



SL424USB Studio/Live Mixer

## **OPERATING MANUAL AND USER GUIDE**



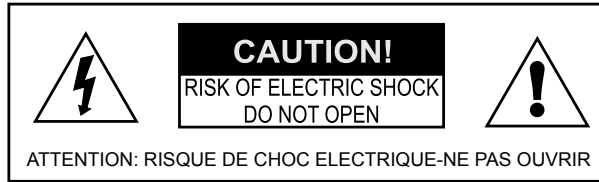
[www.wharfedalepro.com](http://www.wharfedalepro.com)



## IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

1. Read these instructions
2. Follow all instructions
3. Keep these instructions
4. Heed all warnings
5. Do not use this apparatus near water
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of a polarised or grounding plug. A polarised plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding blade. The wide blade or the third blade is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at the plug, receptacle and or the point where it exits from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Only use a stand, tripod, bracket or rack specified by the manufacturer, or sold with the apparatus. When a rack is used, use caution when moving the rack and apparatus combination to avoid tip-over or injury.



13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way including but not limited to power supply cord or plug damage, liquid ingress, foreign objects in the chassis, exposure to rain/moisture or impact damage. In addition the unit must be serviced when you experience any abnormal operation.
15. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not attempt to perform any servicing other than that contained in the operating instructions unless you are qualified to do so. In addition opening the casing will result in your warranty becoming null and void.
16. Do not install this apparatus in a confined space such as a book case or similar unit. Good ventilation should be maintained around the apparatus. Any vents, air-inlets or fans should not be obstructed by objects such as paper, table-cloths, curtains etc.
17. WARNING: To reduce the risk of fire or electric shock, do not expose the apparatus to rain or moisture. The apparatus should not be exposed to dripping or splashing and objects filled with liquids, such as vases, should not be placed on the apparatus.
18. WARNING: The mains plug/appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.



19. The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
- Warning: To reduce the risk of electric shock, do not remove the cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.
  - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.
20.  (Protective earthing terminal) The apparatus should be connected to a mains socket outlet with a protective earthing connection.
21.  Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use local return and collection systems or contact the retailer where the product was purchased. They can take this product for safe environmentally friendly recycling.

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## INTRODUCTION

The Wharfedale Pro SL424USB Professional Mixer is the result of many years of experience in the use, design and manufacture of professional sound reinforcement products. We take great pride in engineering and building every Wharfedale Pro product and wish to thank you for entrusting us with your sound.

From the time Gilbert Briggs built his first loudspeaker in 1932, to the present, Wharfedale Professional products have maintained the same standard of quality in components, workmanship and performance. Wharfedale are one of a few present day manufacturers that design, engineer and build all of their own electronics.

Please take a few minutes to read this manual completely in order to ensure that you get the most out of your SL424USB Mixer.

## ABOUT THE SL424USB MIXER

The SL424USB is a high quality mixer designed to provide the best sound and features in a compact package. It is designed to provide transparent and accurate mixing capability in an easy to use package.

The mixer features 4 microphone/line inputs (channels 1-4). Each of these channels features low, mid and high EQ, balanced inputs, and a full duplex USB playback and recording interface.

The stereo channels (channels 5/6 and 7/8) allow you to mix external devices into the show with ease.

Easy to transport and quick to set up, the SL424USB Mixer is the ideal choice for the serious professional.

## SL424USB OVERVIEW

The SL424USB Mixer is a full featured multi-channel mixer designed to deliver the highest quality sound for the best value. It is an ideal solution when you are looking for a high quality, cost effective compact audio mixer for personal studio and live applications.

This 8-channel model was built to suit a variety of applications, from desktop recording and AV production to smaller live performances. The Wharfedale SL424USB mixer offers a no-nonsense mixing platform for use anywhere quality sound is required. The layout of the controls is straightforward, so first time users can be up and mixing in no time. Features like Mic and line inputs and outputs, accurate 6-segment meters, Stereo Effects returns, Aux sends, Control Room outputs for Left and Right Channels (to go to a separate amplifier, perhaps in a recording control room) 3 band EQ, phantom power as well as a 1/4" headphone output provide added mix and monitoring flexibility.

