

LCU

CONNECTORS

承認書

SPECIFICATIONS FOR APPROVAL

客 戶

啓碁科技股份有限公司

CUSTOMER

茲送 貴公司所要求之樣品 8 個，規格書 1 份，敬請確認，惠返一份。

品 名

2.4GHz SMA Swivel Antenna

SPECIES

料 號

F1B-004321-93

PART NO.

客 戶 料 號

CUSTOMER PART NO.

承 認 欄

APPROVAL BY

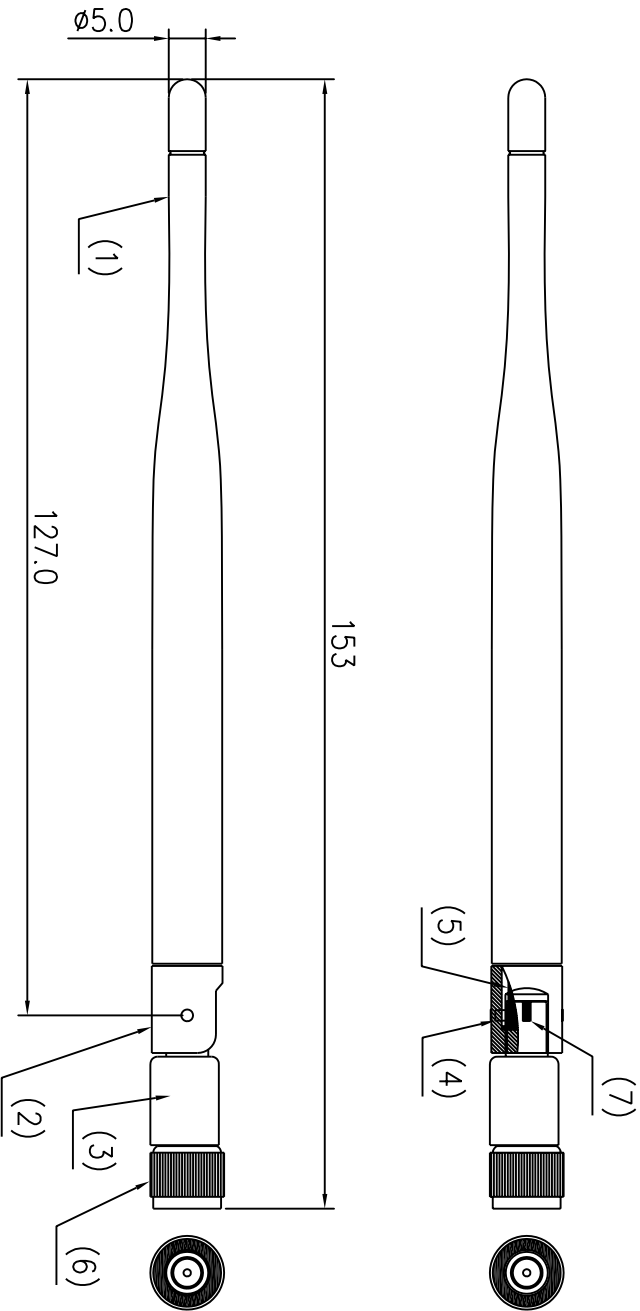
龍 竹 企 業 股 份 有 限 公 司

LONG CHU ELECTRONICS CO., LTD.

台灣省新竹縣竹北市中和街 62 巷 15 弄 1 號

NO. 1 ALLEY 15 LANE 62, CHUNG HO ST JUBEI CITY HSIN CHU HSIEN TAIWAN, R. O. C.

TEL : (03) 5530333 (代表號) FAX : 886-3-5537016



(7)	CABLE	RG-178 透明棕 50 OHMS	1
(6)	CONNECTOR	SMA STRAIGHT PLUG/REVERSE	1
(5)	銅管	BRASS,Ni PLATED	1
(4)	銅墊	BRASS,表面染黑處理	2
(3)	下固定座	ABS,BLACK	1
(2)	上固定座	ABS,BLACK	1
(1)	天線焊套	TPE,BLACK	1
NO.	NAME	DESCRIPTION	Q'TY

Lct

LONG CHENG ELECTRONICS CO. LTD

龍呈國際科技有限公司

UNIT		APVD		DESCRIPTION:	
mm		CHK		2.4GHz Dipole Antenna (Black)	
MATERIAL		SEE NOTE		DIMENSION:	
FINISH		DWN		1 PLC ±0.5	
DATE		NINA CHEN		2 PLC ±0.3	
4/2/04"				3 PLC ±0.2	
NEW RELEASE				ANGLES ±5°	
0				PART NUMBER	
LTR				F1B-004321-93	
				SIZE	
				A4	
				SCALE	
				1/1	
				SHEET	
				1 OF 1	
				REV	
				0	

電氣特性規格

Electrical Specifications

頻率範圍 (Frequency Range)	2.4~2.5GHz
增益 (Gain)	2.0dbi(typical)
VSWR	2.0 Max.
Return Loss	-10db Max.
半功率水平波束寬 (HPBW/Horizontal)	360°
半功率垂直波束寬 (HPBW/Vertical)	78°
極化 (Polarzation)	Linear, Vertical
阻抗匹配 (Impedance)	50 Ohms (typical)

電 氣 特 性 測 試

Electrical Specifications Test

電壓駐波比測試
(VSWR Test)

測試使用儀器
(Test Instrument)

Anritsu MS4653B Vector Network Measurement System

測 試 資 料
(Test Result)

**如下頁附圖所示

電氣特性測試

Electrical Specifications Test

1. 輻射場型測試 (Radiation Pattern Test):

測試儀器 (Test Instrument) :

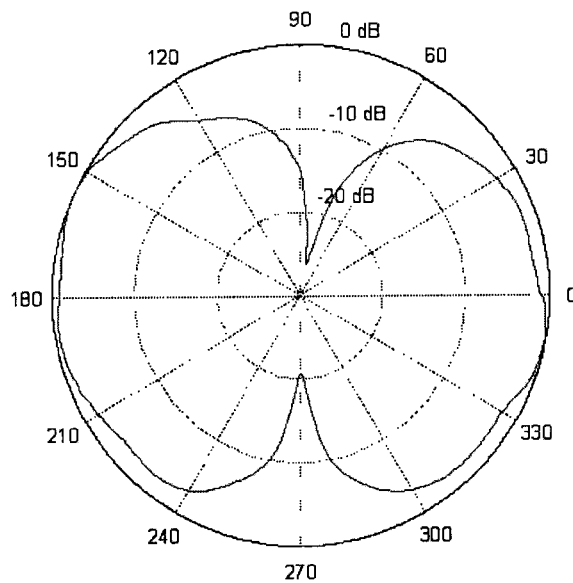
Ancom 6 ft Near-field antenna test system

測試資料 (Test Result) :

