



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.: EC600000000

Master Wave Model No. 98P63MIPF001

Product Description: PCB Antenna

Issue Date: 2015/10/8

REV.: 01

客戶承認用印		權億承認用印	
			
核准 Approve	主管 Chief	承辦 Responsible	
Hero	Matt	Mango	

MASTER WAVE TECHNOLOGY CO., LTD.

權億科技股份有限公司

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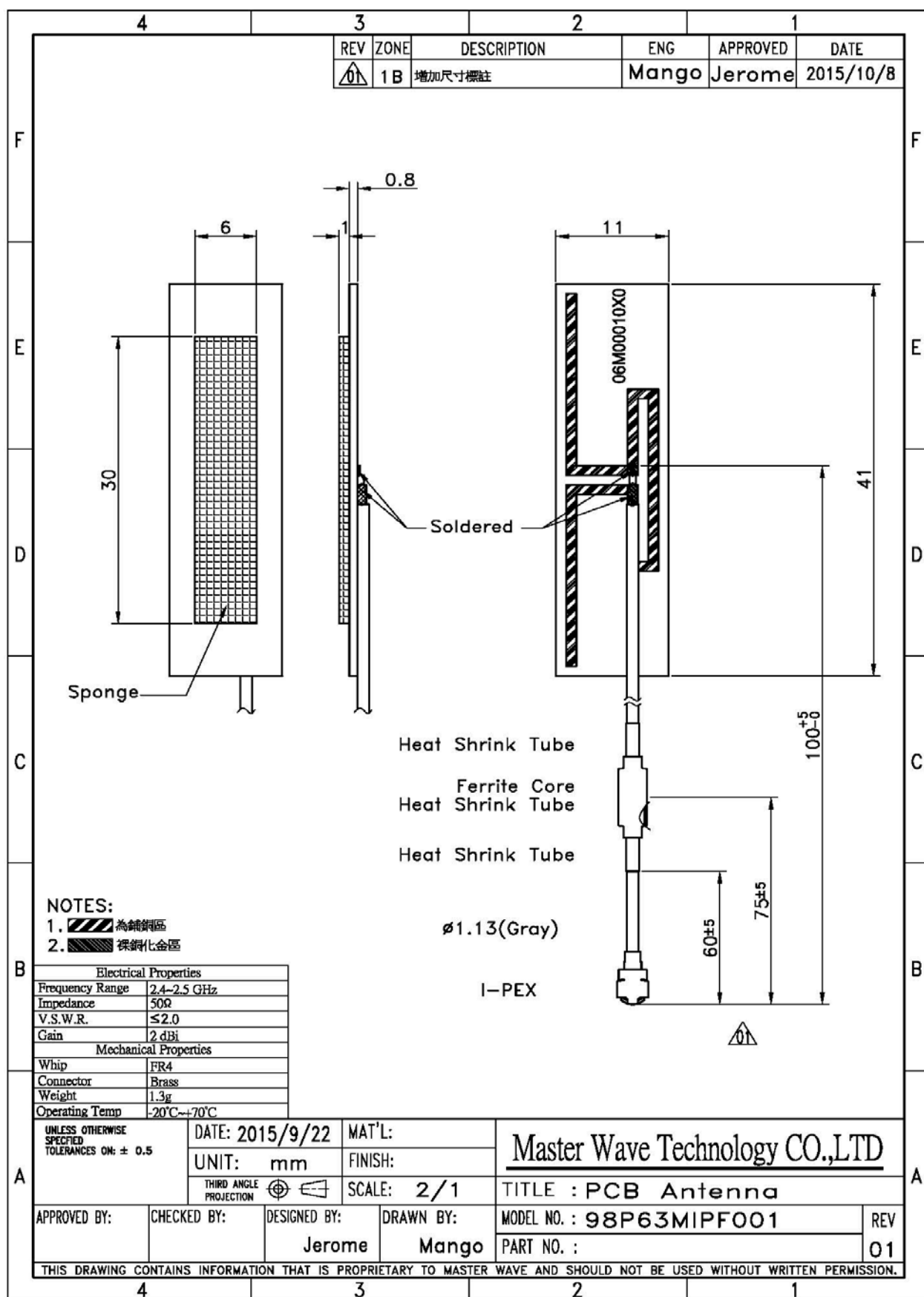
-Connector
-Cable

4. Packing

-PE Bag
-Carton

Modification History:

