

## 1. SCOPE(适用范围)

### 1.1. CONTENTS (目录)

This specification covers the performance, tests and quality requirements for the RF IV Receptacle Connector .  
此 RF 第四代板端产品规格规范涵盖性能, 测试方式和品质要求

### 1.2. QUALIFICATION (条件)

When tests are performed on the subject product line, the procedures specified specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

当所有测试项目被应用于产品线时, 规格书上的这些指定程序将被使用, 所有的检验须按对应的检验规范及产品图纸执行。

## 2. APPLICABLE DOCUMENT(适用说明)

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

出至此规格书的部分文件仅限用于此, 除非有最新版本文件指定发行, 当此规格书标准与产品图纸相冲突时, 以产品图纸为准, 当此规格书与参考文献相冲突时, 以此规格书为准。

## 3. REQUIREMENTS(项目说明)

### 3.1 DESIGN AND CONSTRUCTION (结构设计)

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

产品的设计、结构和物理尺寸须详细的标示在产品图纸上。

### 3.2 MATERIALS (材质)

- 1.Housing: Refer To Teconn Drawings
- 2.Contact: Refer To Teconn Drawings
- 3.Shell: Refer To Teconn Drawings

### 3.3 RATINGS (额定值)

Rated Voltage(额定电压): 60 V AC/DC (RMS. max)

Frequency Range (频率范围): DC up to 6GHz

Storage Temperature & Relative humidity (存储温度及湿度): -10 °C to +40°C , 15%RH to 85%RH

Operating Temperature(工作温度): -40 °C to +90°C

### 3.4 STANDARD ATMOSPHERIC CONDITION

Unless otherwise specified, the standard range of atmospheric condition for making measurements and tests are as follows:

除非有其他要求, 否则测试的标准环境参数参照如下:

Ambient temperature(常温): 15°C to 35°C

Relative humidity(相对湿度): 45%RH to 75%RH

Air pressure(大气压): 86kPa to 106kPa

If there is any about the result, measurements shall be made within the following limits:

如果测试的结果有争议，测试时的标准环境参数可调整为如下：

Ambient temperature(常温): 20+/-2°C

Relative humidity(相对湿度): 50±2%RH

Air pressure(大气压): 86kPa to 106kPa

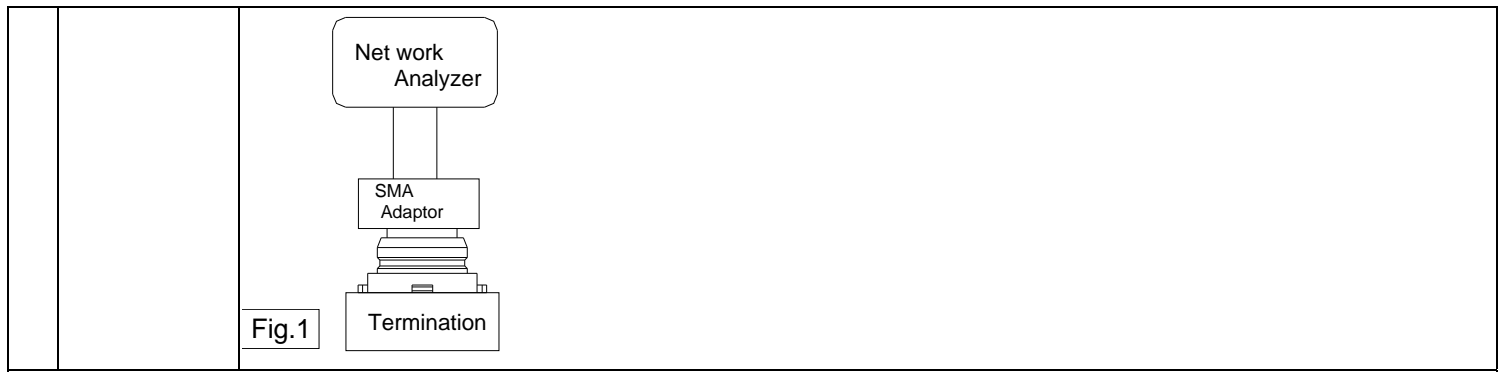
### 3.5 PERFORMANCE REQUIREMENT AND TEST DESCRIPTION (性能要求和测试条件)

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Table. All tests shall be performed at ambient environmental conditions.

