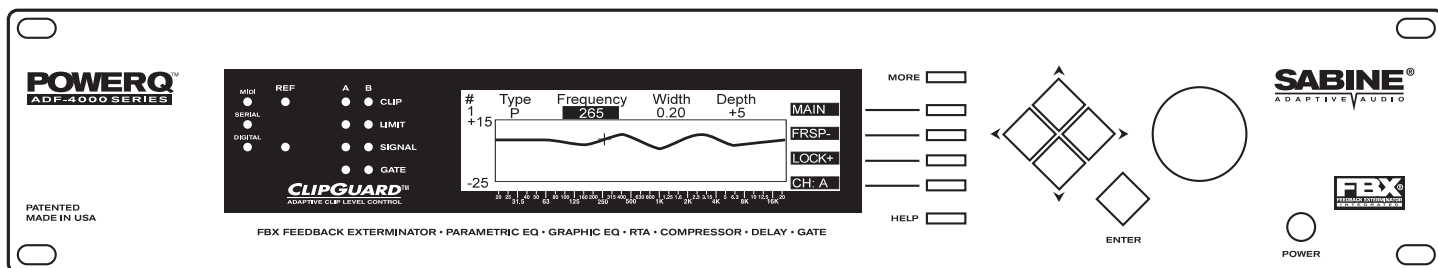


POWER-Q™: a full rack in one essential unit!

FBX®, Parametric, Graphic, RTA, Compressor/Limiter, Gate, & Delay all in one.



POWER-Q™ ADF-4000 SERIES

24-bit Conversion

32-bit Processing

2-channel

FBX FEEDBACK
EXTERMINATOR®

AUTO ROOM EQ with
ENVIRONMENTAL
ARTIFACT REMOVAL

PARAMETRIC EQ

GRAPHIC EQ

REAL-TIME
ANALYZER

COMPRESSOR/LIMITER

NOISE GATE

AUTOMATIC
DIGITAL DELAY

Since 1993 Sabina's ADF Series has provided sound engineers with a powerful array of digital audio shaping and processing tools. Now the new **POWER-Q™ ADF-4000™** combines the functions of seven separate products into one easy-to-use 2U package, and does it without the compromises of other "all-in-one" boxes.

24-bit digital processing and Analog Devices' new SHARC floating-point processor give the POWER-Q unparalleled audio quality and flexibility. The POWER-Q's integrated features replace a full rack of gear, offering two channels of:

- Up to 12-band Parametric Equalizer, with Hi & Lo Pass filters
- 31-band Graphic Equalizer, with adjustable filter widths
- Up to 12-band FBX-Feedback Exterminator, with adjustable sensitivity
- Real-Time Analyzer, full-featured with reference mic input (Sabina SQ-1001 reference microphone optional)
- Compressor/Limiter, full-featured
- **Auto** Digital Delay for speaker alignment
- Noise Gate, full-featured

Now you can store up to 99 user-defined configurations, and load programs locally or via serial remote control options via PC. All functions operate concurrently, harnessing a whole rack of power with just one A/D conversion. You get the most powerful combination of equalization, gain management, and signal processing tools available at any price. And the POWER-Q offers these adaptive features available only from Sabina:

- **FBX-Feedback Exterminator®**
Automatically finds & eliminates feedback during program, not just at setup. Provides more gain before feedback, increased clarity, and maximum wireless mic mobility.
- **Fast Auto Room EQ.**
Takes just seconds, plus there's a new added feature unique to the POWER-Q: *EAR*.
- **EAR Environmental Artifact Removal**
Analyzes the frequency content of constant ambient room noise artifacts, and ignores this in its measurement and calculations of system EQ. So you won't roll off the low frequency in your sound system because the room air conditioner is rumbling!

SABINE®
ADAPTIVE AUDIO

One-year limited warranty • Patented • Made in USA

**FBX and FBX Feedback Exterminator are registered trademarks of Sabina, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665, Australian Patent No. 653,736, German Patent No. 69118486.0, U.K. Patent No. 0486679, and Canadian Patent No. 2,066,624-2. Other patents pending.*

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(904) 418-2002

**The most
powerful
combination
of equalization,
gain management
and signal
processing
tools available.**

- **ClipGuard™ Adaptive Clip Level Control:**
Expands dynamic range to >110 dB; maximum input/output signals up to 26 dBV.
- **Automatic Turbo FBX Setup**—Fast and Quiet. No more “turn it up and wince!”
The POWER-Q now finds feedback at a very quiet volume by temporarily inserting a limiter as it automatically sets the FBX feedback control filters. It even tells you the additional gain you’ve achieved.

