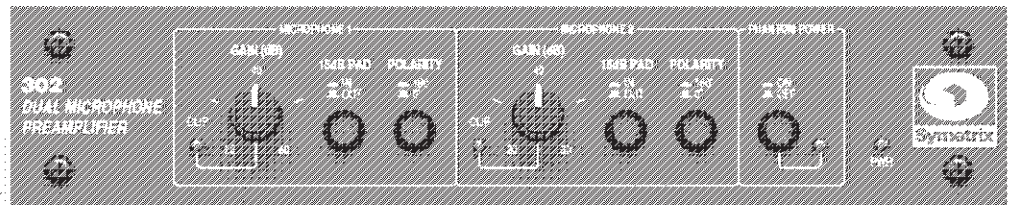# Symetrix

PROFESSIONAL AUDIO SIGNAL PROCESSING
FOR BROADCAST & SOUND REINFORCEMENT

531E Graphic Equalizer 532E Graphic Equalizer 533E Graphic Equalizer

551E Five Band Parametric EQ
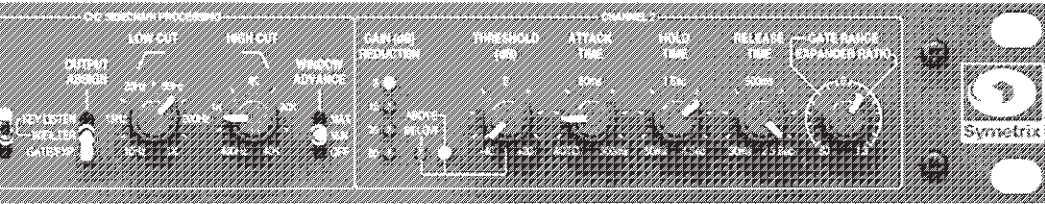
552E Dual Five Band Parametric EQ

9022 2x2 DSP Engine
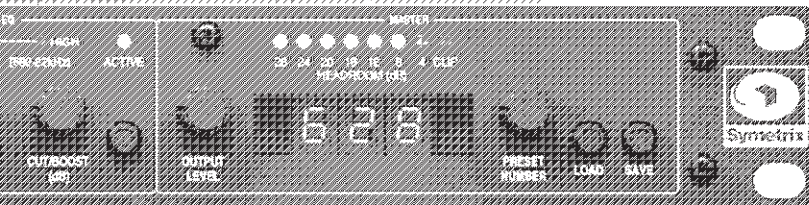
565E Dual Compressor/Limiter/Expander

562E Windowing Expander/Gate

421m AGC-Leveler 422 Stereo AGC-Leveler

501 Peak-RMS Compressor/Limiter 571 SPL Computer 572 SPL Compute

528E Voice Processor 527E Voice Processor 628 Digital Voice Pr

402 Dual Output Delay 606 Delay F/x Machine 610 Broadcast Audio Delay 440 Foreground Audio Control

450 Dual Zone Priority Mixer 420 Stereo Power Amplifier 581E Distribution Amplifier (4x4)
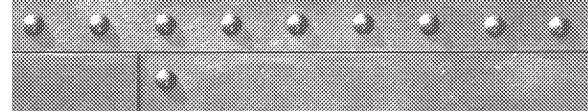
301 Low Distortion Comp/Limiter

302 Dual Microphone Preamplifier 303 Interface Amplifier (Bi-directional)

304 Headphone Amplifier 305 Distribution Amplifier (1x4)

306 Preamp/Duck

307 Dual Isolation Transformer

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YOU DO THINGS YOUR OWN WAY. **SO DO WE**.
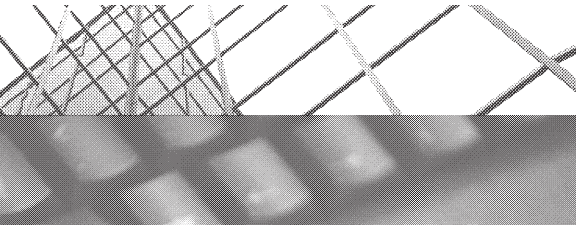
You have to be an individualist to be a successful sound contractor, consultant, integrator, or engineer. Every venue, every voice, every budget, every client is different. You need to put the pieces together in such a way that everything sounds perfect and looks easier than it is. At Symetrix, we like to think of ourselves as being like you — service-oriented, independent-minded, and totally obsessed with premium-quality sound. Here's what a few of us have to say about that.

Dane Butcher Founder and President
Symetrix actually started out as a sound system installation and service company. That was in 1976. Since then, we've worked hard to retain the personal and flexible attitude we began with, even though you can now find our units in stadiums, casinos, airports, malls, radio stations, and studios around the world. From the start, our mission was to create products we'd want to use ourselves.

Steve Kawasaki Director of Sales and Marketing
We weren't the first to create an ambient-level controller, but our 571 SPL Computer was probably the first to do it right. It was a fiendishly complex task to create a box that listens to all the ambient sounds in an environment and makes intelligent decisions about when to make the system quieter or louder. We were successful because we truly understand the integration between electronics and acoustics. We make it our job to learn the details of our customers' sound systems.

