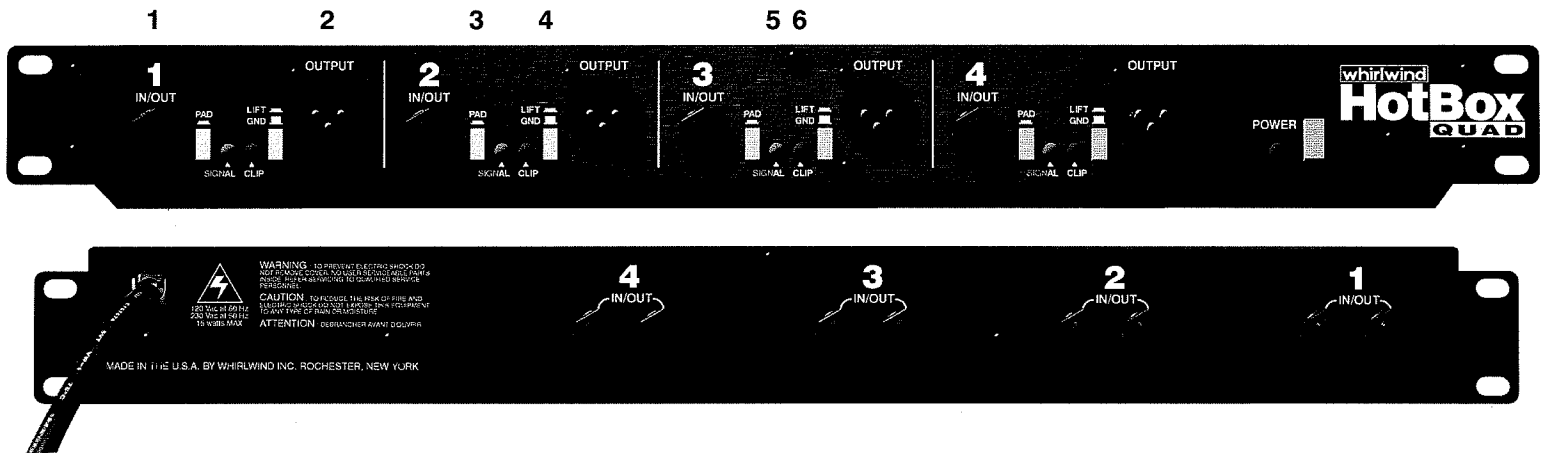


whirlwindTM HotBox QUAD



INTRODUCTION

The whirlwind HotBox QUAD Rev. 2.0 is 4 separate professional quality active direct boxes in a one space AC powered rack unit. With active high impedance inputs and true transformer isolated outputs, the HotBox Quad provides transparent signal reproduction and excellent range with mic level outputs optimized for driving long cables. For quick visual level checking the HotBox Quad has signal present and a clip LED on each channel.

UNPACKING

U.S. Audio has made every effort to ensure that your equipment is received in the same perfect condition it was when it left the factory. Please inspect your product for any signs of damage during shipping and report them to your dealer so that a claim can be made to the shipper. We recommend that you save your packing material for use in the unlikely event that you need to return your equipment for service.

CONTROLS AND FUNCTIONS

1. INPUT Each of the four individual channels has three standard 1/4" unbalanced, high impedance bridging jacks for connection to instruments and amplifiers. All are wired in parallel and can be used in any combination for input and through connections. Two are located on the rear panel with the third in front.

2. OUTPUT A three pin male XLR low impedance output is provided for each channel to connect the DI to the sound board microphone input. Pin 2 is wired in phase with the tip of the 1/4" input.

3. PAD SWITCH When switched to the in position a 20dB pad is inserted across the input. This attenuates very hot input signals such as active pickups and some keyboards. The pad only affects the balanced XLR output.

4. GROUND LIFT SWITCH In the lift position, the input ground is disconnected from pin 1 of the output XLR. This can be very useful for eliminating buzz and hum between on stage equipment and the PA system.