The **POWER-Q** is available in the following configurations, to meet your specific requirements:

- Analog I/O (standard)
- AES/EBU Digital I/O option added to standard analog I/O
- Serial interface option for remote control via any Windows 3.1/95 PC
- ADF-SLU version (blank front panel) for remote computer control,
- Multiple remote units can be chained in a serial network controlled by a single PC.

The **POWER-Q** improves audio and solves problems in all of these venues:

- Theaters & concert halls
- Recording & post-production studios
- Churches & worship centers
- Schools & auditoriums
- Conference rooms & board rooms
- Sports arenas & broadcast stations
- Teleconferencing & paging systems

Other multi-function products cut corners to get all these features, but every POWER-Q function is top quality – and the price is unbeatable. Get the power of simplified operation, greater reliability, and no-compromise specifications. Ask your dealer for a POWER-Q demo today!

The Inside Story of FBX Filters:

The FBX Feedback Exterminator distinguishes the POWER-Q from other equalization devices. In this mode the POWER-Q automatically detects acoustical feedback and precisely determines its frequency. Then it assigns an extremely narrow Constant-Q filter that surgically removes only the ringing frequency. The POWER-Q eliminates feedback quickly and automatically while making almost no audible change in the audio quality!

Using the POWER-Q’s graphic EQ for sound shaping and the FBX filters for feedback control, you get up to a 9 dB increase in gain. The POWER-Q clearly distinguishes music and speech from feedback, so it works in setup and during program. Other devices may claim to be dynamic, but they don’t have the patented FBX

technology that allows the POWER-Q to control feedback in real time, for the life of the system. FBX filters also provide the feedback-free mobility you expect from your wireless mics.

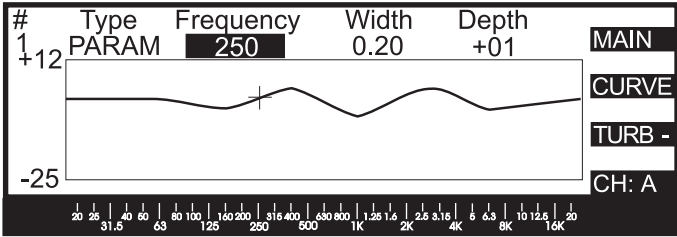
FBX filters come in two types: fixed and dynamic. Both filters are placed the same way – the difference comes after the filter is placed. Fixed filters remain on the initially detected feedback tone – they do not move. These filters provide the initial maximum gain before feedback and are placed during setup. Dynamic filters release and move to new feedback frequencies as needed to provide adaptive feedback control during the performance. Factory default is 7 fixed, 3 dynamic and 2 parametric. This is easily changed using the front panel or computer remote controls.

You’re in good company when you use the ADF4000/PowerQ!

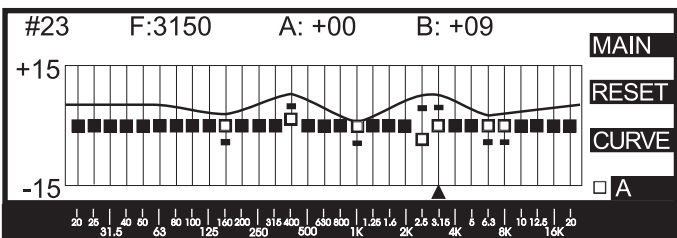
American Museum of Natural History
Mirage Hotel
Jacob Javitz Convention Center
Korean Broadcast System
Walt Disney Company
Westin Bonaventure Hotel
Willie Nelson
Meadowlands Exposition Center
Congress Innsbruck
Showco
Gateway Arena
Jeff Carson
Electrotec
Sound Planning
Entec
Waylon Jennings
Rock ‘n’ Road Audio
Lone Star Amphitheater
Ozzy Osbourne
Wavelength Hire Company
NASA
Church House, Westminster
National Bowling Stadium
Austrian Federal Broadcast
L.A. Shakespeare Festival
Iane Cove Municipal Council
Spice Girls (Wigwam U.K.)
Square Soft
United Nations Headquarters
...and thousands more!

