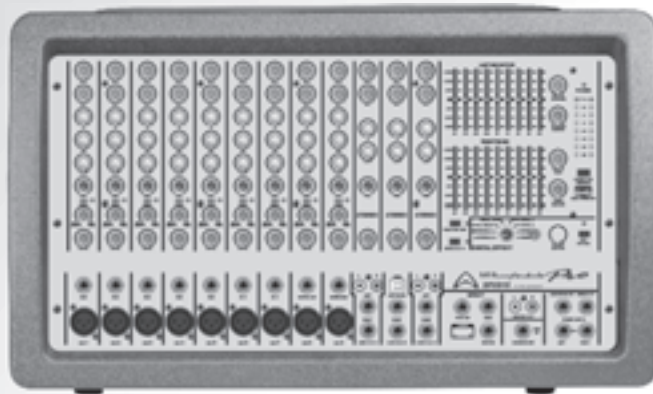
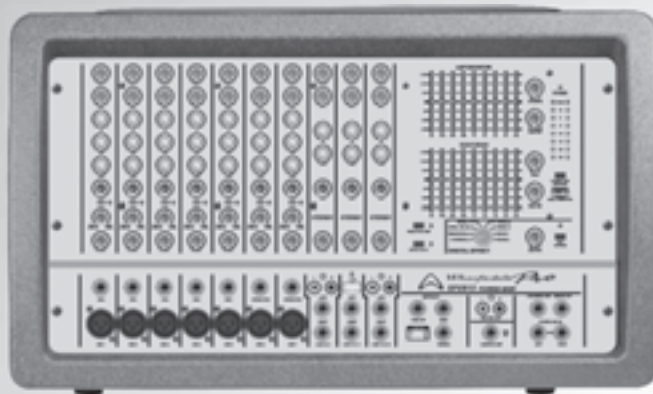


WHARFEDALE PRO SPX613 / SPX815 OWNER'S MANUAL



Wharfedale
Pro

WARNING

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: DUE TO THE RISK OF FIRE OR ELECTRIC SHOCK. DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

Wharfedale Professional Limited Warranty: The SPX Series of Powered Mixers are warranted to be clear of manufacturing or materials defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorized Wharfedale Professional dealer or distributor. Be aware that warranty details differ from country to country.

Unpacking: All Wharfedale Pro Products are fully checked before leaving the factory. After unpacking, please inspect the units for any physical damage. Please retain the shipping carton and internal packing material in case the unit needs to be returned. Please check as soon as possible that the unit is functioning. In the event of any damage please contact your dealer immediately so that a written claim for damages may be made.

! Warning -Read all operating and service instructions that accompany this product!

! Warning -Do not attempt to open the unit! This unit is not user serviceable! Refer all servicing to qualified electronic service personnel only!

WARNING: To reduce the risk of electric shock, do not remove the cover (or back).

! Varning läs alla användar- och serviceinstruktioner som medföljer enheten!

! Ateção - leia todas as instruções de manutenção e de operação que acompanham este aparelho!

! AVVERTENZA - Leggere attentamente le istruzioni per il funzionamento e la manutenzione fornite con l'unità!

! Aviso: Lea todas las instrucciones de funcionamiento y de mantenimiento que se adjuntan a este aparato! Vaara - lue kaikki laitteen mukana toimitetut käyttö - ja huolto-ohjeet!

! Advarsel - læs alle betjenings - og serviceanvisninger, der følger med produktet!

! Waarschuwing - lees alle bedienings - en onderhoudsinstructies die bij dit apparaat horen!

! Vorsicht - Lesen Sie diese Bedienungsanleitung sorgfältig durch!

! Attention: Lisez attentivement les instructions avant d'utiliser ce produit!

FORSIKTIGHET: För att minska risken för elstöt bör man inte ta bort enhetens ytterhölje (eller det bakre skyddshöljet). Reparationer får bara genomföras av kvalificerade servicetekniker.

AVISO: Para reduzir o risco de choque eléctrico, não remova a tampa (ou a cobertura traseira). O usuário não deve efectuar a manutenção. Deve pedir aos técnicos qualificados em manutenção.

