



# Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	RF 1.45H CONNECTOR	PS-0057			
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**\*\*\*\*\* Revised history \*\*\*\*\***

Edition	ECN NO.	Revised Page	Remark
X1	ECN1204148	None	Initial Release



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## 1. 概述 **Scope:**

### 1.1 说明 **Content**

此份产品规格书是针对由昆山嘉华电子有限公司设计和制造的 **RF 1.45H 连接器** 产品所定义的产品性能和测试方法。

This product specification defines the product performance and the test methods to ensure the performance of the **RF 1.45H CONNECTOR**, which is designed and manufactured by Kunshan Jiahua Electronics Co., Ltd.

### 1.2 限制 **Qualification**

所有的测试和检验必须依照本文件中所要求的规格、方法进行。一旦产品的重要制程发生变更，必须立即进行品质验证和测试。

Tests and inspection shall be performed in accordance with the requirements, tests and methods contained herein. A re-qualification test shall be conducted immediately following all major process changes.

## 2. 参考文件 **Referenced Documents:**

EIA-364  
MIL-STD-202F  
MIL-P-81728A  
MIL-T-10727B  
JIS C 0040  
JIS C 0041

若某些项目被发现本规格书中的内容与以上参考文件要求不一致时，一律依本规格书中的内容为测试依据。

In case of any contradiction between this document and referenced documents, this document will take precedence.



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### 3. 规格要求 Requirements:

#### 3.1 应用条件 Application Condition:

##### 3.1.1 使用环境 Operating Environment:

温度: -40°C to +85°C,相对湿度:25%~85%,此条件下功能不可失效。

Temperature:-40°C to +85°C, Relative Humidity:25%~85%, Without loss of function.

##### 3.1.2 储存环境 Storage Environment:

温度: -40°C to +90°C,相对湿度:95%或更低,此条件下功能不可失效。

Temperature:-40°C to +100°C, Relative Humidity: 95% or Less, Without loss of function.

#### 3.2 绿色环保要求 Health, Safety and Environment

此产品中所有涉及环保有关的有害物质管控标准请参考嘉华系统文件:**JH-GP-213**

Hazardous substances (Environment related to be controlled substances) contained in this product should comply with the regulations specified by FAF's **JH-GP-213**.

#### 3.3 测试说明 Test Description

此产品性能须满足本文件 3.4 节中的各项规格要求。除非有特别申明，所有的测试和量测必须在以下条件中进行:

The product is designed to meet the requirements specified in section 3.4. Unless otherwise specified, all tests and measurements are to be performed under the following conditions:

温度 Temperature: 20°C ± 5°C

相对湿度 Relative Humidity: 40% to 70%

大气压 Atmospheric Pressure: 650 to 800 millimeters (25.6 to 31.5 inches) of Mercury.



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## 3.4 测试规范和方法 Test Requirements and Methods

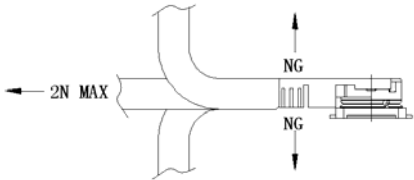
**Table I: 性能要求 Performance Requirements**

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.1 产品外观  Visual Examination	所有零件必须组装完好,不能出现毛边,变形,刮伤,以及任何外观破坏等异常;  All components shall be properly assembled and free of burrs, warps, scratches, broken chips, and other abnormalities	参考测试标准: EIA 364-18 依照相应的文件和规格书进行外观,功能,及尺寸的检验量测.  Comply with method EIA 364-18 Visual, functional, and dimensional inspection complies with applicable specification and document.
3.4.2 低功率接触阻抗  Low Level Contact Resistance	初始接触阻抗: 20 mΩ Max; 测试后接触阻抗: 40 mΩ Max;  Initial: 20mΩ Max; After test: 40 mΩ Max	参考测试标准: EIA-364-23 3002.1 必须保证量测结果为产品以及与之对应配对产品的焊接部位之间的阻抗值;  Comply with method EIA-364-23, method 3002.1. with the exception of the resistance readings, which shall be measured between the termination points of tested plug and connector
3.4.3 绝缘阻抗  Insulation Resistance	初始绝缘阻抗: 500 MΩ Min. 测试后绝缘阻抗: 100 MΩ Min.  Initial: 500 MΩ Min. After Test: 100 MΩ Min.	参考测试标准: EIA-364-21. 在相邻两支端子之间加 500V 直流电压并保持 2 分钟, 测出阻抗值.  Comply with method EIA-364-21. Insulation resistance is measured between adjacent contacts after applying 500V DC for 2 minutes.
3.4.4 耐电压  Dielectric Withstanding Voltage	加电压期间漏电流不超过 0.5mA. 同时不能产生电弧以及而产生的短路和破坏产品的绝缘性能.  No evidence of breakdown or flash burn. No burn caused by short circuit. No insulation destruction. Current leakage: 0.50 mA Max.	参考测试标准: EIA-364-20,方法 B; 在产品以及与之配对的 plug 之间加 200V 交流电压保持 1 分钟,监控漏电流.  Comply with method EIA-364-20, Test Method B. apply 200V AC 1 minute at sea level on tested plug and connectors.

