



RFA-02-G10
Specification

Version: V0.5
Date: July 12, 2005

華朗科技股份有限公司 HL-Tech Corporation

承認書

SPECIFICATION FOR APPROVAL

使用機種：Quanta NB HW1

品號：RFA-02-G10

品名：PIFA Antenna

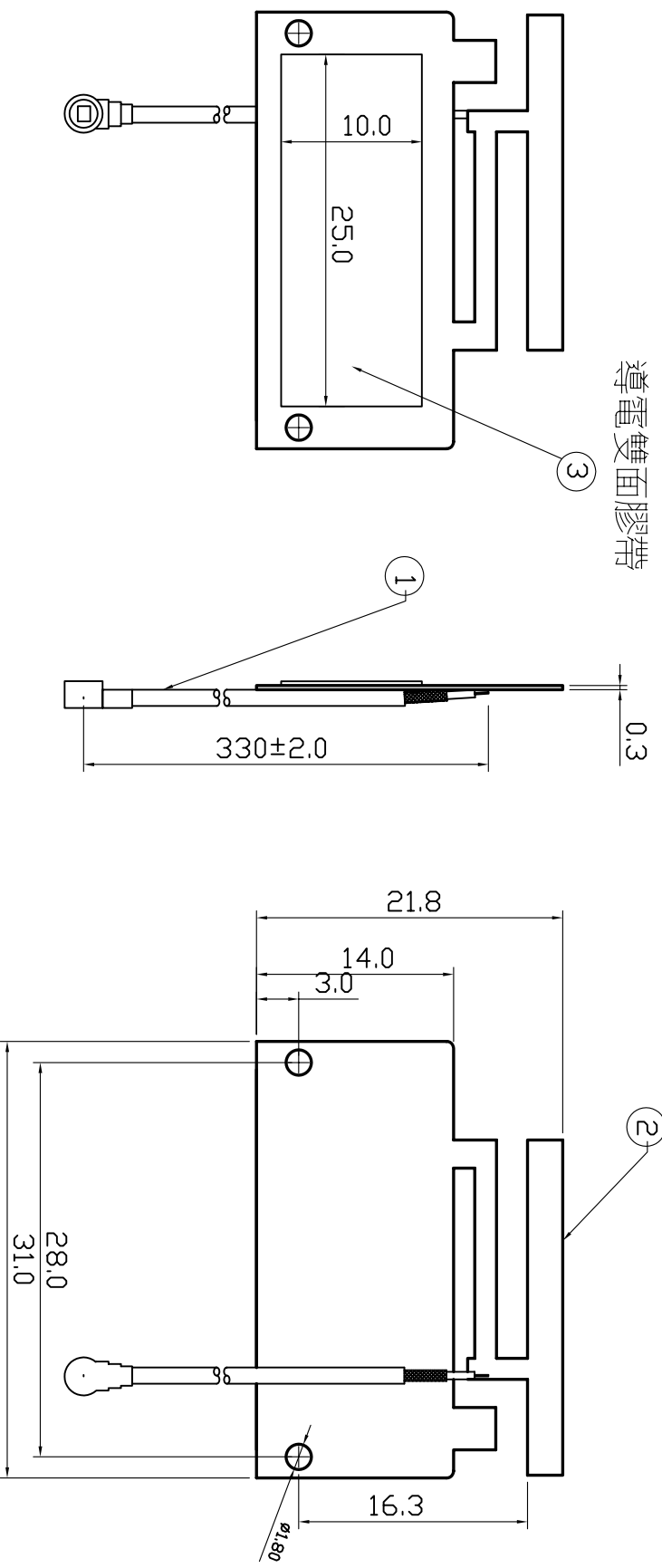
製造商：HJC

製造商型號：RFA-02-G10

採購部門		承認單位		