## FEATURES

- ◆ High Quality Multi-Channel Mixer
- ◆ 16-bit 48kHz USB recording interface
- ◆ 8 Channels
- ◆ Channels 1 – 4
  - XLR + TRS balanced inputs
  - Gain adjustment
  - 80Hz High Pass Filter
  - 3 band (Low/Mid/High) EQ
  - 1 Aux send
  - EFX level control
  - L/R pan control
  - Phantom Power
  - Peak LED
- ◆ Stereo Channels 5/6 – 7/8
  - TRS balanced inputs
  - +4/ -10dB switch
  - EFX level control
  - Pan adjustment
- ◆ Control Room Sends (L/R)
- ◆ USB to Mix Switch
- ◆ USB to Headphones/ Control Room Switch
- ◆ Effects to Aux Switch
- ◆ Headphone Outputs (TRS) with level control

# SL424USB FRONT PANEL



## CONNECTIONS/WIRING

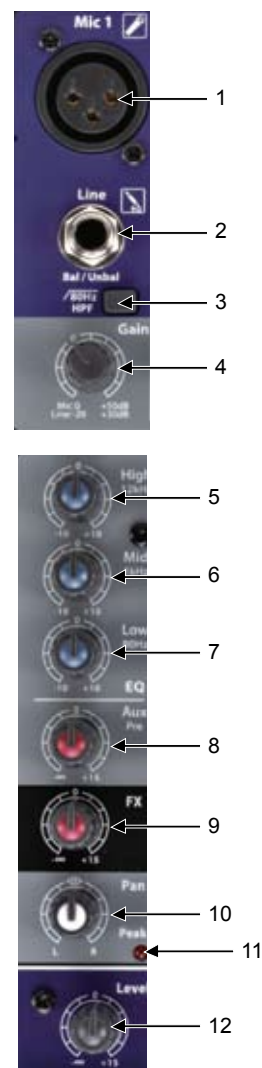
The SL424USB input panel has one XLR plus one TRS connector for each of the first 4 channels and TRS connectors for Channels 5–8. Be sure to use a high quality shielded cable with suitable connectors when connecting balanced sources.

### Channels 1 – 4:

Balanced XLR microphone and line inputs make it easy to plug microphones into the mixer. Plug in your mics, making sure the output volume is low with PAN and all EQ controls in the center detent position with GAIN controls all the way down.

For best results, the gain throughout the system should be matched from one device to the next.

- 1 **Mic** (XLR connector) Balanced input +4dB
- 2 **Line:** Use this input for audio interfaces and other line level devices
- 3 **HPF:** High Pass Filter (24 dB/octave. -6dB @ 80 Hz & -30dB @ 20 Hz) cuts low frequencies.
4. **Gain:** This allows you to calibrate the channel to different sources and apply correct gain structure.
- 5 **High EQ:** Centered at 12kHz. ±10dB of gain.
- 6 **Mid EQ:** Centered at 1kHz. ±10dB of gain.
- 7 **Low EQ:** Centered at 80Hz. ±10dB of gain.
- 8 **Aux Pre:** Sends signal to the Aux output. It is post fader so the output level changes with the Channel Volume level
- 9 **FX:** Allows you to adjust the amount of the effect sent to an external effects processor,
- 10 **Pan:** Allows you to adjust the spatial placement of the channel.
- 11 **Peak LED:** This LED lights when the level of the input signal is too high. It is a good practice to only allow this light to flicker, not constantly glow.
- 12 **Level:** Adjust the level of the channel signal to the Main Mix Level control.

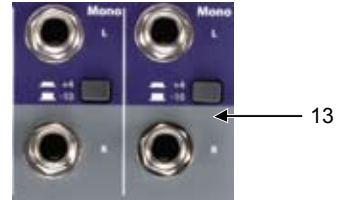




**CHANNELS 5/6 – 7/8:**

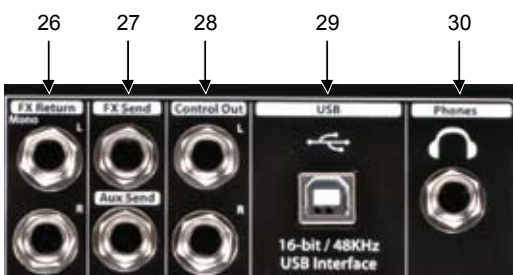
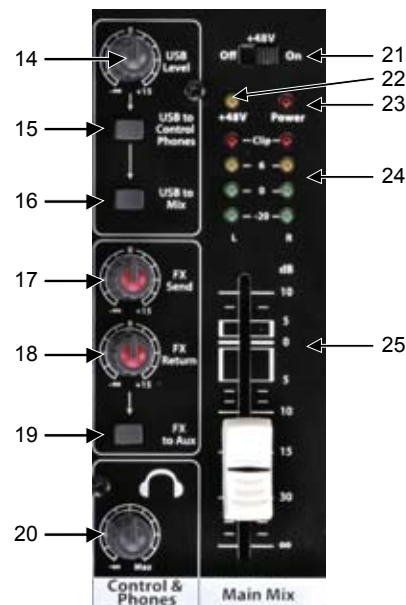
These channels allow you to plug stereo line level devices (digital keyboards, sequencers, interfaces etc.) into the mixer.

