specification

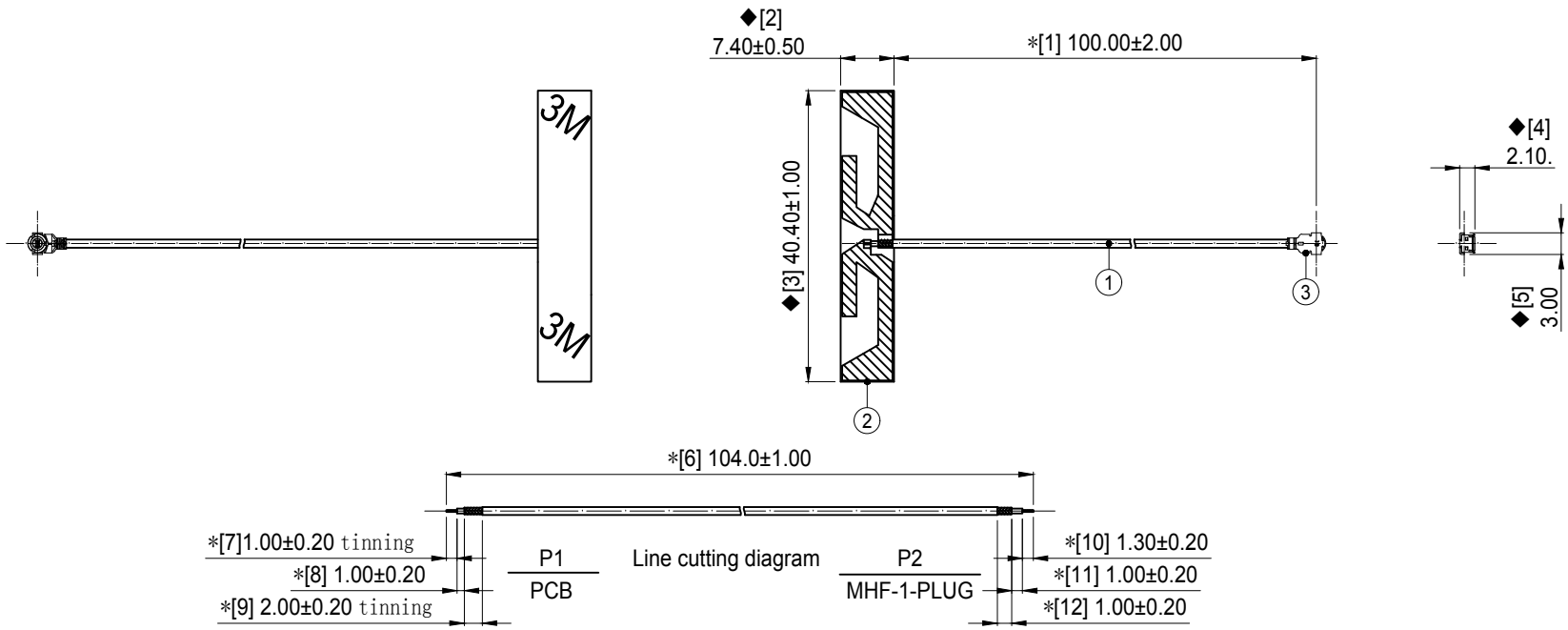
Customer :	Ryder Electronics (Shenzhen) Ltd.
Customer P/N:	
Part Name:	PCB built-in aerial
HJ P/N:	3N0301BK-068
Spec Description :	RG1.13,black Cable;P1 connect PCB;P2 connect MHF-1-PLUG;Cut the lineL=104mm
Prepared Date:	2022/11/29

Signature			
Customer		Supplier	
Confirmed by		Prepared by	S.He
Approved by		Checked by	Yiuming He
		Approved by	

