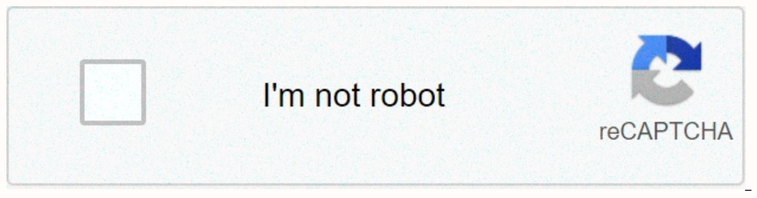

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Input vs output audio

By John Papiewski of small MP3 players for high-power speakers, almost all audio equipment has at least one input or output in the form of standard plugs, cranes and screw stations. Input and outputwork differently; Although they look similar, inputs and outputs have different electrical properties worth noting. The input accepts the output signal - the voltage of the sound frequency - from the outer piece of equipment. By contrast, sound outputs produce signals that drive other unit input. Very little signal appears when you enter offline, as you expect audio from an external device. Using a voltmeter or rotating telescope, however, you can detect signals in an offline output, because its purpose is to send audio to another device. Electronic designers create inputs and outputs to accept connections of different types of equipment. For example, you can connect downloads, musical instruments, or microphones to amplifier inputs. To take it out, you can connect speakers or headphones. The input and outputs of the computer's sound card work in a similar way; In a recording studio, signal paths usually include several devices linked in a string. For example, a musician connects the output of his guitar to the effects pedal input, the pedal output for mixing plate input, and the output of the panel to the amplifier input. Even in these complex configurations, signals always flow from output to input. The input and output of the hearing have an electrical property called obstruction, which, like resistance, is measured in ohm. Obstruction is important, as signal load efficiency depends on how much input resistance matches the output inputs it relates to. For example, you can get weak sound from a high-resistance microphone connected to low resistance inputs. However, a particular piece of audio equipment may contain input barriers that differ significantly from their outputs; The speaker may be 10,000-om input and 8-om outputs, for example, because its sources are microphones and it pushes the speakers. The typical amplifier output provides several watts of energy; On the other hand, the inputs on professional gear such as mixing panels and speakers will provide phantom power, and dc voltage aims to turn on condensed microphones. Line-level output equipment, such as radio tuners and media players, provides small amounts of energy in the range of 100 milliwatts, as it drives sensitive electronic circuits and Energy-hungry speakers. Some types of audio equipment, such as tuners and MP3 players, have only a product; Many electronic elements, such as speakers, recording devices, and sound effects processers, both have inputs and outputs. Speakers and headphones have only input. The output takes the form of sound waves. To fully understand microphones, it is necessary to understand how sound works in terms of input, output, and signal flow. When working with computer sound, it is necessary to understand the system's input and output devices. Are microphones input or output devices? When the microphone is connected to a computer (via a voice interface or other transducer from analog to digital), it sends/input information to the computer. This means that microphones are input devices. Digital microphones with built-in headset amp that receive information from computers are I/O devices. This may be a bit confusing, so we'll go through the full definitions of what I.E.O. devices really are. We'll also talk about possible input and output from the microphone without a frame for the computer system. Make sure you check my new microphone article. (Ultimate Illustrated Guide)! Related articles: • Are inlet headphones or output devices?• Are speakers (and studio screens) input or output devices? Before we go into detail regarding microphones as input devices, let's determine what i-output devices are. What is the difference between the input device and the output device? The I/I sends information to a computer system while the output device receives/reproduces the information that is ejected by a computer system. When determining whether the device is in the I-o, consider the computer input/output (I/O). With this definition, we understand microphones to be input devices. The microphone converts sound waves into sound signals, then converts them into digital audio data and sends/enters them to a computer. Microphones usually output analog audio signals (AC volts) that require conversion to digital data in order to fit into the computer. This means that, by defining the input device, the microphone signal must be converted into digital data before that microphone can be considered an input device. Analog-to-digital conversion of microphone signal may occur in a variety of ways: audio interface (hub) audio interface (adapter) digital microphone audio interface (hub) audio interface (axis): hub-style audio interfaces are the most popular type of audio interface and provide the most common method of connecting a microphone to a computer. One or more microphones can be inserted into the audio interface (depending on the design) and internal lye from symmetry to digital Convert analog signals to digital data that is then entered into a computer connected via USB, Firewire, Thunderbolt, etc. Distributor-style audio interface example: Focusrite Scarlett 2i2 (Check price on Amazon): Focusrite Scarlett 2i2 Audio Interface Focusrite is displayed in the world's 11 best audio interface brands 2020. Audio interface (adapter) audio interface (adapter): Adapter-style audio interfaces are a much less common way of connecting a microphone to a computer. These interfaces usually have a single input (analog microphone signal), a simple ADC, and a single output (digital audio data). These adapters are usually connected to a computer via USB. Example of a converted audio interface: Shure X2U (price verification link on Amazon): Shure X2U Shure is displayed in my new microphone menus:• Top 11 best microphone brands you should know and use • Top 13 headphone brands In the world to learn more about audio interfaces and microphones, check out the following my new microphone material: • What sound interfaces and why does a microphone need one?• Best microphone audio and digital microphone interfaces digital microphone digital microphones (commercially sold as USB mixes) have internal ADCs Digital data is ejected directly from the microphone body. These microphones are directly connected to a computer via USB. Example of a digital USB microphone: Blue Yeti (link to check the price on Amazon): Blue Blue Yeti microphones are displayed in the new microphone menu for the top 11 microphone smiles you should know and use. For more information about USB, analog and digital microphones, check out the following new microphone articles: • How USB microphones work and how to use them• Are microphones representative or digital devices? All this means that microphones are inherently designed to be input devices but their signals first need to be converted into digital data in order to truly become input devices to computer systems. For more information about connecting microphones to computers, see my article how to connect a microphone to your computer. I-o and output from a standalone microphone so we've discussed what input, output, hardware and what makes the microphone an input device. Now let's talk about the inputs and outputs of the microphone itself (without thinking about the computer system). Let's start by defining a microphone. The microphone acts as a converter, converting mechanical wave power (sound waves) into electrical energy (sound signals). There are many types of microphones with many ways to convert sound waves into sound signals, but this is the primary purpose of the microphone and suitable for our discussion. Electrically speaking, microphones are designed to output only electric sound signals (in the form of AC voltaire or sound signal). Microphones are not even designed No sound signals (more on this later). For more information about microphone audio signals, check my article What is microphone audio signals, speaking electrically? However, some microphones need electricity to function properly. Note that this does not mean that they require voice signals. This simply means that they require electricity (in dc voltage form) in order to run the inner circuits or to polarize their microphone capsules. Again, this is not part of the signal flow or input/outputs, but worth mentioning aside. For more information about microphones, microphone signals and electricity, see my article Are AC microphones or DC devices? As for inputs, microphones are not designed to receive any analog (AC) or digital audio signals. Instead, microphones interact with sound waves (changing the volume of sound pressure) around the diaphragm. This mechanical wave energy is the information entered from the microphone. Again, this mechanical wave energy is not an analog or digital signal. Therefore, in terms of signal flow, microphones (in the intended design) can be summarized at the following two points: output signal microphones only: microphones convert sound waves to electrical sound signals that are then ejected from the microphone output connection. A warning here is that digital USB microphones have internal ADCs, so they output digital audio data instead of analog audio signals. Microphones are the beginning of the signal flow line. Microphones are input devices: microphones send/enter data to a computer system for processing. Of course, you must first convert the microphone's audio signals into digital sound before entering them into the computer. Note that until now, I was talking about the intended design of the microphone. In the next section, I'll be discussing the possibility of the microphone signal flow ing to the opposite. Microphones as microphone design speakers is actually very similar to speaker design, especially the moving design of dynamic microphone coils. The dynamic mobile microphone capsule is designed with a diaphragm that contains cylindrical coils of conductive wires attached to its ass. This file sits in cylindrical space without touching the magnet inside and out. As the diaphragm moves in reaction to the sound waves, as well as the conductor coil. As the coil moves through the magnetic field, the electrical sound signal is created by electromagnetic induction. The vast majority of speakers are similarly designed, only in the opposite direction and on a larger scale. The speaker contains large coils of conductive wires, which receive electrical sound signals. This file is attached to a large membrane membrane and sits in a cylindrical space inside a larger magnet (which is designed to occupy space inside and outside the file). As the AC is transmitted through Coils, electromagnetic induction causes coils to

