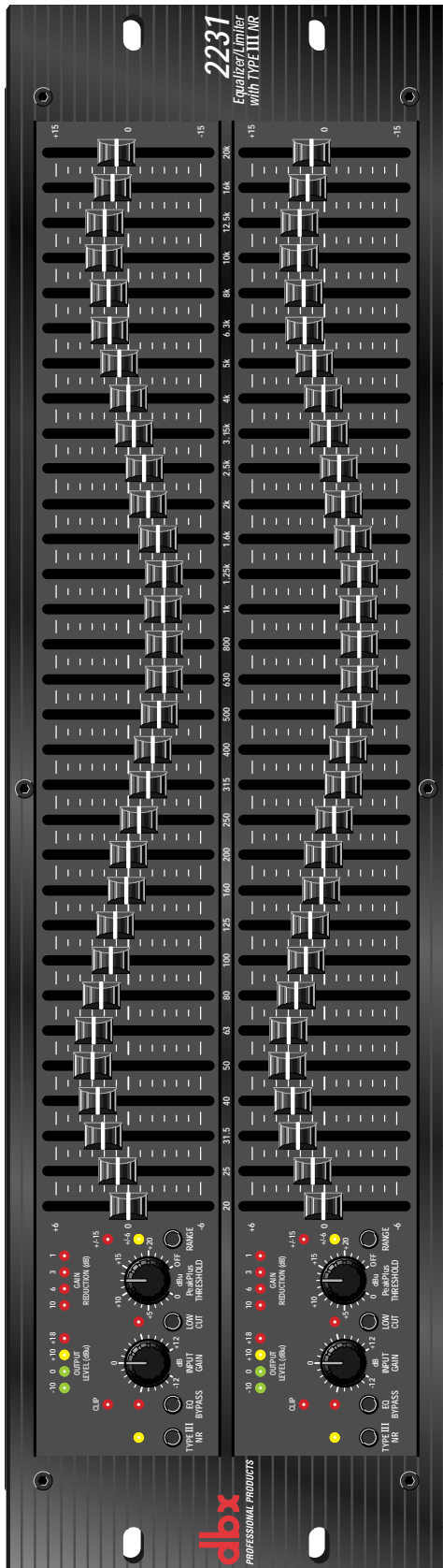


# 2231 DUAL CHANNEL 31 BAND EQUALIZER WITH TYPE III™ NOISE REDUCTION

**dbx**  
PROFESSIONAL PRODUCTS



## VISIONARY DESIGN

It's amazing. One little button. It has so much effect. The Type III Noise Reduction is an entirely new concept... virtually instantaneous encode/decode within the circuitry of the box. We started out to build the finest EQ's possible, boxes with the heritage and performance to rival our famous 30 Series EQ's. And to no one's surprise they came out awfully darn good. (Ask to see the Audio Precision plots compared to the competition.) But then, Roger (our chief engineer, a nice guy, as far as engineers go) got the crazy idea of putting this new noise reduction stuff in the box. We listened to it and were amazed. The EQ's sounded great without it but with it the performance was nothing short of incredible. Check it out yourself and see.

## REVOLUTIONARY ENGINEERING

But hey, Roger wasn't about to stop there. PeakPlus™ Limiter. Who knows more about limiting than the folks at dbx; nobody... that's who. So when the guys were developing this new series of EQ's they wanted something that would be unique to these EQ's. That's when Roger got another one of his bright ideas and said "I bet they'll work a lot better if there's a cool limiter built in." Next thing you know, all the guys are in the studio amazed at the new limiter Roger had designed specially for the 20 Series. Once again, hearing is believing... With a threshold range of 0 to +20dbu, the PeakPlus™ limiter is designed to tame your program material from the subtlest nuances to the rowdiest hits. Also, the four stage LED ladder gives you a great visual indication as to what the limiter is doing.

20 Series EQ's. You used to have to settle for second best in a reasonably priced EQ but not any more. With the new 20 Series from dbx Professional Products you get a great EQ circuit, a graceful yet powerful limiter and the revolutionary new design of the Type III Noise Reduction. Check out the dbx 20 Series graphic EQ's at your pro audio outfitter. You'll see, with the 20 Series EQ's you get **both** MORE!!!

## FEATURES

- Revolutionary patent-pending instant encode/decode Type III Noise Reduction increases S/N ratio by up to 20dB.
- PeakPlus™ Limiter (also patent pending) threshold range from 0dBu to +20dBu
- Four segment LED bargraph for BOTH Gain Reduction AND Output Level.
- Status LEDs offer visual feedback for all settings on the front panel.

