

**M**ULTIPLE AUDIO SOLUTIONS WORKING AS ONE. Compression, limiting, and downward expansion clear up different but related audio problems. Whether you work with vocal tracks, stage monitors, radio signals, paging systems or playback systems, it's likely that your audio needs more than one of these solutions. Symetrix delivers a one-box answer to your dynamics processing needs. The 565E Dual Compressor/Limiter/Expander offers two channels of simultaneous, in-line controls for all three types of dynamics processing. In addition, the 565E employs a new circuitry design, **Dynamics Squared™**, for dramatically reduced distortion when automatic gain reduction is at a maximum.

The compressor and expander sections of the 565E feature newly-developed circuitry, **Dynamics Squared™**. This proprietary design addresses a key problem: most analog compressors use conventional voltage controlled amplifier topography, which creates added distortion when compressing mid-band frequencies. **Dynamics Squared™** resolves this problem by using circuitry that controls gain while reducing distortion. *As a result, the 565E allows audio engineers to apply high levels of compression and expansion with much less distortion.*

If background noise, tape hiss, or pickup hum is a problem, eliminate it with the downward expander. The 565E uses a true downward expander, not a so-called "soft gate". The 565E's downward expander won't chop off the transients and decays like a gate would, yet it can work just as effectively for reducing those noises between sounds.

While the downward expander quiets unwanted noise, the 565E's compressor section allows you to apply the right amount of compression without pumping or breathing. The separate limiter section guards against

peaks that lead to overload problems, freeing the compressor section for settings specific to compression and not protection. (Trying to set a typical compressor for both compression and peak protection usually results in less-than-ideal settings.) The 565E's limiter protects against sharp peak signals while the compressor smooths out the audio program for a silky, pleasing finish.

The 565E's sidechain allows users to alter all three processing sections for special applications. Inserting an equalizer at the sidechain can make the action of the 565E's compressor/limiter/expander frequency-dependent. Emphasize or de-emphasize a particular signal range as the 565E responds more or less to certain frequencies.

Regardless of what your audio challenges may be, the 565E offers a powerful variety of solutions. In-line compression, limiting, and expansion produce clean, clear audio in any situation. Innovative circuitry permits users to choose optimal settings without paying the price of extra distortion. The 565E Dual Compressor/Limiter/Expander: One box, multiple audio solutions. •

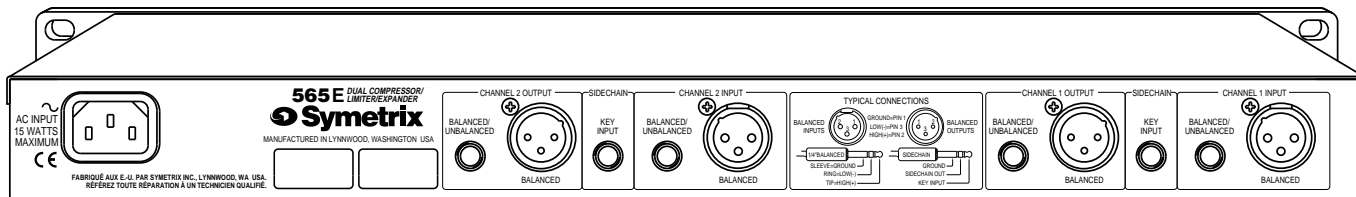
## APPLICATIONS

- Recording
- Sound Reinforcement
- Broadcast
- Special Effects

## FEATURES

- In-line dynamics processing includes downward expander, compressor and limiter
- Dynamics Squared™** circuitry controls gain while reducing distortion
- Stereo-coupled or two-channel operation
- Individual LED meters for each processing section and output
- Separate threshold controls for expander, compressor and limiter
- Sidechain input/output
- Balanced XLR and unbalanced 1/4" line level connections

# 565E



## SPECIFICATIONS

Specifications subject to change without notice.