Nathan O'Neill Design Engineer
Designing our graphic EQs was even more intense than usual. We started by doing an exhaustive survey of existing graphics while also interviewing customers who used them. Only when we understood how we could extend the state of the art did we proceed. We worked objectively with extensive computer modeling, and once we had an actual first prototype, we listened to it — a lot. After quite a few design reiterations, our alpha and beta test sites gave us the thumbs-up. Good design takes a long time. And that's OK.

Julie Denton Customer Service Coordinator
We build our products to be really rugged and dependable. There's industrial-grade connectors and pots, surface-mount components for most products, plus full functional computer testing of every unit. And a final human listening test. If a product should ever fail, our repair service is a 24-hour thing. If we get a unit in the morning, it's almost always out of here that afternoon. It has to be.

Whatever Symetrix product you use, you can count on it for remarkable results in any environment. After all, we built it just the way you would.
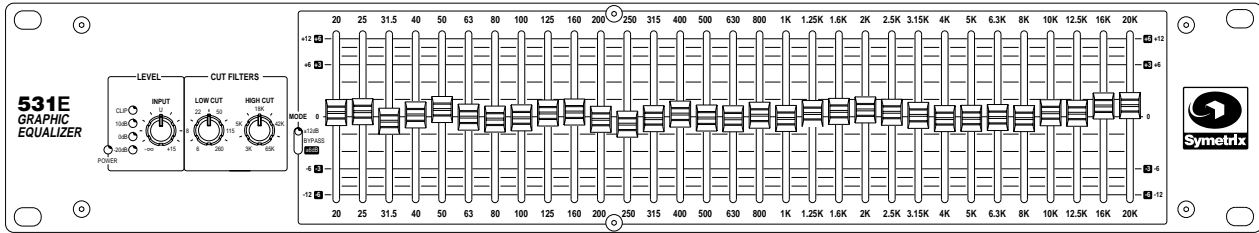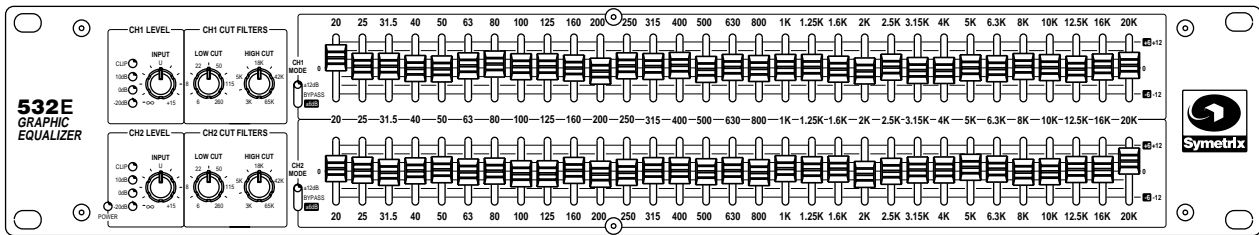
531E GRAPHIC EQUALIZER

Monaural, 31 bands, long throw 60 mm sliders, low-cut and high-cut filters, for concert and installed sound. Flatten system response and increase gain before feedback. Global range switch chooses +/- 6 or +/- 12 dB cut or boost. Advanced filter design delivers ultra low noise and distortion, minimum ringing and phase shift.

- **Internal power supply, gold plated XLR's + 1/4" jacks.**

- **Metal shaft, grounded center detent plastic film slide pots.**
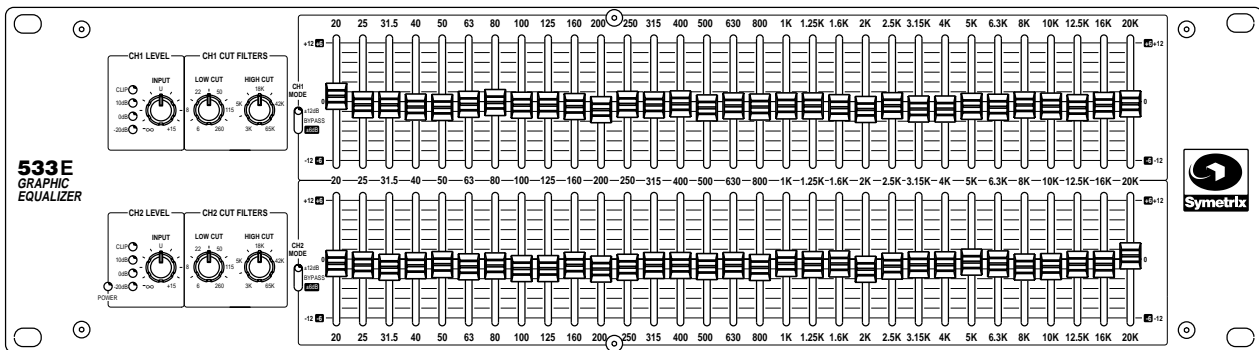
- **Less than .002% THD+Noise (measured with EQ in!).**

532E GRAPHIC EQUALIZER

Two channels, 31 bands, 20mm faders, with low and high cut filters for concert and installed sound. Flatten system response and increase gain before feedback. Global range switch chooses +/- 6 or +/-12 dB cut or boost. Advanced filter design delivers ultra low noise and distortion, minimum ringing and phase shift.

- **Internal power supply, gold plated XLR's and 1/4" jacks.**

- **Metal shaft, grounded center detent plastic film slide pots.**

- **Less than .002% THD+Noise (measured with EQ in!).**

533E GRAPHIC EQUALIZER

Two channels, 31 bands, long throw 45mm sliders, with low cut and high cut filters for concert and installed sound. Flatten system response and increase gain before feedback. Global range switch chooses +/- 6 or +/-12 dB cut or boost. Advanced filter design delivers ultra low noise and distortion, minimum ringing and phase shift.