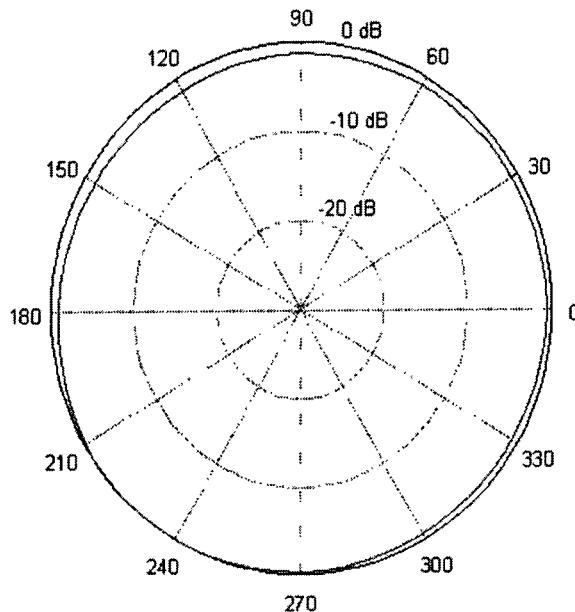
頻率 (Frequency) : **2.45GHz**

Max. gain : 1.73 dbi

Avg. gain : 1.25 dbi



Vertical Pattern



Horizontal pattern

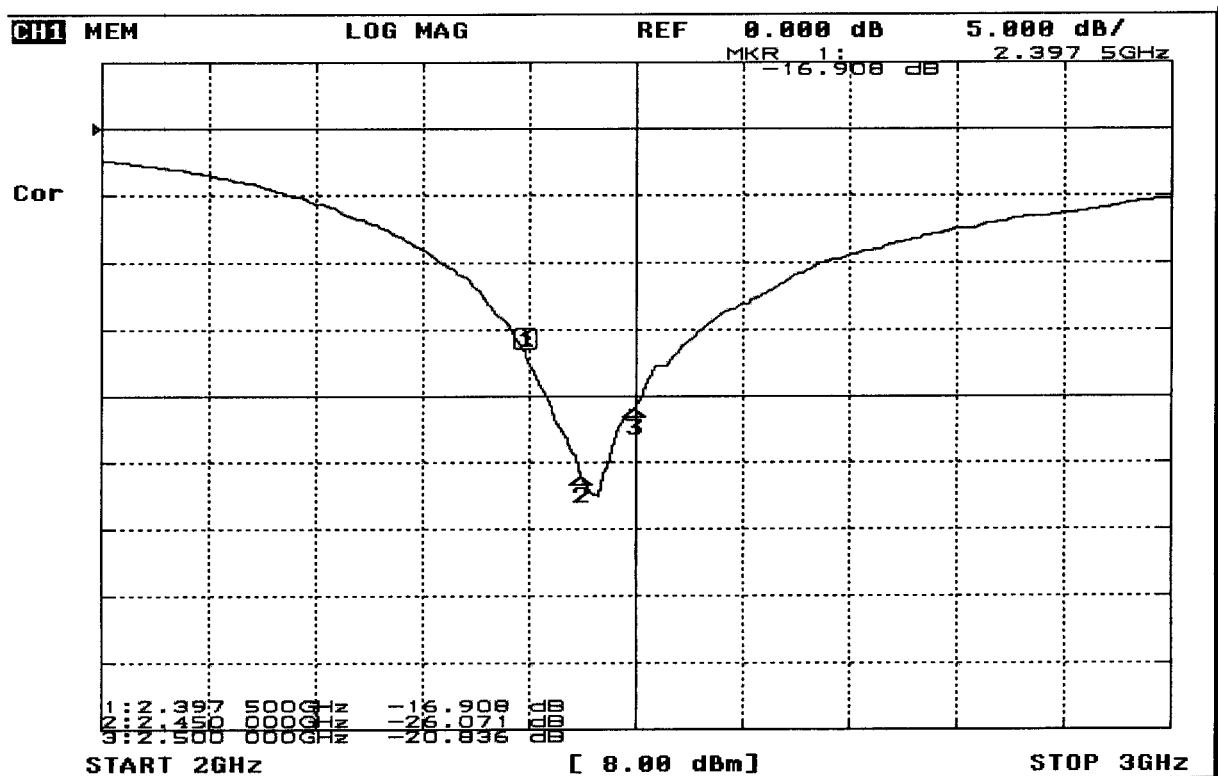
2. Function Test :

測試儀器 (Test Instrument):

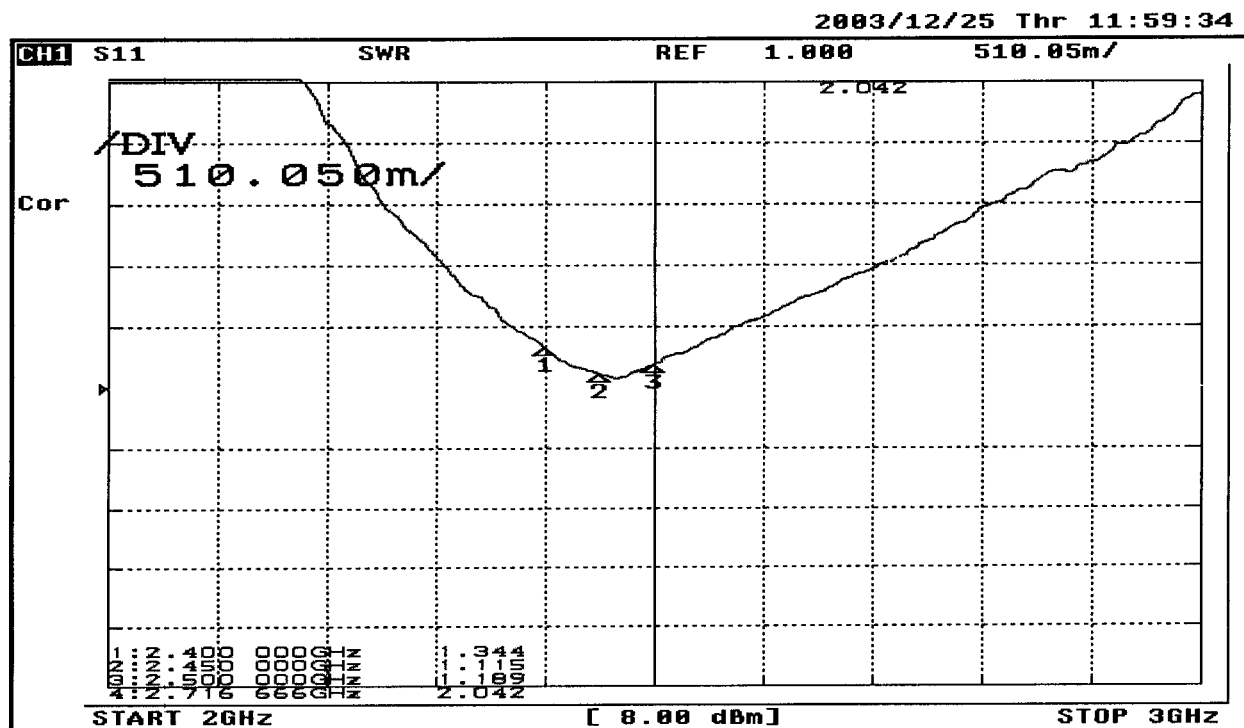
☐ HP 8753E Network Analyzer 30 KHz ~ 3GHz

