

TYPICAL GATE SETUPS, such as drum miking or cleaning up multitrack recordings, all face the same difficulty: how to apply a precise trigger to imprecise, organic signal sources. Much to the frustration of audio engineers, instruments and vocalists produce natural audio waveforms, and nature is rarely consistent. When nature meets machine in audio processing, the results can sound like the ‘snap, crackle and pop’ you’d prefer in your cereal, not your audio. Most gates offer only one solution to this problem: open faster. While they measure performance in microseconds, Symetrix went back to the drawing board and rewrote the rules on opening. The dual channel 562E Windowing Expander/Gate exploits our newly developed proprietary technology to enhance gating and expander control. Ultimately the 562E delivers unparalleled fidelity to any audio signal.

GATING: Gates may be used to clean up virtually any type of musical instrument or audio sound effect, but perhaps their most common use is on drum and percussion tracks. The 562E employs two unique tools for detecting and controlling these audio events.

Window Advance is a proprietary system for recognizing the signal to be gated. In simple terms, it virtually creates the impossible: a gate that opens just ahead of the audio signal. It creates this impression by moving the statistical energy center of the gated signal forward in time. Window Advance permits the user to subtly delay the signal energy, centering it within the envelope. Through this function, the 562E’s gate passes the entire leading edge of the audio waveform. Window Advance eliminates the noises and chopped-off waveforms created by traditional gates that struggle to open as quickly as possible after the signal arrives.

Auto Windowing is a processing technique that allows the user to maintain better control of the gate envelope parameters. Its dynamic smoothing process reduces ‘pops’ and ‘clicks’ that can occur at fast attack settings. These nasty noises are typically produced by envelope edges, overshoot and instabilities. Even gates that claim to open thin microseconds fail to recognize the reality underlying these problems: naturally occurring waveforms do not have consistent leading edges. In contrast, Auto Windowing derives its trigger signal from the ‘time center’ of the leading edge of the audio waveform. This reduces trigger uncertainty, jitters, and attack distortion. Auto Windowing yields an envelope that is consistent

and natural-sounding. It also increases envelope consistency by eliminating the artificial ‘drop off’ that occurs in most gates at the end of the release cycle. In the 562E the signal smoothly and continuously decreases at the end of the release cycle, creating a much more pleasing sound.

EXPANSION: The 562E also permits users a distinctive choice between gating and expansion. A downward expander is similar to a gate, but the expander substitutes RATIO control for the gate’s RANGE control. As a result attenuation is still variable below threshold. This makes the expander ideal for tasks requiring more subtle control. To all possible uses for an expander, the 562E delivers superior performance through unique technology. On the 562E the threshold control calibration is identical for both gating and expander functions. While this may not seem like a big deal at first, many ‘gate/expanders’ demonstrate unacceptable variances between the gate and expander thresholds. The 562E’s AutoWindowing technology eliminates these variances, which typically result from differences in peak and RMS detection strategies. Even the 562E’s ratio circuitry is special. The ratio automatically reverts to 1:1 when the signal approaches 25dB below the threshold. This prevents any low level modulation of the expanded signal.

For the first time, open your ears to all the clear audio you wanted without any revenge from the processor. Experience a quantum leap forward in gate technology with the Symetrix 562E Windowing Expander/Gate. •

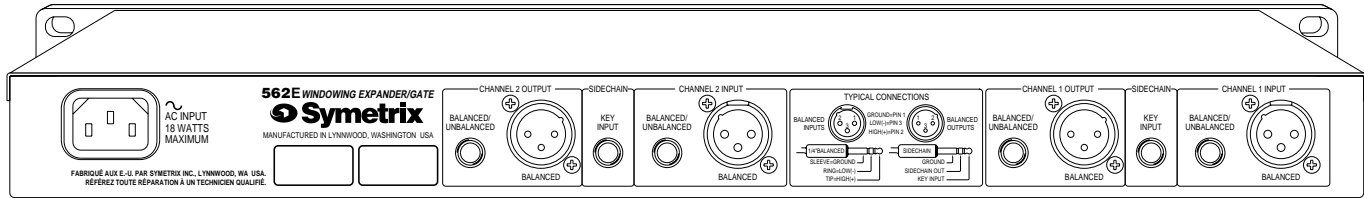
APPLICATIONS

- Isolating drum microphones
-
- Noise and leakage suppression
-
- Artistic envelope shaping
-
- Special dynamics effects
-

