

*Compressor/
Limiter* **262**

Operation Manual

dbx **1**
Project



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



ATTENTION: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR

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

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

WARNING

FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: To reduce the risk of fire or electric shock, the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

U.K. MAINS PLUG WARNING

A moulded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility. **NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET.** Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and **MUST** be ASTA approved to BS1362.

ELECTROMAGNETIC COMPATIBILITY

This unit conforms to the Product Specifications noted on the **Declaration of Conformity**. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation. Operation of this unit within significant electromagnetic fields should be avoided.
- use only shielded interconnecting cables.

SAFETY INSTRUCTIONS

NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.

WARNING: THIS APPLIANCE MUST BE EARTHED.

The cores in the mains lead are coloured in accordance with the following code:

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

As colours of the cores in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The core which is coloured green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, or coloured green, or green and yellow.
- The core which is coloured blue must be connected to the terminal marked N or coloured black.
- The core which is coloured brown must be connected to the terminal marked L or coloured red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the unit's chassis.

CONDUCTOR		WIRE COLOR	
		Normal	Alt
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN/YEL	GREEN

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

DECLARATION OF CONFORMITY

Manufacturer's Name: dbx Professional Products
Manufacturer's Address: 8760 S. Sandy Parkway
Sandy, Utah 84070, USA

declares that the product:

dbx 262

conforms to the following Product Specifications:

Safety: EN 60065 (1993)
IEC65 (1985) with Amendments 1, 2, 3

EMC: EN 55013 (1990)
EN 55020 (1991)

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 90/336/EEC as amended by Directive 93/68/EEC.

dbx Professional Products
Vice-President of Engineering
8760 S. Sandy Parkway
Sandy, Utah 84070, USA
February 6, 1997

European Contact: Your Local dbx Sales and Service Office or International Sales Office
68 Sheila Lane
Valparaiso, Indiana
46383, USA
Tel: (219) 462-0938
Fax: (219) 462-4596

Warranty 2
Introduction 2
Inspection 3
Front Panel Operation 3
Rear Panel Operation 5
Connections 5
Operating Notes 6
Applications 7
Specifications 13



PROFESSIONAL PRODUCTS

8760 South Sandy Parkway
Sandy, Utah 84070 USA
Tel: (801) 568-7660
Fax: (801) 568-7662
E-Mail: customer@dbxpro.com
Home Page: <http://www.dbxpro.com>

International Sales

68 Sheila Lane
Valparaiso, Indiana
46383 USA
Tel: (219) 462-0938
Fax: (219) 462-4596

Warranty

1. The warranty registration card must be mailed within 30 days after purchase date to validate this warranty and proof-of-purchase is considered to be the burden of the consumer.
2. dbx warrants this product, when bought and used solely within the U.S., to be free from defects in materials and workmanship under normal use and service.
3. dbx liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to dbx WITH RETURN AUTHORIZATION from the factory, where all parts and labor will be covered up to a period of two years. A Return Authorization number may be obtained from dbx by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.
4. dbx reserves the right to make changes in design or make additions to, or improvements upon this product without incurring any obligation to install the same on products previously manufactured.
5. The foregoing is in lieu of all other warranties, expressed or implied, and dbx neither assumes nor authorizes any person to assume for it any obligation or liability in connection with the sale of this product. In no event shall dbx or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

Introduction

We congratulate and thank you for your purchase of the dbx 262 Compressor/Limiter. The 262 provides two channels of classic dbx compression at an unheard of price and boasts features found on our industry standard compressor/limiters, such as:

- OverEasy®/Hard Knee Selection - allows selection between our famous OverEasy® compression curve and the classic "Hard Knee" curve popularized by the original dbx 160, 161, and 162.
- True RMS Level Detection - senses the power in the program in a musical manner, much as the ear does, giving results superior to peak or average detection.
- True RMS Power Summing™ - When the two channels of the 262 are stereo coupled together, the RMS energy of the two signals is intelligently summed together in a way that prevents phase cancellation of the two signals which would normally cause unmusical compressor action.
- Balanced 1/4" TRS Inputs and Outputs can be used with pro and semi-pro, balanced or unbalanced systems..
- DC-Controlled Parameters - the signal does not pass through any of the front-

panel controls. Instead, a DC voltage controls all functions; this eliminates any possibility of potentiometer noise developing over time.

