

# What is a 3.5mm headphone jack? How to distinguish between different audio connection standards.

Discover what a 3.5mm headphone jack is, the structure of TS, TRS, and TRRS jacks, and how to choose the right equipment for effective microphone use. Find out more here!

A 3.5mm headphone jack is an analog audio connector with a diameter of 3.5mm, specifically used for transmitting audio signals between devices. This connector is widely used to plug headphones, speakers, or microphones into phones, laptops, PCs, and tablets. Let's explore what a 3.5mm headphone jack is in the following article from GearVN.

## Key points

1. The 3.5mm headphone jack is a common analog connection standard, ensuring stable signal transmission, low latency, and wide compatibility with many devices.
2. TS, TRS, and TRRS jacks are distinguished by the number of markings on the jack to determine their mono/stereo transmission capability and microphone support.
3. 3.5mm headphones are popular because of their zero latency, convenient plug-and-play design, and the fact that they don't require charging like wireless devices.
4. Choosing between wired and wireless headphones depends on your needs; the 3.5mm jack is suitable for gaming, while wireless prioritizes compactness and flexibility.

## 1. What is a 3.5mm headphone jack?

The 3.5mm headphone jack is a standard analog audio plug with a diameter of 3.5mm, specifically used to transmit signals between a source device ( PC , laptop , phone) and a receiver ( headphones , speakers). This connection standard has become widely popular globally since the explosion of the Sony Walkman music player line.

Nowadays, although many smartphone models have removed this port, the 3.5mm jack remains a standard on motherboards , PCs, gaming laptops , and Hi-Fi audio equipment.

1. **Advantages:** Low production cost, high physical durability, and readily available replacement parts. This connection standard also boasts good backward compatibility with a wide range of consumer electronic devices.
2. **Disadvantages:** The cable is prone to tangling or internal breakage if the user coils or folds it improperly. The output sound quality depends entirely on the audio processing chip of the source device such as a PC or laptop.



*3.5mm headphone jack*

## **2. Structure and how to distinguish between different types of 3.5mm jacks**

### **2.1. Single-line Jack TS**

1. The simple structure consists of two contacting parts: the tip and the sleeve.
2. It only transmits mono (single-channel) audio signals, with no distinction between left and right channels.
3. It is primarily used in the production of specialized microphones or connecting cables for electronic musical instruments.



*Jack TS transmits basic mono audio.*

## **2.2. Two-line TRS Jack**

1. It consists of three separate parts: Tip, Ring (metal ring), and Sleeve.
2. Capable of transmitting stereo sound with clear left/right channels.
3. The microphone signal connector is not integrated into the same plug.
4. Typically used for computer speakers and pure music headphones. If you plug this type into a phone to make a call, the device will not recognize the microphone.



*TRS jacks support clear stereo sound.*

## **2.3. Three-bar TRRS jack**

1. The most complex structure has 4 parts: Tip, Ring, Ring, Sleeve.
2. It's a superior connection standard that integrates both stereo audio and microphone into a single plug.
3. Becoming the most common standard for in-ear headphones, wired gaming headsets are used with laptops, phones, and console controllers.



*Jack TRRS integrates microphone and audio.*

### **3. Reasons why gamers and tech enthusiasts prefer 3.5mm jack headphones.**

3.5mm jack headphones are always preferred by gamers and tech enthusiasts because of their ability to transmit signals directly through copper cables, eliminating audio latency. This is a major advantage in FPS games like CS:GO or Valorant, where every millisecond affects reflexes.

Furthermore, the plug-and-play mechanism offers convenience, allowing for immediate use simply by plugging it in. Additionally, 3.5mm jack headphones offer flexible compatibility with external audio processing devices such as soundcards or DACs/amps, enhancing sound quality to meet specific needs.



*3.5mm headphones have near-zero latency.*

## 4. Should I buy 3.5mm jack headphones or wireless headphones?

Headphones with a 3.5mm jack are the optimal choice for hardcore gamers and users who prioritize high-quality sound. This product line offers stable connectivity, helps optimize the budget, and is easy to use across multiple devices such as PCs, laptops, or PS5.

Wireless or USB-powered headphones are more suitable for users who prefer a tidy workspace and prioritize portability. This is also the optimal wireless audio solution if you want to experience 7.1 surround sound simulation through software.



*Wired headphones with a 3.5mm jack are the optimal choice for hardcore gamers.*

## 5. GearVN - A reputable and high-quality place to buy headphones.

GearVN specializes in providing high-end PCs, laptops, PC components (RAM, CPU, SSD, etc.), and gaming equipment (monitors, headphones, keyboards, mice, etc.) to meet all the needs of gamers and technology users. In particular, GearVN stands out with advantages such as:

1. **Diverse products and optimized configurations:** GearVN offers countless options from major brands such as HyperX, Asus, Sony, etc. All products are carefully selected.
2. **Competitive pricing and numerous promotions:** GearVN regularly runs attractive promotions and discounts on special occasions. You can easily get your desired headphones at the best price, along with attractive gifts or flexible installment payment options.
3. **Reliable warranty and after-sales service policy:** When shopping at GearVN, you can rest assured with our clear warranty policy and dedicated technical support team. Our experienced specialists are always ready to advise you on choosing the right product and answer any questions you may have during use.
4. **Convenient shopping experience:** Whether you want to experience our products in person at our showrooms or shop online through our website with fast delivery service, GearVN offers maximum convenience.

## **GearVN contact information :**

1. **Website :** gearvn.com
2. **Hotline :** 1900.5301



*GearVN - The place to buy reliable, high-quality headphones.*

## **6. Frequently Asked Questions about 3.5mm Headphone Jacks**

### **6.1. Which is better for listening to music: Type C or 3.5mm jack?**

The sound quality through a Type-C or 3.5mm port depends primarily on the DAC (digital-to-analog converter), not the connection standard. Type-C (digital) uses the DAC built into the headphones/adaptor cable, while 3.5mm (analog) relies on the DAC of the playback device. Therefore, the connection type doesn't determine sound quality; the quality of the DAC chip is what makes it so good.

### **6.2. Is it possible to plug 3.5mm headphones into a 6.35mm port?**

You can easily do this using a 3.5mm to 6.35mm adapter. The 6.35mm jack is a larger size standard, commonly found on professional audio equipment such as amplifiers, mixers, or high-end soundcards.

### **6.3. Will the 3.5mm jack remain a trend in the future?**

Although smartphones are gradually phasing them out, the 3.5mm jack remains an irreplaceable standard on PCs, gaming laptops, and professional equipment. Headphones are still preferred due to their near-zero latency and no need for charging, perfectly meeting the needs of gamers.



*The 3.5mm jack remains an irreplaceable standard.*

**See more:**

1. Common laptop ports: Function and classification
2. What are true wireless earbuds? A guide to choosing the right ones.
3. Top-selling headphones at GearVN: Exceptional sound quality.

*The 3.5mm jack remains a reliable analog audio connection standard for gamers and tech enthusiasts thanks to its stability and low latency. Contact GearVN via hotline or visit our website to experience our range of high-quality gaming headsets and receive advice on the most suitable configuration.*

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