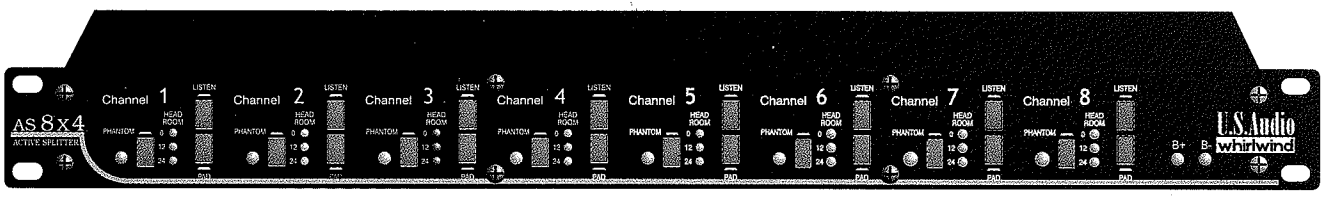
U.S.Audio
whirlwind

OPERATIONS MANUAL

AS8x4
ACTIVE SPLITTER



INTRODUCTION

The Whirlwind AS8X4 microphone splitting system provides a new level of versatility for systems requiring 5-way mic splitting for as few as 8 or as many as 80 channels. This system is based on rack mount modules, each having the capability of splitting 8 mic channels to 1 direct (passive) and 4 active destinations. A pair of high quality Luhndahl transformers on each channel provide superior noise rejection and balancing, making this unit the ideal choice for applications where extremely long cable runs are required. Each channel features push-buttons for engaging a 20dB input pad, 48V phantom power and a button for placing the channel into "Listen" mode, which sends it to a headphone monitoring buss. A three step LED monitors available headroom. All connections are made via Phoenix terminal strips for easy, solderless, on site termination. Internal dip switches are provided for each channel which set ground lift status and provide 20dB, 30dB or 40dB of gain boost. Three power supplies are available, each powers a different number of AS8X4 modules.

UNPACKING

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

DESCRIPTION OF BLOCK DIAGRAM

All audio input and output connections are done via plug-in, Phoenix style, screw terminal strips. Each inline strip accommodates 4 channels. On the back panel, the inputs and each ISO output are grouped separately. The plug-in strips allow termination of wire ends without the splitter unit present and provide for quick and easy connect/disconnect. The Direct IN/OUT terminations, which accept a mic level input, are used for generating a direct-wired parallel output should a 5-way splitter be desired.

Each channel has its own phantom power on/off switch with LED indicator. When engaged, 48 volt phantom power is placed on the Direct IN/OUT + and - terminals. The individual phantom power on/off switches allow worry free hook up to electronic equipment not able to block the 48 volts DC.

The input signal passes thru a 20dB pad. This allows input of line signal levels up to +20dBm. After the 20dB pad, the signal is amplified 20, 30, or 40dBm by the microphone preamp. This low noise preamp provides 20dB of gain minimum, and adds only a few dB of noise. When used with the 20dB pad on the transformer input for unity gain, the unit delivers 116dB maximum signal to noise ratio. Therefore, with 20dB of headroom, the AS8X4 provides 96dBm "working" signal to noise ratio.

Following the microphone preamp, the signal is distributed to 4 sections - Iso1-2 driver, Iso3-4 driver, Headroom circuit, and Cue buss circuit.