Although the dbx 262 was designed to be the easiest stereo compressor/limiter on the market to use, we suggest that you read this operation manual to fully understand the 262's power. We have kept the manual simple and easy to read so that you can get back to work quickly.

We know you'll enjoy your 262 and thanks again for purchasing a quality dbx product.

Before continuing any further, please inspect the contents of the dbx 262 box to be sure that the following items are included:

- dbx 262 Compressor/Limiter
- Operation Manual (yes, you are already reading it)
- Registration/Warranty card
- 4 Rack Screws and Washers
- Power Cord

If anything is missing, please notify your dealer.

The information contained in this manual is subject to change at any time without notification.

Inspection



BYPASS Switches and LEDs: In Bypass mode, the 262's processing and controls are disabled, presenting unaltered input signal at the 262's output. The bypass mode for each channel works independently, even when in stereo couple mode. Bypass mode is especially useful for making comparisons between processed and unprocessed signals. When bypassed, the red LED adjacent to the switch is lit.

THRESHOLD Control: Adjust this control to set the threshold of compression from -40 to +20 dBu.

Front Panel Operation

OverEasy® Switch: OverEasy® provides a smooth transition from the compressor's linear region to the compressed region. This smooth transition greatly reduces compression artifacts and allows faster attack times and higher compression ratios while still maintaining the natural characteristics of the signal. The switch lights to indicate OverEasy® processing is enabled. Figure 1 below illustrates the the input/output relationships for OverEasy® operation. Figure 2 illustrates the same for hard knee operation. When conventional hard knee processing is desired, disable the OverEasy® function

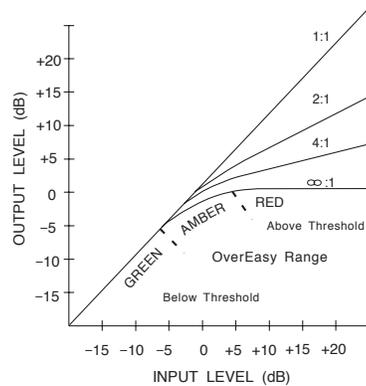


Fig. 1 -OverEasy®

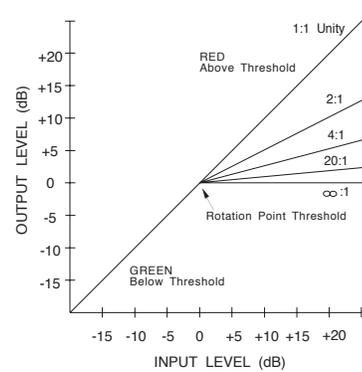


Fig. 2 - Hard Knee

THRESHOLD LEDs: These three LEDs indicate the relationship of the input signal level to the threshold of compression. The green “below” (-) LED is on when the signal is below threshold and the red “above” (+) LED is on when the signal is above threshold. When the 262 is switched to OverEasy® mode, the amber “O” LED is on when the signal is in the OverEasy® region (See Figure 1).

COMPRESSION RATIO Control: This control selects the ratio between input and output levels for signals above the threshold. Rotate this control clockwise to increase the amount of compression from 1:1 (no compression) up to infinity:1 (no increase in output level, regardless of input level increases above threshold); further clockwise rotation increases compression into the INFINITY+™ region, up to a maximum of -1:1 (i.e., a 1dB increase in input level above threshold causes a 1dB decrease in output level). In the INFINITY+™ region, the 262 inverts the program dynamics for special effects. Figures 1 and 2 illustrate input/output slopes corresponding to various compressor/limiter ratio settings.

OUTPUT GAIN Control: Adjust this control to vary the amount of fixed gain (up to ±20 dB) in the 262’s output amplifier stage. The OUTPUT GAIN control does not interact with the threshold of compression.

GAIN REDUCTION Meter: This 8-segment LED meter indicates the amount of gain reduction due to compression/limiting, ranging from 0 to 30 dB.