#	Type	Frequency	Width	Depth	
1	PARAM	250	0.20	+01	MAIN
2	FBX F	458	0.10	-03	LIST
3	FBX F	837	0.10	-06	TURB -
4	FBX F	956	0.10	+01	
5	PARAM	1242	0.10	-04	
6	FBXD	off	0.10	+00	CH: A

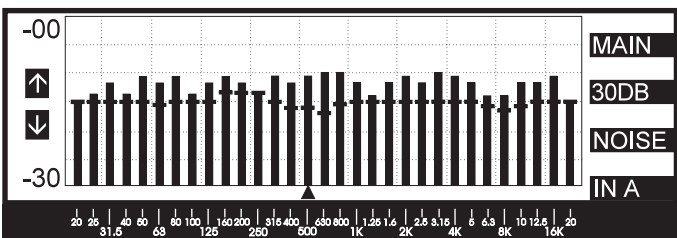
1



2



3



4

COMPRESSOR/LIMITER

OUTPUT UNITY

THRESH +19 dBu pk

RATIO 3:1

KNEE 1

LIMIT off

ATTACK

RELEASE

DIGITAL DELAY

DELAY 2.08 msec

02.4 feet

00.7 meters

DISTANCE TO SPEAKER 17.7 feet

05.4 meters

5

STORED CONFIGURATIONS

LOAD SAVE

- 1.
- 2.
- 3.
- 4.
- 5.

6

1. Parametric EQ & FBX Feedback Exterminator – List View

Tabular editing of 12 digital filters, switchable to Parametric (P), Fixed FBX (F), Locked Fixed (L), or Dynamic FBX (D). Adjust frequency, width and depth of all filters. High & low pass filters for each channel. Patented, adaptive FBX filters find and eliminate feedback by placing super-narrow Constant Q filters, providing more gain, increased clarity, and more wireless mic mobility. Adjustable FBX sensitivity and tracking.

2. Parametric EQ & FBX Feedback Exterminator – Graphic Edit View

Click & Drag graphic editing of parametric filters, 12 per channel. Grab any filter or select any point on the curve to edit using cursor keys & datawheel. Values for selected FBX or parametric filters are shown at top of screen. Shows change in response curve as you sweep filter center frequency, width, or depth. Filter ranges: 20Hz to 20KHz (1 Hz resolution), +12 to -80 dB, 1/100 to 9.99 octaves. Curves are interactively displayed concurrently with all other POWER-Q functions.

3. Graphic EQ

View and edit 31 bands per channel simultaneously on the same screen. View actual frequency response curve as you adjust filters. Edit channels individually or LINK them together. Edit one channel and COPY it to the other. In Automatic Room Equalization mode, POWER-Q uses reference mic input to flatten the response curve of the venue. Ranges: 31 ISO bands, +12 dB to -15 dB, 1/2 to one octave. Both channels operate concurrently with all POWER-Q functions.

4. Real-Time Analyzer

31-band, filter-based, 1/3 octave ISO, 20 to 20KHz digital real-time analyzer. Choose A, B, C or no weighting, slow/fast response, pink or white noise generator. Display scrolls and scales, adjust peak hold and compare channels. Superimpose graphic EQ on RTA display for precise viewing and editing of frequency response (patent pending). Display channel A or B inputs & outputs, and reference mic input. Runs concurrently with all other POWER-Q functions.

5a. Compressor/Limiter and 5b. Noise Gate/Expander (not shown)

Control compressor threshold, limiter threshold, compression ratio, attack & release time, knee, gain & peak limit for each channel. View input levels and gain reduction. Adjust gate threshold, attack, release & knee. Runs concurrently with all other POWER-Q functions.

5C. Automatic Digital Delay for Speaker Time Alignment

Two 1 x 1 digital delays with 20 microsecond resolution. Delay shown in feet, meters and/or seconds. 83.2 millisecond delay max. per channel. Automatically measures the distance between the speakers and your reference microphone and synchronizes the speaker delays in just a few seconds. Runs concurrently with all other POWER-Q functions.

6a. Program Store & Recall

Save and recall up to 99 user-defined configurations and/or frequency response curves. Load programs locally or via Serial remote control option. Also saves current settings and menu location on power-down.

6b. Remote Control

Use optional serial interface and Windows software to control POWER-Q from your computer. All functions controlled & displayed in full color. Or control multiple channels of POWER-Qs (ADF-SLU slave and/or serial-equipped standard units) from one computer.

Additional Windows Not Shown:
Automatic Room Equalization, and Global Parameters.