採購承辦	主管審核	承認	審查	核准

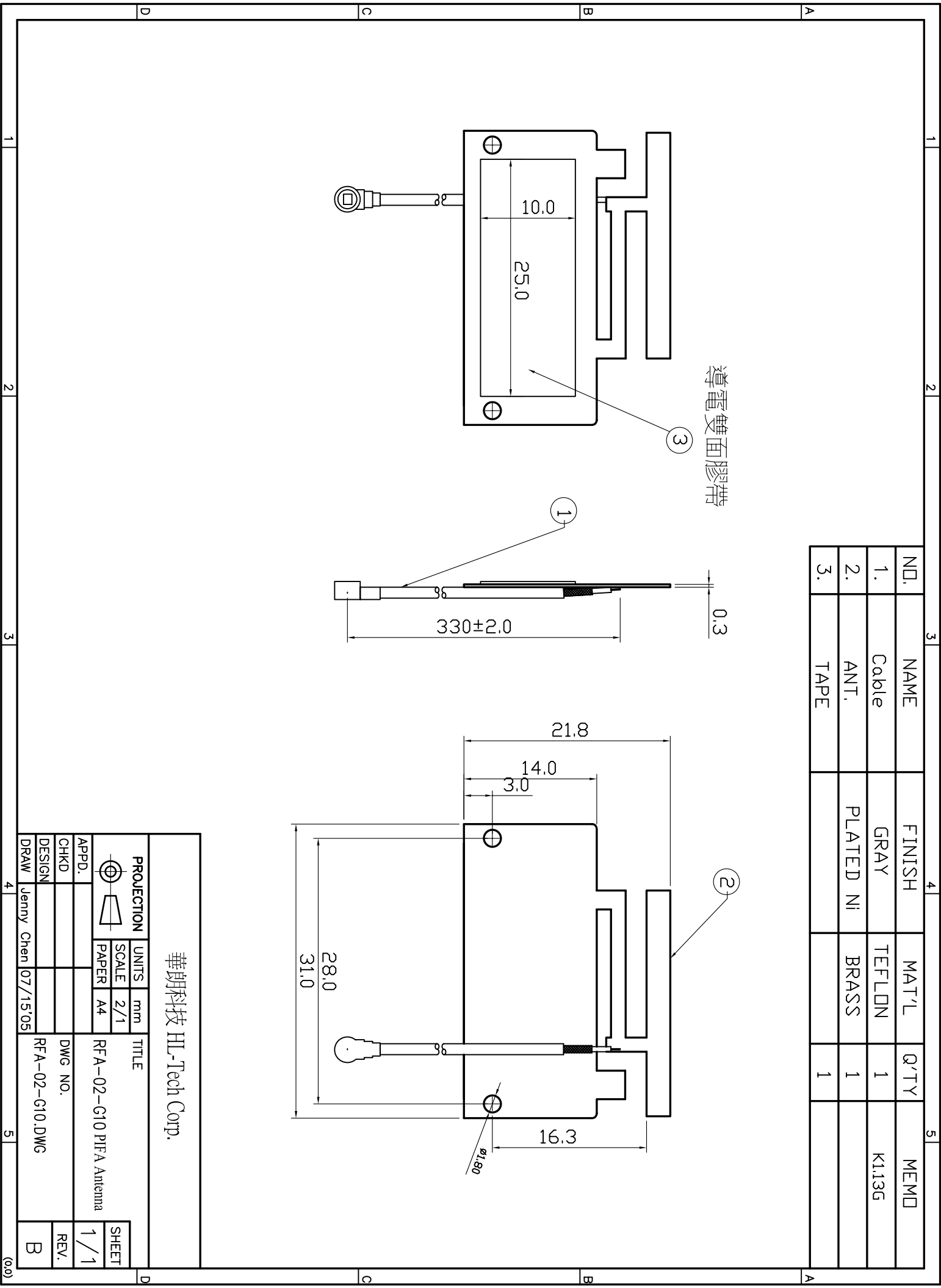
Approval	Check	Engineer
Ken Sung	Dio Lin	Neil Wang

NO.	NAME	FINISH	MAT'L	Q'TY	MEMO
1.	Cable	GRAY	TEFLON	1	K1.13G
2.	ANT.	PLATED NI	BRASS	1	
3.	TAPE			1	

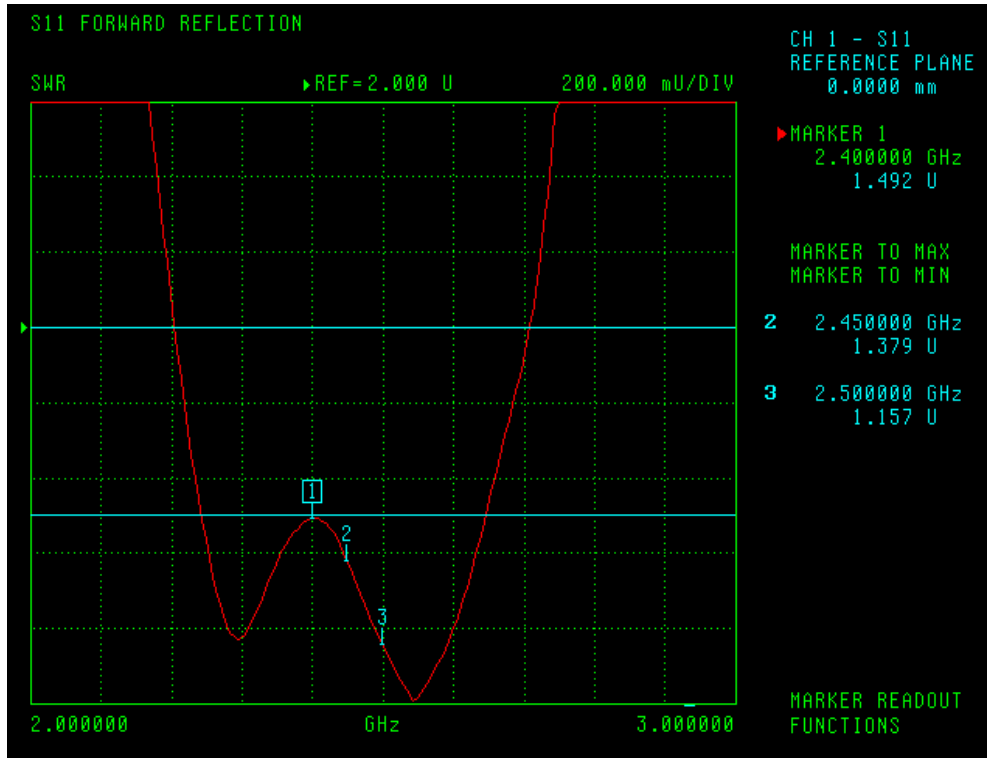


華朗科技 HL-Tech Corp.