STEREO COUPLE Switch and LED: This switch changes the 262 from two independent compressors into a stereo compressor. In Stereo mode, Channel 1

is the host, and Channel 2 is the linked channel. Each of the Channel 2 controls and switches will be overridden and controlled by Channel 1 except the Bypass switch which will remain independent. Also, Channel 2's 3-LED Threshold Meter will be disabled, while both channels' Gain Reduction Meters will identically indicate the amount of gain reduction occurring. It is important to note that while Channel 1 is the host as far as the controls go, both channels have equal precedence as far as signal processing is concerned. The 262 uses True RMS Power Summing™, an extremely accurate and musical way to combine detector outputs in a stereo situation. The LED adjacent to the switch will be lit when switched to stereo couple mode.



INPUT Jacks: The input jacks accept a standard 1/4" TRS phone plug for a balanced input source, or a standard 1/4" TS phone plug for an unbalanced source.

OUTPUT Jack: The output jacks accept a standard 1/4" TRS phone plug for driving balanced lines, or a standard 1/4" TS phone plug for driving unbalanced lines.

AC Power Receptacle: This receptacle accepts an IEC-type power cord (as shipped with the unit). Check that the AC power markings below the AC power connector are correct for your area. (Either 100/120V, or 230V.) Plug the cord into the unit and mains power. Note that the 262 does not have a power switch. It is recommended that the 262 be "On" at all times. Power consumption is low. If you do not plan to use the 262 for an extended period of time, unplug it. **Connection to an inappropriate power source may result in extensive damage which is not covered by the warranty.**

Rear Panel Operation

The 262 has balanced inputs and outputs, and can be used with any line-level device. Some common examples include: mixing consoles, patch bays and other signal processors.

Connections

For all connections, refer to the following steps:

1. Turn off all equipment before making any connections.
2. Mount the 262 in a 1U rack space (optional).

The 262 requires one rack space (height). 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.

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

3. Make balanced or unbalanced connections via 1/4" TRS jacks according to your requirements.

4. Check the line voltage: The unit is shipped for either 100-120V or 230V, 50/60 Hz operation (ie: not both). Refer to the unit's rear panel AC power connector to verify that the voltage is correct for your area. Securely connect the AC power cord to the unit and mains power.

Operating Notes

Using the THRESHOLD Control

In Hard Knee mode (OverEasy® switch out), THRESHOLD sets a reference level above which input signals will be processed by the 262's gain change circuitry in the manner defined by the setting of the RATIO control. Input signals which fall below this level will pass through the 262 unprocessed (except for fixed gain changes directed by the OUTPUT GAIN control).

In OverEasy® Mode (OverEasy® switch depressed), signals begin to gradually activate the 262's gain change circuitry as they approach the THRESHOLD reference level and do not get fully processed in the manner defined by the RATIO control until they have passed somewhat above the THRESHOLD reference level. In OverEasy® mode there is no distinct point at which processing begins, and the THRESHOLD setting corresponds to a point on the input/output transfer curve midway between the onset of processing and that point at which the transfer curve corresponds to the setting of the RATIO control. Figure 1 on page 4 shows the OverEasy® compression curves and how they correlate with the THRESHOLD LEDs. Similarly, Figure 2 on the same page illustrates the THRESHOLD LED operation for the Hard Knee mode.

Using the COMPRESSION RATIO Control

When an input signal is above the THRESHOLD reference level, the setting of this control determines the number of decibels by which the input signal must change in level to produce a 1 dB increase in the signal level at the output of the 262. A setting of 2:1 indicates an input:output ratio wherein a 2 dB increase in signal (above threshold) will produce a 1 dB increase in output signal. A setting of ∞ :1 indicates that an infinite increase in input level would be required to raise the output level by 1 dB. In other words, the output level stays constant when the input signal rises above threshold.

The 262's RATIO control covers the entire range from 1:1 to ∞ :1 and, in addition, goes to Infinity+™ (negative) ratios. At a setting of -1:1, the above threshold input signal must increase by 1 dB in level to decrease the signal at the output of the 262 by 1 dB. See Figure 3 below. The control curve of the RATIO potentiometer has been designed to provide total operator control, with scale expansion at the subtle, lower ratios for easy, repeatable settings.

