

MODEL 263A

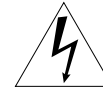
D E - E S S E R

dbx[®]
OPERATION MANUAL



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

CAUTION: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

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H A Harman International Company

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INTRODUCTION

Congratulations on choosing the dbx 263A De-Esser. The 263A provides traditional dbx sonic quality and performance for the working musician, DJ, studio operator or anyone who needs a friendly compressor/de-esser. We recommend that you take a moment and read through the manual as it provides information that will assist you in using your unit to its fullest potential.

Common De-Essing Applications:

- Reduce sibilance
- Modifying high frequency levels
- Exaggerate effects

INSPECTION

Verify that the 263A package contains the following:

- 263A Unit
- AC Power Cord
- Operation Manual
- Registration Card

QUICK SETUP

To get your unit up and running as quickly as possible, do the following steps. For more detailed information, refer to the specified pages.

- | | |
|--|---------|
| <input type="radio"/> Unpack and Inspect the 263A Package. | Page 2 |
| <input type="radio"/> Connect the 263A to Your System. | Page 5 |
| <input type="radio"/> Set Levels and Controls as Needed. | Page 10 |

WARRANTY

This warranty is valid only for the original purchaser and only in the United States. We warrant dbx products against defects in material or workmanship for a period of two years from the date of original purchase for use, and agree to repair or, at our option, replace any defective item, except external power transformers, without charge for either parts or labor.

IMPORTANT: This warranty does not cover damage resulting from accident, misuse or abuse, lack of reasonable care, the affixing of any attachment not provided with the product, loss of parts, or connecting the product to any but the specified receptacles. This warranty is void unless service or repairs are performed by an authorized service center. No responsibility is assumed for any special, incidental or consequential damages. However, the limitation of any right or remedy shall not be effective where such is prohibited or restricted by law.

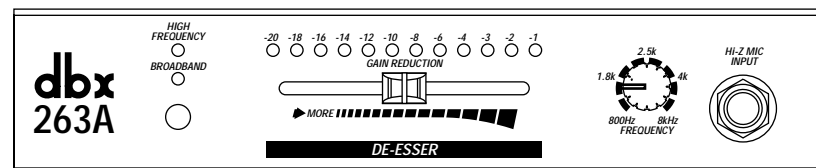
Simply take or ship your dbx product prepaid to our service department. Be sure to include your sales slip as proof of purchase date. (We will not repair transit damage under the no-charge terms of this warranty.) dbx will pay return shipping.

NOTE: No other warranty, written or oral is authorized for dbx products.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion of limitations of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusion and limitations may not apply to you.

OPERATING CONTROLS

Front Panel



HIGH FREQUENCY or BROADBAND LED's and pushbutton: This button controls the processing bandwidth and should be switched according to what works better sonically -- which usually means High Frequency for performance or recording and Broadband for mixing. See the discussion About De-Essing, p.10.

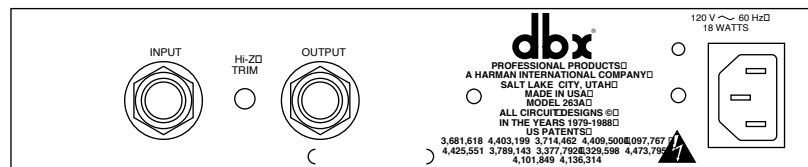
GAIN REDUCTION LED's: These 12 LEDs show in decibels how much de-essing is taking place.

GAIN REDUCTION/DE-ESSER slider: Moving this slider to the right, in the MORE direction, increases the amount of sibilance -- excessive "ess" sounds -- reduction. Start in the middle, which is a good choice for the majority of situations. We'll discuss this in detail later.

FREQUENCY: This knob varies the circuit for specific sibilance frequency ranges. Start around 4 kHz and adjust by ear; discussion later.

HI-Z MIC INPUT jack: This connects to the 263A's low-noise FET preamp. Anything plugged into this jack overrides the rear input. There's enough gain that virtually all high-impedance mics can be plugged in directly; a trim is on the rear for very hot ones.

