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| **SPECIFICATION FOR APPROVAL**  **规 格 承 认 书**   |  |  | | --- | --- | | **CUSTOMER（客户）** |  | | **SUPPLIER PART NO.**  **（本厂产品编号）** | **Q500AT** | | **CUSTOMER PART NO.**  **（客户产品编号）** | **EP03C** | |  |  | | **VERSION（版本号）** | **V1.0** |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **APPROVED**  **（批准）** | **QUANLITY**  **ASSURANCE**  **（质量确认）** | **REVIEWED**  **（复审）** | **CHECKED**  **（校核）** | **AUTHORIZED**  **（编制）** | |  |  |  |  |  |  |  |  | | --- | --- | | **CUSTOMER ASSURANCE**  **（客户确认）** |  | | **Accessories is our Specifications and inspection，please return to**  **your company after confirmation．**  **附件是我司规格及检验资料，请贵司确认返回** | | |

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**1.适用范围**

本规格书描述的是Q500AT免提耳机，制定免提耳机的外部结构、电特性、机械特性、试验方法、检验规则。

**2.引用标准**

本规范根据“电动扬声器通用规范：“GB/T9397-1996”,“电动扬声器测试方法：GB/T9396-1996”标准。

**3.1 Speaker Characteristic(喇叭特性)：**

3.1.1 Diameter of speaker inside earphone(喇叭直径) ø10mm

3.1.2 Impedance(阻抗) 16Ω±15%

3.1.3 Sensitivity(灵敏度) 90±3dB 1KHz 0.179V(基于B&K Sound check7.0测试仪)

3.1.4 Frequency Range(频率响应) 20Hz-20KHz

3.1.5 Rated Power(额定功率) 3mW(0.4V.R.M.S)

3.1.6 Maximum Power(最大功率) 5mW(0.5V.R.M.S)

3.1.7 Test Standard(测试标准) Frequency:50-3KHz Power:0.4V

3.1.8 Polarity(相位) Same Polarity in L and R(左右声道相位相同)

3.1.9 Material of film(膜片材质) Mylar(聚脂薄膜)

3.1.10 Sensivity Graph(频率曲线) Referenced Attachment(参考附图)

**3.2 MIC.Characteristic(MIC特性)**

3.2.1 Diameter of MIC inside earphone(MIC尺寸) ø4.0

3.2.2 Deflection place(偏置点) 2VDC 2.2KΩ

3.2.3 Static impedance(静态电阻) 0.7-2.2KΩ

3.2.4 Be sensitive to fall(灵敏度减低) 供电压变化1.0V时，灵敏度变化在2dB以内

3.2.5 Frequency response(实效频宽) 50Hz-10KHz

3.2.6 Operating Voltage(工作电压) 1.0V∽10V

3.2.7 Sensitivity(灵敏度) -47±5dB 1KHz 2.0V(基于B&K Sound check7.0测试仪)

3.2.8 Direction(方向性) 全指向

3.2.9 Electricity Cost(电流消耗) 150-500uA

3.2.10 Appearance Drawing(咪头外观图)



3.2.11 Schematic Diagram(咪头电路图)



3.2.12 Frequency Hz(咪头频率图)：基于B&K Sound check7.0测试仪

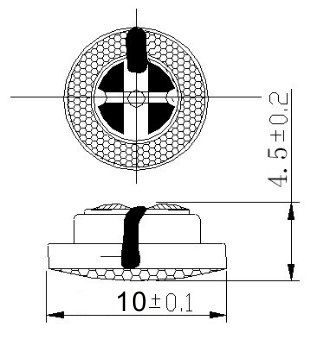


**3.2.13 Sensivity over frequency(频率曲线)：**

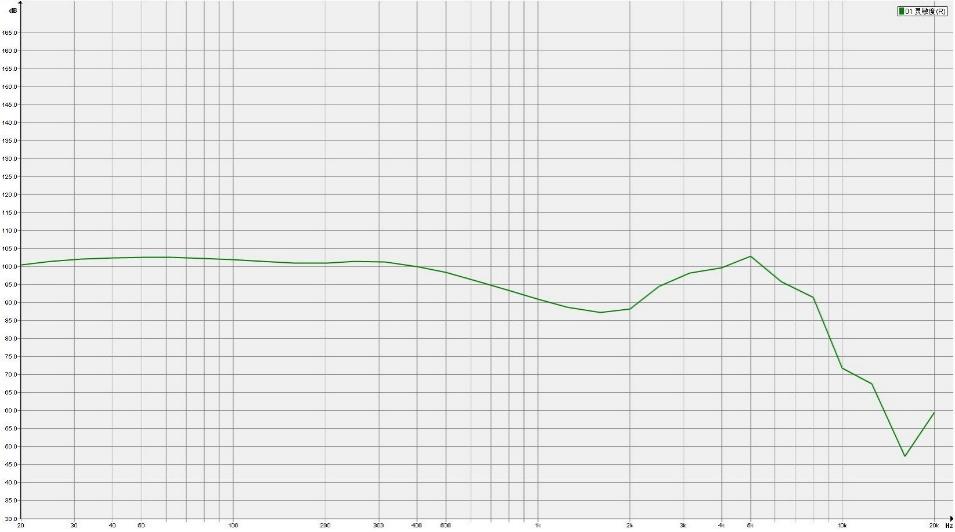
**测试方法**

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**喇叭尺寸图**

****

**喇叭频响曲线**



**4.Cable Specification(电线规格)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **项目（Item）** | | | 主线规格 | 副线规格 |
| **4.1** | **绞线导体（conductor）** | 材质(material) | 0.05 铜 | 0.05 铜 |
| 构成(form) | 14\*0.05/4C L=900mm | 14\*0.05/4C L=350mm |
