

# GRAPHI-Q<sup>2</sup>™ GRQ3121

The graphic EQ/parametric EQ/automatic feedback controller/compressor/limiter/delay/crossover shall be a one in, two out digital signal processor, programmable from the front panel or with provided Windows software, Graphi-Q2 Remote, including linkable functions and remote programming and auto-FBX setup. 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 GRAPHI-Q2 shall also function as a 12-band parametric equalizer, 31-band graphic equalizer, full-featured compressor/limiter, 1x2 crossover, and digital delay for speaker alignment.

The unit shall include the following front panel indicators (LED): power, and clip level and signal-use LED indicators. The unit shall also be provided with the following back panel controls: XLR-3 input/output connectors; 1/4" TRS connector, 8-pin Euroblock connector for switch remote control connection; an internal power supply and power cord; an RS232 remote control connector; an RS232 network connector; and a ground/lift button.

## The following performance criteria shall be met:

**FBX/PARAMETRIC FILTERS** — Twelve independent digital notch filters controlled automatically or parametrically from 20 Hz to 20 kHz, each switchable between FBX fixed filters, FBX dynamic filters and parametric filters<sup>4</sup>. High pass filter: user-controllable cutoff points between 20 kHz and 1 kHz, and 12 or 24 dB/octave roll-off. Low pass filter: user-controllable cutoff points between 3.00 kHz and 20 kHz, and 12 or 24 dB/octave roll-off. Filter depth: user-controllable in 1 dB steps from +12 dB to -84 dB (parametric mode), 3 dB steps from 0 dB to -40 dB (FBX mode), maximum automatic depth adjustable from -6 to -40 dB. Filter width: user-controllable from 9.99 octave to .01 octave (parametric), 1.0 to .01 oct. (FBX<sup>1</sup>); constant Q (filter skirts do not widen as filters get deeper).

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 5 seconds (typically 0.3 seconds). Total number of combined filters active: 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, user selectable +/- 6 dB or 12 dB boost/cut.

**CROSSOVER:** 1x2; Bessel, Linkwitz-Reilly, and Butterworth filters; 12, 24, 36, 48 dB/octave slopes.

**COMPRESSOR/LIMITER** — Threshold: +30dBV to -30dBV in 0.5 dB steps (independently adjustable for compressor & limiter<sup>4</sup>). Ratio: 1:1 through infinity. Knee: soft to hard, in 40 steps<sup>4</sup>. Attack: 1 to 99 mSec in 1 mSec steps<sup>4</sup>. Release: .05 to 5 sec. in .05 sec steps<sup>4</sup>. Peak limits: -30 dBV to 32 dBV in .05 dB steps<sup>4</sup>. Mode: Dual Mono or Stereo (GRQ3122 & 3122-S).

**DIGITAL DELAY** — 1.38 mSec to 999.96 mSec in 20 microsecond steps. Programmable in milliseconds, feet or meters.

**PASSWORD CONFIGURATION** — 4 levels<sup>4</sup>.

**SAVE & RECALL CONFIGURATIONS** — 20 user defined, 1 factory default, 1 most recent front panel configuration (power down save), 1 default front panel.

**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 +18 dBV peak. Output load: 600 Ohms balanced. Bypass: true power-off bypass. I/O connectors: XLR-3 1/4" TRS. GRQ3122 and 3122-S: Dual channel, one input, one output per channel. GRQ3121, and 3121-S: Single channel, one input, two parallel outputs. Functions on each output selectable via GRQ2 Remote.

**PERFORMANCE** — Frequency response: 20 Hz to 20 kHz, 0.2 dB @+18 dBV. Dynamic range: >110 dB. Headroom: +14 dB peak @ 4 dBV nominal input.

**POWER** — 50/60 Hz available in 100V, 120V, 230V; 18W.

**DIMENSIONS** — 2-U rack mount; 19 x 3.5 x 9.5 in. (48.3 x 4.5 x 22.9 cm); Weight: 9.0 lb. (3.9 kg). 1-U rack mount: 19 x 1.75 x 9.5 in. (48.3 x 4.5 x 22.9 cm); Weight: 8 lb. (3.6 Kg).

The unit shall be the Sabine GRAPHI-Q2 GRQ3121.