

World-Class Studio Designer Jay Kaufman on Acoustics & Isolation

# RECORDING

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## New Products On Review:

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**Focusrite** • **Genelec** • Locomotive Audio  
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BY MIKE METLAY

Barefoot Sound is a name that carries a lot of weight in the pro audio industry, both metaphorically and literally. Its speakers use a variety of unusual technologies to deliver impeccable sound in unapologetically huge packages—the signature MiniMain 12 speakers weigh a whopping 120 lbs. each, and the smaller MicroMain27 is almost 70 lbs. Engineers who work in smaller rooms have looked enviously at these massive systems for years, and some have taken the plunge and tried the (somewhat) smaller MicroMain35... but there remains an untapped market of recordists in really small spaces who want the very best, if only they could make it fit.



## Barefoot Sound MicroMain45 Active Loudspeakers

The sound of uncompromising quality—now available for any studio

With the release of the MicroMain45, Barefoot Sound has planted a flag firmly in that market. This is a daunting, but not unmanageable, speaker that distills much of the Barefoot magic into a package that's surprisingly friendly to even the smallest rooms.

### A 3-way with 4 speakers

The MicroMain45 is a triamplified 3-way active monitor with four drivers: one tweeter, two midranges, and a woofer. It's worth discussing these drivers separately before we look at the monitor as a whole.

The tweeter is the same 1" dual ring radiator that's found on all of the other Barefoot monitors. It's a unique design that "pins" the center of the tweeter in place with a metal phase plug, and sports a tuned waveguide chamber behind the tweeter, inside the sealed enclosure. The end result is easy to hear: a very wide and accurate sweet spot that's nothing like the narrow, "beamy" performance of some other tweeters.

The midrange drivers are 2.5" aluminum cones placed in a vertical line so they're phase-aligned as the listener moves from side to side. Similar to the behavior of the multiple speakers in a 4 x 10 bass cabinet, the dual midrange driver provides the tight and controlled sound of a smaller speaker with the punch of a larger speaker. The woofer is an 8" aluminum cone.

The cabinet is unported and filled with wool acoustic damping. There's no waveguide

around the tweeter and mids, nor is the cabinet contoured beyond beveled edges and front corners. A tiny LED glows aqua with power on, flashing red when the onboard limiters engage.

### Specs and features

The MicroMain45 is a DSP-driven speaker; analog input signals are immediately converted to 24-bit/192 kHz digital audio, and converted back to analog right before the three power amplifiers (180W each for the tweeter and midrange array, 250W for the woofer). The digital signal processing chain includes all of the rear-panel level and EQ adjustments, as well as built-in crossovers (at 600 and 3600 Hz) and individual peak and RMS limiters for each driver signal.

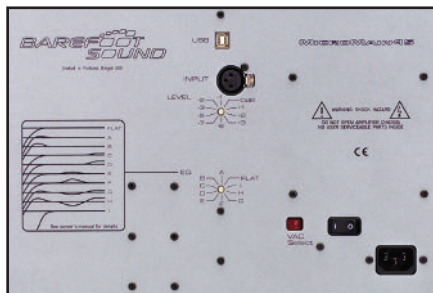
The speakers are rated at 350W continuous power and have two frequency response curves quoted: 53 Hz–40 kHz  $\pm 1$  dB and 40 Hz–45 kHz  $\pm 3$  dB. The bass rolls off at 12 dB/octave below that

–3 dB point of 40 Hz; that means that unless you're doing a lot of stuff below the fundamental of a bass guitar's low E (e.g. grand piano, 5-string bass, dubstep drops, etc.) you'll hear all the bass you need from these speakers without a subwoofer.

The rear panel features a locking XLR input, stepped controls for Level (–9 to +3 dB) and EQ (see below), a manual voltage selector switch (recessed for safety), standard IEC power connection and power switch, and a USB port for factory calibration (it's not an audio interface input).

The MicroMain45 is 11 x 15.5 x 11 inches in size and weighs a respectable but not outrageous 37.5 pounds. The speakers are sold in mirrored pairs for horizontal placement; vertical placement for surround center-channel use is possible and discussed in the manual. Barefoot recommends that the speakers be tried out with the tweeters on the outside first, then on the inside, and for the user to determine what seems to work best for his or her particular setup.

Barefoot also describes in the manual how the speakers are expected to behave if they're not set up in the usual toed-in equilateral triangle. Aiming the speakers more forward gives a less precise sweet spot, but extends the sweet spot out to the sides and back behind the optimal listening position so it's actually possible for people to sit behind the engineer and hear almost exactly what he's hearing. I



did try this in my listening sessions and found it to work quite well when folks joined me in the room.