REV.	Date	Content
00	2015/9/22	
01	2015/10/8	增加尺寸標註



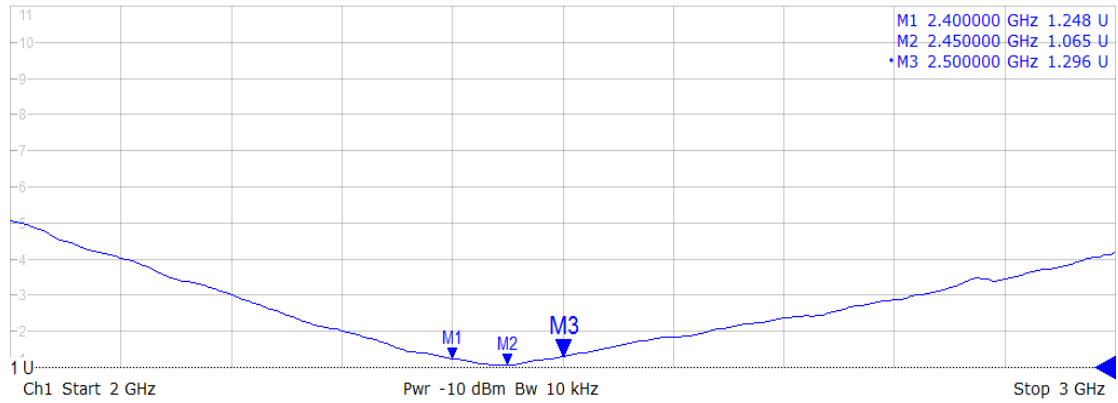


Electrical test (搭配客戶機構)

8/20/2015 5:26:41 PM
1311.6010K42-105528-ws

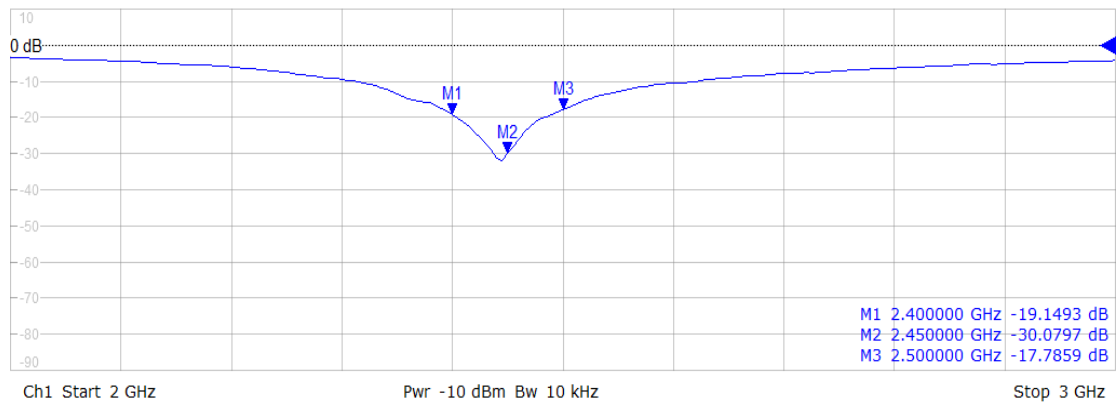
Trc1 — S22 SWR 1 U/ Ref 1 U Cal int Offs