- **Internal power supply, gold plated XLR's + 1/4" jacks.**

- **Metal shaft, grounded center detent plastic film slide pots.**

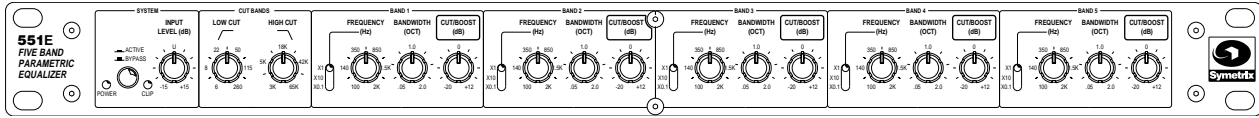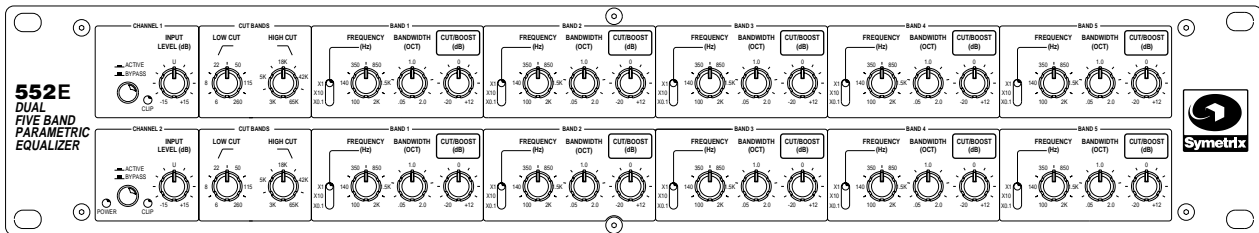- **Less than .002% THD+Noise (measured with EQ in!).**

551E FIVE BAND PARAMETRIC EQ

A monaural parametric EQ for concert or installed sound, recording, or broadcast. Rock-solid construction and easy to use for creative or corrective EQ. Sweeten vocal tracks. Tune out feedback. Get that huge drum sound. Flatten studio monitors. Create your signature sound.

- **Five identical, full range, overlapping bands with high & low cut filters.**

- **Less than .002% THD+Noise (measured with EQ in!).**

- **Gold plated XLR's + 1/4" jacks, bypass relay, internal power supply.**

552E DUAL FIVE BAND PARAMETRIC EQ

A stereo parametric EQ for concert or installed sound, recording, or broadcast. Rock-solid construction and easy to use for creative or corrective EQ. Sweeten vocal tracks. Tune out feedback. Get that huge drum sound. Flatten studio monitors. Create your signature sound.

- **Five identical, full range, overlapping bands with high & low cut filters.**

- **Less than .002% THD+Noise (measured with EQ in!).**

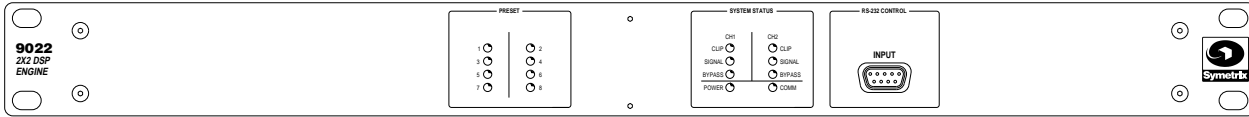- **Gold plated XLR's + 1/4" jacks, bypass relay, internal power supply.**

9022 2X2 DSP ENGINE

A programmable DSP Processor for the installed sound market. Symetrix Audio Workplace™ software provides real-time control over multiple audio functions from a Windows 95/98 PC environment. Use Audio Workplace™ to program presets, adjust parameters or download new DSP code in the field.

- Two channel, DSP-based EQ, Hi/Low Pass Filter, Room Delay and Multiband Limiter.

- Software control via front or rear panel RS232 connections leaves chassis tamper-proof.

- Delta-sigma 24-bit A/D and D/A conversion.
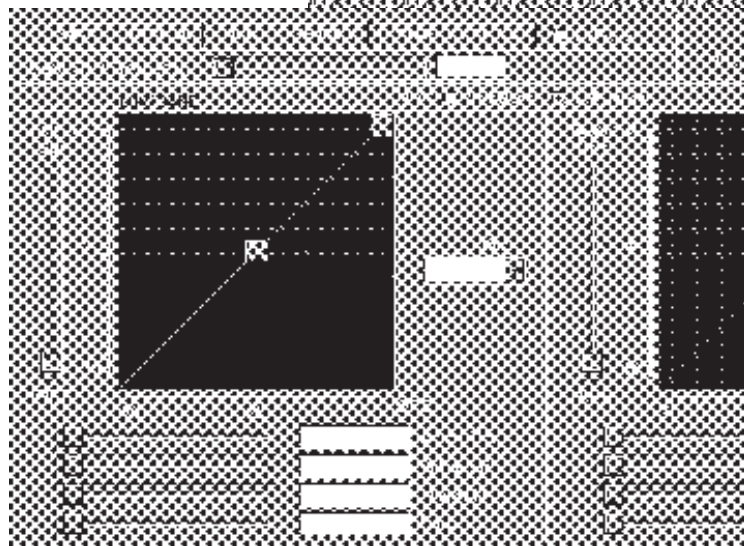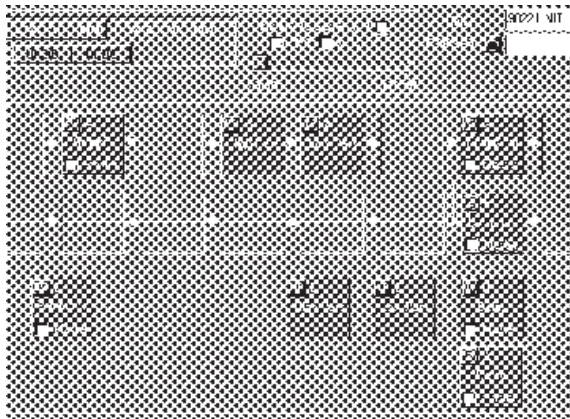
AUDIO WORKPLACE™

