

FBX2400 Dual Channel Feedback Exterminator®

The automatic feedback controller shall be a dual channel digital signal processor with twelve 1/10- or 1/5-octave filters (selectable) per channel. The filters shall be constant Q (filter skirts do not widen as the filters get deeper). The unit may be used on the whole mix, on sub-groups, or on selected insert points. It shall automatically sense feedback and determine its pitch, then assign a digital notch filter to the resonating frequency to automatically eliminate the feedback. The product shall include new SMARTFilter technology that effectively distinguishes between music and feedback, and it shall be operational during the program. It shall use two types of user-selectable notch filters: "fixed" or "dynamic." The fixed filters shall remain set on the initial feedback frequencies, while the dynamic filters shall be automatically reassigned new frequencies as feedback occurs during the program.

The unit shall include the following for each channel: an Active/Bypass button and LED indicator, which allow the user to set the unit to control feedback (active mode) or take the unit out of the signal path so it has no effect on the program (bypass mode); signal level LEDs, which indicate the signal strength relative to the FBX's input clip level; a Setup button so all filters may be re-configured; a Reset Dynamics button to manually or automatically reset the dynamic filters; a Number Fixed button to select the total number of fixed filters to be activated; a Ready button and blue LED indicator, which allows the user to lock fixed filters created during system setup and to limit the total number of active filters; a Fifth Octave button to select wider filters; and a row of filter stage activity LEDs to indicate active filters. It shall include multi-color filter LEDs: amber for unlocked fixed filters, red for locked fixed filters, and green for dynamic filters. The product shall also be provided with a rear-mounted power switch, an A/C power input configured to operate at either 115 or 230 VAC, a built-in fuse holder, and 1/4" TRS and XLR-3 balanced and unbalanced input and output. The FBX2400 shall incorporate a fast and quiet setup mode.

The following performance criteria shall be met:

FBX/PARAMETRIC FILTERS – Twelve independent digital notch filters per channel controlled automatically from 40Hz to 20KHz. Filter width: 1/10 or 1/5 octave (user selectable), constant "Q". Resolution: 1 Hz. Time required to find and eliminate feedback: 0.4 seconds, typical @ 1KHz. Number of Dynamic vs. Fixed filters: user selectable. Last configuration stored in memory. Dynamic Filter Timer: Resets dynamic filters in 1, 5, 30, or 60 minutes.

INPUT/OUTPUT – Input impedance: balanced or unbalanced >40K Ohms, PIN 2 high. Output impedance: balanced or unbalanced 150 Ohms nominal, PIN 2 high. Input/output maximum signal levels: balanced +27 dBV peak; unbalanced +21 dBV peak. Output drive: Unit will perform as specified driving a load >600 Ohms. Headroom: balanced +23 dB peak @ 4 dBV nominal input. I/O connectors: XLR-3 and 1/4" TRS. Bypass: True power-off bypass.

PERFORMANCE – Frequency response: 20 Hz - 20 KHz +/- 0.3 dB. Signal to noise ratio: >100 dB. Total harmonic distortion: .005% at 1 KHz, <0.01% 20 Hz - 10 KHz, <0.025% 10 KHz - 20 KHz. Dynamic range: >105 dB.

POWER INPUT – Factory configured to either 115 or 230 VAC, 50/60Hz, 12 Watt input. Fuse replacement: 115 VAC, 0.1 A, 10 W, 0.160 A SB fuse. 230 VAC, 0.06 A, 10 W, 0.160 A SB fuse.

DIMENSIONS – 1-U rack mount; 19 x 1.75 x 6.25 in. nominal; 48.3 x 4.5 x 15.9 cm nominal. Weight: 8.0 lb. (3.6 kg) nominal.

The automatic feedback controller shall be the Sabine FBX2400 Dual Feedback Exterminator.