☒ Advantest R3767CG Network Analyzer 300 KHz ~ 8GHz

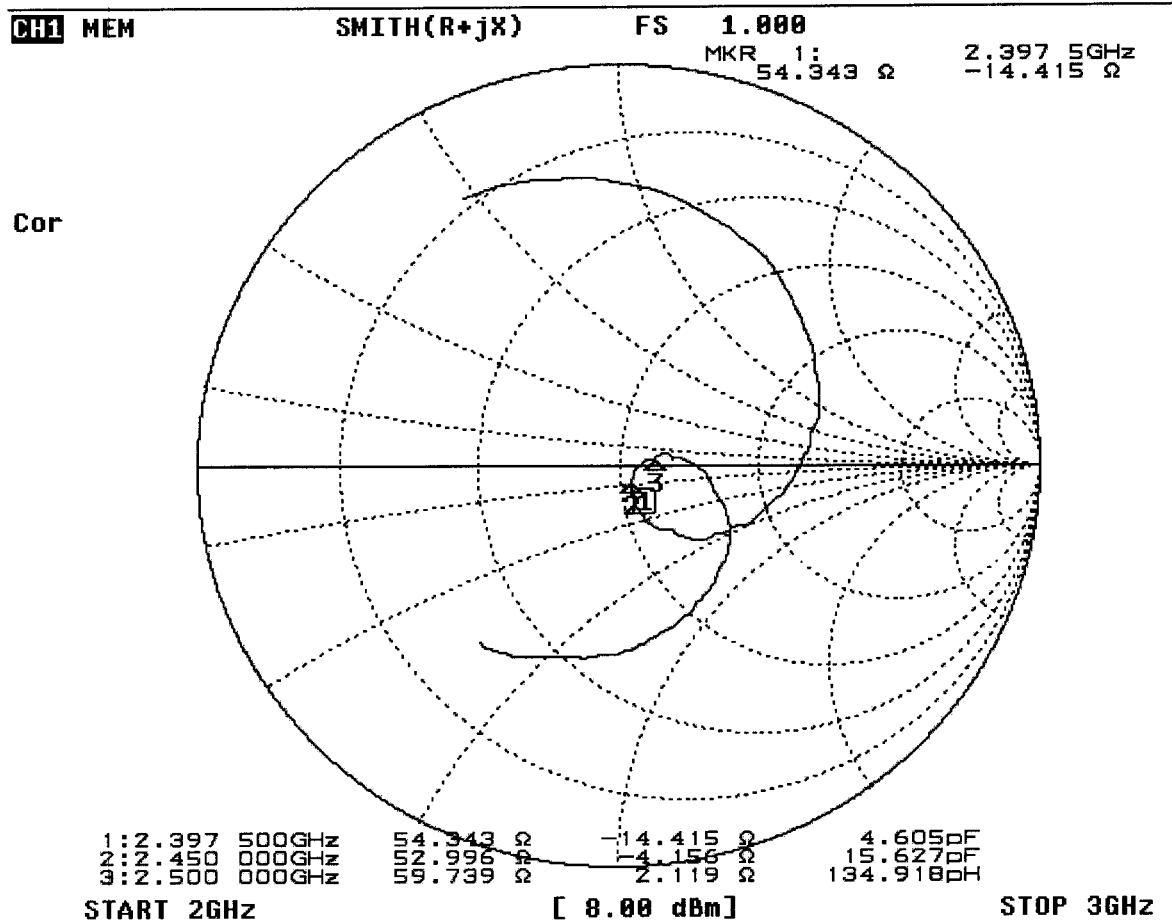
2.1 Return Loss



2.2 VSWR :



2.3 Smith Chart :

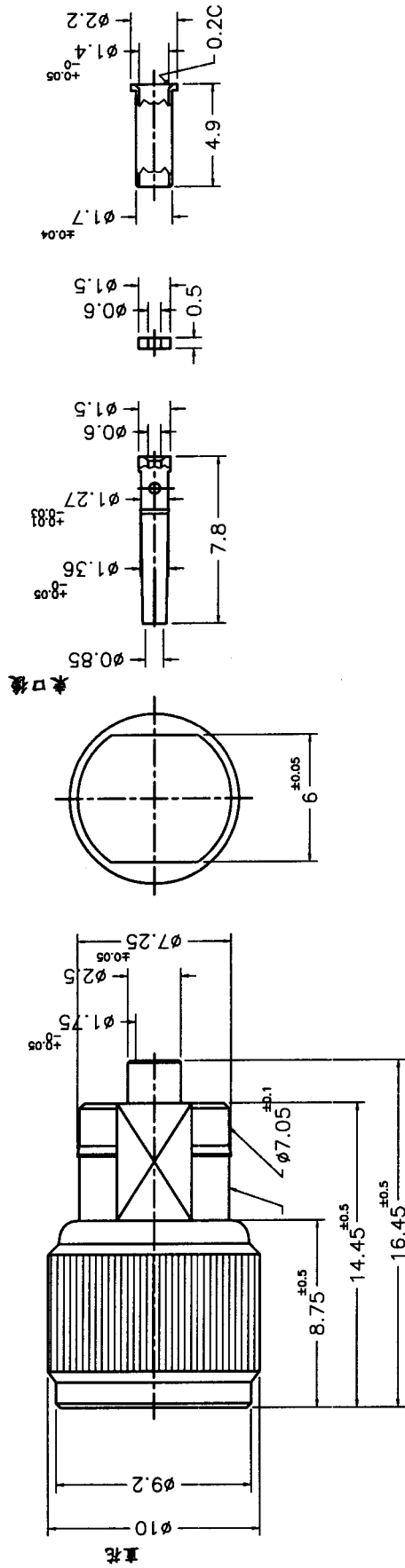


機械特性規格

Mechanical Specifications

接頭種類 (Connector Type)	SMA - MALE TO FEMALE
重量 (Weight)	11 g
同軸線材 (Coaxial Cable Type)	RG - 178
同軸線材規格 (Coaxial Cable Spec.)	如附件
同軸線材顏色 (Coaxial Cable Color)	淡橘色
輻射材料 (Radiator Material)	Copper
工作溫度與溼度 (Working Temperature & Humidity)	-25 °C - +75 °C 90% @ 25 °C
天線尺寸 (Dimensions)	如附圖所示

DRAWING
NUMBER



8	FERRULE	BRASS	1	NICKEL
7	INSULATOR	TEFLON	1	
6	CENTER PIN	BRASS	1	GOLD
5	BODY	BRASS	1	GOLD
4	INSULATOR	TEFLON	1	
3	BODY	BRASS	1	BLACK CHROME
2	SPRING	SPRING SPEED	1	
1	SHELL	BRASS	1	BLACK CHROME
NO	DESCRIPTION	MATERIAL	Q'TY	FINISH

* 扭力 200g~400g

SMA Plug Reverse Straight
For RG-178

Lct LONG CHENG ELECTRONICS CO. LTD.
龍呈國際科技有限公司

DESCRIPTION:		CONN.SMA MALE-FEMALE RG178	
UNIT		mm	APVD
MATERIAL		SEE NOTE	CHK
FINISH		SEE NOTE	DWN
NEW RELEASE		01/15/03	09-10-2002
REVISION RECORD		DWN	NINA CHEN
DATE		CHK	
LTR		4	5
3		1	1

PART NUMBER		REV
M01-053020-00		0
SIZE		SHEET
A4		1 OF 1
SCALE		0.6/1
ANGLES		±5°

DIMENSION:		1 PLC	±0.5
		2 PLC	±0.3
		3 PLC	±0.2
		ANGLES	±5°



TEST REPORT

Report No. : HCD0084/2003

Page : 1 of 3

Date : December 30, 2003

LONG CHENG TECH. INT'L CO., LTD.
NO. 3, ALLEY 15, LANE 62, CHUNG HO ST., JUBEI CITY,
HSINCHU HSIEN, TAIWAN, R. O. C.

The following merchandise was submitted and identified by the vendor as:

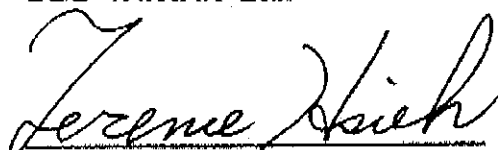
Product Description: Swivel RF Antenna
Style/Item No.: SMA Swivel Antenna (B) / No.1~No.5;
Diople Antenna (G) / No.1, No.2
Quantity: Total 7 pieces

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Required: (According to client's test specification, please see following sheets in detail.)
1. Thermal Shock test

Test Results: - PLEASE SEE ATTACHED SHEETS -

Signed for and on behalf of
SGS TAIWAN Ltd.


Terence Hsieh
Asst. Supervisor

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company. 此報告係根據本公司訂定之通則服務條款所製作發放。請注意此處所列印之聲明、責任、管轄權等事項。此報告結果除非另有說明面對檢驗之樣品負責。本報告未經本公司書面許可，不得部份複製。

TW 0495855



TEST REPORT

Report No. : HCD0084/2003

Page : 2 of 3

1. Thermal Shock test:

Test Equipment:

