

Looking back at the headphone jack: More than a century old and slowly disappearing on smartphones

The 3.5mm jack is a small connector, but contains a long history and a tremendous support for the development of technology.

The 3.5mm headphone jack is a dying port - most smartphone manufacturers are gradually giving up on it, especially on high-end devices. But the headphone jack carries a story that deserves to be told, the jack has existed almost as long as the phone itself, its original use was in 19th-century switchboards, when the Directly connect the call manually. They need a way to easily create and disconnect the audio carrier.



This jack has many different sizes, not just 3.5mm. The jack in the 19th century has a size of 6.35mm.

Headphone jack continues to be popular thanks to Sony Walkman. Sony's music device revolutionized the mobile audio world, and the Walkman (along with many other portable CD players later) made the 3.5mm jack popular among users.



Sony Walkman

2.5mm 'miniature jacks' were in use for a few years in the 2000s, but because the 3.5mm format was more popular with consumer electronics, 3.5mm won in the end.

There is another challenge for the 3.5mm jack - the USB port. T-Mobile G1 (aka HTC Dream), the first Android phone, came with a headset connected to the miniUSB port on the phone. That's not the only model, many HTC models have used the 'ExtUSB' port (which has extra pins and supports audio output).



USB Ext port on HTC

At first, the jack only supported mono audio, but quickly supported the stereo standard. The head of the headphone jack is called the TRS - Tip, Ring, Sleeve (Pointed tip, circuit and leg).



TRS works fine on Walkman devices, which don't have a microphone. Phones that need microphones to make calls and solve have to be very simple - add a second loop, forming the TRRS connector.

TRRS itself is also divided into two standards: OMTP and CTIA. OMTP is used on some older phones of Nokia, Samsung and Sony Ericsson. Apple, HTC, LG and others (including newer Nokia and Samsung phones), use CTIA.



Volume up and down buttons on inline remote control

The headphone jack in CTIA and OMTP standards looks the same, all have 3 bars on the top of the jack. But the position of the two middle rings of these two standards is opposite. These additional connections are also used for volume up and down buttons on the inline remote. However, you must purchase a compatible headset with your phone if you want the mic button and volume to work.

Some Sony phones come with custom TRRRS jacks. The third round allows the company to add an extra microphone, which allows to eliminate noise. The phone handles the necessary processes, so the headset itself doesn't need a battery. This makes them lighter and more comfortable to use.



FM radios are also something that requires headphones to be used - they not only help with listening, but also act as antenna to receive reception. Later, some phones, like the Nokia X2, built-in an antenna, so there was no need for headphones to listen to FM radio anymore. Today, many smartphones do not even have FM Radio.

The USB port has tried and failed to kill the 3.5mm jack, but now USB again wants to topple the headphone jack with USB-C connectivity and Apple has removed the 3.5mm jack with Lightning port and desired users switch to using a Bluetooth headset.



Apple is not the first to 'kill' 3.5mm jack on smartphones, but it is the most influential. After iPhone 7 without 3.5mm jack, a series of other smartphone companies have removed this connector jack, especially On high-end products, USB-C and wireless headsets are replacements for the 3.5mm jack.

However, despite being 'abandoned' by manufacturers, the 3.5mm jack is still popular with users because it is said to be of higher quality and is important for compatibility with nearly every headphone produced in the 70s. past year.

The headphone jack is a small connector, but it has a long history and greatly supports the development of technology.

Reference: GSMarena

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