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Product specification		KC.CN.00011		R-164 版本: B0																						
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***** Revised history *****

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1. 范围 Scope:

本产品规范规定了一代板端连接器的测试条件和性能

This Product Specification defines the test conditions and the performances of the First generation plate end connector

2. 产品名称及产品型号 Product Name and Parts No

- 2.1 产品名称 Product Name:一代板端
- 2.2 产品型号 Parts No:958-B113-W-HU-A0
- 连接器的结构、材料和表面覆盖在每张图纸上

Construction, material and finish of the connector are covered as each drawing

3. 要求 Requirements

额定电压	AC 60V rms
特性阻抗	50Ω
频率范围	0~9GHz
驻波比	0.1~3GHz 1.3 以下, 3-6GHz 1.4 以下,6-9GHz 1.8 以下。
使用温度	233K~363K (-40℃~90℃)
存储条件	温度: 248K~333K(-25℃~+60℃) 湿度: 85% 以下(未凝结)

Rated voltage	AC 60V rms
Nominal characteristic impedance	50Ω
Frequency	0~9GHz
VSWR	1.3Max at 0.1~3GHz, 1.4Max at 3-6GHz 1.8Max at 6--9GHz
Service Temperature	233K~363K (-40℃~90℃)
Storage condition	Temperature: 248K~333K(-25℃~+60℃) Humidity: 85% MAX.(No condensation)

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4.测试和性能 Test and Performance

试验条件 Test Condition

除非另有说明，所有测试和测量均应按照 MIL-STD-202G 在下列条件下进行。

温度: 288K~308K(15℃~35℃)

压力: 866hPa~1066hPa(650mmHg~800mmHg)

湿度: 45~75%R.H.

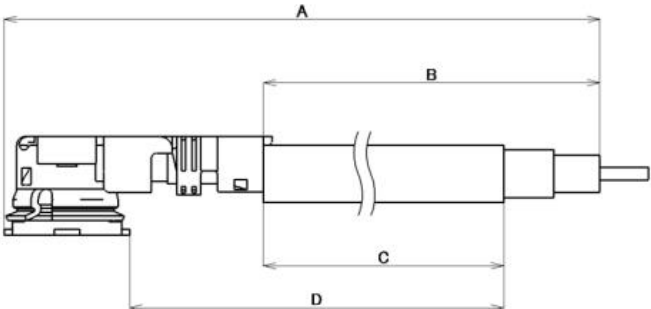
Unless otherwise specified, all tests and measurements shall be performed under the following conditions in accordance with MIL-STD-202G.

Temperature: 288K~308K(15℃~35℃)

Pressure: 866hPa~1066hPa(650mmHg~800mmHg)

Humidity: 45~75%R.H.

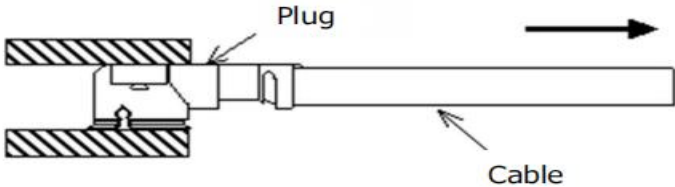
4.1 电气的性能 Electrical Performance

NO	项目/Items	试验条件/Test Conditions	规格/Specifications
1	接触阻抗	公母端连接器配合后使用 20mV 开路电压，以最大 10mA 电流进行测试。参考测试标准：MIL-STD-202 方法 307。 中心导体 (A-B 之间的电气阻抗) 外部导体 (D-C 之间的电气阻抗)	中心导体 初期:20 mΩ 以下 试验后:25 mΩ 以下 外部导体 初期:10 mΩ 以下 试验后:15 mΩ 以下
	Contact Resistance	Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in Fig.1 by the four terminal method.Apply the low level condition in accordance with MIL-STD-202, Method 307. Open circuit voltage: 20mV Max Circuit current: 10mV Max	Inner contact Initial: 20mΩ Max After testing: 25mΩ Max Ground contact Initial: 10mΩ Max After testing: 15mΩ Max
 Inner contact =A-B Ground contact =D-C Fig.1			