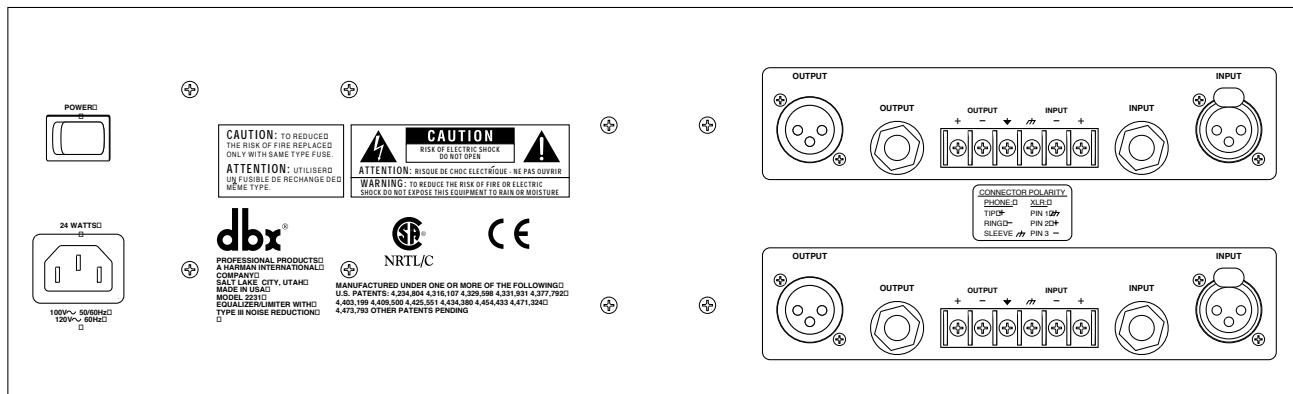
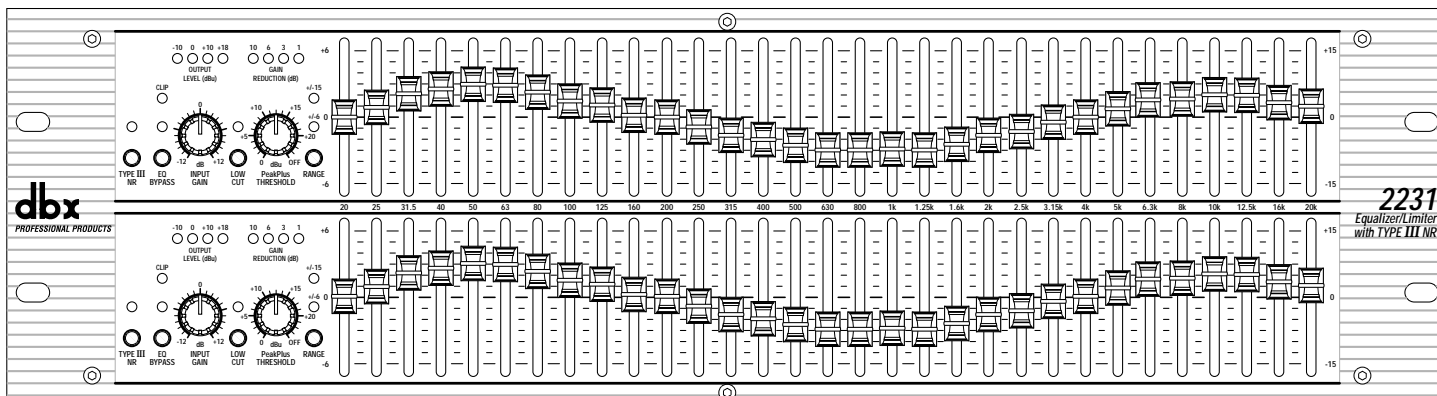
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# 2231

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



### 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 of 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 +/-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 40kS balanced and 20kS 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 200S balanced and 100S unbalanced, and shall be capable of driving not less than +21dBu into 2kS or greater and not less than +20dBm (into 600S) 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 24W. 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
Connectors:	Electronically balanced/unbalanced, RF filtered
Type:	Balanced 40kS, unbalanced 20kS
Impedance:	>+21dBu balanced or unbalanced
Max Input Level:	>+40dB, typically >+55dB at 1kHz
CMRR:	
<b>Outputs</b>	1/4" TRS, male XLR (pin 2 hot), and barrier terminal strip
Connectors:	Impedance-balanced/unbalanced, RF filtered
Type:	Balanced 200S, unbalanced 100S
Impedance:	>+21dBu balanced/unbalanced into 2kS or greater
Max Output Level:	>+20dBm balanced/unbalanced (into 600Ω)
<b>System Performance</b>	
Bandwidth:	20Hz to 20kHz, +0.5/-3dB
Frequency Response:	<10Hz to >50kHz, +0.5/-3dB
<b>Noise Reduction In (+/-6 and +/-12dB range):</b>	
Signal-to-Noise:	>102dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth
Dynamic Range:	>120dB, unweighted
<b>Noise Reduction Out (+/-6dB range):</b>	
Signal-to-Noise:	>94dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth
Dynamic Range:	>112dB, unweighted
<b>Noise Reduction Out (+/-12dB range):</b>	
Signal-to-Noise:	>90dB, unweighted, ref: +4dBu, 22kHz measurement bandwidth
Dynamic Range:	>108dB, unweighted
THD+Noise:	<0.04%, 0.02% typical at +4dBu, 1kHz
Interchannel Crosstalk:	<-80dB, 20Hz to 20kHz (2215/2231)
Noise Reduction:	Up to 20dB of dynamic broadband noise reduction

<b>Function Switches</b>	
Type III NR:	Activates dbx Type III™ Noise Reduction
EQ Bypass:	Bypasses the graphic equalizer section in the signal path
Low Cut (recessed):	Activates the 40Hz 18dB/octave Bessel high-pass filter
Range (recessed):	Selects either +/- 6dB or +/- 15dB slider boost/cut range
<b>Indicators</b>	
Output Level Meter:	4-LED bar graph (Green, Green, Yellow, Red) at -10, 0, +10, and +18dBu
Gain Reduction Meter:	4-LED bar graph (all Red) at 0, 3, 6, and 10dB
Type III NR Active:	Yellow LED
EQ Bypass:	Red LED
Clip:	Red LED
Low Cut Active:	Red LED
+/-6dB range:	Red LED
+/-12dB range:	Red LED
<b>Power Supply</b>	
Operating Voltage:	100VAC 50/60Hz, 120VAC 60Hz
Power Consumption:	230VAC 50/60Hz 23W
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.

### FOR MORE INFORMATION CONTACT:

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