ATTENZIONE: Per ridurre il rischio di scosse elettriche, non rimuovere la copertura (o il pannello posteriore). Le operazioni di manutenzione devono essere eseguite esclusivamente da personale qualificato.

PRECAUCION: Con el fin de reducir el riesgo de sacudidas eléctricas, no desmonte la tapa (o la tapa posterior). El mantenimiento no deberá ser realizado por el usuario, sino por el personal de mantenimiento cualificado.

VAROITUS: Tulipalo- ja sähköiskuvaaran vähentämiseksi älä irrota suojusta (tai takapaneelia). Älä huolla laitetta itse, anna huoltotyöt ammattitaitoisen huoltohenkilökunnan tehtäväksi.

FORSIGTIG: For at mindske risikoen for elektrisk stød må du ikke fjerne beklædningen (eller bagbeklædningen). Reparationer må kun udføres af kvalificeret servicepersonale.

PAS OP: Om de kans op elektrische schokken te minimaliseren, dient u de afdekklep (of achterkant) niet te verwijderen. Onderhoud dient alleen te worden uitgevoerd door gekwalificeerd personeel.

VORSICHT: Um die Gefahr eines elektrischen Schlages zu vermeiden darf die Abdeckung nicht entfernt werden. Die Wartung des Gerätes sollte qualifiziertem Fachpersonal vorbehalten bleiben.

CAUTION: Pour réduire les risques d'électrocution, ne pas démonter le capot. La manipulation doit être effectuée par un personnel agréé.

Introduction

Thank you for your purchase of a Wharfedale Pro SPX613 / SPX815 powered mixer.

Please read this manual completely to ensure proper operation and complete understanding of the features of these products.

The Wharfedale Pro SPX Series powered mixers are designed for ease of use and quality audio performance in portable sound reinforcement applications.

UNIQUE FEATURES BY MODEL

SPX613

- 7 Mono balanced / unbalanced mic / line input channels

SPX815

- 9 Mono balanced / unbalanced mic / line input channels

COMMON FEATURES TO BOTH MODELS:

- Variable Trim control on each mono channel.
- Built-in low-noise / high-output dual channel power amplifier.
- Rugged injection molded housing.
- Two high quality 9 band graphic equalizers for mains and monitors
- Assignable signal routing allows amplifiers to power main speakers only or main and monitor speakers.
- Massive toroidal power transformer for high current output.
- 3 band equalization (EQ) on each mono channel.
- 2 band equalization (EQ) on each stereo channel.
- High-headroom, low-noise preamps with switchable global phantom power.
- "Super Hi-Z" input channels for instrument level signals.
- Built-in signal limiting circuit to prevent signal clipping.
- Peak indication LED on mono channels.
- Independent Monitor and Effects sends on each channel.
- Built-in 8 preset, 24 bit digital effects unit.
- 8 segment bar-graph LED meters indicating amplifier output signal levels.
- Two stereo channels with dual 1/4" (Left & Right) and dual RCA (Left & Right) input jacks.
- One stereo channel with dual 1/4" (Left & Right) and USB stereo digital input and output.
- External and internal effects sends and returns.
- Global mono channel Mute / Standby button.
- Stereo line level outputs.
- Dual 1/4" inputs to the power amp for connection of external signal sources.

Getting Started

1. Power Supply

The SPX Series powered mixers are supplied with an internal AC power supply. Connect the appropriate grounded IEC power cable to the SPX mixer BEFORE connecting it to the power source outlet. It is important to allow for adequate ventilation for the powered mixer as it may become warm during long periods of operation. Be sure to allow for free air flow around the powered mixer to minimize excessive heat build-up.

Each SPX mixer is shipped with the correct power supply and cable for the country in which it is to be used. The SPX mixer is NOT to be used in a country using a different source supply voltage other than for which it is designed. Note the operating voltage shown near the AC power cord jack and ONLY connect this unit to the appropriate AC source voltage.

2. Packing

The exterior and interior packaging has been designed to protect the mixer during transit. If any shipping damage has occurred, consult your dealer and the shipping provider.

3. Safety

Avoid excessive heat, humidity, dust and vibration. Store and operate the powered mixer away from locations where it is likely to be exposed to lack of ventilation, high temperatures or humidity. Also, avoid locations which may be subject to excessive dust and lint or vibration / physical shocks that could cause mechanical damage to the powered mixer.