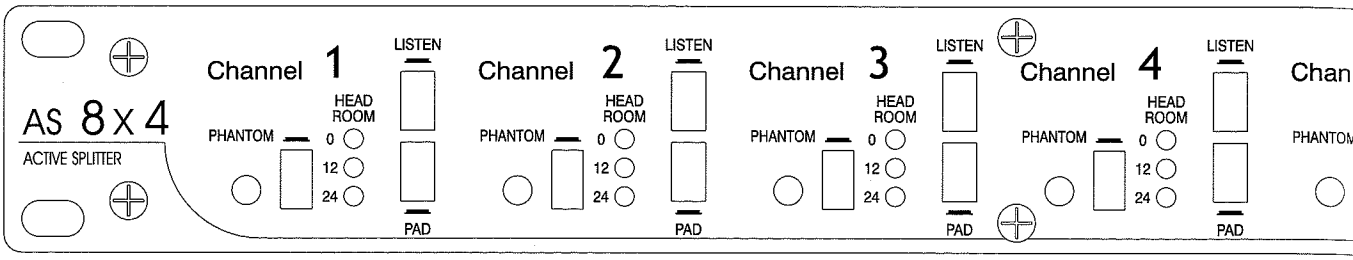
The Iso outputs are broken into 2 identical sections, Iso 1-2 and Iso 3-4. The signal passes through a receiving op-amp to a 20dB T pad that is user selectable (internally) on or off. With the mic preamp at 20dB of gain and the T pad engaged and attenuating 20dB, unity gain is preserved. This is the factory default setting. A mic to line level conversion (20-40dB of gain) is done with the T pads off. By utilizing various combinations of settings, the overall gain structure can be set from 0 to 40dB in 10dB increments. Each group (1-2 and 3-4) can independently have the T pad engaged, allowing one to send hotter signals down longer lengths of cable.

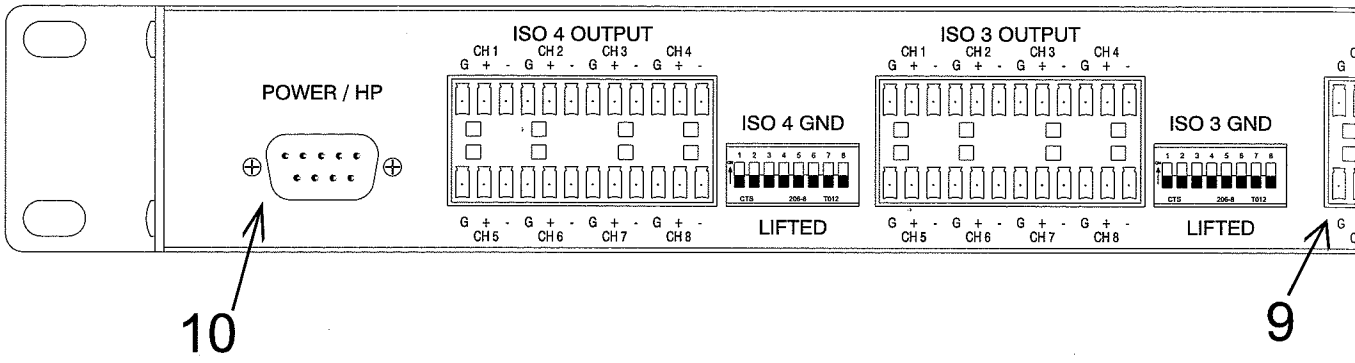
From the T-pad, signal is input to a Lundahl 1581XL dual secondary transformer, which balances the signal and provides two isolated outputs to the rear panel screw terminals. This PC mount transformer offers excellent performance with low distortion and high noise immunity.

The Headroom indicator displays the amount of headroom left before clipping. 0, 12 and 24dB headroom LEDs visually indicate headroom and show signal level problems quickly.

The Listen momentary switch on the front panel places the signal from that channel on the cue buss. The cue buss signal is sent to the Headphone and VU monitor, located with the fuse panel on the power supply. There, it may be listened to on headphones and metered in dB by the VU meter.

Power for the AS8X4 units is delivered through male to female 9 pin Dsub cables that connect the power supply/monitor panel to the individual AS8X4 enclosures. Each unit receives +15Vdc, -15Vdc +48Vdc phantom and ground from the main supply. The audio signal to the cue buss also travels through this connection. There are individual fuse inside each AS8X4 unit as well as power buss fuses on the power supply/monitor front panel.





CONTROLS AND CONNECTIONS

1. Phantom power LED indicates 48v applied to the corresponding channel on the rear input/output connector.

2. Phantom power switch turns on the phantom voltage to each channel.

3. Headroom indicator LED stack shows signal strength and remaining headroom before channel clipping.

4. Listen switch (momentary)sends the audio from the selected channel to the meter and headphone amp on the monitor panel.

