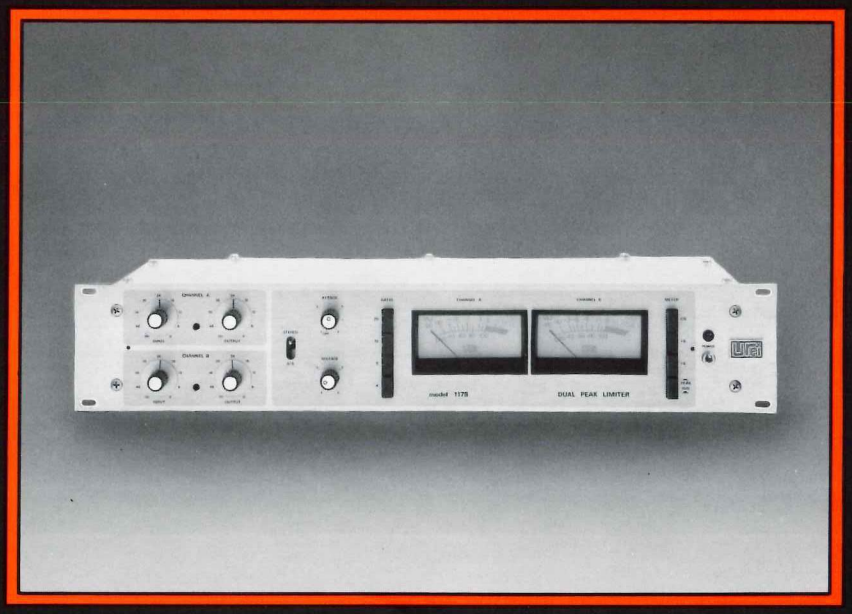
1178 DUAL PEAK LIMITER



FEATURES:

Two independent Peak Limiters with perfect tracking when used in stereo mode.

Attack time front panel adjustable from 20-800 microseconds. Independent of peak duration or frequency.

Release time front panel adjustable from 50 ms to 1.1 seconds.

Pushbutton selection of four compression ratios, to satisfy various program requirements.

Balanced, transformer outputs.

Switchable meter ballistics (VU, peak).

The Model 1178 is a two channel version of the very successful 1176LN Peak Limiter used in many recording studios, broadcast stations, sound reinforcement installations, etc. around the world. The Dual Peak Limiter was designed for those applications where two channels of program material are processed and the balance of these audio channels must be maintained. The two limiters inside the Model 1178 are perfectly matched to assure the high degree of tracking necessary for critical stereo applications.

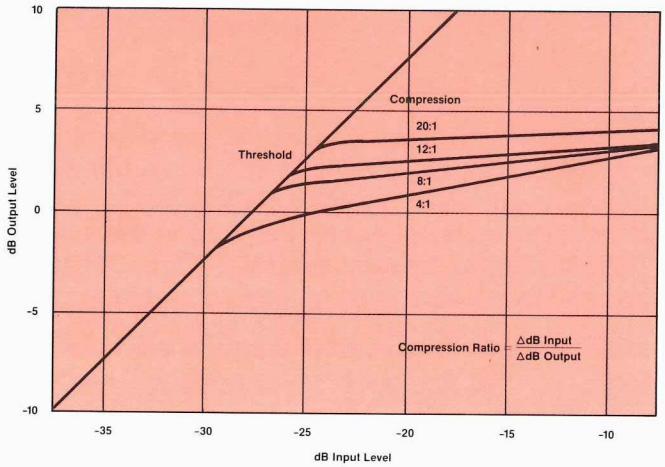
Single adjustments of attack and release time control both channels simultaneously, while the input and output level controls are adjusted independently. In the stereo mode a front panel switch allows the gain reduction amplifiers of the

two limiters to be linked together. The audio signal with the larger peak-to-peak amplitude will cause the same amount of gain reduction in both channels. On the other hand, when switched to single mode operation the two limiters process the signals independently. This provides the user with exceptional flexibility in operation.

The Model 1178 was designed to have performance characteristics similar to the single channel 1176LN. Limiting is accomplished by utilizing FETs as voltage variable resistors. Unique circuitry permits severe limiting without added distortion and the compression ratio may be optimized for various program materials. The gain structure throughout the Model 1178 maintains an excellent signal-to-noise ratio at normally used control settings.

Dual, backlighted front panel meters may be switched to read either the amount of gain reduction, or the output signal level referenced to +4 dBm or +8 dBm. Also switch selectable are the characteristics of the meter readings, either indicating average signal (VU ballistics) or peak. The limiter requires only 3½" of rack space and is operable from 100-125 VAC or 200-250 VAC, 50/60 Hz.

Typical Input Versus Output Level Curves of 1178 at Various Compression Ratios.



SPECIFICATIONS:

ELECTRICAL: (Each Channel)	
Input:	Balanced, bridging differential amplifier.
Input Impedance:	20 kohms, used as balanced input. 10 kohms, used as unbalanced (single ended) input.
Input Level:	+20 dBu max.
Gain:	45 dB, ±1 dB.
Frequency Response:	±1 dB, 20 Hz to 20 kHz.
Output:	Floating, transformer isolated.
Output Load:	150 ohms or greater
Power Output:	+24 dBm +20 dBu into 150 ohm load
Distortion:	Less than 0.5% THD from 50 Hz to 15 kHz in limiting at any level up to rated output; release time set to slow. (As with all limiting devices, distortion of low frequency peaks increases with faster release time).
Signal-to-noise Ratio:	Greater than 81 dB at threshold of limiting 30 Hz to 15 kHz..
Attack Time:	Less than 20 micro-seconds for 100% recovery. Adjustable to 800 micro-seconds with front panel control.
Release Time:	50 ms minimum, 1.1 seconds maximum (for 63% recovery). Adjustable with front panel control.

Threshold vs Output Level:

Compression Ratio Setting	Input Level at Minimum Limiting Threshold ±2 dB	*Relative Output at Threshold
20 : 1	-24 dBu	+10 dBm
12 : 1	-25 dBu	+ 9 dBm
8 : 1	-26 dBu	+ 8 dBm
4 : 1	-30 dBu	+ 7 dBm

* with Output gain control set to provide a reserve of approximately 10 dB.

Connections:	Rear chassis barrier strips for input and output. Power through 3-wire IEC style connector.
Power Requirements:	100-125 VAC, or 200-250 VAC, 50/60 Hz, switch selectable, less than 10 W.
Environment:	Operating 0°C to +50°C; Storage -20°C to +60°C.
PHYSICAL:	
Dimensions:	483 x 89 mm rack panel, depth behind panel 203 mm (19 in. x 3½ in. x 8 in.).
Finish:	Panel is 3.18 mm (⅛ in.) brushed clear anodized aluminum in two shades. Chassis is cadmium plated steel.
Weight:	5.0 kg (11 lbs.)
Shipping Weight:	6.6 kg (14.5 lbs.)
Accessories:	SC-2 Security Cover. Model 301 XLR/QG Adapter for input and output.
	NOTE: 0 dBm = 0.775 Volt/600Ω = 1mW 0 dBu = 0.775 Volt/Load not specified

JBL UREI ELECTRONIC PRODUCTS

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