WARNING: REFER ALL MAINTENANCE, REPAIRS AND MODIFICATIONS TO QUALIFIED SERVICE PERSONNEL! THIS PRODUCT CONTAINS NO USER-SERVICEABLE PARTS!

For the protection of the powered mixer and other audio equipment, always turn off the power on the powered mixer and other system components before connecting or disconnecting audio cables.

4. Warranty

The SPX Series mixers are covered, by limited warranty, of any defects in workmanship for a period of one year from the date of purchase. This warranty is non-transferable and applies only to the original purchaser. If any warranty related issues occur, contact your dealer.

FEATURES AND CONTROLS

Mono Mic/Line Input Channels:

1. Low Impedance (Low Z) Mic Input jacks with switchable global phantom

power: The low noise, high headroom “Low Z” mic inputs are for use with balanced, low impedance microphones.

2. “Hi-Z” Line Level Input jacks: These 1/4” Tip, Ring, Sleeve (TRS) jacks are designed to be connected to (-10 to +4dBu) balanced or unbalanced line level sources.

3. “Super Hi-Z” inputs: Channels 6 & 7 on the SPX613 and Channels 8 & 9 on the SPX815 for connection of unbalanced, low level instrument signals such as an electric guitar or electric bass.

4. Stereo Line Level Input jacks: Channels 8 & 10 on the SPX613 and Channels 10 & 12 on the SPX815. These dual 1/4” Tip, Ring, Sleeve (TRS) and dual RCA phono jacks are designed to be connected to (-10 to +4dBu) balanced or unbalanced line level sources. A mono signal can be connected by using only the left input jack. The mono signal, connected like this, will be routed to both left and right outputs and will be controlled by the position of the pan knob of that channel.

5. USB Stereo Input and Output

This digital input and output is provided to allow for the direct digital connection to a computer USB port for both the playback and recording of signals to and from a digital audio software program. The output signal is derived from the stereo Main Mix, pre master level, and the input signal is routed to channel input 9-10 on the SPX613 and channel 12-13 on the SPX815. Consult the manufacturer of your software for details. The USB input is not disabled by the input of line level signals to the 1/4” jacks on the channel. Both the analog and digital signal can be used simultaneously.

6. Level Control: Adjusts the level of the input signal to the mixer.

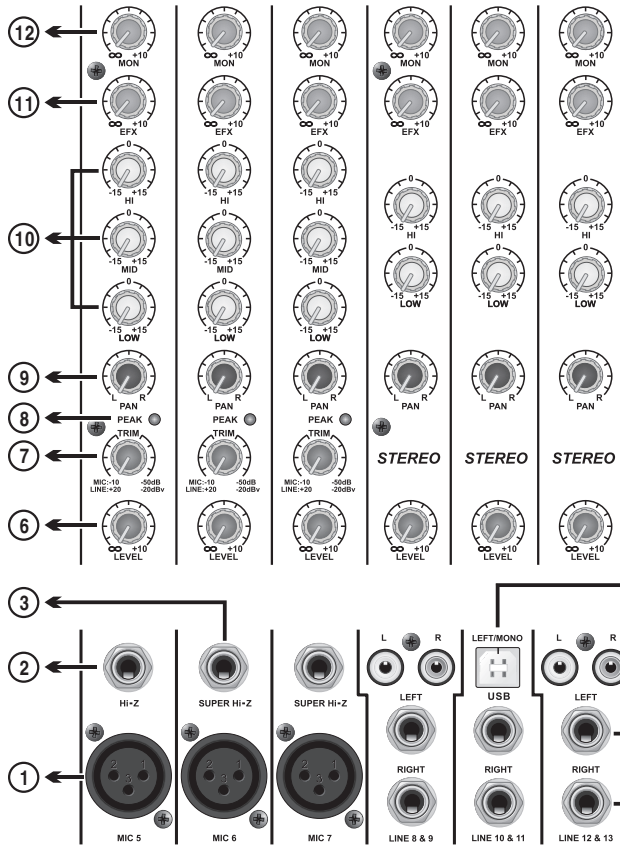
7. TRIM Control: In order to achieve the best signal to noise ratio and adequate dynamic range, the input preamp level of each mono channel is controlled by the TRIM control knob on each channel. To set the TRIM control, watch the PEAK LED while the signal source for that channel is active (whether it be a singer using a microphone or an instrument connected to the LINE INPUT of the channel). If the PEAK LED (#8) on the channel lights up consistently, the Gain Control is set too high. The ideal setting is obtained, when the PEAK LED only flashes periodically.

