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## Microphones

### sE Reflexion Filter

An amazing device for those serious about isolating a microphone.

by Stephen Murphy, 11.15.2006

[email the author](#)

*Stephen Murphy is the Studio Editor of Pro Audio Review.*

sE (Sound Engineering) Electronics is certainly one of the more interesting product manufacturers to emerge from China's growing audio technology sector. The Shanghai-based company was founded by Siwei Zou, a classically trained musician, with experience as a conductor and recording artist with the Shanghai Philharmonic Orchestra and Shanghai Opera.

Aiming to set themselves apart from the spate of inexpensive and seemingly identical Chinese microphones rebranded and marketed in the US and elsewhere, Zou set up his own lab and factory and enlisted the talents of top engineers and audio experts from Shanghai University. Since their introduction in the US and Europe a few years ago, sE Electronics microphones have earned a fair amount of respect from project, production and live engineers. Recently, sE Electronics introduced its unique take on acoustic ambience control, the Reflexion Filter (\$399). Bearing an uncanny resemblance to a shipboard radar antenna, the mic stand-mounted device is designed to reduce the effect of reflective room acoustics on recordings.

### Features

The main part of the Reflexion Filter kit is a surprisingly large and heavy curved plane of punched metal on the convex surface and panels of absorptive material on the concave. A convoluted-but-effective all-metal mounting system connects the filter plane to a mic stand, and a secondary mounting system secures the recording microphone within the focus of the curved filter. A unique mic clamp system allows the microphone to be moved both horizontally and vertically within the absorptive space for optimal placement of a variety

## Fast Facts

### Applications

Studio, live sound, broadcast

### Key Features

Acoustic ambience-reducing filter; six layers of absorptive and diffusive materials; rugged filter and stand assembly construction; two-year warranty

### Price

\$399

### Contact

sE Electronics/Sonic  
 Distribution | 617-623-5581  
 | [www.seelectronics.com](http://www.seelectronics.com)

of mic sizes and shapes.

The filter itself is comprised of six main layers. Starting with the outermost, a layer of perforated brushed aluminum allows diffused waves to pass through to a layer of absorptive wool. The remaining wave energy then hits a layer of aluminum foil, intended to further dissipate the energy and break up lower-frequency waves.

Next comes an acoustically isolating air space layer, kept intact by spacers interspersed rods that run through the layers of the filter. Another layer of absorptive wool is followed by a second layer of punched aluminum. Mounted to the innermost perforated aluminum wall are four acoustically absorptive resilient panels that form the inside surface (facing the mic) of the Reflexion Filter.

#### In Use

Upon opening the fairly heavy shipping box, I was impressed by the size and construction of the curved Reflexion Filter. I continued to empty the box, pulling out "oversized puzzles of ironmongery" to quote Ray Bradbury's *Something Wicked This Way Comes*.

Puzzles, indeed, for on my floor were several substantial metal contraptions and an unintentionally humorous single sheet of instructions (without words) depicting a metal rod with a wrench and arrows indicating the direction to turn.

As can be inferred, other than which way to turn the wrench, figuring out the functions of the parts and assembling them in a meaningful manner was pretty much a trial-and-error affair. Thankfully, sE now has a well-written assembly/user's manual available for download on its website.

Once assembled, the Reflexion Filter system clamps easily to the shaft of any mic stand – though the heavier duty the better. Due to the weight of the mic, filter and mounting system, and the shifted center of gravity of the whole system, I highly recommend having sandbags on hand.

I tested the Reflexion Filter in my studio's control and recording rooms, as well as various non-recording rooms (read: bathroom and office). In the acoustically treated environments, the filter's effect was subtle, yet some reduction in ambience and increase in focus was evident.

The Reflexion Filter really started showing its worth on recordings made in the control room. Here, I was able to effectively reduce some low-level fan and equipment noise by pointing the outside of the filter directly at the offending sources. The result was a 3 dB - 5 dB reduction of noise on the recordings (as compared to the same mic placement without the filter). The amount of reduction varied with filter positioning and placement of the mic within the filter, and it was easy to find the most pleasing combination.

sE recommends – and my use confirms – that the mic capsule be centered vertically and horizontally within the filter's focus, and placing the front of the capsule flush with the imaginary plane between front edges. This spot is the most benign in terms of changing the inherent sound and polar pattern of the microphone, while providing a decent amount of ambience reduction. Moving the mic into the curve of the filter definitely provides more "room reduction" but at the cost of detrimentally (in most cases) affecting the sound of the mic.

Later, I put the Reflexion Filter to work at the National Press Club in Washington, DC, during the run-up to the launch of an XM Radio show called (what else?) "From the National Press Club." A permanent home for the show's production had yet to be decided, so we set up in a spare

edit bay in the Press Club's Broadcast Operation Center. Between the bare walls and large sliding glass door, the room had all the acoustic charm of, say, a very large bathroom. Placing the mic deep into the Reflexion Filter (and the talent as close to the mic as possible) the room's "bounciness" was significantly tamed and a decent recording was teased from an otherwise unacceptable room.

### Summary

The sE Reflexion Filter works well to reduce ambience and focus the overall sound of the mic towards the recording subject and, as such, makes a useful addition to the range of tools regularly used in studio miking. Though certainly not a substitute for a properly designed and treated room, the Reflexion Filter comes close to being an acoustic ace-in-your-pocket for recording in challenging environments.

PAR Studio Editor Stephen Murphy has over 20 years production and engineering experience, including Grammy-winning and Gold/Platinum credits. His website is [www.smurphco.com](http://www.smurphco.com).

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