

POWER-Q™ ADF4000

The automatic feedback controller/parametric EQ/graphic EQ/RTA/compressor/limiter/delay shall be a dual channel digital signal processor with 12 selectable digital filters per channel and several programmable functions. 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 three types of user-selectable filters: parametric, fixed FBX or dynamic FBX. The user controls the parametric filters; the fixed FBX filters, controlled automatically, remain set on the initial feedback frequencies, and the dynamic FBX filters shall be automatically reassigned new frequencies as feedback occurs during the program. The POWER-Q shall also function as a 12-band parametric equalizer, 31-band graphic equalizer, full-featured real-time analyzer with reference mic input, full-featured compressor/limiter, digital delay for speaker alignment and full-featured noise gate/expander.

The unit shall include the following front panel controls: a remote control RS232 serial port data indicator; a remote control MIDI data indicator; reference mic indicator; clip level, limiter use, signal and noise gate use LED indicators for each channel; an LCD display for interaction with the unit and viewing menus and graphs; soft key selectors for quickly selecting various menu items; a MORE button for choosing additional Power Q menus or soft key selections; an online context-sensitive HELP button; cursor movement arrow keys; a data wheel for selecting values; an ENTER button for initiating commands; and a two-position push button power switch. The unit shall also be provided with the following back panel controls: an internal power supply and power cord, MIDI input/output connectors, an RS232 remote control connector, an RS232 network connector, XLR-3 input/output connectors for each channel, digital input/output connectors, a reference mic input and a ground/lift button. The POWER-Q shall also incorporate ClipGuard™ adaptive clip level control with TURBO setup mode, which automatically matches the POWER-Q's internal dynamic range to the program level.

The following performance criteria shall be met:

FBX/PARAMETRIC FILTERS — Twelve independent digital notch filters per channel controlled automatically or parametrically from 20Hz to 20kHz, channel copy option or dual mono operation, each switchable between FBX fixed filters, FBX dynamic filters and parametric filters. High pass filter, user-controllable in 1/6-octave cut-off points between 20Hz and 1kHz, 6, 12, 18 & 24 dB/octave roll-off. Low pass filter, user-controllable in 1/6-octave cut-off points between 3.15kHz and 20kHz, 6, 12, 18 & 24 dB/octave roll-off. Filter depth: user-controllable in 0.5dB steps from +12 dB to -84 dB (parametric mode), 3 dB steps from 0 dB to -80 dB (FBX mode), max. automatic depth adjustable from -6 to -80 dB. Filter width: user-controllable from 1.00 octave to .01 octave (parametric), 1.0 to .05 oct. (FBX); constant Q (filter skirts do not widen as filters get deeper). Resolution: 1Hz from 20Hz to 20kHz in FBX and parametric mode. Time

required to find and eliminate feedback: user-controllable from 0.1 seconds to 5 seconds (typically 0.3 seconds). Total number of combined filters active per channel: user selectable, 0-12, plus low and high pass filters. Filters controllable via table or graphic interface.

GRAPHIC EQUALIZER — 31 digital filters on ISO center frequencies, width from 0.5 to 1.0 octave in .01 octave increments, +12 dB boost to -15 dB cut. Independent display and control of A&B channels, with channel copy option or dual mono option.

REAL-TIME ANALYZER — 31 band, 20Hz - 20kHz on ISO center frequencies. A, B, C, or flat weighting. Fast/slow, peak hold, and channel compare functions. Source selectable: reference mic, channels A or B, input or output. Reference mic input: ISO phantom power, +48VDC @ 10mA, 1.2K Ohm impedance.

COMPRESSOR/LIMITER — Threshold: +26dBV to 0dBV in 0.5dB steps. Ratio: 1:1, 1.4, 2, 4, 8, 16, 32 or 4. Knee: hard/soft variable 1 to 40 dB with center of range = threshold. Attack: .5 to 100 mSec in .5 mSec steps. Release: .05 to 5 sec. in .05sec steps. Peak limits: 0 dBV to 26 dBV in 0.5 dB steps. Channel copy option or dual mono operation.

DOWNWARD EXPANDER/NOISE GATE — Threshold: 0 to -84.0 dBV in 0.5 dB steps. Knee: hard/soft variable 1 to 40 dB with center of range = threshold. Attack: .5 to 100 mSec. in .5 mSec steps. Release: .05 to 5 sec. in .05 sec. steps. Channel copy option or dual mono operation.

DIGITAL DELAY — 1.38 mSec to 83.28 mSec in 20 microsecond steps. Programmable in milliseconds, feet or meters. Channel copy option or dual mono operation.

PASSWORD CONFIGURATION — 5 numeric characters.

LOAD & RECALL CONFIGURATIONS & RESPONSE CURVES — 98 user defined, 1 factory default, 1 most recent configuration (power down save).

INPUT/OUTPUT — Input impedance: balanced >10K Ohms, PIN 2 high. Output impedance: balanced 10 Ohms nominal, PIN 2 high. Input/output maximum signal levels: balanced +26 dBV peak. Output load: 600 Ohms balanced. Bypass: true power-off bypass. I/O connectors:

XLR-3. PERFORMANCE — Frequency response: 10Hz to 20kHz, 0.2 dB @+22 dBV. Signal to noise ratio: >105 dB (with ClipGuard). Total harmonic distortion: <0.01% @ 22 dBV @ 1kHz. Dynamic range: >110 dB (with ClipGuard). Headroom: +22 dB peak @ 4 dBV nominal input.

POWER — 50/60Hz available in 100V, 120V, 230V; 25W.

DIMENSIONS — 2-U rack mount; 19 x 3.5 x 7.5 in.; 48.3 x 9 x 18.3 cm. Weight: 9.0 lb. (3.9 kg).

OPTIONS — ADF-4SLU: Blank front panel (two channel slave unit for remote master control with POWER-Q or PC). DA-I/O: AES/EBU Digital I/O. D-I/O: AES/EBU Digital I/O only. SMR-I/O: Serial full remote control with Power-Q or Windows, MIDI for loading presets and output level only. Balanced line transformers.

The unit shall be the Sabine POWER-Q ADF4000.