CONTENTS

informative abstract

REV.	RELEASE AND CHANGE SUMMARY	DATE
A	initial issue	2022.09.15



Technical Requirements:
1 Direction: The direction of the terminal port points to the back of the PCB ±45°.
2 Electrical characteristics: Characteristic impedance :50Ω; Frequency range :2.40GHz-2.50GHz.
Test method: Single test antenna, using network analyzer 100% comparison waveform test.
3 Drawing force test: minimum 1.30kgf.
Test method: The 1.30kg weight was lifted vertically from the table along the central axis of the cable at a speed of about 25±3 mm/min.
4 Size inspection: [*],FAI first process inspection project; ◆ QIP key inspection project; ★,CPK process control project.
5 Appearance inspection: cable cutting shall be smooth, tinning shall be bright, conductor shall not have excess strands protruding and scattered;
PCB shall not have scratches, scratches, copper exposure and other defects, welding must be full, no false welding, false welding, burr;
The outer cover of the cable shall not be damaged, creased and heterochromatic.
Inspection method: Complete visual inspection.
6 Packing specification: 20PCS/ tie, 5 tie/pack, i.e. 100PCS/ pack.
Environmental requirements: Products and all materials used in the production process must meet the requirements of EU RoHS directive.

IC

No.	PART NUMBER	PART NAME AND DESCRIPTION	Q'TY
3	2LM10P113210	IPEX：MHF-1-PLUG FOR OD1.13 CABLE	1
2	2YP024	PCB：L40.40*W7.40*T0.80mm,FR-4,back 300L 3M	1
1	2C5M11312BK1	RG1.13 black Cable,50Ω	1

BOM

GENERAL TOLERANCE:
UNLESS OTHERWISE SPECIFIED
LINEAR:
0.5 < L ≤ 6 ± 0.05
6 < L ≤ 30 ± 0.10
30 < L ≤ 120 ± 0.20
ANGULAR:
0 < L ≤ 10 ± 1°30'
10 < L ≤ 50 ± 1°00'
50 < L ≤ 120 ± 0°30'

FILE TYPE: product drawing
DRA./DATE: S.He 22.09.15
CHE./DATE:
APP./DATE:
FILE FORM: HJ-QR-E-03 22.09.01

Dongguan HUANGJIE Communication Technology Co., Ltd.

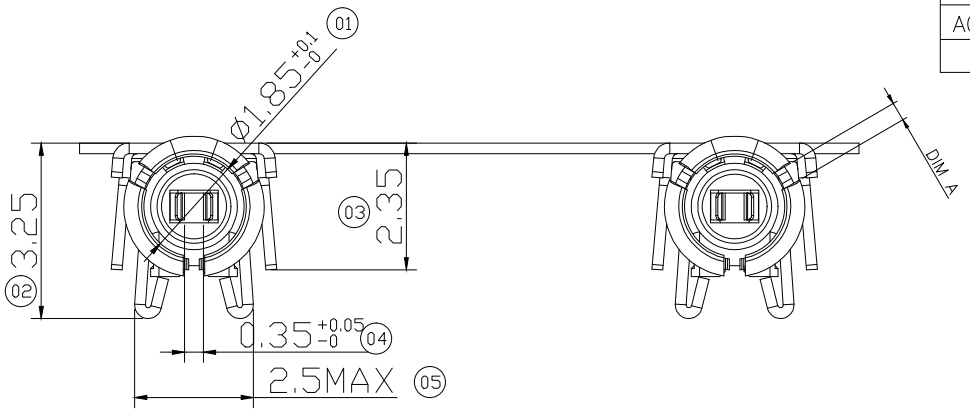
TITLE: built-in aeria
RG1.13,black Cable;P1 connect PCB;P2 connect MHF-1-PLUG;Cut the lineL=104mm RF1811013(C)