Audio Workplace™ is a Windows 95/98 application that provides complete user control over the 9022 and its powerful feature set. Using Audio Workplace™ and a host PC, system designers and installers can program presets, adjust audio parameters and download new DSP code for permanent nonvolatile storage.
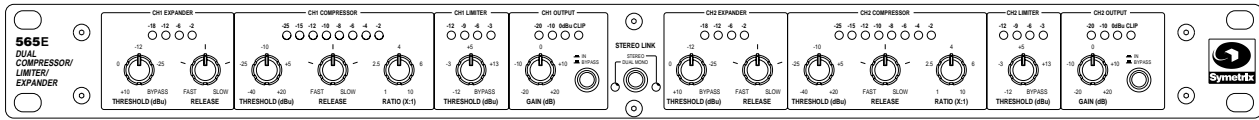
565E DUAL COMPRESSOR/LIMITER/EXPANDER

An extremely flexible, low distortion, high performance multi dynamics processor for recording, live, or installed sound. Two channels, each with simultaneous downward expander, compressor, and peak limiter. Add impact and fullness to any audio source. Control levels, reduce noise, prevent loudspeaker and tape overload.
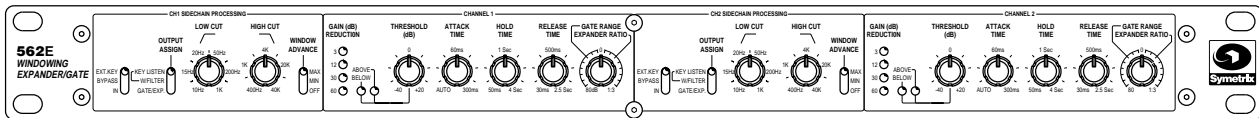
- **Dynamics Squared™ circuitry reduces distortion during gain reduction for better-sounding compression.**

- **Dual mono, or stereo operation. Balanced XLR and unbalanced 1/4" connectors.**

- **Individual LED meters for each processing section and output.**

562E WINDOWING EXPANDER/GATE

A two channel expander/gate for recording or live sound. Patch in at channel inserts or effects returns. Eliminate microphone leakage, headphone leakage and noise from drum, percussion and other instrumental or vocal tracks. Tracks processed with the 562E are much easier to mix.

- **Window Advance function delivers ultra fast attack without clicks or pops.**

- **Key filters ensure precise triggering in noisy environments.**

- **Auto Windowing feature creates smooth and natural release cycle (decay).**
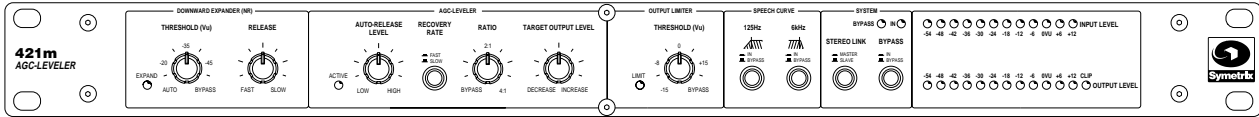
421M AGC-LEVELER

An automatic gain controller that makes quiet sounds louder and loud sounds quieter by creating constant output levels. Increases intelligibility in public address and paging systems. Operation is automatic, precise, and completely transparent – no pumping, breathing, or other side effects.

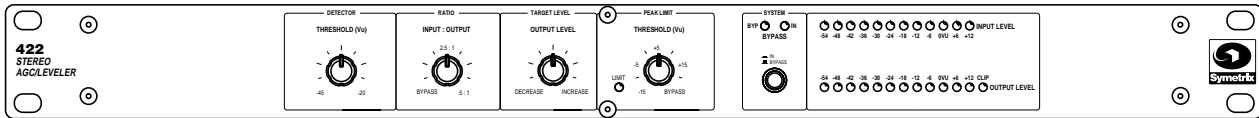- **Line level or mic level input with phantom power.**

- **Output peak limiter positively prevents system overload.**

- **Speech Curve filters help prevent system feedback.**

422 STEREO AGC-LEVELER

Stereo automatic gain controller creates constant level audio. Processes music, dialog or effects mastered at different levels and outputs predictable, intelligible signals. Use for foreground and background music installations, satellite, cable video, radio & TV broadcast, and tape duplication.