- 13 **+4 / -10dB switch:** to get the best signal to noise ratio when plugging in various instruments and outboard gear.



**STEREO EFFECTS RETURN**

- 14 **USB level:** Adjusts the signal level of the USB playback.
- 15 **USB to Main Mix:** Send the signal from the USB input to the Main Mix output jack.
- 16 **USB to CR & Phones:** Send the signal from the USB input to the headphone and CR output jacks.
- 17 **FX Send:** Adjust the level of the signal sent to the FX output jack.
- 18 **FX Return:** Adjust the level of the FX return input.
- 19 **FX to Aux:** Routes the FX send bus to the Aux bus.
- 20 **CR & Phones:** Adjust the signal sent to the headphone and Control Room outputs
- 21 **+48V:** Phantom Power switch for condenser microphones
- 22 **Phantom Power (+48v):** Indicates global +48V supply
- 23 **Power LED:** Indicates AC input and operation
- 24 **Output Meter + Clip LED:** Displays the output level of the Main Mix and if the Main Mix signal is clipping.
- 25 **Main Mix:** This allows you to adjust the level of the signal going to the Main Mix output jacks
- 26 **FX Return:** Connect the output of an outboard effect processor to this input jack.
- 27 **FX Send:** Connect to the input of the outboard effect processor.
- 28 **CR Out:** Connect to the inputs of an external amplifier or powered speaker.
- 29 **USB Connector:** Connects to your computer for playback and recording.
- 30 **Phones:** For connecting stereo headphones.
- 31 **Main Output:** Balanced outputs; TRS and XLR jacks
- 32 **AC POWER IN:** Use the standard supplied IEC mains power cable.
- 33 **POWER:** Switch the SL424 on or off. Be sure you turn it on BEFORE switching equipment connected to the output sends.



### **Follow these few steps and you are on your way to a great sounding mix!**

- Set the first channel LEVEL control in the “12 o'clock” position. All others down (-∞)
- Speak into your mic (or start source material) and while watching the metering, slowly increase the level using the GAIN control at the top of the channel. The CLIP (RED) LED should only flicker.
- Adjust the EQ , keeping in mind that EQ adjustment will affect the output level.
- If the CLIP LED illuminates constantly, turn the GAIN control down (anti-clockwise) until the LED flickers.
- Repeat for each channel used.
- Adjust the MAIN MIX control so that the CLIP LED only flickers – AVOID CONSTANT ILLUMINATION!
- Once the mixer has an acceptable gain structure match each device in the signal chain, from the mixer to the amplifiers. Your target will be to get each device working at its optimum level, resulting in a mix with a good signal to noise ratio.

## **USB INTERFACE**

The USB connector enables computers with USB connectivity to interface directly with an SL Series mixer for full duplex recording and playback. In recent years the introduction of USB connectivity has ushered a new appreciation of the capabilities of computer audio, helping to fuse both digital and analogue and open up endless possibilities for the recording musician.

The internal AD (Analogue to Digital) and DA (Digital to Analogue) converters are 16-bit/48KHz enabling recording and playback above CD quality, ensuring that recordings that you make with an SL Series Mixer have outstanding quality.

The SL Series are fully class compliant and require no drivers when used with modern operating systems. Mac OSX, Windows XP, Vista and 7 will require no additional driver software.

