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| TITLE<br>标准书名称                                                     | TH649U 有线耳机产品规格书<br>TH649U Headset Specification | INITIATED DATE<br>制定日期 | 2021/7/2 |
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## 1.介绍/introduction

本文为 TH649U 有线耳机的功能和性能具体规格。

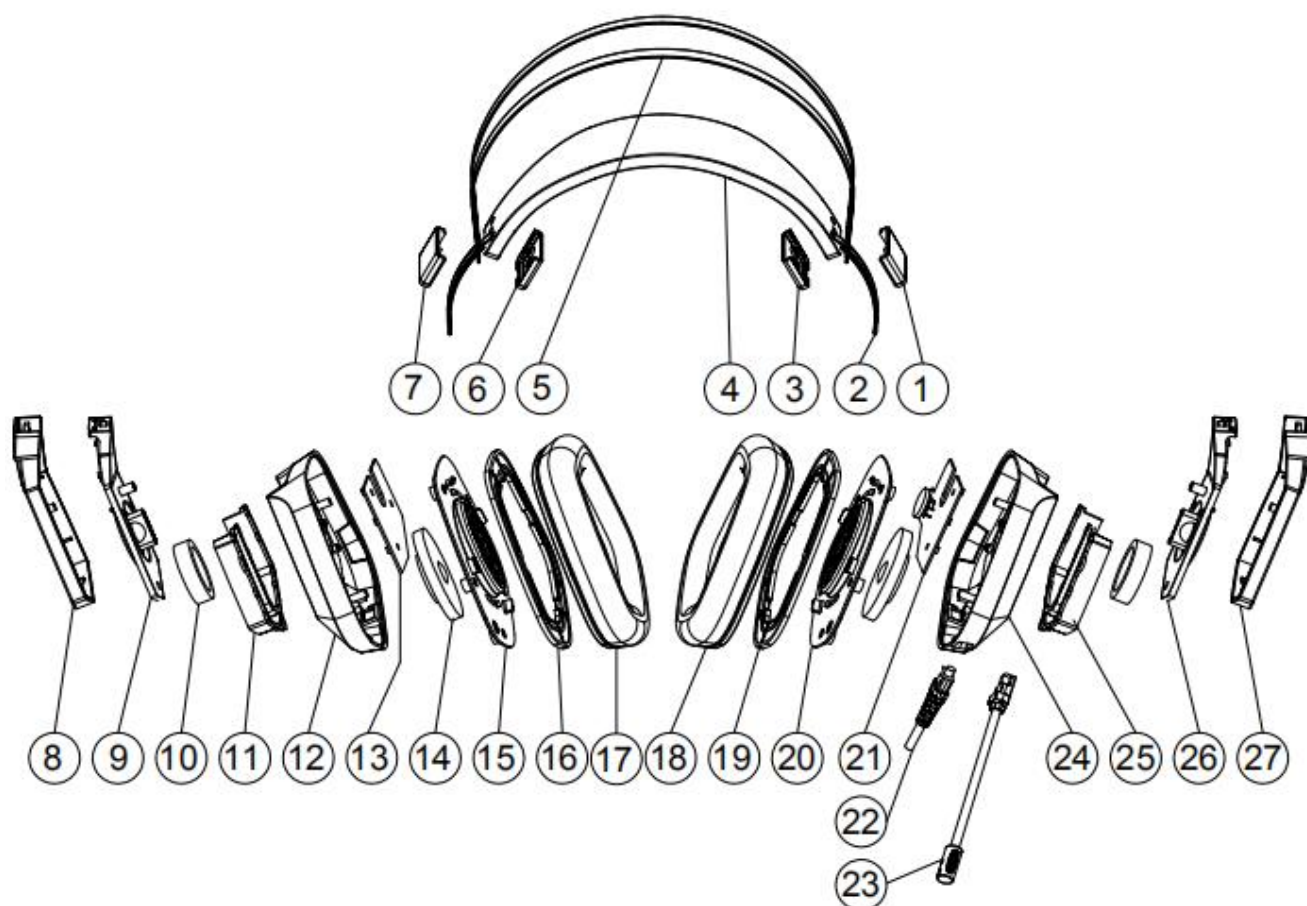
This document contains a functional and performance specification of the TH649U headset product .

