

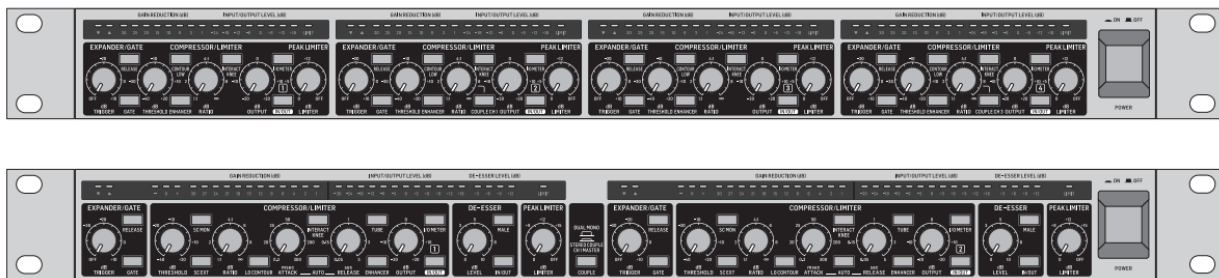


# behringer MDX4600 Reference-Class 4-Channel Expander/Gate/Compressor/Peak Limiter Owner's Manual

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## Quick Start Guide



### MDX4600

Reference-Class 4-Channel Expander/Gate/Compressor/Peak Limiter with Dynamic Enhancer and Low Contour Filter

### MDX2600

Reference-Class 2-Channel Expander/Gate/Compressor/Peak Limiter with Integrated De-Esser, Dynamic Enhancer, and Tube Simulation

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## Important Safety Instructions

 **CAUTION**   
**RISK OF ELECTRIC SHOCK!**  
**DO NOT OPEN!**



Terminals marked with this symbol carry an electrical current of sufficient magnitude to constitute a risk of electric shock.

Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modifications should be performed only by qualified 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.



### **Caution**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user-serviceable parts inside. Refer servicing to qualified personnel.



### **Caution**

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.



### **Caution**

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.

6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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 is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Use only attachments/accessories specified by the manufacturer.



12. 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.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 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.
15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
17. Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office or your household waste collection service.
18. Do not install in a confined space, such as a bookcase or similar unit.
19. Do not place naked flame sources, such as lighted candles, on the apparatus.
20. Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed of at a battery collection point.
21. This apparatus may be used in tropical and moderate climates up to 45°C.

## LEGAL DISCLAIMER

Music Tribe accepts no liability for any loss which may be suffered by any person who relies either wholly on or in part upon any description, photograph, or statement contained herein. Technical specifications, appearances, and other information are subject to change without notice. All trademarks are the property of their respective owners. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Oberheim, Auratone, Aston Microphones, and Coolaudio are trademarks or registered trademarks of Music Tribe Global Brands Ltd. © Music Tribe Global Brands Ltd. 2021 All rights reserved.

## LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at [musictribe.com/warranty](http://musictribe.com/warranty).

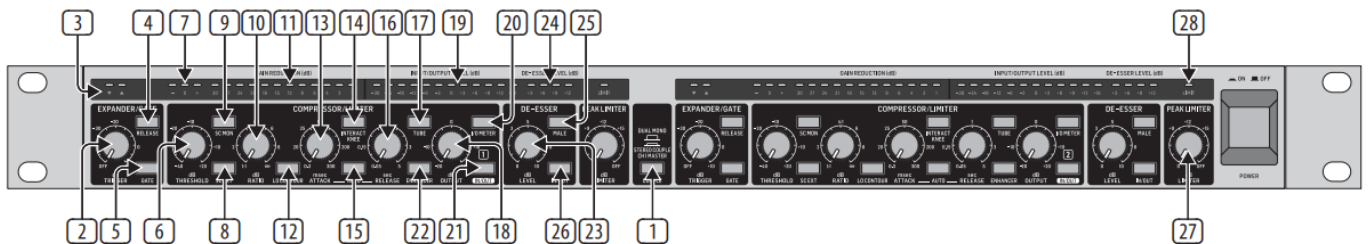
## MDX4600/MDX2600 Controls



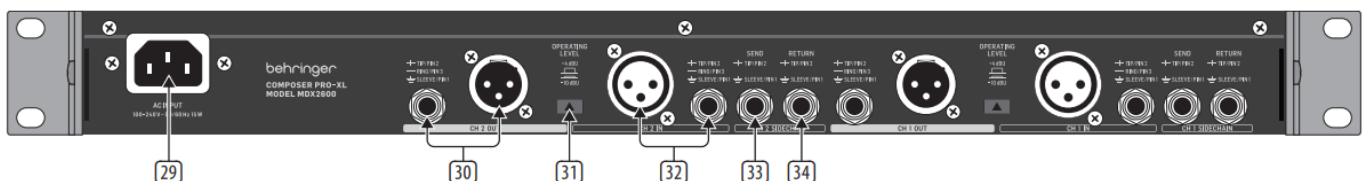
MDX4600 front panel



MDX4600 rear panel



MDX2600 front panel



MDX2600 rear panel

## Step 2: Controls

1. Pressing the **COUPLE** switch links the channels. In couple mode, dynamics are controlled by using channel 1 switches and controls, whereby the control signal is derived from the energy of both side chain channels (true stereo processing).
2. Use the **TRIGGER** control in the expander/ gate section to determine the threshold below which expansion sets in, so that signals below the threshold are reduced in gain. The setting range is from OFF to +10 dB.
3. If a signal below the adjusted value is applied, the red LED (expansion on) lights up. If the signal gain is above the adjusted value, the green LED lights up.

4. In order to adapt the expander/gate optimally to the program material, use the **RELEASE** switch to select a short or long release time. Percussive material with little or no reverb at all is usually processed with a short release time (switch not pressed). The long release time is the best choice for slowly decaying or heavily reverberated signals (switch pressed).
5. The **GATE** switch allows you to toggle between the expander (switch not pressed) and the gate function (switch pressed). Use the gate function to mute signals below the threshold (e.g. noise).
6. Use the **THRESHOLD** control to adjust the compressor threshold from -40 to +20 dB.
7. These three LEDs (MDX2600 only) indicate whether the input signal is above or below the adjusted compressor threshold. The yellow LED in the middle refers to the IKA “soft knee” range (if IKA is on).
8. Activating the **SC EXT** switch interrupts the link between the signal input and the compressor control section. At the same time, an external control signal can be fed in via the rear panel SIDECHAIN RETURN jack, taking over control of the input signal dynamics reduction.
9. The **SC MON** switch links the sidechain input signal to the audio output, thereby muting the audio input signal. For example, this allows you to pre-monitor the sidechain signal in combination with an equalizer or other device inserted into the sidechain channel.
10. The **RATIO** control determines the ratio of input vs. output level with regard to all signals exceeding the threshold by more than 10 dB. Although the compression starts earlier, the IKA characteristic ensures the smooth, inaudible onset of the gain reduction, which is why the ratio value will be reached only 10 dB or more above the threshold. It can be set continuously from 1:1 (no compression) to  $\infty$ :1 (limiter).
11. The 12-digit **GAIN REDUCTION** display (MDX4600: 8-digit) informs you about the current gain reduction applied (1 to 30 dB).
12. The **LO CONTOUR** switch activates a high-pass filter in the side-chain path and thus avoids the “pumping” effect caused by high-energy bass frequencies and their influence on the compression process.
13. Use the **ATTACK** control to determine when the compression sets in once the signal has exceeded the threshold (MDX2600 only).
14. Press the **INTERACT KNEE** switch to change from “hard knee” to IKA characteristic: Input signals exceeding the threshold by up to 10 dB will be processed with a “soft knee” characteristic. Above 10 dB the control characteristic changes from “soft knee” to a more conventional “hard knee” compression.
15. The AUTO function, which is activated with the **AUTO** switch, disables the ATTACK and RELEASE controls and derives these time values automatically from the program material.
16. The **RELEASE** control (MDX2600 only) sets the time when the original 1:1 gain is reached after the signal has dropped below the threshold again.
17. Use the **TUBE** switch (MDX2600 only) to enhance the output signal with the warm and transparent tonal character typically produced by electronic tubes.
18. The **OUTPUT** control allows you to raise or lower the output signal by max. 20 dB, so as to make up for a gain-loss caused by the compressor or limiter action. Raise the gain by roughly the same amount that it has been reduced by the compressor. The GAIN REDUCTION display (11) reads the value adjusted.
19. The 12-digit **INPUT/OUTPUT LEVEL** display (MDX4600: 8-digit) reads both the level of the incoming audio signal and the level at the dynamics processor output. The range is from -30 to +18 dB (MDX4600: -24 to +18 dB).
20. The **IN/OUT METER** switch selects whether the gain LEDs read the input signal (switch not pressed) or the output signal (switch pressed).
21. The **IN/OUT** switch activates the corresponding channel. It provides a so-called “hard bypass”, i.e. if it is OUT

or the unit is not connected to the mains, the input jack will be linked directly to the output jack (MDX2600 only). Usually, this switch is used for direct A/B comparison between unprocessed and compressed/ limited signals.