8. PEAK indicator LED: The PEAK indicator LED will illuminate when the input signal level is 3dB before clipping (signal distortion).

9. PAN Control: On the mono channels, the PAN control adjusts the balance of the signal being sent to the left and right MAIN MIX. Turning the PAN control fully left on a stereo channel will cause the right input's signal level to decrease. Turning the PAN control fully right on a stereo channel will cause the left input's signal level to decrease.

10. EQ (Equalization): Each mono channel on the SPX Series mixers features a three band Equalization (“EQ”) section. Each band allows for up to 15 decibels of boost (increase) or cut (decrease) of the signal in the tone range for which it controls (**HI**, **MID**, **LOW**). In the center detented position, the equalizer is bypassed (FLAT) and the control has no effect on the tonal characteristics of the signal. The **HI** EQ control is centered at 12kHz, the **MID** EQ control is centered at 2.5kHz and the **LOW** EQ control is centered at 80Hz. Stereo channels have two band equalization with the **HI** EQ control is centered at 10kHz and the **LOW** EQ control is centered at 100Hz.

LOW EQ control is centered at 80Hz. Stereo channels have two band equalization with the HI EQ control is centered at 10kHz and the LOW EQ control is centered at 100Hz.



11. EFX (Effects) Send

Controls: Each EFX control is post channel level and post EQ. Any changes made to the channel level and/or the equalizer section of a channel will affect the EFX SEND signals. There is 15 dB of signal gain available for each EFX SEND knob.

12. MONITOR Send Controls:

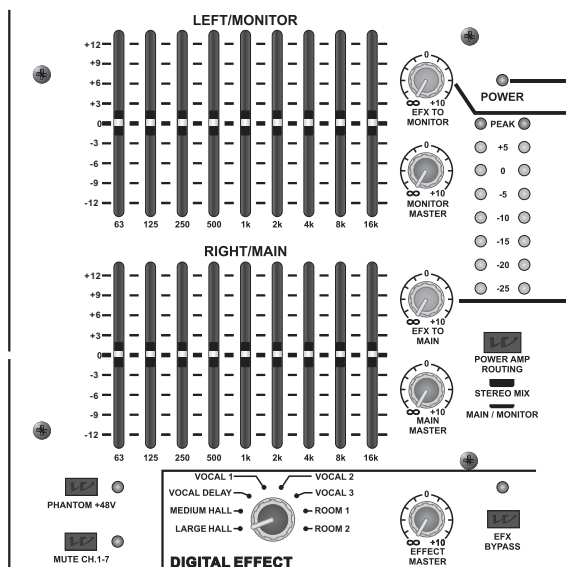
The MON send control determines the amount of signal that is fed to the monitor buss. This control is Pre-fader and derives its signal independent from the channel level control. Any changes made on the channel fader do not affect the signal that is sent to the "MON" buss. This send is commonly used for a stage monitor mix in sound reinforcement applications.

13. Power ON LED: This LED lights when the power is on for the mixer.

14. EFX TO MAIN: This knob is the level control for the internal effects unit and the EFX Return Jack (when an external device is connected to this jack). This knob controls the amount of the effects signal that is mixed with the unprocessed, "clean" signal of the main mix.

15. EFX TO MONITOR: This knob is the level control for the internal effects unit and the EFX Return Jack (when an external device is connected to this jack) that is routed to the MONITOR buss of the mixer. This knob controls the amount of the effects signal that is mixed with the unprocessed, "clean" signal of the monitor mix.

SPX613 / SPX815 FEATURES



SPX613 / SPX815 FEATURES

16. Internal EFFECT Preset Select Knob: This knob allows the selection of the desired digital effect. The level of the chosen effect is controlled by the EFX RETURN knobs explained in #14 and #15. The signal from the digital effects unit is disabled when a cable is connected to the EFX Return Jacks.