表中详述了产品具有的电气、机械及环境的测试要求，所有测试将按此条件执行。

### 3.6 TEST REQUIREMENTS AND PROCEDURES SUMMARY(性能要求和测试条件):

TEST ITEM (FREQUENCY)		REQUIREMENTS	PROCEDURE
	Appearance 外观	No defects such as cracks, scratches or blemishes. 产品不可有缺陷，例如：破裂，刮伤，脏污。	Visual inspection in compliance with appliance specification and document are performed, the test samples shall be free from defects such as damage, creep, deformation, blister and burrs that are detrimental to the function and appearance of test samples. (MIL-STD-202G) 依产品规格书和文件目视检验，测试样品将没有缺陷，如损伤、变形、水泡和影响到功能和外表的有害毛边 (MIL-STD-202G)
<b>A. ELECTRICAL REQUIREMENT (电气测试)</b>			
<b>Test shall be performed in mated condition with mating applicable modules. (产品在配对条件下测试)</b>			
A1	Contact Resistance 接触电阻	Inner contact : Initial :20mΩ MAX After testing :△R 20mΩ MAX Ground contact: Initial :20mΩ MAX After testing :△R 20mΩ MAX	Open circuit voltage : 20mV MAX Circuit current : 10mA MAX
A2	Insulation Resistance 绝缘阻抗	Initial :500MΩ MIN After testing : 100MΩ MIN	Mate the plug and receptacle connector together , and then apply DC 100V between the inner contact and the ground contact in accordance with MIL-STD-202G 测试条件: 100VDC/1min.( MIL-STD-202G)
A3	Dielectric withstanding Voltage 耐电压	Between conductors: Without damages such as arc or breakdown etc. 导体相互间: 产品无损坏现象，例如：电弧，击穿等等.	Mate the plug and receptacle connector together , then apply AC 200V rms between the inner contact and the ground contact for a minute in accordance with MIL-STD-202G 测试条件: 200VAC/1min. (MIL-STD-202G)
A4	VSWR 驻波比	Receptacle connector 1.3 MAX. at 0.1~3GHz 1.4 MAX. at 3~6GHz	Measure the VSWR as shown in Fig.1 by the network analyzer. Frequency : 100M ~ 6GHz



## B. MECHANICAL REQUIREMENT (机械测试)

Test shall be performed in mated condition with mating applicable modules. (产品在配对条件下测试)

