What Ships in the Box

- A 528E hardware unit.
- A detachable power cord.
- This Quick Start Guide.

Getting Help

If you have questions beyond the scope of this Quick Start Guide, please download the complete User's Guide from the Symetrix website or contact our Customer Support Group in the following ways:

Tel: +1.425.778.7728
     8:00 am to 4:30 pm
     Monday through Friday,
     Pacific Time
Web: http://www.symetrix.co
Email: support@symetrix.co

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

Cet appareil numerique de la classe B respecte toutes les Exigences du Reglement sur le materiel brouilleur du Canada.

Important Safety Instructions
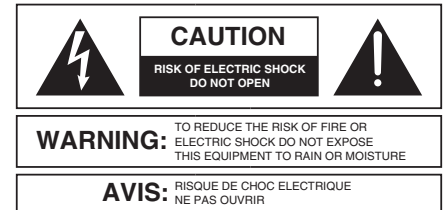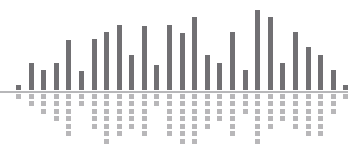
❶ Read these instructions.

❷ Keep these instructions.

❸ Heed all warnings.

❹ Follow all instructions.

❺ Do not use this apparatus near water. This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

❻ Clean only with dry cloth.

❼ Do not block any ventilation openings. Install only in accordance with the manufacturer's instructions.

❽ Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

❾ This apparatus shall be connected to a mains socket outlet with a protective earthing connection. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

❿ Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

⓫ Only use attachments/accessories specified by the manufacturer.

⓬ Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

⓭ Unplug this apparatus during lightning storms or when unused for long periods of time.

⓮ Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug cord is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

SEE OWNERS MANUAL. VOIR CAHIER D'INSTRUCTIONS. No user serviceable parts inside. Refer servicing to qualified service personnel. Il ne se trouve a l'interieur aucune piece pouvrant entre reparée l'usager. S'adresser a un reparateur compétent.

➥ **The lightning flash** with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product (i.e. this Quick Start Guide).

➥ **CAUTION:** To prevent electric shock, do not use the polarized plug supplied with the device with any extension cord, receptacle, or other outlet unless the prongs can be fully inserted.

➥ **Power Source:** This Symetrix hardware uses a switchable power supply that is preset for 117 VAC or 230 VAC nominal operation. Ensure that your AC mains voltage matches the voltage marked on the rear of the hardware. Use only the power cord and connector specified for the product and your operating locale. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation. The appliance inlet and coupler shall remain readily operable once the apparatus has been installed.

➥ **Lithium Battery Caution:** Observe the correct polarity when changing the lithium battery. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Dispose of used batteries according to local disposal requirements.

➥ **User Serviceable Parts:** There are no user serviceable parts inside this Symetrix product. In case of failure, customers inside the U.S. should refer all servicing to the Symetrix factory. Customers outside the U.S. should refer all servicing to an authorized Symetrix distributor. Distributor contact information is available online at: http://www.symetrix.co.

Symetrix

The Vision Behind the Sound

Settings

Set the controls and switches on the front of the 528E as per the **table below**.

Front Panel Control	Setting
MIC / LINE	As required
-15 PAD	Out
MIC GAIN	12 o'clock
DE-ESS FREQUENCY	3K (12 o'clock)
DE-ESS THRESHOLD	0 (Full CW)
DE-ESS IN / OUT	Out
DOWNWARD EXPANDER EXP THRES	BYPASS (Full CCW)
COMPRESSOR COMP THRES	+20 (Full CW)
COMPRESSOR COMP RATIO	2 (12 o'clock)
EXP/COMP IN / OUT	Out
VOICE SYMMETRY IN / OUT	Out
LOW EQ FREQUENCY	160 Hz (12 o'clock)
LOW EQ BANDWIDTH	1.5 octaves (12 o'clock)
LOW EQ CUT/BOOST	0 (12 o'clock)
MID EQ FREQUENCY	2.5K (12 o'clock)
MID EQ BANDWIDTH	1.5 octaves (12 o'clock)
MID EQ CUT/BOOST	0 (12 o'clock)
HIGH EQ FREQUENCY	6.8K (12 o'clock)
HIGH EQ BANDWIDTH	1.5 octaves (12 o'clock)
HIGH EQ CUT/BOOST	0 (12 o'clock)
EQ IN / OUT	Out
GAIN	0 (12 o'clock)

You can now power on the 528E and it should pass signal. The POWER LED should be illuminated and the OUTPUT LEVEL LED display should show some activity. We can now move on to fine tuning your settings.

