

BBE[®]

SM500

Sonic **Maximizer**

USER MANUAL

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Thank you for your purchase of the SM500, and for the trust that you've placed in BBE. We are committed to bringing you the finest products, with useful and unique features to serve your audio needs.

The BBE SM500 Sonic Maximizer is a modular single-channel signal processor designed to be used specifically with an API-style 500 rack. You will find the Sonic Maximizer's rugged construction and careful electronic design a welcome addition to your sonic arsenal.



PRODUCT FEATURES

SM500 FEATURES

- **A full-function Sonic Maximizer**
- **+23dB of output headroom**
- **118dB signal to noise ratio**
- **Modular 500-Type Chassis,
Works with Any 500 Series Rack**

IMPORTANT

Before you begin, please check the contents within this box to insure that included are:

1. The BBE SM500 Sonic Maximizer
2. The BBE SM500 User's Manual.

If any of these items are found to be damaged or missing, immediately contact the BBE dealer from whom the unit was purchased.

This manual will help you to effectively utilize the BBE SM500. Reviewing the information contained in this manual will answer most of the common questions that our service department receives. If you still have questions, please feel free to call *800-233-8346*.

IMPORTANT SAFEGUARDS

For your protection, please read these safety instructions completely before operating the appliance, and keep this manual for future reference.

Carefully observe all warnings, precautions and instructions on the appliance and described in the operating instructions supplied with the appliance.

INSTALLATION

Water and Moisture - Do not install the appliance near water: for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

Heat - Do not install the appliance near sources of heat such as radiators, heat registers, stoves, or other appliances that produce heat.

USE

Power Source - Connect the appliance to a power supply only of the type described in the operating instructions or as marked on the appliance.

Foreign Objects - Be careful that foreign objects and liquids do not enter the enclosure through openings.

Cleaning - unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

SERVICE

- A solid object or liquid has fallen into the cabinet.
- The appliance has been exposed to rain or moisture.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped, or the enclosure damaged. Do not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, refer to qualified service personnel only.

THE BBE PROCESS — "WHAT IT IS"

Loudspeakers have difficulty working with the electronic signals supplied by an amplifier. These difficulties cause such major phase and amplitude distortion that the sound reproduced by speaker differs significantly from the sound produced by the original source.

In the past, these problems proved unsolvable and were thus delegated to a position of secondary importance in audio system design. However, phase and amplitude integrity is essential to accurate sound reproduction.

Research shows that the information which the listener translates into the recognizable characteristics of a live performance are intimately tied into complex time and amplitude relationships between the fundamental and harmonic components of a given musical note or sound. These relationships define a sound's "sound."

When these complex relationships pass through a speaker, the proper order is lost. The higher frequencies are delayed. A lower frequency may reach the listener's ear first or perhaps simultaneously with that of a higher frequency. In some cases, the fundamental components may be so time-shifted that they reach the listener's ear ahead of some or all of the harmonic components.

This change in the phase and amplitude relationship on the harmonic and fundamental frequencies is technically called "envelope distortion." The listener perceives this loss of sound integrity in the reproduced sound as "muddy" and "smeared." In the extreme, it can become difficult to tell the difference between musical instruments, for example, an oboe and a clarinet.

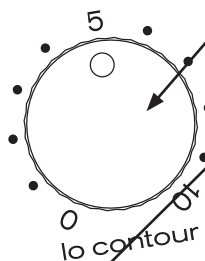
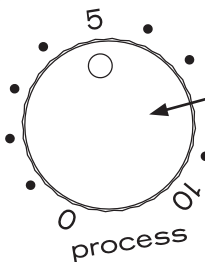
BBE Sound, Inc. conducted extensive studies of numerous speaker systems over a ten year period. With this knowledge, it became possible to identify the characteristics of an ideal speaker and to distill the corrections necessary to return the fundamental and harmonic frequency structures to their correct order. While there are differences among various speaker designs in the magnitude of their correction, the overall pattern of correction needed is remarkably consistent.

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SONIC MAXIMIZER

clip

signal



in/out

SM500

FRONT PANEL

CLIP LED

The CLIP LED will illuminate at +20dBu, indicating 3 dB of headroom left before distortion.

PROCESS CONTROL

Regulates the amount of phase corrected high frequencies.