- **Target Level control makes setup simple & quick.**

- **Peak Limiter prevents sound system overload or tape distortion.**

- **Parallel input/output LED meters show display gain status.**

501
PEAK-RMS
COMPRESSOR/
LIMITER

RMS COMPRESSOR/LIMITER — THRESHOLD (dBm) · ATTACK (dB/mSEC) · RELEASE (dB/SEC) · RATIO (X:1) — AUTOMATIC ATTACK/RELEASE · MANUAL — STEREO SLAVE · SIDECHAIN — PEAK LIMITER THRESHOLD (dBM) · OUTPUT GAIN (dB) · OUTPUT GAIN REDUCTION (dB) · POWER · ACTIVE · Symetrix
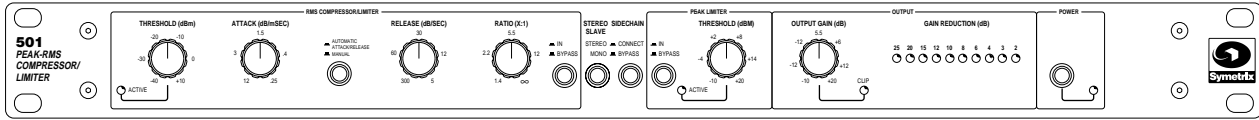
501 PEAK-RMS COMPRESSOR/LIMITER

A mono comp/limiter for installed sound, recording or live performance. A 'legendary' choice for bass players and club sound engineers looking for fat, full sounds while protecting amps and speakers from peak audio spikes. Rock solid construction for years of reliable use.
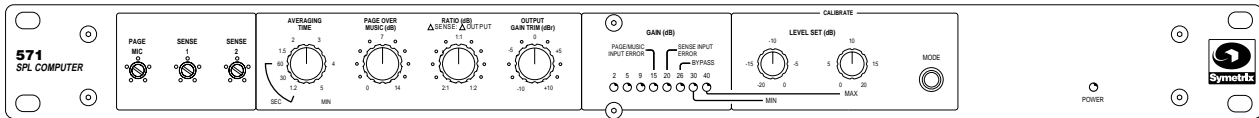
- **RMS and Peak response, auto and manual attack and release.**

- **Balanced and unbalanced connectors, stereo linkable.**

- **Peak limiter catches fastest transients with 2000 dB/millisecond attack.**

501

571
SPL COMPUTER

PAGE MIC · SENSE 1 · SENSE 2 · AVERAGING TIME · PAGE OVER MUSIC (dB) · RATIO (dB) △SENSE: △OUTPUT · OUTPUT GAIN TRIM (dBr) · PAGE/MUSIC INPUT ERROR · SENSE INPUT ERROR · BYPASS · GAIN (dB) · LEVEL SET (dB) · CALIBRATE · MODE · POWER · Symetrix

571 SPL COMPUTER

Microprocessor based gain controller maximizes intelligibility by automatically changing sound system gain in response to ambient noise changes. A microphone (not supplied) is used to sense noise level changes. Thousands installed in factories, transportation terminals, sports arenas, casinos, museums, restaurants, and night clubs.

- **Separate inputs for page mic, house feed, music.**

- **Page over music control (ducking).**

- **For stereo applications links to optional 571S SPL Slave.**

571

572
SPL COMPUTER

BYPASS · PAGE MIC GAIN · SENSE GAIN · SENSE · MUSIC/PAGE · SAMPLE INTERVAL (MIN) · PAGE OVER MUSIC (dB) · RATIO (dB) △SENSE: △OUTPUT · PAGE/MUSIC INPUT ERROR · BYPASS · GAIN (dB) · LEVEL SET (dB) · CALIBRATE · MODE · OPTIONS A B C D · Symetrix
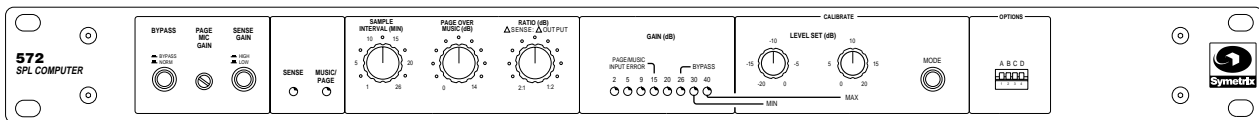
572 SPL COMPUTER

Microprocessor based gain controller maximizes intelligibility by automatically changing sound system gain in response to ambient noise level changes. Uses existing system speaker(s) to sense noise changes. Thousands installed in factories, transportation terminals, sports arenas, casinos, restaurants, and museums.

- **Separate inputs for page mic, house feed, music.**

- **Page over music control (ducking).**

- **For stereo applications links to optional 571S SPL Slave.**

572
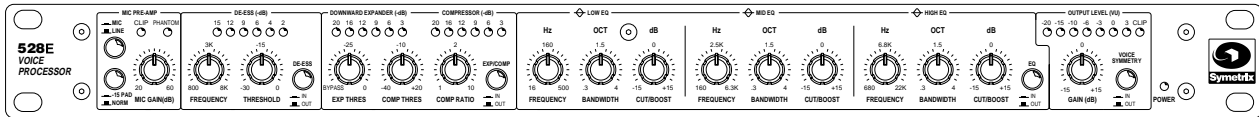
528E VOICE PROCESSOR

Our industry-leading analog multi processor for voice work in recording, broadcast and sound reinforcement. Create an audience pleasing, articulated sound using high gain mic preamp with phantom power, comp/limiter, expander/gate, de-esser, and parametric EQ.

