

# 2231 DUAL CHANNEL 31 BAND EQUALIZER WITH TYPE III™ NOISE REDUCTION

**dbx**  
PROFESSIONAL PRODUCTS



## VISIONARY DESIGN

With a prestigious heritage extending back to our heralded 30 Series equalizers, the dbx 2231 easily lives up to the revered dbx reputation. Besides including two 31-band channels of 1/3-octave equalization, the 2231 empowers you with flexible features like our PeakPlus™ limiter circuit, and our amazing Type III™ Noise Reduction system. It also includes  $\pm 12$  dB input gain range; switchable  $+6$  or  $\pm 15$  dB boost/cut range; XLR, Barrier strip, and 1/4" inputs; nonconductive nylon sliders; and an intuitive user interface with comprehensive output and gain reduction metering. As always, the inevitable result of our meticulous attention to detail and top-quality componentry is exceptional sound, performance, and reliability.

## REVOLUTIONARY ENGINEERING

The most revolutionary feature of the 2231 is our proprietary Type III™ Noise Reduction system, which enables you to boost signal-to-noise ratios by up to an incredible 20dB. The result of this instant encode/decode process is that you're no longer forced to employ drastic EQ settings in effort to reduce system noise. Instead, you're freed to dedicate all EQ bands to the most important thing, the music. Further, our PeakPlus™ limiter technology allows you to easily safeguard your gear against hazardous dynamic surges in program material. In addition to these formidable tools, the 2231's front panel provides at-a-glance insight as to gain reduction and output level status via its four-stage LED ladders. With such power and finesse built into such a reasonably priced package, it's easy to see why dbx 20 Series equalizers are relied upon by studio and touring professionals the world over. With such affordable quality, there's no longer any excuse for compromising your sound.

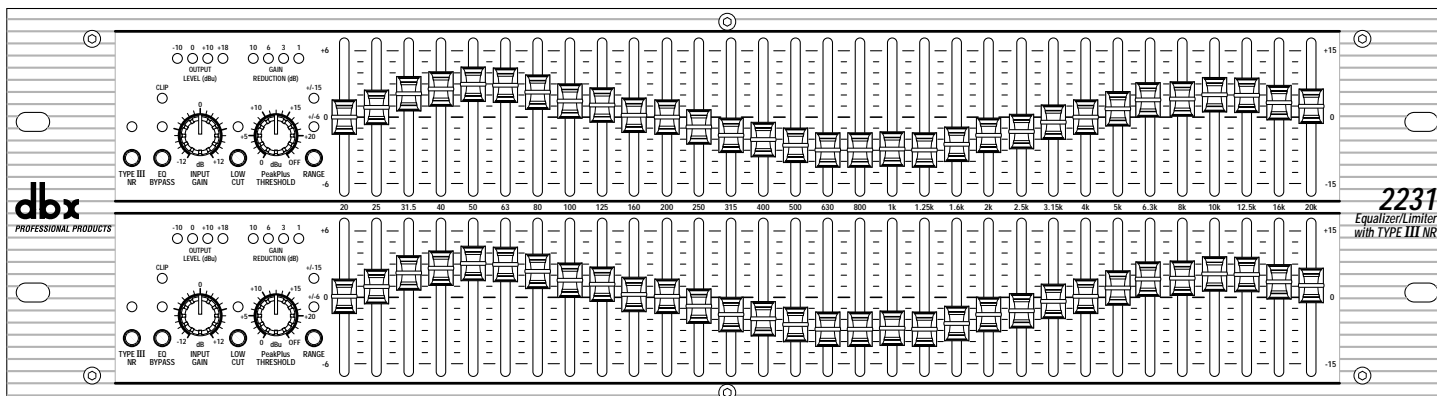
## FEATURES

- dbx's revolutionary Type III™ Noise Reduction system, which increases S/N ratio by up to 20dB
- PeakPlus™ limiting technology with threshold range from 0dBu to +24dBu (off)
- Two 31-band, 1/3-octave channels with switchable boost/cut ranges of  $\pm 6$  or  $\pm 15$  dB
- $\pm 12$  dB input gain range
- XLR, Barrier strip, and 1/4" inputs
- 4-segment LED ladders for monitoring of gain reduction and output levels—the most comprehensive visual feedback available
- Exceptional sound quality
- dbx's unmatched engineering and construction standards

