

Noise Gate
Stereo/Quad/Limiter

Operation Manual

B I A M P[®]

S Y S T E M S

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Limit Gate Application and Operation

STEREO/QUAD LIMITER. COMPRESSOR/NOISE GATE

FEATURES:

- Two and four independent channels.
- Single side-range control for maximum simplicity.
- Individual compression/noise indicators.
- Balanced XLR's and unbalanced inputs and outputs.
- Individual release time adjustable screwdriver—adjusts from 150 mSec to 1.5 Sec.
- Series patchable for multi-compressor/noise gate action.
- Front panel switchable for limiter or noise gate.

NOISE GATE.

FEATURES:

- Eliminates microphone rumble and low level background noise.
- Keyboards, only the one being used is "on" and the others "off," eliminating hum and noise.
- Acoustic guitar.
- State-of-the-art in electronics to achieve "limited breathing".
- Instrument or voice activates individual channel being used and turns off channels not being used. Better channel separation with no noise/hum.

The Biamp Limit/Gate has been designed for all audio users to simplify the use of sound equipment. With the Limit/Gate equipment, noise, equipment overload, instrument and microphone bleedthrough can be automatically eliminated. Yet the unit itself is amazingly simple to use.

The Limit/Gate

Two each (Limit/Gate 2) or four each (Limit/Gate 4). These Limit/Gates can be selected by a switch to be either a signal limiter or a noise gate.

Limiter Mode

In the limit mode, you select a high-quality, soft knee limiter with compression ratio 16-1. Simply patch the limiter into an audio line, set the threshold control to a loudness level that you do not want to exceed, and that's it. The green LED will turn on any time an excessive signal occurs, telling you that the limiter has automatically reduced the gain during the overload. For hard limiting, two limiters can be wired in series.

Gate Mode

In the gate mode, you have selected a noise gate with all audio equipment on, but not in use. Turn the threshold control to a position where the green LED just turns on. This will turn down the noise of the equipment and/or room noise. When you use the equipment or micro-

phones, the gate will automatically turn on allowing the audio signal to pass. The green LED will then go off.

A SOUND SOLUTION

The Sound Controller (making a sound controller)

Patch the output of the limiter to the input of the noise gate. Signal will go to the input of the limiter and from the output of the noise gate. Set one as a limiter and the other as a noise gate—your sound now is under control. You will automatically be free of noise, and equipment overload in all equipment following the limiter.

Applications of the Sound Controller:

Sound controller for instruments (guitar, amplifiers, etc.).

Connect a sound controller between the instrument line output and the mixer. Noise and loudness will now be under control in the sound system.

Sound controller for keyboards

Connect a sound controller between each keyboard and the mixer. All keyboards will be turned off except those in use, automatically, and mixer overload will be prevented.

Sound controller for microphones

The sound controller can be used between microphones and mixers. The microphones that are not in use will be turned down to reduce stage noise, bleed through, and unwanted echos from unused microphones that muddle solos and soft instrumentals. Your live sound will sound closer to studio sound because unused microphones will be turned down automatically. Mixer overload will also be prevented.

Controller for signal processing

Noise and overload can be reduced in signal processing equipment of all kinds by connecting the input signal to a limiter. This prevents equipment overload. Connect the output of the limiter to your processing equipment, or chain of processing equipment. The output of the equipment will go back to a noise gate to turn noise down automatically when no signal is present.

General

Always use the limiter first to prevent input overload, and the gate last to reduce noise.

High Gain After the Noise Gate

The Biamp Limit/Gate uses high slew rate, low noise design throughout, but using it between a microphone and mixer, where weak sounds are being highly amplified, can increase noise, but you might not notice it. Noise will be insignificant when the controller is used on high level microphones.

Loudness of Sound System

The sound controller will make your sound system quieter and prevent overload, so if you want your sound

louder you can turn it up. When set properly, the sound controller will give your existing sound system more horsepower.

Soft Knee Limiting

Soft knee limiting is a design approach that solves most of the problems associated with older and low cost limiters that caused breathing and thumping. The less you hear a limiter work, the better its design. The Biamp Limit/Gate uses the new soft knee, low-distortion design.

Release Time

Release time on a limiter and noise gate is the time it takes to turn off after it has acted. For live sound a fast time is required. For broadcast and some recording, a longer time is desirable. This control is usually set and forgotten. Each Biamp Limit/Gate has a screwdriver adjustment through the front panel to set release time. The factory has set this control to near its fastest setting for the majority of live sound applications.

Attack Time

Attack time is important in both limiters and gates so that sudden fast transients are not missed. The Biamp Limit/Gate has special switching so that fast attack time is available in both the limit and gate mode.

Threshold Control

Threshold is the audio level where a limiter starts to limit, and a noise gate turns the signal back on. The threshold control on the Biamp Limit/Gate sets this level in either mode, limiter or gate. This unique wide range (-40dB to +18dB) control is what makes the Limit/Gate so simple to use, by eliminating the need for input and output level controls on each section.

Wherever sound is being used, the Biamp Sound Controller will improve the sound and make sound equipment easier to use.