1



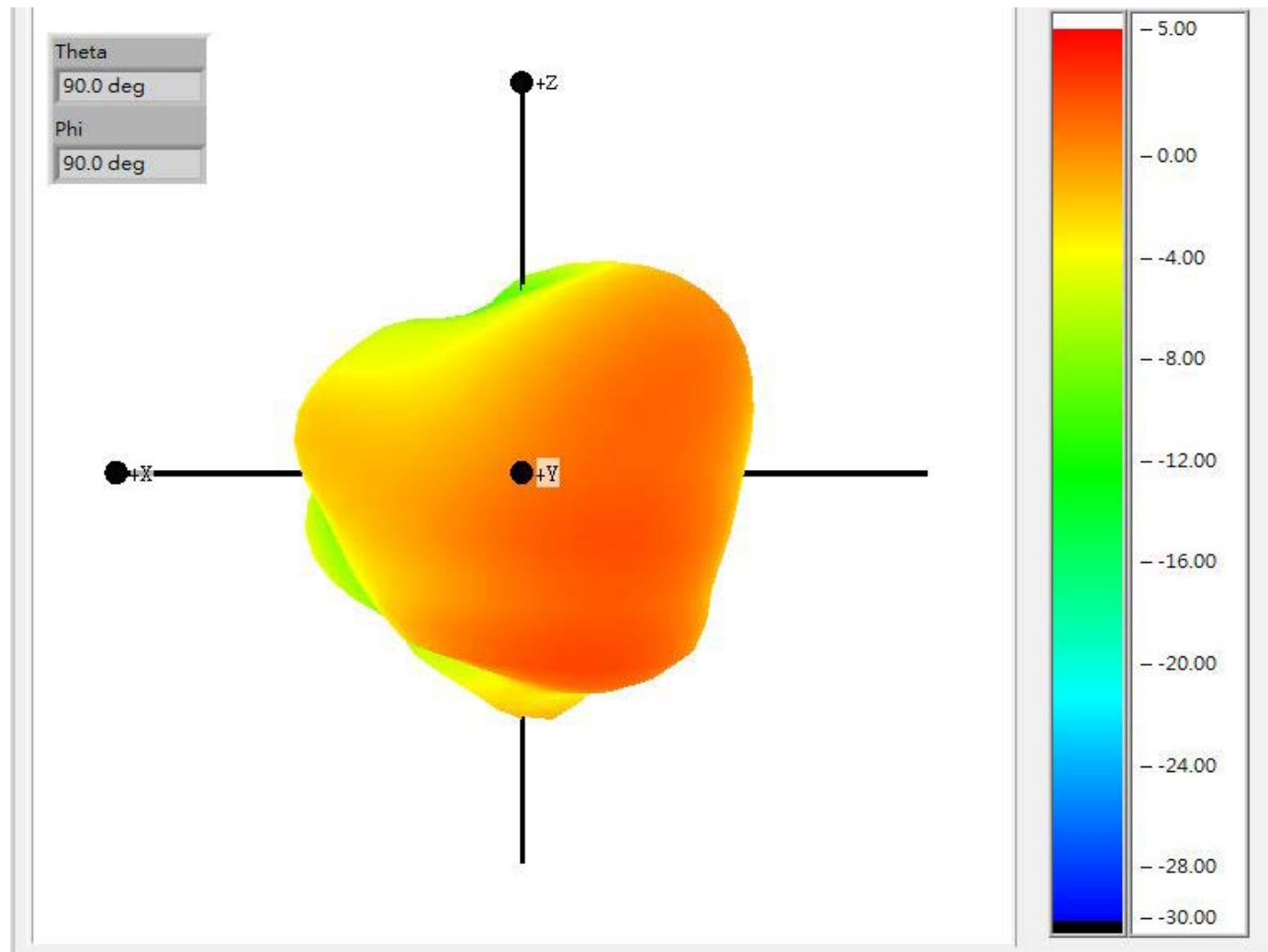
Trc3 — S22 dB Mag 10 dB/ Ref 0 dB Cal int Offs

