1. SCOPE（适用范围）

This specification covers the performance, tests and quality requirements for the RJ45 MODULAR JACKS Connector .本规范涵盖了 RJ45 网络连接器的性能、测试和质量要求。)

2. PRODUCT DESCRIPTION（ 产品描述）

DESCRIPTION（描述）	Part Number（料号）
RJ45 MODULAR JACKS	X01AB002AA2AD

3. APPLICABLE DOCUMENT（适用文件）

The following documents form a part of this specification to the extent specified herein. 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.（下列文件构成本规范的一部分，在此规定的范围内。本规范要求与产品图纸有冲突时，以产品图纸为准。如果本规范的要求与参考文件发生冲突，应以本规范为准。)

- ANSI X3.263: Information Technology - Fiber Distributed Data Interface (FDDI) -Token Ring Twisted Pair Physical Layer Medium Dependent (TP-PMD). (信息技术——光纤分布式数据接口（FDDI）与使用双绞线作为物理层媒介(TP-PMD)的令牌网)
- EIA/TIA-568-B.2： Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components. (商业建筑电讯电缆标准——第 2 部分：平衡式双绞线线缆组件)
- IEEE 802.3：Local Area Networks: Carrier Sense Multiple Access With Collision Detection (CSMA/CD) Access Method and Physical Layer Specification. (局域网：载波监听多路访问/冲突检测（CSMA/CD）访问方式和物理层规格)

- EIA-364：Electrical Connector/Socket Test Procedures Including Environmental Classifications. (包含环境分级的电子连接器和插孔的测试方法)
- FCC Part 68： Connection of Terminal Equipment to the Telephone, Connector Specifications. (连接电话的终端设备，连接器规格)

4. REQUIREMENTS（要求）

4.1. Design and Structure and Materials （设计和结构与材料）

Product shall be of the design, structure and physical dimensions specified on the applicable product drawing. （产品的设计、结构和物理尺寸参考所适用的产品图纸）

4.2. Ratings （额定功率）

Item（项目）	Standard（标准）
Rated Voltage (Maximum)额定电压	125V AC /Contact, 2.0 volts DC for LED signals
Rated Current (Maximum)额定电流	1.5A DC /Contact, 20mA DC for LED signals
Operating temperature range工作温度范围	-40℃～+85℃ From -40 to +85 degree centigrade
Storage Temperature Range储存温度范围	-40℃～+85℃ From -40 to +85 degree centigrade

4.3. Materials/ Finish (材料/表面处理)

Materials used in the structure of product shall be as specified on the applicable product drawing. (产品结构中使用的材料参考所适用的产品图纸)

5. TEST STANDARD （测试条件）

5.1 Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows （除另有说明外，用以进行测量和测试的标准环境条件范围如下）

Ambient temperature（环境温度）: 20℃ to 30℃

Normal humidity （正常湿度）: 25% to 65%

Air pressure （气压）: 86Kpa to 106Kpa

5.2 However if doubt arises on the decision based on the measured Values under the above-mentioned Conditions.The following conditions shall be employed:（但是在对判定产生疑问时,按下述状态实施）

Temperature （温度）：20±2℃

Relative humidity （相对湿度）：65±5%

Air pressure （气压）: 86Kpa to 106Kpa

6. PERFORMANCE AND TEST DESCRIPTION（性能和测试类型）

6.1 APPEARANCE（外观）

ITEM	DESCRIPTION（类型）	TEST CONDITION（测试条件）	REQUIREMENT（要求）
1	**Examination of Product（产品外观）**	**Visual and dimensional inspection per product drawing. EIA-364-18B**（EIA-364-18B 肉眼观察，产品外形必须符合图纸要求）	**Meet requirements of product drawing and dimensional requirements of FCC Part 68,Subpart F, Connector Specification per Figure 68.500(d)(2)(i) 8 Position Series Modular Jack.**（产品外观良好,无外观不良情形,产品结构及尺寸亦须符合图纸设计要求）
2	**Plating Thickness Measurement**（电镀膜厚测试）	**Inspect plating thickness using X-ray evaluation. EIA-364-48A, Method C**（EIA-364-48A，方式 C 肉眼观察电镀层外观并使用适当的仪器设备进行膜厚测试）	**Meet plating requirements defined in customer drawing.**（电镀层须良好，无外观不良情况，电镀膜厚测试须满足设计或图纸需求）

