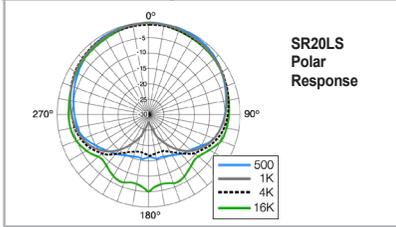
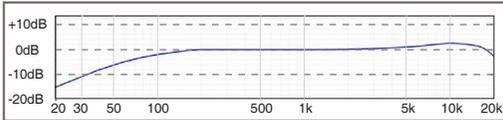


SR20LS Cardioid

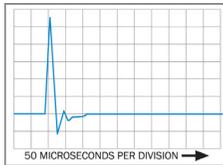
Frequency Response	20Hz to 20kHz
Polar Pattern	Cardioid
Sensitivity	8mV/Pa (-42 dBV/Pa)
Power Requirements	24-48V Phantom @ 10mA
Peak Acoustic Input	150dB SPL
Signal-to-Noise Ratio	74dB A-weighted
Output	XLR (PIN 2+)
Output Impedance	200Ω bal. (between pins 2&3)
Minimum Output Load	1,000Ω, balanced between pins 2&3
Noise	20dB (A-weighted)
Dimensions L & D	Length 7.57 inches (192.2mm) Diameter .860 inches (21.8mm)
Weight	0.36 lb. (164g)



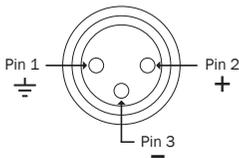
Specifications subject to change without notice



Frequency Response of SR20LS (typical)



Impulse Response of SR20LS (typical)



XLR Output Connector Assignment of SR20LS

Product Registration

To help you get the most out of your Earthworks purchase, please take a moment to register your product online at earthworksaudio.com/register

Service & Repair

If you have any problems with your Earthworks products, please contact our Service & Repair Department.

Email: returns@earthworksaudio.com
 Telephone: (603) 654-2433, ext. 119

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SR20LS

High Definition Microphone™
 for Kickdrum & Other
 High SPL Acoustic Sources

User's Guide

MADE IN USA

earthworksaudio.com



Description

The Earthworks SR20LS is a cardioid condenser microphone designed specifically for kickdrum and other high level acoustic sources up to 150dB SPL and requires standard 24-48V phantom power. It has a uniform frequency response from 20Hz to 20kHz with a very fast impulse response. The uncolored rear rejection of this microphone is nearly twice that of conventional microphones.

Before You Start

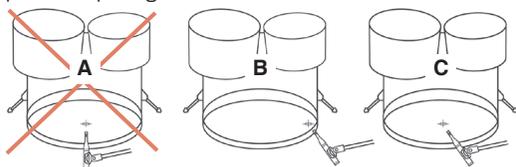
After activating phantom power, allow up to a minute for the SR20LS's circuitry to settle. It is a good idea to keep the channel muted during this settling time.

Important: Using the SR20LS for Kickdrum

Some popular kickdrum mics have built-in EQ for use on kickdrum. However, such mics usually do not sound good when miking other instruments or vocals. In contrast, the SR20LS has an extended frequency response and a very fast impulse response making it incredible for kickdrum. It can also be used for miking most anything else. It has no built-in EQ so you will need to EQ this mic for use with kickdrum (see EQ and Signal Processing Section).

Miking the Front Head

When miking the kickdrum at the "front head" you can position the mic either at the edge or the center of the drum head. However, do not place the microphone tip parallel to the drum head as shown in Figure 1-A. Always place the mic at an angle to the head (Figures 1-B & 1-C) to prevent large bursts of air from pushing the diaphragm against its backplate, which will create a "pop" or "snap" in the microphone output signal.