Mic Preamp Gain

Set the MIC GAIN control so that the OUTPUT LEVEL LED display indicates a signal between -10 and 0 VU. The CLIP LED should almost never light. If it does, decrease the MIC GAIN control until it does not. Any loss in gain can be made up for later in the signal chain.

De-Esser Settings

The De-Esser is used to reduce the level of objectionable sibilant sounds (S and T sounds). Engage the De-Esser by pressing the DE-ESS IN / OUT button IN. Set the THRESHOLD control so that the de-esser gain reduction LED display shows about 12 dB of reduction. Now, "tune" the FREQUENCY control for the maximum sibilance reduction. Finally, reduce the setting of the THRESHOLD control until you reduce the sibilance to a tolerable level without harming the quality of the audio signal.

Downward Expander Settings

Use the Expander to reduce room noise or other low level or background noise. Set the THRESHOLD control to allow low level speech sounds to pass while still blocking out room sound or noise.

Compressor Settings

Use the COMP THRES control to determine the level at which the compressor starts to work. As the sound level increases above the set threshold, you will see the gain reduction LED display start to work indicating the amount of gain reduction taking place. Generally 3 to 6 dB is sufficient, unless you are using a low compression ratio (below 2:1), or you want a special effect. Pick a ratio suited to the task at hand: low ratios and low thresholds for unobtrusive level control, medium ratios for overall level control and consistency, high ratios (greater than 8:1) for limiting or in-your-face sorts of sounds.

Equalizer Settings

Equalization is entirely dependent upon many factors and should generally be used to correct or enhance the frequency content of the signal. For example, the default settings should be close for the male voice. For female voices, the LOW EQ range shifts up to 200 or 300 Hz and the MID EQ range shifts up to 3-5 kHz.

If you are using a microphone that exhibits proximity effect, then you'll probably need to reduce (cut) the bass (LOW EQ) response somewhat. 3-6 dB should be fine, but you'll have to compromise between a big full sound and the overbearing low frequency content. A bit of MID EQ will help make voices cut through and seem louder. The HIGH EQ can add brightness and intimacy.

It will take some tuning and experimentation based on the signal source, microphone used and personal taste.

Output Settings

For many applications, setting the output GAIN control to 0 dB works fine. If you are adding a lot of EQ, this will tend to cause an overall level increase. Thus, you may need to lower the output GAIN appropriately. Likewise, if you are using a fair amount of compression, you may need to add some gain to compensate for the gain reduction in the compressor section. You should adjust the output GAIN control so that it provides enough signal level to your connections downstream, yet still prevents the CLIP LED from illuminating.

The output CLIP LED monitors both the equalizer and the output stage. Large amounts of EQ boost and/or high signal levels can cause CLIP indications. If this occurs, lower the signal level via the GAIN control. It is also possible for the output stage to clip if a processor, inserted via the OUTPUT STAGE INPUT jack, is contributing gain to the overall signal path. In this case, either lower the gain of the inserted processor or reduce the setting of the output GAIN control.

Declaration of Conformity

Connections

Connect a Mic or Line level source to the appropriate input connector on the rear of the 528E. Be sure to set the Mic / Line switch to the appropriate position and be sure to turn on phantom power if using a microphone that requires it. Next, connect the appropriate output of the 528E to your monitoring system or mixing console. Finally, connect the 528E to an AC source of the proper voltage and frequency as marked on the rear of the unit.

Rear Panel	Connection / Setting
Output	Connect to input of console, tape recorder, etc.
Line Input	Connect line-level source here.
Mic Input	Connect microphone here.
Phantom Power	Depress if mic requires phantom powering.

Caution: Failure to connect the 528E to the proper AC mains voltage may cause fire and/or internal damage.

Warning: Lethal voltages are present inside the chassis. There are no user serviceable parts inside the chassis. Refer all service to qualified service personnel or to the factory.

If you are using a condenser microphone, refer to **"Phantom Powering Condenser Microphones"** before depressing the Phantom Power switch.

Declaration of Conformity

We, Symetrix Incorporated, 6408 216th St. SW, Mountlake Terrace, Washington, USA, declare under our sole responsibility that the product:

528E Voice Processor

to which this declaration relates, is in conformity with the following standards:

IEC 60065, EN 55103-1, EN 55103-2, FCC Part 15

The technical construction file is maintained at:

Symetrix, Inc.

6408 216th St. SW

Mountlake Terrace, WA, 98043 USA

The authorized representative located within the European Community is:

World Marketing Associates

P.O. Box 100

St. Austell, Cornwall, PL26 6YU, U.K.