6.2 ELECTRICAL（电气）

ITEM	DESCRIPTION（类型）	TEST CONDITION（测试条件）	REQUIREMENT（要求）
1	**Low Level Contact Resistance（接触电阻）**	**Subject mated contacts assembled housing to 20 mV maximum 100mA .Measured from plug side to PCB side. EIA-364-23C.**（EIA-364-23C 组装好的端子施以最大电压 20mV 最大电流 100mA 从端口处到 PCB 端测试）	**20 mΩ MAX (Initial)** **50 mΩ MAX (Final)** **See notes a.** (初始态最大 **20 mΩ** 最终态最大 **50mΩ** 见备注 **a)**

2	**DCR** （直流电阻）	**The DCR between J end incoming and outgoing lines of the same set of filters is measured(Example: J1～J2; J3～J6).** (对同一组滤波器 J 端进线与出线之间的DCR进行测量(例：J1～J2；J3～J6))	**1.20Ω MAX.**
3	**Insulation Resistance** （绝缘阻抗）	**Mated connectors with 500±10% VDC between adjacent contacts or ground. EIA-364-21C EIA-364-21C.**(对组装好的独立端子或接地物之间施以 500±10% VDC 的电压测试)	**500MΩ MIN (Initial)** 初始态最小500MΩ **500MΩ MIN (Final)** 测试后最小 500MΩ
4	**Dielectric Withstanding Voltage** (耐电压)	**Mated connectors with 1500±5%VAC or 2250 ±5% VDC for 60 seconds 1.0mA between adjacent contacts or ground. EIA-364-20C .**（EIA-364-20C 对组装好的独立端子或接地物之间施加1500±5%VAC或2250VDC 1mA 电流,60S）	**One minute hold with no breakdown or flashover.** (不能有如跳电、击穿、破裂损坏)
5	**LED Functional Test** (LED 功能测试)	**Activate LEDs at application current and voltage.** （根据产品图纸要求加载适当的电流和电压激活 LED）	**When LEDs are present, all LED colors illuminate and meet visual requirements.** (包含 LED 的产品，点亮 LED 时，所有 LED 正常发光且符合视觉要求)

6.3 MECHANICAL （ 机械）

ITEM	DESCRIPTION（类型）	TEST CONDITION （测试条件）	REQUIREMENT（要求）
1	**Normal Force**（正向力）	**Mating connectors and measure the force of the contact area, using an FCC compliant modular plug.**（EIA-364-04 EIA-364-04 测试组装好公母头端子接触点之力，使用 FCC 标准之插头）	**100 gram force minimum**（100 克力最小）
2	**Mating and Un-mating Force**（插拔力）	**Mating connectors at maximum rate 25.4millimeters/minute and measure the Insertion and Extraction force . EIA -364-13D.**（EIA -364-13D 测试组装好之连接器在每分钟 25.4 毫米/分钟的速度下之插入力和拔出力）	**23N Max.**
3	**Durability**（耐久性）	**Operation Speed :10 to 20 cycle/min.**(EIA-364-09C 测试速度：每分钟 10 到 20次) **Durability Cycles：750 Cycles** （循环测试次数：750 次最少） **EIA -364-09C**	**No damage to the mechanism.**（机构无破坏） **50 mΩ MAX.**

4	**Drop Test** （产品跌落）	**Drop onto a horizontal marble floor surface from a height of 90CM,test for 6 faces、 3sides、1pointedness.3times in each cycle.**（在距离硬制地面 90CM 高度自由落体对整箱产品进行跌落，让一个角，三个边，六个面分别着地，3 次跌落）	**1. Loosen, crack and breakage of the plastic part and other detrimental damage shall not be observed.**（塑胶件不能有松脱，破损或其他损坏） **2. No electrical fail.**（电气性能不能失效）

6.4 ENVIRONMENTAL (环境)

ITEM	DESCRIPTION（类型）	TEST CONDITION（测试条件）	REQUIREMENT（要求）
1	**Solder ability**（可焊性）	**Subject specimens to steam aging prior to solderability, per category 3. Solder type and temperature shall be in accordance with the intended method of mounting the product. If not specified, use RMA or R type solder flux prior to solder ability test. Then immerse the solder pin into the solder bath at Solder Temp：245℃±5℃, 3 ±0.5S. EIA-364-52, Category 3.**（EIA-364-52，种类 3．在测试可焊性之前对样品按照种类 3 进行蒸气老化处理。焊接方法和温度应当与装贴产品所希望的方法一致。假如未指定，则按如下条件：将端子脚浸入 RMA 或 R type 的助焊剂中(5-9)秒，然后将端子脚浸入 245℃ ± 5℃的锡炉中 3 ± 0.5 秒）	**Solderable area shall have a minimum of 95% solder Coverage.**（沾锡面积 95%以上，无针孔）