- **Microphone & line level inputs, line or mic level output.**

- **Voice symmetry feature corrects excessive positive or negative signal peaks.**

- **Minimum components in signal path, resulting in very low noise, natural sound.**
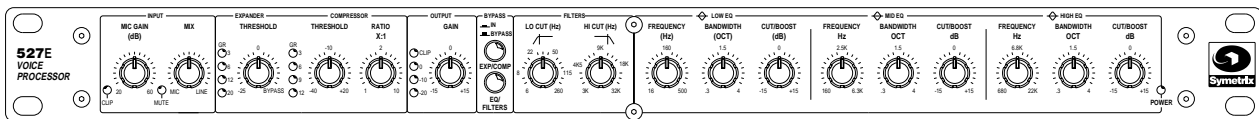
527E VOICE PROCESSOR

An evolution of Symetrix studio voice processing design to meet the demands of engineered sound systems. Features high gain mic preamp with phantom power, high and low cut filters, compressor/limiter, downward expander, and three-band parametric EQ. Compressor and EQ maximize intelligibility while downward expander and high/low cut filters keep feedback in check.

- **Microphone and line level I/O via Euroblock and XLR connectors for easy interface with any audio system.**

- **Mic muting port for "cough switch" control.**

- **Mic/Line Input Mix control accommodates local and global announce sources.**
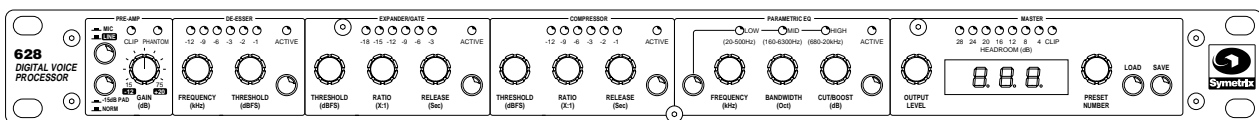
628 DIGITAL VOICE PROCESSOR

A programmable digital processor for voice work in broadcast and recording. Features high gain direct coupled mic preamp with phantom power, compressor/limiter, expander/gate, de-esser, and parametric EQ. Create custom processing programs tailored for the unique sound of each voice talent, and store the results in the 128 user presets.

- **Microphone and line level inputs, 20 bit A/D & D/A.**

- **AES/EBU & S/PDIF digital output, analog line out.**

- **MIDI in/out. Optional remote preset controller is available.**
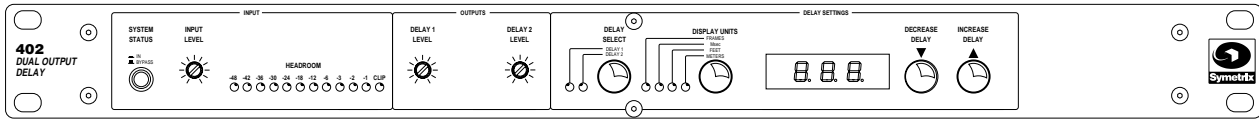
402 DUAL OUTPUT DELAY

A high performance one input, two output digital delay for acoustical alignment of distant speaker systems in installed and touring sound systems. Also used for resynchronization of audio to video in broadcast and video post production applications. User interface is simple and intuitive.

- **Each output delayed up to 885 milliseconds in 1 ms. increments.**

- **20 bit delta sigma A/D & D/A converters.**

- **Delay adjustable in milliseconds, meters, feet, or frames.**
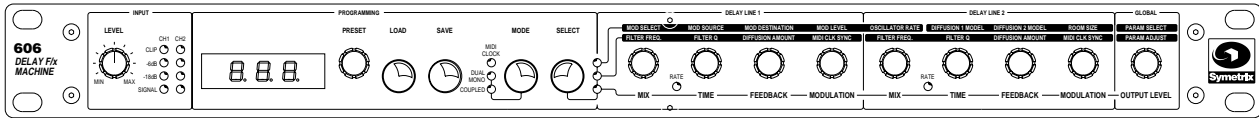
606 DELAY F/X MACHINE

Unique and powerful delay effects processor for recording and live performance. Two separate delays for stereo, dual mono or series mode processing. True stereo chorusing, flanging, echo, filtering, diffusion, phase shifting, room simulation, widening, doubling and fattening. Use on voice, instrument or special effects tracks.

- **Rotary control knobs, 20-bit converters, internal power supply.**

- **Maximum delay 2.6 seconds (each channel), resolution down to 1 millisecond.**

- **Six independent modulation sources, MIDI & tap tempo control.**
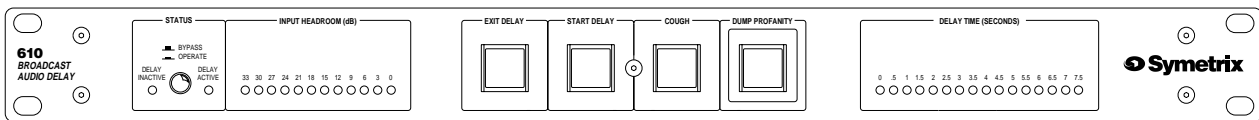
610 BROADCAST AUDIO DELAY

Delays stereo audio program by 3.5 or 7.5 seconds to prevent the broadcast of unwanted profanities or comments from telephone callers. Dump profanity button instantly erases unwanted caller audio. Cough button digitally edits unwanted studio audio.