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项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.5 电压驻波比  VSWR	Plug: 1.3 以下 0.1-3GHz, 1.5 以下 3-6GHz Receptacle: 1.3 以下 0.1~3GHz, 1.4 以下 3~6GHz  Plug: 1.3Max.at 0.1~3GHz, 1.5Max.at 3~6GHz. Receptacle: 1.3Max.at 0.1~3GHz, 1.4Max.at 3~6GHz.	周波数:100M~6GHz  Measure the VSWR as shown in Fig.1by the network analyzer.Frequency: 100M~6GHz.
3.4.6 插拔力  Mating Force and Un-mating Force	综合插入力:初回插入力 15N 以下, 30 回后插入力 15 N 以下 综合拔去力:初回拔去力 4N 以上, 30 回后拔去力 2N 以上  Total mating force: Initial 15N Max. after 30 cycles 15N Max. Total un-mating force: Initial 4N Min. after 30 cycles 2N Min	插拔试验机以每分 25±3mm 的速度进行插拔  Un-mate the receptacle connector(soldered to the test board)and plug at a speed 25±3mm/minutes along the mating by the push-on/pull-off machine
3.4.7 引张强度  Crimp strength	8N 以上  8N MIN	通过引张试验机以每分 25+/-3 毫米/分钟的速度拉线材部分  Pull the cable as shown in, at speed 25+/-3mm/minutes by tensile strength machine.
3.4.8 耐久插拔  Durability	中心导体接触阻抗: 初期 20 mΩ,以下, 试验后 40 mΩ 以下 外部导体接触阻抗: 初期 10 mΩ, 以下, 试验后 30 mΩ 以下  Contact resistance of inner contact initial 20 mille-ohm MAX. after testing 20mille-ohm MAX. Contact resistance of ground contact initial 10 mille-ohm MAX. after testing30mille-ohm MAX.	参考测试标准: EIA-364-09; 母头连接器焊接在板上以每分钟 25±3mm 的速度插拔 30 次  Comply with method EIA-364-09 Mate and un-mate the receptacle connector (soldered to the test board)and plug 30 cycles at a speed 25±3mm/minutes along the mating by the push-on/pull-off machine.

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<p>3.4.9 保持力 Cable retention force</p>	<p>部品无外观及其它异常. 试验中无 1 微秒的电流中断 中心导体接触阻抗: 初期 20 mΩ, 以下, 试验后 40 mΩ 以下 外部导体接触阻抗: 初期 10 mΩ, 以下, 试验后 30 mΩ 以下</p> <p>Appearance: Looseness between the parts, chipping, breakage or other abnormality shall not occur Electrical discontinuity :No electrical discontinuity grater than 1 micro-sec. shall occur. Contact resistance of inner contact initial 20 milli-ohm MAX. after testing 40milli-ohm MAX. Contact resistance of ground contact initial 10 milli-ohm MAX. after testing 30milli-ohm MAX.</p>	<p>施加力于图 Fig.1 方向</p>  <p>试验期间工作电流 100mA DC, 检查瞬间电流中断.</p> <p>Apply force on the cable as shown in Fig.1. During the testing, run 100mA DC to check electrical discontinuity.</p>
<p>3.4.10 振动 Vibration</p>	<p>不产生超过 0.1 秒的瞬断, 产品没有物理破坏以及零件脱落, 端子接触阻抗满足规格要求. 中心导体接触阻抗: 初期 20 mΩ, 以下, 试验后 40mΩ 以下 外部导体接触阻抗: 初期 10 mΩ, 以下, 试验后 30 mΩ 以下.</p> <p>No electrical discontinuity longer than 0.1 sec. No mechanical damage or looseness. Contact resistance specifications remain satisfied. Appearanec: Looseness between the parts, chipping, breakage or other abnormality shall not occur. Electrical discontinuity: No electrical discontinuity grater than 1 micro-sec. shall occur. Contact resistance of inner contact initial 20 milli-ohm MAX. after testing 40milli-ohm MAX. Contact resistance of ground contact initial 10 milli-ohm MAX. after testing 30milli-ohm MAX.</p>	<p>参考测试标准: EIA-364-28, 嵌合状态下振动, 试检中电流瞬断的确认. 周波数: 30Hz-100Hz-30Hz 约 20 分钟 片振幅, 加速度: 1.5mm or 59m/s<sup>2</sup>(6G) 方向: 三个互相垂直的方向每个方向 2 小时共 6 小时.</p> <p>Comply with method EIA-364-28 Apply the following vibration to the mating connector. Frequency: 30Hz-100Hz-30Hz/ approx 20 minutes. Half amplitude, peak value of acceleration: 1.5mm or 59m/s<sup>2</sup>(6G) Directions, cycle: 3 mutually perpendicular direction, 2 hours for each direction, a total of 6 hours.</p>
<p>3.4.11 机械冲击 Physical Shock</p>	<p>不产生超过 0.1 秒的瞬断, 产品没有物理破坏以及零件脱落, 端子接触阻抗满足规格要求. 外观无异常 不得有超过 1 微秒的漏电流产生</p>	<p>参考测试标准: EIA-364-27. 嵌合状态在冲击试验机下冲击, 试验中 DC100mA 电流的瞬断确认. MIL-STD-202 试验法 203, 试验条件 B 最大加速度: 735m/s<sup>2</sup>(75G)</p>