PROJECTION	UNITS	SCALE	TITLE	SHEET
	mm	2/1	RFA-02-G10 PIFA Antenna	1/1
CHKD			DWG NO.	REV.
DESIGN			RFA-02-G10.DWG	B
DRAW	Jenny Chen	07/15'05		



VSWR Test Report



Frequency	2.4GHz	2.45GHz	2.5GHz
VSWR	1.5	1.4	1.2

Gain Test Result

Horizontal-plane

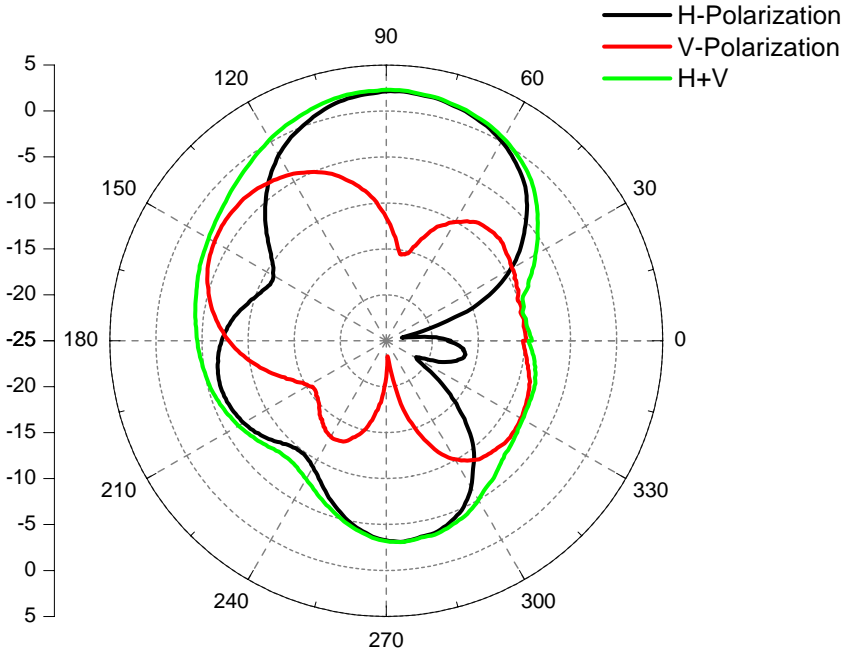
Frequency (MHz)	Peak Gain (dBi)	Average Gain (dBi)
2400	2.31	-2.72
2450	3.34	-2.27
2500	3.91	-1.80

Vertical-plane

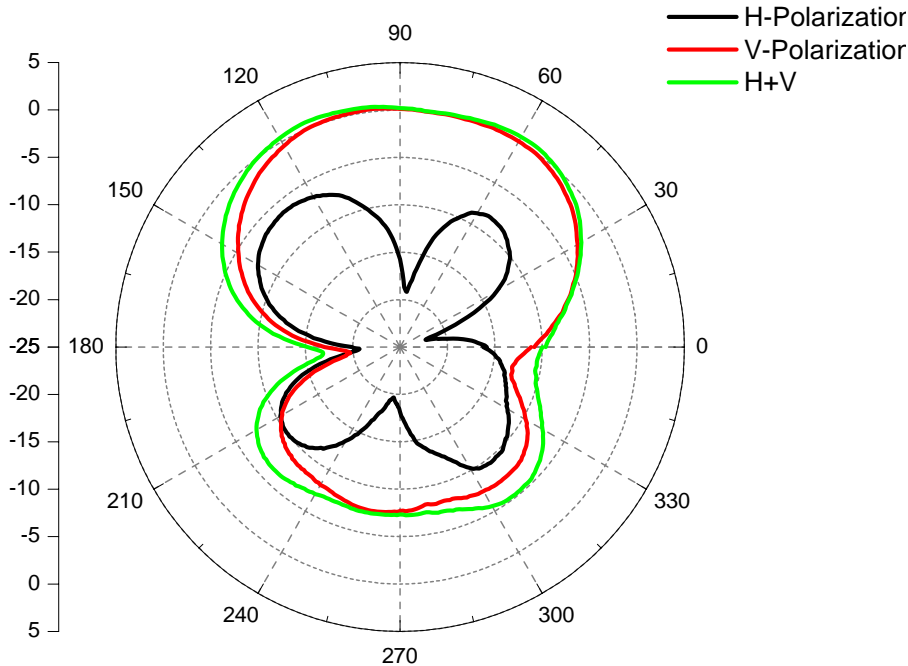
Frequency (MHz)	Peak Gain (dBi)	Average Gain (dBi)
2400	0.72	-3.47
2450	1.63	-3.21
-2500	2.40	-2.94