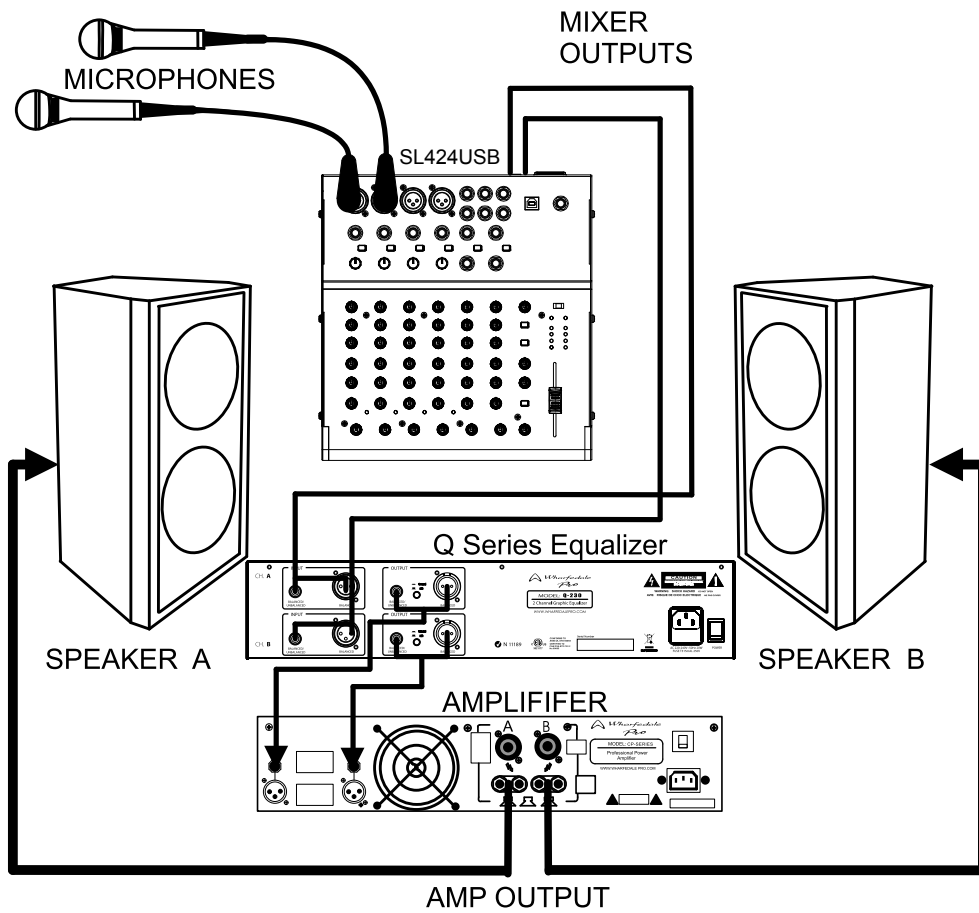
### **Windows XP Installation**

Simply choose the device in the following location: Start/Settings/Control Panel/Sounds and Audio Devices/Audio

