



Setting the Record Straight: FBX Feedback Exterminator vs. dbx Advanced Feedback Suppression

Thirteen years after inventing the world's first successful automatic feedback control device, the FBX Feedback Exterminator®, and developing a new breed of digital signal processors, Sabine continues to lead the industry. There are now other feedback controllers on the market, and the latest company to follow Sabine's lead is dbx, who recently published information about their Advanced Feedback Suppression™ (AFST™) algorithm. This white paper, available on the dbx web site, provides an introduction to the concept of feedback control. But it also contains several inaccuracies regarding Sabine's products.

- **dbx ignores important distinctions among Sabine products**, referring simply to a generic "Sabine filter." In particular, a graphic is shown comparing a 1/10 octave FBX filter (from an FBX1020, discontinued in 1999) compared to a narrower (presumably 1/80th octave) dbx filter. dbx simply ignores the fact that Sabine Q-series products are capable of creating narrower filters than dbx products.
- **dbx wrongly implies Sabine's filter resolution is limited.** In the same paragraph dbx creates the impression that the FBX can only place filters at discrete "6 or 12 Hz" frequency intervals. In fact the Sabine FBX can place filters with 1 Hz resolution and accuracy. dbx does not give a precise resolution specification.
- **dbx wrongly implies Sabine's filters get wider as they get deeper.** Sabine's digital Constant Q filters maintain their specified width at all depths. In fact, Sabine introduced Constant Q filters in 1991.
- **dbx labels a Sabine tenth octave filter as "wide band,"** but offers the same width and calls it "Music Low." It is worth noting that dbx themselves recognize the usefulness of tenth-octave filters, which they call "narrow notch filters" in their operating guides. Yet in their white paper, the same filter width is labeled "wide band."
- **dbx decries "wide band" filters yet their filters get wider.** The first part of dbx's white paper argues that their product is best because its feedback control filters are only 1/80 of an octave filters. We have learned from 13 years experience that a filter this narrow simply does not control feedback in performance situations. The second part of their white paper introduces their newest feature they call "adaptive filter bandwidth." Now they argue that the best filters widen automatically as needed. They do not specify how wide that must make their filters to effectively control feedback.

Beyond these inaccuracies there are several important benefits offered by Sabine's FBX products that are not available in the dbx feedback controller.

- **Patented feedback detection.** The FBX algorithm is specifically designed to react to feedback and not your sound. dbx ignores this all important feature. Making a feedback control filter in setup is one thing, but doing it during the show is quite a different task. Sabine's FBX excels at this, and our worldwide patents specifically address this unique ability to ignore music while honing in on feedback. Eliminating false filters is one of the most important features of an automatic feedback controller!
- **Adjustable feedback control sensitivity.** Sabine's FBX is the only feedback controller to allow sensitivity adjustments to the crucial difference between music and feedback. Simple adjustment of two key parameters optimizes the balance between the speed of the Sabine algorithm's action, and the depth and quality of analysis performed to decide whether an event is truly feedback and warrants a filter.
- **Fully adjustable FBX filter widths.** Sabine's Graphi-Q and Power-Q offer default widths from 1/100 to one full octave wide. dbx only allows four discreet widths. Additionally, width controls apply to all filters. In contrast, all Sabine products allow mixed filter widths.
- **Editable filters.** The Q-Series products let the operator change FBX filters to true parametric filters, at any time, both before and after they are set.
- **Selectable maximum filter depth.** Q-Series products allow the user to globally limit maximum filter depth.
- **More filters.** Sabine's feedback control products offer up to 24 total filters, and on the Q-series these can be switched to fully parametric filters.