**POWER-Q™ ADF-4000™
ENGINEERING SPECIFICATIONS**

FBX/Parametric Filters

Twelve independent digital filters per channel, controlled automatically or parametrically from 20 Hz to 20 KHz, each switchable between FBX fixed filters, FBX dynamic filters, and parametric filters

Filter depth: user-controllable in 1 dB 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 9.99 to .01 octave (parametric), 1.0 to .01 octave (FBX)

High pass filter, user-controllable in 1Hz steps between 20 Hz and 3 KHz; 12 dB/octave roll-off

Low pass filter, user-controllable in 1 Hz steps between 1 KHz and 20 KHz; 12dB/octave roll-off

Resolution: 1 Hz from 20 Hz to 20 KHz in FBX and parametric mode

Time required to find and eliminate feedback: user-controllable from 0.1 seconds to 1 second (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 & -15dB cut

Independent display and control of A & B channels, with LINK functions

Real-Time Analyzer

31 band, 20 Hz - 20 KHz on ISO center frequencies

A, B, C, or flat weighting

Fast/slow, peak hold functions

Source selectable: reference mic, channels A or B input or output

Reference mic input: ISO phantom power, +48 VDC @ 10 mA, 6.8 K Ohm impedance

Compressor/Limiter

Threshold: +32 dBV to -30 dBV in 0.5 dB steps

Ratio: 1:1 through 16, 32, or ∞

Knee: soft/hard

Attack: 1 to 100 msec in .5 msec steps

Release: .05 to 5 sec in .05 sec steps

Peak limits: +32 dBV to -30 dBV in 0.5 dB steps

Noise Gate

Threshold: -20dBu to -84.0 dBu in 0.5 dB steps

Knee: soft/hard

Attack: 1 to 99 msec in 1 msec steps

Release: .05 to 5 sec in .05 sec steps

Digital Delay

1.3 to 83.2 msec in 20 µsec steps

Programmable in milliseconds, feet or meters.

Password Configuration

5 numeric characters

Load & Recall Configurations & Response Curves

99 user defined

1 factory default

1 most recent configuration (power down save)

Front Panel

LCD Display

Clip, limit, signal, and gate LEDs for channels A & B; clip and signal LEDs for REF

MIDI, Serial, Digital & Bypass LEDs

Four menu/soft keys

Context Sensitive Help key

Datawheel and cursor keys

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: 10 Hz to 20 KHz, ñ 0.2 dB @ +22 dBV

THD: <0.01% at 1.0 KHz at +22 dBV

SNR**: >105 dB (with ClipGuard™)

Dynamic Range: >110 dB (with ClipGuard™)

Headroom: +22 dBV peak @ 4 dBV nominal input

Power

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

Dimensions

2-U rack mount 19 x 3.5 x 9 in. (48.3 x 9 x 22.9 cm); 9 lb. (3.9 Kg)

Options

ADF-4SLU: Blank Front Panel two-channel slave unit for remote master control with PC (via serial connector)

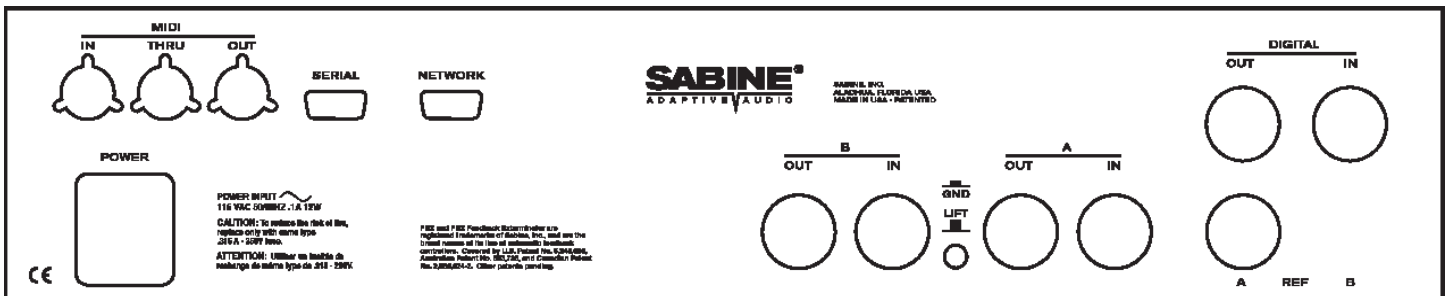
DA-I/O: AES/EBU Digital I/O (add to standard analog)

SMR-I/O: Serial (RS232) full remote control with POWER-Q for Windows™

Specifications subject to change without notice.

* Tests performed using an Audio Precision System One model 322 or equal

** Signal-to-noise ratio is the ratio of the maximum undistorted signal by specification (26 dBV RMS sinewave) to the noise floor



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