



## RDB-400 INTEGRATED DIRECT BOX OWNER'S MANUAL



Congratulations! You are now the proud owner of the highest quality and most versatile direct box money can buy. The RDB-400 is designed to convert unbalanced signals such as those from electric guitars, basses, and keyboards, into a buffered balanced or unbalanced output, for direct insertion into mixing consoles and tape recorders. The unique design approach used in the RDB-400 allows the ultimate in sonic accuracy and performance. Please read this manual thoroughly to familiarize yourself with all of its features and capabilities. Thanks for choosing **Simon Systems - Simply The Best!**®

**Power Switch:** Press this switch up to turn on the RDB-400, and press down to turn it off. This switch illuminates to indicate the when the RDB-400 is powered. To avoid turn on/off thuds, always make sure to hook up output connections after powering up, and disconnect output connections before powering down. Another way to avoid power thuds is to power up/down the RDB-400 and down with volume fader down on receiving device e.g., mixing console or power amp volume.

**Input Connector:** The RDB-400 features front and rear unbalanced high impedance inputs. This convenient feature helps to eliminate cord clutter in rack mount installations. The front input supersedes the rear input. When no input is present, the input "hot" lead is shorted to ground to minimize noise.



Input Level Switch: Use the **NORM** (out) position for inputs of line level or smaller amplitude (guitars, basses, synthesizers, pre-amp outputs, microphones, etc.). Use the **SPKR** (in) position for high level signals from amplifier outputs.

Overload LED: The RDB-400 is equipped with a special peak detecting circuit which monitors the output level of the RDB-400's input stage. The LED will turn on approximately 2.5dB before this stage begins to clip. The fast attack / slow decay LED circuit will sense even transient clipping. The LED will turn off a few seconds after the overload ceases.

Output Level Switch: The **NORM** position is for use with most instruments when the output of the direct box is connected to a mixing console mic input amplifier. In this position, the output of the DB-1A is at the same level as the input, i.e. no insertion loss! The **ATT** position enables the attenuation trim pot, providing an adjustable pad. The **LINE** switch position enables the line trim pot. In this mode, the output of the RDB-400 can be connected to a line input or a tape deck, bypassing a mixing console completely!

Attenuation Trim: This control provides attenuation in 41 steps of -0dB (no attenuation), to  $-\infty$  (zero output).

Line Trim: This control provides infinitely variable gain of +6dB to +40dB, with center detent at approximately +20dB.

Outputs: The RDB-400 provides both balanced and unbalanced outputs on the front panels, as well as a second set of balanced outputs on the rear of the box. For balanced connections; pin 1=gnnd, pin 3=low, pin 2=high. The RDB-400 can be configured for pin 3 high and pin 2 low. Consult the factory for details.

### **IMPORTANT**

When using the XLR outputs in an unbalanced mode, always float the low pin (no connection). Use pin 1 for ground and pin 2 for high, pin 2=high, but leave pin 3 open. **Do not ground pin 3.** Unlike transformer outputs where the low side is grounded for unbalanced connections, the active driver should not be grounded. Although the output circuit was designed to tolerate shorts to ground, it performs much better when connected properly.

Pin 1 Switch: Provides an optional ground isolation (lift) at the output. Normally leave this switch in the **GND** position.

NOTE: Because of the variable gain / attenuation pots and the features and performance of the RDB-400, there are many other ways it can be used where other DI's cannot. For example, with the gain / att pots you can convert -10dB signal to +4dB and vice-versa. The RDB-400 can also serve as a pre-amp, distribution amp, buffer, and many other applications. Enjoy!



RDB-400 Technical Specifications\*

Frequency Response: 10Hz - 150k Hz +0, -.5 db into 1kΩ load

Total Harmonic Distortion: <.005%

Equivalent Input Noise: -108 db (normal mode)

Slew Rate: 5.88 volts/μsec

Transient Response: .3 μs

Input Impedance: 1MΩ (10.5kΩ with Speaker Level Pad In)