5. Pad switch applies a 20dB pad to the input of the channel when depressed.

Dsub Pinout=
1,6 Ground
2,7 Positive voltage rail
3,8 Negative voltage rail
4,9 Phantom voltage rail
5 Monitor audio buss
Chassis= Earth ground

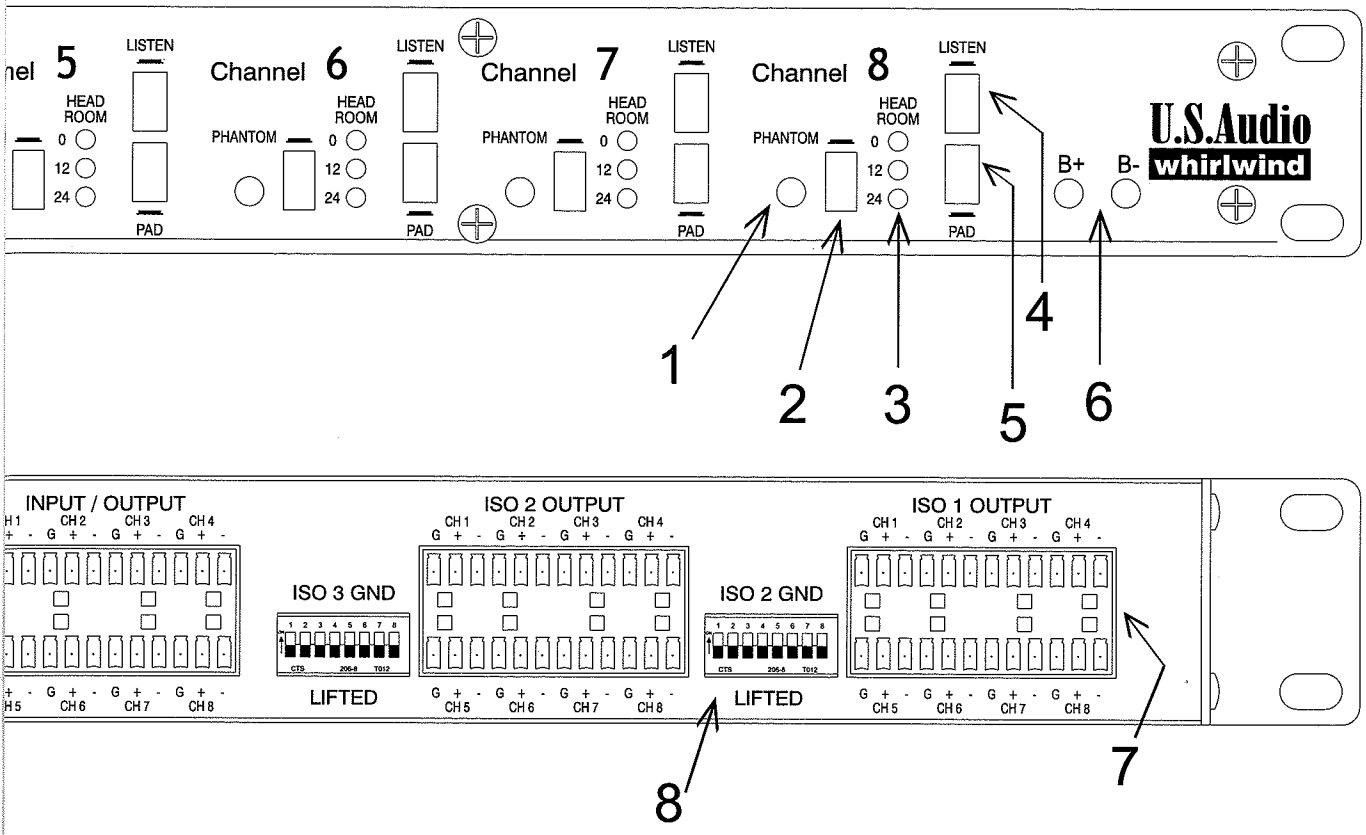
6. Power indicator LEDs illuminate to show power is present at the unit. There are internal fuses which, if blown, prevent the power LEDs from lighting.

7. Output header connector delivers the mic level transformer isolated output signals to the mating 12 position plug connectors (Whirlwind # Term12 plug) Phoenix #1803675

8. Ground lift switches disconnect the audio circuit ground from each channel's shield connection (G) but leave the transformer's Faraday shield attached to the terminal.