LO CONTOUR CONTROL

Regulates the amount of phase corrected low frequencies.

POWER ON LED

This LED indicates if the SM500 is on, and also indicates whether the Sonic Maximizer Process is engaged.

IN/OUT BUTTON

Engages the Sonic Maximizer Process. When the button is in, the BBE Process is on and the LED will appear green. When the button is out, the BBE Process is off and the LED will appear red.

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signal



in/out

SM500

SERVICE

We recommend that if at all possible, a BBE SM500 which requires service be sent to our facility in Huntington Beach, California. We request that a "*RETURN AUTHORIZATION*" be issued by the dealer from whom you purchased the unit. If this is not possible, call BBE Sound, Inc. directly at *(800) 233-8346*, extension *116* to obtain a "*RETURN AUTHORIZATION*." Include a copy of the bill of sale with the unit when it is shipped to BBE Sound, Inc. so that the service can be expedited.

As the repair turnaround time is minimal, we request that the unit be sent to BBE Sound, Inc. We also need to add reliability data to our files so that future revision may be undertaken, if necessary, to improve the product. If unit has been purchased outside the US, please contact your national distributor.

MAINTENANCE

Maintenance of the BBE SM500 is limited to proper cleaning of the unit with mild household cleaner such as Formula 409™ or Windex™. The chassis is steel, the casing is an aluminum extrusion. Both are finished with a durable polyurethane paint.

There are no user replaceable parts and the unit should not be opened for any reason unless you are a qualified technician. Calibration should be performed if parts are replaced or if a performance check-out indicates a problem with calibration. Long term use has shown that over the life of this unit there is little or no drift of the components in the BBE S500 which would cause a change in calibration.

5 YEAR LIMITED WARRANTY

Warranty registration of the unit to BBE Sound, Inc. is not necessary. It is strongly recommended that you retain a copy of the bill of sale for future reference.

IT IS THE SOLE RESPONSIBILITY OF THE END USER TO PROVIDE THE BILL OF SALE OR OTHER MEANS OF PROOF OF PURCHASE TO VALIDATE THE WARRANTY IF WARRANTY SERVICE IS REQUESTED.

The BBE SM500 is warranted against defects in material and workmanship for a period of five (5) years from date of purchase from BBE Sound Inc. or from an authorized dealer. During this period, we will repair units free of charge providing that they are shipped prepaid to:

**BBE Sound, Inc.,
5381 Production Drive,
Huntington Beach, CA 92649**

We will pay return UPS shipping charges within the USA. All charges related to non-UPS shipping, including customs clearance, will be billed. The warranty will be honored for the longer of either 90 days from the date of any service or the remainder of the original 5 Year factory warranty.

This warranty will be consider null and void by BBE Sound, Inc. if any of the following is found:

1. The equipment has been physically damaged.
2. The equipment shows signs of abuse.
3. The equipment has been electrically damaged by improper connection or attempted repair by the customer or a third party.
4. The equipment has been modified without authorization.

5. The bill of sales indicates that the purchase date of the equipment is not within the warranty period.

All non-warranty repairs are warranted for a period of 90 days from the date of service.

BBE Sound, Inc. is *NOT LIABLE FOR CONSEQUENTIAL DAMAGES*. Should the unit fail to operate for any reason, our sole obligation is to repair it as described above.

DO NOT RETURN ANY PRODUCT TO THE ABOVE ADDRESS WITHOUT INSTRUCTIONS AND AUTHORIZATION ISSUED BY THE ABOVE LOCATION.

SPECIFICATIONS

Frequency Response	5Hz to 30kHz +/-0.5dBu, -10dBu input
THD in process mode	less than 0.2% at -10dBu input, 20-20kHz
Maximum Output	+23dB of output headroom
Input Impedance	14.7k Ohms Balanced
Output Impedance	600 Ohms Balanced
Sensitivity	-45dBu for maximum process
Maximum Process	+12dBu boost at 5kHz
Lo Contour	+12dBu boost at 50Hz
Dimensions	10.63"(W) x 8.27"(D) x 2.36"(H)
Shipping Weight	2.65 lbs.

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SONICMAXIMIZER


 clip

 signal

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process



5
0 01
lo contour





 in/out

SM500

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