Output Impedance: 100Ω unbalanced, 100Ω balanced

Recommended Load Impedance: 300Ω to ∞

Maximum Undistorted Output: 9.2 VRMS Balanced into ≥ 600Ω

Attenuation Range: 0dB to -∞ in 41 detented steps

Gain Range: +6dB to +40dB, center detent at +20dB

Maximum Input Voltage: 50 volts

Maximum Voltage on XLR Output Connector: 60 volts

Power Requirements: 105 to 130 VAC; 47 to 400 Hz; 7 Watts Max

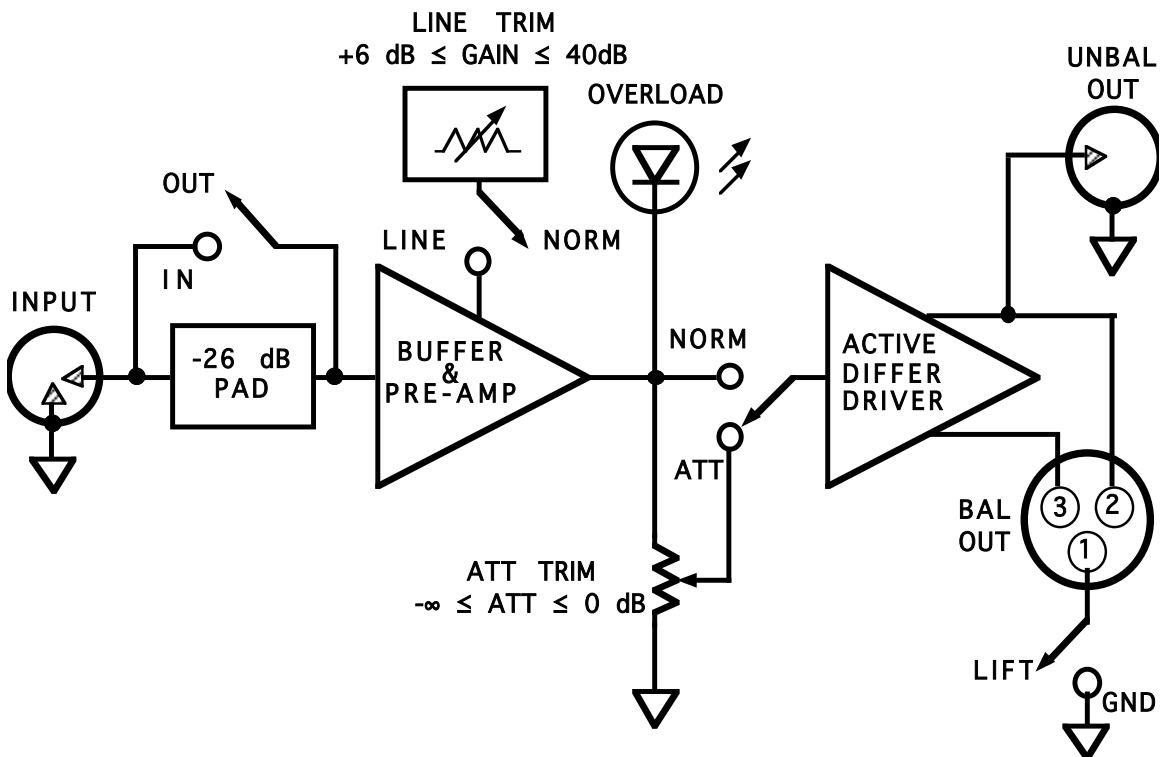
Can be configured for 220 VAC operation.

Dimensions & Weight: 3.5" High, 19" Wide, 11.5" Deep, 6 lbs.

Specifications subject to change without notice.

Simon Systems Products are Manufactured by Simon-Kaloi Engineering, Ltd.

**RDB-400 BLOCK DIAGRAM**





#### WARRANTY

Simon-Kaloi Engineering, Ltd ("SKE"), warrants this product to be free from defects for a period of one year from the date of purchase. If this product is defective under warranty, it must be returned to SKE or authorized service representative with proof of purchase (shipping costs for service are not covered by the warranty). This warranty is in lieu of all other warranties, expressed or implied, including, but not limited to, the implied warranties of merchantability or fitness for particular purpose, which are hereby expressly disclaimed. Warranty service must be performed by SKE or SKE authorized service representative. Unauthorized service invalidates the warranty.

#### LIMITATION OF LIABILITY

SKE shall not be liable for any damage due to accident, abuse, misuse, normal wear and tear, or exceeding manufacturers specifications. The only remedy for breach of warranty is repair or replacement at the sole discretion of SKE. SKE shall not be liable for any incidental or consequential damages for breach of any expressed or implied warranty. SKE shall not be liable for any damage, whether arising in tort, contract or otherwise, for any amount in excess of the dealer cost of the product. Any claims for breach of warranty or contract must be brought within one year of acceptance of the product. Notice of such claims must be received by SKE within 60 days after acceptance of the product.