产品基本外形如下/ Product Outline Photo:



|                                                                    |                                                  |                        |          |
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各零件明细表如下/Structure chart:



## 2.物理规格/MECHANICAL SPEC

### ●尺寸/ Size:

高:212.7 $\pm$ 1.0mm

长:206.9 $\pm$ 1.0 mm

宽:106.3 $\pm$ 1.0 mm

### ●功能键/ Functional keys: 灯按键、麦克风按键、音量拨盘

### ●线长/ Cable:外露 2.5 米

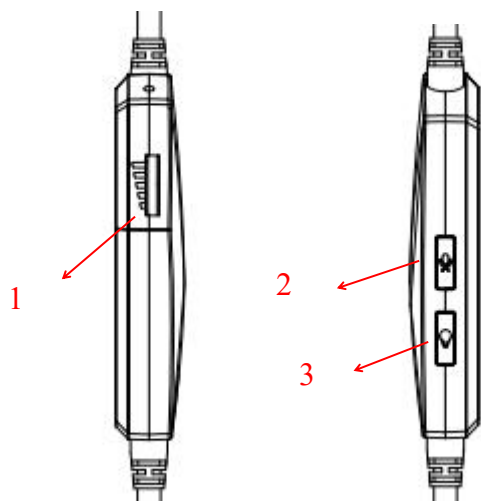
### ●颜色/ Color: 灰色

|                                                                    |                                                  |                        |          |
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- 类型/Product type: ☒USB ☐3.5+USB ☐Bluetooth ☐3.5 Plug ☐3.5+USB audio control box
- 重量/Product Weight: 397±10G

### 3.产品功能介绍/Function Introduction

功能介绍/ The function of audio :



1. 音量控制按键，向上转动音量减少，向下转动音量增加。  
This is the volume control button. Turn up to decrease the volume and turn down to increase the volume.
2. 麦克风切换按键，短按一下此开关，开启或关闭麦克风。  
Microphone switch button. Short press this switch to turn on or off the microphone.
3. 灯开关，短按一下此开关，切换一次灯效。  
Light switch, press the switch briefly to switch the light effect once.

### 电气特性/electrical specification

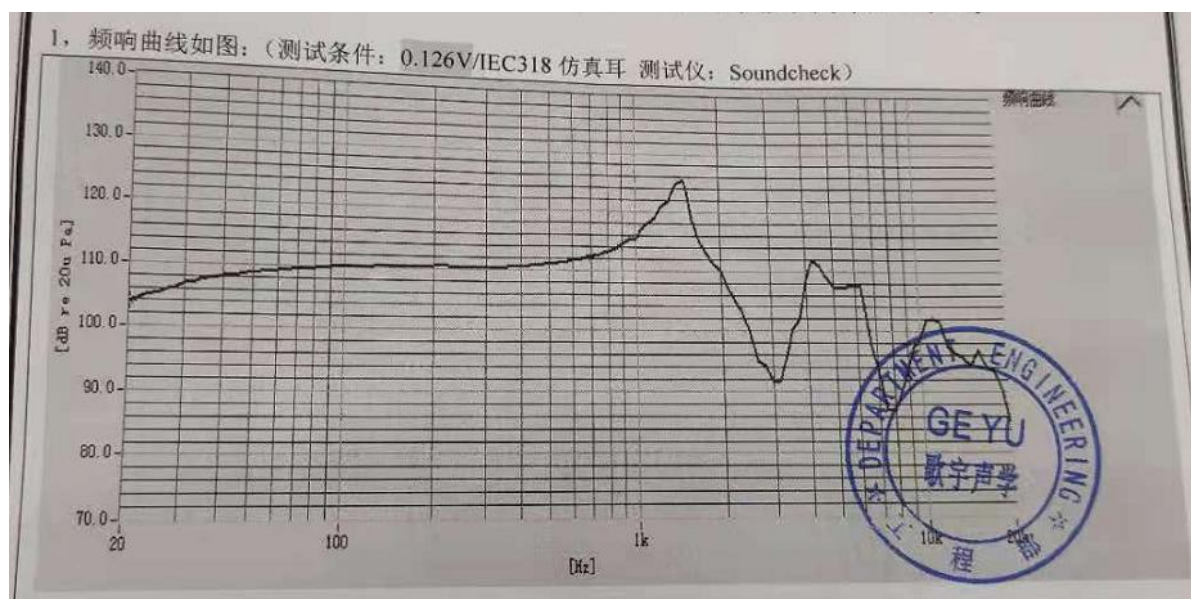
- 规格标准/Standard: USB
- 支持蓝牙 Profile: N/A
- 工作电压: 5±5%V
- 频率范围/Product type: N/A
- 发射功率/ Transmit Power: N/A

|                                                                    |                                                  |                        |          |
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- 接收灵敏度/ Receiver Sensitivity: N/A
- 工作距离/RF Range: N/A
- 充电电压/charging voltage: N/A
- 电池容量/battery capacity: N/A
- 工作电流/working current: <90mA