LIST OF AVAILABLE EFFECTS

- VOCAL DELAY
- VOCAL DELAY 1
- VOCAL DELAY 2
- ROOM 1
- ROOM 2
- MEDIUM HALL
- LARGE HALL

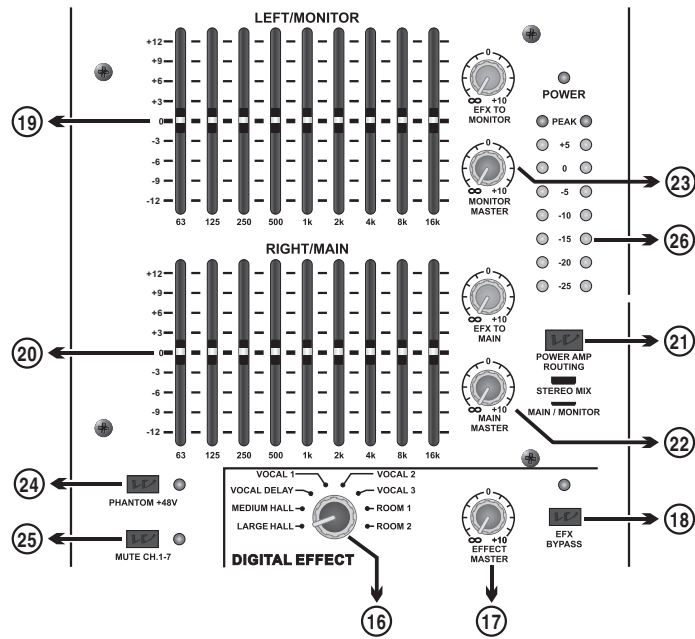
17. EFX master Send: This knob controls the overall level of the signal of the EFX buss (the mix of the individual EFX levels of each channel). This signal is routed to the internal digital effects unit as well as the EFFECT SEND jack.

18. EFX BYPASS: This switch is for muting the return signal of the internal digital effects unit. The LED above the switch will illuminate when the signal muting is active.

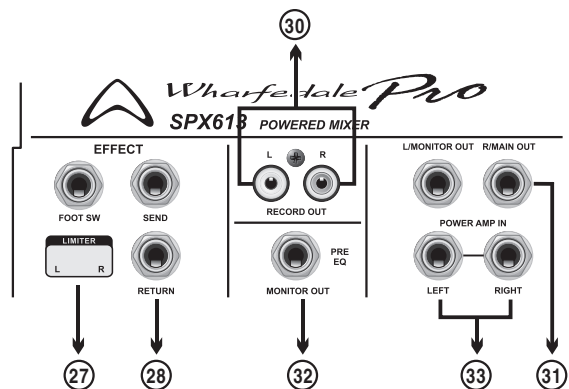
19. LEFT/MONITOR Equalizer: This 9 band graphic equalizer allows for detailed equalization of the signal for the Main Left Output or, if the MAIN/MONITOR switch is engaged it will equalize the overall signal from the Monitor mix of the input channels. It affects the MAIN LEFT OUTPUT signal and the Left speaker output (on the rear of the mixer).

Each vertical slider on the equalizer provides plus or minus (+/-) 12 decibels of signal gain or reduction, to the specified frequency centers. When the slider is in the middle, detented position, no gain or reduction of signal is applied to that slider's frequency point. The specified frequencies for each frequency band are: 63Hz, 125 Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, and 16kHz.

20. RIGHT/MAIN Equalizer: Like the LEFT/MONITOR Equalizer, this 9 band graphic equalizer allows for detailed equalization of the signal for the Main Right Output. It affects the MAIN RIGHT OUTPUT signal and the Right speaker output (on the rear of the mixer). The function and frequency points are the same as the LEFT/MONITOR Equalizer.