- **Simple, foolproof controls. Easy to operate.**

- **Automatic relay bypass when not in use.**

- **Stereo, 14 kHz bandwidth. All functions may be remotely controlled.**
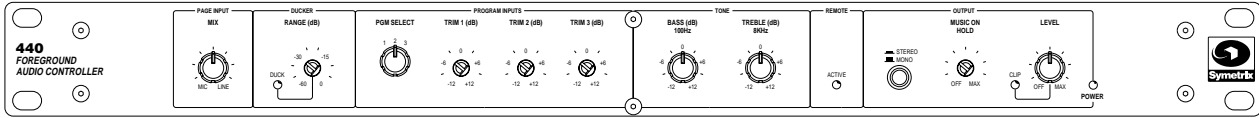
440 FOREGROUND AUDIO CONTROLLER

Stereo controller for installations that combine voice paging with foreground or background audio. Ideal for high performance sound systems in restaurants, bars, conference rooms and public facilities. Transformer-isolated Music-on-Hold output feeds the music-on-hold input of a telephone system.

- **Bass and Treble tone controls.**

- **One mic/line input for paging sources; three switch-selectable line inputs for CD, radio, tape or TV audio sources.**

- **Optional remote control selects line input source and adjusts master output volume.**
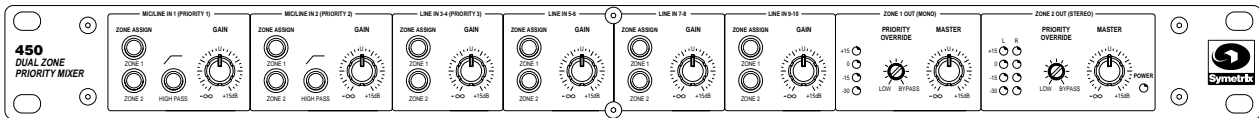
450 DUAL ZONE PRIORITY MIXER

Mixes mics and mono/stereo line inputs and assigns them to a mono output, a stereo output or both. Ideal for multi-zone paging in restaurants, bars, conference rooms, and public facilities. Priority feature lets selected inputs mute or duck other inputs assigned to the same zone.

- **Two mono mic/line inputs with +48 volt phantom power; four stereo inputs.**

- **Mic inputs have 20dB pads to prevent overload & low cut filters to reduce popping.**

- **Outputs have adjustable 'ducking' or muting & remote volume control inputs.**
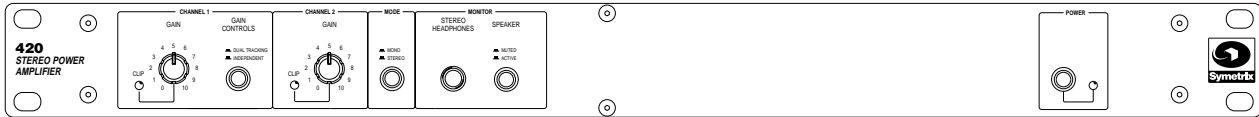
420 STEREO POWER AMPLIFIER

One rack space, 20 watts per channel amp for powering near field monitors, headphones, or small paging speakers in broadcast and installed sound applications. Thousands of units in service in recording studios, video suites, remote trucks, and radio control and production rooms.

- **20 watts/channel into 8 ohms, 20 watts mono bridged mode.**

- **Front panel headphone jack & speaker mute switch.**

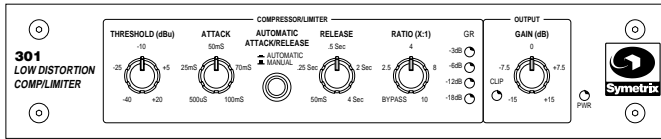- **Low transformer field emissions allow mounting next to video monitors.**
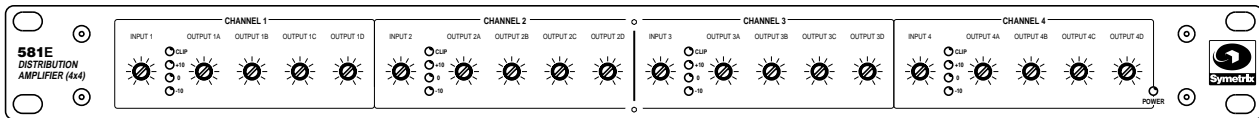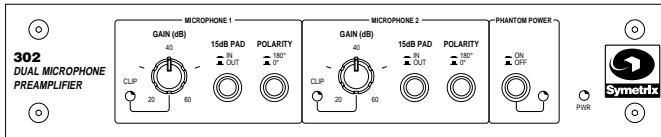
581E DISTRIBUTION AMPLIFIER (4X4)

A four input, sixteen output distribution amplifier. Each 1 input/ 4 output module operates independently. Simple rewiring creates 2x8 and 1x16 configurations. Internal power supply via toroidal transformer results in a very low noise, high performance product.