Stereo Limiter Compressor Noise Gate Front Panel

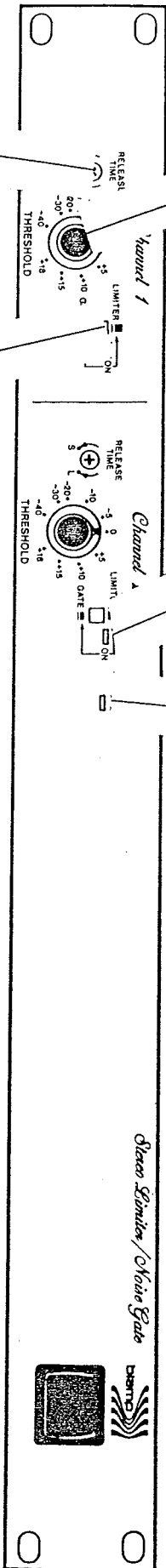
THRESHOLD
Amount of limiting/compression needed; or, in the noise gate mode, the amount of sensitivity for "turn on"

LED (Green)
Signal activates the front panel light, which turns on automatically when an input signal becomes strong enough to activate the compression or noise gate in that channel.

LED (Red)
Power is on when lit.

RELEASE TIME
Screwdriver adjust, factory set.

SWITCH FOR LIMITER OR NOISE GATE



Stereo Limiter Compressor/Noise Gate Rear Panel

POWER CORD

Connect this to a source of 120V 50/60 Hz AC Power. Conversion from one voltage to the other after purchase may be accomplished by a qualified service technician.

STEREO STRAP SWITCH

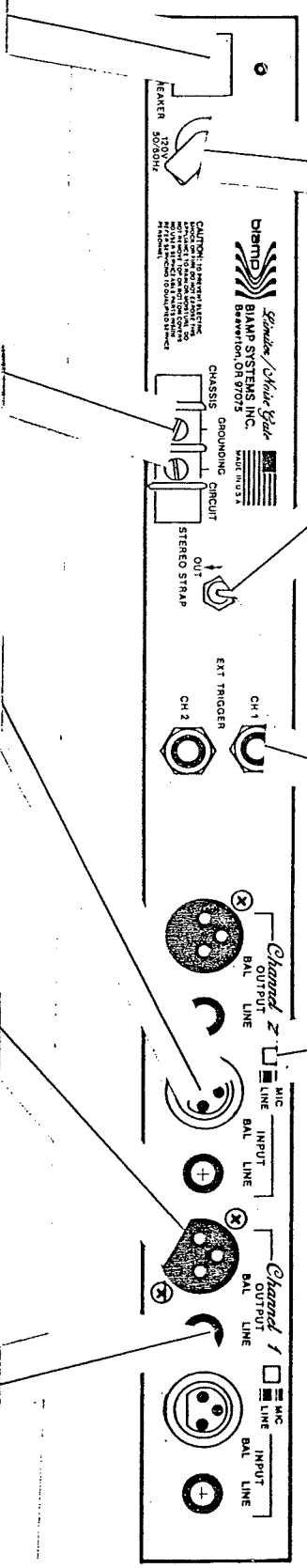
To strap channel one and channel two together, having a noise gate and limiter tied together, or any combination needed (stereo version only).

EXT. TRIGGER

Audio signal to activate limiter or noise gate (stereo version only).

LINE-MIC SWITCH

Line position is for normal line operations in a system. Mic position has 30dB gain so that you can go directly into the limiter/noise gate with a microphone.



CIRCUIT BREAKER

This circuit breaker protects the unit against faults and overloads.

GROUNDING STRAP

This terminal strip allows floating the circuit ground from the chassis ground to help eliminate ground loops.

INPUTS

This three-conductor phone jack and XLR connector accepts balanced or unbalanced inputs of up to +30dBm and should be used in professional sound applications. If unbalanced operation is desired, simply tie the unused side of the input to ground. When using the 1/4" phone jack this may be accomplished simply by using a two-conductor plug.

OUTPUTS

This three-conductor phone jack and XLR connector carry the output of the limiter and should be used in professional sound applications where a high level, balanced or unbalanced output is desired.

UNBALANCED OUTPUT

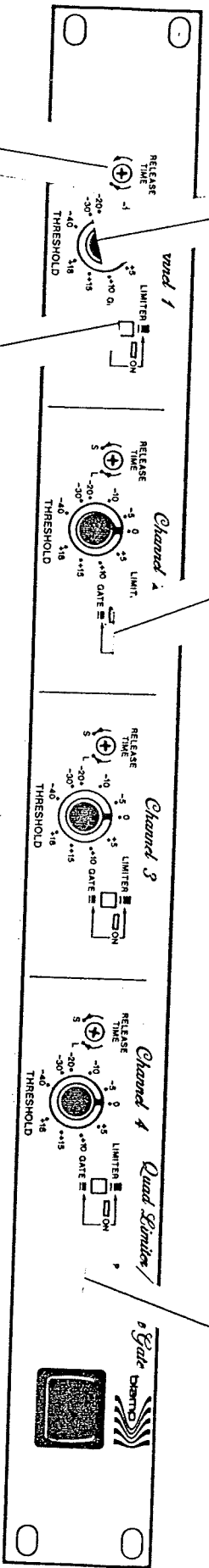
This two-conductor phone jack carries the unbalanced output of the limiter and should be used any time an unbalanced load is driven.