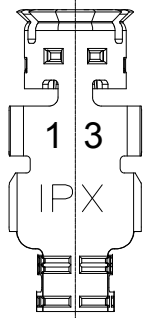
CODE: 3N0301BK-068

SIZE:	UNIT:	PRO.:	SCALE:	PAGE:
A4	mm	3rd	1:1	1/1

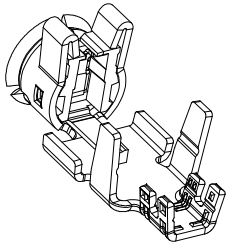
0 10 20

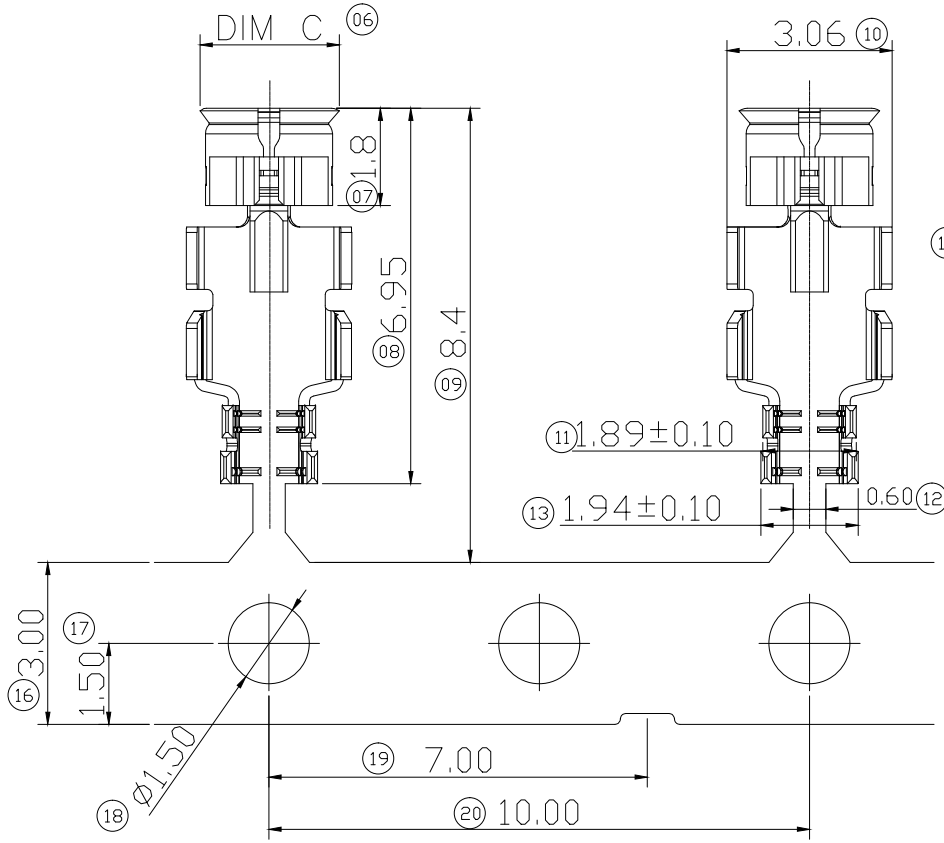
REV.	ECN NO.	LOCAS.	DESCRIPTION	DATE	DESIGN
A0			The first edition released	2012.08.28	Mark

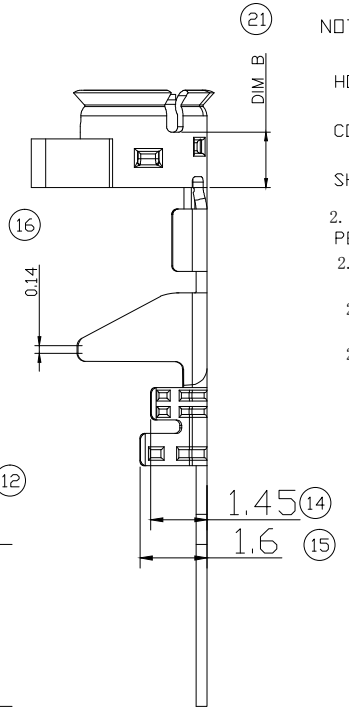




Mark Position







NOTE:

HOUSING MATERIAL: THERMOPLASTIC PLASTIC, UL 94V-0,BLACK;

CONTACT MATERIAL: COPPER ALLOY, GOLD PLATED ALL OVER;

SHELL MATERIAL: COPPER ALLOY, GOLD OR NICKEL PLATED ALL OVER;

2. PERFORMANCE:

2.1. CONTACT RESISTANCE: 20mOHM Max.

2.2. DIELECTRIC WITHSTANDING VOLTAGE: 200V AC FOR 1MINUTE;

2.3. INSULATION RESISTANCE: 500MOHM Min.

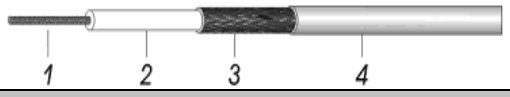
DURABILITY: 30TIMES Min.

DURABILITY: 5N Min.

