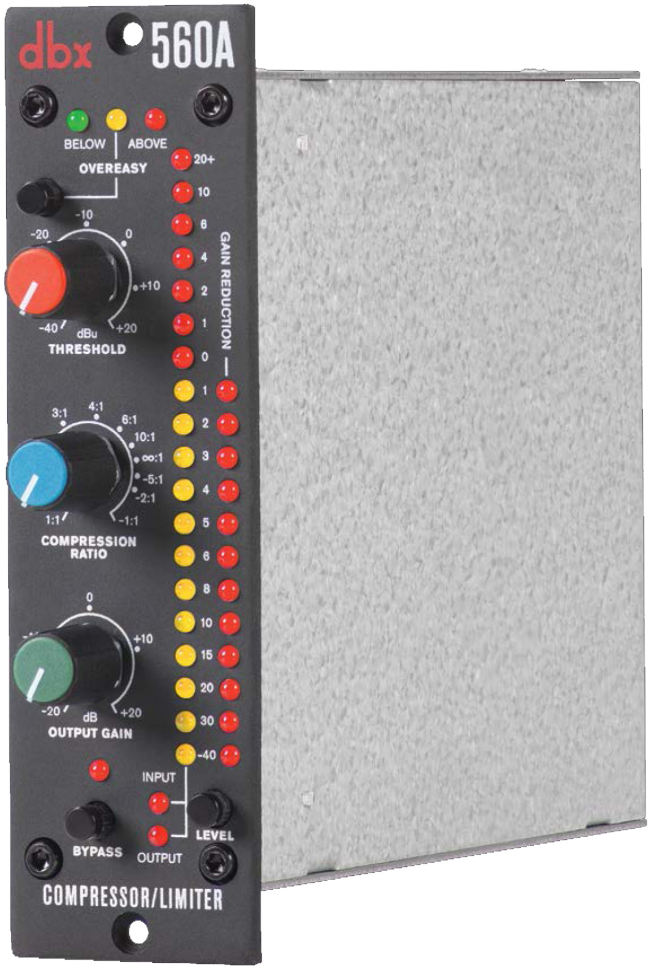
dbx by HARMAN

560A

500 SERIES COMPRESSOR/LIMITER



OWNER'S MANUAL

Warranty

1. Please register your product online at www.dbxpro.com. Proof-of-purchase is considered to be the responsibility of the consumer. A copy of the original purchase receipt must be provided for any warranty service.

2. dbx warrants this product, when purchased new from an authorized U.S. dbx dealer and used solely within the U.S., to be free from defects in materials and workmanship under normal use and service. This warranty is valid to the original purchaser only and is non-transferable.

3. dbx liability under this warranty is limited to repairing or, at our discretion, 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 must first be obtained from dbx. 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 additions or improvements 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 on its behalf 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.

Technical Support & Service

If you require technical support, contact dbx Technical Support. Be prepared to accurately describe the problem. Know the serial number of your device – this is printed on a sticker attached to the chassis.

Before you return a product to the factory for service, we recommend you refer to this manual. Make sure you have correctly followed installation steps and operating procedures. For further technical assistance or service, please contact our Technical Support Department at (801) 566-8800 or visit www.dbxpro.com. If you need to return a product to the factory for service, you MUST first contact our Technical Support Department to obtain a Return Authorization Number.

NO RETURNED PRODUCTS WILL BE ACCEPTED AT THE FACTORY WITHOUT A RETURN AUTHORIZATION NUMBER.

Please refer to the Warranty information, which extends to the first end-user. After expiration of the warranty, 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 transportation charges to the factory. If the product is still under warranty, dbx will pay the return shipping.

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.

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Overview

Introduction

The 560A is a 500 series compliant compressor/limiter. It's design is based on the popular dbx 160A compressor/limiter. It is a VCA design which incorporates true RMS level detection for very musical compression characteristics. The 560A functions as a hard-knee compressor/limiter when the OverEasy® switch is disengaged – this works great when a more aggressively compressed signal is required. When the OverEasy switch is engaged, the processor functions as a soft-knee compressor/limiter – use this mode when more subtle compression or limiting is required.

The 560A is well suited for live sound or studio use and can be used to add punch to drums, add sustain to bass and guitar lines, control vocal level fluctuations, or control any other mono source which has excessive dynamic range or peaks. When recording, the 560A can be used to effectively control peaks during the tracking stage or for compressing/limiting signals during the mixing stage.

