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# PRO AUDIO REVIEW

equipment  
review

## Sabine Graphi-Q 31 02 Digital EQ/Processor by Andrew Roberts

Recent technological advances have introduced a group of processors that can perform a wide range of functions, preserve user presets and consume only a fraction of the space of their combined, single-function predecessors. The Sabine Graphi-Q series of processors offers multiple functions, takes up minimal space and, at \$1,299.95 (full front panel controls), lowers the price threshold for this expanding class of processors.

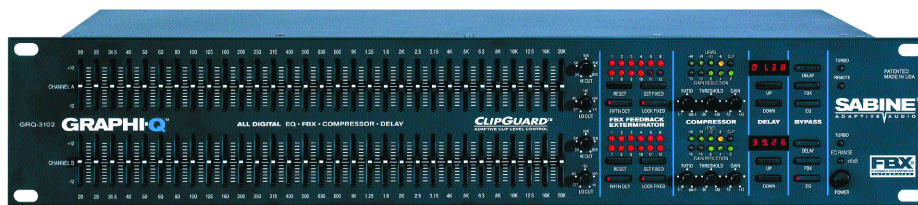
### Features

The unit I received for evaluation, the GRQ-3102, is one of four models in the Graphi-Q line. The GRQ-3102 is a dual-channel unit with faceplate controls; the GRQ-3102S (\$799.95; blank front panel) is the related slave version without front panel controls. The 3101 (\$1,099.95; full front panel) and 3101S (\$699.95; blank front panel) are the comparable single-channel versions.

All units in the series come with GRQ remote software for Windows. With the exception of the two-rackspace-high 3102, which needs the space to accommodate its dual 31-band graphic EQs, the Graphi-Q units are all one rackspace tall. The 3102 weighs nine pounds and is nine inches deep.

The GRQ-3102 has a full arsenal of loudspeaker-related processing. It has two 31-band graphic EQs, a full-function dual-channel compressor/limiter, two digital delays, high and low shelving filters and two channels of Sabine's FBX Feedback Exterminator. Each channel of FBX contains 12 separate, automatically placed, narrowly attenuated parametric filters that hunt down and reduce feedback when it occurs.

Analog aficionados will find great comfort in the 3102's traditional-style controls. The two 31-band EQs have sliders that offer a choice of either 6 or 12 dB of cut/boost. The front panel also has high- and low-cut filters (3 kHz to 20 kHz and 20 Hz to 1 kHz), compressor function controls (ratio, threshold and gain), a compressor LED dis-



play (level and gain reduction), delay time adjustment, bypass buttons (delay, FBX and EQ), and a group of control switches for the FBX section with LEDs that indicate filter status.

The 3102 also has two small LCD-type displays that Sabine calls "Tweak-n-Peek" windows. In default setting, these displays show the current delay time setting. When any front panel control is moved, however, that channel's window displays the parameter value of the control being tweaked.

3102 also has a Phoenix block connector for contact closure switching.

The FBX section features 12 parametric filters that can be divided into two categories: fixed and dynamic. The fixed filters will not change the frequency of a particular filter notch once they have latched onto a feedback cycle. They will deepen the filter notch if additional feedback is detected at that frequency, unless you depress the Lock-Fixed button in the FBX section. The dynamic filters hunt for new feedback frequencies as they occur. The factory default is nine fixed and three dynamic; this ratio can be adjusted to your liking.

Setting the FBX filters can be accomplished by performing a short process once your sound system is set up and ready to go. With master sends down, bypass all gates and press and hold the reset button to erase any previous filters. Program the ratio of fixed vs. dynamic filters by pressing and holding the Set-Fixed button until you have the desired number of fixed filters. Set the filter width (default is a constant Q of 1/10 octave) and then slowly raise the system gain.

As feedback rings occur, the 3102 detects these frequencies and pulls them down with fixed filters. Once the fixed filters are assigned, the dynamic filters begin to engage as more feedback rings occur. As the system settings and room acoustics change, the dynamic filters latch onto new frequencies as they occur. Additionally, the Graphi-Q has a Manual Turbo Mode and an Auto Turbo Mode, which allow for fast and quiet FBX Filter setup.

The Graphi-Q Remote Software allows

### At a Glance

#### Applications:

Live sound; contracting

#### Key Features:

Dual graphic EQs; dual compressor/limiters; digital delays; 24 FBX feedback filters

#### Price:

\$1,299.95

#### Contact:

Contact: Sabine at 386-418-2000;  
[www.sabine.com](http://www.sabine.com)

For example, if you start to push up a graphic EQ slider from its 0 dB detent, you will immediately see that gain increase show up in the display window as a +dB setting.