#### 4.扬声器规格/Speaker unit SPEC

- 阻抗/Loading Impedance:  $16 \pm 15\% \text{ OHMS}$  (  $f=1\text{KHz}$  ) 供电电压: \*\*\*\*\*
- 出力音压/Out Sound Pressure Lever (S.P.L) :  $107\text{dB} \pm 3\text{dB}$  At  $1\text{KHz}$  / $1\text{cm}$  / $1\text{mW}$
- 频率响应/ Frequency Response:  $20 \sim 20\text{KHz}$  (at  $1\text{KHz}$  Output S.P.L  $\pm 10\text{dB}$ )
- 总谐波失真/Total Harmonic Distortion:  $\leq 5\%$
- 单元尺寸/Drive Unit Dimensions:  $\Phi 50\text{mm} * 10 \text{ mm(H)}$
- 输入功率/Power Rating: Normal:  $10\text{mW}$  ; Maximum :  $15\text{mW}$  N
- 异常音与外碰/Buzz & Rating : Sine Wave:  $0.49\text{V}$  (Must Be Normal)
- 连续负荷/Load Test: Normal  $10\text{mW}$  24Hours (White noise)
- 磁铁/Magnet: 钕铁硼/(NdFeB) 钕铁硼/NdFeB
- 极性/Polarity: Diaphragm Shall Move Forward While Apply a Positive DC Current To the “+” or “Marked” Terminal
- 频响曲线图: (测试条件:  $0.126\text{v}$ /318 仿真耳, 测试仪: Soundcheck)

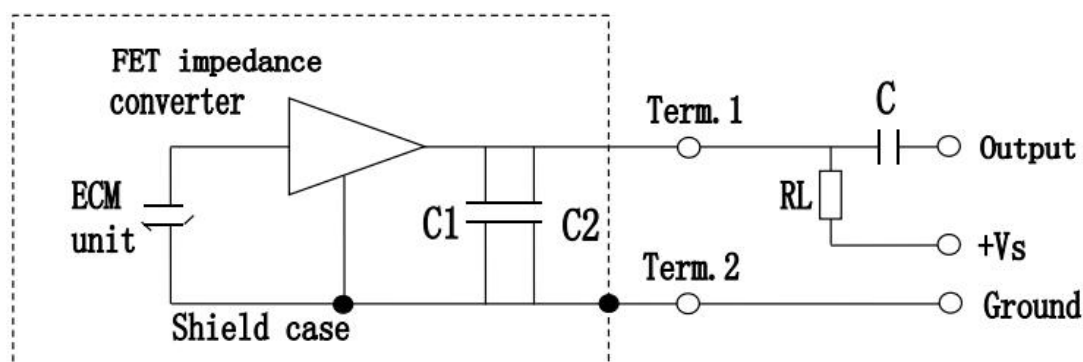


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## 5.麦克风规格/Microphone unit SPEC

- 单元尺寸/Drive Unit Dimensions:  $\phi 6\text{mm} * 2.7\text{mm(H)}$
- 灵敏度/Sensitivity:  $-42 \pm 3 \text{ dB}$  (0dB=1V/Pa. 1KHz)
- 指向性/Directivity: 全指向/Omnidirectional
- 输出阻抗/Output Impedance: **2.2KOHMS**
- 频率响应/Frequency Response:  $100 \sim 10000\text{Hz}$  (at 1KHz  $\pm 3\text{dB}$ )
- 总谐波失真/Total Harmonic Distortion:  $\leq 5\%$
- 工作电压/Operating Voltage : DC 1.0V~10V
- 额定电压/Standard Operating Voltage : DC 2.0V
- 消耗电流/Current Consumption : Max 0.5mA
- 信噪比/S/N Ratio: 60dB or More
- Maximum input S.P.L : 100dB
- Measurement Circuit :

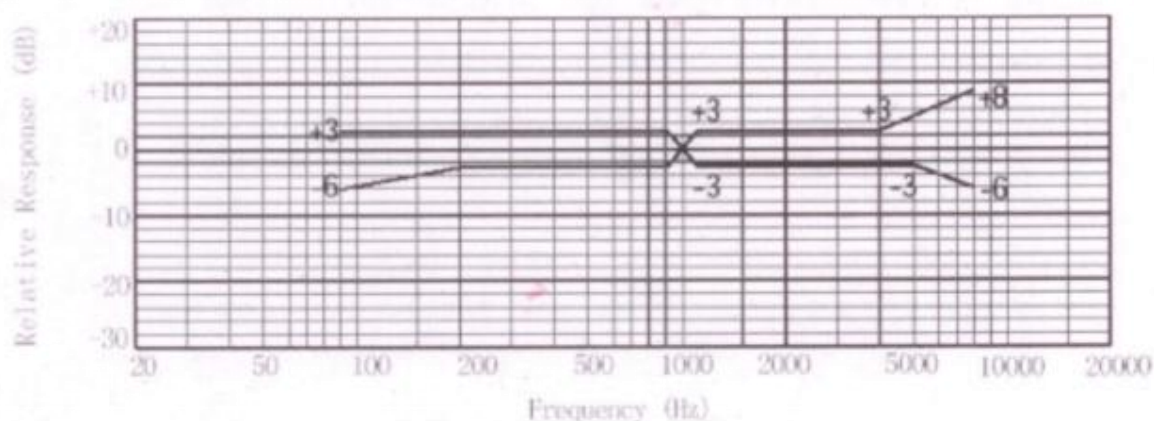
Test Condition Vs=2.0V RL=2.2K $\Omega$  Ta=20 $\pm$ 2 $^{\circ}\text{C}$  R.H=60 $\pm$ 5%