2



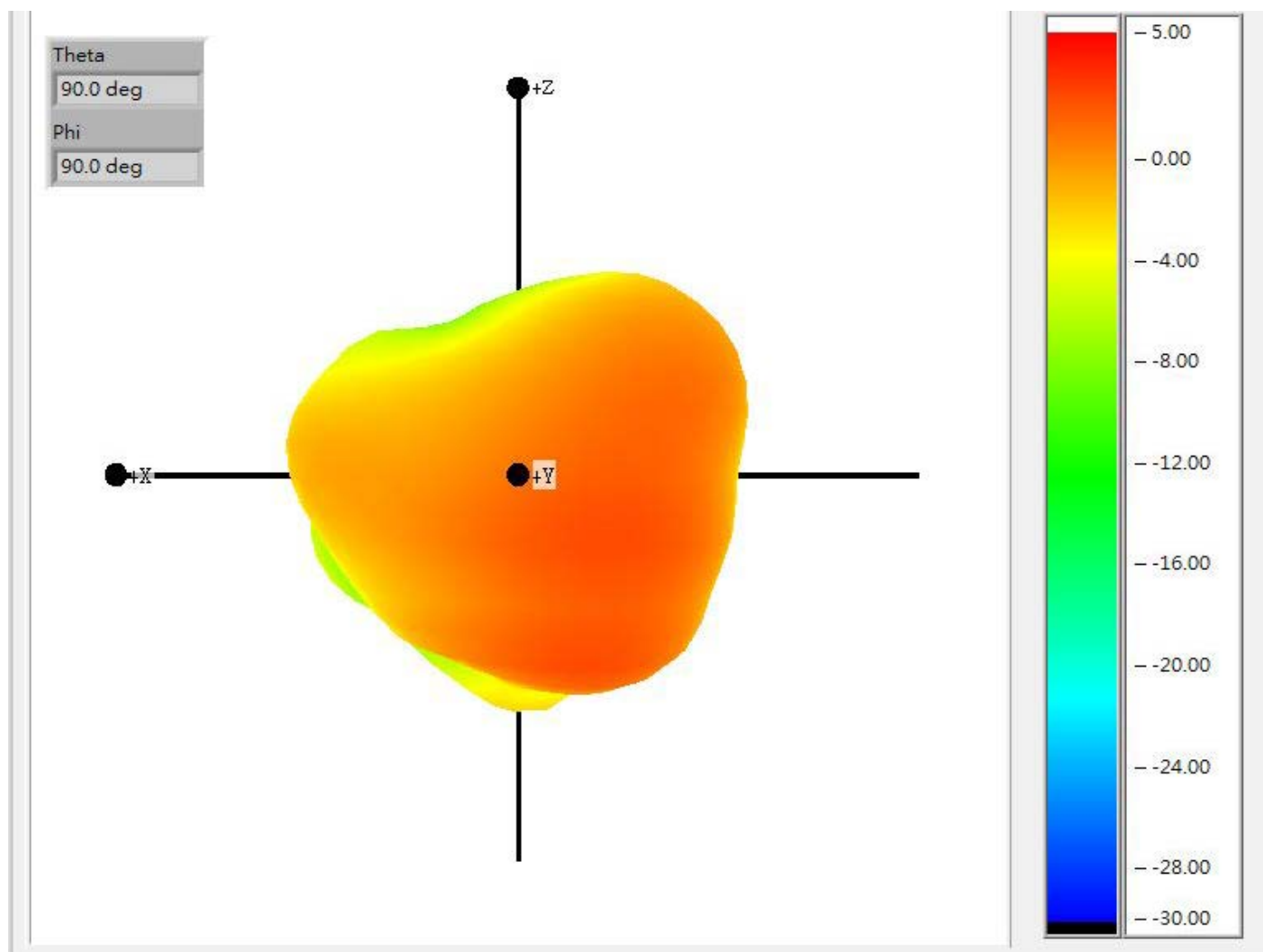


3D Radiation Pattern 2.4GHz



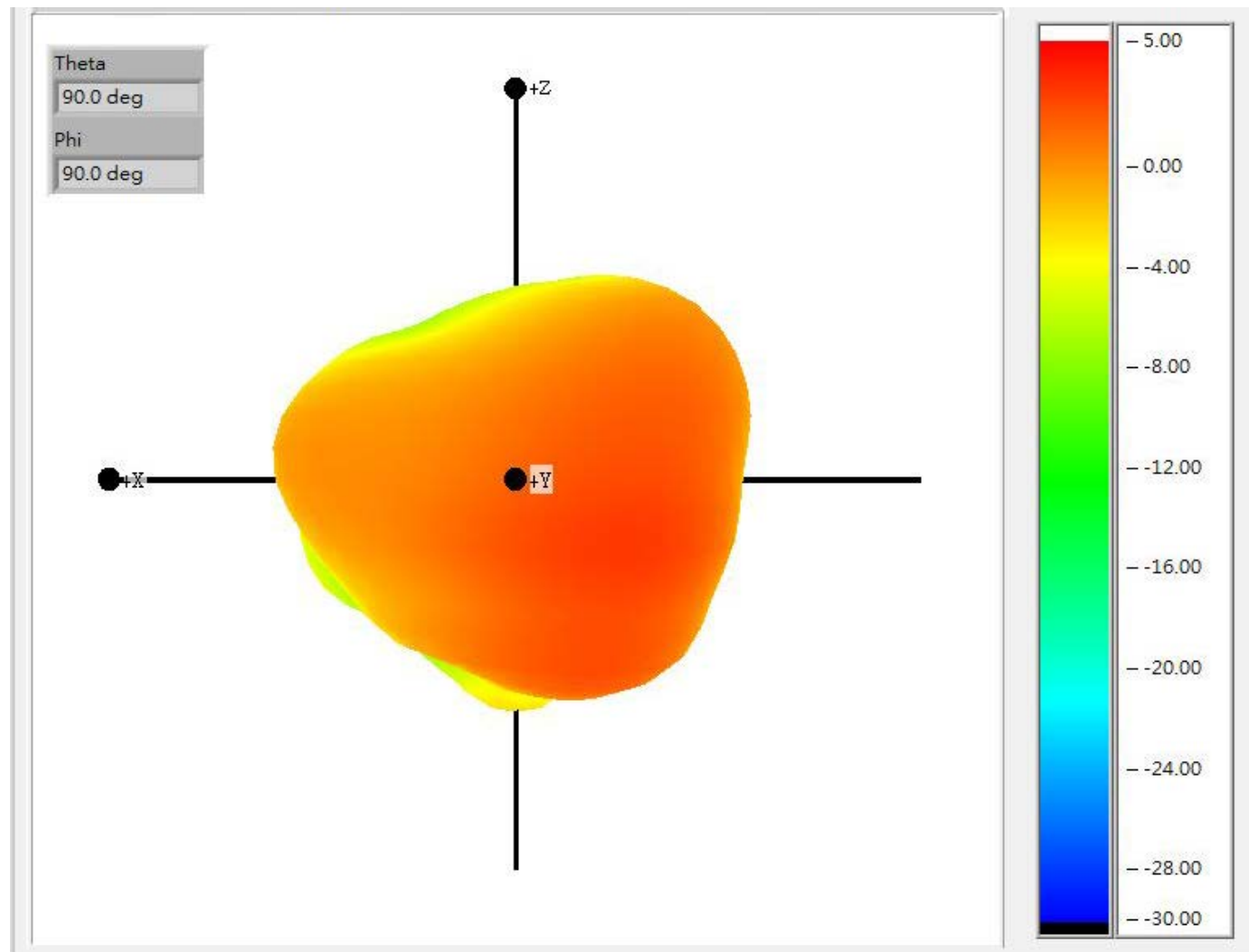


3D Radiation Pattern 2.45GHz





3D Radiation Pattern 2.5GHz





Antenna Efficiency

Frequency (MHz)	2400	2450	2500
Peak Gain (dBi)	2.62	2.42	2.96