Radiation Pattern Test Result at 2400MHz

Horizontal-plane scanning

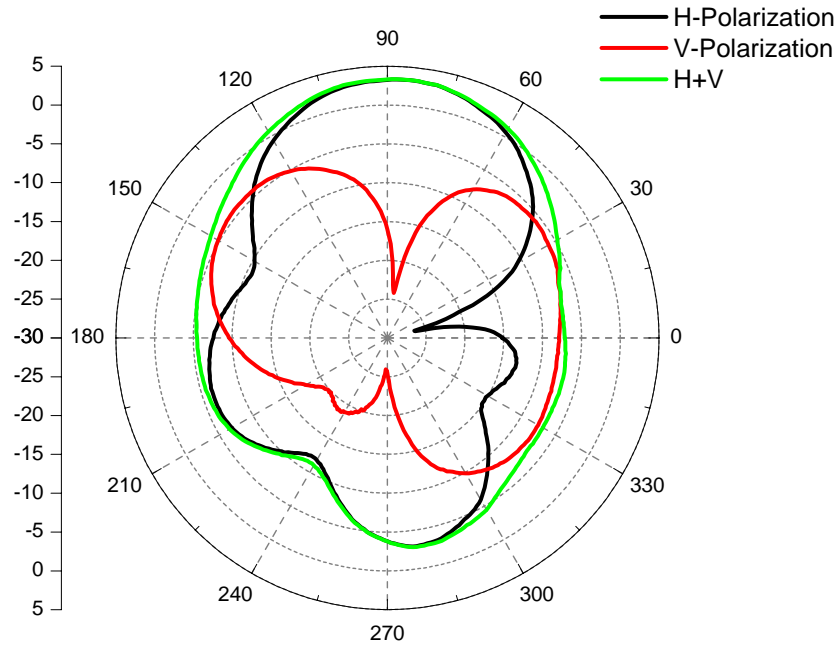


Vertical-plane scanning

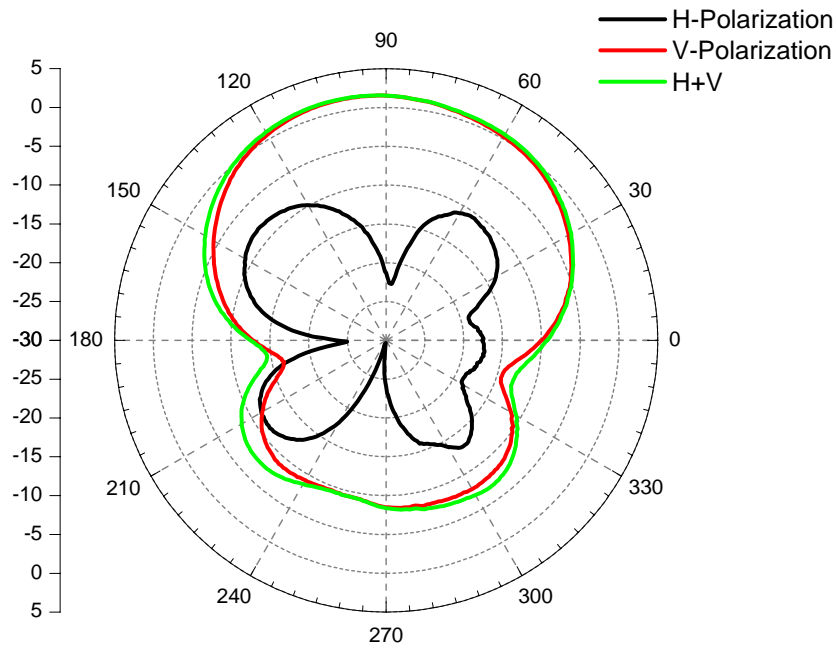


Radiation Pattern Test Result at 2450 MHz

Horizontal-plane scanning

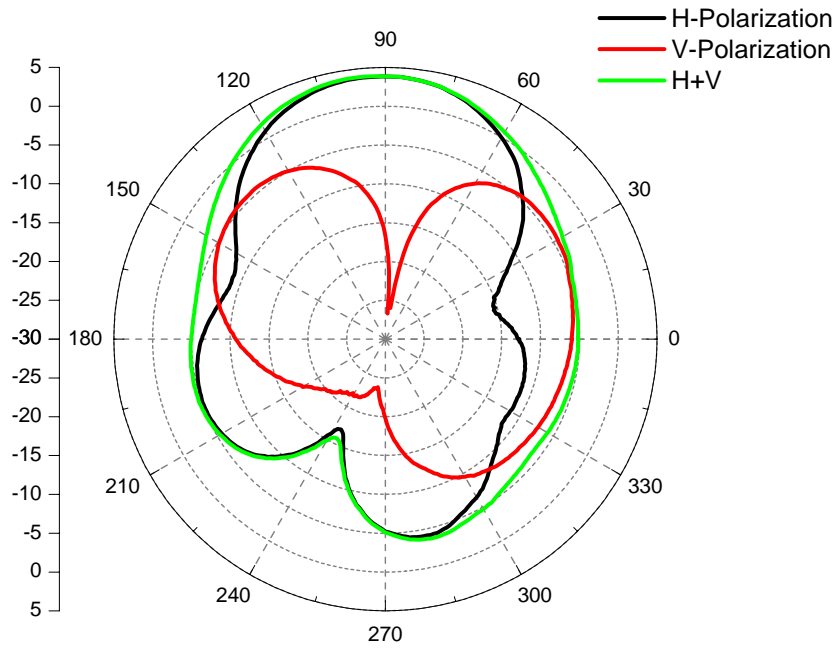


Vertical-plane scanning

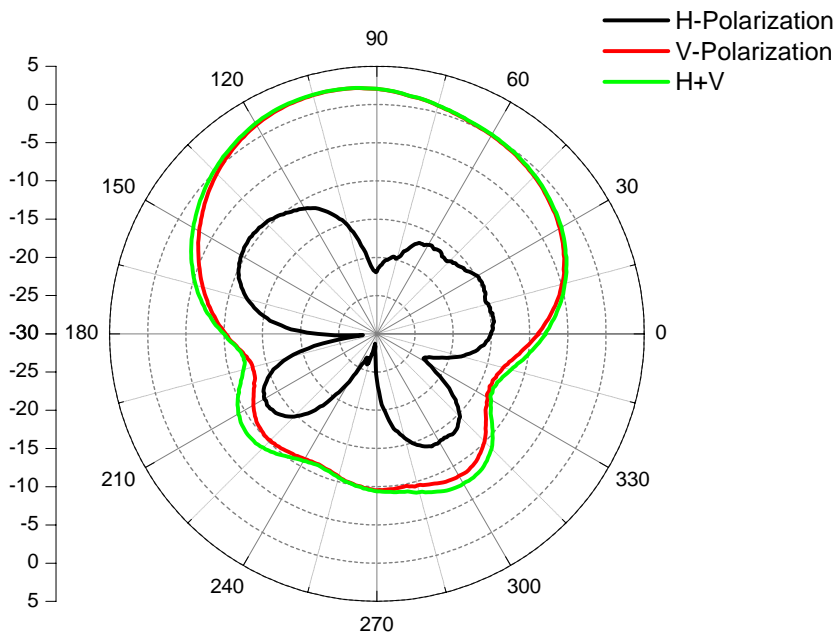