9. Input/Output header connector is the mic level input to the splitter unit. Paralleling wires to the Term12plug can provide a direct output. Phantom power is applied to this connector.

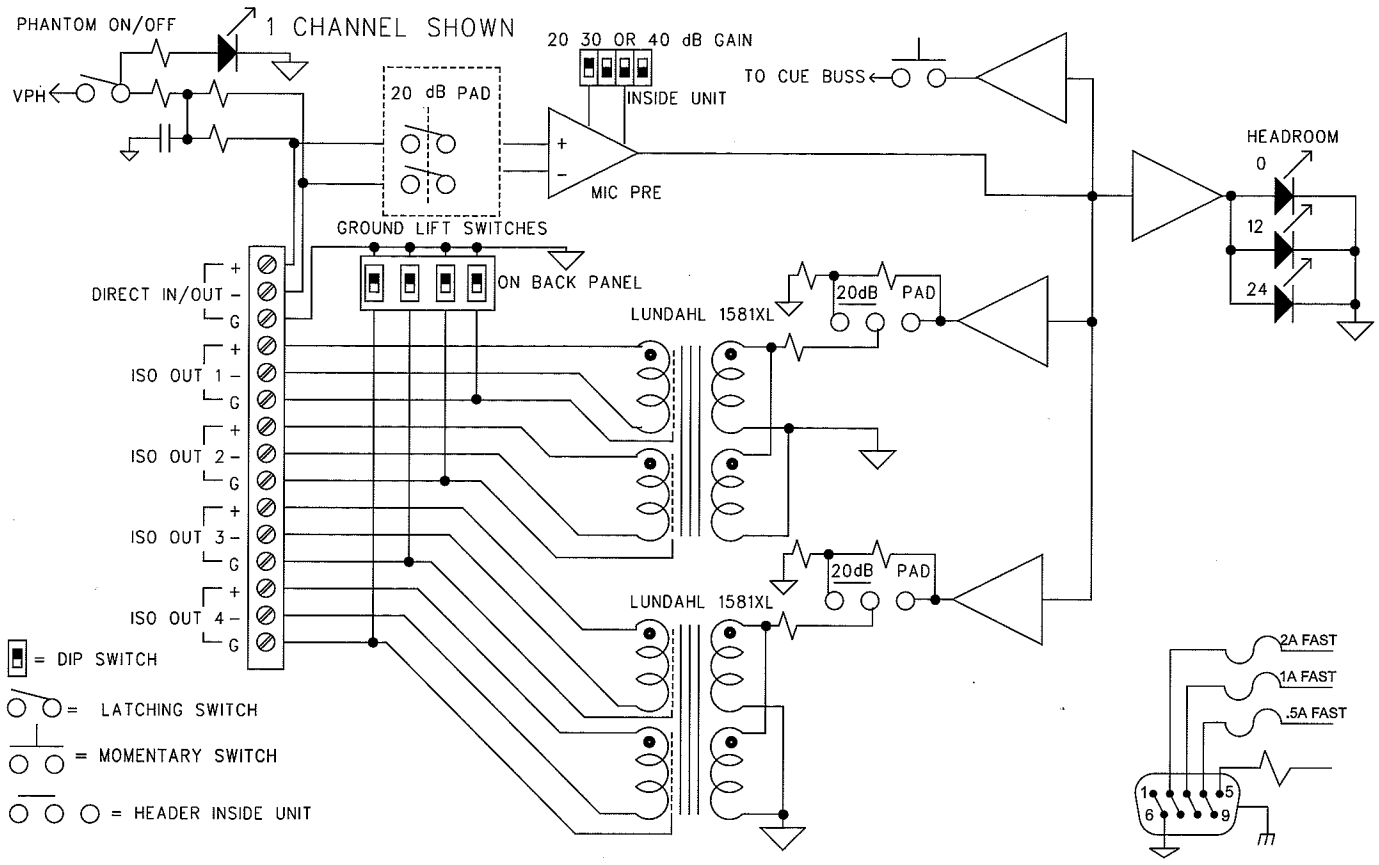
10. Power/HP connector connects with 9 pin Dsub m-f cables to the monitor/power supply panel. (See pinout at left)



