



**J.B. Sound Industries Pty. Ltd.**

**43 Valencia St.**

**Greenacre 2190**

ACN: 002 346 278

**Manufacture & Consultancy:**

Custom Electronics, Printed Circuit Boards,  
Broadcast Equipment and Controlled Evacuation Systems

<http://www.jbsound.com.au>    [mail@jbsound.com.au](mailto:mail@jbsound.com.au)

**Ph. (02) 9750-4372, Int. +61-2-9750-4372**

**FAX. (02)9750-9406, Int. +61-2-9750-9406**



**LL-1**

(25mm wide (5E) EuroCard to operate from  $\pm 24V$  supply)

**Line Limiter 1**, was designed to fill the gap for an effective limiter at an economical cost without compromising performance. LL-1 has a flat frequency response as shown below, input level is a preset and the input amplifier can be easily set to cover many applications from peak limiting to gain riding. The output level is a preset with front panel access providing output levels from zero to +13dbm (the output stage has headroom to +26dbm). With dual time constant response, this provides a fast response (attack & release) to peak levels while providing a slow attack & release to sustained levels.

Level control is done with a VCA driven from a precision rectifier and controlled by an op-amp allowing for ganging of controls for multichannel operation.

LL-1 was designed to provide very fast, dual time constant limiting, to prevent overload to line equipment, and to present a "Brick Wall" affect, it accomplishes this with only a 0.5db increase in output for every 10db

increase in input, over a 30db range. LL-1 was designed to operate at a nominal level of +8dbm input, and providing an adjustable output (screwdriver from the front panel) variable from zero to +13dbm.

The output stage is equipped with high speed back diodes, to prevent damage to the output stage from reflections or other signals on the line. The LEDs on the front panel will indicate the current status of limiting (Yellow, Fast and Red Slow).



**Typical Specifications:**

Measured on S/N 5 2 96 on February 29, 1996.

Nominal operating level:

+8dbm input.

+8dbm output.

**Total noise & distortion @ 1kHz input:**

+8dbm in 0.08% (Threshold of limiting).

-2dbm in 0.075% (10db below limiting).

+18dbm in 0.12% (10db of limiting).

**Frequency response:** at +8 input (at no time during this test, was the limiting threshold exceeded).

8.1Hz -3.0db

13.6Hz -1.0db

30.0Hz 0.0db

1.0kHz 0.0db

5.0kHz 0.0db

10.0kHz -0.1db

18.0kHz -0.5db

25.5kHz -1.0db

49.5kHz -3.0db

Typical uses:

High speed limiting of audio for ISDN transmission.

High speed limiting of audio prior to DIGITAL RECORDING.

High speed limiting of audio for BROADCAST TRANSMISSION LINE.

High speed limiting of audio prior to MODULATING A TRANSMITTER.

The smooth & precise limiting action provides a completely transparent audio passage, the only noticeable effect is the apparent "loudness" caused when operating under heavy limiting. Below limiting threshold the limiter operated as a unity gain amplifier, limiting threshold is a precise point < 0.1db wide.

**Standard face plate colours are:**

Natural Satin Anodised Aluminium, with Black filled engraving.

Black Satin Anodised Aluminium, with White filled engraving.

**Current consumption:**

I @ +24V operating to +8dbm out = 54mA, into S/C 89mA.

I @ -24V operating to +8dbm out = 41mA, into S/C 71mA.

**Typical Tracking Error:**

Between two limiters selected at random <1db

**Call J.B. Sound Industries Pty. Ltd to discuss your requirements.  
(02) 9750-4372, Fax & email available.**