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Subject: Re: When does the center channel speaker become necessary?

Posted by [Wayne Parham](#) on Tue, 29 Jan 2019 15:24:26 GMT

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A center channel for home theater is very good, especially for dialog intelligibility, with one caveat: The center channel speaker must be the same as the left and right mains. A spectral mismatch really blows the illusion of reality, so the speakers really need to be well-matched.

The center channel must also be placed at the same height as the left/right mains, preferably somewhere in the bottom half, from midpoint down. This placement precludes solid screens, and necessitates a projector and acoustically transparent screen.

So if you have a flat panel TV with a solid screen, a compromise must be sought.

One of the most common compromises is to place the speakers just below the screen. This is acceptable provided the center speaker is the same as the left and right mains, but that's usually the sticking point - unless the speakers are very small, placing them below the screen puts them too low. And a horizontal array or "sound bar" is a substandard arrangement, because the off-axis nulls are in the horizontal plane, right where the listeners are sitting. This kind of compromise is usually just too difficult to work around and get any kind of decent quality sound.

The compromise I have found to work best is the phantom center. A phantom center can be done very well using speakers that have uniform-directivity and that are properly positioned, with their forward-axes crossing just in front of the listeners. This provides a realistic illusion if done right. If the screen is solid, it's the best option in most cases.

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