

THE SYMETRIX 501 PEAK/RMS COMPRESSOR/LIMITER is a precision dynamic range controller intended for use in the most demanding professional audio applications. The 501 is two dynamics controllers in one unit. Separately controlled, simultaneous RMS detection and peak limiting is provided so that the limiter can be set to prevent spikes and allow the compressor to control the signals without applying more than the desired amount of gain reduction. The 501 performs both duties with unsurpassed distortion and noise specifications. A full complement of controls gives the operator the ability to perfectly tailor dynamic response. This isn't a one slider device, you are in control.

Standard engineering practice often calls for the use of low ratio compression, as a creative device, to achieve dynamic characteristics that are more pleasing to the ear. Since the 501's compressor is RMS responding (like the human ear) it's easy to get a consistent, more listenable sound. The RMS compressor section is designed to provide both manual and automatic (program controlled) attack and release times. The wide range of the ratio and threshold controls make the 501 usable over a 50 dB range. RMS detection, high headroom input circuits and output drivers, give the 501 its well known sonic excellence.

However, an RMS compressor alone does not prevent clipping distortion or tape saturation. For this reason, standard practice also dictates the use of a peak limiter, as a protection device, to take control of transient peaks that would otherwise cause overload distortion. The peak limiter catches even the fastest transient spikes, with its exceedingly quick 2000 dB/msec attack time.

With both types of processing in the same package, the 501 provides both creative and protective dynamic range control. This is one reason why the 501 has become a first choice for vocal applications. It is also widely known as the compressor/limiter choice for bass players, allowing the low frequency notes to sound close and full, while protecting the player's amp from overloading during sharp slaps and pounding of the bass strings. With this type of performance and reliability the 501 has become the audio experts' tool of necessity.

Backed by over two decades of audio processor design experience, the Symetrix 501 can only be called "performance elegance" in the classic sense of audio quality and reliability. •

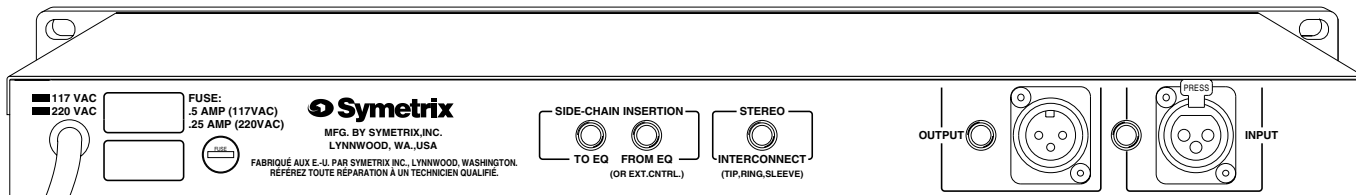
APPLICATIONS

- "Legendary" choice for bass players
- Sound Reinforcement
- Recording
- Broadcast

FEATURES

- RMS and interactive peak control
- Manual or automatic attack/release
- Balanced and unbalanced connections
- Stereo linkable
- Sidechain access

501



SPECIFICATIONS

Specifications subject to change without notice.

Input/Output

Inputs	XLR-female, >20-kilohms line-level Balanced Bridging, >20-kilohms Unbalanced Bridging TRS-female paralleled with XLR connector
Outputs	200-Ohm Source Impedance, Balanced, XLR-male TS-female (Unbalanced) Transformer Balanced Optional 100-Ohm Source Impedance
Maximum Input Level	+20 dBu, Balanced
Maximum Output Level (onset of clipping/1% THD)	+26 dBm Balanced (600 Ohms) +20 dBm Unbalanced (600 Ohms)
Sidechain	100-Ohm Source Impedance 7-kilohm Input Impedance
Connectors	Separate TS, Unbalanced, Send and Receive jack Input: XLR-3F, 1/4" TRS Output: XLR-3M, 1/4" TS Sidechain: 1/4" TS (two)

Performance Data

Frequency Response	20 Hz to 20 kHz (+0, -1 dB)
THD+Noise	0.025 %, +0 dBm in, +0 dBm out, 10 dB gain reduction, 1 kHz, 30 kHz low-pass filter
Equivalent Input Noise (EIN)	Better than -85.5 dBu, 600-Ohm Source Impedance, Unity Gain Better than -95.5 dBu, 600-Ohm Source Impedance, 20 dB gain reduction

Physical

Size (hwd)	1.74 x 19 x 4.75 inches, 4.42 x 48.3 x 12.065 centimeters
Weight	7 lbs (15.4kg) shipping

Electrical

Power Requirements	117V nominal, 120V AC, 60 Hz, 12.5 watts maximum 230V nominal, 240V AC, 50 Hz, 12.5 watts maximum
--------------------	------------------------------------------------------------------------------------------------------

Compressor

Type	RMS responding, soft-knee
Manual Attack Time	Variable: .25 to 12 dB/ms
Manual Release Time	Variable: 5 to 300 dB/sec
Auto-Release Time	Program dependent
Threshold	-40 dBu to +10 dBu
Ratio	1.4:1 to ∞:1

Limiter

Attack Time	2000 dB/ms (approximately 1/2 cycle at 50 kHz)
Release Time	110 dB/sec
Threshold	-10 dBu to +20 dBu
Ratio	∞:1

501 ARCHITECTS AND ENGINEERS SPECIFICATIONS

The compressor/limiter shall be a single channel unit that reduces the dynamic range of wideband, wide range audio signals. It shall have separate compressor and peak limiter sections and occupy a single rack space (1U).

The unit shall have a RMS responding compressor section with separate controls for ratio, threshold, attack, and release. A front panel switch shall be provided to engage the auto attack/release time mode. The ratio shall be adjustable from 1.4:1 to infinity:1. The peak limiter shall have a fixed infinity:1 ratio, fixed attack rate of 2000dB/ms, and adjustable threshold (-10dBm to +20dBm).

The inputs shall be active balanced bridging designs terminated with 3-pin XLR (AES/IEC standard wiring), and 1/4" TRS. The input circuitry shall incorporate RFI filters. The output shall be an active balanced design, terminated with 3-pin XLR (balanced output, AES/IEC standard wiring), and a 1/4" TS jack (unbalanced output). The active-balanced output shall be capable of delivering +26 dBm, balanced, into a 600 Ohm load. A transformer-coupled output shall be available as an option. There shall be separate 1/4" TS female connectors provided for the sidechain send and return.

The unit shall be capable of being linked with another like unit for stereo operation. In this mode, the overall gain reduction of the two channels shall be based upon the mono-sum of the two input signals and each unit shall receive identical gain-reduction control signals. The stereo-link function shall be controllable via a front-panel switch.

Overall frequency response shall be 20Hz to 20kHz (0dB, -1dB). THD shall not exceed .025% with 10dB gain reduction, 600 ohm load, 1kHz tone at 0dBm. The equivalent input noise (EIN) shall be -85.5dBu or better at unity gain with a 600 Ohm source over a 22-20kHz noise bandwidth.

The AGC shall be capable of operating by means of its own built-in power supply connected to 117V nominal AC (105-130V) 50/60 Hz (230V nominal, 207-253V AC, 50 Hz where applicable).

The unit shall be a Symetrix Incorporated model 501 Peak RMS Compressor/Limiter.

501