

## Shopping For Speakers Guidelines

### "Why do I need all those speakers for home theater?"

In the real world, we don't just hear sounds in front of us, but from the back and sides as well. In their attempts to make movies as lifelike as possible, directors duplicate this experience by sending certain sounds to the sides and rear of the listeners. For these reasons, modern soundtracks include additional channels that "surround" their audiences with sound. When movies are auditioned through a multi-speaker theater array, viewers are placed "in the center" of the action. *That's* why you need all those speakers!

### Take a Balanced Approach

Your left & right, center, and surround speakers shouldn't just sound good, they should all sound the same. Using a technique known as "timbre matching," top manufacturers achieve a consistent character of sound, or timbre, from main to center to surround models, assuring a seamless blend among all channels. Choose a brand that offers a wide range of timbre-matched models. Look at the drivers and tweeters used throughout the system. The tweeters should be the same. The midrange driver cones should be made of the same material, or better yet, the drivers themselves should be identical.

A chain is only as strong as the weakest link. This is as true in home theater systems as it is in many other things. With today's home theater systems, every speaker in the system has a vital job and must do it well. When selecting home theater speaker components, strive for balanced performance. It makes no sense to overspend on one speaker component and skimp on others.

A description of each speaker in a home theater system, its purpose and how to choose the right one for you appears below.



*Definitive Mythos  
ST SuperTower*

### Main Left & Right Speakers

In addition to playing music, the left and right "main" channels of a soundtrack carry most of a motion picture's special effects and orchestral score. In order to excel at these tasks, the stereo pair must encompass wide frequency and broad volume swings (dynamic range), reproduce subtle recorded details, and be able to create a convincing "soundstage" (the impression of three dimensions).

When choosing main channel loudspeakers, play a handful of music and movie selections you know well. Listen to a solo vocalist: Does the "image" of that performer seem to float at the center of the soundstage (good), or can you trace the singer to the speakers (bad)? Next, try an acoustic guitar, violin or cello. You should hear natural, detailed string tone, as well as the resonance of the instrument's wooden body. Finish with an action flick. Are the effects-gunshots, explosions, etc-clearly reproduced, or do they become hard, flat and generally unpleasant as the volume increases? A good pair of loudspeakers should NEVER sound "fatiguing."

## Center Channel Speaker



*Definitive ProCinema 20000*

Although the main purpose of a center speaker is to fix the actors' voices to the screen for off-center listeners, this channel also carries a good deal of the movie's special effects. In fact, more than 50% of a typical film's sound is routed to the center, and the speaker must be able to produce very high volumes without distortion or strain-so don't

skimp! Audition a scene in which several actors speak. Is each voice unique and articulate? Male vocals should be deep, but never boomy or "chesty" (emphasizing the deep-chest sounds in spoken or singing voice) Higher-pitched women's voices shouldn't sound shrill, "spitty," or nasal. Finally, try a scene in which special effects "pan" from left to right-a car chase is ideal. Does the sound remain consistent, or does it become weak or lightweight as it passes through the center?

For a single listener sitting in the "sweet spot" (equidistant from both speakers), a center channel speaker is sometimes not even necessary. Simply engage the "phantom center" control on your processor or receiver, and you'll hear a clearly localized central image. Of course, if you'd like to share the fun with friends or family, a good center channel speaker is a necessity.

Do you need a center channel speaker with good bass performance? For most systems, the answer is no. All surround receivers and processors have "bass management" for the center speaker. They allow you to direct the center channel bass information into the main or subwoofer channels. Your processor's instruction manual will show you how to do it. The center speaker needs to reproduce sounds only from 100 Hz and up.

If you want the ultimate home theater performance, there are a few center speakers that can reproduce bass with authority-including a couple that even have built-in powered subwoofers (such as Definitive's L/C/R Series models). If your main speakers are ultra-high performance, you'll appreciate the added dynamic range, kick, and imaging precision that a full range center speaker brings to the party.

## Surround Speakers



*Bipolar Surround*

The next time you're in a movie theater, look around. See all those speakers lining the side and rear walls? They help the soundtrack encircle the audience. It's this "surround" effect that places viewers in the center of the action. Since it's impractical for homeowners to install multiple pairs of "effects channel" loudspeakers, manufacturers offer "bi-directional" (bipole or dipole) speakers, which place drivers on both the front and rear of the cabinet. This arrangement spreads the sound along

the side walls, making it harder for the audience to identify the location of the surround speakers and delivering a more enveloping experience. This is especially important if the surround speakers need to be placed within a few feet of your listening position.

