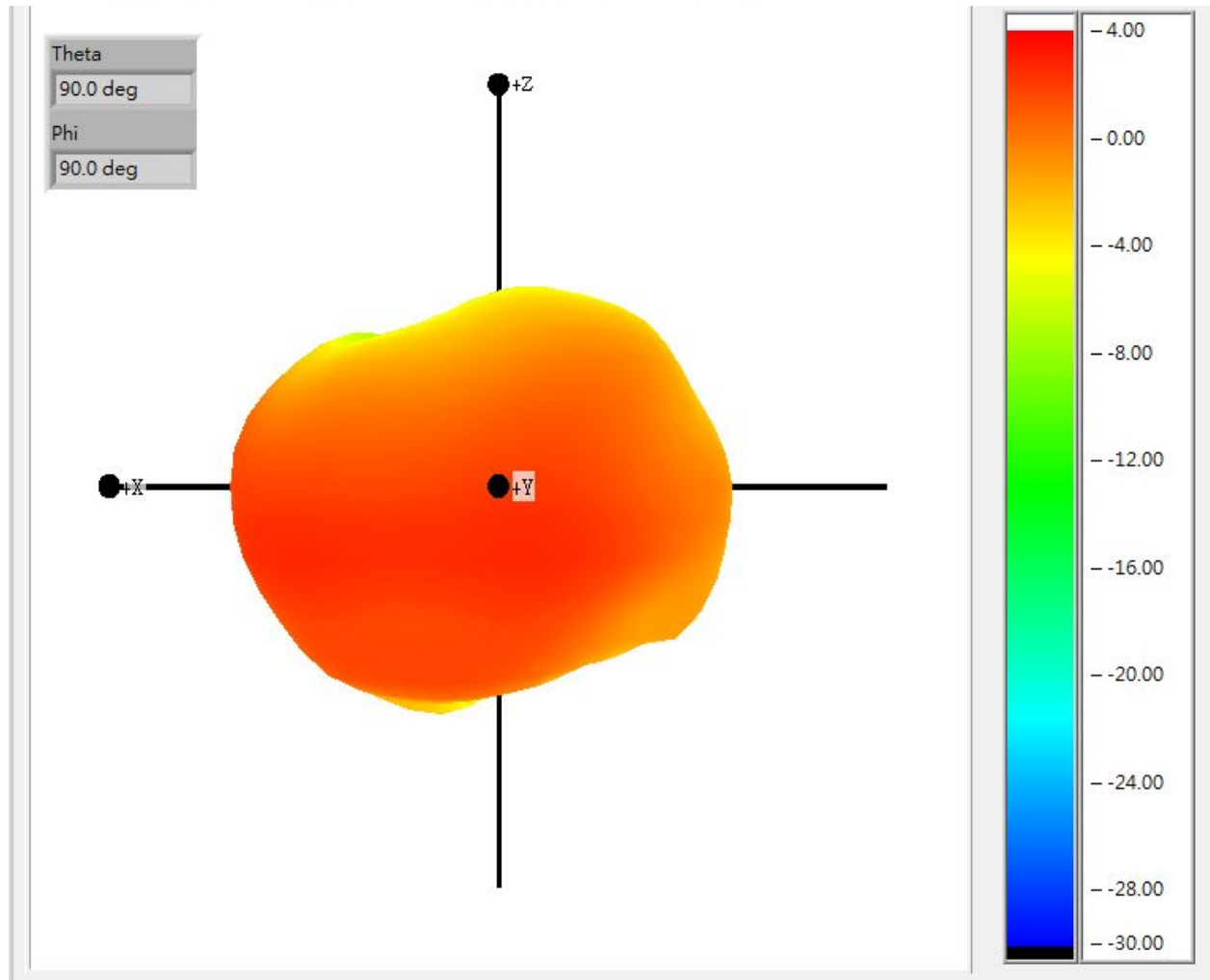


3D Radiation Pattern 2.4GHz (垂直方向)



