



Test Report

SCCI Series 2-2270185-4 and 5-2271085-4

TE Connectivity. (Shanghai) Co., Ltd.

SCSI Connector

1. Introduction

简介

- 1.1. Testing was performed on SCSI connector to verify whether it meets the requirement of design objective 108-5288 Rev. A.

本次测试旨在验证SCSI连接器性能是否符合设计目标108-5288 Rev. A的要求。

1.2. Scope:

范围:

This report covers mechanical, electrical and environment performance requirements of SCSI connector

本报告主要涵盖了SCSI 连接器机械，电气及环境的性能要求。

1.3. Conclusion

结论

The SCSI连接器 meets mechanical, electrical and environment performance requirements of product. SCSI连接器，电气及环境性能符合产品要求。

1.4. Product Description

产品描述

This product is for industrial domain.

该产品主要是工业产品。

- 1.5. Test Sample P/N: 5- 2271085-4; 2- 2271085 -4

2. Test Content

测试内容

2.1 EXAMINATION:

检查

Test Description 测试项目	Requirement 要求	Procedure 规定
Examination of the product 产品检查	Meets visual requirements. 目视	Visual inspection per product drawing. Per EIA364-18B 符合产品图纸要求

2.2 ELECTRICAL

电气

Test Description 测试项目	Requirement 要求	Procedure 规定
Insulation resistance. 绝缘电阻	1) Initial :500MΩ Min. 2) After test:500MΩ Min.	500V DC for 1minute between adjacent circuits of mated connectors. 互配连接器相邻回路之间加载500V 直流 持续时间1分钟 According to EIA 364-21E request to make the testing 根据EIA 364-21E需求做测试

Contact resistance (Low level) 接触阻抗	35 mΩ Max. (Initial) Δ25 mΩ Max. (After)	Subject a voltage of 20mV Max open circuit at 100mA on mated contacts assemblies. 20mV Max 100mA 加载相互配合的端子 According to EIA364-23C request to make the testing 根据EIA 364-23C需求做测试
Dielectric withstanding voltage 耐压	No creeping discharge or flashover shall occur. 没有沿面放电或闪弧发生 Leak current: 0.5mA Max. 漏电流: 0.5mA Max.	500V AC for 1minute between adjacent circuits of mated connectors. 互配连接器相邻回路之间加载500V 交流电 1分钟 According to MIL-STD-202, Method 301 request to make the testing 根据MIL-STD-202方法301需求做测试

2.3 MECHANICAL

机械

Test Description 测试项目	Requirement 要求	Procedure 规定
Mating force 插入力	735.5 mN (Initial) per contact Max.	Operation speed: 25mm/min. 操作速度: 25mm/min Measure force necessary to mate samples without locking latches. 不带紧锁装置测量插入需要的力 Subject specimens to do test per EIA 364-13E, test method A 所做测试应满足EIA364-13E, 测试方法 A Calculate the value for a contact.
Un-mating force 拔出力	196.1 mN (Initial) per contact Min.	Operation speed: 25mm/min. Measure force necessary to un-mate samples without locking latches. 不带紧锁装置测量分开需要的力 Subject specimens to do test per EIA 364-13E, test method A 所做测试应满足EIA364-13E, 测试方法 A Calculate the value for a contact.
Durability 使用寿命	Show no physical damage. 产品没有损坏	Operation Speed: 40cycles/hour No. of Cycles: 500cycles. Subject specimens to do test per EIA 364-09C 所做测试应满足per EIA 364-09C
Vibration (Random) 震动	No electrical discontinuity greater than 1μsec shall occur 在1微秒以内没有发生电气断开	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude 2 hours each of 3 mutually perpendicular planes. Subject specimens to do test per MIL-STD-202.Method 201 所做测试配合连接器须三个相互垂直平面方向做测试: 频率: 10-55-10Hz, 一分钟来来回运动在振幅1.52mm情况下。持续时间: 2小时。 所做测试应满足MIL-STD-202.Method 201