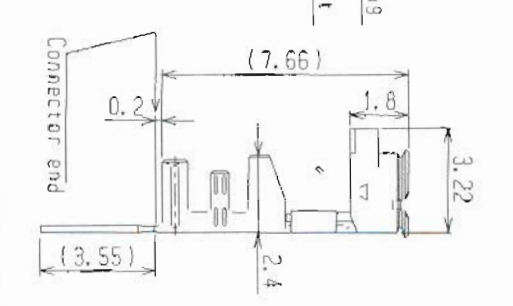
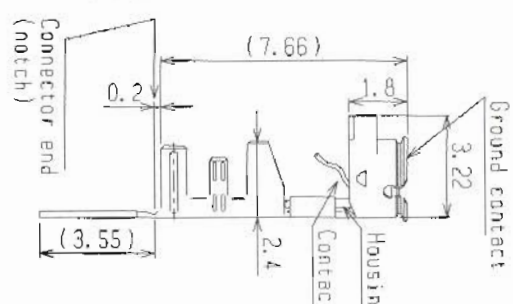
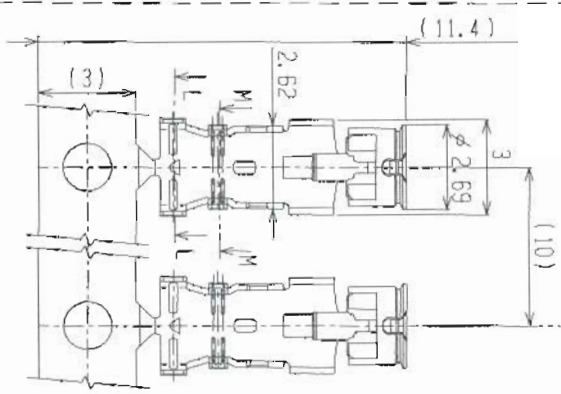
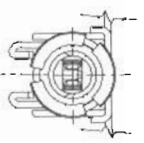
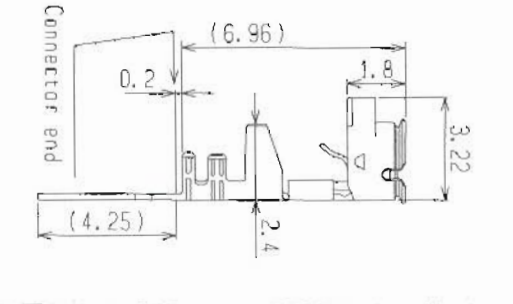
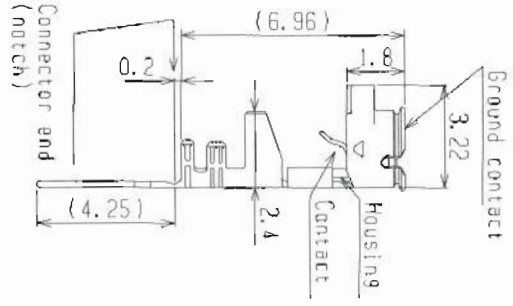
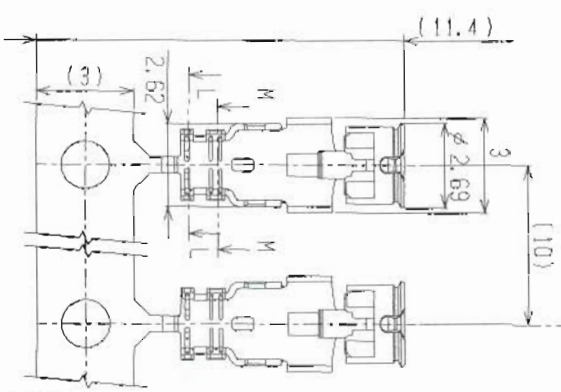
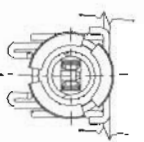
Radiation Pattern Test Result at 2500 MHz