| 颜色(color) | 绿色,红色,金色,蓝色 | 绿色/金色,红色/金色 |
| **4.2** | **介在物（fill）** | 材质(material) | 250D尼龙丝 | 250D尼龙丝 |
| **4.3** | **外层绝缘导体（Sheath insulation conductor）** | 材质(material) | 黑色TPE | 黑色TPE |
| 外径(Dia) | 2.5±0.05mm | 2\*1.5±0.05mm |
| 颜色(color) | 黑色 | 黑色 |
| **4.4** | **电性（Electricity Capability）** | 绝缘阻抗 | ＞10MΩ | ＞10MΩ |
| 直流电阻值 | ＜1.0Ω/1m | ＜1.0Ω/1m |
| **项目（Item）** | | | **规格（Specification）** | |
| **5.1** | 型号（Model no） | | TypeC模拟插头 | |
| **5.2** | 外壳(Crust) | | 白色ABS | |
| **5.3** | 导体(Conductor) | | Phosphor Bronze | |
| **5.4** | 镀层(The plated) | | 镀镍 | |
| **5.5** | 插针示意图(Nailhead sketch map) | | 如下图 | |

**5. Plug Characteristic(插头特性)**

**6.General Characteristic(常规特性)**

**6.1 Working environment(工作环境)：**

Working temperature from–20℃ and +60℃,Relative humidity≤95% and atmospheric pressure between 70∽106Kpa.(工作温度：-20℃∽+60℃，相对湿度≤95%，大气压力：70∽106Kpa.)

**6.2 Tempature Humidity test(温湿度试验)：**

Standing in temperature+40(±2℃)，93%∽95%of humidity for 48 hours, under the normal atmospheric temperature state for one hour after experiment,then test,the appearance/performance is ok.(温度40±2℃，湿度93%∽95%中放置48小时，实验后在常温状态下放置1小时后进行测试，外观、性能没有异常现象.)

**6.3 High-temperature test(高温试验)：**

Standing in temperature+65±2℃、30%relative humidity for 8 hours,under the normal atmospheric temperature state for one hour after experiment,then test,the appearance/performance is ok.(温度65±2℃，相对湿度30%中放置8小时，实验后在常温状态下放置1小时后进行测试，外观、性能没有异常现象.)

**6.4 Low-temperature test (低温测试)：**

Standing in temperature -30℃±2℃ for 8 hours,under the normal atmospheric temperature state for one hour after experiment,then test,the appearance/performance is ok. (温度-30℃±2℃中放置8小时，实验后在常温状态下放置1小时后进行测试，外观、性能没有异常现象.)

**6.5 High & low-temperature circulation test(高低温循环实验)：**

-30℃±2℃ an hour to 65±2℃ an hour is a circulation,circulate for 3 times altogerher,under the notmal atmospheric temperature state for 2 hours after experiment,then test,the appearance/performance is ok.( -30℃±2℃1小时----65±2℃1小时，为一个循环，共循环3次，实验后在常温下放置2小时，外观、性能应正常)

**6.6 Load test continuously(连续负荷测试)：**

With earphone in the state of free radiate space,import the noise signal equivalent to 5mW for96 hours,there is no unusual phenomena.(耳机处在自由空间放射状态下，给耳机输入相当5mW的白噪声信号96小时，无异常现象。)

**6.7 Salt fog test(盐雾实验)：**

Put the product in the salt for experiment machine(35C(±2C),5%of the salt) to carry on the 48-hour salt fog experiment,the product should not get rusty,oxidi.(将产品放到盐雾实验机35C±2C)，的盐）里进行48小时盐雾实验，实验结束后产品应无生锈、氧化.)

