



CL44

Quad Compressor/Limiter/Compander with DSP Sidechain

The PreSonus CL44 sets a new standard in multi-channel dynamics processing. PreSonus Audio Electronics 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 CL44 presents itself as an attractively styled analog compressor/limiter. But beauty is not skin deep with the CL44, it goes down into every circuit on the surface mount boards and DSP code. The CL44 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, vintage compressor emulation, and other special function processing.

The CL44 control set provides standard dynamics processing functions such as Threshold, Ratio, Attack and Release. An Auto function monitors audio over three separate time constants and provides a program dependent attack and release for quick set up and easy operation. Based on demands from professional FOH engineers, PreSonus has included an extended feature set that includes a filter that allows for frequency dependent compression, separate peak limiter threshold and a Compaander circuit that provides AGC (Automatic Gain Control). The Compaander raises the signal when it falls below a desired threshold. Used in conjunction with the compressor the CL44 can keep an audio signal within a very restricted dynamic range with out losing any information. A special 'optical' mode emulates a vintage optical transfer curve found in the world's most sought after vintage compressors. Adjacent channels are stereo linkable. The rear panel of the CL44 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 CL44. 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.

- Fully Featured Compressor with variable Attack, Release, Ratio and Release
- Separate Peak Stop Limiter
- Variable Frequency Filter Allows you to pinpoint the frequency range in which the compressor operates
- Compaander circuit for maximum control over dynamic range
- Vintage Optical Transfer Curve emulation
- Digital Sidechain Processor
- 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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Technical 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
 Threshold +15dBu to -40dBu
 Ratio 1:1 to 20:1
 Gain -20dB to +20dB
 Compad 0% to 100%
 Attack 01mS to 500mS
 Release 01S to 3S
 Limit -10dBu to 24dBu (Off)
 Optical Mode Switch
 Link 1-2 and 3-4 Switch
 Auto Switch
 Bypass Switch

Performance

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

Gain Reduction Meters

LED -0.5dB to -24dB

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.