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	<p>中心导体接触阻抗:初期 20 mΩ 以下,试验后 40 mΩ 以下. 外部导体接触阻抗:初期 10 mΩ 以下,试验后 30 mΩ 以下.</p> <p>No electrical discontinuity longer than 0.1 sec. No mechanical damage or looseness. Contact resistance specifications remain satisfied. Appearanc:Looseness between the parts, chipping, breakage or other abnormality shall not occur. Electrical discontinuity: No electrical discontinuity grater than 1 micro-sec. shall occur. Contact resistance of inner contact initial 20 milli-ohm MAX. after testing 40milli-ohm MAX. Contact resistance of ground contact initial 10 milli-ohm MAX. after testing 30milli-ohm MAX.</p>	<p>时间:11msec 波形:半正弦 方向/次数: 6 个互相垂直的方向 3 次</p> <p>Comply with method EIA-364-27, Apply the following vibration to the mating connector in accordance with MIL-STD-202, Method 213, Condition B. During the testing, run 100mA DC to check electrical Peak value of acceleration: 735m/s<sup>2</sup>(75G). Duration: 11msec Wave Form: half sinusoidal Diretions, cycle: 6 mutually Pcrpcndicular direction, 3 cycles about each direction.</p>
<p>3.4.12 耐湿性 Humidity</p>	<p>部品无外观及其它异常 中心导体接触阻抗: 初期 20 mΩ, 以下, 试验后 40 mΩ 以下 外部导体接触阻抗: 初期 10 mΩ, 以下, 试验后 30 mΩ 以下 绝缘阻抗: 初期 500MΩ 以上, 试验后 100MΩ 以上. 耐电压: 沿面放电, 空中放电, 绝缘破坏无异常发生.</p> <p>Appearance: Looseness between the parts, chipping, breakage or other abnormality shall not occur. Contact resistance of inner contact initial 20 milli-ohm MAX. after testing 40milli-ohm MAX. Contact resistance of ground contact initial 10 mille-ohm MAX. after testing 30milli-ohm MAX Insulation resistance: initial 500 mega-ohm MIN. after testing 100 mega-ohm MIN. D.W. Voltage: No creeping discharge, flashover, nor insulator breakdown shall occur</p>	<p>嵌合状态的连接器在以下环境放置. MIL-STD-202. 试验法 103, 条件 B 温度: 313 +/- 2K (40 +/- 2°) 湿度: 90~95%RH 时间: 96 小时</p> <p>Apply the following environment to the mating connector in accordance with MIL-STD-202, Method 103, Condition B. Temperature: 313 +/- 2K (40 +/- 2°) Humidity: 90~95%RH Duration: 96 hours</p>
<p>3.4.13 温度冲击</p>	<p>测试后满足相应机械及电气规格; 部品无外观及其它异常</p>	<p>参考测试标准: EIA-364-32; 嵌合状态的连接器在以下环境</p>