DIM	TOL	DIM	TOL
X.	±0.30	X°.	±4.0°
X.X	±0.20	X.X°	±3.0°
X.XX	±0.15	X.XX°	±2.0°
X.XXX	±0.10	X.XXX°	±1.0°

HJ-Tech

DRAW NO.		DATE	DRAW NAME: 1.13 I-PEX
DESIGN:	Mark	2012.08.28	
CHECK:			FILE: / P/N NO. 2LM10P113210
APPROVED:			MODEL:
			REV. A0 / SCALE N/A / UNIT: mm / SHEET: N/A

Type	RF-1.13/50	P/N	2C5M11312BK1 (Black)
Structure drawing			

Structure characteristics

Structure	Item	Standard value
①Inner conductor	Material	Tinned copper wire
	Makeup:total / O.D. of every wire(mm)	7/0.08
	(Intertwist)NOM.O.D.(mm)	0.24±0.02
② Insulation	Material	FEP
	Color	Natural
	NOM.O.D.(mm)	0.7±0.03
③ Outer conductor	Material	Tinned copper wire
	Makeup:total / O.D. of every wire(mm)	16/4/0.05
	NOM.O.D.(mm)	0.92±0.05
	Coverage ratio(%)	90±5
④ Jacket	Material	FEP
	Color	Black
	NOM.O.D.(mm)	1.13±0.05

Electrical characteristics

Item	Standard value	Item	Frequency	Standard value Unit:dB/m
Capacitance(pF/m)	98	Attenuation	1GHz	≤2.32
Velocity(%)	70		2GHz	≤3.27
Impedance(Ω)	50±3		3GHz	≤4.01
Standing wave ratio	≤1.4@0~6GHz		4GHz	≤4.64
Max.operating voltage(V)	1000		5GHz	≤5.17
Max.operating frequency(GHz)	6		6GHz	≤5.70

Dependability

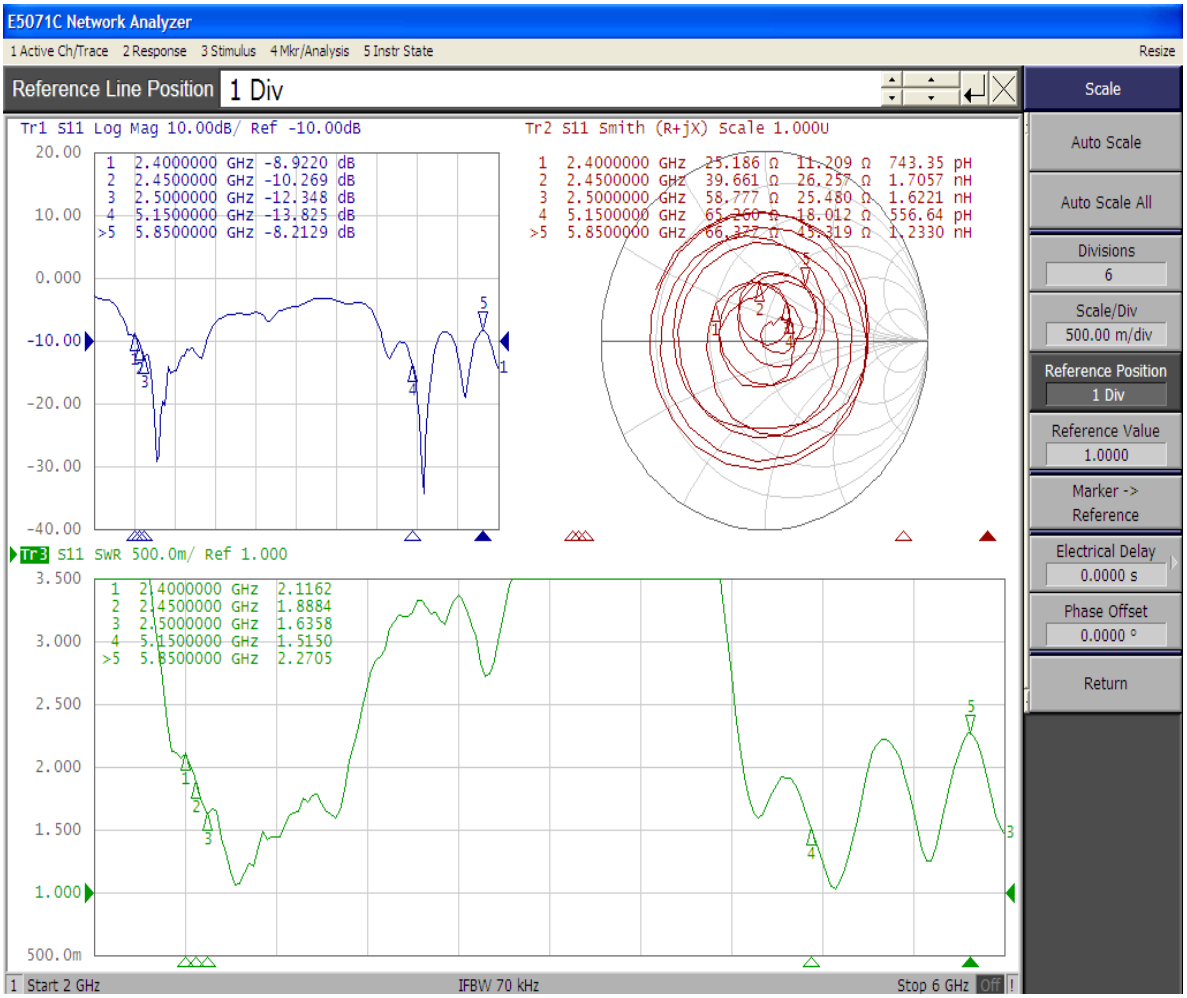
Item	Unit	Standard value
Min.bending radius static	mm	4
Min.bending radius repeated	mm	—
Operating temperature	℃	-55~+150