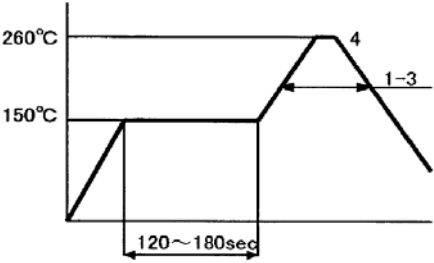
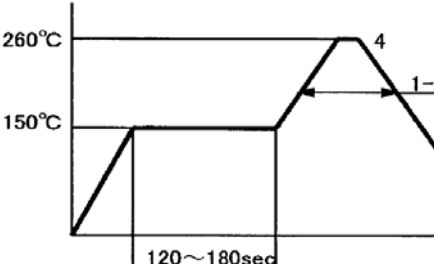
TEST ITEM (FREQUENCY)	REQUIREMENTS	PROCEDURE
B1 Un-mating Force 拔出力	Initial(初始) : 4N MIN After 30 cycles(30次插拔后) : 2N MIN	Solder the receptacle connector to the test board and the mate the plug connector, then measure the un-mating force at a speed $25 \pm 3$ mm/minutes along the mating by the push-push machine 将母座焊接在测试板上, 并且将公头插合在焊好的母座上, 然后用插拔力测试仪以每分钟 $25 \pm 3$ 毫米的速度测试拔出力。
B2 Durability 耐久性	Appearance: No abnormality. Contact resistance: Shall meet A-A1	Mate the un-mate the receptacle connector (soldered to the test board) and plug connector 30 cycles at speed $25 \pm 3$ mm/minutes along the mating by the push-push machine
B3 Vibration 震动	Appearance: No abnormality. Electrical discontinuity : No electrical discontinuity grater than $1 \mu s$ shall occur Contact resistance: Shall meet A-A1	Amplitude: 1.5 mm P-P or $59m/s^2$ {6G} Sweep time: 50-2000-50Hz in 20 minutes. Duration: 12 times in each (total of 36 Times) X, Y, Z axes. Electrical load : DC100mA current shall be 振幅 : 1.5 mm P-P 或 $59m/s^2(6G)$ 扫描期 : 20 分钟内 20-2000-50 赫兹 持续时间 : 每一 X, Y,Z 轴乘以 12 倍 (共计 36 倍) 电力负荷 : 在循环测试时使用 直流 100 毫安
B4 Physical Shock 耐冲击性	Discontinuity: $1 \mu s$ Max. Contact resistance: 60 milliohms Max. 信号中断: $1 \mu s$ Max. 接触电阻: $60m\Omega$ Max.	Pulse shape: half sign Peak acceleration: $735m/s^2$ Duration of the pulse: 11ms Three successive shocks shall be applied in both directions of 3 mutually perpendicular axis(total 18 shocks). For other procedure, refer to MIL-STD-202,Method 213,Condition B 脉冲形状: 半波 峰值加速度: $735m/s^2$ 脉冲的持续时间: 11ms 在 X, Y, Z 轴上每两个轴向上测试 3 次震动, 共计 18 次. (其它具体的操作步骤可参照: MIL-STD-202)

## C. ENVIRONMENTAL REQUIREMENT (环境测试)

Test shall be performed in mated condition with mating applicable modules. (产品在配对条件下测试)

TEST ITEM (FREQUENCY)	REQUIREMENTS	PROCEDURE
-----------------------	--------------	-----------

C1	Humidity 湿度	<p>Appearance: No abnormality.</p> <p>Contact resistance: Shall meet A-A1</p> <p>Insulation Resistance: Shall meet A-A2</p> <p>Dielectric Withstanding Voltage Shall meet A-A2</p>	<p>Mate connectors together and perform the test as follows.</p> <p>Temperature : 40+/-2°C</p> <p>Relative Humidity : 90 to 95%RH</p> <p>Duration : 4 cycles (96 hours)</p> <p>Upon completion of the test, specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed. (ANSI/MIL-STD-202G)</p> <p>连接器配对且依下列各项执行试验。</p> <p>温度：40+/-2°C</p> <p>相对湿度：90 至 95%RH</p> <p>延时：4 个循环（96 小时）</p> <p>在试验的完成后，样品将在周围环境条件的室内24 小时，测量指定的尺寸。</p> <p>(ANSI/MIL-STD-202G)</p>
C2	Thermal Shock 热冲击	<p>Appearance: No abnormality.</p> <p>Contact resistance: Shall meet A-A1</p> <p>Insulation Resistance: Shall meet A-A2</p> <p>Dielectric Withstanding Voltage Shall meet A-A2</p>	<p>5 cycles of:</p> <p>a) -55°C for 30 minutes</p> <p>b) +85°C for 30 minutes (ANSI/MIL-STD-202G Method 107G, Condition A)</p> <p>5 循环：</p> <p>a) -55°C for 30 minutes</p> <p>b) +85°C for 30 minutes (ANSI/MIL-STD-202G Method 107G, Condition A)</p> <p>5 循环：</p> <p>a) -55°C for 30 minutes</p> <p>b) +85°C for 30 minutes (ANSI/MIL-STD-202G Method 107G, Condition A)</p>
C3	High Temperature Life 高温寿命	<p>Appearance: No abnormality.</p> <p>Contact resistance: Shall meet A-A1</p> <p>Insulation Resistance: Shall meet A-A2</p>	<p>Mate connectors together and perform the test as follows.</p> <p>Temperature : 90+/-2°C</p> <p>Duration : 96 hours</p>
C4	Salt Spray 盐雾测试	<p>Appearance: No damage.</p> <p>外观：不可有明显氧化，生锈，发黑等现象。</p>	<p>The connector shall be subjected to a fine mist solution at a temperature of 35+/-2°C for 48h continuously. Salt solution concentration is 5+/-1% by weight. Then it shall be subjected to standard atmospheric conditions for 1h, and so measurement shall be made.</p> <p>将样品放置于盐雾测试箱中，其测试条件： 测试温度：35+/-2°C 盐水浓度：5+/-1% 测试时间：48 小时 测试完成后检查样品的外观。</p>
C5	Solderability 焊接性	<p>A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed</p> <p>沾锡面积达 95% 以上。</p>	<p>Solder temperature: 245+/-5°C</p> <p>Immersion time: 3~5sec</p> <p>焊接温度：235+/-2°C</p> <p>浸渍时间：3~5sec</p>