FEATURES

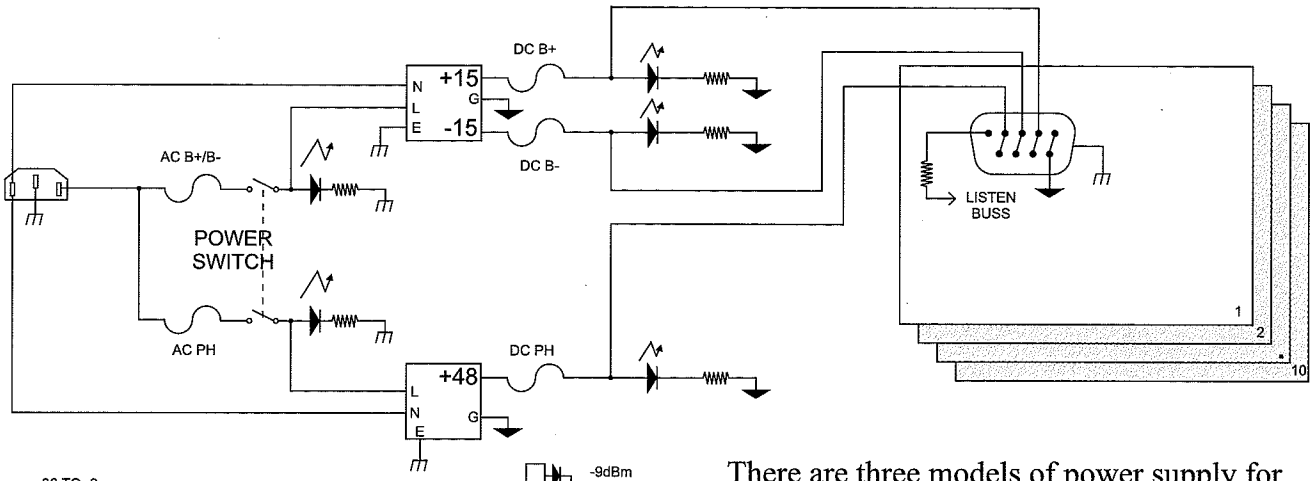
The As8x4 is a 1 rack space, 8-channel active microphone splitter providing 4 isolated outputs per channel. It features:

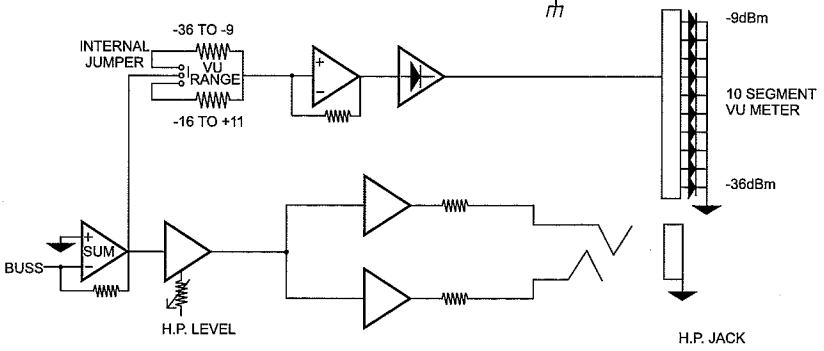
- Professional quality mic preamps driving quality Lundahl LL1581XL transformers. This eliminates microphone loading effects characteristic of passive splitters.
- 4 Transformer isolated outputs optimized for transmitting audio down long cables.
- All I/O connections via plug-in Phoenix style screw type terminal strips.
- 48 Volt phantom power with on/off switch and indicating LED provided on each channel.
- 20dB input pad.
- Listen (cue) feature on each channel.
- Ground lift switches on all isolated outputs.
- Internal switches allow 3 different gain settings of the mic preamp.
- 2 additional internal jumpers (user changeable without soldering) engage post mic preamp 20dB pads for flexibility in setting different gain structures for various cable lengths.
- Up to 80 channels of split are possible with multiple units and the appropriate power supply.
- Modular design allows for future expansion and individual units are easily changed in the unlikely event they need servicing.
- Power supply and monitor are in a separate unit and utilize various wattage supplies, depending on the number of channels in the system.
- Monitor section features a high power headphone driver and VU meter for instant cuing of individual channels.