Precision metering makes it easy to see input and output levels, as well as the exact amount of gain reduction being applied. Combined with the simplistic controls and very musical program-dependent attack and release times, the 560A is very quick and easy to dial in with great results.

We hope the 560A serves as an indespensible creative tool for your sound processing and music production needs. Thank you for choosing dbx.

Features

- *Compatible with 500 series chassis*
- *Hardwire Bypass*
- *True RMS level detection for very musical compression*
- *OverEasy® or classic hard knee compression with dbx's ultra-musical program-dependent attack and release times*
- *Compression ratio variable from 1:1 through infinity:1 to -1:1*
- *Output gain control and bypass button for easy comparison of processed vs. unprocessed signal*
- *Precise RMS gain reduction and input/output meter displays*
- *Exclusive Infinity+ compression using negative ratios*

Installation

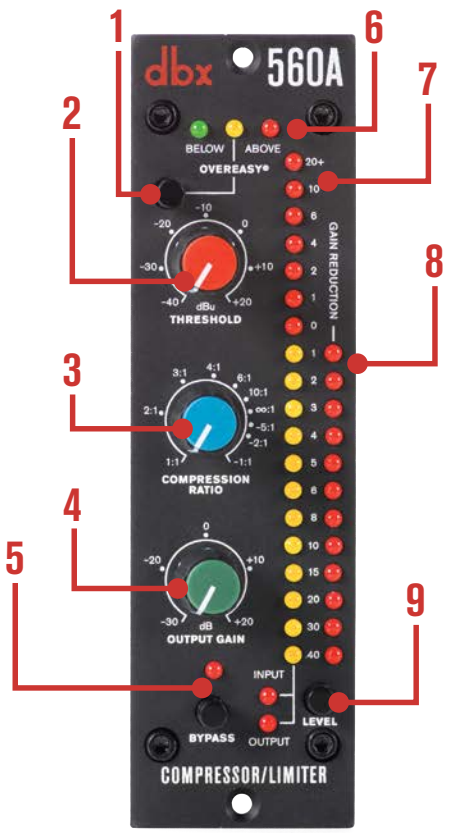
FOR 500 SERIES CHASSIS MOUNT USE ONLY!

To install the 560A into a 500 series chassis:

1. Turn off the power to the 500 series chassis.
2. Unpack the module and ensure the rear connector is free of debris.
3. Align and slide the module into the 500 series chassis, ensuring the connectors on the back properly seat with the connectors in the chassis.
4. Install the included screws to secure the 560A to the chassis. Both metric and standard screws are included. Use the correct screw type for your chassis.
5. Power on the chassis.
6. Enjoy!

WARNING! Do not hot swap 500 series modules! Doing so can potentially cause damage to the 500 series module or chassis. Always power down the chassis when installing or removing 500 series modules.

The User Interface



1. OVEREASY® Button

This button sets the "knee" of the compressor/limiter. The knee determines how abrupt or gradual the transition is between compression and non-compression.

When disengaged, the 560A will operate as a hard knee compressor/limiter – meaning the transition between compression and non-compression is sharp or abrupt. This mode works well when a more aggressively compressed signal is required.

When the OVEREASY button is engaged, the 560A will operate as a soft knee compressor/limiter – meaning the transition between compression and non-compression is gradual. This mode works well when more subtle compression or limiting is required.

NOTE: When the OVEREASY button is engaged, the yellow OVEREASY LED becomes active and lights when the signal level is in the OverEasy region, which is just below the set threshold.

2. THRESHOLD Control

Adjust this knob to set the level at which compression or limiting will begin. The range of this knob is from -40dBu (7.8mVRMS) to +20dBu (7.8VRMS).

3. COMPRESSION RATIO Control

This control adjusts the amount of gain reduction applied once the signal level exceeds the set THRESHOLD setting. A setting of 1:1 means there is no change in level between input and output, which means no dynamics processing will occur regardless of the THRESHOLD setting. The compression/limiting range of this control is from 1:1 (no compression) up to ∞:1 (maximum limiting).

Rotating this control further clockwise, past the ∞:1 setting, increases compression into the INFINITY+ region, up to a maximum of -1:1. Where a RATIO setting of ∞:1 essentially puts a "ceiling" on the output signal level and doesn't allow any output signal level increase above threshold, negative compression goes further and allows the output signal level to be reduced even beyond that of the set threshold. In other words, the louder the input signal level is above threshold, the lower the output signal level will be, without hitting the "floor" of the THRESHOLD setting. This can be used for special effect applications where the output level needs to be reduced below that of the input signal level. See the "RATIO" graph in ***'Compression Graphs' on page 6*** to see a graph showing compression curves based on ratio setting, including a negative compression curve using the -1:1 COMPRESSION RATIO setting.