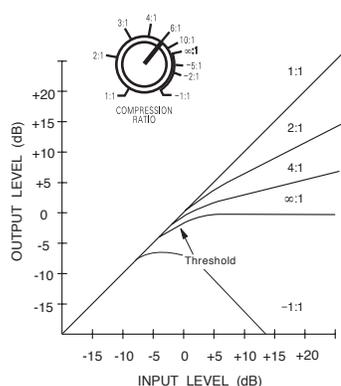


Figure 3: Ratio Control and Infinity+™ (Negative) Ratios

Applications

Typical patch points include: a mixer's channel or subgroup inserts when using the 262 on individual instruments or tracks; the mixer's main outputs or bus inserts when mixing; an instrument preamp's effects loop when using the 262 for guitar or bass; main outs of a submixer (e.g., drum mixer) as the signal is sent to main mixer; between a DAT's output and an analog cassette input. When using a chain of processors, the 262 may be placed either before or after effects or dynamic processors. However, if you are using the 262 for speaker protection, the compressor should be as close to the amplifier as possible in the signal chain. We recommend you use common sense and experiment with different setups to see which one provides the best results for your needs.

Mixing Board

If you wish to compress a particular track of a multitrack recording or one channel of a live performance, connect a cable from the audio source's output jack to the 262 INPUT, and connect the 262 OUTPUT to a line input jack (balanced or not), or the 262's INPUT and OUTPUT can be wired to an insert point. In the latter case, the signals will most likely be unbalanced as is typical of most insert signals.

Note: The amount of compression is directly related to the level of the input signal. However, depending upon your system's setup, it may not always be crystal clear as to which volume controls in your chain affect input level and which affect output level. If the 262, in relation to your mixer channel's volume controls, is "pre-fader" (i.e., the 262 is connected to mixer inserts so that the compression effect occurs before the mixer channel's volume fader), you can boost or cut the input level by adjusting the mixer channel source's volume control (e.g., a synthesizer's volume control) and vary the track's output level using either the 262's OUTPUT GAIN control or the mixer channel's volume fader (the latter here is great for track fade-outs). Keep in mind that it is best to set the OUTPUT GAIN of the 262 to achieve a "nominal" level that the mixer channel would like to "see" and use the channel fader to change levels. This method maintains proper signal levels through the channel and avoids either running out of headroom (clipping) or increasing noise by running the channel

signal too low.

If the 262 is “post fader” (i.e., the 262 is connected to mixer inserts so that the compression effect occurs after the level set by the mixer channel’s volume fader), adjusting the mixer’s volume fader changes the input level and the amount of compression. If you would rather have this volume fader control output, we suggest you set up the compressor directly between the source and the mixer channel’s input. This way, you can use the instrument’s volume control to define the input level and amount of compression and the mixer’s volume fader to change only the overall volume of the track.

Musical Instruments (e.g., Electric Guitar, Bass, Keyboards, Electric-Acoustic Instruments)

The output of an electric guitar is sometimes not “hot” enough to drive the 262’s INPUT. When this is the case, you should use the “PREAMP OUT” of your guitar amp (if so equipped), or the output of some other device that is designed to accept low-level instrument inputs (including various foot pedal effects, acoustic pickup preamps, and rack mount audio products, like the dbx 163A and 263A). Such sources can be balanced or unbalanced - this is no problem for the 262.

With most setups these low-level sources require signal boost to drive the 262’s INPUT. For example, when recording voice directly to a portable tape deck, a mic preamp (like the dbx 760X) placed between the mic and the 262 (which is then fed to one of the recorder’s inputs) can boost the low-level signal to a line-level required by the 262.

Keyboards, samplers, drum machines and sound modules typically produce a line-level signal and can be connected directly from the instrument’s output to the 262’s INPUT.

Note: DO NOT CONNECT the output of a power amp or the speaker out of an instrument to the input of the 262. Severe damage to system components may result.

Patch Bay

In the studio, the 262 may be connected to a patch bay to allow it to be patched anywhere in the studio system.

Sound Reinforcement

To compress a live mix or to protect loudspeakers, connect the 262 between the source (mixing board or distribution amp) and the power amp(s). If multi-way loudspeakers with low-level electronic crossovers are used, the 262(s) should go after the crossover(s). For a stereo system, you can separately stereo couple the two high band crossovers, low band crossovers, etc.

Specific Applications

Note: The following control settings for each application are suggested as a starting point. Adjust them for your requirements.