SPX613 / SPX815 FEATURES



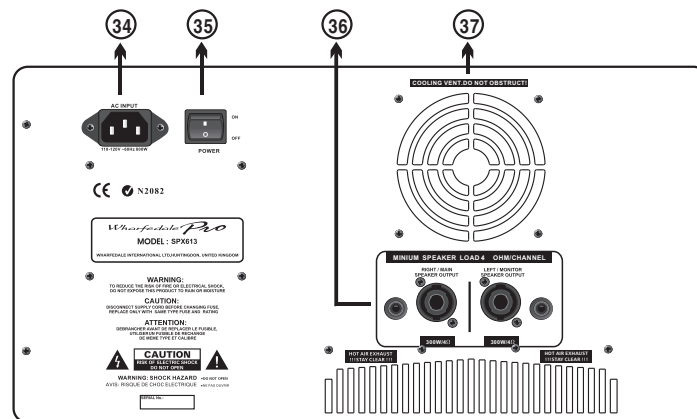
SPX613 / SPX815 FEATURES

- 21. STEREO MIX - MAIN / MONITOR Switch:** As described in #19, the position of this switch determines whether the mixer is used in STEREO mode (the up position) or as a mono mixer with a separate monitor output fed by the channel MONITOR mix (the down position).
- 22. MAIN MASTER Level:** This control adjusts the overall stereo Main Left and Right volume to the MAIN OUT jacks (on the front of the mixer) and the speaker outputs (on the rear of the mixer).
- 23. MONITOR MASTER Level:** This control adjusts the overall MONITOR output volume to the MONITOR OUT jack (on the front of the mixer) and the LEFT/MONITOR speaker outputs (on the rear of the mixer) when the MAIN / MONITOR switch (#21) is engaged.
- 24. PHANTOM +48V Switch:** When engaged, this switch provides +48 Volts DC to each microphone input jack to allow for the use of condenser microphones.
- 25. MUTE CHANNEL 1-7 Switch (SPX 613) / MUTE CHANNEL 1-9 Switch (SPX 815):** When engaged, this switch will mute channels 1-7 on the SPX613 and channels 1-9 on the SPX815.
- 26. LED Bar-Graph Meter:** These dual, 5 segment bar-graph LED meters indicate the output signal levels of the mixer in all output modes.
- 27. LIMITER LED Indicators:** These dual LED indicators illuminate when the built in limiting circuit is activated. The limiter automatically engages to prevent signal clipping (distortion) of the output signal of the mixer.
- 28. EFFECT SEND / RETURN Jacks:** The EFFECTS SEND jack is an unbalanced 1/4" Tip / Sleeve (TS) jack that allows for the connection to the input of an external effects processing unit (such as a reverb or delay or multi-effects processor). The signal for this jack is derived from the internal EFX buss and is controlled by the EFX MASTER volume control. The EFFECTS RETURN jack provides an input to the mixer from the output of an external effects processor.
- 29. EFFECT FOOT SW:** This jack provides a method of remotely switching the internal digital effects unit on and off with a footswitch.
- 30. RECORD OUT:** These dual RCA phono jacks provide the pre-graphic EQ signal, controlled by the MAIN MASTER volume control. A stereo recording device can be connected to these jacks.
- 31. L/MONITOR OUT R/MAIN OUT:** These dual unbalanced 1/4" jacks provide a post graphic EQ signal from the Main mix buss. It is controlled by the MAIN MASTER volume control. This output can be used to connect to additional external amplifiers or recording devices.
- 32. MONITOR OUT:** This unbalanced 1/4" jack provides a mix from the channel MON buss for connection to an external stage monitor amplifier. The signal is pre-graphic EQ and controlled by the MONITOR MASTER volume control.
- 33. POWER AMP IN:** These dual 1/4" unbalanced Tip/Sleeve (TS) jacks allows for the connection of an external stereo line level signal to the internal amplifier of the SPX613 SPX 815. This input can be used for connection of the line level outputs of an additional mixer.
- 34. A/C INPUT:** Plug the appropriate A/C power cord to this connector. WARNING: DO NOT ATTEMPT TO BYPASS THE GROUND CONNECTION OF THE POWER CORD.

35. POWER ON / OFF Switch: Located on the rear of the mixer, this switch turns the power on and off. The POWER LED (#13), on the front of the mixer, will illuminate when the power is on.

36. Speaker Connections: Two 1/4" and two Speakon-type connectors are provided for connection of the output of the amplifier to speakers. These outputs are rated for speaker connections of 4 to 8 ohms. Do not connect a speaker load of less than 4 ohms (each) to these outputs or it could result in damage to the amplifier.

