

FBX-SOLO SL820 Feedback Exterminator®

The automatic feedback controller shall be a single channel digital signal processor for 1/4" connections (for mixer insert points, powered mixer patch points, acoustic/electric guitars and guitar amps and high impedance mics), with six 1/10- or 1/5-octave filters (selectable). The filters shall be constant Q (filter skirts do not widen as the filters get deeper). The unit shall automatically sense feedback and determine its pitch, then assign a digital notch filter to the resonating frequency to automatically eliminate the feedback. It shall effectively distinguish between music and feedback and shall be operational during the program. The product 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 feedback controller shall include the following: a TURBO mode for "quick setup; a two-position push button power switch; a two-color active/bypass button and LED, which allows 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); a reset button so all filters may be re-configured; a "lock fixed" button and LED, which allows the user to lock fixed filters created during system setup and to limit the total number of active filters; a clip level adjust knob; clip LEDs, which indicate clip level and also indicate threshold level when enabling the selectable noise gate; and filter stage activity LEDs to indicate active filters. The unit shall also include a filter width switch to select 1/10- or 1/5-octave filters; an input low/high switch for choosing input level; and an output unity/line switch for choosing output level. The unit shall also be provided with an external power supply and 1/4" TRS input and output.

The following performance criteria shall be met:

FBX/PARAMETRIC FILTERS — Eight independent digital notch filters controlled automatically from 40Hz to 20,000Hz. Filter width: 1/10 or 1/5 octave (selectable), constant Q. Filter depth: DSP controlled, variable to -40dB. Resolution: 1/50th Octave. Time required to find and eliminate feedback: 0.4 seconds, typical @ 1KHz. Total number of combined filters active: user selectable, from 1 to 8. Number of dynamic vs. fixed filters: user selectable. Last configuration stored in memory.

INPUT/OUTPUT — Input impedance: unbalanced >1meg Ohm. Output impedance: unbalanced 10 Ohms nominal; maximum load 2K Ohms. Maximum input/output level at lowest gain: +20 dBV. Gain range (with line out selected): 0 to +35 dB (high in), +30 to +65 dB (low in). Input to output gain @ unity setting: +/-0.5 dBV. I/O connectors: 1/4" TRS; tip=input, ring=output, sleeve=ground. Bypass: Digital.

PERFORMANCE — Frequency response: < +/- 0.25 dB, 20Hz to 17,000Hz or better. Signal to noise ratio: >94 dB typical. Total harmonic distortion: < 0.01% @ 1 KHz @ any gain setting. Dynamic range: >100 dB. Selectable noise gate.

POWER — Power supply: 8-20VDC @ 400 mA. Memory backup battery life: 7 years.

DIMENSIONS — 1-U rack mount height, 1/6-RU width; 2.78 x 1.65 x 5.5 in. nominal; 6.95 x 4.13 x 13.75 cm nominal. Weight: 9.0 oz. (0.26 kg) nominal. Optional rack tray holds up to six units.

The automatic feedback controller shall be the Sabine FBX-SOLO SL820 Feedback Exterminator®.