Smoothing Out Variations in Microphone Levels

Variations in signal level can occur when the distance between a vocalist and a

mic changes, or when the dynamics of a voice changes relative to a vocalist's range. To smooth out these variations, start with the 262 in OverEasy® mode and adjusted for a low to medium COMPRESSION RATIO (e.g., 4:1). Adjust the THRESHOLD control so that the GAIN REDUCTION meters show 6 dB to 10 dB of gain reduction, then increase the COMPRESSION RATIO if necessary. Due to the gentle OverEasy® characteristic of your 262 you will find that even fairly high ratios are handled transparently.

Smoothing Out Variations (and Increasing Sustain) in Musical Instrument Levels

To achieve a smoother electric (or electronic) bass sound, compress the instrument's output with a COMPRESSION RATIO of approximately 4:1, then adjust the THRESHOLD control for 10dB to 12dB of gain reduction. Compression lessens the loudness variations among the strings and increases the bass' inherent sustain. Other instruments, such as horns, vary in loudness depending on the note being played, and benefit similarly.

To control untimely volume shifts in "hot" guitar or synth parts and to keep them from overloading your tape deck or mixer during recording and live performances, start with the COMPRESSION RATIO at approximately 5:1 and the THRESHOLD set to the average maximum level of the track. This will ensure that only the offending "hot" part is compressed. Adjust both controls as necessary.

To add sustain to guitar or synthesizer string sounds, begin with a higher COMPRESSION RATIO (from 10:1 to ∞:1), then adjust the THRESHOLD control to taste. For example, you can use a compressor to alter the envelope of a synth patch to create an otherworldly synth pad that has just the right amount of body and soul without losing its initial impact: begin with a synth sound that has a bite on its attack, but ends with a long release time. While playing slow, but steady, synth stabs or chords, compress the sound heavily; adjust the THRESHOLD to taste and toggle between OverEasy® and Hard Knee modes to hear the effect each mode has on the attack and release of the envelope. Heavy compression of guitars and synths, as they are being recorded to digital formats, can often help revive their sense of "analog life."

Negative ratios alter the envelope of a sound differently than high compression ratios. With the 262 in the path of a synth or guitar, set the COMPRESSION RATIO to -1:1, -2:1 or -5:1. Methodically strike a series of chords and listen to how the compression softens the attack and quickens the release. Adjust the THRESHOLD and experiment with different types of sounds and 262 settings.

Negative ratios can also be used to prevent musicians from continually increasing the volume of their instrument (e.g., in live applications where there is no sound engineer to control the house levels). With their signal compressed by a negative COMPRESSION RATIO, each volume increase initiated at the instrument or amp would actually decrease the volume level at the final mix.

Fattening Kick Drums and Compressing Other Drums

Weak, flabby kick drums often have too much boom, and not enough slap. To tighten them up, start with the 262 adjusted for a medium to high COMPRESSION RATIO (e.g., 6:1), adjust the THRESHOLD control so that the GAIN

REDUCTION meters show 15dB of gain reduction, then increase the COMPRESSION RATIO if necessary. In OverEasy® mode, the 262 takes slightly longer to react than in Hard Knee mode, and will therefore emphasize the slap at the beginning of the note and reduce the boominess of its body. The 262 also works well for tightening snare drums and tom toms and can be used with drum machines to effectively alter the character of any electronic drum sound.

For drum kit submixes (e.g., mixing multiple drum tracks to two tracks while using two 262s for compression), consider backing off the COMPRESSION RATIO on each 262 (down to 2:1) to avoid an excess of cymbal “splattering.” In larger multitracking systems, compress the kick and snare separately. A further possibility (if you have two more compressors) is to heavily compress a stereo submix of toms and leave the remaining percussives unaffected.

Raising a Signal Out of a Mix

Since reducing dynamic range increases the average signal level by a small amount, a single track can be raised out of a mix by boosting its level slightly and applying compression. Start with a 2:1 COMPRESSION RATIO and a relatively low THRESHOLD setting (-20dB). Adjust both controls as necessary.

Compressors have also been used to bring vocals to the forefront of a mix in volume-restricted studios (e.g. home studios). Start by adding a foam wind-screen to the mic (if it doesn't have one). Set the COMPRESSION RATIO to 10:1 and the THRESHOLD to -10dB. With your mouth approximately 2 inches from the mic, sing the vocal part, but with less volume than normal. Use phrasing to give the part some intensity. An equalizer (e.g., a dbx 3031 Graphic Equalizer) or a vocal effects device (e.g., dbx 290, delay, distortion) can be added to further toughen the performance.