- 频响曲线/Typical Frequency Response

|                                                                    |                                                  |                        |          |
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TYPICAL FREQUENCY RESPONSE CURVE 频响曲线



## 6.环境定义/Environment Definition

### ● 6.1 温度/Temperature

使用温度范围/Operating Temperature Range: 0°C to 40 °C

使用湿度范围/Operating Humidity Range: ≤85%

运输温度范围/Transported Temperature Range : -15°C- 60°C

运输湿度范围/Transported humidity range: ≤85%

### ● 6.2 环境实验/Environmental Test

#### 6.2.1 高温试验/High Temperature Test

温度/Temperature: 60±2°C

时间/time : 96 小时

湿度/Moisture: 50±5% R. H.

#### 6.2.2 低温试验/Low Temperature Test

温度/Temperature: -15±2°C

时间/time : 96 小时

## 7. 可靠性参数 /reliability testing

|                                                                                                                                               |                                                  |                        |          |
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### ● 7.1 高温测试/High Temperature Test

温度/Temperature:  $60\pm 2^{\circ}\text{C}$

测试时间/ Test time: 96 hours

样品通过这个实验后要在室温下静置一个小时。

/After this test the sample shall be left in room temperature for 1 hour.

判断标准: 未出现功能问题。

/Judging Criteria : No functional defect should be found.

### ● 7.2 低温测试/Low Temperature Test

温度/Temperature:  $-15\pm 2^{\circ}\text{C}$

测试时间/ Test time: 96 hours

样品通过这个实验后要在室温下静置一个小时。

/After this test the sample shall be left in room temperature for 1 hour.

判断标准: 未出现功能问题。

/Judging Criteria : No functional defect should be found.

### ● 7.3 湿度测试/Moisture Test

温度/Temperature:  $40\pm 2^{\circ}\text{C}$

湿度/Humidity: 90~95% R. H.

测试时间/Test time: 96 hours

样品通过这个实验后要在室温下静置一个小时。

/After this test the sample shall be left in room temperature for 1 hour.

判断标准: 未出现功能问题。

/Judging Criteria : No functional defect should be found.

### ● 7.4 热循环测试 /Heat Cycle Test

|                                                                    |                                                  |                        |          |
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温度/Temperature:  $-15\pm 2^{\circ}\text{C}$  for 1 hour and then  $60\pm 2^{\circ}\text{C}$  for 1 hour

进行次数/Test number: 5 cycles

样品通过这个实验后要在室温下静置一个小时。

/After this test the sample shall be left in room temperature for 1 hour.

判断标准: 未出现功能问题。

/Judging Criteria : No functional defect should be found.

## 7.5 裸摔测试/Drop Test

裸摔次数 /drop number: 6 times

裸摔高度/Drop Height:  $150\pm 5$  cm

方向/orientation: 6 面各一次/each face of headset drops once.

裸摔表面/ the materials of testing surface: 塑料地砖/Plastic floor tile

## ● 7.6 线材摇摆测试/Wires Swing TEST

摇摆速度/Swing speed: 30 cycle/min

负载/bear load : 300 g

摇摆角度/Swing angle:  $\pm 90^{\circ}$

摇摆次数/swing number: 12000 (times.)

判断标准: 未出现功能问题。

/Judging Criteria : No functional defect should be found.

可靠性测试的判定: 因为各项测试均为破坏性测试, 每项测试均需独立取样。每项测试后的样品可正常工作即判定通过该项测试。

/Determination of reliability test: since all tests are destructive testing, each test shall be independently sampled. After each test, it is pass for test while that the sample can work normally .

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## 8. 认证/Agency Certifications

●FCC CLASS B PART15

●CE

要求符合铭冠以下三大文件：The following three documents are required

a. 《耳机类外观检验标准 TG-WQ-005》

Standard for appearance inspection of earphone TG-WQ-005

b. 《耳机可靠性试验管理规范 TG-WQ-006》

Specification for reliability test management of earphones TG-WQ-006

c. 《TG-HSF-300 环保要求》

Environmental Requirements TG-HSF-300