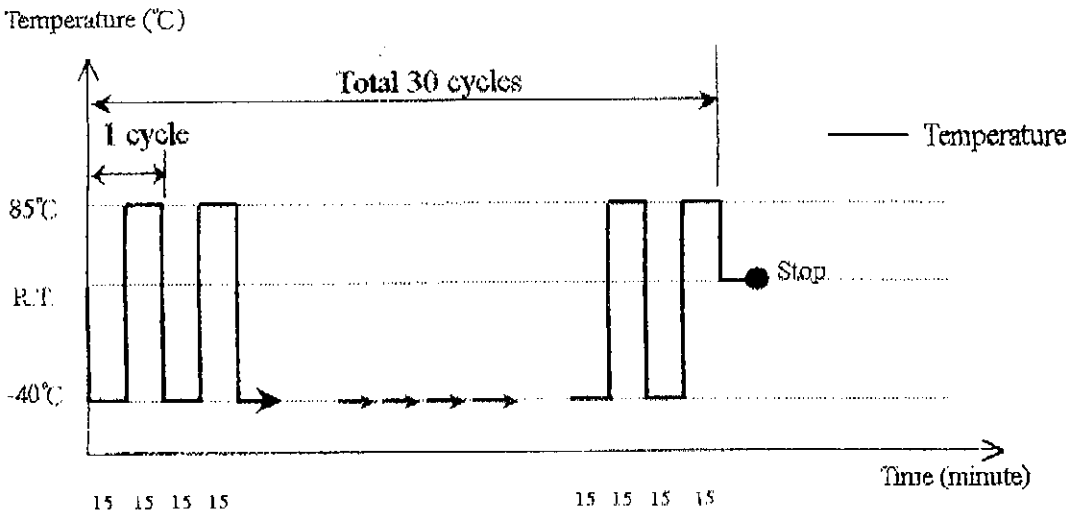
Name	Brand	Model	Serial No.
Thermal Shock Testing Chamber	KSON	TSK-C4H+-RAMP	2336

Lab Environmental Conditions:

Ambient temperature: 25±3℃

Relative humidity: 55±20%RH

Test Method/ Specification:



- The temperature transition time shall be less than 5 minutes.
- Examine the appearance of specimen by visual check after this test.



TEST REPORT

Report No. : HCD0084/2003

Page : 3 of 3

Specimen:Style/ Item No.: SMA Swivel Antenna (B) / No.1~No.5;Diople Antenna (G) / No.1, No.2Quantity: Total 7 piecesTest Result:

Check Item Style/Item No.	Appearance Check (Visual Check)
SMA Swivel Antenna (B) / No.1	No visible damage
SMA Swivel Antenna (B) / No.2	No visible damage
SMA Swivel Antenna (B) / No.3	No visible damage
SMA Swivel Antenna (B) / No.4	No visible damage
SMA Swivel Antenna (B) / No.5	No visible damage
Diople Antenna (G) / No.1	No visible damage
Diople Antenna (G) / No.2	No visible damage

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是憑本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面。將本公司之業務，免責，需標明聲明條款。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司蓋印許可，不可部份複製。

TW 049585

Function test after Thermal shock

Tester: James Lir Date: Jan.02,2004

Sample No	VSWR Test			Return Loss Test		
	2.4GHz	2.45GHz	2.5GHz	2.4GHz	2.45GHz	2.5GHz
1	1.21	1.07	1.25	-20.1	-29.50	-17.1
2	1.20	1.10	1.28	-18.4	-30.7	-17.0
3	1.30	1.10	1.15	-18.0	-33.8	-23.4
4	1.30	1.12	1.23	-18.6	-33.0	-24.2
5	1.30	1.06	1.19	-16.9	-34.2	-21.2
6	1.51	1.37	1.41	-14.2	-16.1	-15.3
7	1.45	1.36	1.42	-13.2	-15.1	-14.2

Sample 1~5 SMA swivel antenna

Sample 6~7 Fix R/A Antenna

Bending test after Thermal shock

Specification >20 g

Sample No	Bending force (unit:g)					
	Before 700 cycles bending			After 700 cycles bending		
	P1	P2	Result	P1	P2	Result
1	92	109	pass	47	64	pass
2	97	114	pass	35	62.7	pass
3	96	108	pass	34	59	pass
4	93	119	pass	36	64.3	pass
5	98.8	113	pass	38	65.6	pass
6	X	X	X	X	X	X
7	X	X	X	X	X	X

Pull force test after Thermal shock

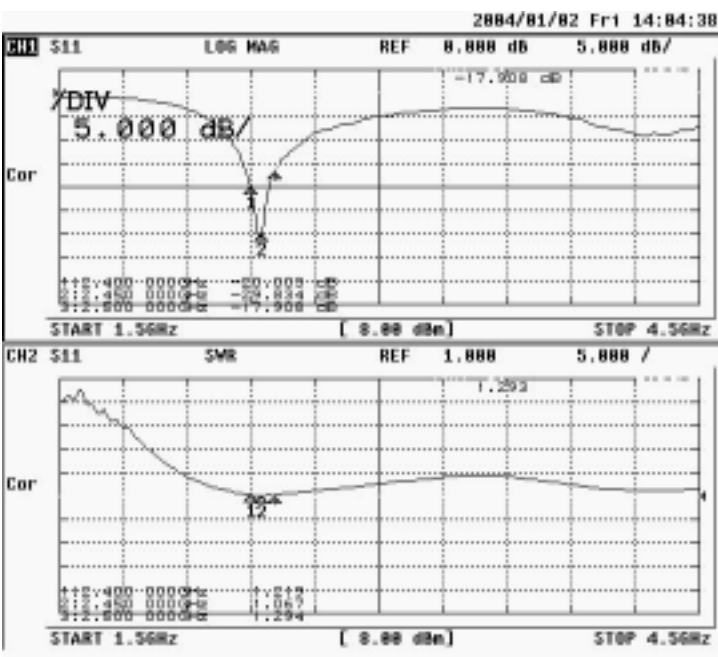
Specification >7kg

Sample No	Pull force Test	
	After thermal schock	
	Kg Max.	Result
1	11.3 kg	pass
2	10.9 kg	pass
3	12 kg	pass
4	11.2 kg	pass
5	11.9 kg	pass
6	9.9 kg	pass
7	9.8 kg	pass

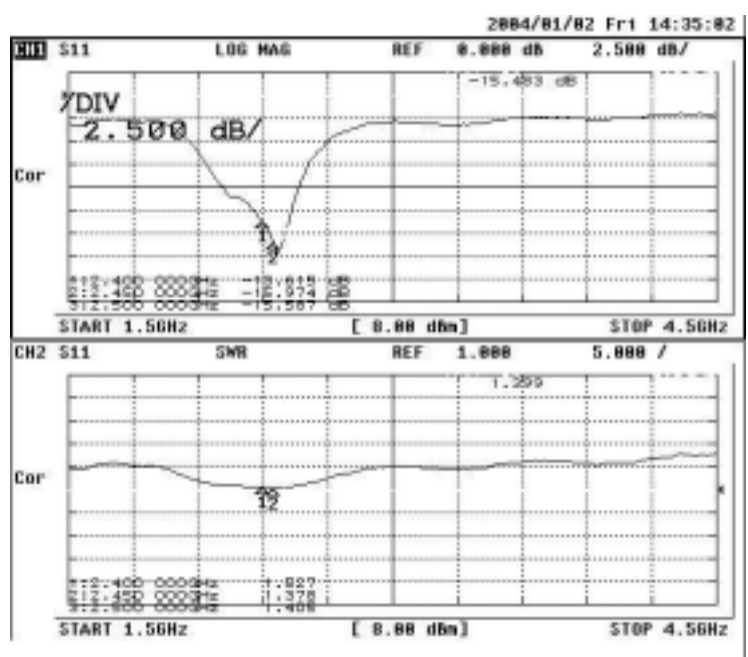
Function test after Thermal shock , bending test &

Sample No	VSWR Test			Return Loss Test		
	2.4GHz	2.45GHz	2.5GHz	2.4GHz	2.45GHz	2.5GHz
1	1.21	1.07	1.30	-20.00	-29.80	-17.90
2	1.20	1.10	1.25	-19.0	-31.0	-19.0
3	1.30	1.10	1.15	-18.0	-34.0	-23.4
4	1.30	1.12	1.23	-18.6	-33.0	-24.2
5	1.30	1.06	1.19	-17.3	-35.0	-21.0
6	1.53	1.37	1.41	-13.6	-15.9	-15.6
7	1.46	1.35	1.4	-13.1	-15.2	-14.5

2.4GHz SMA Swivel antenna



2.4GHz FIX R/A antenna



環境測試規範 Environment Test Specification	編號 No.		修訂日期 Amendment Date	
	頁次 Page	1	版本 Version	V.01
			發行日期 Release Date	