Note: When compressing stereo program material, the factors affecting a compression curve and the actual COMPRESSION RATIO and THRESHOLD settings, are like those previously covered with reference to single channels of program material. However, it will generally be found that large amounts of compression are more audible in a mixed stereo program than they might be on the separate tracks that were mixed to create the program.

Preventing Tape Saturation

With programs of widely varying levels, compression can prevent recording levels (e.g., cymbal tracks in a final mix or drum kit submix) from saturating tape tracks.

Preventing Digital Overload

Digital recorders and samplers produce audible distortion when they exceed their headroom. The 262 effectively ensures that audio input does not overload a digital recorder's D/A (digital-to-analog) converters. The 262 can perform this compression quietly enough for all digital media. Set the 262 for limiting with Hard Knee mode On, the COMPRESSION RATIO to ∞ :1, and set the THRESHOLD 2 to 3 dB below the overload point of the recorder.

Speaker Protection (Auditoriums, Churches, Mobile DJs and Sound Systems)

Compressors are frequently used to prevent excessive program levels from dam-

aging drivers in a sound-reinforcement system (whether you're doing auditorium, church, or club sound engineering, or are a mobile DJ for small dances, or like to push the limits of your home's audio entertainment center). Set the 262 for limiting (Hard Knee mode On, with a COMPRESSION RATIO of 10:1 or greater) and adjust the THRESHOLD to provide 15dB or more of compression (just a few dB below the input clip). For low-level signals, the 262 won't change gain, but if large signals come along, the gain will be reduced to prevent clipping and save sensitive system components from excessive heat buildup or other type of damage.

In circumstances where the 262 is expected to cause no change in gain unless an emergency arises (wildly excessive levels), some operators set Hard Knee mode On, the COMPRESSION RATIO to ∞ :1, and the THRESHOLD to the highest permissible level.

As a general rule, compressors should be as close to the amplifiers as possible in the signal chain. If the 262 is placed before the EQ (equalizer), for example, a potentially damaging boost in the EQ won't be seen by the 262 and the speakers may be damaged. For maximum sound pressure levels, large sound reinforcement systems frequently use a separate compressor on each output of the electronic crossover(s).

Raising Average Level in PA Systems

Limiting (i.e., compression at high ratios like ∞ :1) also benefits intelligibility by allowing low-level input signals to be reproduced through the system at higher volume. In a musical performance, this provides additional intimacy as the vocalist's whispers are heard clearly at every seat in the house. The OverEasy® curve available with the 262 permits a very high amount of compression (COMPRESSION RATIO of 10:1 or greater) to be used in many situations. This allows dynamic speakers, vocalists and other musicians to concentrate on their presentation or performance without worrying about the ill effects of volume changes.

Using Your EQ to Reduce Feedback in Live Settings (Indoor and Outdoor Concerts, Churches)

You can use your 262 and EQ (equalizer) to reduce feedback in clubs, churches, outdoor concerts and other live settings. Patch or insert the 262 into the main output of a mixer, set the 262 to Hard Knee mode and slowly increase the console gain control until the first feedback "ring" occurs, then set up the 262 with its COMPRESSION RATIO at ∞ :1 and THRESHOLD low. The 262 will catch the first feedback ring and hold it as a constant tone so you can adjust your EQ to minimize it. Continue to increase your console gain and set your EQ until the next 3 or 4 "ring" frequencies have been compensated for.

The 262 as a Line Amplifier

To use the 262 as a line amplifier, adjust the COMPRESSION RATIO control fully counterclockwise (1:1 position), THRESHOLD fully clockwise (+20) and OUTPUT GAIN to whatever setting is required for the application. Remember, excessive gain may lead to output clipping of high level signals. To add compression, adjust the COMPRESSION RATIO and the THRESHOLD controls to the desired settings.

Increasing Sustain

To increase the sustain of a musical instrument (e.g., a guitar or bass). Set the

262 to Hard Knee mode, with a fairly low THRESHOLD and a moderate COMPRESSION RATIO.