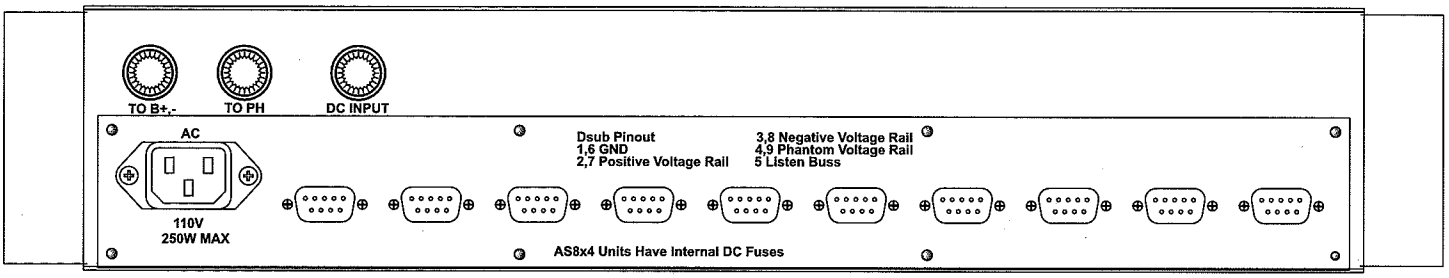
INTRODUCTION

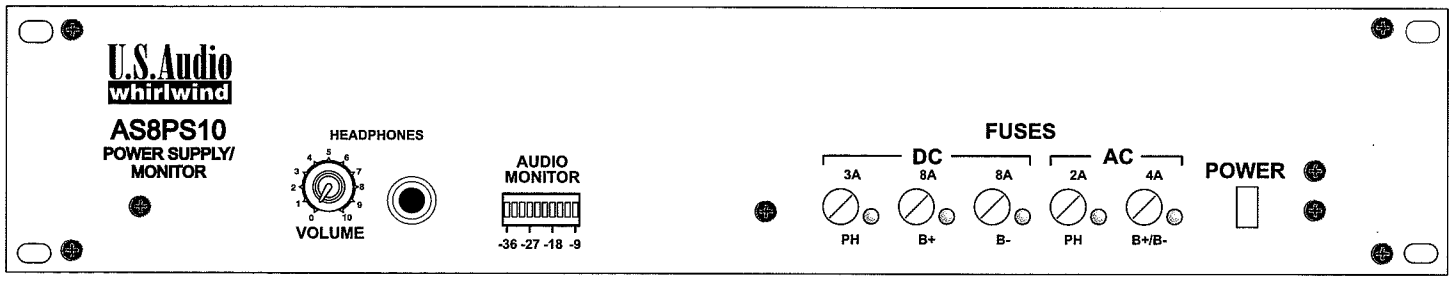
Frequency response	± .15dBv 31Hz -18KHz, -3dBv at 20Hz, -1.53dBv at 20KHz
Total harmonic distortion + noise	.00019 % at 1KHz -14dBv
Phase shift	.4 degrees at 1KHz
Equivalent input noise	120dBv
Total gain	40dBv
Gain of microphone preamp	20, 30 or 40dBv selectable
Common mode rejection of input	90dBv at 60Hz
Maximum input level	0dBv
Input impedance	1.2K Ohms
Maximum output level	+22dBv
Output impedance	80 Ohms T pad on, 22 ohms T pad off
Headphone output impedance	13 Ohms
Minimum impedance of headphones	30 Ohms
Noise at unity gain	-116dBv
Noise at 40dBv of gain no T pad	-80dBv
Noise at 30dBv of gain no T pad	-89dBv
Headroom LED threshold	0, -12 -24dBv
Phantom power	+ 48 volts DC
Max output of headphones at 30 Ohms	+8dBv





There are three models of power supply for the AS8x4 splitters, configured with the appropriate wattage for the number of AS8x4 units required. TheAS8P4 (4units) and the AS8P6 (6units) are 6 space rack enclosures that house the power supply, the fuse panel and the audio monitoring electronics. The AS8P10, for systems requiring more than 48 channels, has a 2 space rack enclosure for the audio monitor and the fuse panel and a separate 8 space rack enclosure containing the power supply. The AS8P10 will power a maximum of 10 units, equaling 80 channels.





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