1. Dry Heat Test (High Temperature Test) 高溫測試：

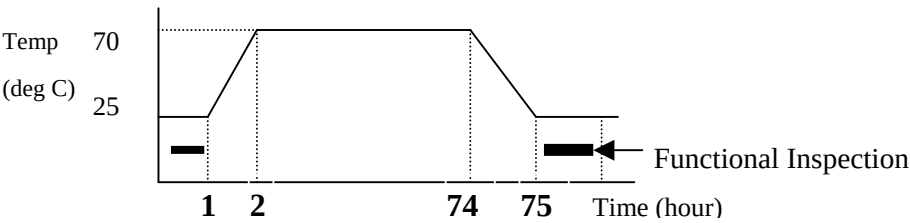
1.1 Test Conditions:

Temperature : 70 ±2 °C

Humidity : Uncontrolled

Period : 72 Hours

Reference : IEC 68-2

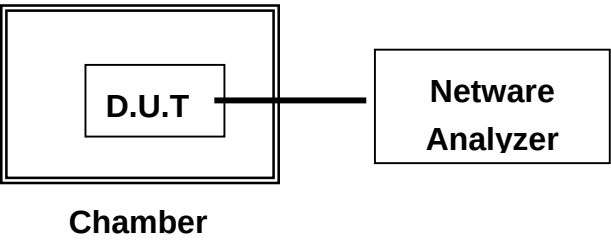


1.2 Test Method :

After follow No.1.1 with have testing in chamber .

The result Return Loss less than -10dbi Max .

1.3 Test configuration :



環境測試規範 Environment Test Specification	編號 No.		修訂日期 Amendment Date	
	頁次 Page	2	版本 Version	V.01
			發行日期 Release Date	

2. Cold Test (Low Temperature Test) 低溫測試：

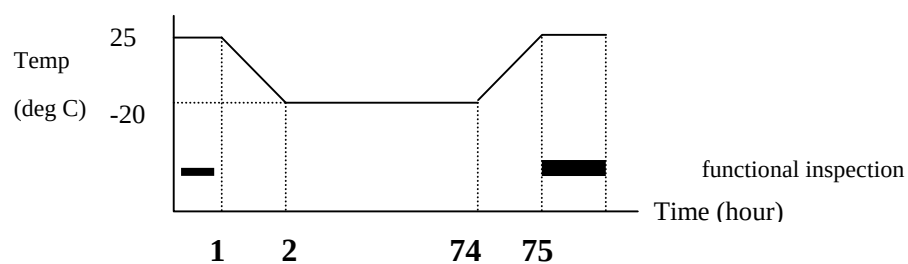
2.1 Test Conditions:

Temperature : -20 ± 3 °C

Humidity : Uncontrolled

Period : 72 Hours

Reference : IEC 68-2

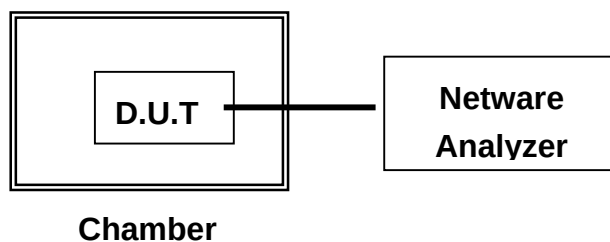


2.2 Test Method :

After follow No.2.1 with have testing in chamber .

The result Return Loss less than -10dbi Max. .

2.3 Test configuration :



環境測試規範 Environment Test Specification	編號 No.		修訂日期 Amendment Date	
	頁次 Page	3	版本 Version	V.01
			發行日期 Release Date	

3. Cyclic Test (Temperature Cyclic Test) 溫度循環測試：

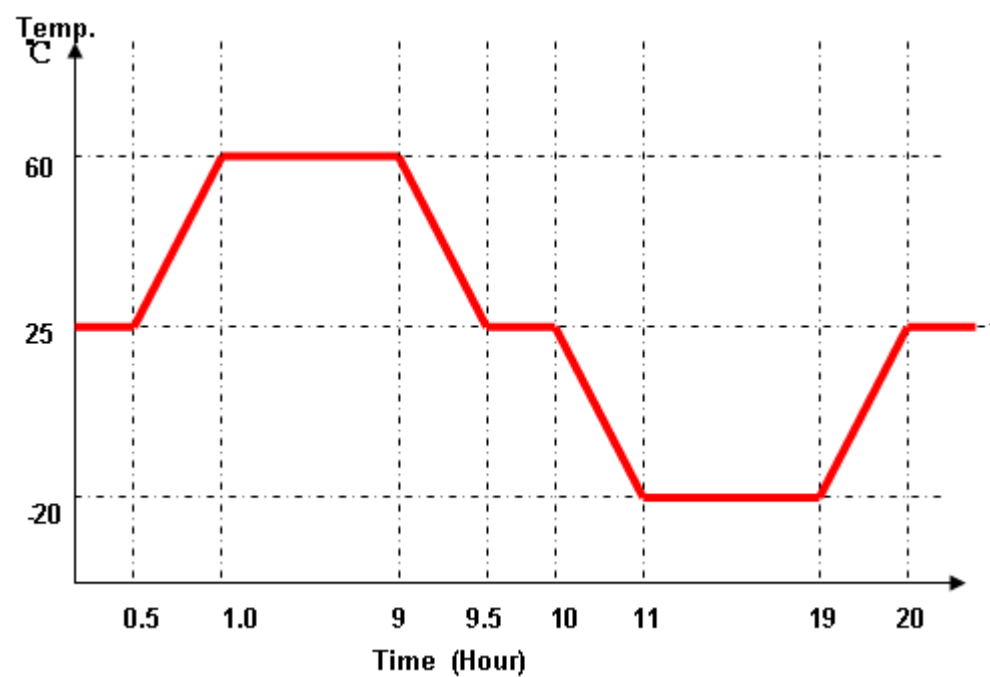
3.1 Test Conditions:

Temperature : -20°C~ 60°C

Humidity : Uncontrolled

Period : 20 Hours

Reference : IEC 68-2

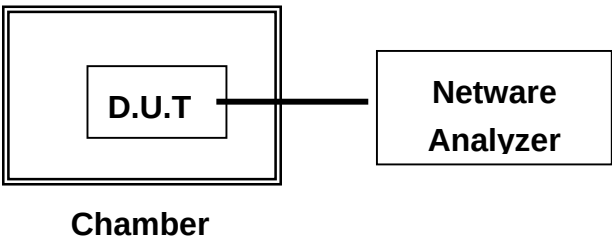


3.2 Test Method :

After follow No.3.1 with have testing in chamber .

The result Return Loss less than -10dbi Max. .

3.3 Test configuration :



RF Antenna Cable Assembly

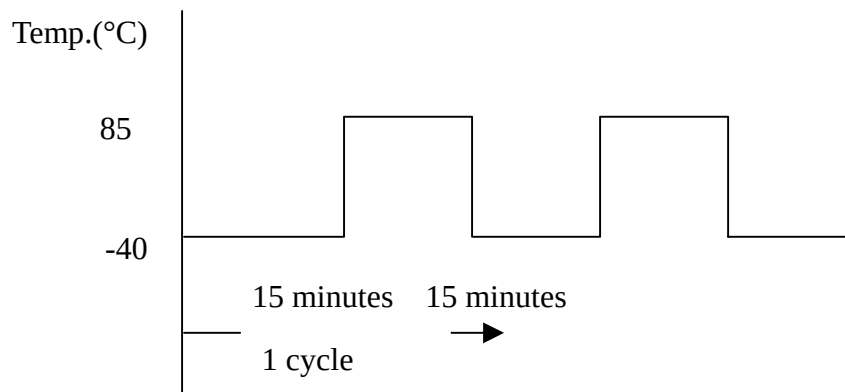
Adhesive Force Test (Pull force Test)

1.Equipment : Thermal-Shock machine,
pull-force-test,machine

2.Test condition : -40°C ~ 85°C

3.Cycle : 30cycle

4.Spec : 7kg Minium



Sample	Spec	Test result
1	7Kg	>7Kg
2		>7Kg
3		>7Kg
4		>7Kg
5		>7Kg
6		>7Kg
7		>7Kg
8		>7Kg
9		>7Kg
10		>7Kg



1285 West Whittman Rd
Melville, NY 11747-3081
631-271-6200
http://www.ul.com/plastics
Local Fax: +1 (631) 438 8048
App. Fax: +31 48 4780 799

Melville - March 7, 2002

AIR MAIL

DSM Engineering Plastics
Mr. M. C. de Vos
DSM Engineering Plastics
PO Box 604
6160 AP Geleen
The Netherlands

Our Reference: 02ME05192, E47960, QMF22, DCX3016P.