Date of issue: March 15, 1999

Place of issue: Mountlake Terrace, Washington, USA

Authorized signature:

Dane Butcher, President, Symetrix Incorporated.

The Symetrix Limited Warranty

Symetrix, Inc. expressly warrants that the product will be free from defects in material and workmanship for three (3) years from the date the product is shipped from the factory. Symetrix's obligations under this warranty will be limited to repairing or replacing, at Symetrix's option, the part or parts of the product which prove defective in material or workmanship within three (3) years from the date the product is shipped from the factory, provided that the Buyer gives Symetrix prompt notice of any defect or failure and satisfactory proof thereof. Products may be returned by Buyer only after a Return Authorization number (RA) has been obtained from Symetrix. Buyer will prepay all freight charges to return the product to the Symetrix factory. Symetrix reserves the right to inspect any products which may be the subject of any warranty claim before repair or replacement is carried out. Symetrix may, at its option, require proof of the original date of purchase (dated copy of original retail dealer's invoice). Final determination of warranty coverage lies solely with Symetrix. Products repaired under warranty will be returned freight prepaid via commercial carrier by Symetrix, to any location within the Continental United States. Outside the Continental United States, products will be returned freight collect.

The foregoing warranties are in lieu of all other warranties, whether oral, written, express, implied or statutory. Symetrix, Inc. expressly disclaims any IMPLIED warranties, including fitness for a particular purpose or merchantability. Symetrix's warranty obligation and buyer's remedies hereunder are SOLELY and exclusively as stated herein.

This Symetrix product is designed and manufactured for use in professional and studio audio systems and is not intended for other usage. With respect to products purchased by consumers for personal, family, or household use, **Symetrix expressly disclaims all implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose.**

This limited warranty, with all terms, conditions and disclaimers set forth herein, shall extend to the original purchaser and anyone who purchases the product within the specified warranty period.

Symetrix does not authorize any third party, including any dealer or sales representative, to assume any liability or make any additional warranties or representation regarding this product information on behalf of Symetrix.

This limited warranty gives the buyer certain rights. You may have additional rights provided by applicable law.

Note: Some Symetrix products contain embedded software or apps and may also be accompanied by control software intended to be run on a personal computer. Said software is specifically excluded from this warranty.

Limitation of Liability

The total liability of Symetrix on any claim, whether in contract, tort (including negligence) or otherwise arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any product will not exceed the price allocatable to the product or any part thereof which gives rise to the claim. In no event will Symetrix be liable for any incidental or consequential damages including but not limited to damage for loss of revenue, cost of capital, claims of customers for service interruptions or failure to supply, and costs and expenses incurred in connection with labor, overhead, transportation, installation or removal of products, substitute facilities or supply houses.

Servicing Your Symetrix Product

If you have determined that your Symetrix product requires repair services and you live outside of the United States please contact your local Symetrix dealer or distributor for instructions on how to obtain service. If you reside in the U.S. then proceed as follows:

Return Authorization

At the Symetrix factory, Symetrix will perform in-warranty or out-of-warranty service on any product it has manufactured for a period of three (3) years from date of discontinued manufacture.

Before sending anything to Symetrix, please contact our Customer Service Department for a Return Authorization (RA) number. The telephone number is +1.425.778.7728. Additionally, support is available via the web site: http://support.symetrix.co.

In-warranty Repairs

To get your Symetrix product repaired under the terms of the warranty:

1. Call us for an RA number (have the serial number, shipping and contact information and description of the problem ready).

2. Pack the device in its original packaging materials.

3. Include your name, address, daytime telephone number, and a brief statement of the problem.

4. Write the RA number on the **outside** of the box.

5. Ship the device to Symetrix, freight prepaid. We do not accept freight collect shipments.

Just do these five things, and repairs made in-warranty will cost you only one way freight charges. We'll pay the return freight.

If you don't have the factory packaging materials, we recommend using an oversize box. Wrap the device in a plastic bag, surround it with bubble-wrap, and place it in the box surrounded by Styrofoam peanuts. Be sure there is enough clearance in the box to protect the rack ears. We won't return the device in anything but Symetrix packaging for which we will have to charge you. If the problem is due to operator misuse or error, you will have to pay for both parts and labor. In any event, if there are charges for the repair, you will pay for the return freight. Payment for all charges must be pre-arranged (prepaid, Visa or Mastercard).

Out-of-warranty Repairs

If the warranty period has passed, you'll be billed for all necessary parts, labor, packaging materials, and freight charges. Please remember, you must call for an RA number before sending the device to Symetrix.