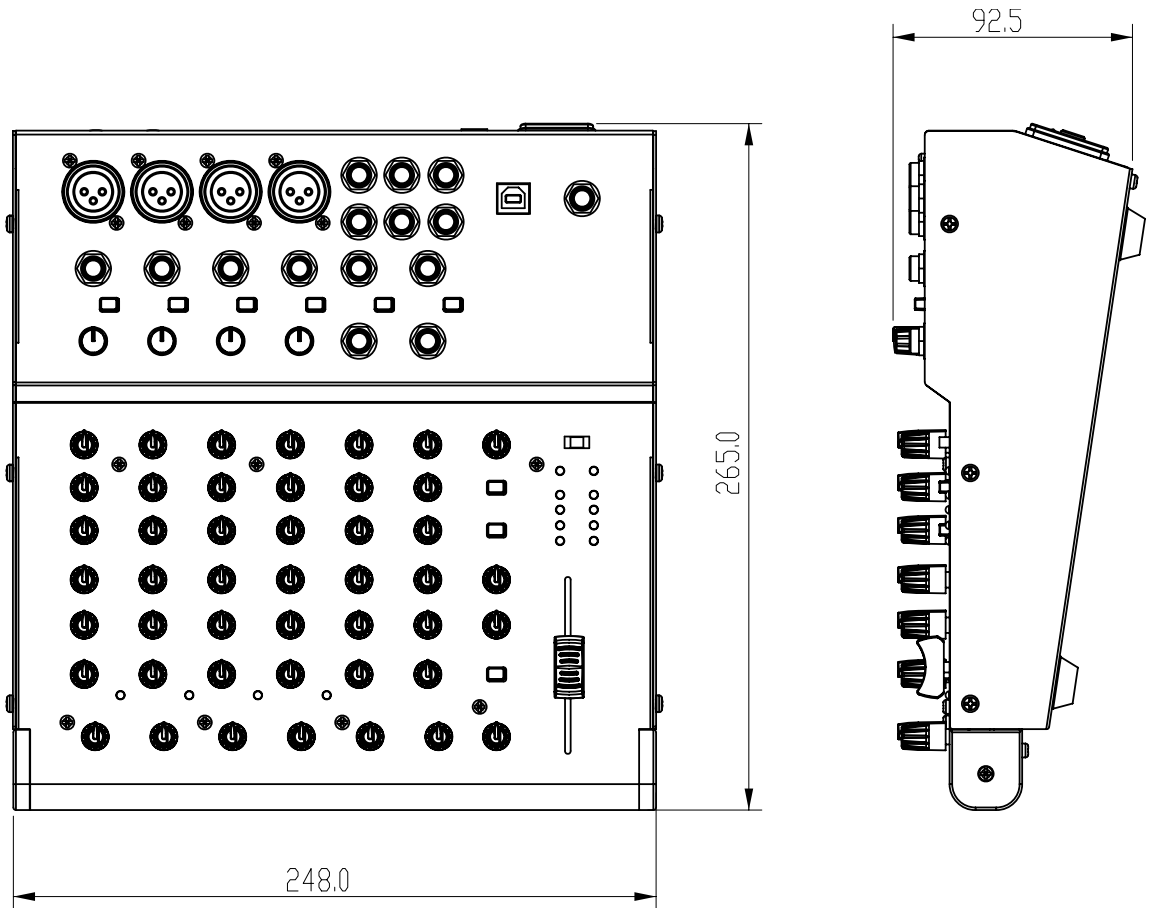
### **Mac OSX Installation**

Simply select as an input and output device using the "Audio MIDI Setup" page, you can find this easily using the spotlight function.