Subject: Component - Plastics; Grades EL550, EM550, EL630 and EM630 designated "Arditel".

NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

We have completed our Engineering Investigation under the above file number and find the products comply with the applicable requirements.

This letter temporarily supplements the UL Follow-Up Services Inspection Procedure and your Component Recognition Listing Information Page. The ratings indicated on the table below are being assigned to the products.

Material Designation	Color	Min. thickness mm	UL94 Flame Class	Elec	R.T.I. °C	
					Mech with Imp	Mech w/o Imp
<i>Thermoplastic Elastomer (TPE), Polyester, designated "Arditel", furnished in the form of pellets</i>						
EL550, EM550	NC, BK	1.5	HB	50	50	50
EL630, EM630	NC, BK	1.5	HB	50	50	50

The material designations shown above will be used in the report and Recognition Card. If these are not accurate, please notify us of the correct material designations as soon as possible so that these documents will reflect the proper nomenclature.

This letter serves as authorization to apply the UL Recognized Marking and/or Recognized Component Mark to the above products which are constructed identically to grades EL550, EM550, EL630 and EM630, which were submitted to UL for this investigation. The UL records covering the materials will be in the Follow-Up Services Inspection Procedure, File E47960, Volume 1.

To provide the manufacturer with the intended authorization to use the UL Mark you, the Applicant, must send a copy of this Notice and all attached material to each manufacturing location covered by a UL Follow-Up Service Procedure.

A not-for-profit organization
dedicated to public safety and
committed to quality service

Base ABS

QMFZ2

Component - Plastics

May 8, 1996

CHI MEI CORPORATION

PA-765A	AI		94V-1	94V-0	94-5VA	94V-0	E56070 (S)			
							(A1B2-cont. from A1B1 card)			
	1.57		85	80			85	—	0	7
	2.12		85	80			85	3	0	7
	2.54		85	80			85	—	0	7
	3.17		85	80			85	0	0	7

Report: June 23, 1983.



Replaces E56070A1B2 dated April 12, 1996.

267295002

N7047

Underwriters Laboratories Inc.

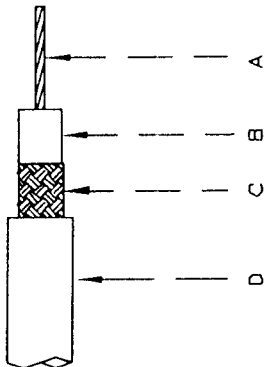
(Cont. on A1C card)

011/0294897

Base ABS

Flame Retardant						High Heat		
PA-769	PA-766	PA-765	PA-765A	PA-765B	PA-764	PA-777B	PA-777D	PA-777E
390 (5530)	370 (5250)	390 (5530)	400 (5670)	400 (5670)	370 (5250)	430 (6100)	440 (6240)	440 (6240)
25	30	15	15	25	15	15	15	10
2.1 (3.0)	2.0 (2.8)	2.1 (3.0)	2.3 (3.2)	2.4 (3.4)	2.0 (2.8)	2.4 (3.4)	2.5 (3.5)	2.5 (3.5)
620 (8800)	590 (8360)	620 (8800)	640 (9070)	650 (9200)	590 (8360)	700 (9920)	750 (10630)	750 (10630)
R-98	R-95	R-100	R-100	R-102	R-96	R-112	R-115	R-115
21 (3.8)	23 (4.3)	20 (3.7)	21 (3.8)	24 (4.4)	14 (2.6)	23 (4.3)	17 (3.2)	12 (2.2)
16 (2.9)	21 (3.9)	16 (2.9)	17 (3.1)	20 (3.7)	12 (2.2)	20 (3.7)	14 (2.6)	11 (2.0)
96 (208)	98 (214)	90 (194)	92 (197)	95 (203)	97 (208)	115 (239)	125 (257)	129 (264)
88(190) 78(172)	89(192) 81(178)	83(181) 73(165)	85(185) 76(169)	86(187) 79(174)	92(198) 79(174)	107(225) 97(206)	115(239) 105(221)	120(248) 109(228)
1.19	1.20	1.20	1.17	1.16	1.19	1.03	1.06	1.07
3.2	2.3	5.2	4.8	2.6	3.2	--	--	--
35	25	60	55	28	35	6.7	6.0	5.0
1/8" V-O	1/16" V-O	1/16" V-O 1/10" 5VA	1/12" V-O 1/10" 5VA	1/16" V-2 1/10" V-O 1/8" 5VA	1/16" V-O 1/10" 5VA	1/16" HB	1/16" HB	1/16" HB
F. R. Medium Impact	F. R. Medium Impact	F. R. High Flow	F. R. High Flow	F. R. Medium Impact	F. R. Weather Resistance	High Heat High Impact	Super High Heat	Super High Heat

Rev	Change	Date
A	Corrected Cut-off Freq.	11/13/01



Construction:

A) Center Conductor:
26 7/.0067 SPCW
OD .020" $\pm$.001"

B) Dielectric:
Extruded PTFE
OD .060" $\pm$.003"

C) Shield:
38 AWG SPC
OD .081" Max.

D) Jacket:
FEP - Brown Tint
OD .098" $\pm$.005"

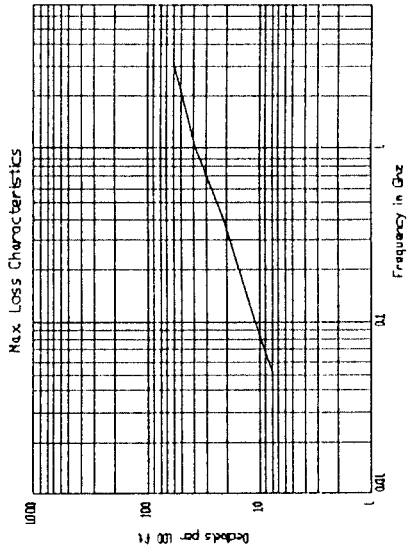
Surface Printed: "M17/113-RC316 MIL-C-17 27478 HARBOUR INDUSTRIES"

Electricals:

Impedance: 50 $\pm$ 2 Ohms
Capacitance: 32 pF/ft Max.
Velocity of Prop.: 69.5% Nom.
Time Delay: 1.50 ns Max.
Cut off Frequency: 65 GHz

Physical Properties:

Weight per 1000 ft: 12.2 lbs max
Minimum Bend Radius: .5"
Operating Temperature Range: -55' C to +200' C



Harbour Industries

Date:	10/28/89	Scale:	None	Drawn By:	Joann McVeigh
Drawing Name:	M17/113-RC316	Rev:	A	Approved By:	
Part Number:	J1108			Sheet	1 of 1
				Drawing Number:	032096_2



KINGDON

Raison Enterprise Co., Ltd
Commate International Co.

