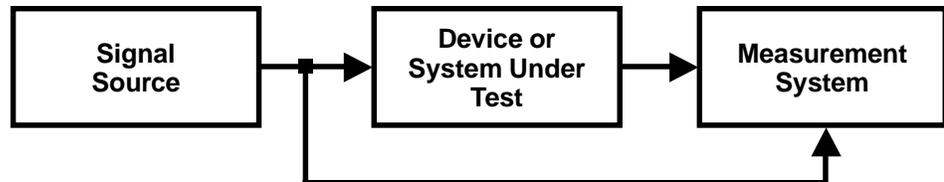




Transfer Function Measurement Configurations

Figure 1



The block diagram in *Figure 1* illustrates the basic configuration for both transfer function and delay locator measurements. Note that the signal is *not* generated by the computer. Typically a CD player or noise generator is used as a signal source for playback systems and/or during initial setup of a sound reinforcement system. During a live performance, the output of the sound reinforcement system console itself can be used as the signal source (see *Figure 3* on page 2).

In either case, the computer receives two signals:

- a *reference* signal — also being used to stimulate the system under test *and*
- a *measurement* signal — the output of the system under test

Figure 2

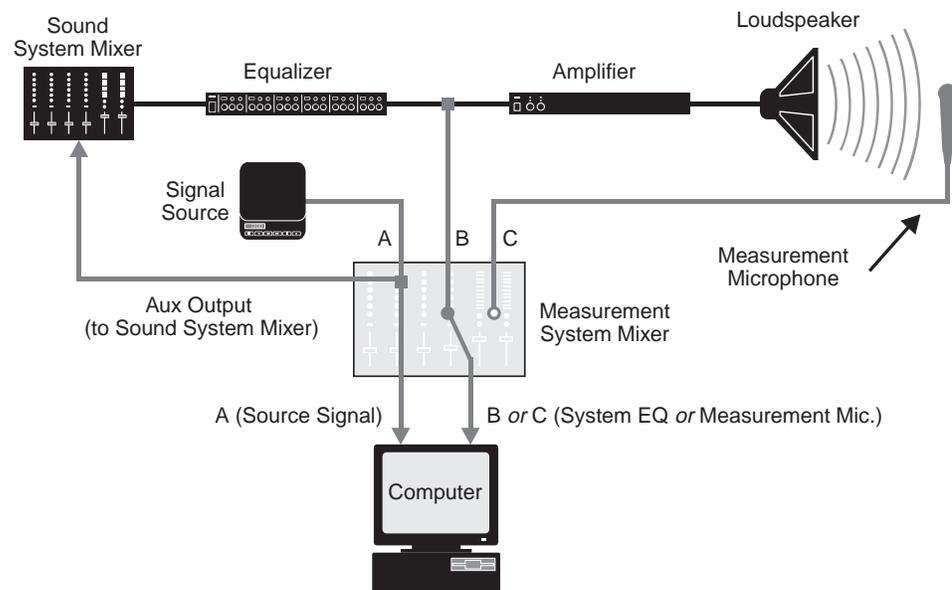


Figure 2 is a diagram of a typical “real-world” transfer function measurement configuration. This setup could be used for a playback system or for initial setup in a live sound reinforcement system. A portable CD player is used as the reference signal source. In this example, the signal source is part of the measurement

system. The *reference* signal is split *inside* the measurement mixer and sent to both the computer, using one of the mixer's main outputs, and out to the sound system on an auxiliary bus. The advantage of this arrangement is that it allows both the *reference* and *measurement* signal levels to be controlled directly from the measurement system mixer.

The reference signal itself can be any signal that has sufficient energy at the frequencies you want to measure. For example, one might use pink noise during the initial stages of system tuning then switch to music while putting the final touches on EQ settings. Music can also be used in many situations where random noise would be considered intrusive or otherwise inappropriate.

Figure 3

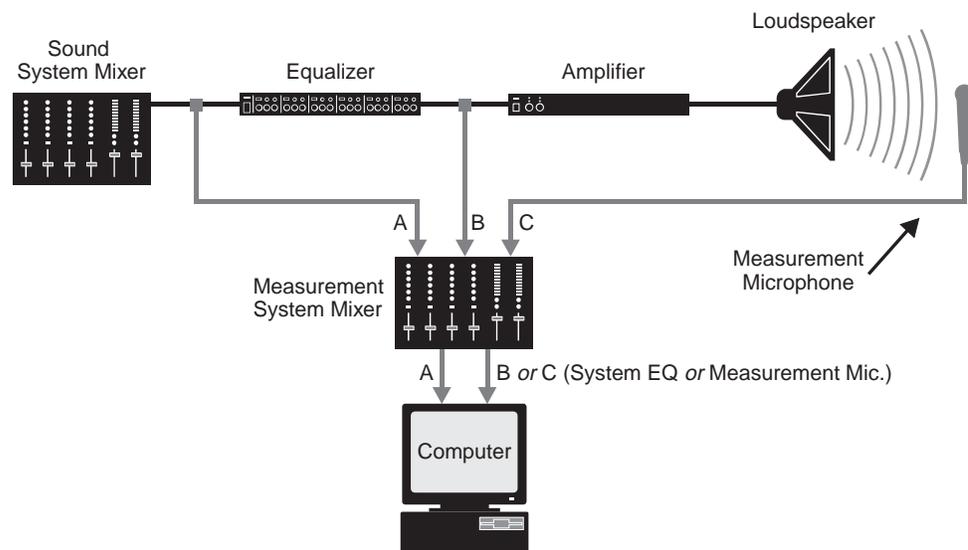


Figure 3 illustrates a typical “show mode” measurement setup. In this configuration, Smart Pro can be used to monitor system performance and adjust EQ settings during a live performance using the mix from the sound reinforcement itself as the reference signal. This application involves splitting the output(s) of the sound system mixer so that the computer gets the same signal (at input A) that is going out to rest of the sound system. This signal can then be compared to the output of the system EQ(s) or measurement microphone(s) positioned in the room to monitor the output of system loudspeakers. *Figure 3* shows a simple monaural sound system however this basic concept can easily be adapted for use in other sound system configurations.

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One Main Street
Whitinsville, MA 01588
USA

telephone: 508-234-6158
e-mail: support@siasoft.com
www.siasoft.com

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