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NO	项目/Items	试验条件/Test Conditions	规格/Specifications		
2	绝缘阻抗	公母端连接器配合后，测试中心导体与外部导体之间的绝缘阻抗。使用 DC100V，保持 1 分钟，参考测试标准：MIL-STD-202 方法 302.	初期:500 MΩ 以上 试验后:100 MΩ 以上		
	Insulation Resistance	Mate the plug and receptacle connector together, then apply DC100V between the inner contact and the ground contact In accordance with MIL-STD-202,Method 302.	Initial: 500MΩ MIN After testing: 100MΩ MIN		
3	耐电压	公母端连接器配合后，使用 AC 200V 对中心导体与外部导体进行耐压测试 1 分钟。参考测试标准：MIL-STD-202 Method 301	无沿边放电、空中放电、绝缘破坏等异常		
	Dielectric Withstanding voltage	Mate the receptacle and plug connector together, then apply AC 200 V(rms)between the neighboring contactts t for a minute accordance with MIL-STD-202,Method 301.	No creeping discharge, flashover, no insulator Breakdown shall occur.		
4	驻波比	如图 2 所示，通以网络分析仪测试驻波比。周波数：100MHz~9.0GHz	Receptacle 0.1~3GHZ 1.3Max		
	VSWR	Measure the VSWR as shown in Fig.2 by the network analyzer.Frequency:100MHz~6.0GHz	3~6GHZ 1.4Max 6~9GHZ 1.8MAX		
Network analyzer Plug 100mm Cable SMA adaptor SMA adaptor Fig. 2 Network analyzer Receptacle SMA adaptor Terminator					

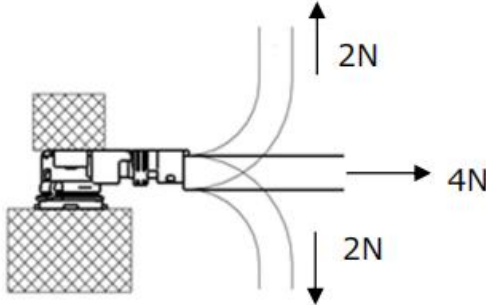
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4.2 机械的性能 Mechanical Performance

NO	项目/Items	试验条件/Test Conditions	规格/Specifications
5	插入力 拔去力	将板端连接器焊接在测试板上并于线端连接器配合，用插拔力实验机以每分钟 25mm±3mm 的速度测试插拔力	插入力 初次: 30N MAX 30 次后: 30N MAX 拔去力 初次: 5N MIN 30 次后: 3N MIN
	Mating force Un mating force	Solder the receptacle connector to the test board and mate the plug connector, then measure the un-mating force at speed 25±3mm/minutes along by the push-pull machine.	Mating Initial: 30N MAX After 30 cycles: 30N MAX Un-mating Initial: 5N MIN .After 30 cycles: 3N MIN
6	引张强度	用材料实验机以每分钟 25mm±3mm 的速度拉线材部分，测定引张强度。如图 3 所示	10N 以上
	Crimp strength	Pull the cable as shown in Fig.3 at a speed 25±3mm/minutes by tensile strength machine.	10N Min
	 Fig. 3		

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NO	项目/Items	试验条件/Test Conditions	规格/Specifications
7	耐久力	母端连接器焊在板上，用插拔力实验机以每分钟 25mm±3mm 的速度插拔 30 次。	中心导体 初期:20 mΩ 以下 试验后:25 mΩ 以下 外部导体 初期:10 mΩ 以下 试验后:15mΩ 以下
	Durability (Repeated Mating/ Unmating)	Mate and umate 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.	Contact resistance of inner contact Initial: 20mΩ Max After testing: 25mΩ Max Contact resistance of ground contact Initial: 10mΩ Max After testing: 15mΩ Max
8	插座剪切强度	将插座连接器焊接到测试板上，从每个方向推动插座接头，如图所示。测量接头断裂时的强度。	30N 以上
	Receptacle shearing strength	Solder the receptacle connector to the test board, push the receptacle connector from each directions as Shown in Fig. . Measure the strength when the connector is broken.	30N Min
			