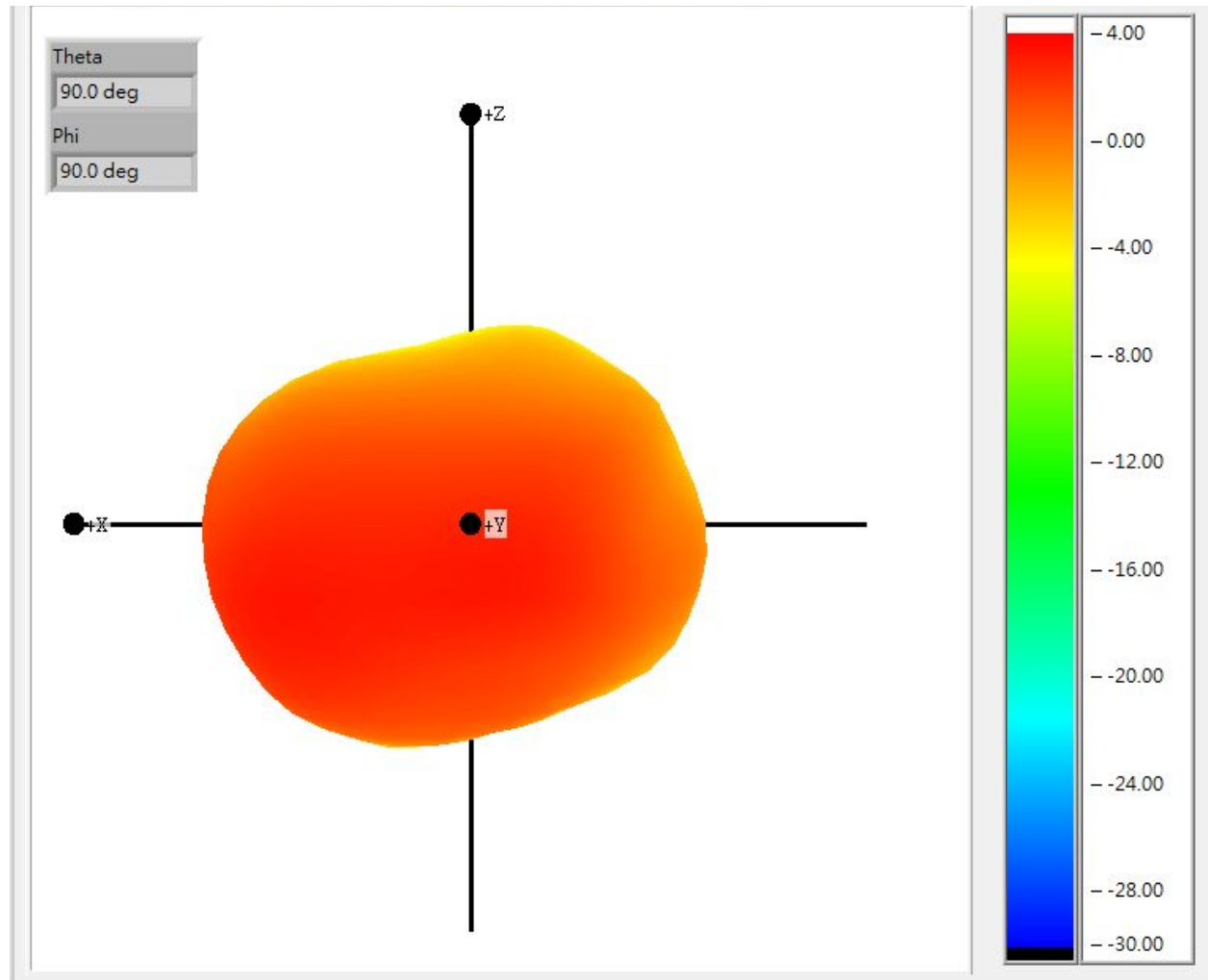


3D Radiation Pattern 2.45GHz (垂直方向)





3D Radiation Pattern 2.5GHz (垂直方向)





Antenna Efficiency (水平方向)

Frequency (MHz)	2400	2450	2500
Peak Gain (dBi)	1.7	2.01	2.22
Directivity (dBi)	4.53	4.74	4.54
Efficiency (dB)	-2.83	-2.72	-2.32
Efficiency (%)	52.08	53.42	58.68