Rear Panel



INPUT / OUTPUT Jacks : These jacks are for a line-level input and output and are the standard 2-circuit ("mono") 1/4" phone type, where the tip carries the signal and the sleeve carries the ground.

Hi-Z trim: This control sets the gain of the preamp for the microphone input (see front panel). The gain is set at the factory at +20dB (all the way right, or clockwise) and shouldn't be changed unless your mic output is very hot. All the way left (ccw) is unity (0dB) gain.

CONNECTING THE 263A TO YOUR SYSTEM

Basic Connection

The 263A can be used with any line-level device. Some common examples include mixing consoles, electronic musical instruments, patch bays, and signal processors.

For all connections, refer to the following steps:

1. Turn Off all equipment before making any connections.
2. Mount the 263A in a 1U rack space (optional).

Mounting the 263A in a 1U Rack Space

Note: Avoid over-tightening of rackmounting screws as this could damage the front panel.

The 263A requires one rack space (height) and 1/2 rack space (width). It can be mounted above or below anything that doesn't generate excessive heat, since it requires no special ventilation. Ambient temperatures should not exceed 113°F (45°C) when equipment is powered. Hardware for mounting your 263A is provided in the optional accessory kit.

Make connections via 1/4" phone jacks according to your requirements.

To save rack space, two 263A units may be mounted side-by-side. In addition, the 263A can be mounted next to other dbx "half-rack" units: 760X Mic Preamplifier, 1024 Buffer Amplifier, 140X Type II Noise, 163A Compressor/Limiter, 363X Dual Noise Gate, 463X OverEasy Noise Gate, or 563X Hiss Reducer. Hardware for side-by-side mounting is included in the optional accessory kit. If the rubber feet were used for table top operation, they should be removed at this time.

Caution: Never remove the cover. There are no user-serviceable parts inside, and you run the risk of an electric shock.

Connect the AC plug (shipped with the unit) to the 263A's rear panel POWER jack.

Note: Check the line voltage (printed on the rear panel) and verify that it is correct.

To install a single 263A (left or right side)

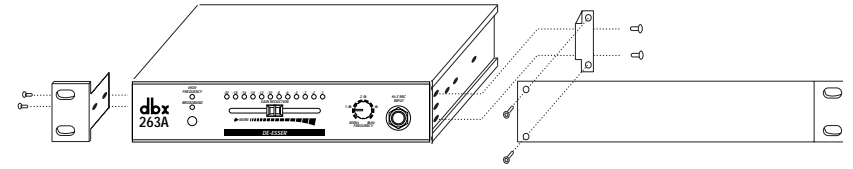


Figure 3: Rack Mounting One 263A Unit

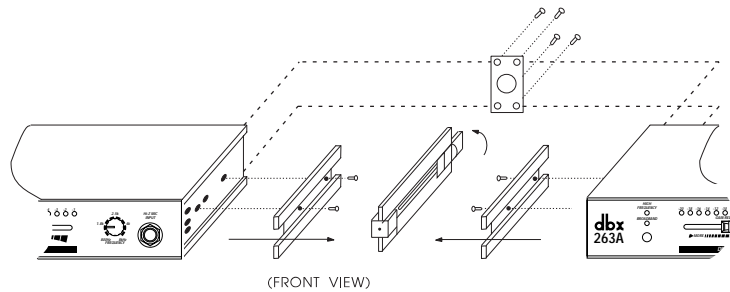
| | | |
|----------------|---|-------------------------------------|
| You will need: | 1 | blank black panel |
| | 1 | rack ear |
| | 1 | blank panel adapter piece |
| | 1 | 3/32" Allen wrench |
| | 1 | Phillips screwdriver (not included) |
| | 4 | pan head Phillips screws |
| | 2 | hex head screws |

NOTE: The optional 263A Accessory Kit includes the tools and hardware listed above, except as noted.

- A. Use a Phillips screwdriver to loosely attach the single rack ear to either side of the 263A with two pan head Phillips screws.

NOTE: If this is the first time the rack ear has been installed, you will be cutting threads as you drive the screws. This is normal.