9	将线材施加于力后的产品接触阻抗	如图 4 制定方向施力，测试期间工作电流 100mA DC，检查瞬间电流中断。	外观无异常，瞬断小于 1μs 接触阻抗满足要求
	Cable Retention Force	Apply force on the cable as shown in Fig.4. During the testing, run 100mA DC to check electrical discontinuity.	Appearance Looseness between the parts, chipping, breakage or other abnormality shall not occur.

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			Electrical discontinuity No electrical discontinuity grater than 1 μs shall occur. Contact impedance meets the requirement			
	 Fig. 4					
10	振动	公母端连接器配合固定在震动台上，15 分钟内振动频率为 10-100-10Hz，半振幅，加速度峰值 1.5 振 mm 或 59m / s2(6g)方向，三个相互垂直的方向进行震动，各方向振动 5 次（共 75 分钟），测试过程中加 DC 100mA 直流电。	外观无异常，瞬断小于 1μs 接触阻抗满足要求			
	Vibration Sinusoidal Low Frequency	Apply the following vibration to the mating connector.During the testing, run 100mA DC to check electrical discontinuity. Frequency: 10Hz→100Hz→10Hz/approx 15 minutes. Half amplitude, Peak value of acceleration 1.5mm or 59m/s2（6G） Directions, cycle 3 mutually perpendicular direction 5 cycles（approx 75min）about each direction	Appearance Looseness between the parts, chipping, breakage or other abnormality shall not occur. Electrical discontinuity No electrical discontinuity grater than 1 μs shall occur. Contact impedance meets the requirement			
	冲击	公母端连接器配合固定在冲击实验机上，以 735m/s2（75G）的加速、半正弦冲击波的波形和 11msec 的冲击时间进行测试。周期 6 相互垂直的方向 3 周期。测试过程中加载 100mA 直流电。参考测试标准：MIL-STD-202 Method 213 条件 B	外观无异常，瞬断小于 1μs 接触阻抗满足要求			
	shock	Apply the following vibration to the mating	Appearance			

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11	connector in accordance with MIL-STD-202,Method 213, Condition B. During the testing, run 100mA DC to check electrical discontinuity Peak value of acceleration: 735m/s2 (75G) Duration:11msec Wave Form:half sinusoidal Directions, cycle: 6 mutually perpendicular direction, 3 cycles about each direction	Looseness between the parts, chipping, breakage or other abnormality shall not occur. Electrical discontinuity No electrical discontinuity grater than 1 μs shall occur. Contact impedance meets the requirement
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4.3 环境的性能 Environmental Performance

NO	项目/Items	试验条件/Test Conditions	规格/Specifications
12	热冲击	公母端配合后，将样品放入试验箱内，测试 5 循环。 一个循环条件如下： -40℃/30 分钟→(5-35)℃/5 分钟以下→90℃/30 分钟→(5-35)℃/5 分钟以下，转换时间不超过 30 秒	外观无异常 接触阻抗满足要求 绝缘阻抗满足要求
	Thermal shock	Apply the following environment to the mating connector. Temperature,duration: 233K(-40℃)/30minutes→278~308K(5~35℃) /5 minutes Max. →363K(90℃) /30 minutes →278~308K(5~35℃) /5 minutes Max No.of cycles:5 cycles	AppearanceLooseness between the parts, chipping, breakage or other abnormality shall not occur. Contact impedance meets the requirement Insulation resistance meets the requirement
13	恒温恒湿	公母端配合后，将样品放入试验箱内 温度：40±2℃ 相对湿度：90-95% 时间：96 小时； 测试标准：MIL-STD-202，方法 103,条件 B	外观无异常 接触阻抗满足要求 绝缘阻抗满足要求
	Humidity (Steady State)	Apply the following environment to the mating connector in accordance with MIL-STD-202, Method 103,Condition B.	Appearance Looseness between the parts, chipping, breakage or other abnormality shall not occur.

