



USER MANUAL



ULTRAMIX 1502-EQ

DUAL 15 - BAND GRAPHIC EQUALIZER



**Thank you for the purchase of your BLASTKING ULTRAMIX Series Equalizer.
We know you have a world full of choices and we thank you for selecting us.**

Please read this entire user manual before operating this unit

BlastKing® products purchased in the USA are protected under the regular manufacturer's warranty. The Ultramix series comes with a 2 year warranty. This warranty is intended to protect customers from any and all manufacturer defects from two years of purchase.

The product will be replaced or repaired at the manufacturer's discretion upon receipt of the warranted unit along with a dated proof of purchase from an authorized dealer or distributor. This warranty becomes null and void under situations including but not limited to misuse, normal wear and tear, shipping damage and abuse. For international purchases, please contact your local dealer or sales associate for further warranty information.

FCC STATEMENT

NOTE: 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 technician for help.

CAUTIONS

- All operating instructions should be read before using this equipment.
- To reduce risk of electrical shock, do not open the unit. There are NO USER OR SERVICEABLE PARTS INSIDE. Please refer servicing to a qualified service technician. Opening the unit without the manufacturer authorization will void the warranty.
- Do not expose this unit to direct sunlight or a heat source such as a radiator or stove.
- Dust, dirt and debris can interfere with the performance of this unit. Make an effort to keep this unit away from dusty, dirty environments, and cover the unit when it is not in use. Dust it regularly with a soft clean brush.
- DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
- DO NOT USE ANY SPRAY CLEANER OR LUBRICANT ON ANY CONTROLS OR SWITCHES.

For warranty please register this product online at

<http://blastking.com/product-registration/>



This manual does not contain all the information about the design, production and changes of the equipment, and does not cover all the conditions that may occur during installation, use and maintenance.

The information provided in this manual is accurate at the time of delivery. It may have changed due to product updates.

FEATURES

- 4 LED Output Levels
- Switchable Boost/Cut Ranges of ± 6 or ± 12 dB
- Front Panel Bypass Switch
- 12dB Per Octave 50Hz Low-Cut Filters
- 12dB/ + 12dB Input Gain
- RF Filtered, Electronically Balanced Inputs
- RF Filtered, Impedance Balanced Outputs
- XLR and 1/4" TRS Connectors
- Dynamic Range 108db

FRONT PANEL



1 INPUT GAIN CONTROL

This control sets the signal level to the equalizer. It is capable of -12 dB to +12 dB of gain. Its effect is apparent by viewing the OUTPUT LEVEL BAR GRAPH.

2 EQ BYPASS

This switch removes the graphic equalizer section from the signal path. The BYPASS switch does not, however, affect the INPUT GAIN, or LOW CUT filters.

3 BOOST/CUT RANGE SELECTION SWITCH

This switch selects which of the two boost/cut ranges the equalizer will use, either ± 6 dB or ± 12 dB. The red LED lights when the ± 12 dB range is selected.

4 CLIP LED

This LED lights whenever any internal signal level reaches 3 dB below clipping which may occur when any of the following happen: 1) the input signal is "hotter" than +18 dBu, 2) excessive gain is applied by the input gain control, or 3) excessive boost is applied using the frequency sliders.

5 OUTPUT LEVEL BAR GRAPH

These four LEDs indicate output level of the equalizer. The red LED is 3 dB below clip-ping and is marked as +18 dBu. It monitors the level at the output of the equalizer after all other processing.

6 FREQUENCY BAND SLIDER CONTROLS

Each one of these slider potentiometers will boost or cut at its noted frequency by ± 6 dB or ± 12 dB, depending upon the position of the BOOST/CUT RANGE switch. When all the sliders are in the center detented position the output of the equalizer is flat. The frequency band centers are marked at 2/3rds of an octave intervals on ISO standard spacings.

7 LOW CUT ENABLE SWITCH

The LOW-CUT switch inserts or removes the 12 dB per octave 50 Hz low-cut filter from the signal path. When the LOW-CUT switch is pushed in, the LOW-CUT filter is IN the audio path.

BACK PANEL



8 POWER CORD RECEPTACLE

Connects AC power to the equalizer.

9 110-220VAC SWITCH

10 OUTPUT CONNECTORS

Two types of output connectors are provided for output connections: male XLR type connectors, and 1/4" tip-ring-sleeve phone jack connectors.

11 INPUT CONNECTORS

Two types of input connectors are provided for input connections: female locking XLR type connectors, and 1/4" tip-ring-sleeve phone jack connectors. The maximum input level that the equalizer can accept is typically +22 dBu (ref: 0.775Vrms).

CONNECTING THE EQ TO YOUR SYSTEM

The ULTRAMIX1502-EQ Equalizer has balanced inputs and impedance balanced outputs that can be used with any balanced or unbalanced line-level device.

To connect the equalizer to your sound system refer to the following steps:

- Turn off all equipment before making connections.
- Mount equalizer in a standard-width rack.