- B. Loosely attach the adapter piece to the other side of the 263A using two more pan head Phillips screws and a Phillips screwdriver. See note above.
- C. Loosely attach the blank panel and adapter piece using an Allen wrench and two hex head screws.
- D. Align everything on a flat surface and tighten the screws with a Phillips screwdriver and the hex wrench.

To install two units side-by-side**Figure 4: Rack Mounting Two 263A Units**

| | | |
|----------------|---|---|
| You will need: | 1 | joiner assembly (joiner, joiner side pieces) |
| | 1 | reinforcing plate |
| | 2 | rack ears |
| | 1 | 3/32" Allen wrench |
| | 1 | Phillips screwdriver (not included) |
| | 4 | pan head Phillips screws |
| | 4 | flat head countersink screws |

NOTE: The optional Accessory Kit includes the tools and hardware listed above, except as noted.

A. Remove the joiner assembly from the Accessory Kit. Note how the joiner side pieces are held captive by the joiner before you separate them. This is important when it comes time to join the units together. Now separate the joiner side pieces from the joiner by turning the thumbscrew counterclockwise.

B. At this time you will need to designate a "Left" and a "Right" unit.

C. With the left unit facing you, loosely attach a rack ear to the left side of the unit with two pan head Phillips screws. On the right side of the unit, place a joiner side piece into the extruded channel so the holes in the unit align with the holes in the joiner side piece - countersink side up. Secure the joiner side piece with two countersink screws.

NOTE: If this is the first time the rack ear has been installed, you will be cutting threads as you drive the screws. This is normal.

D. Repeat step C with the "Right" unit; swapping right for left with regard to the rack ear mounting and left for right with regard to the joiner side piece mounting.

E. Place the Left and Right units on a flat surface, rear facing, so the joiner side pieces are approximately 2" apart. Take the joiner assembly and loosen the thumbscrew so the sliding catches clear the joiner side-piece cut-outs. Now place the joiner assembly against one of the units with the side piece so it lays flush. (The joiner assembly should be positioned so the thumbscrew is accessible from the rear of the unit.)

While holding the joiner assembly in position, slide the other unit over so it mates flush with the joiner assembly and turn the screw clockwise until it is snug. Do not over-tighten. Both units should now be secured together.

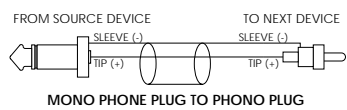
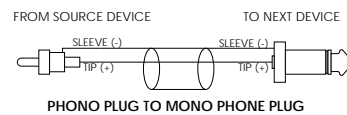
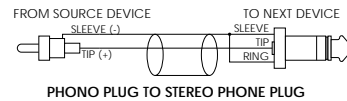
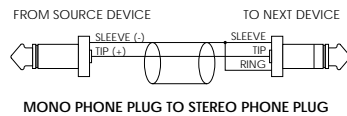
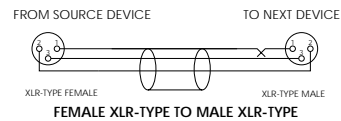
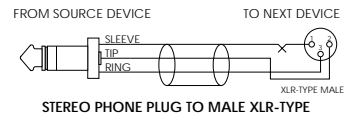
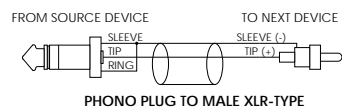
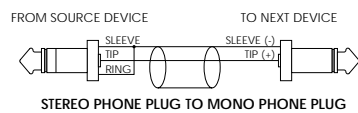
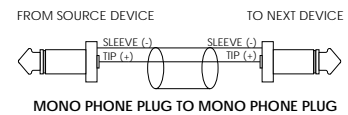
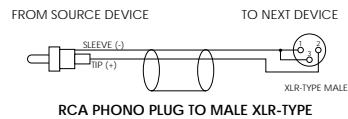
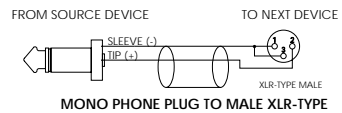
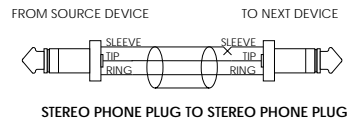
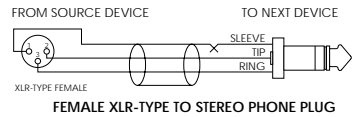
F. Make sure everything is aligned, and tighten the screws on each of the two rack ears.