### Setup and settings

I set up the MicroMain45 speakers in my studio at the *Recording* offices. They lived on a pair of Ultimate Support speaker stands, sitting on Sorbothane domes for isolation, with the tweeters roughly 49" apart; after some initial listening tests, I opted to set up the speakers with the tweeters on the inside, as I felt I was getting a more honest playback within a slightly smaller sweet spot. If this had been a bigger room with the speakers on or behind a larger-format mixing desk, I would almost certainly have opted for the tweeters-out positioning.

The EQ switch has a Flat setting plus nine different EQ curves, A through I. These curves are diagrammed and described in the owner's manual; they represent eight combinations of three different EQ adjustments. The ninth curve, I, is flat except for a very steep highpass filter that's 6 dB down at 80 Hz, effectively pulling back bass response for use with a subwoofer.

The high and mid tweaks involve simply changing the relevant driver levels rather than adding filter bands—the midrange can be turned up or down by 1 or 2 dB, and the tweeter can be turned up 1 or 2 dB. At the low end, there's a 160 Hz low shelf that can boost by 1 or 2 dB before the bass rolloff hits, to give just a bit more push to the low end if desired.

Not all combinations of settings are available, but the eight sets of choices provide a wide range of musical possibilities for dealing with treble absorption, console bounce, wall effects, etc. For most of my listening sessions, I left the EQ flat, although adding 1 dB of LF contour (curve A) was quite seductive in my room.

### Listening sessions

Once I fired up the MicroMain45, I had to spend several hours listening to familiar material to get past my initial reaction, which was joyously stunned silence. It was instantly obvious why Barefoot speakers have such a strong following.

These speakers are quite flat with no noticeable bumps or dips throughout the audible spectrum, including the critical crossover points. Imaging is simply spot on, and with a reliable frequency response out to at least 10° off axis (the frequency plots for 15° are well controlled to within -2 dB out to 20 kHz), the sweet spot is simply immense. Whatever that voodoo they're doing with the tweeters might be, I have to say... it works!

Bass is perfectly focused and tight, with tons of detail from the fundamental on up into the harmonics. The mids are neither scooped or forward unless you set them that way; curves E and F push the mids a bit if that's your taste, and curves G and H give you that bassy/

trebly smiley-face response that some engineers enjoy. The highs go on forever, and have that utter clarity that skips "sparkling" and goes straight to "stratospheric" without ever taking a side trip into "sterile."

Once I came back to Earth, I started listening to audio that I knew had problems, and the MicroMain45's knives came out. Sloppy tracking with overly noisy preamps? There was the hiss. Tubby mids in a mix? Boom. Bad mastering or overuse of compression and limiting? Painful. Overly bright condenser mics stacked up on multiple instruments in a mix? What should have been air was more like flying glass. I was hearing details that I'd normally turn to my best headphones to pick out. Mixes I did on them translated reliably to everything from earbuds and car audio to home theater with practically no tweaking.

What was truly startling was how well they revealed lossy compression artifacts. There are certain forms of compression that are very hard for most folks to hear; 320 kbps MP3 and 256 kbps AAC can fool many listeners in a double blind A/B test with CD-quality WAV files. The MicroMain45 is the first monitor I've used where I could spot compressed vs. uncompressed files almost every time.

On the flip side, if you want to really hear what's so special about high-resolution audio, the MicroMain45 brings the noticeable difference in clarity to small rooms like no other speaker I've heard. In a listening session involving 24-bit WAV files at 44.1, 48, 88.2, 96, and 192 kHz, the combination of the MicroMain45 and the H2 Designs MIYO interface (reviewed in this issue) was simply astounding. If less expensive monitors let you hear audio through a perfectly transparent window, these monitors smash the glass and put you right there with the music—it literally sounded like Diana Krall or Alison Krauss was singing right in front of me, a few feet away. Spine-tingling!

### Conclusions

These monitors are not for everyone. They demand a good room and good playback of good material. You won't use them for casual listening to anything that wasn't recorded impeccably, because they'll highlight all the flaws.

If, on the other hand, your goal is to produce the best-sounding audio you can, and you've already outgrown speakers that are "good enough" for less exacting applications, then you need to hear the MicroMain45 for yourself. It's expected for great speakers to work brilliantly in larger rooms, but I've never heard anything bring the magic to a smaller space like these monitors do. ➤

**Price:** \$5995/pair

**More from:** Barefoot Sound,  
[www.barefootsound.com](http://www.barefootsound.com)