

Trust Your In-Ears?

- Timothy J Miller

Woohoo - your first set of quality in-ears has arrived! You've plugged them into your personal monitor mixer. They fit perfectly. They sound pristine. Sunday is going to be awesome!

But then during the set the band turns to mush, you can't hear yourself, the click is inaudible, and to top it all off, you've lost touch with a congregation that looks like they're just moving their mouths. So you do what you've seen the cool pro's do and pop out one side. But now you tempo drags, your pitch slips, and the click bleeds through your mic into the house and the entire congregation hears, "Chorus, 2, 3, 4!"

Your hopes to become more effective just become an in-ear nightmare.

The Underlying Basics

In-ears with personal monitor mixes can be a great asset when working properly. Unfortunately, many times the people using them are not trained properly, and the devices become an irritating inconvenience hampering your opportunity to impact worship.

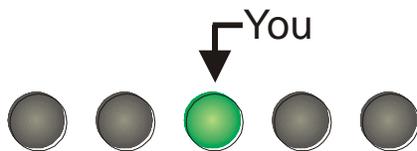
Follow these tips to make your in-ear and personal monitor mix do their job in helping you do yours.

1. Save your precious ears! Always have the unit powered up and your monitor mix volume lowered to 0 before plugging in your in-ear cable into the control unit or wireless pack. Then you can safely put the in-ears into your ears. Gently raise the mix volume level as needed.
2. In-ears are merely monitors. Their job is simply to let you hear only what you must in order to play your part. Their function is not to create a pristine CD-mix of the entire band inside your head. Each instrument you add to your in-ear mix increases the mud. Keep your mix simple, especially while learning to use them.
3. Not all in-ears are created equal. It may take some adjusting to identify what meets your need at your price point. There are a couple of factors to consider. Music clarity is deeply affected by the number of drivers a set of in-ears offers. An in-ear is like a speaker; some are basic and push all the high, low, sub, and mid frequencies through a common driver. Other models offer a more complex combination of individual drivers handling specific frequency ranges. Whether off the Walmart shelf or custom poured for your ears, typically more drivers means greater distinction and higher cost.
4. Not all in-ear *tips* are created equal, either. In-ears usually come with one to three to help you match your ear canal size. Additional tips are available in a variety of styles. Tips all have one thing in common: they insert into your ear. *Ear-buds*, on the other hand, rest beside your ear canal, provide little or no separation for your hearing, and should not be used as in-ears. *Ear-tips* provide you with your desired level of sound separation from the noise going on outside your head, and give you a comfortable fit lasting the length of use. Like in-ears themselves, you may need to try different styles and sizes.
5. To hear the congregation, you'll probably need to mic them. It's best to use shotgun-type mics for this so you can reduce as much bleed from the main speakers as possible. (Some in-ear systems have a built-in ambient channel, canal, or ambient mic insert jack.) Add ambient sound sparingly to your in-ear mix! Remember, congregational clapping will automatically be behind the click because of the delay caused by the distance of the sound going from the main speakers to the congregation, and from the congregation to the mics. You'll primarily hear the congregation channel best during a cappella breaks.

6. To hear non-vocalist team members during practice, consider either mic'ing them to an "everything else" in-ear-only channel or aiming the congregational mics at them.
7. General in-ear mixing principles:
 - Pan yourself to center.
 - Pan the drums and the click/cue opposite one another.
 - Pan similar instruments to yours hard right and hard left to create sonic distance between them and yourself.
 - If you don't absolutely need to hear an instrument in order to play your musical role, don't add it to your in-ear mix. If you can't help yourself, keep it soft.
 - Pan similar instruments to opposite sides. So if you're a background vocalist, pan the other background vocalists to hard right and hard left.
 - Work to find your own instrument volume sweet spot. If you're too loud, you'll play or sing softly and not provide good signal to the soundboard. If your volume is too soft, you'll oversing, have pitch issues, or overplay.
 - There will automatically be additional mud once the congregation joins in because of noise bleeding into your in-ears and through open mics in your mix. You may need to adapt at this point a bit.

Creating Your Personal Monitor Mix: A good place to start

1. Set the overall volume on low. Take everything out of your personal mix except yourself. (If you're using the common Aviom 16ii, you can reset all channels by pressing the left Reset and right Mute buttons simultaneously.) Raise your channel's volume to about 70%. Then bring up the overall volume setting to the level you need for your own sound. Keep in mind that good quality in-ears cut out so much exterior sound that you don't need extreme levels in your head. If you can pan channels on your control unit, set your channel to center. You should be able to hear yourself clearly.