NOTE: For installations where the two units will be subjected to physical stress (e.g. portable operations), a small **OPTIONAL** reinforcing plate is included. See steps G through I. If you don't wish to use the reinforcing plate, skip the following steps.

G. Turn the two units so that the back faces you. Remove the four rear cover screws nearest the joiner knob.

H. Place the reinforcing plate over the joiner knob so that the four screw holes line up.

I. Replace the four screws, using the slightly longer screws provided in the Accessory Kit.



Input/Output Connections

ABOUT DE-ESSING WITH THE 263A

High Frequency or Broadband?

In order to detect that harsh, spitty sound of excess sibilance, all incoming signals are split into two frequency bands regardless of this button setting. Too much "ess" content shows up as too much high frequencies relative to lows; the 263A circuit responds whenever this happens. The button controls what happens to the signal you hear at the 263A output when the detector circuit recognizes an "ess."

If the button is set to the HF position, the circuit reduces the high-frequency band only -- which (as noted) is generally the best choice for live situations and recording. This brings down only the frequencies where excessive "ess" are located.

The Broadband setting helps more during mixdown, for excess sibilance tends to saturate tape, producing low-frequency modulation products -- distortion -- during playback. In this setting the entire frequency spectrum gets attenuated, which reduces the level of the distortion along with the sibilance.

The slider

This governs the overall amount of processing. With most material, mid-settings will work well; these reduce the "ess" just enough to put the balances aright. Vary them to suit your ear. Also experiment with wider departures from the middle for non-vocal material, but be advised that far-right settings may cause sibilants to sound swallowed, even comical.

The Frequency knob

This sets the crossover point between the high and low bands (again, 4kHz is a good starting point). Subtle variations can be achieved with fine-tuning and a close ear on the characteristics of the vocal. Note that this knob varies the crossover point for the detector even when you're in the Broadband setting. The technically minded will want to know that the 263A band-splitting filters are phase-coherent, ensuring accurate phase relationships at the output after the signals are recombined.

Some Elementary Phonetics

Sibilance is the hissing or rushing sound produced by blowing air thru a constricted (narrowed) mouth opening or across the edge of the teeth, as in the "s" and "ssh" in "sash." Sibilants contain predominantly high-frequency components with a sharp rise above 1kHz and most of the energy in the 4-10 kHz band, centered on 6-8 kHz. Much of the energy in non-sibilant speech (vowels and semi-vowels) for both sexes lies in the 200-400 Hz octave with a rolloff above 1kHz. The singing voice has the same spectral distribution but usually contains additional small energy peaks and often a larger peak between 2 and 3 kHz, which can be 5 to 10 dB louder than for the same non-singing voice.

Because of the way it detects excesses of high-frequency energy, the 263A is very effective for vocal problems wider-ranging than sibilance. Many sharp high-frequency sounds cause difficulty in recording and sound-reinforcement situations; those produced by blocking the air flow and then suddenly releasing it ("f"s, "th"s, etc., in addition to the sibilants) will be successfully handled by the 263A. For example, the "t" in "top" has a substantial peak around 8kHz with little energy below 4kHz; this type of sound can be as troublesome as any.

Current studio and performance equalization often boosts the lead vocal track in the 4-8 kHz region, for doing so improves intelligibility and crispness and makes the vocal cut through the hot mixes typical of rock productions. This is fine until problem passages occur: the boost can cause an increase to the point where (in extreme cases) one has trouble distinguishing between sibilance and cymbal crashes. Compression on vocal tracks also commonly aggravates sibilance, for time constants that otherwise sound smooth on vocals are often too slow to catch the elusive "ess." Further, the energy contained in

"ess" sounds is usually lower than the rest of the vocal program, which means that sibilants receive less compression than other parts of the vocal, causing them to sound louder. (A given mic can be another aggravating factor.) But not all causes of excessive sibilance are electronic. The normal levels vary widely from one voice to another and from one mic technique to another, and inherently harsh sibilants often ruin an otherwise pleasing singing voice.