22. **ENHANCER** switch. Activates the dynamic enhancer, which boosts treble only during compression to give a more natural frequency balance.
  23. **LEVEL** control (MDX2600). Instead of an adjustable enhancer, the MDX2600 has a controllable dresser, which helps you eliminate hiss noise contained in the audio signal. The LEVEL control determines the amount of frequency suppression.
  24. **DE-ESSER LEVEL** (MDX2600). The LED chain reads the current attenuation within a range from +3 to +12 dB.
  25. **MALE** switch. This switch adapts the dresser to the male (switch pressed) or female registers (not pressed).
  26. **IN/OUT** switch. Switches the dresser on and off.
- NOTE:** The Dresser can only function while compression is being applied.
27. The peak limiter limits the signal to an adjustable level. When the **LIMITER** control is turned fully to the right, the limiter is switched off. Owing to its extremely fast “zero” attack, this circuit is capable of limiting signal peaks without any overshoot. If the signal is limited for more than 20 ms, the overall gain is reduced for about 1 s to avoid strong and thus audible limiter effects.
  28. The **LIMIT** LED lights up as soon as the limiter is on.

## Specifications

	MDX2600	MDX4600
<b>Audio Inputs</b>		
Type	XLR and 1/4" TRS connectors, servo-balanced	XLR and 1/4" TRS connectors, servo-balanced
<b>Impedance</b>		
+4 dBu	50 kΩ balanced, 50 kΩ unbalanced @ 1 kHz	50 kΩ balanced, 50 kΩ unbalanced @ 1 kHz
-10 dBV	50 kΩ balanced, 100 kΩ unbalanced @ 1 kHz	50 kΩ balanced, 100 kΩ unbalanced @ 1 kHz
Operating Level	+4 dBu / -10 dBV, switchable	+4 dBu / -10 dBV, switchable

Max. input level	+22 dBu, balanced and unbalanced	+22 dBu, balanced and unbalanced
CMRR	Typically 60 dB @ 1 kHz	Typically 60 dB @ 1 kHz
<b>Audio Outputs</b>		
Type	XLR and 1/4" TRS connectors, servo-balanced	XLR and 1/4" TRS connectors, servo-balanced
Impedance	100 $\Omega$ balanced, 50 $\Omega$ unbalanced @ 1 kHz	100 $\Omega$ balanced, 50 $\Omega$ unbalanced @ 1 kHz
Max. output level	+21 dBu, balanced and unbalanced	+21 dBu, balanced and unbalanced
<b>Sidechain Inputs</b>		
Type	1/4" TS connector, unbalanced	—
Impedance	10 k $\Omega$	—
Max. input level	+20 dBu	—
<b>Sidechain Outputs</b>		
Type	1/4" TS connector, unbalanced	—
Impedance	50 $\Omega$	—
Max. output level	+21 dBu	—
<b>System Specifications</b>		

Frequency range	10 Hz to 70 kHz, +0/-3 dB	10 Hz to 70 kHz, +0/-3 dB
S/N ratio	115 dB, unweighted	115 dB, unweighted
THD	0.02% typ. @ +4 dBu, 1 kHz, unity gain	0.02% typ. @ +4 dBu, 1 kHz, unity gain
Crosstalk	-90 dB @ 1 kHz	-90 dB @ 1 kHz
<b>Expander/Gate Section</b>		
Type	IRC (Interactive Ratio Control) expander	IRC (Interactive Ratio Control) expander
Threshold	OFF to +10 dB, variable	OFF to +10 dB, variable
Ratio	1:1 to 1:8, variable	1:1 to 1:8, variable
Attack	< 1 msec/50 dB, program-dependent	< 1 msec/50 dB, program-dependent
Release	SLOW: 100 msec/1 dB FAST: 100 msec/100 dB, variable	SLOW: 100 msec/1 dB FAST: 100 msec/100 dB, variable
<b>Compressor Section</b>		
Type	IKA (Interactive Knee Adaptation) compressor	IKA (Interactive Knee Adaptation) compressor
Threshold	-40 to +20 dB, variable	-40 to +20 dB, variable
Ratio	1:1 to $\infty$ :1, variable	1:1 to $\infty$ :1, variable
Attack/release	Manual or automatic, variable	—