The rear panel on the 3102 is home to balanced XLR inputs and outputs, as well as TRS 1/4-inch balanced in and outs. There are also two RS-232 terminals, one to connect to a PC or laptop controller and the other to chain additional units together. The

you to remotely control all of the 3102's front panel controls and much more. Using the software controller embellishes most of the front panel control parameters. For instance, not only can you set the FBX filters, you can adjust their depth and width. You can also trade FBX filters for fully parametric EQs. It is also possible to globally adjust the filter width of each band of the graphic EQ and view and edit the response curve. You can also extend the power of the 3102's digital delays by using the GRQ software. From the digital delay page, adjust the delay increments by milliseconds, feet or meters — very handy for quickly setting up delay speakers in a large venue.

The 3102 can also incorporate ambient air temperature into the delay equation. Since the speed of sound is affected by temperature, this can be a valuable parameter adjustment — especially when working outdoors. Compressor/limiter adjustments are expanded. Using the software allows for adjustment of attack, release, knee and limiter threshold in addition to the ratio, threshold and gain parameters that appear on the front panel. The GRQ software allows the user to store up to 69 presets, control and link up to 16 channels of Graphi-Q, and set passwords for security purposes.

## In use

My evaluation of the GRQ-3102 consisted of about a half-dozen sound reinforcement jobs, most of which included a full band and challenging acoustic environments. I used the 3102 to process both front-of-house (FOH) speakers and monitor mixes.

Using the 3102 sans software was initially easy, thanks to its analog-style controls. It quickly became clear, however, that the 3102 is quite complicated; when I was not using the GRQ software I had to rely on the manual quite a lot. Many functions the unit performs require pressing buttons that seemingly have no connection to a given task. For example, to change the graphic EQ range from 6 to 12 dB, you simultaneously hold down the delay up/down buttons.

Setting up the FBX filters requires holding down certain buttons for varying amounts of time. Due to the time that passed between shows, it was hard to remember the procedure for these adjustments. Consequently, I found myself reaching for the manual frequently, despite the presence

of the analog-style controls. Fortunately, the 3102's manual is very concise and it proved helpful when using the Graphi-Q in variety of situations. Despite a few idiosyncrasies, I found the 3102 to be quite effective.

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As long as there was adequate time for setup during sound check, the 3102 helped me wring a little more volume out of the monitors — a big plus when working with loud bands on an ambient stage. I particularly liked the 3102's graphic EQ. It was great having two ranges from which to choose. In one venue, the stage was acting as a bass resonator and there was a lot of 200-Hz rumble in the monitors. Pulling the 200-Hz slider down at -6 dB on the monitor EQ helped somewhat, but when I switched the range to -12 dB, I was able to remove most of the unsavory boominess.

The dynamics processor in the 3102 worked well when used in tandem with my laptop running the GRQ software. It seemed a tad less transparent than my analog compressor, however, when used to lightly compress the FOH mix. It worked great as a limiter on the monitors.

I found the dynamics LEDs on the 3102's faceplate difficult to read. The LED lamps have a lot of bleed from one light to the next, so it was hard to properly gauge gain reduction and compressor level.

It was nice having analog-style controls to adjust parameters on the 3102. It expedited the setup process since there were no menu pages to scroll through. Since many of the controls were multitasking, however, it made things a bit trickier in the beginning. It was sometimes difficult to get a precise adjust-

ment out of the miniature pots used on the compressor. When setting the ratio, the display would often jump past my intended destination with the slightest turn. For this reason, I began using the GRQ software, which offered very precise adjustments.

I encountered one problem with the Graphi-Q that I think Sabine should address. At one show, I had to power off the system for a couple of minutes. When I powered the system back up, feedback ensued.

Initially, I thought my Graphi-Q settings had been dumped, but what was happening was the FBX filters were not being applied while the unit was booting up. If Sabine could add an output mute during the power-up process this problem would be eliminated. If not, there should be some indication that the unit is booting up. This would have alerted me to the problem and allowed me to preemptively stop it, thus keeping my blood pressure down a bit.

## Summary

The Sabine Graphi-Q 3102 is a very powerful processing tool that is a remarkably good deal. It is well designed and constructed despite a few minor irritants, some of which may be mitigated with future software upgrades (which, by the way, are free). With powerful EQ, good dynamics processing, a unique feedback reduction system and the power of comprehensive external control, the 3102 should be a welcome addition to most professional sound systems.

*Andrew Roberts, a regular contributor to Pro Audio Review, is a sound reinforcement and recording engineer.*

## Product Points

### Sabine Graphi-Q 3102 Digital EQ

#### Plus

- Powerful and compact
- Increases system volume without feedback
- Analog-style controls

#### Minus

- Hard to read display
- Confusing control procedures
- No power-up mute

#### The Score

A powerful tool to fight feedback and improve system sound.