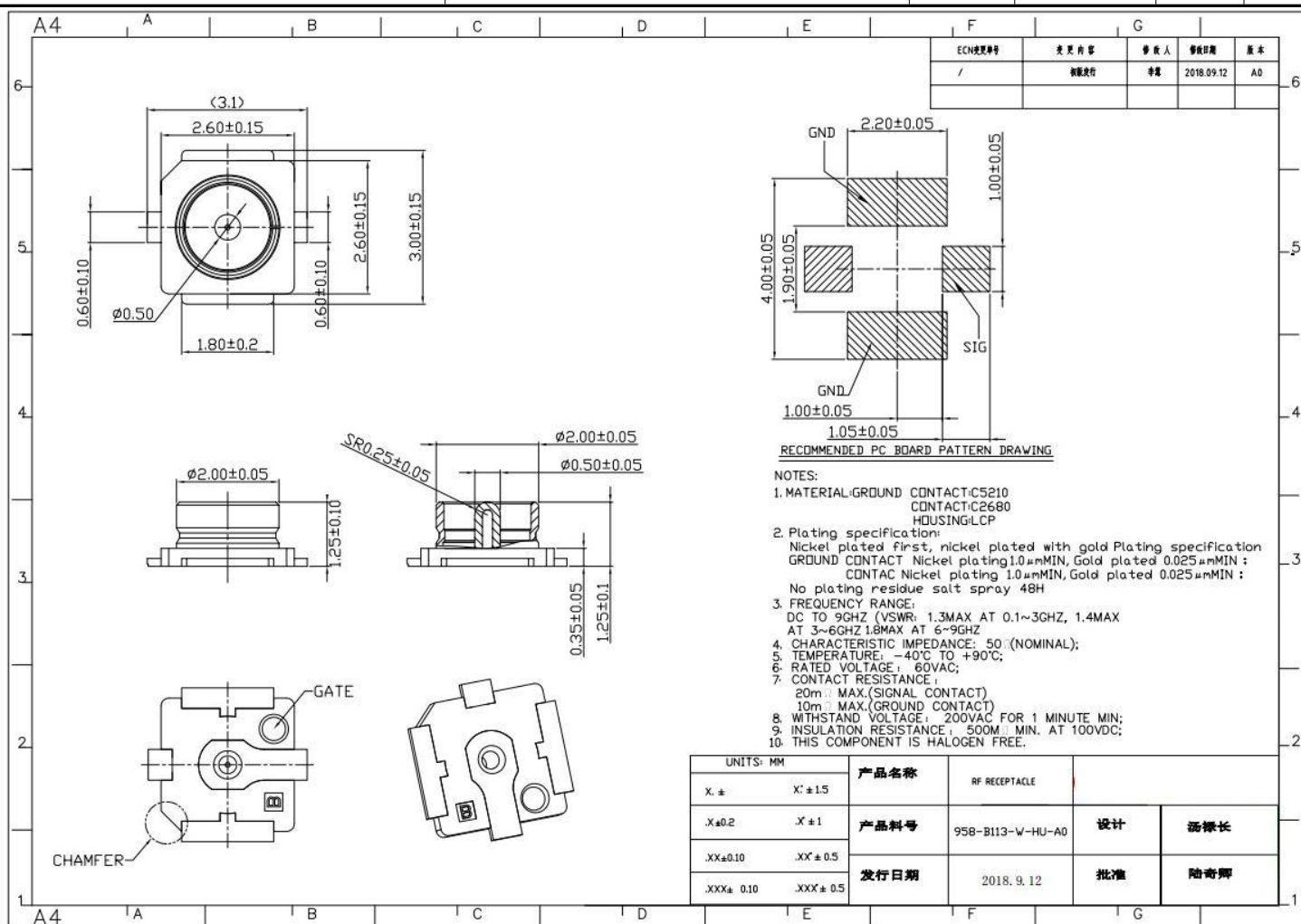
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		Temperature:33±2K(40±2℃) Humidity :90~95%RH Duration :96 hours		Contact impedance meets the requirement Insulation resistance meets the requirement			
NO	项目/Items	试验条件/Test Conditions		规格/Specifications			
14	盐水喷雾	公母端配合后，将样品放入试验箱内 温度：35±2℃ 盐水浓度：5±1% 时间：48 小时 测试标准：MIL-STD-202，方法 101,条件 B		外观无明显腐蚀			
	Salt Water Spray	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		Appearance No abnormality adversely affecting the performance shall occur.			
15	高温	公母端配合后，将样品放入试验箱内 温度：90±2℃ 时间：96 小时		外观无异常 接触阻抗满足要求			
	High Temperature	Apply the following environment to the mating connector Temperature:363±2K(90±2℃) Duration :96 hours		Appearance Looseness between the parts, chipping, breakage or other abnormality shall not occur. Contact impedance meets the requirement			
4.4 焊接的性能 Soldering							
NO	项目/Items	试验条件/Test Conditions		规格/Specifications			