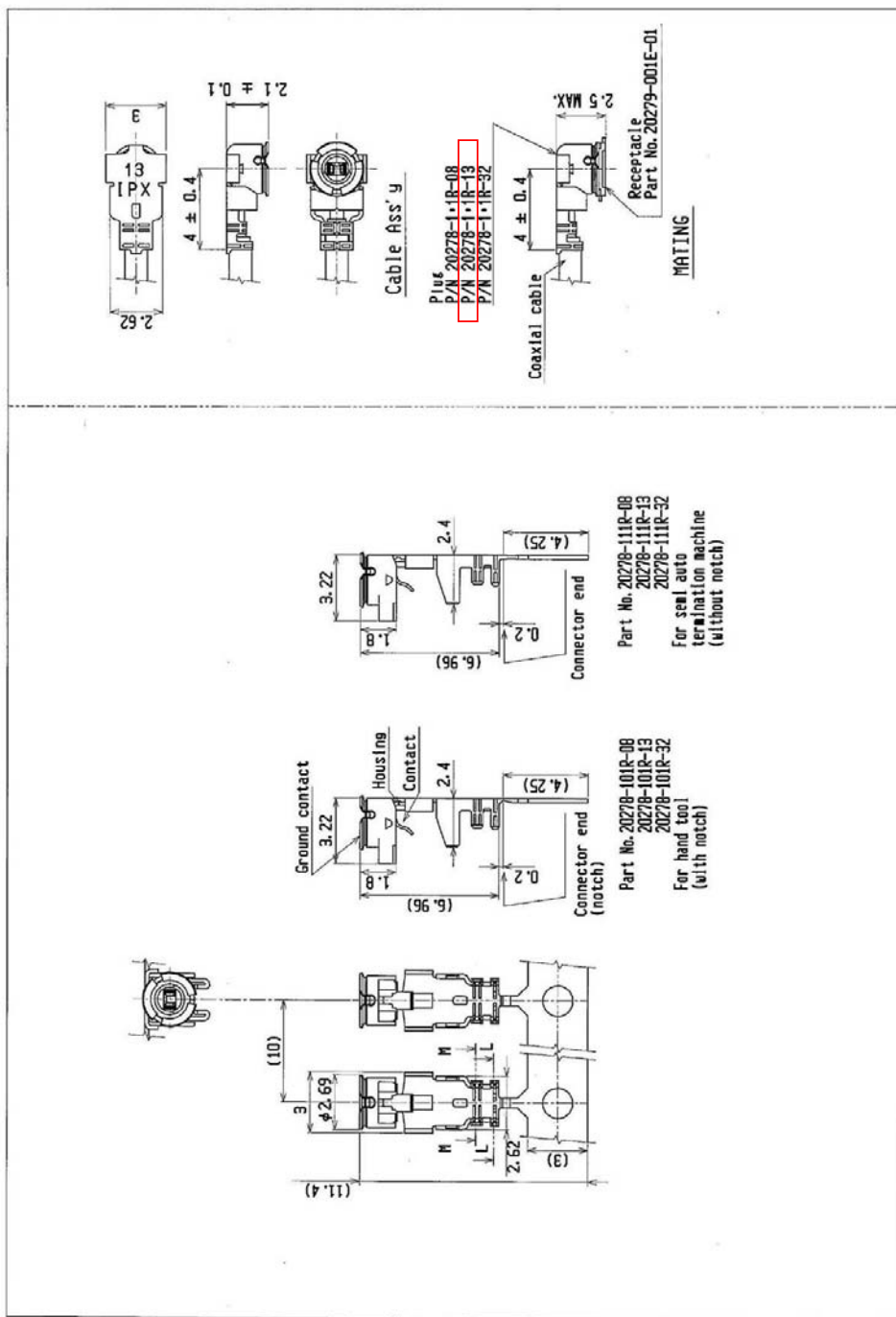
Antenna Efficiency (垂直方向)

Frequency (MHz)	2400	2450	2500
Peak Gain (dBi)	3.08	2.69	3.35
Directivity (dBi)	5.51	5.39	5.59
Efficiency (dB)	-2.43	-2.7	-2.24
Efficiency (%)	57.15	53.72	59.69



Connector

I-PEX





Connector

I-PEX

Part No.	Housing color	Cable cut length		Crimp Height	
		20278-101R-08	20278-111R-08	20278-101R-13	20278-111R-13
Applicable cable nominal dimension	White	2.09±0.1	2.09±0.1	2.09±0.1	2.09±0.1
Inner conductor	White	φ0.4	φ0.4	φ0.68	φ0.68
Dielectric core	White	1.25±0.1	1.25±0.1	1.25±0.1	1.25±0.1
Outer conductor	White	1.16±0.1	1.16±0.1	1.16±0.1	1.16±0.1
Jacket	White	φ0.81 Nominal	φ0.81 Nominal	φ1.13 Nominal	φ1.13 Nominal
Shield of outer conductor	White	φ0.4	φ0.4	φ0.68	φ0.68
P/N of hand Tool	White	90187-008C	90187-032C	90187-013C	90187-032C
P/N of seal auto termination machine	White	90213-008C	90213-032C	90213-013C	90232-018
Sect. M-M	White	1.68	2.29	2.24	2.71
Sect. L-L	White	1.72	2.37	2.28	3.1
Crimp Height	White	1.34~1.40	1.34~1.40	1.34~1.40	1.34~1.40
	White	0.76~0.84	1.20~1.30	1.06~1.14	1.41~1.49
	White	0.85~0.97	1.26~1.46	1.15~1.35	1.70~1.80

NOTE-1
中心導体、外部導体への半田加工は不可
Must not use solder coated
Inner conductor and outer conductor.



Connector

I-PEX

5-2 Unmating.

(1) In case of unmating by pulling tool.
Please use the pulling tool as shown in the drawing, and please pull in the vertical direction as directly as possible.