Stereo/Quad Limiter Compressor/Noise Gate Front Panel

THRESHOLD
Amount of limiting/compression needed; or, in the noise gate mode, the amount of sensitivity for "turn on."

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Signal activates the front panel light, which turns on automatically when an input signal becomes strong enough to activate the compression or noise gate in that channel.

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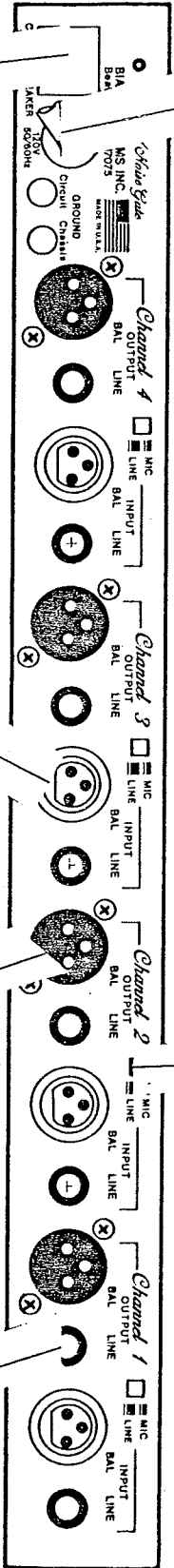


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SWITCH FOR LIMITER OR NOISE GATE

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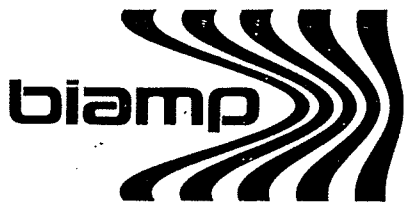
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UNBALANCED OUTPUT
 This two-conductor phone jack carries the unbalanced output of the limiter and should be used any time an unbalanced load is driven.



STEREO / QUAD LIMITER COMPRESSOR / NOISE GATE

FEATURES:

- 2 OR 4 INDEPENDENT CHANNELS.
- SINGLE SIDE-RANGE CONTROL MAXIMIZES SIMPLICITY.
- INDIVIDUAL COMPRESSION/NOISE INDICATORS.
- BALANCED XLR'S AND UNBALANCED INPUTS AND OUTPUTS.
- INDIVIDUAL ATTACK AND RELEASE TIME ADJUSTABLE.
SCREW DRIVER ADJUST 150m SEC. to 1.5 SEC.
- SERIAL PATCHABLE FOR MULTI-COMPRESSOR/NOISE GATE ACTION.
- FRONT PANEL SWITCHABLE FOR LIMITER/OR NOISE GATE.

The all new Stereo/Quad Limiter Compressor/Noise Gate has been designed for the best of two worlds, having the wide range of problems in limiting of over loading problems from line conditions, speaker protection (High Frequency) to microphone plus having the flexibility of the Noise Gate, or combined both Limiter/Noise Gate as the Noise Gate eliminates hum and noise by gating off the signal. The variable decay rate provides for a much more natural response.

The new Limiter/Noise Gate will find a place in sound reinforcement, in recording studio's, monitor systems, broadcast and production use, and especially in the musical instrument field for Keyboard, Drums, Guitar limiting and Noise Gate elimination.

Biamp's Stereo/Quad Limiter/Noise Gates are designed for maximum simplicity of operation. The two and four independent channels feature front panel threshold control and selection switchable for Limiting or Noise Gate and compatible to your needs. With each having a high emitting diode (LED) to indicate when Limiting/Compression/or Signal through the Gate are occurring. Release Time is varied by means of a screw driver adjust control, located on the front panel for each control.

Biamp's superior engineering ability in using the newest Technology for the latest in high slew rate and low in noise to make available a product reasonably priced and with a superb performance.

SPECIFICATIONS

frequency Response	20Hz to 25kHz \pm 0.5dB
Total Harmonic Distortion (1kHz, balanced or unbalanced)	Less than 0.1% at + 15dBm output Less than 0.01% at + 6dBm output
Noise	- 90dBm 20Hz to 20kHz - 98dBm A weighted
Signal to Noise Ratio (Relative to Max Threshold)	108dB 20Hz to 20KHz 116dB A weighted
Unity Gain Accuracy	\pm 0.5dB
Channel Tracking	\pm 0.5dB
Threshold Range	- 40dBm to + 18dBm
Attack Time	Better than 4mS
Release Time	150mS to 1.5 Sec (Factory set at 200mSec)
Input Impedance	50k ohms balanced 25k ohms unbalanced
Output Impedance	200 ohms balanced 100 ohms unbalanced Will drive 600 ohm lines
Maximum Gain Reduction	- 20dB Limit Mode - 28dB Noise Gate
Dimensions	19"w x 1 $\frac{3}{4}$ "h x 5 $\frac{1}{2}$ "d