Horizontal-plane scanning



Vertical-plane scanning





Part No. 20278-101R-08
20278-101R-13
20278-101R-32
For hand tool
(with notch)

Part No. 20278-111R-08
20278-111R-13
20278-111R-32
For semi auto
termination machine
(without notch)

Part No. 20278-101R-18
For hand tool
(with notch)

Part No. 20278-111R-18
For semi auto
termination machine
(without notch)

GENERAL TOLERANCE

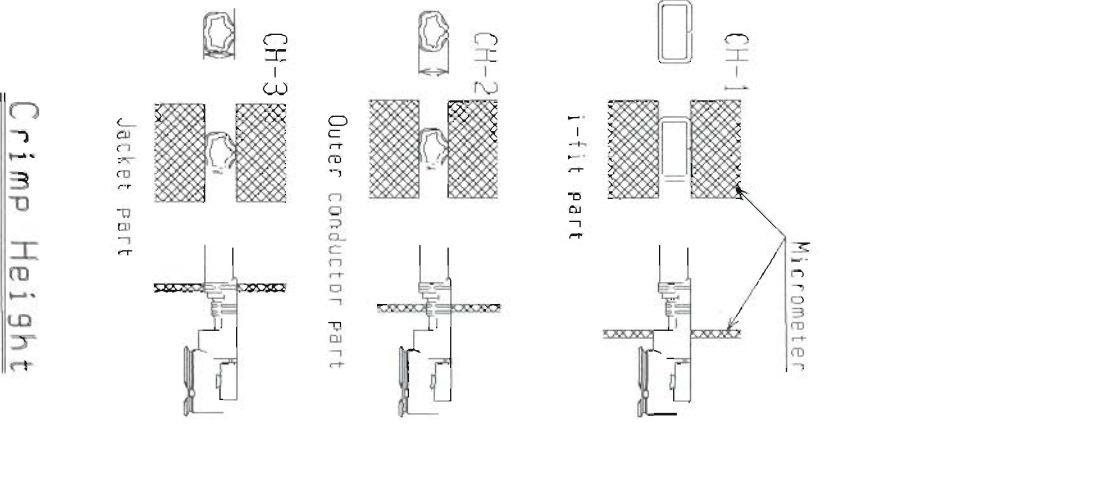
6 MAX. ±0.2
6 OVER MAX. 30 ±0.3
30 OVER MAX. 120 ±0.5
ANGLE ±2°

REV	ECN	BY	DATE	APP	REV	ECN	BY	DATE	APP
13C	Z3074	A.H/May/22/03	K.K	K.K	7B	Z2180	K.O	JUL/29/03	E.K
12C	Z3052	K.O/Apr/16/03	K.K	K.K	6B	Z2146	K.O	JUN/24/02	K.K
					5B	Z2117	A.H	MAY/17/02	K.K

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
APP'D BY	DATE	APP'D BY	DATE
K. Karabuchi	JUN/13/01	K. Karabuchi	JUN/13/01
CUSTOMER COPY	PRODUCTION SCALE	CUSTOMER COPY	PRODUCTION SCALE
	6/1		6/1
TITLE	SCALE	TITLE	SCALE
Micro coaxial connector plug	Vertical (ground contact : gold plating)	Micro coaxial connector plug	Vertical (ground contact : gold plating)
REV. No.	20278	REV. No.	20278
SHEET REV.	1/3 13C	SHEET REV.	1/3 13C

I-PEX
Interconnect
and Packaging Electronics
TOKYO, JAPAN

Part No.	20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18
Applicable cable nominal dimension	2.09±0.1 1.25±0.1 1.15±0.1 φ 0.81 Nominal (φ 0.65) φ 0.4 Nominal AWG#36(7/0.05) * NOTE-1	2.09±0.1 1.25±0.1 1.15±0.1 φ 1.13 Nominal (φ 0.93) φ 0.68 Nominal AWG#32(7/0.08) * NOTE-1	2.09±0.1 1.25±0.1 1.15±0.1 φ 1.32 Nominal (φ 1.12) φ 0.66 Nominal AWG#32(7/0.08) * NOTE-1	2.09±0.1 1.25±0.1 1.15±0.1 φ 1.8 Nominal RG178 B/Y (φ 1.35) φ 0.84 Nominal AWG#30(7/0.102) * NOTE-1
Jacket				
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	90187-009C	90187-013C	90187-032C	90233-018
P/N of semi auto termination machine	90213-009C	90213-013C	90213-032C	90232-018
Sect. M-M				
Sect. L-L				
Crimp Height	CH-1 1.34~1.40 CH-2 0.76~0.84 CH-3 0.85~0.97	CH-1 1.34~1.40 CH-2 1.06~1.14 CH-3 1.15~1.35	CH-1 1.34~1.40 CH-2 1.20~1.30 CH-3 1.26~1.46	CH-1 1.34~1.40 CH-2 1.41~1.49 CH-3 1.70~1.80