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Thermal shock	<p>中心导体接触阻抗: 初期 20 mΩ, 以下, 试验后 40 mΩ 以下 外部导体接触阻抗: 初期 10 mΩ, 以下, 试验后 30 mΩ 以下 绝缘阻抗: 初期 500MΩ 以上, 试验后 100MΩ 以上. 耐电压: 沿面放电, 空中放电, 绝缘破坏无异常发生.</p> <p>Meet related mechanical and electrical specification. Contact resistance of inner contact initial 20 milli-ohm MAX. after testing Appearance: Looseness between the parts, chipping, breakage or other abnormality shall not occur. 40milli-ohm MAX. Contact resistance of ground contact initial 10 mille-ohm MAX. after testing 30milli-ohm MAX Insulation resistance: initial 500 mega-ohm MIN. after testing 100 mega-ohm MIN. D.W.Voltage: No creeping discharge, flashover, nor insulator breakdown shall occur</p>	<p>温度, 持续时间: 233K(40°)/30 分钟 278~308K(5~35°)/5 分以下 363K(90°)/30 分钟 278~308K(5~35°)/5 分以下 实施 5 个循环</p> <p>Comply with method EIA-364-32E. Apply the following environment to the mating connector. Temperature, duration: 233K(-40°)/30minutes 278~308(5~35°)K/minutes MAX. 363K(90°)/30minutes 278~308K/5minutes MAX No.of cycles: 5 cycles</p>
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项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.14 温度寿命 Temperature life	<p>部品无外观及其它异常 中心导体接触阻抗: 初期 20 mΩ, 以下, 试验后 40 mΩ 以下 外部导体接触阻抗: 初期 10 mΩ 以下, 试验后 30 mΩ 以下. 绝缘阻抗: 初期 500MΩ 以上, 试验后 100MΩ 以上.</p> <p>Appearance: Looseness between the parts, chipping breakage or other abnormality shall not occur Contact resistance of inner contact initial 20 milli-ohm MAX. after testing 40milli-ohm MAX Contact resistance of ground contact initial 10 mille-ohm MAX. after testing 30milli-ohm MAX</p>	<p>参考测试标准: EIA-364-17; 嵌合状态的连接器放置以下环境温度 363+/-2K(90+/-2°) 时间: 96 小时</p> <p>Comply with EIA-364-17. Apply the following environment to the mating connector in accordance Temperature: 363+/-2K(90+/-2°) Duration: 96 hours</p>



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	Insulation resistance: initial 500 mega-ohm MIN.after testing 100 mega-ohm MIN.	
3.4.15 盐雾腐蚀  Salt spray	<p>外观无异常,性能良好 中心导体接触阻抗: 初期 20 mΩ,以下, 试验后 40 mΩ 以下. 外部导体接触阻抗:初期 10 mΩ 以下,试验后 30 mΩ 以下.</p> <p>Appearance no abnormality adversely affecting the performance shall occur Contact resistance of inner contact initial 20 milli-ohm MAX.after testing 40milli-ohm MAX. Contact resistance of ground contact initial 10 mille-ohm MAX.after testing 30milli-ohm MAX</p>	<p>嵌合状态的连接器放置于以下条件: 温度: 308+/-2K(35+/-2°) 盐水浓度:5+/-1%(重量比) 时间:48 小时</p> <p>Apply the following environment to the mating connector in accordance with MIL-STD-202,Method 101,Condition B Temperature:308+/-2K(35+/-2°) Salt water density by weight:5+/-1% Duration:48 hours</p>



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## 3.5 Test Sequence

Test of Examination	测试群组 Test Group												
	A	B	C	D	E	F	G	H	I	J	K	L	
	测试序列 Test Sequence												
产品细查 Examination of product	1,3	1,3	1,5	1,3	1,5	1,5	1,7	1,7	1,5	1,5	1,5	1,3	
接触阻抗(低功率) Termination resistance (Low Level)			2,4		2,4	2,4	2,5	2,5	2,4	2,4	2,4		
绝缘阻抗 Insulation resistance							3,6	3,6					
耐电压 Dielectric withstanding voltage	2												
电压定在波比 V.S.W.R												2	
插拔力 Mating Force and Un-mating Force		2											
引张强度 Crimp strength												3	
耐久性 Durability			3										
保持力 Cable retention force				2									
振动 Vibration					3								
物理冲击 Physical shock						3							
盐水喷雾 Salt spray									3				
温度寿命 Temperature life										3			
热冲击 Thermal Shock							4						



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耐湿性 Humidity								4					
样品数量 Sample QTY	5	5	5	5	5	5	5	5	5	5	5	5	