2	Resistance to Soldering heat（耐焊性）	**Select below test item according to customer application condition. 1.Wave soldering Place the connector on the P.C. Board, then immerse the solder pin up to the surface of the board in the solder bath at Solder Temp： 260±5℃, 10S max. 3. IR Reflow Place the connector on the P.C. Board, then pass through the reflow oven. Temperature profile refers to customer drawing. EIA-364-56D. Condition B.**（EIA-364-56D, 条件 B. 依客户制程要求选择以下测试方法： 1. 波峰焊制程将连接器置于 PC 板上，然后将露出 PC 板表面的 PIN 脚部分浸入锡炉中锡炉温度：260±5℃，不超过 10 秒。 2. 回流焊制程将连接器至于 PC 板上，过回流焊炉。温度条件参考客户图纸(见备注 b)。）	**1. Shall maintain electrical and mechanical functionality.**（塑胶不得有明显的变形或损坏而影响客户装板） **2. Shall meet visual requirements and be free of warpage that would prevent installation in customer's system.**（电气和机械特性必须符合规格） **3. LEDs (if applicable) shall be functional with no damage to the lens.**（对于包含 LED 的产品，点亮 LED 时，所有 LED 正常发光且符合视觉要求）
3	**Temperature Life**（温度寿命）	**Mated connectors and expose to 85 ℃ for 500 hours, Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. EIA-364-17B Method A, Test Condition 3, Test Time Condition C.**（EIA-364-17B, 方式 A, 测试条件 3, 时间条件 C. 先在温度为 85℃±2℃ 环境中放置 500 小时，取出于常湿常温中放置 1~2 小时后，测试接触阻抗）	**Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence (Table 2).**（满足外观要求，无有形损伤，接触阻抗满足要求）

4	**Humidity（耐湿性）**	**At a temperature of 40±2℃ and relative humidity of 90% - 95% for 96 hours. Then, be left alone for 1 to 2 hours in a room ambient and test in the time. EIA-364-31B, Method I, Test condition A** **（EIA-364-31B，方式 I，测试条件 A 温度 40±2 ℃，湿度 90%－95%，测试 96 小时，测试后置于室温下 1~2 小时测试其它项目。）**	**Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence (Table 2).（满足外观要求，无有形损伤，测试接触电阻及耐电压）**
5	**Salt Spray Test（盐雾试验）**	**Tested as below（测试条件）：** **Temperature（温度）: (35±2)℃** **Humidity（湿度）:(95—98)% (R.H.) PH: 6.5—7.2** **Duration（持续时间）:X≤1u":8H; 1u"＜X＜3u":12H; 3u"≤X＜15u":24H; 15u ≤X＜30u": 48H X = 30u" : 72H X = 50u" : 96H It shall be subjected to standard atmospheric condition 1 hour after removing the salt deposits. It should meet the contact resistance.（物体在移出盐水槽后应置于标准大气条件中一个小时后再进行测量动作）** **Object non-contact area（待测品非接触部位测试条件）：** **Temperature（温度）: (35± 2)℃ Salt-solution（盐水密度）： (5 ± 1)% .** **EIA -364-26B.**	**Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence (Table 2).（满足外观要求，无有形损伤，测试接触电阻及耐电压）**

Notes（备注）：

(a): The test result does not include the resistance of cable and internal resistance of contact wire.（测试结果不包含水晶头和连接器端子(线)的本身内阻）

(b): Do not perform "IR reflow soldering test" for wave soldering product.（对于非回流焊产品，耐焊性无需测试 "回流焊"项目）

7. QUALITY ASSURANCE PROVISIONS（品质保证方案）：

7.1. Qualification Testing.（规格承认测试）

7.1.1. Specimen Selection.（样品选择）

Specimens shall be prepared in accordance with standard production methods and shall be prepared as they would be for normal applications.（样品制备应当按照标准的产品生产方法并能满足一般应用场合）

Notes（备注）：Test boards for mounting the specimens shall not short the signal pins to each other and shall leave the signal pins in an open state for electrical screening tests. Test boards for mounting the specimens shall be of a thickness to allow access to signal pins for attaching electrical probes during electrical screening tests.（用于装配及固定样品的测试板不能使信号脚位相互间短路，同时需要确保信号脚位相互间处 于开路状态以进行电屏蔽测试。测试板厚度应该保证在电屏蔽测试中信号脚位能够连接额外的电极探针.）