Stereo Couple

The ability to choose between dual mono or stereo coupled operation allows flexibility in a variety of situations. Use dual mono (uncoupled) operation when processing independent signals such as individual instruments or on channel inserts of a mixer. Use stereo coupled operation when simultaneously processing stereo L/R signals such as mastering to tape or compressing the stereo L/R outputs of a live mixing console. Stereo coupling not only allows identical control of both channels from one set of host controls, but it causes identical gain reduction in both channels. This is not only desirable, but necessary to maintain the stereo image. If the left and right channels' gains were allowed to change independently, the stereo image would audibly shift away from the channel in which gain reduction is occurring, toward the channel in which less (or no) gain reduction is occurring.

To provide the most pleasing and accurate signal dynamics, dbx processors use True RMS Power Summing™. This means that, in stereo couple mode, signals above the compressor threshold in either channel cause gain reduction in both channels. This ensures that the protective or creative action of the compressor is maintained for both channels, while preserving the integrity of the stereo image. Additionally, True RMS Power Summing™ allows stereo signals to be combined without phase cancellation in an intelligent way, interpreting the combined signals the same way the human ear and brain combine and interpret them. The natural result is the pleasing sound of dbx compression that has become a world-wide standard.

Specifications

Inputs:

Connectors:	1/4" TRS
Type:	Electronically balanced/unbalanced, RF filtered
Impedance:	Balanced > 50 k Ω , unbalanced > 25 k Ω .
Max Input Level	+22 dBu, balanced or unbalanced
CMRR:	> 40 dB, typically > 55 dB at 1 kHz

Outputs:

Connectors:	1/4" TRS
Type:	Impedance-balanced/unbalanced, RF filtered
Impedance:	Balanced 200 Ω , unbalanced 100 Ω
Max Output Level:	> +21 dBu balanced/unbalanced into 2 k Ω or greater

System Performance:

Bandwidth:	20 Hz to 20 kHz, +0/-0.5 dB
Frequency Response:	< 3 Hz to > 90 kHz, +0/-3 dB
Noise:	< -92 dBu, unweighted, 22 kHz measurement bandwidth
Dynamic Range:	> 114 dB
THD+Noise	0.01% typical at +4 dBu, 1 kHz unity gain 0.09% typical at +20 dBu, 1 kHz, unity gain
IMD:	< 0.2%, any amount of compression up to 40 dB, 1 kHz
Interchannel Crosstalk:	< 0.2% SMPTE
Stereo Coupling:	< -90 dB at 1 kHz True RMS Power Summing™

Compressor:

Threshold Range:	-40 dBu to +20 dBu
Threshold Characteristic:	Selectable OverEasy® or hard knee
Ratio:	1:1 through ∞ :1 to -1:1; > 60 dB maximum compression
Attack Time:	Typically 15 ms for 10 dB, 5ms for 20 dB, 3 ms for 30 dB
Release Time:	Program-dependent, 125 dB/sec rate
Output Gain:	-20 to +20 dB

Function Switches:

OverEasy®	Activates the OverEasy® compression function, one switch per channel.
Bypass:	Electronically disables gain reduction, one switch per channel. Couples channels for stereo operation. Channel One is the host.
Stereo Couple:	

Indicators:

Gain Reduction Meter:	8-segment LED bar graph at 1,3,6,10,15,20,25, and 30 dB
Compressor Threshold Meter:	3-segment LED bar graph at Below (-), OverEasy® (O), and Above (+)
Bypass Switch:	Red LED per channel
Stereo Couple Switch:	Amber LED

Power Supply:

Operating Voltage:	100VAC 50/60 Hz, 120VAC 60 Hz 230 VAC 50/60 Hz
Power Consumption:	15 Watts
Mains Connection:	IEC 320 receptacle

Physical:

Dimensions:	1.75" H X 19" W X 6.9"D (4.4cm x 48.3 cm x 17.5cm)
Weight	3.6 lbs. (1.6 kg)
Shipping Weight:	5.3 lbs. (2.4 kg)

Note: Specifications subject to change



PROFESSIONAL PRODUCTS

8760 South Sandy Pkwy.

Sandy, Utah 84070

Phone: (801) 568-7660

Fax: (801) 568-7662

Int'l Phone (219) 462-0938

Int'l Fax: (219) 462-4596

H A Harman International Company

Questions or comments?

E-mail us at: customer@dbxpro.com

or visit our World Wide Web home page at:

<http://www.dbxpro.com>