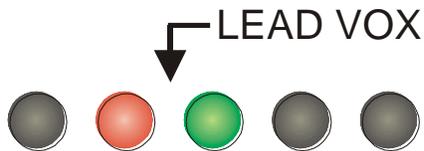
2. If you play an instrument using two separate channels, pan one instrument one-half light to the left and the other the same to the right. (For example, my Godin LGX guitar outputs an electric channel running through one rig and an acoustic channel running through an acoustic rig; I separate apart the two channels in my ears just enough to distinguish each. My vocal mic remains centered.) I usually start the guitars at about 65% volume and the vocal at about 70% so I have headroom to increase them later if necessary.



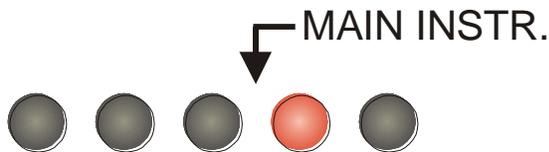
3. Add the drums, click/cue, and sound technician mic. Pan your drum channel one light to the left and pan the click one-half light to the right. Make the click about as loud as yourself - that constant, bothersome click is one of your most important elements. The drums should be noticeably softer, but present enough so you hear the groove. Make the sound technician mic distinguishable by placing it half way on the right between center and the click. I usually start the drums at 45%, the click at 70%, and the sound tech mic at 70%.



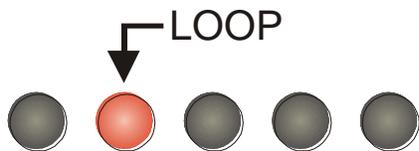
- If you're not the leader, add the leader's voice one-half light on the same side as the drums. You need this loud enough that you can follow vocal cues and can hear any changes dynamically. (This will also help keep the leader's voice separated from the click's vocal cues.) I usually start the lead vox volume around 65%



- Add the primary instrument. If it is the same kind of instrument as yours (example: you play guitar and the leader plays guitar), pan the primary instrument completely to the right side. Make it loud enough that you can distinguish groove, hooks, and dynamic adjustments. Otherwise, pan it one light to the right (opposite the lead vocal but not as far as the click). I usually start the primary instrument at about 50%.



- Add the loop. Pan it left one light with the drums and opposite the main instrument. Unless you are relying on the loop for the groove or are doubling something on the loop, keep its volume very soft in your mix. I start the loop at about 30%.



- Add any instrument that is similar to yours, but only if you absolutely need it in order to play your role. Keep similar instruments panned hard right or hard left. I start similar instruments about 40% and try to cut them back during rehearsal.



- Add any remaining instruments you absolutely must include by panning them 1-and-a-half lights on opposite sides. I start remaining instruments at 20%, except the bass, which I start around 40%.



9. By now you've probably covered up your own volume level a bit too much and may need to increase your own channel. If you still can't hear yourself, you added too much of the other instruments and will need to reduce them, especially instruments that are similar to yours. Tweak if you must.

10. Save your settings!

Wrapping it up

Once you're used to doing this process, it should only take one to two minutes. Before anyone plays a note, I usually have already reset my monitor mix to 0 and then preset my levels and the click/cue to 70% volume, the primary instrument and vox to about 50% volume, and the rest to about 30%. After dialing it in a bit during sound check, I save my settings and leave it alone, seldom adjusting my monitor mix once the actual set with the congregation begins. If you need to make a significant adjustment between songs, save each setting and use the recall button instead of making adjustments during the actual set.

This technique relies heavily on separating similar sounding instruments by using the personal monitor mixer's ability to pan. If your mixer cannot pan, you will need to simplify even more by limiting your mix to yourself, the primary vox, the click/cue, and the primary instrument.

Rehearsing with musicians using this panning technique does take a bit getting used to - sometimes the sound from the instrument of the person standing to the left of you comes from the right of the in-ear mix. Weird. Sometimes I have to watch another musician's hands or communicate using hand signals.

But I really like being able to hear important parts clearly, play on time, and sing the right pitch. All this without the feedback issues and overly loud stage monitor volume levels we used to struggle with before in-ears came along.

And you know what? The congregation likes it better, too.

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Timothy J Miller helps church leaders and teams who are trying to increase their ability to impact worship. He has served in small, medium, and multi-site congregations for over 30 years in volunteer, part-time, and full-time worship-related roles. His recent book **BORN FOR WORSHIP: The Best You Can Be In Worship-Arts Ministry** is designed for both individual and groups who want to take transformation to a new level (available at [Amazon](#) and [Kindle](#)). Read his [Smashwords author interview](#). He would love to hear from you!