Crimp Height

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

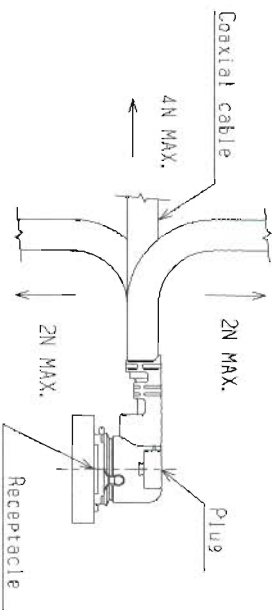
G MAX.	±0.2
G OVER MAX.	±0.3
30 OVER MAX.	±0.5
ANGLE	±2°

DESIGN'D BY	DATE	CHECK'D BY	DATE
APP'D BY	DATE	CUSTOMER COPY	
REV. RECORD	DATE	PROJECTION	SCALE
REV. RECORD	DATE	UNIT	DWG. No.
REV. RECORD	DATE	UNIT	20278
REV. RECORD	DATE	UNIT	2/3 13C

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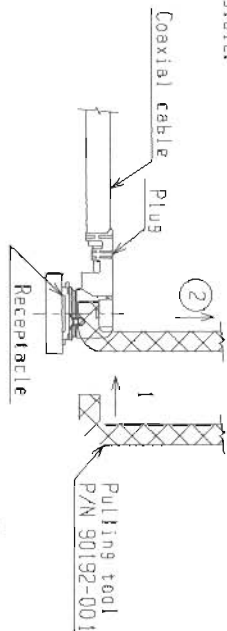
Notes

- Material
 - Housing : PBT , UL94V-0 , black
 - Contact
 - phosphor bronze
 - gold plating 0.1um MIN. over nickel 1.27um MIN.
 - Ground contact
 - phosphor bronze
 - gold plating 0.05um MIN. over nickel 1.27um MIN.
- Packings : reel
- Mating partner Part No. : 20279-001E-01
- Permissible load of cable at mating

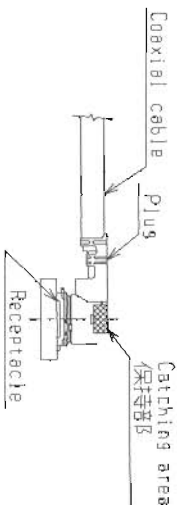


- 材料
 - ハウジング: PBT, UL94V-0, 黒色
 - コンタクト
 - 銅鍍
 - 金メッキ0.1um MIN. 下地 ニッケル1.27um MIN.
 - グラウンドコンタクト
 - 銅鍍
 - 金メッキ0.05um MIN. 下地 ニッケル1.27um MIN.
- 梱包 : リール
- 対応相手 Part No. : 20279-001E-01
- コネクタ合後のケーブルに対する荷重

- 5-2 Unmating.
 - In case of unmating by pulling tool. Please use the pulling tool as the following drawings, and please pull plug to vertical direction as directly as possible.



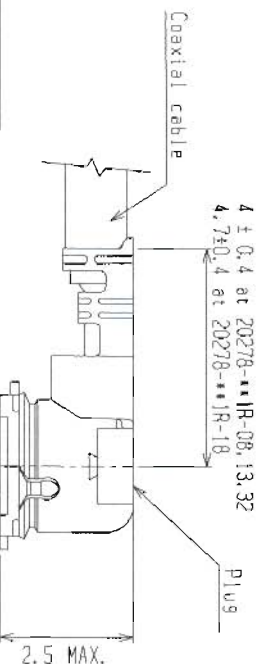
- (2) In case of unmating directly by hand. Please catch the catching area of plug, and please pull plug to vertical direction as directly as possible.



- (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. Suggestions for mating & unmating operation.

S-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. コネクタ合時および抜き去時の注意

S-1 コネクタ挿入時
PlugとReceptacleの合時を合わせ、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。コネクタ嵌合の原因となりますので、過度な斜め挿入は行わないで下さい。

- 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 (外部導体バル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、過熱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注意してください。

GENERAL TOLERANCE

6 MAX.	±0.2
6 OVER MAX. 3D	±0.3
3D OVER MAX. 12D	±0.5
ANGLE	±2°

MATING

Receptacle
P/N 20279-001E-01

2.5 MAX.

DESIGN'D BY	DATE
CHK'D BY	DATE
APP'D BY	DATE

I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN

REV. ECN	BY	DATE	APP	CUSTOMER	PROJECTION	SCALE	UNIT	DWG. No.	SHEET REV.
REV. RECORD				COPY		1/1	mm	20278	3/3 13C
SERIES No.	2814								

KURABE INDUSTRIAL CO., LTD

SP3830M-X	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE (FWS 5022)	PAGE	1/4
PRODUCT STANDARD		ISSUED	17-9-2001
		REVISED	

1. SCOPE

This standard covers "FEP insulated High-Frequency coaxial cable".

2. CONSTRUCTION

Construction and dimensions of the cable are shown in Figure.1 and Table 1.

3. PERFORMANCE

Performance of the finished cable is shown in Table 2. The test methods are in accordance with applicable test methods described in JIS C 3005.