Physical shock 物理冲击	No electrical discontinuity greater than 1μsec shall occur. 在1微秒以内没有发生电气断开	Accelerated Velocity : 50G Waveform : Half-sin wave Duration: 11 milliseconds. Number of drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. Subject specimens to do test per MIL-STD-202, Method 213, Condition A 加速度: 50G 波形: 半正弦波 持续时间: 11 毫秒 冲击次数: 18次 所做测试应满足MIL-STD-202,Method 213, Condition A
Solderability 可焊性	Solderable area shall have minimum of 95% solder coverage. 可焊性区域最少应有95%的焊料覆盖	Solder Temperature: 245±5° C Immersion Duration: 3±0.5 sec. Subject specimens to do test per MIL-STD-202. Method 208 所做测试应满足per MIL-STD-202.Method 208
Resistance to Soldering Heat 耐焊热性	No physical damage shall occur. 产品没有损坏	Solder Temperature: 220±5° C 焊锡温度: 220±5° C Immersion Duration: 10±0.5 sec. 浸泡时间: 10±0.5 sec In case of manual soldering iron, apply it as 360±10° C for 3±0.5 seconds without forcing pressure to affect the time of contact. Test contact per MIL-STD-202, Method 210 所做测试应满足per MIL-STD-202.Method 210
Connector Tensile Strength 连接器拉伸强度	No physical damage shall occur. 产品没有损坏	Apply an axial pull-off load of 98.1 N the cable terminated on the plug connector 施加到连接公头电缆线98.1N的轴向拉力
Repeated Bending of Cable 电缆重复弯曲	No physical damage shall occur. 产品没有损坏	With the free end of the terminated cable securely fixed, repeat bending of the to 60° both sides with tension load of 4.9 N applied, for 2,000 cycles reciprocating 施加4.9N, 两个方向弯曲60°, 重复2000次
Retention Force 保持力	10Kgf minimum/Connector.	Retention Force: 10Kgf minimum/Connector. EIA364-35A 保持力: 10Kgf minimum

2.4 Environmental

环境

Test Description	Requirement	Procedure
Humidity Temperature Cycling 湿度温度循环	Show no physical damage. 产品没有损坏	Subject mated connectors to 10 cycles of humidity-temperature changes between 25°C and 65°C at 95% R.H. MIL-STD-202. Method 106 所做测试应满足MIL-STD-202.Method 106
Humidity 湿度	Show no physical damage. 产品没有损坏	90-95% Relative Humidity at 40 °C 96 hours 相对湿度: 90-95%, 温度: 40°C, 持续时间: 96小时 Subject specimens to do test per MIL-STD-202.Method 103,Condition B 所做测试应满足MIL-STD-202.Method 103,Condition B

Salt Spay 盐雾	Show no corrosion evidence. 没有腐蚀迹象	Mated connector 互配连接器 Salt concentration: 5%, 35±2° C, 48 hours 盐浓度: 5%, 温度: 35±2° C, 时间: 48 hours Subject specimens to do test per EIA364-26C 所做测试应满足per EIA364-26C
Temperature life 温度寿命	Show no physical damage. 产品没有损坏	Subject mated connectors to temperature life at 85°C for 250 hours. 温度: 85°C, 时间: 250 小时 Subject specimens to do test per MIL-STD-202, Method 108, Condition B . 所做测试应满足 MIL-STD-202,Method 108, Condition B.
Thermal Shock 热冲击	Show no physical damage. 产品没有损坏	-55° C / 30 min. +85° C / 30 min. Making this a cycle, repeat 5 cycles. Subject specimens to do test per MIL-STD-202.Method 107,Condition A 温度范围: -55° C / 30 min. +85° C / 30 min. 循环次数: 5次 所做测试应满足 MIL-STD-202.Method 107,Condition A

*Remark: The text “**No mechanical damage**” means No structure is damaged/No connection becomes loose/The specimen still is fully functional in electricity after testing. The plug need to meet requirements of EIA364*

*注意: 上文中的无损坏是指结构无破坏, 产品功能符合要求
与SCSI插座相配合的插头其性能应满足EIA364要求。*

3. Product Qualification and Requalification Test Sequence (Sample Size: 5pcs for each group)

产品验证及测试顺序（样品数量：每组5pcs）

Test group 测试项目	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Examination of product 产 品检查	1,9	1,6	1,3	1,3	1,5	1,7	1,5	1,5	1,5	1,7	1,3	1,3	1, 3	1,3
Low level Contact Resistance 接触阻抗	2,8	2,5			2,4		2,4	2,4	2,4					
Dielectric withstanding voltage 耐压						2,5				2,5				
Insulation resistance 绝缘 阻抗						3,6				3,6				
Vibration 震动 (Random)		3												
Physical shock 冲击		4												
Mating force 插入力	3,6													
Un Mating force 拔出力	4,7													
Durability 使用寿命	5													
Solderability 可焊性												2		
Resistance to Solder Heat 耐焊热性											2			
Thermal Shock 热冲击							3							
Humidity Temperature Cycling 湿度温度循环					3	4								
Humidity Steady State 湿 度									3	4				
Temperature life 温度寿命								3						
Connector Tensile Strength			2											
Repeated Bending of Cable				2										
Salt Spay 盐雾													2	
Retention Force														2