### Input/Output

Maximum Input Level	+20 dBu Balanced
Maximum Output Level	+22 dBu Balanced +18 dBu Unbalanced
Input Impedance	20k Ohms Balanced, 10k Ohms Unbalanced
Output Impedance	200 Ohms Balanced, 100 Ohms Unbalanced
CMRR	Greater than 40 dB

### Performance Data

Frequency Response	10 Hz to 60 kHz +0, -3 dB
Dynamic Range	115 dB (difference of max output and noise floor)
THD+Noise	< .02%, +4 dBu in, +4 dBu out, 0 dB gain reduction, 20 Hz to 20 kHz, 30 kHz low-pass filter
System Gain Control	±20 dB center detent
Output Noise	-90 dBu measured at balanced output, input terminated in 600 Ohms, 20 kHz rolloff in analyzer
Crosstalk	-95 dB 1k, -95 @ 10k, +4 dBu in, remaining channel terminated in 600 Ohms, 20 kHz rolloff in analyzer
Sidechain	500 Ohms source impedance, 10k Ohms input impedance, TRS jack, tip is return

### Compressor

Type	RMS responding
Attack Time	2 mS
Release Time	180 mS to 2.5 S
Threshold	-40 dBu to +20 dBu
Ratio	1:1 to 10:1

### Limiter

Attack Time	100 µS
Release Time	100 mS
Threshold	-12 dBu to +22 dBu
Ratio	20:1

### Expander

Attack Time	4 mS
Release Time	250 mS to 5 S
Threshold	+10 dBu to -40 dBu (true bypass)
Ratio	1:1.5

### Connections

Input	XLR, ¼" TRS
Output	XLR, ¼" TRS
Sidechain	¼" TRS (one per channel)
Polarity	pin 2 of XLR is hot, tip of TRS jack is hot

### Physical

Size (hwd)	1.72 x 19 x 8 inches, 4.37 x 48.26 x 20.32 centimeters
Shipping Weight	8 lbs (3.6kg)

### Electrical

Power Requirements	120V AC nominal, 60 Hz, 15 watts 220V AC nominal, 50 Hz, 15 watts
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## 565E ARCHITECTS AND ENGINEERS SPECIFICATIONS

The Compressor/Limiter/Expander shall be a dual channel model that controls the dynamic range of wide range, wideband audio signals, providing compression, peak limiting, and downward expansion simultaneously. The unit shall occupy one rack space (1U).

The threshold of the compressor section shall be adjustable over a range of -40 dBu to +20 dBu via a front panel control. The input-to-output ratio will be adjustable from 1:1 to 10:1. Control of the compressor release time shall be set by the front panel release control. The compressor section will have a dedicated eight segment LED ladder that will display the gain reduction amount.

The Compressor/Limiter/Expander shall contain an integral peak limiter having a 20:1 ratio and adjustable threshold level. A four segment LED display shall be provided to indicate the amount of peak limiter activity.

A front panel switch, with LED indicator, shall select between dual mono and stereo master/slave operation. Each channel shall have a bypass switch which defeats all front panel controls for that channel.

The Compressor/Limiter/Expander shall also contain a downward expander having a 1:1.5 expansion ratio with threshold, and release time controls. A four segment LED display shall be provided to indicate the amount of downward expansion.

The inputs shall be active balanced bridging designs terminated with 3-pin

XLR (AES/IEC standard wiring), and ¼" TRS jack. The input circuitry shall incorporate RFI filters. The outputs shall be active balanced designs having equal source impedances and terminated with 3-pin XLR (AES/IEC standard wiring), and ¼" TRS jack.

The balanced inputs shall accommodate +20 dBu signals without distortion, and the balanced outputs shall be capable of delivering +22 dBm into a 600-ohm load.

Overall frequency response shall be 10 Hz to 60 kHz (+0 dB, -3 dB). THD+N shall be less than 0.02% measured under the following conditions: +4 dBu input, +4 dBu output, BYPASS switch out, 20 Hz to 20 kHz, 30 kHz low-pass filter, 0 dB gain reduction. Residual noise output shall be no greater than -90 dBu, measured with

a 20 kHz noise bandwidth, input terminated in 600 ohms.

Access to each channel's sidechain shall be provided via a single ¼" TRS female connector. The ring connection shall be the sidechain output and the tip connection shall be the sidechain return.

The unit shall be capable of operating by means of its own built-in power supply connected to 117V nominal AC (105 to 130V) 50/60 Hz (230V nominal, 207 to 253V AC, 50 Hz where applicable). The unit shall be listed by Underwriters Laboratories, Inc. (UL) or other equivalent nationally recognized safety testing agency.

The unit shall be a Symetrix, Inc. model 565E Dual Compressor/Limiter/Expander.

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