Install the EQ in a rack with the rack screws provided. It can be mounted above or below anything that does not generate excessive heat. Ambient temperatures should not exceed 113° F (45°C) when equipment is in use. Although the unit's chassis is shielded against radio frequency and electromagnetic interference, extremely high fields of RF and EMI should be avoided.

- Make audio connections via XLR or 1/4" TRS jacks (according to application needs). Both types of connectors for the inputs and outputs can be used for balanced or unbalanced connections. The use of more than one connector at a time for the inputs could unbalance balanced lines, cause phase cancellation, short a conductor to ground, or cause damage to other equipment connected to the equalizer. More than one output may be used simultaneously as long as the combined parallel load is greater than 2 kΩ.

- Select the operating range with the Boost/Cut range selection switch.

NOTE: Be sure to reduce audio levels at the power amplifiers when changing the setting of this switch as it may generate an audible transient.

- Apply power to the equalizer.

Connect the AC power cord to the AC power receptacle on the back of the equalizer. Route the AC power cord to a convenient power outlet away from audio lines. Since the ULTRAMIX1502-EQ equalizer consumes a relatively small amount of power, the unit may be left on continuously.

INSTALLATION CONSIDERATIONS

Hookups and Cabling: The ULTRAMIX1502-EQ equalizer is designed for nominal +4 dBu levels. The equalizer can be used with either balanced or unbalanced sources, and the out-puts can be used with either balanced or unbalanced loads, provided the proper cabling is used.

A balanced line is defined as two-conductor shielded cable with the two center conductors carrying the same signal but of opposite polarity when referenced to ground. An unbalanced line is generally a single-conductor shielded cable with the center conductor carrying the signal and the shield at ground potential.

Input Cable Configurations: The equalizer has an input impedance of 40 k Ω balanced and 20 k Ω unbalanced. This makes the ULTRAMIX1502-EQ equalizer' audio inputs suitable for use with virtually any low source impedance (under 2 k Ω).

Output Cable Configurations: The equalizer's output is capable of driving down to a 2 k Ω load to at least +21 dBu. For maximum hum rejection with a balanced source, avoid common grounding at the equalizer's inputs and outputs. Most balanced (3-conductor) cables have the shield connected at both ends. This can result in ground loops which cause hum. If hum persists try disconnecting the shield on one or more of the cables in the system, preferably at the input of a device, not at the output.

OPERATION AND APPLICATION NOTES

The ULTRAMIX1502-EQ equalizer is a useful audio signal processing tool in situations where precise frequency control is required across the audible frequency spectrum.

When used with an audio spectrum analyzer the EQ can tune any acoustical environment from the studio to the concert hall to stop ringing, increase clarity, and tailor the overall frequency response of the environment. A real-time spectrum analyzer or other types of audio environment analyzers are very useful in determining the amount of equalization needed.

Insert the graphic equalizer between the signal source (usually a mixer) and the power amplifiers (or the crossover if there is one). Adjust the level and equalization as required to yield the desired system response.

For optimum signal-to-noise response, the gain structure of the sound system must be properly set up. Each component of the sound system should be set at its nominal operating level, starting with the first element in the system, usually a mixing console. Each element should be run at its nominal operating level in order to take advantage of the maximum signal-to-noise properties of that element. Loudspeaker amplifiers, as the last element in the chain, should be set only as loud as necessary, in order to avoid inducing unnecessary noise into the system.

SPECIFICATIONS

ULTRAMIX 1502-EQ	
Inputs	
Connectors:	1/4" TRS, female XLR (pin 2 hot)
Type:	Electronically balanced/unbalanced, RF filtered
Impedance:	Balanced 40 k Ω , unbalanced 20 k Ω
Max Input Level:	>+21 dBu balanced or unbalanced
CMRR:	>40 dB, typically >55 dB at 1 kHz
Outputs	
Connectors:	1/4" TRS, male XLR (pin 2 hot)
Type:	Impedance-balanced/unbalanced, RF filtered
Impedance:	Balanced 100 Ω , unbalanced 50 Ω
Max Output Level:	>+21 dBu balanced/unbalanced into 2 k Ω or greater
	>+18 dBm balanced/unbalanced (into 600 Ω)
System Performance	
Bandwidth:	20 Hz to 20 kHz, +0.5/-1 dB
Frequency Response:	<10 Hz to >50 kHz, +0.5/-3 dB
Dynamic Range:	Typically >112 dB
Signal-to-Noise:	Typically >95 dB
THD+Noise:	<0.003%
Interchannel Crosstalk:	<-90 dB, 20 Hz to 20 kHz
Function Switches	
EQ Bypass:	Bypasses the graphic equalizer section in the signal path
Low Cut:	Activates the 50 Hz 12 dB/octave high-pass filter
Range:	Selects either +/- 6 dB or +/- 12 dB slider boost/cut range
Power Supply	
Operating Voltage:	100 - 240 VAC, 50/60 Hz
Power Consumption:	15 W
Mains Connection:	IEC receptacle
Physical Dimensions	
Weight	5.5 lbs (2.5 Kg)
Dimensions (LxHxD)	19" x 1.75" x 6" (482.6 x 44.5 x 152.4 mm)



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