4. Test Result

测试结果

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
1.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
1.2	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 20.6 mΩMax (Initial) P/N: 5- 2271085 -4 20.5 mΩMax (Initial)	35 mΩ Max. (Initial)	Pass 合格
1.3	Mating force 插入力	mN	P/N: 2- 2271085 -4 644 mN per contact Max. P/N: 5- 2271085 -4 710 mN per contact Max.	735.5 mN (Initial) per contact Max.	Pass 合格
1.4	Un-mating Force 拔出力	mN	P/N: 2- 2271085 -4 521 mN per contact Min. P/N: 5- 2271085 -4 596 mN per contact Min.	196.1 mN (Initial) per contact Min.	Pass 合格
1.5	Durability 使用寿命		Show no physical damage.	Operation Speed: 40cycles/hour No. of Cycles: 500cycles.	Pass 合格
1.6	Mating force 插入力	mN	P/N: 2- 2271085 -4 562 mN per contact Max. P/N: 5- 2271085 -4 642 mN per contact Max.	735.5 mN (Initial) per contact Max.	Pass 合格
1.7	Un-mating Force 拔出力	mN	P/N: 2- 2271085 -4 450 mN per contact Min. P/N: 5- 2271085 -4 530 mN per contact Min.	196.1 mN (Initial) per contact Min.	Pass 合格
1.8	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 2.6 mΩMax (After) P/N: 5- 2271085 -4 2.6 mΩMax (After)	Δ25 mΩ Max. (After)	Pass 合格
1.9	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
2.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
2.2	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 21.3 mΩMax. (initial) P/N: 5- 2271085 -4 21.1mΩMax. (initial)	35 mΩ Max. (Initial)	Pass 合格
2.3	Vibration 震动		No electrical discontinuity greater than 1μsec shall occur.	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude 2 hours each of 3	Pass 合格