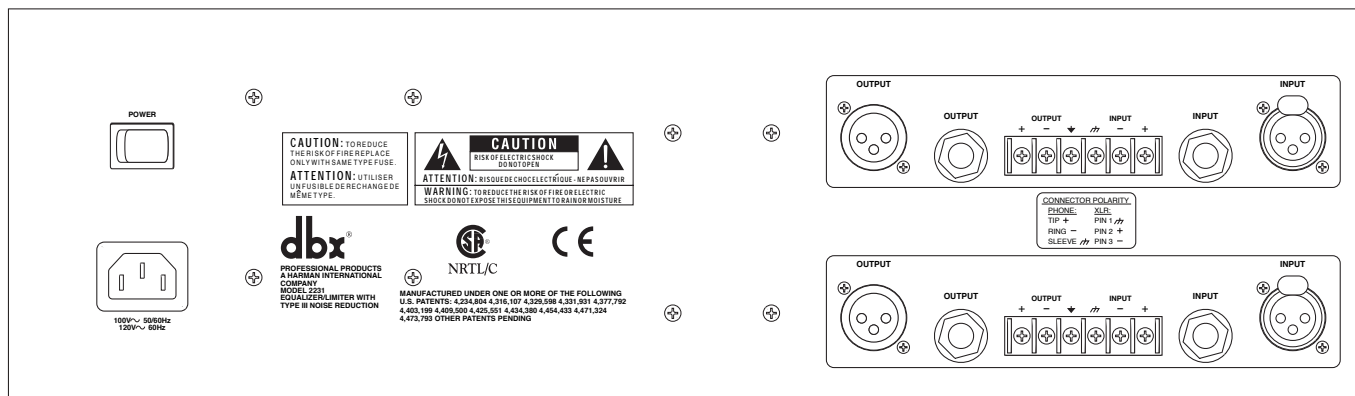
A Harman International Company

# 2231

## DUAL CHANNEL 31 BAND EQUALIZER / LIMITER WITH TYPE III™ NOISE REDUCTION



**2231**  
Equalizer/Limiter  
with TYPE III NR



### ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The graphic equalizer shall be a dual 31-band type with frequency centers on standard ISO one-third octave frequencies ranging from 20Hz to 20kHz. The boost/cut ranges shall be switchable via recessed front panel switches to either +/-6dB or +/-15dB and the selected range shall be indicated on the front panel by either two LEDs per channel. Low-noise equalization sliders having a 45mm travel shall be utilized having center detents at 0 dB. The equalizer shall have front panel 41-detent rotary input gain controls having a +/-12dB range. Bypassing the equalizer sections of the signal path shall be accomplished via front-panel switches having corresponding LEDs to indicate when each channel is bypassed. A 40Hz low-cut Bessel filter per channel with 18dB/octave slope shall be insertable in the signal path via front panel recessed switches with LEDs to indicate when the filters are active.

The graphic equalizer shall incorporate dbx Type III™ Noise Reduction providing up to 20dB of broadband noise reduction, having front panel switches to enable the noise reduction and LEDs to indicate when it is active. The equalizer shall also be equipped with dbx PeakPlus™ limiters having front panel 41-detent rotary limiter threshold controls varying from 0 to +24dB (off) and four-LED gain reduction bar graphs calibrated to read 0, 3, 6, and 10dB. Output levels shall be monitored on four-LED peak-reading bar graphs calibrated to read -10, 0, +10, and +18dBu.

Electronically balanced/unbalanced inputs shall include 1/4" TRS, female XLR, and screw terminal barrier strip, while servo-balanced/unbalanced outputs shall include 1/4" TRS, male XLR, and screw terminal barrier strip shared with the input. A circuit/chassis ground lift jumper per channel shall be strapped across circuit ground and chassis ground screw terminals and shall be removable by the user. Inputs shall be electronically balanced/unbalanced and RF filtered having a nominal input impedance not less than 40kΩ balanced and 20kΩ unbalanced, and shall accept maximum signal levels of not less than +21dBu. Outputs shall be servo-balanced/unbalanced and RF filtered having a nominal output impedance of not more than 200Ω balanced and 100Ω unbalanced, and shall be capable of driving not less than +21dBu into 2kΩ or greater and not less than +20dBm (into 600Ω) continuously.