Directivity (dBi)	5.38	5.32	5.4
Efficiency (dB)	-2.76	-2.9	-2.44
Efficiency (%)	52.91	51.26	57

Recommended P/N

20278-112R-**-**

PART No.

20278-***R-**-**

20278-***R-**-**

Cable type

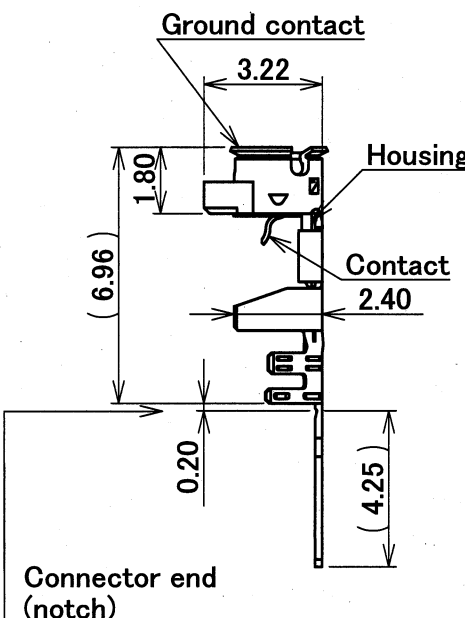
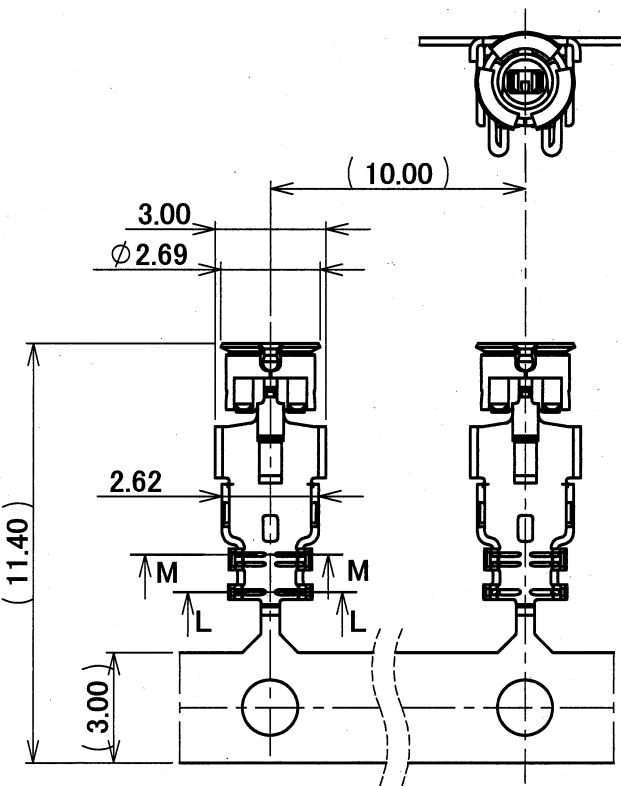
1 Non halogen free type

