

# GRAPHI-Q™ GRQ3101

The graphic EQ/parametric EQ/automatic feedback controller/compressor/limiter/delay shall be a single channel digital signal processor, programmable from the front panel or with provided Windows software, Graphi-Q 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-Q shall also incorporate ClipGuard™ adaptive clip level control with TURBO setup mode, which automatically matches the GRAPHI-Q's internal dynamic range to the program level. The GRAPHI-Q shall also function as a 12-band parametric equalizer, 31-band graphic equalizer, full-featured compressor/limiter, and digital delay for speaker alignment.

The unit shall include the following front panel controls: 31 slider encoders; threshold, ratio, gain, high cut and low cut knobs; bypass switches for FBX, digital delay and EQ; up and down increment buttons for digital delay and digital delay readout; a remote control RS232 serial port data indicator (LED); and clip level, limiter 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. High pass filter: user-controllable cutoff points between 20 Hz 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 24dB/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 -80 dB (FBX mode), maximum automatic depth adjustable from

-6 to -80 dB. Filter width: user-controllable from 10.00 octave to .01 octave (parametric), 1.0 to .01 oct. (FBX); 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.

**COMPRESSOR/LIMITER** — Threshold: +32 dBV to -30 dBV in 1 dB steps. Ratio: 1:1, 1.4, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 32 or 4. Knee: hard/soft variable 1 to 40 dB with center of range = threshold. Attack: 1 to 99 mSec in 1 mSec steps. Release: .05 to 5 sec. in .01 sec steps. Peak limits: -30 dBV to 32 dBV in 1 dB steps.

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

**PASSWORD CONFIGURATION** — 5 numeric characters.

**LOAD & RECALL CONFIGURATIONS & RESPONSE CURVES** — 65 user defined, 1 factory default, 3 snapshots, 1 most recent front panel configuration (power down save).

**INPUT/OUTPUT** — Input impedance: balanced >10K Ohms, PIN 2 high. Output impedance: balanced 50 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. 1 input, 2 output configurations. Processing may be assigned to either or both outputs, with identical values, except digital delay end output level settings, which can be set independently for each output via software.

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

**POWER** — 50/60 Hz available in 100V, 120V, 230V; 20W.

**DIMENSIONS** — 2-U rack mount; 19 x 1.75 x 9.5 in.; 48.3 x 4.5 x 22.9 cm. Weight: 8.0 lb. (3.6 kg).

The unit shall be the Sabine GRAPHI-Q GRQ3101.