Frequency response shall be better than 10Hz to 50kHz, +0.5/-3dB. Signal-to-noise ratio shall be greater than 90dB, referenced to +4dBu, in either boost/cut range with noise reduction disabled and shall be greater than 102dB with noise reduction enabled. THD+Noise shall be less than 0.04% with a 1kHz signal at +4dBu, while interchannel crosstalk shall be lower than -80dB from 20Hz to 20kHz.

The internal power supply shall be constructed using a thermally-fused transformer mounted in a low hum orientation and shall be magnetically isolated from equalizer circuitry by means of a mu-metal shield. The power cord shall be detachable from an international standard IEC 320 power inlet receptacle. Unit shall be constructed to meet or exceed all applicable international safety and regulatory agencies. Domestic unit shall be powered from 100VAC 50/60Hz, 120VAC 60Hz, while international unit shall be powered from 230VAC 50/60Hz. Unit shall consume no more than 28W. Housing shall be of all steel/aluminum construction and shall be rack-mountable in an IEC standard 19" rack and shall occupy a 3U (5.25") rack space. The unit shall be a dbx 2231 Ultra Quiet Equalizer/Limiter.

dbx engineers are constantly working to improve the quality of our products. Specifications are, therefore subject to change without notice.

### SPECIFICATIONS

<b>Inputs</b>	1/4" TRS, female XLR (pin 2 hot), and barrier terminal strip	<b>Function Switches</b>	Type III NR: Activates dbx Type III™ Noise Reduction
Connectors:	Electronically balanced/unbalanced, RF filtered	EQ Bypass: Bypasses the graphic equalizer section in the signal path	Low Cut (recessed): Activates the 40Hz 18dB/octave Bessel high-pass filter
Type:	Balanced 40kΩ, unbalanced 20kΩ	Range (recessed): Selects either +/-6dB or +/-15dB slider boost/cut range	
Impedance:	>+21dBu balanced or unbalanced		
Max Input Level:	>40dB, typically >55dB at 1kHz		
CMRR:	>120dB, unweighted		
<b>Outputs</b>	1/4" TRS, male XLR (pin 2 hot), and barrier terminal strip		
Connectors:	Impedance-balanced/unbalanced, RF filtered		
Type:	Balanced 200Ω, unbalanced 100Ω		
Impedance:	>+21dBu balanced/unbalanced into 2kΩ or greater		
Max Output Level:	>+20dBm balanced/unbalanced (into 600Ω)		
<b>System Performance</b>			
Bandwidth:	>120dB, unweighted		
Frequency Response:	20Hz to 20kHz, +/-0.5dB		
<b>Noise Reduction In (+/-6 and +/-12dB range):</b>	<10Hz to >50kHz, +0.5/-3dB		
Signal-to-Noise:	>102dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth		
Dynamic Range:	>120dB, unweighted		
<b>Noise Reduction Out (+/-6dB range):</b>	>94dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth		
Signal-to-Noise:	>112dB, unweighted		
Dynamic Range:	>120dB, unweighted		
<b>Noise Reduction Out (+/-12dB range):</b>	>90dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth		
Signal-to-Noise:	>108dB, unweighted		
Dynamic Range:	<0.04%, 0.02% typical at +4dBu, 1kHz		
THD+Noise:	<<80dB, 20Hz to 20kHz (2215/2231)		
Interchannel Crosstalk:	Up to 20dB of dynamic broadband noise reduction		
Noise Reduction:			
		<b>Power Supply</b>	Operating Voltage: 100VAC 50/60Hz, 120VAC 60Hz, 230VAC 50/60Hz
		Power Consumption:	28W
		Mains Connection:	IEC receptacle
		<b>Physical</b>	
		Dimensions:	3.5" H X 19" W X 7.9" D (8.9cm x 48.3cm x 20.1cm)
		Weight:	x.x lbs. (x.x kg)
		Shipping Weight:	x.x lbs. (x.x kg)
		Note:	Specifications subject to change.