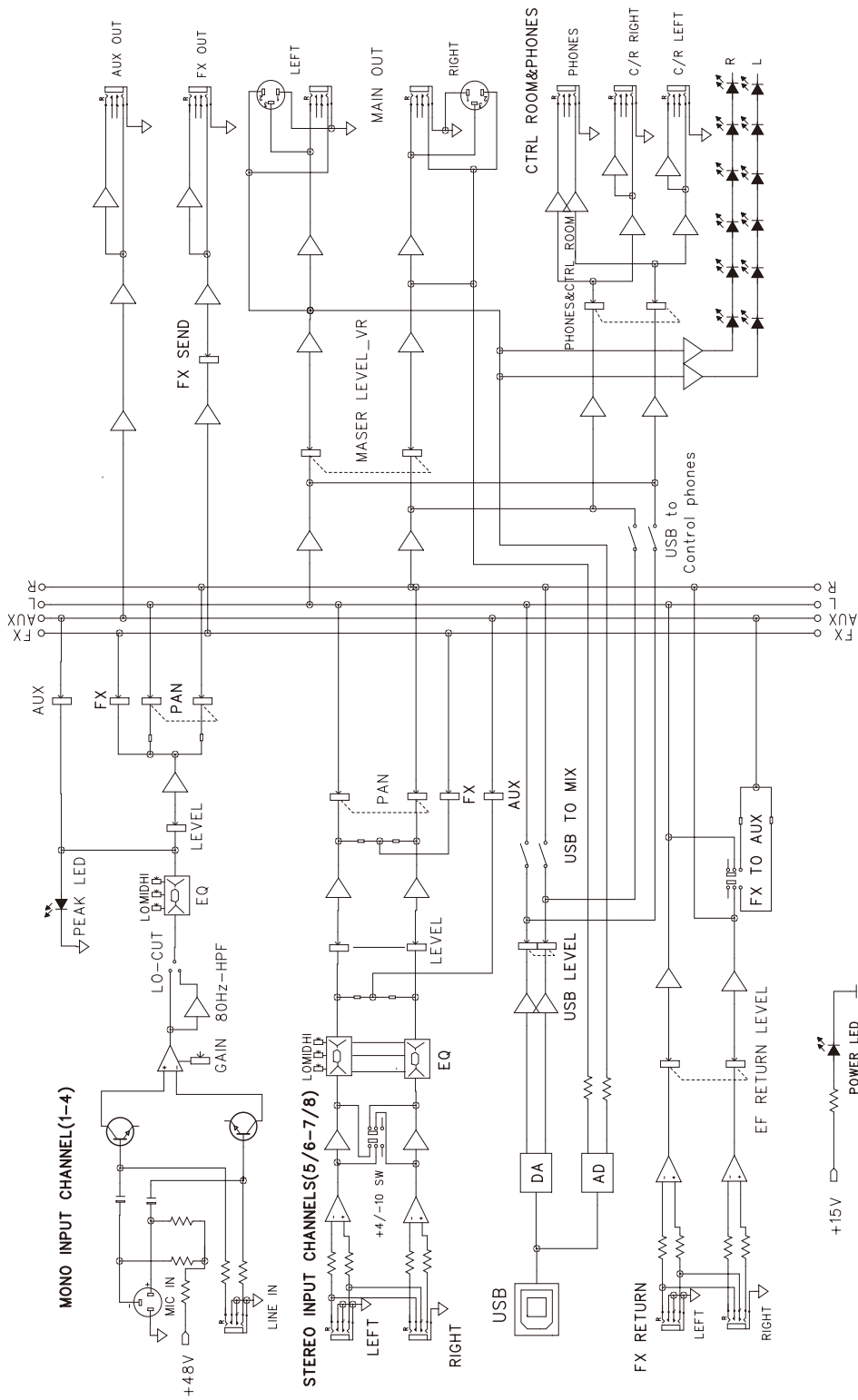
# WIRING DIAGRAM



## DIMENSIONAL DRAWINGS



# BLOCK DIAGRAM



## SPECIFICATIONS

<b>0dBu=0.775Vrms</b>	
<b>Maximum Balanced Output Level (1% T.H.D. at 1kHz )</b>	Main XLR Balanced out +26.5dBu ±1dBu Main 1/4" Jack Balanced out +26.5dBu ±1dBu
<b>Maximum Unbalanced Output Level (1% T.H.D. at 1kHz )</b>	Main XLR Unbalanced out +21dBu ±1dBu Main 1/4" Jack Unbalanced out +21dBu ±1dBu Headphone output 150mw±5mw @ 32ohms
<b>THD+N</b>	<0.055% @ + 14dBu ±0.5dBu
<b>Frequency Response</b>	20Hz~20kHz±2dB
<b>Hum and Noise 20Hz-20Khz (150R)</b>	-127dBu ±5dBu Mic Pre Equivalent Input Noise -85dBu ±5dBu Residual Noise
<b>S/N</b>	89dB ±5dB @ fader max
<b>FFT</b>	-65dBv ±5dBv @ max fader gain
<b>CMRR</b>	55dB ±5dB @ 1kHz
<b>Maximum Input Level</b>	Mic +4dBu ±1dBu Channel Line 25dBu ±1dBu Stereo Line +21dBu ±1dBu AUX Return In +21dBu ±1dBu
<b>Impedances</b>	Mic: Balanced 6kΩ, Unbalanced 3kΩ ±500Ω Line: Balanced 44kΩ, Unbalanced 22kΩ ±2kΩ AUX Return: Balanced 20kΩ, Unbalanced 10kΩ ±2kΩ All other Unbalanced outputs:100Ω, Balanced outputs: 200Ω
<b>Mono Input Channel Gain</b>	50dB Variable MIC (0~50dB) Line (-20dB~+30dB)
<b>Input Channel EQ</b>	High (+/-10dB) ±1.5dBu 12kHz Shelving Mid (+/-10dB) +/-1.5dBu 1kHz Shelving Low (+/-10dB) ±1.5dBu 80Hz Shelving
<b>Level Meter</b>	4 Segment LEDx2 (output of +4dB = 0dB) Main L/R
<b>AC Power</b>	AC100V-240V, 50Hz/60Hz
<b>Product Dimension (MM)(HxWxD)</b>	248 x 265 x 92.5 mm / 9.76" x 10.43" x 3.64"
<b>Carton Dimension (MM)(HxWxD)</b>	365 x 136 x 343 mm / 14.37" x 5.35" x 13.50"
<b>Net Weight:</b>	2.7 Kgs / 6 LBS
<b>Gross Weight:</b>	4.26 Kgs / 9.47 LBS

### WHARFEDALE PRO LIMITED WARRANTY

Wharfedale Pro SL Series products are warranted of manufacturing or material defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorized Wharfedale Pro dealer or distributor for information.

\*Be aware that warranty details may differ from country to country. Contact your dealers or distributor for information. These terms do not infringe your statutory rights.