Use tips

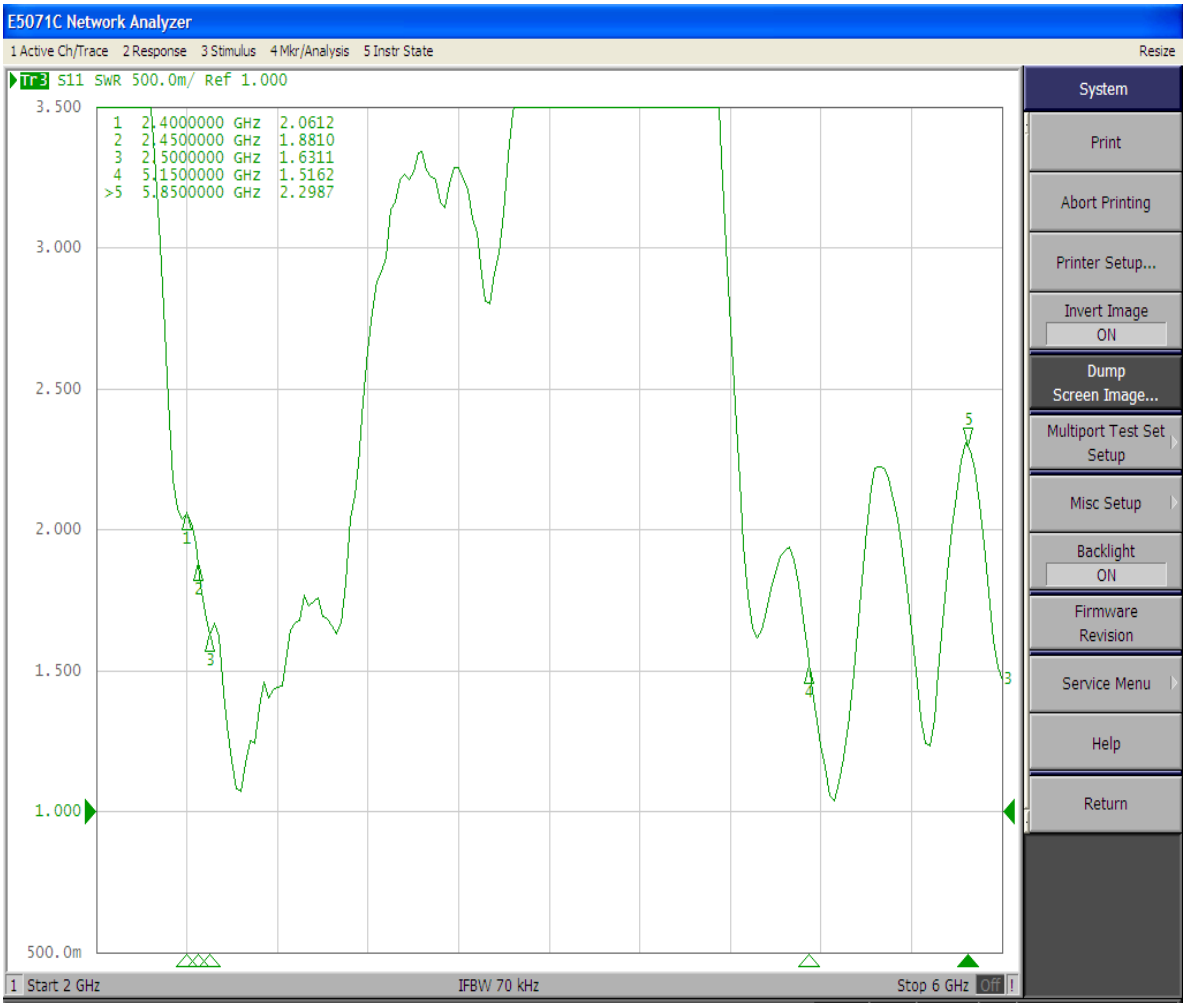
Storage environment	30℃ 20%~65%
Processing temperature	Under the limit condition of 260℃, it can bear for a short time; Above 300℃, the isoterminal group of molecules will decompose. Significant thermal decomposition occurs above 400℃

DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO., LTD.

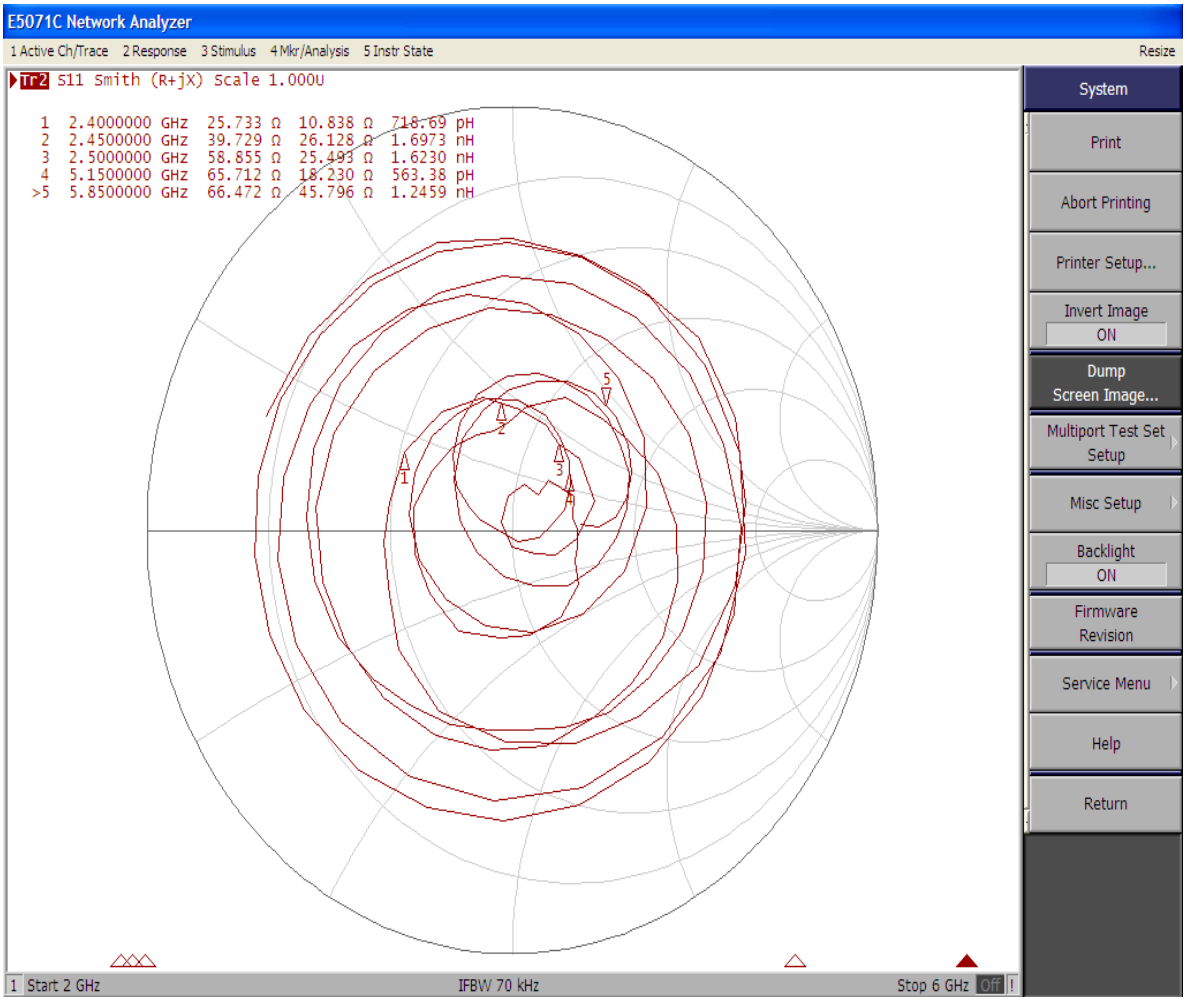
1 Test Report



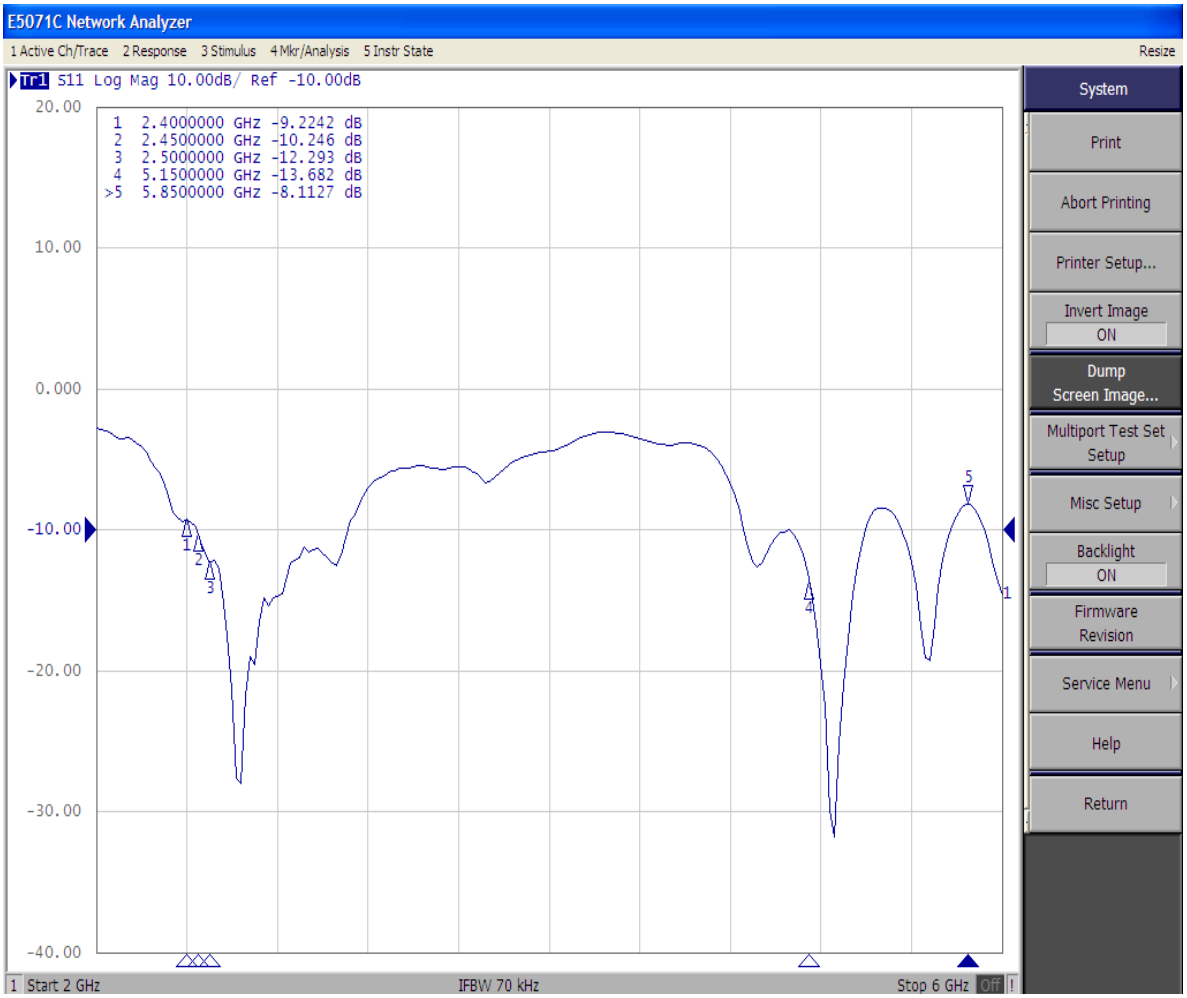
2 Test Report-VSWR



3 Test Report-SMITH CHART



4 Test Report-RETURN LOSS



Electrical characteristics test report

---darkroom

5 Test Report

FEITUKEJI																			
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0	5150.0	5250.0	5350.0	5450.0	5550.0	5650.0	5750.0	5850.0
Point Values																			
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Peak EIRP (dBm)	2.03	2.11	2.06	2.21	2.36	2.50	2.55	2.39	2.09	2.55	2.68	2.66	2.51	2.44	2.39	2.09	2.44	2.19	2.63