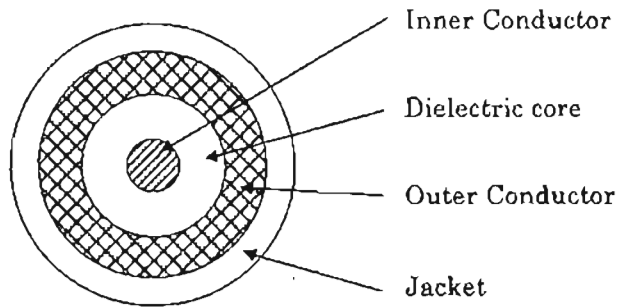


Figure 1.

NOTE :	MADE BY	<i>M. Mba</i>
	APPROVALS	<i>J. Kasper</i>

KURABE INDUSTRIAL CO., LTD

SP3830M-X	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE (FWS 5022)	PAGE	2/4
PRODUCT STANDARD		ISSUED	17-9-2001
		REVISED	

Table 1. Construction

Item	Unit	Specified Value
Inner Conductor	Material	—
	Stranding	No./mm
	Dia.(approx.)	mm
Dielectric Core	Material	—
	Thick.(nom.)	mm
	Dia.	mm
	Color	—
Outer Conductor	Material	—
	Type	—
	Dia.(approx)	mm
Jacket	Material	—
	Thick.(nom.)	mm
	Dia.	mm
	Color	—

Standard colors are white, black, blue, brown, and gray.

Table 2. Performance

Item	Unit	Specified Value	Note
Appearance	—	Faultless in visible	—
Inner conductor resistance	Ω/km	Max.597	at 20°C
Insulation resistance	MΩ·km	Min.1500	at 20°C
Dielectric strength	—	Dielectric core: No breakdown at AC1.5kV for 0.15sec.	Spark test
		Jacket: No breakdown at AC1.5kV for 0.15sec.	Spark test
		No breakdown at AC500V for 1min.	Outer conductor to inner conductor
Heat resistance for solder	—	Shrink or expansion of dielectric core are not more than 0.5mm	※
Capacitance	pF/m	nom. 98	at 1kHz
Characteristic impedance	Ω	50±2	TDR method
Attenuation (nom.)	dB/m	2.0	1.0GHz
		2.9	2.0GHz
		3.6	3.0GHz
		4.2	4.0GHz
		4.7	5.0GHz
		5.2	6.0GHz

※ After immersion of dielectric core, 10mm into soldering pot which is 230°C for 5 seconds, shrinkage or expansion of the dielectric core must not exceed 0.5mm.

NOTE :	MADE BY	<i>M. Ohba</i>
	APPROVALS	<i>J. Kawasaki</i>

KURABE INDUSTRIAL CO., LTD

SP3830M-X	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE (FWS 5022)	PAGE	3/4
PRODUCT STANDARD		ISSUED	17-9-2001
		REVISED	
<p>4. INSPECTION</p> <p>An inspection is took place in accordance with applicable test methods. The cable has to pass the specifications described Table 1 and Table 2.</p> <p>5. TEST METHOD</p> <p>The test methods are in accordance with applicable test methods described in JIS C 3005 (Test methods for rubber or plastic insulated wires and cables).</p> <p>6. TEMPERATURE RATING</p> <p style="padding-left: 40px;">150 °C</p> <p>7. VOLATGE LATING</p> <p style="padding-left: 40px;">250 V</p> <p>8. MARKING ON TAG</p> <p>Each reel of finished cable is tagged to indicate following information:</p> <ul style="list-style-type: none"> (1) Designation of the cable, (2) Conductor size, (3) Length, (4) Date of manufacture or LOT No., (5) Specification No., and (6) Manufacture's name. <p>9. PACKAGE</p> <p>The finished cables are cut into a shipping length of 200 meters, reeled to paper bobbin and packed securely to prevent injuries during transportation. Odd length of the finished wires should be accepted for shipping according to the condition of mutual agreement.</p> <p style="padding-left: 40px;">In the case no agreement is found, the condition stated in quotation shall prevail.</p> <p>10. APPLICATION NOTES</p> <p>10-1. For use other than the use mutually agreed, compatibility should be carefully confirmed in each practical use by user.</p> <p>10-2. It is recommended to make a trial run for each practical application.</p>			
NOTE :		MADE BY	<i>M. Ohba</i>
		APPROVALS	<i>T. Kawasawa</i>

KURABE INDUSTRIAL CO., LTD

SP3830M-X	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE (FWS 5022)	PAGE	4/4
PRODUCT STANDARD		ISSUED	17-9-2001
		REVISED	
<p>10-3. In case a design for use of cable is changed, please contact our sales department, if necessary. Do not use under extreme mechanical stress such as hard bending, tightening, and twisting. The use under extreme mechanical stress may cause not only shortening the life span of cable but also troubles such as decline of dielectric strength.</p> <p>10-4. Handling precautions</p> <p>① Do not hurt the insulation and sheath of the cable by making holes and scratches. And avoid any sharp edge when wiring so as not to injure cables.</p> <p>② Avoid unnecessary excessive force to cable, such as pulling, twisting, bending or tightening.</p> <p>10-5. Storage precautions</p> <p style="padding-left: 20px;">Avoid continuous exposure to sunlight.</p>			
NOTE :	MADE BY	<i>M. Ohba</i>	
	APPROVALS	<i>T. Kawasumi</i>	