C6	<p>Reflow Soldering 回流焊</p>	<p>Without deformation of care or excessive looseness of terminals. Maximum number of reflow cycles: 3 cycles. Maximum number of reworks cycles: 2 times.</p> <p>样品不可有明显变形及铁壳、端子不可虚焊，漏焊。 最多回流焊次数：3次 最多返工次数：2次</p>	<p>1)Reflow characteristics The connector housing shall be stored at a temperature, each as shown in the chart below. <u>TEMPERATURE OF SURFACE P.C.B</u> 1.Time above 200°C : Max 80 sec 2.Time above 217°C : Max 50 sec 3.Time above 230°C : Max 30 sec 4.Peak temperature in reflow: 255~260°C for 10s</p>  <p>2)Manual soldering using soldering iron Tip diameter: Selected to fit application Maximum tip temperature: 370°C Antistatic protection: Required Maximum exposure time: 3 sec</p> <p>3)Manual hot gas soldering Max air temperature: 285°C Max air velocity: 10m/sec Max exposure time: 30 sec</p> <p>1)回流焊特性 样品测试条件请见下表： <u>P.C.B 的表面温度</u> 1.温度上升到 200 °C : Max 80 sec 2.温度上升到 217 °C : Max 50 sec 3.温度上升到 230 °C : Max 30 sec 4.回流焊的峰值温度： 255~260°C for 10s</p>  <p>2)烙铁焊接 烙铁头直径：选择合适的烙铁头 烙铁头峰值温度：370°C 抗静电保护：必需的 焊接时间：3 sec Max.</p> <p>3)热气焊接 空气温度：285°C Max. 空气流动速度：10m/sec Max. 暴露时间：30 sec Max.</p>
----	---------------------------------	---	---

**D · USAGE PRECAUTION (使用禁忌&注意事项)**

D1	<p>STOCKPILE CONDITION (存储条件)</p>	<p>Use this product within 6 months after receipt 请接收产品在 6 个月内使用</p>
----	---------------------------------------	--

### 3.8 TEST SEQUENCE

Test group		A	B	C	D	E	F	G	H	I	J	K				
Group sample size		5	5	5	5	5	5	5	5	5	5	5				
1	A: appearance		1,4	1,4	1,4	1,4	1,6	1,6	1,4	1,4	1,3	1,3				
2	A1: Contact Resistance		2	2,5	2,5	2,5	2,7	2,7	2,5	2,5						
3	A2: Insulation Resistance						3,8	3,8								
4	A3: Dielectric Withstanding Voltage						4,9	4,9								
5	A4: VSWR	1														
6	B1: Un-mating force		3													
7	B2: Durability			3												
8	B3: Vibration				3											
9	B4: Shock					3										
10	C1: Humidity						5									
11	C2: Thermal Shock							5								
12	C3: High Temperature Life								3							
13	C4: Salt Spray									3						
14	C5: Solderability										2					
15	C6: Reflow Soldering											2				

APPROVED BY: Jack

CHECKED BY: Nick

REVISED BY: Andy