5-2 コネクタ抜き
(1) 抜きツグを用いる場合、右図のようであるが、垂直に引き抜いて下さい。

(2) In case of unmating directly by catch the catching area of plug, and please pull plug to vertical direction as directly as possible.

5-2 コネクタ抜き
(2) 手で直接引き抜く場合、下面の保持部をつかみ、できるだけ垂直に引き抜いて下さい。

5-3 Crimp over standards of outer conductor
Standards: Less than 10% from total numbers of outer conductor.
(Numbers of outer conductor's crimp over from outer conductor's barrel.)

5-3 外径標準はみ出し量
外径標準はみ出し量標準：外導体数に十分本数（0.1以下）（外導体バレルの外にみ出し量）

5-4 Caution about Heat shrinkage tubes
Please be careful not to melt housing when using heat shrinkage tubes.
It will become cause of open circuit.

5-4 熱収縮チューブについて
熱収縮チューブは外導体保護層の溶融は、導通不良の原因となり、また、熱収縮チューブの収縮による圧力により、外導体バレルにひびく原因となります。

6. This is 'Pb-free' connector.

6. 本コネクタは「Pb-free」である。

Notes

1. Material
(1) Housing : PBT, UL94V-0
(2) Contact phosphor bronze
gold plating 0.1μm MIN.
over nickel 1.27μm MIN.
(3) Ground contact phosphor bronze
gold plating 0.05μm MIN.
over nickel 1.27μm MIN.
2. Packing : reel
3. Mating partner part No. : 0279-001E-01
4. Permissible lead of cable at mating

1. 材質
(1) ハウジング: PBT, UL94V-0
(2) コンタクト
リチウム青銅
めっき厚0.1μm MIN.
下層 ニッケル1.27μm MIN.
(3) グランドコンタクト
リチウム青銅
めっき厚0.05μm MIN.
下層 ニッケル1.27μm MIN.
2. 梱包: リール
3. カップリング相手品 No.: 0279-001E-01
4. コネクタからの合装ケーブルの許容導長

5. Suggestions for mating & unmating operation.

5-1 Mating.
Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle.
As excessive slant angle mating may break the connector, please don't do it.

5-1 コネクタ挿入時
PlugとReceptacleの中心合軸を必ず、できるだけ垂直に挿入して下さい。
挿入時の傾き角度が大きすぎると、導通不良の原因となります。

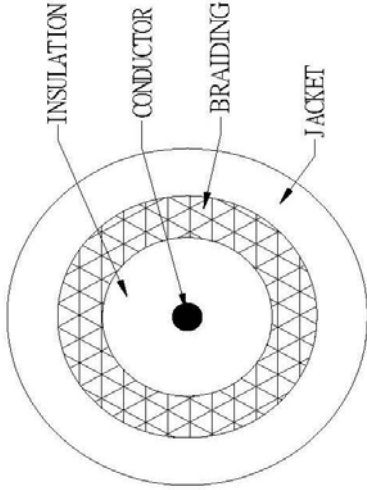
5. コネクタからの合装および抜き操作の注意
5-1 コネクタ挿入時
PlugとReceptacleの中心合軸を必ず、できるだけ垂直に挿入して下さい。
挿入時の傾き角度が大きすぎると、導通不良の原因となります。



線材規格

CABLE SPECIFICATION

SPECIFICATION: 1.13mm CABLE		CONSTRUCTION D.W.G	
ITEM	SPECIFICATION		
CONDUCTOR	MATERIAL	Silver-coated Copper Wire	
	Composition(No./mm)	7/0.080	
INSULATION	NOM.O.D	0.24±0.03	
	Material	FEP(Natural)	
BRAIDING	Nom.Thick.(mm)	0.23	
	NOM.O.D	0.70±0.03	
JACKET	MATERIAL	Tinned annealed copper wire	
	Composition	Single Braid of 0.05	
JACKET	MATERIAL	FEP(*color)	
	Nom.Thick(mm)	0.1	
	Nom.O.D(mm)	1.13±0.08	
Color		White · Black · Brown · Gray · Blue	
Electrical Properties(at 20 °C)			
Item	Unit	Details	
Conductor Resistance	Ω/km	Max.581	
Insulation Resistance	MΩ.km	Min.200	
Dielectric Strength	V(AC)/min	1000	
Capacitance	pF/m	105	
REMARK			
MASTER WAVE TECHNOLOGY CO., LTD.			
CHECKED	DATE	Charlene	2012/11/29
DRAWING	REV	Charlene	00



Characteristic Impedance	Ω	50±2.0	
	Attenuation	dB/m	1GHZ 2.20
			2GHZ 3.10
			3GHZ 3.90
			4GHZ 4.50
			5GHZ 5.00
		6GHZ 5.50	
Temperature range	°C	-55~150	
Standing wave(0-6GHz)	/	≦1.35	