- **Euro-style detachable terminal blocks for quick rack installation.**

- **Precision circuitry yields THD+Noise less than .009%.**

- **Four LED input level meters, individual trim pots for input and output volume attenuation.**
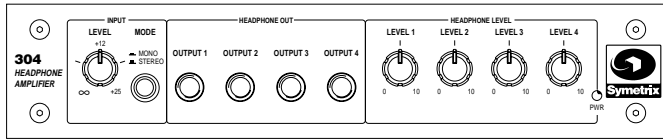
301 LOW DISTORTION COMP/LIMITER

A mono comp/limiter that delivers extremely clean compression for installed sound and broadcast applications. Unique circuitry eliminates secondary causes of distortion during compression, allowing use of shorter release times. PY-3 accessory Y power cord permits two 301's to share a single power supply.

- **Automatic Attack/Release button for quick preset setup.**

- **115dB Dynamic Range. Ultra-low THD+Noise of less than .008% at any gain reduction level.**

- **XLR and Euroblock input & output connections.**

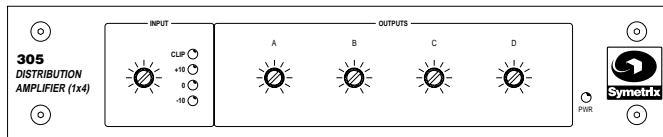## 302 DUAL MICROPHONE PREAMPLIFIER

Designed for broadcast, sound reinforcement, and digital and analog recording. Offering substantial sonic improvements over stock mixers or console preamps, the 302 has solid stereo imaging, excellent transient response, very low noise, and almost undetectable distortion.

- **Polarity reversal switches and 15dB pads on both channels.**

- **+48 volt phantom power.**

- **Gain variable from 20-60dB, works with virtually any professional microphone.**
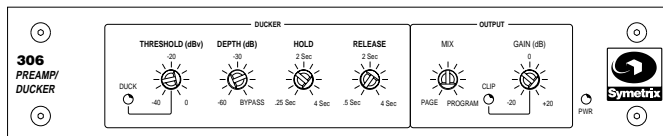
303 INTERFACE AMPLIFIER (BI-DIRECTIONAL)

A stereo level matching amplifier that accepts balanced or unbalanced inputs and converts them to balanced or unbalanced outputs. Use the 303 to interface a consumer DAT, cassette recorder or computer sound card to a professional recording console or to other +4dBu nominal level equipment.

- **Simple, affordable conversion of consumer audio to pro audio without loss of information.**

- **Stereo XLR and RCA input and output jacks.**

- **External power supply ensures low noise operation.**

304 HEADPHONE AMPLIFIER

Stereo in, four output amp drives headphones of any impedance. Used in broadcast, installed sound, and recording applications. High voltage technology provides 6dB volume increase over most competing units. Compact half rack chassis permits 8 channels in one rack space.
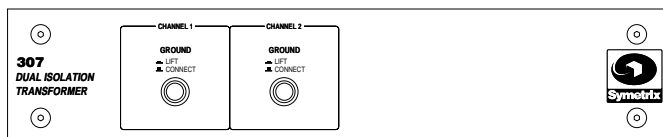
- Individual volume controls for each output, master input volume.

- Stereo or mono operation, balanced or unbalanced input.

- Pass Thru jacks permit daisy-chaining of multiple units.

305 DISTRIBUTION AMPLIFIER (1X4)

A one input/four output mono distribution amplifier. Use the 305 to route your most critical audio to four separate outputs. Sound contractors will find the 305 essential for feeding multiple power amps. Broadcast engineers can easily and inexpensively distribute satellite audio around their station with the 305.

- Euroblock terminal connectors for quick installation.

- Precision circuitry yields THD+Noise less than .009%.

- Four-segment LED input level meter. Individual trim pots for input and output volume attenuation.

306 PREAMP/DUCKER

A streamlined paging/foreground music front-end with comprehensive ducking controls. Separate Threshold, Depth, Hold and Release adjustments allow precise ducking control of program material in the presence of a page. Mix control varies the proportion of paging and program feeding the outputs.

- XLR Mic/Line input for paging systems with switchable phantom power for condenser mics.

- Stereo RCA Line input for foreground music and program sources.

- Output gain adjustable over a +/-20dB range.

307 DUAL ISOLATION TRANSFORMER

A two input/two output isolation box for use in installed sound and broadcast audio systems. Isolates ground, positive and negative audio paths to break up ground loops and improve overall system performance. Interfaces balanced and unbalanced devices. Increases resistance to RF interference.

- Euroblock terminal connectors for quick installation.

- Two high-performance audio transformers.

- Flexible grounding options.

SYMETRIX WORLDWIDE DISTRIBUTION

Symetrix professional audio products are distributed worldwide. Please contact our corporate headquarters for the name of the Symetrix distributor in your country.

Corporate Headquarters

Symetrix, Inc.

14926 35th Avenue West

Lynnwood, WA 98037 USA

✆ (425) 787-3222

Fax (425) 787-3211

www.symetrixaudio.com

Asian & South American Representation

International Sales

3233 Lucinda Street

San Diego, CA 92106

✆ (619) 224-9429

Fax (619) 224-9439

European Representation

World Marketing Associates

PO Box 100

St. Austell, Cornwall

England PL26 6YU

✆ +44(0)1726 844440/1

Fax +44(0)1726 844443

Canadian Distribution

SF Marketing

6161 Cypihot

St-Laurent, Quebec

Canada H4S 1R3

✆ (514) 856-1919

Fax (514) 856-1920

Symetrix