



MIKING ADVICE

Get more from your Sontronics microphones with this useful information and advice about microphone technology and miking techniques...

About SONTRONICS microphones

For over 50 years, the Sontronics factory has been responsible for developing and producing some of the finest quality equipment for all aspects of the professional audio industry. Expert engineers painstakingly ensure that all microphones have been subjected to stringent quality controls.

Our capsules are handcrafted, using gold-sputtered Mylar film no more than six microns thick, seven times thinner than a human hair. Each capsule is artificially aged to ensure stability and to also give each capsule its specific characteristics.

Once assembled, each microphone must meet a series of strict performance targets, and are tested using specialist laboratory equipment at all stages of production.

Our vacuum tube or 'valve' microphones (the **HELIOS** and **OMEGA**) utilise the dual-triode 12AX7/ECC83 in their preamplifier, chosen for its consistency in delivering an excellent balance of both low and high frequency response without colouring the original signal.

The **APOLLO** and **SIGMA** ribbon microphones employ an aluminium ribbon element less than two microns thick enabling them to deliver stunningly accurate results, thanks to their increased sensitivity. Their outputs are actively balanced, which means they can be connected to any mic preamplifier without the common impedance problems associated with transformer-based ribbon mics.

Using SONTRONICS microphones

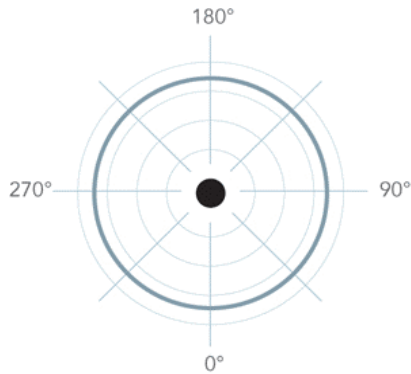
Most Sontronics microphones are condenser or 'capacitor' microphones. In the majority of applications, condenser microphones have an advantage over dynamic microphones, thanks to their ability to produce a consistent and transparent frequency response.

Typically, a condenser microphone should be able to accurately capture its subject, along with transient sounds, helping to produce a very natural recording that is true to the original sound. For these reasons, condenser microphones are most often used in recording studios and other professional applications where absolute accuracy is critical.

All Sontronics microphones require a 48V phantom power source to operate, via XLR cable from a mixing desk or separate preamplifier unit. Our vacuum tube models are supplied with an external mains power unit that delivers a constant power supply to the mic via a multi-pin cable, which is included in the package. All other models use a 48V phantom power source via your standard XLR mic cable, unless otherwise stated.

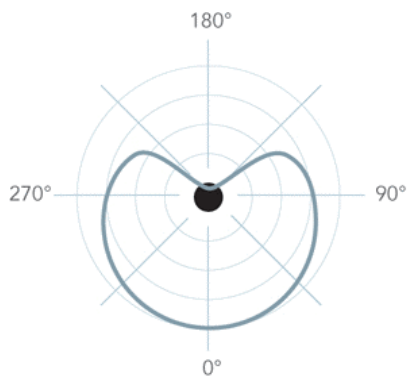
Polar pattern characteristics

A polar pattern is the representation of how a microphone picks up sound in the space around it. The most commonly used polar patterns for microphones are omnidirectional (omni) and cardioid.



OMNI-DIRECTIONAL PATTERN

An omni pattern picks up sound equally from all directions, which is useful for recording choirs and groups of musicians, and also for capturing the natural room ambience.



CARDIOID PATTERN

A cardioid pattern picks up sound from the source it is pointed at, but also offers a graduated rejection of sounds from the side, and very little input from the rear. When shown as a graph, the pickup response looks very much like a heart shape, hence the term 'cardioid'. These microphones are also referred to as 'pressure-gradient' microphones.

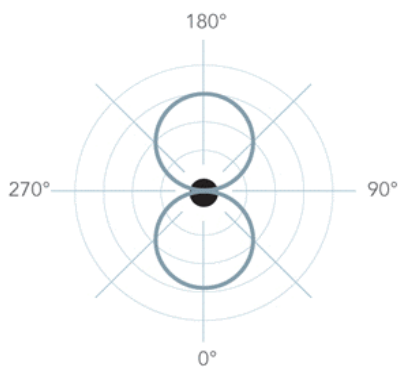


FIGURE-OF-EIGHT

Another common polar pattern is figure-of-eight, which picks up an equal response from the front and the rear of the microphone but offers excellent sound rejection from either side or 'off-axis'.

To make a directional polar pattern, the omni and figure-of-eight patterns are combined. Consequently, by varying this combination, you can create different variations on the cardioid pattern, such as hypercardioid. The hypercardioid pattern offers a good overall rejection and a flatter frequency response, while having a low sensitivity to sounds coming from the rear of the microphone.

The proximity effect

When a pressure-gradient (or 'cardioid') microphone is moved closer to its sound source, its bass response increases, and this is known as the proximity effect. Some singers often use this effect to their advantage as it adds a deeper sound to their voice. However, you can use a low-cut filter to compensate for this effect.

Low-cut filter and attenuation switches

As the characteristics of each sound that you are recording are potentially very different, so are the ways in which they can be captured. To help you make the very best recording possible, some of our microphones feature a low-cut filter, an attenuation switch or 'pad', or a combination of both.

The low-cut filter simply reduces the output of the lower frequencies captured by the microphone. This is particularly useful when the proximity effect is causing a problem, or where low-frequency sounds like traffic noise and vibrations are being picked up. It is also very useful when the source being recorded exhibits little or no low frequency output, where the filter could be employed to add definition to your recording while limiting unwanted noise.

An attenuation switch or pad is used to attenuate or reduce the sensitivity of the microphone, especially where a very loud sound source could overload the preamplifier and cause unpleasant distortion. For example, a trumpet played directly at the microphone is very likely to overload the preamplifier, so a pad would be used in this instance to attenuate the level, but still capture the characteristics of the instruments itself.

To assist in choosing the right mic for the right job, we've gathered feedback from users to create our [Application Guide](#) that shows you which mic is suitable for which application. [Download it here.](#)