**6.8 Alcohol test(酒精测试)：**

98% of the alcohol,use the strength of 500g,polish the pringing for10 times,(a time is once),make the speed at 2-3seconds/time,there has not the bad phenomenon of oil for prints..(98%的酒精，用500g力，移印件来回擦拭10次，一个来回为一次，速度2-3秒/次，丝印字体无掉油不良现象。)

**6.9 Button testing(按键测试)：**

To do the button of earphone test for 30000 times,in200g40-60 times/minue,require the appearance and function of the earphone is ok.(进行耳机按键试验30000次，加200g40-60次/分，要求按键应正常。)

**6.10 绝缘电压测试:**

加DC300V电压于耳壳与插头之间的绝缘部分和导体部分之间维持一分钟，绝缘部分应不被损坏。

**7.Appearance Requirement(外观要求)：**

7.1 The earphone thread has not bubbled,scalded,scratched,shrunk,been variegated,revealed bad phenomena such as the copper wire,etc,(耳机线没有气泡、烫伤、划伤、缩水、杂色、露铜线等不良现象。)

7.2 The casing/covering/hang falling,have not criticized bad phenomena such as the sharp point,shrinking variegatedly,etc.(耳壳、面盖、咪壳、排针、咪夹没有批锋、杂色、缩水等不良现象。)

**8.Mechanical Characteristic(机械特性)：**

8.1 Pulling force test:under normality,pulling in 100 mm of the wire end,last 60 second,line material can’t emerge,disconnection,short out.(拉力测试：在常态下，电线自由端100mm处施力，持续60秒。线材不会露出、断开、短路)

8.1.1 Application of force 2Kg/1min between Earlap and Cable.(耳壳与线材之间施力2kg.)

8.1.2 Application of force 2Kg/1min between MIC. Housing and Cable.(咪壳与线材之间施力2kg.)

8.1.3 Application of force 3Kg/1min between Plug and Cable.(插针于线材之间施力3kg.)



**8.2 Bending Test(弯曲测试)：Regular bending test on ±60º(常规弯曲测试于±60º)**

8.2.1 Between Earlap and Cable:(耳壳与线材之间) in 100g(施加100g) 20times/minute 3000 times(20次/分 3000次)

8.2.2 Between MIC Housing and Cable.(咪壳与线材之间) in 100g(施加100g) 20times/minute 3000 times(20次/分 3000次)

8.2.3 Between plug and Cable(插头与线材之间)in300g(施加300g) 20times/minute 3000 times(20次/分 3000次)

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**8.3 Free Drop Test(跌落测试)：**

With the earphone drops from 1.5M height to marble for 10times naturally,there is no structure unusual phenomena of damaging, disconnecting etc.(成品耳机从1.5M高处向大理石地面自然落下10次，无结构损坏、脱节等异常现象。)



**8.4 Jump Test(冲击试验)：**

With the Speaker Vibrate 6 times on 5CM thick marble vertically,then should be normal.(咪头喇叭部分垂直落于5CM厚的大理石6次后，应正常。)



**8.5 Insert and Pull test for plug(插头插拔测试)：**

Under free Ioad state,insert and pull out when at the speed of 10-20times of every minute,after inserting and pulling out for5000 times,there can’t be obvious pull-away in.(无负荷状态下，以每分钟10∽20次的速度时进行插拔，插拔5000次后，耳机的插针电镀层不能有明显的脱落。)

**9.Material List(材料清单)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO. | 物料编号 | 物料名称 | 数量 | 颜色 | 材质及规格 |
| 9.01 |  | 副线 | 2 | 黑色 | 0.35m/1.5/2C/黑色TPE圆线（14\*0.05） |
| 9.02 |  | 主线 | 1 | 黑色 | 0.9m/2.5/4C/黑色TPE圆线（14\*0.05） |
| 9.03 |  | 插头 | 1 | 银色 | TypeC模拟插头/白胶镀镍 |
| 9.04 |  | 插头套 | 1 | 灰色 | 灰色金属套 |
| 9.05 |  | 咪板 | 1 | 绿色 | 调音量咪板 |
| 9.06 |  | 咪壳 | 1 | 黑色 | 黑色ABS |
| 9.07 |  | 耳壳 | 2 | 灰色 | 前盖黑色ABS/后盖灰色金属车光刀 |
| 9.08 |  | 喇叭 | 2 | 银色 | 10mm /16Ω |
| 9.09 |  | 黑网 | 2 | 银色 | 银色布网 |
| 9.10 |  | 硅胶圈 | 2 | 黑色 | 中号 |
| 9.11 |  | 扎带 | 1 | 黑色 | 黑色有芯扎带 |
| 9.12 |  |  |  |  |  |
| 9.13 |  |  |  |  |  |
| 9.14 |  |  |  |  |  |
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**10. Appearance structure chart(外观结构图)：**

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**11. Circuit diagram(电路图)：**

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