7.2. Requalification Testing.（规格重新承认测试）

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.（如果产品设计或制作过程中存在影响外观、安装和功能的重大更改，产品应当进行规格重新承认测试以保证品质，视产品设计、品质和可靠性要求对产品进行全部或者对原始测试中的部分测试顺序进行调整.）

7.3. Acceptance .（可接受等级 ）

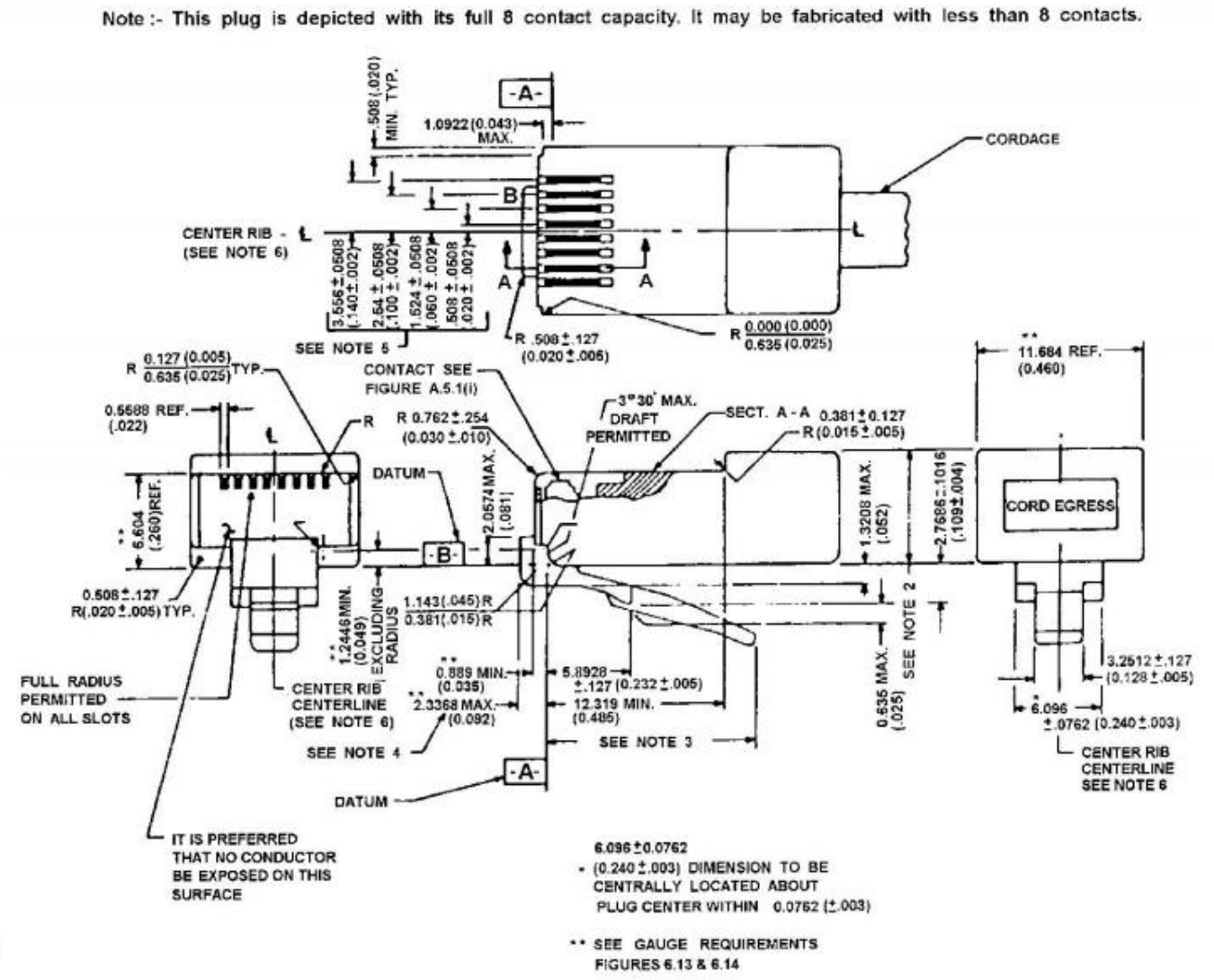
Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed o equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before re-submittal.（经核实产品能否满足表 1 所列的要求来确定可接受等级。因设备、测试夹具或操作人员操作质量问题导致的测试失败应当不影响产品规格承认。当出现产品测试结果失败时，应当采取纠正措施并重建样品以承认规格。在重新提交样品之前必须有验证纠正措施有效性的测试.）