4. OUTPUT GAIN Control

Adjust this control to compensate for the amount of gain lost during compression/limiting. Making up for lost gain with this control makes it far easier to compare the processed signal against the unprocessed signal to determine if the

current settings are indeed enhancing the signal in a desirable way. This is done by matching the levels while switching in and out of bypass mode. Up to 20dB of gain can be applied using this control. The OUTPUT GAIN control does not interact with the threshold of compression/limiting.

5. BYPASS Button & LED

Engage the BYPASS button to bypass the 560A processor. The BYPASS LED will light when the processor is bypassed. The 560A is designed with a hardwire bypass – meaning when bypassed, the signal passes straight from the input jack directly to the output jack, without going through any of the 560A's circuitry. Bypass mode is especially useful for making comparisons between the processed and unprocessed signals.

6. THRESHOLD LEDs

These three LEDs indicate the relationship of the input signal level to the threshold of compression. The green "BELOW" LED lights when the signal level is below the set threshold. The red "ABOVE" LED lights when the signal level is above the set threshold. When the OVEREASY button is engaged, the yellow LED lights when the signal level is in the OverEasy region, which is in the range just below the set threshold (see ***'Compression Graphs' on page 6*** to see a plot showing the OverEasy region).

7. INPUT/OUTPUT LEVEL Meter

This LED meter shows input or output signal level, as selected with the LEVEL button. When the LEVEL button is engaged, the INPUT LED will light and this meter will show input signal level. When the LEVEL button is disengaged, the OUTPUT LED will light and this meter will show output signal level. The output meter is post the OUTPUT GAIN control. The "0" indicator on this meter is equivalent to +4dBu (1.23VRMS).

8. GAIN REDUCTION Meter

This LED meter shows the amount of gain reduction applied by compression or limiting and can display up to 40dB of gain reduction (although the 560A is actually capable of delivering up to 60dB of gain reduction).

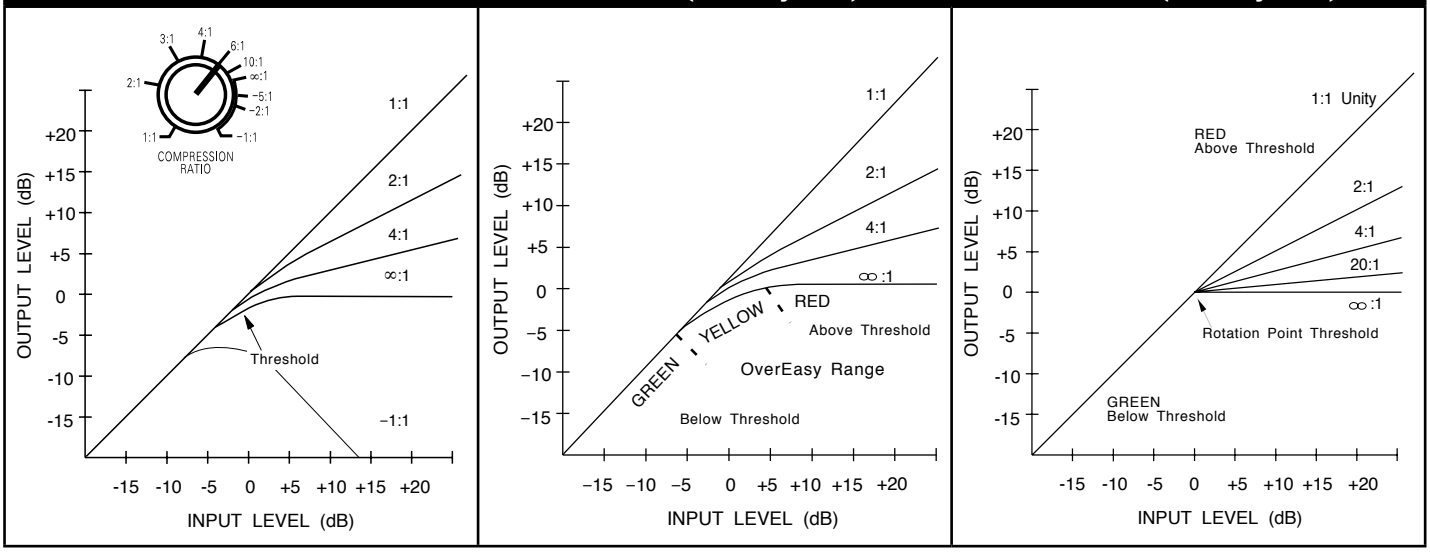
9. LEVEL Button & INPUT/OUTPUT LEDs

Engage this button to display input signal level on the LEVEL meter (the INPUT LED will light). Disengage this button to display output signal level on the LEVEL meter (the OUTPUT LED will light).