The annoyance of excessive sibilance increases when they are transmitted through a channel with limited dynamic range. Broadcast and recording engineers can face a major problem since hot high-frequency signal levels leave little headroom. And in large-scale sound-reinforcement applications, an extra 6dB of headroom may require hundreds or thousands of extra watts of amplifier power, especially when compression has increased the relative sibilant level. Proper control can prevent high-frequency clipping and tweeter burnout and will enable higher sound-pressure levels without a large increase in amp output.

Equalization is often used in an attempt to cure these problems, particularly if they arise from heavy vocal compression. But sibilants can occupy a fairly broad portion of the important 4-8kHz intelligibility band, and a static EQ dip in this area will cause loss of articulation and dull sound. Equalization is not the solution.

Other Applications

The 263A has surprising uses in processing instruments. Any signals that have large high-frequency levels without accompanying low frequencies can be modified; depending on the control settings, changes can be subtle or obvious. Guitar plucks processed through the 263A will be mellower, with less pick noise and less bite at the start of each note. "Spitty" brass will benefit likewise. Try both HF and Broadband modes as you experiment.

We have noted that mid-settings of the slider give natural-sounding results and that far-right settings cause exaggerated effects. But on synthesizers and drums, go ahead and try extreme settings, and experiment to find new effects on other instruments.

TECHNICAL SUPPORT, FACTORY SERVICE

Technical Support, Factory Service

The 263A is an all-solid-state product with components chosen for high performance and excellent reliability. Each 263A is tested, burned in and calibrated at the factory and should require no internal adjustment of any type throughout the life of the unit. We recommend that your 263A be returned to the factory only after referring to the manual and consulting with Customer Service.

Our phone number, Fax number and address are listed on the inside front cover. When you contact dbx Customer Service, be prepared to accurately describe the problem. Know the serial number of your unit - this is printed on a sticker attached to the rear panel.

Note: Please refer to the terms of your Limited Two-Year Standard Warranty, which extends to the first end-user. After the warranty expires, a reasonable charge will be made for parts, labor, and packing if you choose to use the factory service facility. In all cases, you are responsible for shipping charges to the factory. dbx will pay return shipping if the unit is still under warranty.

Shipping Instructions: Use the original packing material if it is available. Mark the package with the name of the shipper, and with these words in red: DELICATE INSTRUMENT, FRAGILE! Insure the package properly. Ship prepaid, not collect. Do not ship parcel post.

Registration Card and User

Feedback

We appreciate your feedback. After you have an opportunity to use your new 263A, please complete the Registration Card and return it.

SPECIFICATIONS

Note: 0dBu = 0.775VRMS

Specifications are subject to change.

Frequency Response

Flat

20Hz - 20kHz, +0, ±1dB

Input (Unbalanced)

Impedance

391kΩ

Max Level

+20dBu

Output

Impedance

22Ω

Max Level

+20dBu into 600Ω

Distortion

<0.1%@ 1kHz, no DE-ESSING, -10dBμ input

Noise Intermodulation

<0.2% SMPTE, no DE-ESSING

Equivalent Input Noise

-85dBu, (20 - 20kHz)

Dynamic Range

105dB

DE-ESSING Operating Range

-35 to +18dBμ

Frequency Crossover Point

800Hz to 8kHz

Maximum Attenuation

20dB

Attack Time

Program dependent

2ms for 10dB DE-ESSING

0.6ms for 20dB DE-ESSING

Release Time

Program dependent

26ms for 20dB DE-ESSING

Power Requirements

100VAC, 120VAC, 230VAC, 240VAC, 50/60 Hz

Operating Temperature

0°C to 45°C (32°F to 113°F)

Dimensions (H x D x W)

1.75" x 8.5" x 7.25" (4.5cm x 21.6cm x 18.4cm)

Weight, Net Weight:

2.5 lbs (1.1kg); Shipping Weight: 5 lbs (2.3kg)