2 Halogen free type

0 With notch

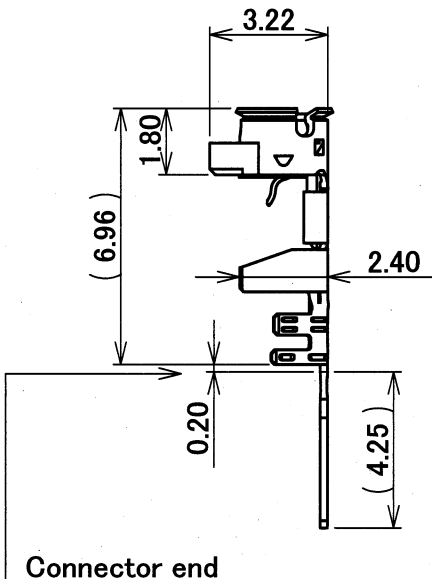
1 Without notch

1 Au Plating



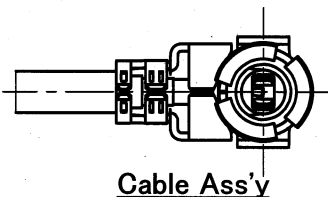
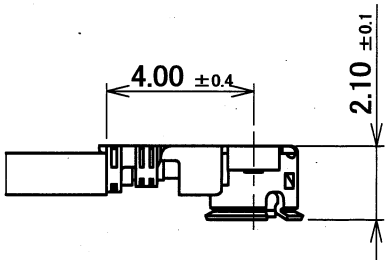
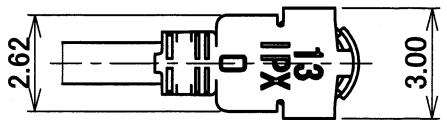
Part No. 20278-101R-08
20278-102R-08
20278-101R-13
20278-102R-13
20278-101R-32
20278-102R-32

For hand tool
(with notch)



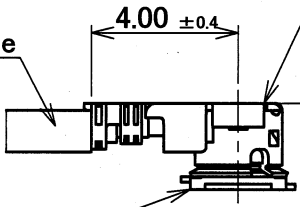
Part No. 20278-111R-08
20278-112R-08
20278-111R-13
20278-112R-13
20278-111R-32
20278-112R-32

For semi auto
termination machine
(without notch)



Plug
20278-1**R-08
20278-***R-13
20278-1**R-32

Coaxial cable



Receptacle
Part No.20279-001E-**-**
20441-001E-01

MATING

GENERAL TOLERANCE

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

23	Z150949	K.T	Aug./31/'15	Tom	DESIGN'D BY	DATE
22	Z150615	Tad	Jun./04/'15	Tom	K.Oobayashi	Jul./13/'01
21	Z131052	T.S	Nov./15/'13	Tom	CHK'D BY	DATE
20	Z12832	H.M	Sep./27/'12	Tom		
19	Z08056	K.O	Feb./04/'08	E.K	APP'D BY	DATE
REV	ECN	BY	DATE	APP	K.Katabuchi	Jul./13/'01
REV.RECORD					CUSTOMER COPY	PROJECTION
SERIES No.						5:1
R14						mm

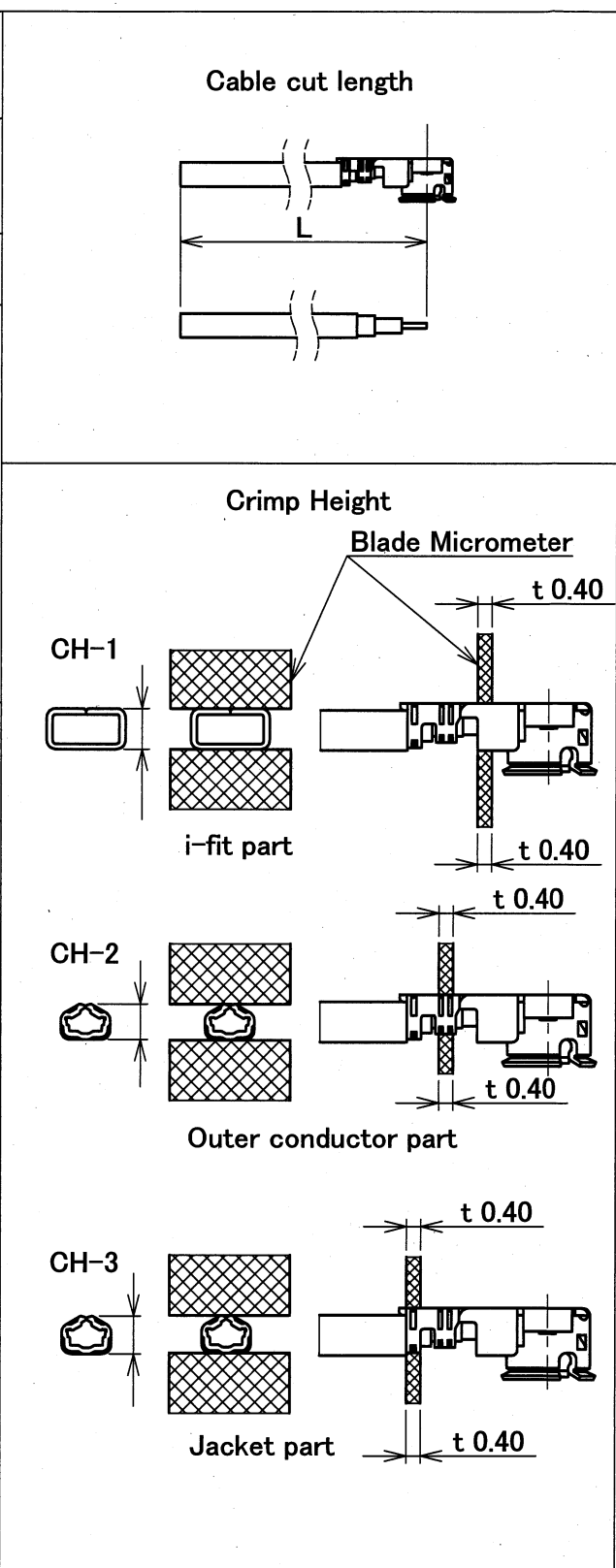
I-PEX DAHCHI SEIKO CO.,LTD.
I-PEX Business Company