FEATURES

- Auto Windowing technology delivers advanced envelope shaping capabilities.
-
- Window Advance detection captures all attack transients without adding clicks or coloration.
-
- Key Filters ensure precise triggering even in noisy environments.
-
- Creates a new industry standard for ultra-low noise and distortion-free gating.
-

562E



SPECIFICATIONS

Specifications subject to change without notice.

Input/Output

Number of Audio Channels	Two
Connectors	XLR and 1/4" TRS
Maximum Input Level	+22 dBu
Maximum Output Level	+22 dBu
Input Impedance	>20K Balanced, >10K Unbalanced
Output Impedance	600 ohms Balanced

Physical

Size (hwd)	1.75 x 19 x 4.25 inches, 4.44 x 48.26 x 10.795 centimeters
Shipping Weight	8 lbs, 3.64 kg

Electrical

Power requirements	117V nominal, 105 to 130V AC, 50 to 60 Hz, 18 watts 230V nominal, 207 to 253V AC, 50 Hz, 18 watts
--------------------	--

Performance Data

Frequency Response	+0, -3 dBm, 10 Hz to 40 kHz
Dynamic range	112 dB
Signal/Noise	94 dB
THD+Noise @ 1kHz	.03% @ +4 dBu
Attack Time	Program Dependent to 300 milliseconds
Attenuation	80 dB max., adjustable

562E ARCHITECTS AND ENGINEERS SPECIFICATIONS

The Dual Channel Expander/Gate shall provide two independent channels of dynamic range expansion for wide band, wide range audio signals. The unit shall occupy one rack space (1U).

The Expander/Gate shall incorporate AutoWindowing (tm) and Window Advance (tm) circuitry to deliver virtually instantaneous attack times without any audible 'clicks' or 'pops'. There shall be continuously variable controls for Threshold, Attack Time, Gate Hold Time, and Release Time. Gate Range and Expander Ratio shall be continuously variable via a single front panel control.

There shall be separate, tunable high pass and low pass filters in series within the control sidechain. The cutoff frequencies shall be individually adjustable via front panel controls. There shall be an External Key input on the rear panel and a Key Listen mode shall be available that will monitor the control signal either pre or post Key Filter. There shall be a front panel control to select either External Key, Internal Key, or Bypass mode.

Each channel shall have a four segment LED meter that shall indicate gain reduction amount. The meter shall have a range of 60dB. There shall also be LED indicators that display the input signal level relative to the Expander/Gate threshold.

Pre-filter control loop access will be available via a 1/4" TRS female jack. This shall be wired Tip=Return, Ring=Send, Sleeve=Ground.

The inputs shall be active balanced bridging designs terminated with 3-pin XLR (AES/IEC standard wiring) and 1/4" TRS connectors. The input circuitry shall incorporate RFI filters. The outputs shall be active servo-balanced designs having equal source impedances and terminated with 3-pin XLR (AES/IEC standard wiring).

The inputs shall accommodate +22 dBu signals without distortion, and the balanced outputs shall be capable of delivering +22 dBm into a 600 ohm load.

Overall frequency response (+0, -1dB) shall be 20Hz to 20kHz. THD+N shall not be greater than 0.03%, 0dB g/r, 1kHz into a 600 ohm load. Dynamic range shall be 110dB.

The unit shall have a built-in power supply and operate from 117V nominal AC (105-130V) 50/60 Hz or 230V nominal, 207-253V AC, 50 Hz.

The unit shall be a Symetrix Incorporated model 562E Windowing Expander/Gate.

562E