Technical Information

Compression Graphs

Ratio	Soft Knee (OverEasy™ On)	Hard Knee (OverEasy™ Off)



Specifications

INPUT

Type:	Electronically balanced/unbalanced, RF filtered
Impedance:	40kΩ balanced, 20kΩ unbalanced
Maximum Input Level:	+22dBu
CMRR:	>40 dB; typically >55 dB at 1 kHz

OUTPUT

Type:	Electronically balanced/unbalanced, RF filtered
Impedance:	Balanced 30Ω, unbalanced 15Ω
Maximum Output Level:	+ 22 dBu

PERFORMANCE

Frequency Response:	20 Hz – 20 kHz, + 0/-0.5 dB
	0.5 Hz – 100 kHz, +0/-3 dB
Noise:	<-97 dBu, Unweighted (22 Hz – 22 kHz)
THD+N:	<0.005% typical, No compression, 1 kHz input at 0 dBu
	<0.07% typical, Any Amount of Compression up to 40 dB @ 1 kHz
Dynamic Range	>119 dB

COMPRESSION

Gain Adjustment Range:	Variable from -20 dB to +20 dB
Threshold Range:	-40 dBu to +20 dBu
Threshold Characteristic:	Selectable OverEasy® or Hard Knee
Compression Ratio:	Variable 1:1 to ∞:1 thru to -1:1; 60dB Maximum Compression
Attack Time:	Program-Dependent; Typically 15ms for 10dB, 5ms for 20dB, 3ms for 30dB
Release Time:	Program-Dependent; Typically 8ms for 1dB, 80ms for 10dB, 400ms for 50dB; 125dB/Sec Rate

POWER

Requirements:	+/- 16VDC
Current Draw:	60mA per power rail
Power Draw:	1.92 watts

PHYSICAL

Rack System:	500 Series Compatible Power-frame
Rack Space	1 Slot
Dimensions (H x W x D)	5.25" x 1.5" x 6" (13.34cm x 3.81cm x 15.24cm)
Weight:	1.3 lbs (0.59 kg)
Shipping Weight:	1.7 lbs (0.77 kg)

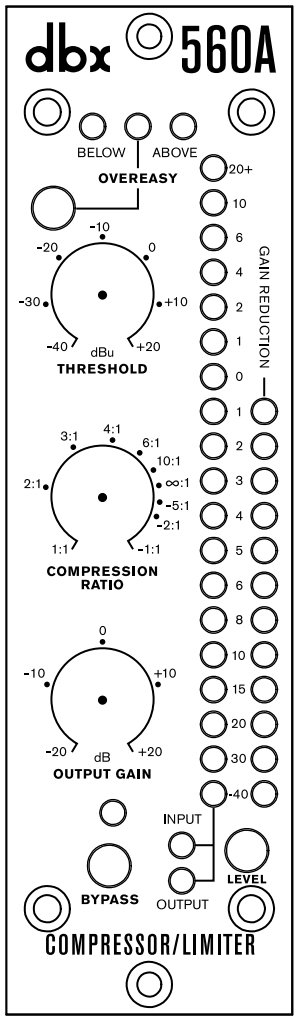
Notes: Noise and frequency response specifications are at unity gain.
0dBu=0.775Vrms

Specifications are subject to change without notice.

560A RECALL SHEET

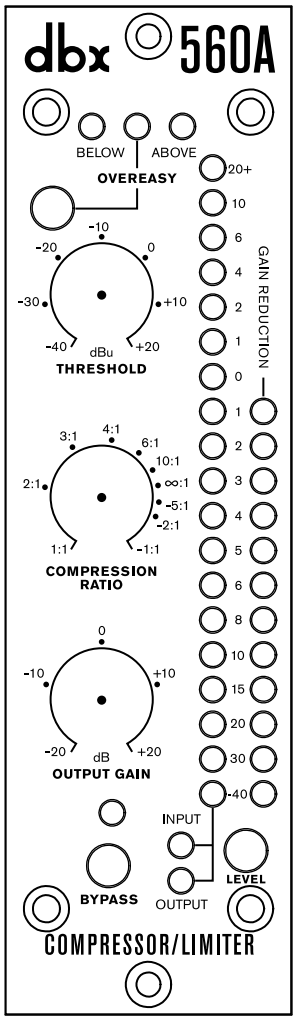
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PROJECT: _____