TITLE				MHF PLUG ASS'Y (Au TYPE)			
SCALE	UNIT	DWG. No.	SHEET	REV.			
5:1	mm	20278	1/4	23			

Confidential III C

QKE-DFDE06-02 REV.7

Part No. of non halogen free type		20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18
Part No of halogen free type		20278-102R-08 20278-112R-08	20278-102R-13 20278-112R-13	20278-102R-32 20278-112R-32	20278-102R-18 20278-112R-18
Housing color		Natural	Black	Black	Natural
Applicable cable nominal dimension		 ※ Note-1	 ※ Note-1	 ※ Note-1	 ※ Note-1
Braided shield of Outer conductor 外部導体の編組		Single / 1重編組	Single / 1重編組	Double / 2重編組	Single / 1重編組
P/N of hand Tool		90187-008C	90187-013C	90187-032C	90233-018
P/N of semi auto termination machine		90213-008C	90213-013C	90213-032C	90232-018
Sect. M-M					
Sect. L-L					
Crimp Height	CH-1	1.34~1.40	1.34~1.40	1.34~1.40	1.34~1.40
	CH-2	0.76~0.84	1.06~1.14	1.20~1.30	1.41~1.49
	CH-3	0.85~0.97	1.15~1.35	1.26~1.46	1.70~1.80



Note-1
中心導体、外部導体への半田コーティングは不可
Must not use solder coated
inner conductor and outer conductor.

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

Confidential III C

DESIGN'D BY		DATE		DAI-ICHI SEIKO CO.,LTD. I-PEX Business Company				
CHK'D BY		DATE						
APP'D BY		DATE						
				TITLE				
				MHF PLUG ASS'Y (Au TYPE)				
CUSTOMER COPY		PROJECTION 		SCALE 	UNIT mm	DWG. No. 20278	SHEET 3/4	REV. 23

Notes

1. Material

- (1) Housing : PBT , UL94V-0
 (2) Contact
 phosphor bronze : Au over Ni
 (3) Ground contact
 ・20278-1**R-**
 phosphor bronze : Au over Ni

2. Packing : reel

3. Mating partner part No.

: 20279-001E-**, 20441-001E-01

4. Permissible load of cable at mating

1. コネクタの材料

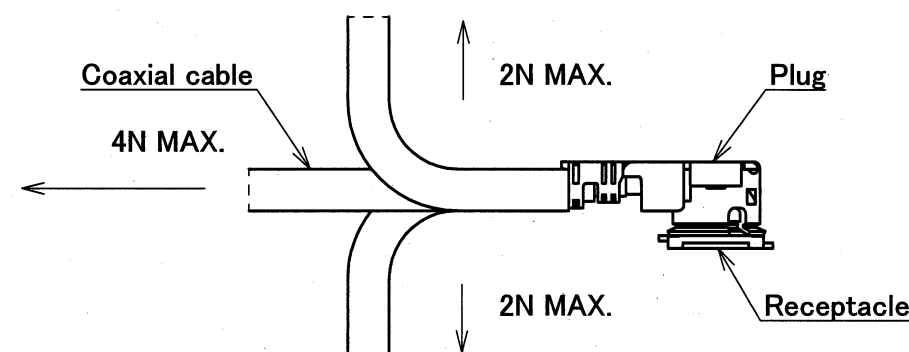
- (1) ハウジング : PBT, UL94V-0
 (2) コンタクト
 リン青銅 : 金メッキ、下地 ニッケルメッキ
 (3) グランドコンタクト
 ・20278-1**R-**
 リン青銅 : 金メッキ、下地 ニッケルメッキ

2. 梱包 : リール

3. かん合相手 Part No.

: 20279-001E-**, 20441-001E-01

4. コネクタかん合後のケーブルに対する荷重



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.

