

# Seamless switchers

## THE NEXT STEP FOR A HOUSE OF WORSHIP VIDEO SYSTEM

**A seamless scaler/switcher** performs two functions in a house of worship video system:

1. It scales the video source to the resolution of the projector. You may be showing composite video from a camera or tape, s-video from a DVD, one computer at 800 x 600 and another at 1024 x 768. The scaler interpolates all of these signals to the resolution that's native to your projector, so that all sources look their best when projected.
2. It brings all of these scaled signals into sync with each other and puts them all into the same input on your video projector. There's no confusion and no noise or jump when you switch from one to the next.

With a price of several thousand dollars, a switcher/scaler is a major investment for many congregations. It can be worth the cost because it eliminates distractions that can get in the way of communicating your message.



There are two basic types of scaler/switcher. Consider your needs carefully, because the difference roughly doubles the cost of the equipment.

**A single scaling engine** scales just one of the two or more sources that you're switching.

Say you're using a computer and a projector that are matched at 1024 x 768 resolution. You want to switch to a composite video source such as a videotape. The scaler brings the video up to 1024 x 768, puts it in sync, then switches to it seamlessly. All is well.

But suppose you want to make a quick cut from that now-scaled video to another video source, for example a camera. You'll need a **dual-scaling engine** to scale the signal from the camera while it's already scaling the videotape. If they're not synced and scaled to match each other, you can't switch seamlessly.

It is possible to use a single-scaling engine for multiple sources, but it will need to fade to black for a second or so while it scales and syncs the new source. That fade to black may or may not be acceptable, depending on how you plan to use the switch and how often.

There are a couple of situations where it won't be acceptable at all. If you want to do video picture in picture –put a smaller image of the worship leader into a larger video that's running, or perhaps a smaller image of someone signing for deaf members into an image of the person speaking– then you need a dual-scaling engine. Dual scaling is also a necessity if you want to do any kind of transition other than fade to black –if you want a quick cut, fade, or wipe. A dual-scaling switch generally will include some nice features that the single scaling switch does not: more flexible inputs, a preview mode, and built-in transition effects.

When choosing a scaler/switcher, you should also consider the user interface it includes. The lower cost systems require someone to stand up and push a button on the switcher installed in your equipment rack. A nicer system would put a more intuitive control on your work surface next to your computer keyboard.

Further reading: *[The Magic of Scalers and Seamless Switchers](#)* from Technologies for Worship Magazine.



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