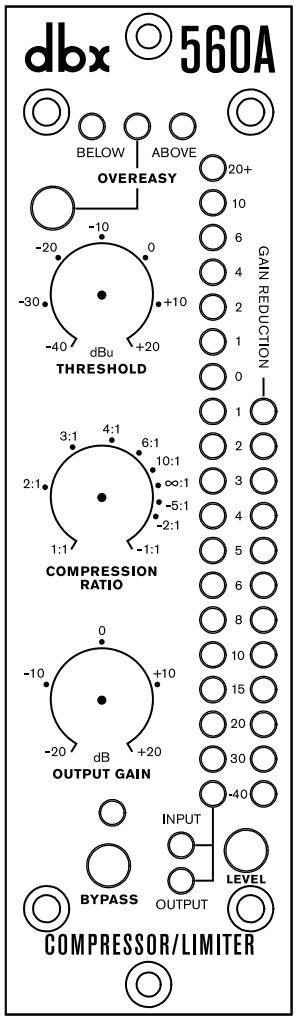
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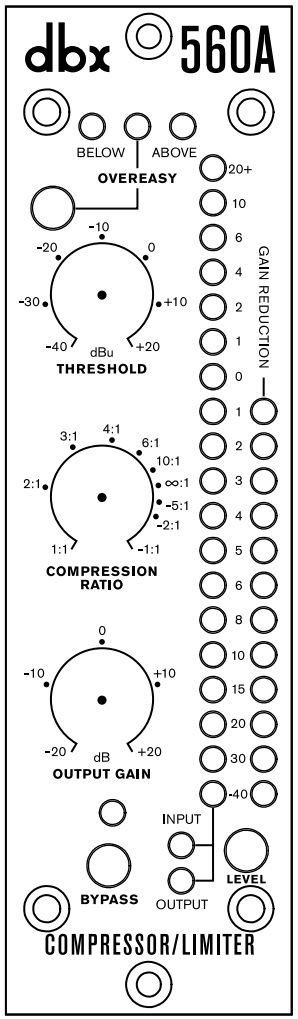
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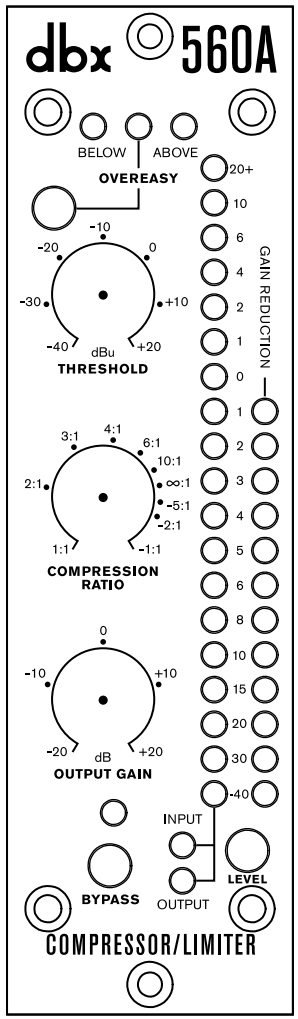
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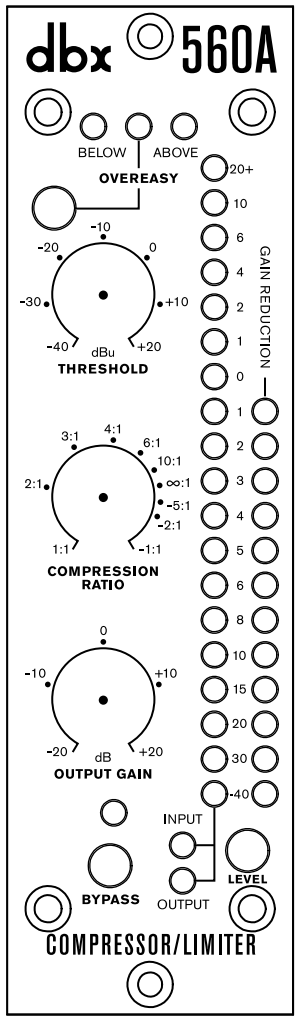
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Website: dbxpro.com
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560A Owner's Manual
Rev B

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