But bi-directional surrounds will cost more than traditional speakers for a given quality level. They are not for everyone and not necessary in every system layout. With judicious placement monopole (front firing) loudspeakers can work out nearly as well as a bipolar surround speaker.

To choose the surround speakers that are best for you, first select a location and the type of speakers (floor, on-wall, in-wall, etc.) that fit well in your room.

Select surround speakers that are as close as possible in performance to your front speakers. Look for the same or similar driver and tweeters as your front speakers. Pick speakers made by the same manufacturer as your main speakers.

In-wall or in-ceiling speakers are an attractive option for surround channel use. They can offer high performance and take up no space at all.

### **Subwoofer**

A powered subwoofer is a speaker that reproduces only the lowest (bass) frequencies to provide a more exciting and life-like movie experience. Since it has its own built-in amplifier, you don't need to be concerned about whether your receiver or amp has enough power to drive a powered subwoofer.



*Definitive SuperCube Series*

A highly recommended option for stereo listening, subwoofers are an essential component of multi channel systems since these formats assign additional low frequency effects to a separate subwoofer track. If you've chosen powered towers such as Definitive's SuperTower series for your stereo pair, their built-in subs will probably make this sixth speaker

unnecessary. If you're looking to assemble a truly outrageous home theater system, adding a separate subwoofer to a set of powered towers will deliver an effortless, body-moving experience.

There are a few things to keep in mind when selecting a powered subwoofer for your system. First, select a location for your subwoofer and measure the space to see what fits. Subwoofers generally perform best when placed near walls.

Next, the better your front main speakers, the better the subwoofer needs to be. If you have floor-standing speakers that already have good bass, select a subwoofer that is capable of reproducing very low frequencies so that it produces the bass that your main speakers cannot reproduce efficiently. A small, inexpensive subwoofer added to a pair of large, high quality floor-standing speakers may do more harm than good.

The size of your room is also a factor. The bigger the room you want to fill, the better the subwoofer you'll need. Any open areas such as high ceilings or open walls are all "seen" by the subwoofer- even if you don't listen in that area. Any airspace above suspended ceilings is also included. Thus the larger the room, the more powerful subwoofer you need.

What material is to be played through the system is another factor. Action/adventure movies have significantly more bass requirements than talk shows, news or comedies. Ultimately how much bass you're looking for in the system. If you want to rattle the walls and feel chest collapsing bass, one or more powerful subwoofers is recommended.

But the best advice of all is to ignore the numbers and simply listen before you buy. Many people get hung up on inches and watts. They assume that the bigger the driver size and the higher the power amp rating, the better the subwoofer. This is simply not so. Bigger doesn't necessarily make better.

Your dealer can let you listen to different subwoofers before you buy. If possible, listen with the front speakers you own or intend to get. Does the subwoofer add a deep bass foundation, or does it just "boom"? Listen with music as well as movie sources. Is the subwoofer tight and well

defined with music, or does it just add a vague rumble? Trust your ears. Just keep in mind the dealer showroom acoustics can differ significantly then your home.

### **Single Speaker Surround Systems**

Sometimes you just can't accommodate 5 or more speakers in your room because of space or decorating concerns. There are loudspeakers that can simulate the effect of a 5 channel system from just one "bar" speaker that sits above or below the TV screen. The effectiveness of such systems varies from marginal to very good. Always ask for a demonstration before you buy. Besides listening for the effectiveness of the surround effect also pay close attention to the basic sound quality of the speaker. Long after the novelty of the surround effect wears off you'll be suffering with inherently poor sound quality if you choose a single speaker surround that sacrifices fundamental audio quality for sonic fireworks. Go for the basic sound quality first, worry about surround effects second.



*Definitive SSA-50*

### **How to Judge Speaker Build Quality**

Although listening is the ultimate test of a loudspeaker, there are other clues to quality. Rap your knuckles on the sides of the cabinet: a hollow thud indicates a poorly made enclosure that will probably degrade the sound. The weight of a speaker will give you a clue as to the materials and construction quality. The best speakers offer 5-way binding posts that offer the best possible connection with any type of cable.

Read the manufacturer's specifications to make sure your amplifier and speakers will work properly together. The efficiency (a.k.a. "sensitivity") rating tells you how much sound a speaker will produce when fed one watt of power. Choose a model rated at 86 dB or higher-a low-powered system needs high efficiency speakers. Finally, check the "impedance" specification. If you've chosen an inexpensive receiver, your speakers' impedance should be at least 4-Ohms, and preferably 6-Ohms or higher.