GTX44

Quad Gate/Expander with DSP Sidechain & Frequency Dependent Filters

The PreSonus Audio Electronics GTX44 sets a new standard in multi-channel dynamics processing. PreSonus has been an innovative leader in dynamics processing since its inception. This line of quad dynamics processors shows our commitment to the market and to the creative audio professionals we work with everyday. We've listened to what our customers have said and given the industry what it has asked for. The GTX44 presents itself as an attractively styled Noise Gate/Expander. But beauty is not skin deep with the GTX44, it goes down into every circuit on the surface mount boards and DSP code. The GTX44 is a hybrid VCA, analog dynamics processor under digital control with DSP flexibility. Digital sidechain processing allows PreSonus to program multiple functions that can be applied simultaneously such as filtering, ducking, and other special function processing.

Based on demands from professional FOH engineers, the GTX44 control surface provides a truly professional feature set that rivals the most expensive gates in the world. Threshold, Ratio, Attack, Release and Hold controls are the necessities. The GTX44 can be used either as a noise-gate or downward expander. The GTX44 employs high-pass and low-pass filter potentiometers for pinpoint frequency 'windowing', which control the specific frequency range over which the gate will open. There is a sidechain monitor listen button that allows for the operator to 'hear' what frequency range the gate is operating within. The DSP aspect of the GTX44 brings to bear new technology in dynamics processing. For instance, our Zero-Crossing circuit will render the gate absolutely 'click-less'! Zero-crossing is the function by which the opening of the gate is predicated upon the existence of a zero amplitude line where an audio signal is 0 volts for an instant. The zero-crossing circuit detects the instant at which the audio crosses that line (provided it is above the set threshold) and allows the gate to open only then. The result is that the gate is already open when the signal crosses the 'gate open' threshold and prevents chattering on quick attack-time gate settings. A special 'duck' mode allows for ducking via the gate sidechain input.

Adjacent channels are stereo linkable. The rear panel of the GTX44 is well thought out with external sidechain insert on every channel. The unbalanced I/O is on a single TRS jack, which facilitates a single cable for getting into and out of the GTX44. A 'flip' button is provided that 'flips' the 'tip and the 'ring' on the 1/4" jack to match the wiring preference of your console's manufacturer. Balanced Input and Output are XLR. Internal power supply, +4/-10dBv selector, lighted function buttons, 10 segment gain reduction meters, all steel chassis, one rack space.

- Hi/Low-Pass Filter Control for Frequency Dependent Gating/Expansion
- Professional Feature Set, with Hold time control and Sidechain Monitor
- Single button Duck feature
- Zero-Crossing Circuit for truly 'Clickless' Operation
- Flexible and comprehensive I/O: Balanced XLR, 1/4" TRS, Insert for External Sidechain
- 10 Segment Gain Reduction LED
- Backlit Function Buttons
- Internal Power Supply

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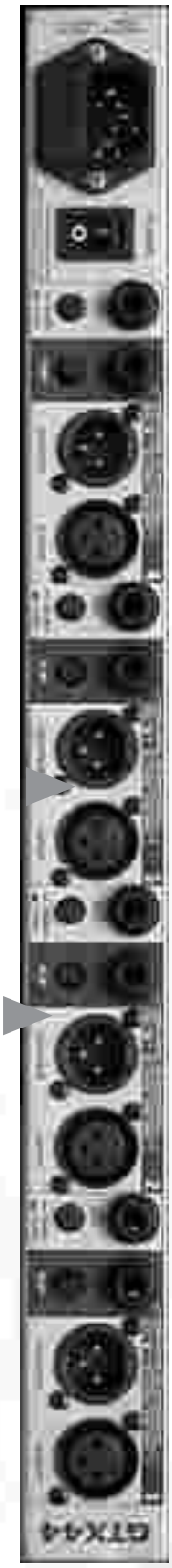
Technicial Specifications



Input
XLR .....10K Ohms (Balanced)
1/4" TRS .....10K Ohms (Unbalanced) Ring or Tip Based on Flip Switch

Output
XLR .....51 Ohms (Balanced)
1/4" TRS .....51 Ohms (Unbalanced) Ring or Tip Based on Flip Switch

Insert/Sidechain (+4/-10 Based on Switch)
Tip = Return .....10K Ohms (Unbalanced)
Ring = Send.....51 Ohms (Unbalanced)
Sleeve = Ground

Panel Controls
Low Cut Filter.....20Hz-8kHz
Hi Cut Filter.....250Hz-20kHz
Threshold.....+15dBu to –40dBu
Ratio.....1:1 to Gate
Range.....0dB to -80dB
Attack .....01mS to 500mS
Hold .....001S to 1S
Release .....01S to 2S
Sidechain Monitor Switch
Link 1-2 and 3-4 Switch
Duck Switch
Bypass Switch

Performance
THD+Noise .....0.01% (0dBu output)
Signal To Noise .....>90dB

Gain Reduction Meters
LED.....-3dB to-30dB

Physical
Weight.....10lbs.
Dimensions.....19" W x 7" H x 1.75" D
Chassis .....Steel
Panel .....Painted Aluminum

Power Supply
Type.....Internal Linear
Input .....100/120/220/240VAC (Factory Configured)
Power .....24 Watts

What is DSP doing in the side-chain?

In modern compression, gating, limiting and dynamics processing technology, a copy of the audio signal is processed to compute a precise amount of gain reduction or gain expansion of the original waveform (the side-chain of the audio signal). This computation can be very complex as it involves frequency, time and amplitude signal analysis. Traditionally, this process is performed using analog electronic functions such as rms/peak detectors, rc time constant generators and general mathematical analog operations. However, once the side-chain circuit is placed on the circuit board, it is fixed and cannot be easily changed or updated. This is where digital signal processing (DSP) of the side-chain signal creates an enormous advantage over traditional systems. Being software based, the DSP side-chain can be programmed to apply multiple functions simultaneously such as filtering, vintage compressor emulation, and special function processing. Of course every common function of dynamics processing; threshold, ratio, attack, release, etc. is part of the software.

(DSP in the side-chain is not to be confused with inserting an outboard EQ or other device into the side-chain of a traditional setup to achieve frequency dependent compression or gating. Having DSP in the side-chain allows for this to be accomplished on-board with out the need for external devices.)

In the PreSonus DSP side-chain products, the audible audio signal is controlled using a very warm, wide dynamic range (>130dB) analog VCA. The VCA is adjusted using the output of the DSP side-chain computations. This creates a warm yet very fast dynamics control system that is unparalleled in the industry.