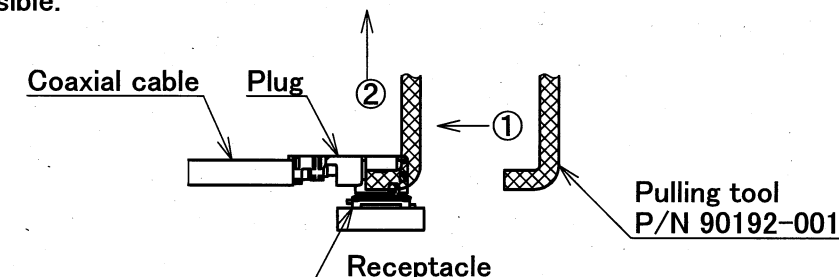
5. コネクタかん合時および抜去時の注意

5-1 コネクタ挿入時

PlugとReceptacleのかん合軸を合わせ、できるだけ垂直に挿入して下さい。極端な斜め挿入は行わないで下さい。コネクタ破損の原因となりますので、過度なこじり挿抜は行わないで下さい。

5-2 Unmating.

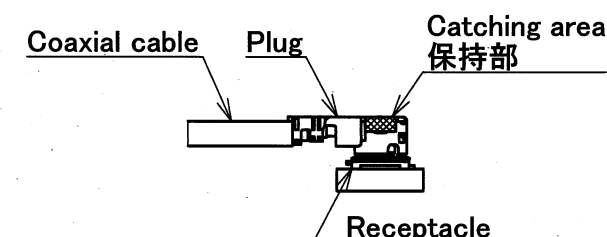
- (1) In case of unmating by pulling tool.
 Please use the pulling tool as the following drawing, and please pull plug to vertical direction as directly as possible.



5-2 コネクタ抜去時

- (1) 抜去ジグを用いる場合
 下図のようにできるだけ垂直に引き抜いて下さい。

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



- (2) 手で直接引き抜く場合
 下図の保持部をつかみ、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 外部導体はみ出し量

外部導体はみ出し量規定
 : 外部導体トータル本数の10%以下
 (外部導体パレルの外にはみ出した量)

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の注意

熱収縮チューブで外部導体を覆う場合は、導通不良の原因になりますので、熱によりハウジングを溶融させないように注意してください。

6. This is "Pb-free" connector.

6. 本コネクタは"Pb-free"である

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

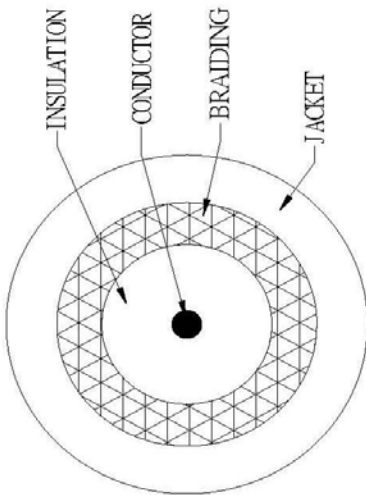
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DESIGN'D BY	DATE	DAI-ICHI SEIKO CO.,LTD. I-PEX Business Company		TITLE	
CHK'D BY	DATE				
APP'D BY	DATE				
CUSTOMER COPY	PROJECTION	SCALE	UNIT	DWG. No.	SHEET
		---	mm	20278	4/4
					REV. 23



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			
	NOM.O.D	0.24±0.03			
INSULATION	Material	FEP(Natural)			
	Nom.Thick.(mm)	0.23			
	NOM.O.D	0.70±0.03			
BRAIDING	MATERIAL	Tinned annealed copper wire			
	Composition	Single Braid of 0.05			
	MATERIAL	FEP(*color)			
JACKET	Nom.Thick(mm)	0.1			
	Nom.O.D(mm)	1.13±0.08			
	Color	White、Black、Brown、Gray、Blue			

Electrical Properties(at 20℃)			
Item	Unit	Details	
	Ω/km	Max.581	
	MΩ.km	Min.200	
	V(AC)/min	1000	
	pF/m	105	
REMARK			

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	℃	-55~150	
Standing wave(0-6GHz)	/	≦1.35	
MASTER WAVE TECHNOLOGY CO., LTD.			
CHECKED	DATE	2012/11/29	
DRAWING	Charlene	REV	00



4		3		2		1	
REV	ZONE	DESCRIPTION		ENG	APPROVED	DATE	

F

E

D

C

B

A

25PCS ANTENNA 綁一束
50PCS ANTENNA 1PE BAG

Label
標籤Label貼於外箱側面

DATE:		MAT'L:		Master Wave Technology CO.,LTD	
UNIT: mm		FINISH:			
THIRD ANGLE PROJECTION		SCALE: -		TITLE : PCB Antenna Packing	
APPROVED BY:	CHECKED BY:	DESIGNED BY:	DRAWN BY:	MODEL NO. :	REV
			Mango	PART NO. :	00

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MASTER WAVE AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.

4	3	2	1