Manual attack time	0.3 msec/20 dB to 300 msec/20 dB, variable	—
Manual release time	0.05 sec/20 dB to 5 sec/20 dB, variable	—
Auto characteristic	Wave adaptive compressor	Wave adaptive compressor
Auto-attack time	Typically 15 msec for 10 dB, 5 msec for 20 dB, 3 msec for 30 dB	Typically 15 msec for 10 dB, 5 msec for 20 dB, 3 msec for 30 Db
Auto release time	Typically 125 dB/sec, program-dependent	Typically 125 dB/sec, program-dependent
Output	-20 to +20 dB, variable	-20 to +20 dB, variable

#### Peak Limiter Section

Type	IGC (Interactive Gain Control) peak limiter	IGC (Interactive Gain Control) peak limiter
Level	0 dB to OFF (+21 dBu), variable	0 dB to OFF (+21 dBu), variable
Level 1 limiter type	Clipper	Clipper
Attack	“Zero”	“Zero”
Release	“Zero”	“Zero”
Level 2 limiter type	Program limiter	Program limiter
Attack	Typically <5 msec, program-dependent	Typically <5 msec, program-dependent

Release	Typically 20 dB/sec, program-dependent	Typically 20 dB/sec, program-dependent
<b>Dynamic Enhancer Section</b>		
Type	IDE (Interactive Dynamic Enhancer)	IDE (Interactive Dynamic Enhancer)
Filter frequency	2.5 kHz (lower cut-off frequency)	2.5 kHz (lower cut-off frequency)
Characteristic	A high-pass filter (6 dB/oct.)	A high-pass filter (6 dB/oct.)
Boost	Max. 28 dB @ 7.5 kHz	Max. 28 dB @ 7.5 kHz
<b>De-Esser Section</b>		
Type	VAD (Voice-Adaptive De-Esser)	—
Filter Frequencies	8.6 kHz (Female), 7.5 kHz (Male)	—
Filter bandwidth	Program-dependent	—
Level reduction	Max. 15 dB	—
<b>Power Supply, Voltage, Current Consumption</b>		
Switch-mode power supply	Auto range, 100-240 V~ 50/60 Hz	Auto range, 100-240 V~ 50/60 Hz
Power consumption	15 W	18 W
Mains connector	Standard IEC receptacle	Standard IEC receptacle

Dimensions/Weight		
Dimensions (H x W x D )	44 x 483 x 149 mm (1.7 x 19.0 x 5.9")	44 x 483 x 149 mm (1.7 x 19.0 x 5.9")
Weight	1.7 kg (3.7 lbs )	1.8 kg (4.0 lbs )

## Other important information

### Important information

1. **Register online.** Please register your new Music Tribe equipment right after you purchase it by visiting [musictribe.com](http://musictribe.com). Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.
2. **Malfunction.** Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under "Support" at [musictribe.com](http://musictribe.com). Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at [musictribe.com](http://musictribe.com). Alternatively, please submit an online warranty claim at [musictribe.com](http://musictribe.com) BEFORE returning the product.
3. **Power Connections.** Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

## FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

### Behringer

#### MDX4600/MDX2600

Responsible Party Name: **Music Tribe Commercial NV Inc.**

Address: **5270 Procyon Street, Las Vegas NV 89118, United States**

Phone Number: **+1 702 800 8290**

#### MDX4600/MDX2600

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.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

### Important information:

Changes or modifications to the equipment not expressly approved by MUSIC Tribe can void the user's authority to use the equipment.



Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.

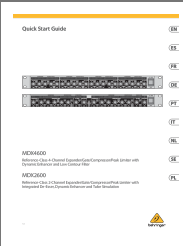
Full text of EU DoC is available at <https://community.musictribe.com/>

EU Representative: Music Tribe Brands DK A/S Address: Ib Spang Olsens Gade 17, DK – 8200 Aarhus N, Denmark



**We Hear You**



## Documents / Resources

	<p><a href="#">behringer MDX4600 Reference-Class 4-Channel Expander/Gate/Compressor/Peak Limite</a>  <a href="#">r [pdf] Owner's Manual</a>  MDX4600 Reference-Class 4-Channel Expander Gate Compressor Peak Limiter, MDX2600, 4-Channel Expander Gate Compressor Peak Limiter, Gate Compressor Peak Limiter, Peak Limite  r</p>
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## References

-  [Music Tribe](#)
-  [Music Tribe](#)