RG Cable

Low loss cable

/ Connector

\ Cable assemblies

/ Home

Physical Characteristics

MIL-C17Type Coaxial Cable, QPL approved

M17 Number	Center Conductor	Dielectric	Dielectric O.D.	Shield	Jacket	Overall O.D.	Operating Temp°C	Weight (lbs. /MFT)	Comments
M17/60-RG142	.037" SCCS	PTFE	.116"	SPC (2)	FEP	.195"	-55+200	43.0	
M17/93-RG178	.0120" (7/.004")SCCS	PTFE	.033"	SPC	FEP	.071"	-55+200	6.3	
M17/94-RG179	.0120" (7/.004")SCCS	PTFE	.063"	SPC	FEP	.100"	-55+200	10.8	
M17/110-RG302	.0253" SCCS	PTFE	.14"	SPC	FEP	.202"	-55+200	40.0	
M17/111-RG303	.037" SCCS	PTFE	.116"	SPC	FEP	.170"	-55+200	31.0	
M17/112-RG304	.059" SCCS	PTFE	.185"	SPC (2)	FEP	.280"	-55+200	94.0	QPL Approval Pending
M17/113-RG316	.0201" (7/.0067") SCCS	PTFE	.060"	SPC	FEP	.098"	-55+200	12.2	
M17/127-RG393	.094 (7/.0312")SPC	PTFE	.285"	SPC (2)	FEP	.390"	-55+200	165.0	
M17/128-RG400	.0384"(19/.008")SPC	PTFE	.116"	SPC (2)	FEP	.195"	-55+200	50.0	
M17/131-RG403	.012"(7/.004")SCCS	PTFE	.033"	SPC (2)	FEP (2)	.116"	-55+200	15.0	Triaxial M17/93-RG178
M17/152-0001	.0201"(7/.0067")SCCS	PTFE	.060"	SPC (2)	FEP	.114"	-55+200	18.5	Double Shielded RG316

RG Type Coaxial Cable, Non-QPL

RG174 /U	.0120" (7/.0067")TPC	PE	.060"	TPC	PVC	.110"	-40+85	9.0	
RG213 /U	.089"(7/.0296")BC	PE	.285"	BC	PVC	.405"	-40+85	111.0	
RG214 /U	.089"(7/.0296")SPC	PE	.285"	SPC (2)	PVC	.425"	-40+85	136.4	
RG223 /U	.034" SPC	PE	.117"	SPC (2)	PVC	.212"	-40+85	36.7	
RG178 /U-SF	.0120"(7/.004")TPC	PE irrad	.033"	TPC	PVC	.017"	-40+85	5.8	
RG178 /U	.0120"(7/.004")SPC	FEP	.033"	SPC	FEP	.071"	-55+200	6.3	
RG179 B/U	.0120"(7/.004")SPC	FEP	.063"	SPC	FEP	.100"	-55+200	10.8	
RG316 /U	.0201"(7/.0067")SPC	FEP	.060"	SPC	FEP	.098"	-55+200	12.2	
RG142 B/U	.037" SPC	FEP	.116"	SPC (2)	FEP	.195"	-55+200	43.0	
RG400 /U	.0384"(19/.008")SPC	FEP	.116"	SPC (2)	FEP	.195"	-55+200	50.0	

Other type RG cables are available upon requested

PTFE Tape Wrap Jacketed RG Cables :

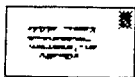
RG187 A/U	.0120"(7/.004")SCCS	PTFE	.063"	SPC	PTFE	.100"	-55+250	9.0	250°C rated
RG18 A/U	.0201"(7/.0067")SCCS	PTFE	.060"	SPC	PTFE	.100"	-55+250	12.0	250°C rated
RG196 A/U	.0120"(7/.004")SCCS	PTFE	.034"	SPC	PTFE	.080"	-55+250	8.0	250°C rated

Electrical Characteristics

Type No.	Impedance (ohms)	Capaci. (pf/ft)	Working Voltage (Vols RMS)	Macimum Attenuation (db/100ft)@						Max Frequency (Ghz)
				100Mhz	400MHz	1Ghz	3Ghz	5Ghz	10Hgz	
M17/60-RG142	50+/- 2	29.4	1900	5.5	11.7	19.0	35.0	48.0	-	12.4
M17/93-RG178	50+/- 2	29.4	1000	16.0	33.0	52.0	4.0	-	-	3.0
M17/94-RG179	75+/- 3	19.4	1000	-	21.0	-	-	-	-	-
M17/110- RG302	75+/- 3	19.4	2300	-	8.0	-	26.0	-	-	-
M17/111- RG303	50+/- 2	29.4	1900	3.9	8.6	15.0	28.0	-	-	-
M17/112- RG304	50+/- 2	29.4	3000	2.7	6.4	11.1	22.0	30.0	37.0	8.0
M17/113- RG316	50+/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
M17/127- RG393	50+/- 2	29.4	2500	2.4	5.0	8.8	18.0	24.6	37.0	11.0
M17/128- RG400	50+/- 2	29.4	1900	4.5	10.5	17.0	38.0	50.0	78.0	12.0
M17/131- RG403	50+/- 2	29.4	1000	-	37.0	-	-	-	-	10.0
M17/152-00001	50+/- 2	29.4	1200	11.5	24.0	40.0	75.0	110.0	170.0	12.0
RG174 /U	50+/- 2	30.8	1200	11.0	21.0	38.0	58.0	-	-	3.0
RG213 /U	50+/- 2	30.8	2500	2.1	5.0	8.8	18.0	-	-	-
RG214 /U	50+/- 2	30.8	2500	2.1	5.0	8.8	16.0	-	-	-
RG223 /U	50+/- 2	30.8	1900	4.9	11.0	18.0	39.5	-	-	-
RG178 / U-SF	50+/- 2	30.8	1000	16.0	33.0	52.0	94.0	-	-	3.0
RG178/U	50+/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
RG179 B/U	75+/- 2	19.4	1000	-	21.0	-	-	-	-	-
RG316 /U	50+/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
RG142 B/U	50+/- 2	29.4	1900	5.5	11.7	19.0	35.0	-	-	-
RG400/U	50+/- 2	29.4	1900	4.5	10.5	17.0	38.0	-	-	-
PTFE Tape Wrap Jacketed RG Cables :										
RG187 A/U	75+/- 3	19.4	1200	-	21.0	-	-	-	-	3.0
RG188 A/U	50+/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
RG196 A/U	50+/- 2	29.4	1000	-	21.0	-	-	-	-	-

< PDF >

Next Page



Buyers Inquiry

Raison Enterprise Co., Ltd.

1F, No. 2-2 Alley 3, Lane 387, Nei-Hou Rd., Sec. 1, Taipei, Taiwan, R.O.C.

TEL: 886-2-26590060 FAX: 886-2-27973715

(SALES OFFIC& MANUFACTURING FACILITY)

Commate International Co.(Canada)

49 Thatcher's Millway Markham , Ontario ,L3P 3T2 FaX : (905) 472-2487

仕 様 書

SPECIFICATION

TakiTek

Messr. Borntek Corp.

Date of Establishment: Jan. 29. 2003

Date of Issue: **03.2.-3**

SPECIFICATION

for

HIIFLON

FEP INSULATED-FEP JACKETED COAXIAL CABLE

Type : RG-178-TA

(This cable is the specification change article of RG178.)

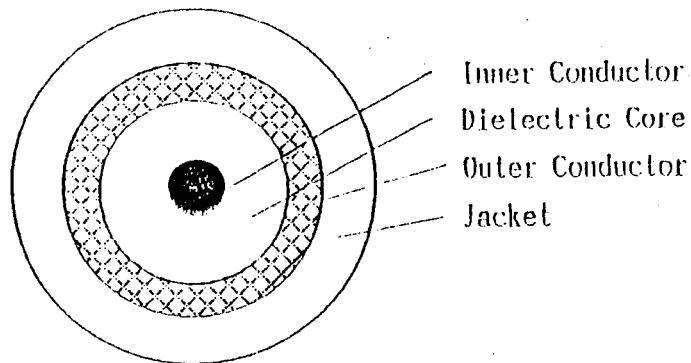
1. SCOPE

This specification applies to HIFLON FEP INSULATED COAXIAL CABLE

UL File No.	: E56198
Applicable Specification	: UL 758, UL 62
Temp. Rating	: 90°C
Voltage Rating	: AC 30V

2. CONSTRUCTION, MATERIALS AND DIMENSIONS

2.1 Construction



2.2 Materials and dimensions

Materials and dimensions of this cable is shown as Table-1.

3. PERFORMANCE OF THE CABLE

3.1 Testing of cable

Performance of the cable is examined and tested in accordance with the test method as listed in Table-2.