Figures 1-A, B & C Miking the Front Head

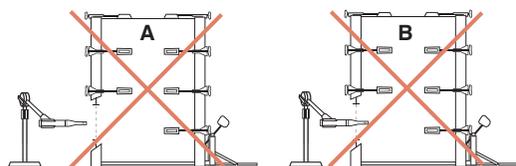
Miking the Hole in the Head

First, make sure the mic clip is attached all the way at the bottom (XLR end) of the microphone to allow it to go deeper inside the kickdrum (Figures 2-A & 2-B).



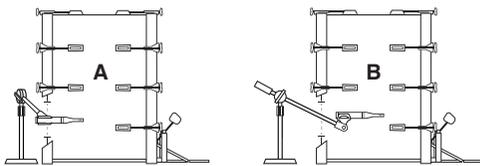
Figure 2 Attach Mic Clip at XLR End of the Microphone

When miking the kickdrum at the hole in the head keep in mind that the highest velocity of air from the hole is closest to the outside or inside of the hole which could cause the microphone to pop (Figures 3-A & 3-B).



Figures 3-A & B High Air Velocity Close to Hole in Head

The mic will not go as far inside the kickdrum using a taller mic stand (boom at an angle), than with a shorter mic stand (boom parallel to the floor) see Figures 4-A & 4-B. For optimum results place the microphone at least 6 inches inside the hole (Figure 4-A) or closer to the batter head (Figure 4-B). With the mic inside the kickdrum it should be "placed at an angle" (mic tip not parallel to the head).



Figures 4-A & B Suggested Miking inside Kickdrum

EQ and Signal Processing

It is standard practice when miking a kickdrum to EQ it by boosting the low frequency range to make the kickdrum sound fatter, and then boost the mid and/or high frequency range to hear more snap from the beater. However, you may need to rethink this approach when using the SR20LS with its extended low and high frequency response compared to other mics used for kickdrum. This extended response may reduce the amount of low and high frequency EQ that would typically be used for kickdrum.

First, we suggest that you first listen with the EQ "flat" (Fig. 5) with all other signal processing turned "off." You may be surprised how good this mic sounds all by itself.

Next, before adding EQ or signal processing try moving the mic around, whether placed inside or outside of the kickdrum for the desired balance of beater sound and fat low frequency kickdrum sound.

If EQ is needed, first create a dip of -6 to -12dB at 500Hz. Then if desired, add some high frequency "shelving" EQ in the 2kHz to 3kHz range (Fig. 6) for the beater sound. Next add some low frequency "shelving" EQ in the 60Hz to 80Hz range to fatten the low frequency sound if necessary (Fig. 7). Play with the amount of EQ until you get the sound you want. Keep in mind, all kickdrums sound different and may require different amounts of EQ at slightly different frequencies. For a simpler and easier EQ approach, you can use an Earthworks KP1 KickPad™ that will do the majority of this EQ for you. Just plug this XLR type module into the mic cable feeding your kick drum microphone.



Figure 5 Start with EQ "Flat"

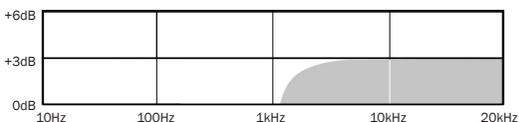


Figure 6 Add Shelving EQ in High Frequency Range

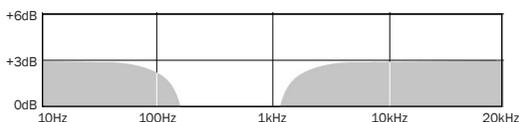


Figure 7 Add Shelving EQ in Low Frequency Range

It is also standard practice to sometimes use compression, limiting and/or gates (expanders) for kickdrum. It is suggested that you first obtain the EQ'd kickdrum sound you want, then add compression, limiting and/or gating until you obtain the desired kickdrum sound.

Many engineers using the SR20LS for kickdrum say it is the best kickdrum mic they have ever used. We hope you will find this to be your favorite kickdrum mic as well.