5. SIGNAL PRESENT LED When lit indicates that a signal is present on the designated channel.

6. CLIP LED When lit indicates that signal level is above normal and causing distortion.

WARRANTY

This product is guaranteed to be free from defects in materials and workmanship to the original purchaser for a period of 2 years from the date of purchase. Should service be required, return the unit postage prepaid along with the original sales receipt to:

whirlwind
Attention - Repair
99 Ling Road
Rochester, New York 14612

The warranty on this product shall not apply to defects or damage resulting from abuse, abnormal use or from repairs or modifications performed by anyone other than whirlwind. If it is determined a manufacturing defect has occurred, whirlwind will repair or replace the unit at our option and pay the postage back to you.

CIRCUIT DESCRIPTION

The HotBox Quad's instrument inputs are all quarter inch unbalanced jacks. One jack is on the front panel and 2 on the rear allowing for patching or permanent rack wiring. Typically a second jack is used to return the instrument signal back to stage amplifiers. After the input jacks, the signal moves to the pad switch and circuit, which offers 20dB of attenuation. The pad is completely removed from circuit when not used which eliminates loading effects. If the input signal is too great, the clip red LED will light. To eliminate clipping, either engage the pad switch or adjust the signal at the source. The signal present green LED will light with any audio signal above -40dBm in level and informs the user that a signal is present. After the input circuits, the signal is buffered and fed to the output transformer via a high current drive circuit. The transformer's output is directly wired to pins 2 and 3 of the male XLR output jack. The ground lift switch breaks pin 1 of the output jack from the ground of the Hotbox Quad offering a true ground lift. With a 0dB input, the Hotbox Quad with output either -20dB or -40dB (with pad in).

Quarter inch jacks are all parallel wired with the rings connected to the sleeve to increase ground conductivity. A low value capacitor to ground and RF bead in series with the signal provide RF frequency trapping.

A T style pad creates an overall impedance of 11.1k ohms. The pad in/out switch is a double pole style, completely switching the input and output of the pad, eliminating parallel impedance loading. After the pad, the signal goes into an op amp buffer which has an input impedance set at 1 meg ohms. The buffer's output drives 3 circuits, the transformer driver IC, signal present circuit and signal clip circuit.

The transformer drive circuit is a high current IC running into the transformer primary. The transformer is a high to low style (20k to 150 ohms), PC mounted, with a faraday shield for RF rejection. A grain oriented can and the steel rack enclosure act as a double shielding system to keep out unwanted magnetic fields (either hum or RF). The transformer secondary is directly connected to the output male XLR pins 2 (hot/+) and 3 (cold/-) maintaining high common mode rejection. Pin 1 lift is accomplished with a ground lift switch, completely isolating instrument grounds from the grounds of the mixing board.

The Hotbox Quad is powered by AC mains only. Internal jumpers are available for 120V -60Hz or 230V -50Hz configuration (soldering required). The DC power supply is 18V bipolar, with distributed filtering at all the critical points in the circuitry. The power switch connects and disconnects both hot and neutral in the AC line. A power LED illuminates when the unit is connected to live AC and the power switch is in.

SPECIFICATIONS

Frequency Response	-1.2dBm at 20Hz -.002dBm at 20kHz + or -3dBm 11Hz to 65kHz
Input Impedance	1 Meg ohm with pad off 11.1 K ohm with pad on
Maximum Input Level	+22dBm with pad off +42dBm with pad on
Output Impedance	150 ohms balanced
Maximum Output Level	+22dBm into 600 ohms
Rise Time	5 u S
T.H.D. +n	.006% at 1kHz < .055% 20Hz-20kHz
Noise	-110dBm
Channel Separation	> 100dBm 20Hz-20kHz
Pad Attenuation	20dBm
Power Consumption	11 Watts Max
Dimensions	19" X 1.75" X 4" Depth
Unit Weight	4.5 Pounds

SUBJECT TO CHANGE WITHOUT NOTICE

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BLOCK DIAGRAM