Directivity (dBi)	5.41	5.36	5.29	5.33	5.64	5.29	5.22	5.19	5.27	5.23	5.42	5.62	6.35	6.55	6.14	6.63	6.49	6.05	6.47
Efficiency (dB)	-2.53	-2.55	-2.69	-2.61	-2.66	-2.63	-2.51	-2.59	-2.66	-2.68	-2.58	-2.71	-2.61	-2.54	-2.33	-2.44	-2.44	-2.46	-2.33
Efficiency (%)	55.36	56.11	56.92	57.03	57.62	59.05	61.28	60.55	58.09	53.68	53.66	51.96	52.66	53.81	53.17	54.95	56.08	57.24	53.91
Gain (dBi)	2.78	2.92	2.78	2.83	2.73	2.50	2.49	2.63	2.51	2.48	2.37	1.76	2.86	2.38	1.70	2.18	1.47	1.40	0.75
NHPRP ±Pi/4 (dBm)	-3.84	-3.81	-3.94	-3.86	-3.91	-3.97	-3.92	-3.77	-3.93	-3.95	-4.01	-5.88	-5.54	-5.36	-5.34	-5.55	-6.32	-5.37	-6.08
NHPRP ±Pi/6 (dBm)	-5.43	-5.39	-5.54	-5.47	-5.53	-5.61	-5.57	-5.42	-5.58	-5.60	-5.65	-7.20	-6.87	-6.70	-6.73	-6.96	-7.68	-6.72	-7.45
