

FD23



FEEDBACK

When used with any equalizer, the FD23 Feedback Detector is the fastest way to *eliminate feedback*.

Uses the same filters as found in expensive 1/3 octave analyzers.

A rugged hand held instrument with built-in microphone, powered by AA batteries or a 12Vdc supply.

Generally, feedback (ringing) is a self-sustaining and erroneous oscillation that occurs when sound arriving at a microphone is greater than the sound produced by the person or instrument using that microphone. Feedback is controlled through the use of a graphic or parametric equalizer, and these units are most effective when the sound engineer can quickly recognize the frequency at which feedback is occurring. The FD23 provides a quick inexpensive means of detecting which frequency is causing the feedback.

The FD23 operates in the same manner, using the same filter design that is found in Gold Line's spectrum analyzers. Ease of operation is through a single on/off/sensitivity control. If a frequency is ringing and the sensitivity is set accurately, the display of the FD23, which has LEDs for standard ISO third-octave frequencies from 80Hz to 12.5kHz, will light an LED representing the frequency that is ringing (within that frequency's tolerance). Most equalizers have adjustments (sliders) at the same frequencies and by moving the slider that matches the frequency indicator on the FD23 you will reduce the feedback. The FD23 can also be used in situations where feedback is not actually happening. By carefully adjusting the FD23's sensitivity, you can detect a frequency that is building up (but not necessarily feeding back). You can then use the equalizer to reduce the buildup.

The FD23 is a rugged, inexpensive, hand-held instrument that can be used with either alkaline or nicad batteries. It can also be powered with a wall-wart providing 12Vdc @ 200mA.

To eliminate feedback:

1. Feed pink noise into the line input of the system under test and set the volume for a moderate level from the speakers.
2. Turn on the FD23 and set the sensitivity so that the LED's are just beginning to flicker.
3. Turn up the gain on the main microphone input until feedback starts.
As you turn up the system's gain, you may want to decrease the sensitivity of the FD23 until the feedback starts.
4. With the detector, look for one band to be peaking above the others. Increase the sound level if necessary.
5. Adjust the system's equalizer to put in just enough cut in that band to stop the feedback. Set a parametric equalizer to minimum bandwidth.
6. Continue to increase volume and cut where indicated.
7. When feedback occurs in 3 or more bands the practical limit of feedback control with the minimum effect on the overall sound has been reached.
8. Open other microphones that will be on at the same time and change settings as needed for best performance.
9. As a final adjustment, performers should stand at the microphones in their normal positions, the proximity can cause some changes in feedback modes.
10. During a live performance, keep the FD23 at the sound engineer's console, turned on with the LED's just beginning to flicker. As feedback occurs, he can quickly adjust the corresponding frequency.