

## FBX2020-Plus Dual Channel Feedback Exterminator®

The automatic feedback controller shall be a dual channel digital signal processor with ten 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 effectively distinguish between music and feedback and 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 reset switch so all filters may be re-configured; a "set total no." button to select the total number of active filters; a "set fixed" button to select the total number of fixed filters to be activated; a "lock fixed" button and 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 oct." button to select wider filters; and a row of filter stage activity LEDs to indicate active filters. The unit shall also be provided with a two-position push button 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 balanced and unbalanced input and output. The FBX2020-Plus shall also incorporate ClipGuard™ adaptive clip level control with TURBO setup mode, which automatically matches the FBX2020-Plus' internal dynamic range to the program level.

The following performance criteria shall be met:

**FBX/PARAMETRIC FILTERS** — Ten independent digital notch filters per channel controlled automatically from 40Hz to 20KHz. Filter width: 1/10 or 1/5 octave (selectable), constant Q. Resolution: 1/50th Octave. Time required to find and eliminate feedback: 0.4 seconds, typical @ 1KHz. Total number of combined filters active per channel: user selectable, from 1 to 12. Number of dynamic vs. fixed filters: user selectable. Last configuration stored in memory.

**INPUT/OUTPUT** — Input impedance: balanced or unbalanced >10K Ohms, PIN 2 high. Output impedance: balanced or unbalanced 10 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. Head-room: balanced +23 dB peak @ +4 dBV nominal input. I/O connectors: XLR-3 and 1/4" TRS. Bypass: True power-off bypass. Input/output transformer option.

**PERFORMANCE** — Frequency response: <+/- .25 dB, 20Hz to 20KHz. Signal to noise ratio: >100 dB typical, "A" weighted. Total harmonic distortion: <0.01% @ +23 dBV sine wave @ 1KHz. Dynamic range: >105 dB with ClipGuard active.

**POWER** — Factory configured to either 115 or 230 VAC, 50/60Hz, 12 Watt input. Fuse replacement: Replace only with 5x20mm, .315A, 250V, fast-acting fuses. Memory backup battery life: 7 years.

**DIMENSIONS** — 1-U rack mount; 19 x 1.75 x 8.0 in. nominal; 48.3 x 4.5 x 20.3 cm nominal. Weight: 8.0 lb. (3.6 kg) nominal.

The automatic feedback controller shall be the Sabine FBX2020-Plus Dual Feedback Exterminator.