4. QUALITY ASSURANCE

4.1 **TakiTek** Electric Company fully guarantees the quality of this cable.

Every lot produced are processed and inspected with best available technical skill.

4.2 Quality conformance inspection

Every lot produced shall be examined and tested for items 1 thru 14 of Table-2.

5. PACKAGING AND MARKING

5.1 Packaging

Unless otherwise indicated in the contract, packaging shall be made per good commercial practices.

5.2 Marking

Each coil shall be marked with the following information.

- | | |
|-------------------|-------------------------|
| 1. File No. | 6. Length |
| 2. Style No. | 7. Name of Manufacturer |
| 3. Voltage Rating | 8. Date of Manufacture |
| 4. Temp. Rating | 9. Lot Number |
| 5. Conductor Size | 10. UL Label |

Table-1. Description

No.	Components	Material	Construction	Diameter
1	Inner Conductor	Silver-Coated Annealed Copper Wire	7/0.102	0.305mm(nominal)
2	Dielectric Core	FEP Color:Natural	Thickness 0.27mm(nominal)	0.84mm(nominal)
3	Outer Conductor	Tinned Annealed Copper Wire	16/3/0.1	1.35mm(nominal)
4	Jacket	FEP Color:Brown	Thickness 0.23mm(nominal)	1.80±0.10mm

Table-2. Requirements

PART	No.	TEST ITEM	PERFORMANCE	TEST CONDITIONING
Inner Conductor	1	Stranding	See Table-1.	Visual
	2	Material	See Table-1.	Visual
	3	Diameter of Wire	See Table-1.	
	4	Conductor Resistance (at 20°C)	Less than 320Ω/km	Double Bridge
Dielectric Core	5	Diameter of Core	See Table-1.	
	6	Spark Test	No breakdown at AC 4000V for 0.15sec.	Spark Tester
Outer Conductor	7	Material of Strands	See Table-1.	Visual
	8	Construction	See Table-1.	Visual
Finished cable	9	Overall Diameter	See Table-1.	
	10	Dielectric Withstand Voltage	No breakdown at AC 2000V for 1min.	Outer Conductor to Inner Conductor
	11	Insulation Resistance (at 20°C)	More than 1500MΩ·km	High Insulation Resistance Meters
	12	Characteristic Impedance	50±2 ohms	TDR Method
	13	Capacitance	95pF/m (nominal)	Capacitance Meter
	14	Attenuation	at 100 MHz nominal 0.53dB/km at 1500 MHz nominal 2.13dB/km at 1900 MHz nominal 2.42dB/km at 2300 MHz nominal 2.69dB/km at 5000 MHz nominal 4.11dB/km	Network Analyzer

RG Series Cable / RG-178-TA Coaxial Cable for WLAN Application

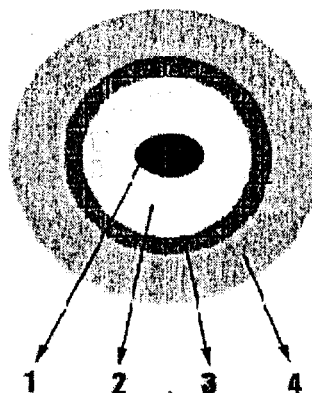
version 1.1

RG series cable :

The RG series coaxial cable are easy to strip, flexible alternative to standard MIL-spec. Our RG coaxial cable provides the best combination of handling and loss characteristics available in the market today.

With RG, we can approach the electrical performance of MIL-spec with a flex life somewhat closer to standard flexible constructions.

A good selection of standard interface connectors (crimp or clamp style) are available, RG cables can be purchased in bulk reels or predominated and tested cable assemblies.



1. Center conductor: Silver coated copper wire
2. Dielectric: FEP
3. Shield : Tin coated copper wire
4. Jacket : FEP

Mechanical Characteristics:

Specification Data		
Inner Conductor	Const.	7/0.102
	Material	SA
	Diameter (mm)	0.305
Dielectric Core	Material	FEP
	Diameter (mm)	0.84
Outer Conductor	Const.	16/3/0.1
	Structure	TA
	Diameter (mm)	1.35
Jacket	Material	FEP
	Thickness (mm)	0.23
Outside Diameter (mm)		1.80 +/- 0.10
Impedance (Ω)		50 +/- 2
Nominal Attenuation (dB / m)	100 MHz	0.53
	1.5 GHz	2.13
	1.9 GHz	2.42
	2.3 GHz	2.69
	3.0 GHz	3.00
	5 GHz	4.11

SA: Silver-Coated Annealed Copper Wire

TA: Tin-Coated Annealed Copper Wire

TakiTek

Above specification change without notice

Tel: +813 5825 2960 / Fax: +813 5825 2961 / website: <http://www.takitek.co.jp>

Add: 1-3-10,ROKUHARA BUILD 3F, HIGASHI NIHONBASHI, CHUOU-KU, TOKYO 103-0004, JAPAN

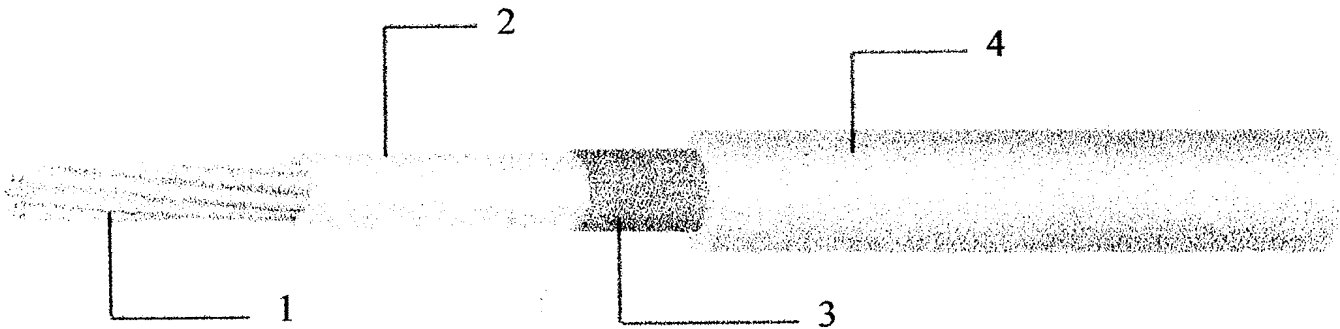
Nizing Electric Co., Ltd.

RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	1 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

I - Scope

This specification presents a FEP insulated high-frequency coaxial cable AWG 30, 1.8 mm O.D. for internal wiring of electronic equipment, such as Computer / Notebook with wireless communication systems.

II - Construction



Item		Unit	Details
1. Inner Conductor	Material	—	CP-AG
	Composition	No./mm	AWG 30 or 7 × 0.1
	Dia. (approx.)	mm	0.305
2. Dielectric	Material	—	Extruded FEP
	Nom. O.D.	mm	0.84 ± 0.05
	Color	—	Natural
3. Outer Conductor	Material	—	Silver coated copper
	Composition	—	Braided (16 / 3 / 0.1)
	Dia. (approx)	mm	1.29 ± 0.07
4. Jacket	Material	—	Extruded FEP
	Dia.	mm	1.80 ± 0.08
	Color	—	Standard color is Light Orange

Note :	MADE BY	
	APPROVALS	

Nizing Electric Co., Ltd.

RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	2 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

III – Characteristics

Item	Unit	Specified Value	Note
Temperature Rating	℃	-55 ~ +200	
Voltage Lasting	V	1000	
Dielectric strength	—	Dielectric core: No breakdown at AC 3 kv for 0.2 sec.	Spark test
		Jacket: No breakdown at AC 3 kv for 0.2 sec.	Spark test
Characteristic Impedance	Ω	50 ± 2	TDR method
Capacitance	pF / ft	29.4	
Attenuation. (Max.)	dB/100ft	16.0	100.0 MHz
		33.0	400.0 MHz
		52.0	1.0 GHz
		94.0	3.0 GHz
Approx. Weight	g / m	7.68	

Note :

MADE BY

APPROVALS