				mutually perpendicular planes.	
2.4	Physical shock 物理冲击		No electrical discontinuity greater than 1μsec shall occur.	Accelerated Velocity: 50G Waveform: Half-sin wave Duration: 11 milliseconds. Number of drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops.	Pass 合格
2.5	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 2.5 mΩMax. (after) P/N: 5- 2271085 -4 2.4 mΩMax. (after)	Δ25 mΩ Max. (After)	Pass 合格
2.6	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
3.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
3.2	Connector Tensile Strength		No contacts damage	Apply an axial pull-off load of 98.1 N the cable terminated on the plug connector	Pass 合格
3.3	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
4.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
4.2	Repeated Bending of Cable		No physical damage shall occur.	Apply an axial pull-off load of 98.1 N the cable terminated on the plug connector	Pass 合格
4.3	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
5.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
5.2	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 21.2 mΩMax (Initial) P/N: 5- 2271085 -4 21.3 mΩMax (Initial)	35 mΩ Max. (Initial)	
5.3	Humidity Temperature Cycling湿度温度循环		Show no physical damage.	Subject mated connectors to 10 cycles of humidity-temperature changes between 25℃ and 65℃ at 95% R.H. MIL-STD-202. Method 106	Pass 合格
5.4	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 3.5 mΩMax (Initial) P/N: 5- 2271085 -4 3.5 mΩMax (Initial)	Δ25 mΩ Max. (After)	Pass 合格
5.5	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
6.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
6.2	Dielectric withstanding voltage 耐压	V	No creeping discharge or flashover shall occur.	500V AC for 1minute between adjacent circuits of mated connectors.	Pass 合格
6.3	Insulation resistance 绝缘阻抗	MΩ	P/N: 2- 2271085 -4 >500 MΩ P/N: 5- 2271085 -4 >500 MΩ	Initial :500MΩ Min	Pass 合格
6.4	Humidity Temperature Cycling 湿度温度循环		Show no physical damage.	Subject mated connectors to 10 cycles of humidity-temperature changes between 25℃ and 65℃ at 95% R.H. MIL-STD-202. Method 106	Pass 合格
6.5	Dielectric withstanding voltage 耐压	V	No creeping discharge or flashover shall occur.	500V AC for 1minute between adjacent circuits of mated connectors.	Pass 合格
6.6	Insulation resistance 绝缘阻抗	MΩ	P/N: 2- 2271085 -4 >500 MΩ P/N: 5- 2271085 -4 >500 MΩ	After :500MΩ Min	Pass 合格
6.7	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
7.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
7.2	Contact resistance (Low level) 接触阻抗	V	P/N: 2- 2271085 -4 20.3 mΩMax (Initial) P/N: 5- 2271085 -4 20.3 mΩMax (Initial)	35 mΩ Max. (Initial)	Pass 合格
7.3	Thermal Shock 热冲击		Show no physical damage.	-55° C / 30 min. +85° C / 30 min. Making this a cycle, repeat 5 cycles.	Pass 合格
7.4	Contact resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 2.1 mΩ Max. (After) P/N: 5- 2271085 -4 2.0 mΩ Max. (After)	Δ25 mΩ Max. (After)	Pass 合格
7.5	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
8.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
8.2	Contact resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 20.3 mΩMax (Initial) P/N: 5- 2271085 -4 20.3 mΩMax (Initial)	35 mΩ Max. (Initial)	Pass 合格
8.3	Temperature life 温度寿命		Show no physical damage. 产品没有损坏	Subject mated connectors to temperature life at 85°C for 250 hours. 温度: 85°C, 时间: 250 小时 Subject specimens to do test per MIL-STD-202, Method 108, Condition B . 所做测试应满足 MIL-STD-202, Method 108, Condition B.	Pass 合格
8.4	Contact resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 3.8 mΩ Max. (After) P/N: 5- 2271085 -4 3.9 mΩ Max. (After)	Δ25 mΩ Max. (After)	Pass 合格
8.5	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
9.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
9.2	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 19.8 mΩMax (Initial) P/N: 5- 2271085 -4 19.7 mΩMax (Initial)	35 mΩ Max. (Initial)	Pass 合格
9.3	Humidity Steady State 湿度		Show no physical damage. 产品没有损坏	90-95% Relative Humidity at 40 °C 96 hours 相对湿度: 90-95%, 温 度: 40°C, 持续时间: 96小时 Subject specimens to do test per MIL-STD-202.Method 103,Condition B 所做测试应满足 MIL-STD-202.Method 103,Condition B	Pass 合格
9.4	Contact Resistance (Low level) 接触阻抗	mΩ	P/N: 2- 2271085 -4 1.7 mΩ Max. (After) P/N: 5- 2271085 -4 1.7 mΩ Max. (After)	Δ25 mΩ Max. (After)	Pass 合格
9.5	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
10.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
10.2	Dielectric withstanding voltage 耐压	V	No creeping discharge or flashover shall occur.	500V AC for 1minute between adjacent circuits of mated connectors.	Pass 合格
10.3	Insulation resistance 绝缘阻抗	MΩ	P/N: 2- 2271085 -4 >500 MΩ P/N: 5- 2271085 -4 >500 MΩ	After :500MΩ Min	Pass 合格
10.4	Humidity 湿度		Show no physical damage. 产品没有损坏	90-95% Relative Humidity at 40 °C 96 hours Subject specimens to do test per MIL-STD-202.Method 103,Condition B	Pass 合格
10.5	Dielectric withstanding voltage 耐压	V	No creeping discharge or flashover shall occur.	500V AC for 1minute between adjacent circuits of mated connectors.	Pass 合格
10.6	Insulation resistance 绝缘阻抗	MΩ	P/N: 2- 2271085 -4 >500 MΩ P/N: 5- 2271085 -4 >500 MΩ	After :500MΩ Min	Pass 合格
10.7	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
11.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
11.2	Solderability 可焊性		Solderable area shall have minimum of 95% solder coverage. 可焊性区域最少应有95%的焊料覆盖	Solder Temperature: 245±5° C Immersion Duration: 3±0.5 sec. Subject specimens to do test per MIL-STD-202. Method 208 所做测试应满足per MIL-STD-202.Method 208	Pass 合格
11.3	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
12.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
12.2	Resistance to Soldering Heat 耐焊热性		No physical damage shall occur.	Solder Temperature: 220±5° C 焊锡温度: 220±5° C Immersion Duration: 10±0.5 sec. 浸泡时间: 10±0.5 sec In case of manual soldering iron, apply it as 360±10° C for 3±0.5 seconds without forcing pressure to affect the time of contact. Test contact per MIL-STD-202, Method 210 所做测试应满足per MIL-STD-202.Method 210	Pass 合格
12.3	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
13.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
13.2	Salt Spay 盐雾		no corrosion	Mated connector Salt concentration: 5%, 35±2° C, 48 hours	Pass 合格
13.3	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格

Test Group 测试组别	Test Item 测试项目	Unit 单位	Result 结果	Spec. 规格	Judgment 判断
14.1	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格
14.3	Retention force 保持力	Kgf	>10 Kgf 大于10Kgf	Retention Force: 10Kgf minimum/Connector Leg. EIA364-35A	Pass 合格
14.4	Examination of product 产品检查		No Physical damages, no burr. 无结构性损伤, 无毛边倒刺等		Pass 合格