oscillate within the magnetic field, pushing and pulling the amplifier diaphragm and emits sound waves. So, what prevents us from using speakers as microphones and vice versa? Moving dynamic coils: In the case of moving coil microphones and speakers, all we have to do is reverse the signal flow. Condenser: In the case of condenser microphones and static electric speakers, we need to reverse the signal flow while maintaining a continuous polarizing charge on the condenser capsule/diaphragm. Dynamic tape: In the case of tape microphones and tape speakers, we'll only need to reverse the signal flow. Tape designs are also dynamic and work on electromagnetic induction. The diaphragm microphone tape is very sensitive so I do not recommend trying to send an audio signal to the tape microphone. For a guide to turning your speaker into a microphone, please click through my comment on how to turn the speaker into a microphone in 2 easy steps. The point here is that microphones can be output devices if the signal flow dictates it. Of course, the microphones are not designed to be speakers and the result will be dimmer. However, it is quite possible to force a microphone in being an output device! Are headphones without microphones input or output devices? When talking about pc I/Os, headphones without microphones are output devices. When connected to a computer, the headphones receive information that has been removed from your computer. Are headphones with device input or output microphones? When talking about the input/operating system, headphones with built-in microphones are input and output devices. Headphones are output devices since the computer/outputs send information to them. Built-in microphones are input devices since information is sent/entered to your computer. Related article: Are headphones inserting or taking out devices? Devices?