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16	可焊性	将端子沉入 245℃±5℃的焊液中 5±0.5 秒.RMA 使用 R 型，浸泡 5~10 秒。 测试标准: MIL-STD-202，方法 208	焊锡表面浸渍超过 95%			
	Solder ability	Dip the solder tine of the connector in the solder bath at 518±5K(245±5℃)for 5±0.5 seconds after immersing the tine in the flux of RMA or R type for 5 to 10seconds . MIL-STD-202,Method 208.	More than 95% of the dipped surface shall be evenly wet.			
17	耐焊接热	将连接器焊接在 PCB 板上，如图 5 所示加热 2 次循环	外观无明显变形			
	Soldering heat resistance	Put on the receptacle connector to PCB，apply the heat 2 cycles as shown in Fig.5	Appearance No abnormality adversely affecting the performance shall occur.			
	Temperature Time Gradient 1~4 K/sec. 433~473K (160~200°C) 1~2 minutes 533K (260°C) 10±0.5 sec. Gradient -3 ~ -6 K/sec. Fig. 5					

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5.测试顺序和数量 Test Sequence and Sample Quantity					

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Test Item 测试项目		Test Group 测试群组														
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
(1)	Contact resistance 接触阻抗					1 3		1 3	1 3	1 3	1 4	1 4		1 3		
(2)	Insulation resistance 绝缘阻抗										2 5	2 5				
(3)	Dielectric Withstanding voltage 耐电压	1														
(4)	VSWR 驻波比		1													
(5)	Mating force / Un mating force 插入力 / 拔去力			1												
(6)	Crimp strength 引张强度				1											
(7)	Durability 耐久力					2										
(8)	插座剪切强度 Receptacle shearing strength						1									
(9)	Cable Retention Force 将线材施加于力后的产品接触阻抗							2								
(10)	Vibration 振动								2							
(11)	Shock 冲击									2						
(12)	Thermal shock 热冲击										3					
(13)	Humidity (Steady State) 恒温恒湿											3				
(14)	Salt waterspray 盐水喷雾												1			
(15)	High temperature 高温													2		
(16)	Solder ability 可焊性														1	
(17)	Soldering heat resistance 耐焊接热															1
Sample pcs 样品数量		10	5	10	10	10	10	10	10	10	10	10	10	10	10	10

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