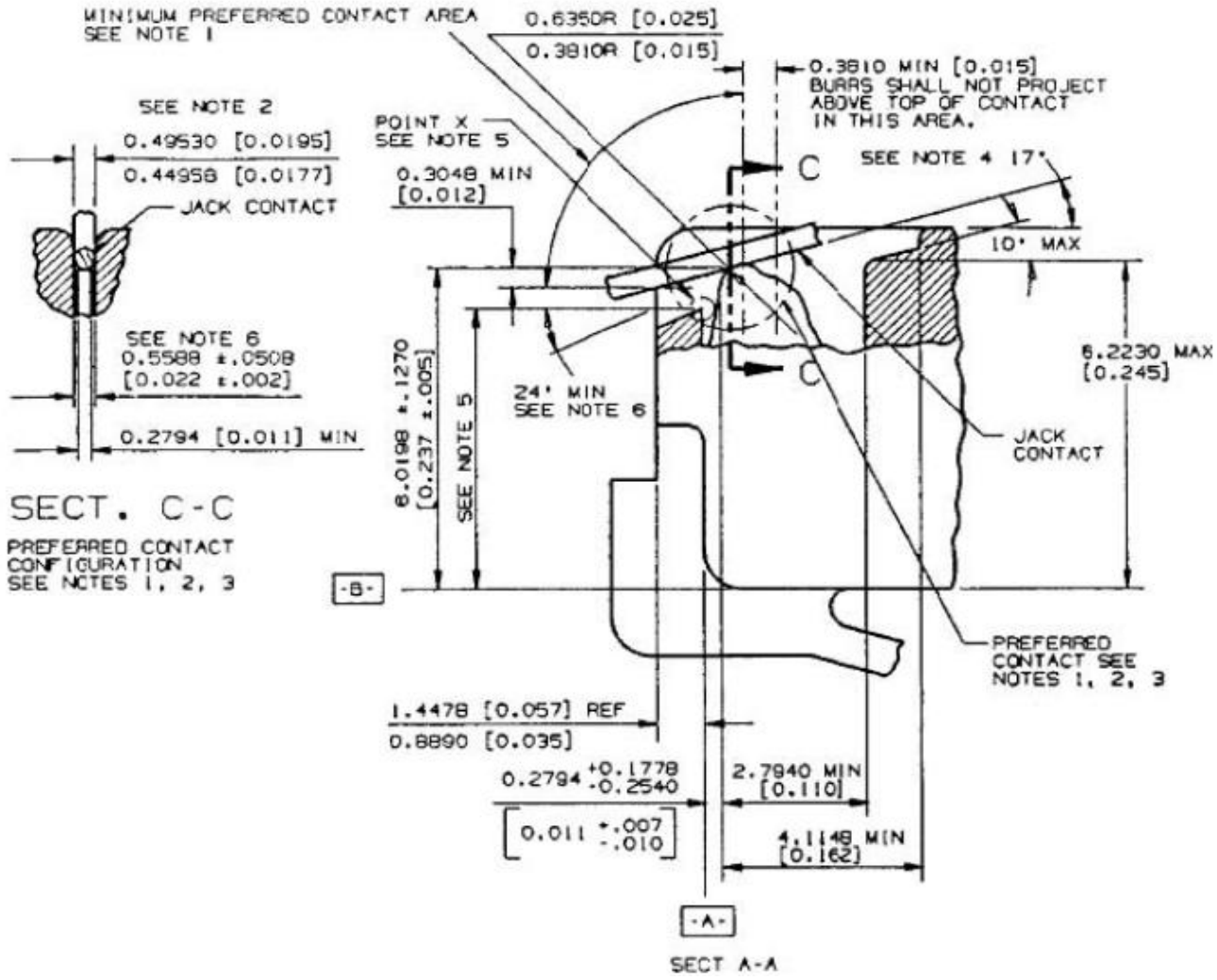
7.4. Quality Conformance Inspection.（品质一致性检查）

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.（在相应的品质检查计划

中应当指明所采用的样品可接受质量等级。尺寸和功能要求应当符合相应的产品图纸和本规格.)

8. RECOMMENDED RJ PLUG SPECIFICATION (FCC)（参考 RJ45 标准水晶头(FCC)）：





Rev.	Description	Date revised	Created/ Revised by
01	New Release	2020/04/30	Josephine Lin