NHPRP ±Pi/8 (dBm)	-6.60	-6.55	-6.71	-6.66	-6.73	-6.83	-6.80	-6.67	-6.85	-6.87	-6.91	-8.24	-7.94	-7.77	-7.81	-8.06	-8.72	-7.75	-8.47
Upper Hem. PRP (dBm)	-4.82	-4.85	-5.05	-5.04	-5.15	-5.24	-5.23	-5.11	-5.29	-5.35	-5.44	-8.44	-8.53	-8.58	-8.51	-8.86	-9.76	-8.65	-9.02
Lower Hem. PRP (dBm)	-6.36	-6.28	-6.37	-6.22	-6.20	-6.20	-6.11	-5.91	-6.05	-6.05	-6.09	-7.16	-6.56	-6.35	-6.38	-6.42	-6.98	-6.11	-6.95
Upper Hem. PRP (%)	32.96	32.76	31.28	31.37	30.58	29.90	29.99	30.85	29.55	29.18	28.57	14.32	14.01	13.87	14.09	13.00	10.56	13.64	12.53
Lower Hem. PRP (%)	23.10	23.55	23.08	23.87	24.00	23.96	24.51	25.64	24.83	24.84	24.63	19.22	22.08	23.16	23.02	22.81	20.04	24.47	20.16