37. Cooling Fan: This fan provides cooling to the internal amplifier. To prevent overheating, do not obstruct airflow to the back of the mixer.



SPX613 / SPX815 FEATURES

GENERAL OPERATING INSTRUCTIONS

1. Make sure that the power switch is set to the OFF position while making connections to and from the powered mixer.
2. Connect all external components. Speakers, microphones, instruments, etc. Check for secure connections. Be sure to engage the PHANTOM POWER switch if any
3. condenser microphones are going to be used.
Turn all level controls down (on each channel and in the master section of the mixer) and center all EQ knobs.
4. Connect the A/C power cord to the power outlet.
5. Turn the power to the 'ON' position and verify that the POWER LED is lit.
- 6.. Turn the MAIN MASTER volume control up to the "0" setting.
7. With the source signal present (a person singing in to a microphone or and instrument playing), one channel at a time, adjust the TRIM control so the PEAK LED flashes. Once the TRIM is adjusted, bring up each channel LEVEL control to a comfortable level being careful not to set levels too high, causing feedback. Repeat these steps for all input channels.
8. Make any necessary adjustments for monitor sends and master, effects sends and returns, and equalization settings as needed.
9. Make any needed overall volume adjustments with the MAIN MASTER volume control.
10. When powering down, make sure any external power amps are switched off first.

SPX Powered Mixer USB Operation

General USB Operation

With the introduction of the SPX Powered Mixer with USB, Wharfedale Pro enters the realm of digital audio recording and reproduction. Now, with the connectivity offered by the bi-directional USB port, the SPX powered mixer can be used as a digital interface to any computer allowing for full digital audio recording and playback. In order to get the most from this powerful new feature please read the following instructions carefully.

The USB port on the SPX series is a fully 2.0 compliant interface that is recognized under Windows®, Mac® OS-X and other operating systems. As a Plug-and-Play device, the interface requires no drivers or additional software to function. Simply connect the device to the computer using a standard USB A-to-B cable, power the mixer on and follow any on-screen prompts. Once the operating system recognizes the USB device it is ready for use.

The computer's operating system will recognize the USB device as a virtual sound card with Stereo Output and Stereo Input. You can then play sounds out through the SPX mixer just as if it were your computer's sound card. Simply open any audio software application (such as Windows® Media Player) and play an audio file. Note that you may have to change the audio properties to send the signal to the SPX.

The USB port allows for the export of the Stereo mix from the SPX into the computer for recording. The SPX output signal is derived from the Stereo Main Mix and is Pre-Fader. The signal level sent to the computer is not affected by the SPX Main Master level control. In order to receive a signal from the SPX simply open any audio recording application (such as Windows® Sound Recorder) and set the audio recording properties to the SPX.

Bonus Software included with the SPX

SPX models are shipped with a CD-ROM containing free audio recording and editing software. This software is included at no charge to illustrate the power and functionality of the USB recording and playback feature in the SPX series. It is not required for proper operation of the SPX, nor is it necessary to use the supplied application. It is included as an introduction to digital audio recording and editing.

Software Installation

NOTE: The bonus recording and editing software is supplied on a CD-ROM for computers using the Windows® operating system. Users of other operating systems may visit the developer's website for the appropriate files. The following instructions are for Windows® users.

Insert the CD-ROM into the computer's drive. The Audacity Installer will start automatically. Please read the license and support information carefully. Wharfedale Pro does not offer support for the Audacity audio recording and editing software, so users should be capable of using the program without technical support. The developer's website offers a tutorial and FAQ section for user inquiries. Accept the Audacity License Agreement and the software will install automatically to the default hard drive. Once the software is installed start the program by either clicking the desktop icon or through the Start menu. Once Audacity is open select Edit from the menu bar, then Preferences. The Audacity Preferences window will open. Select the Audio I/O tab and then select the SPX for both Playback Device and Recording Device. Click OK. You are now ready to start using Audacity with your SPX Powered Mixer!

Using Audacity software

NOTE: It is strongly recommended that you review the supplied Audacity Help file. Simply select Help from the menu bar, then Contents. Users should also visit the Audacity website at <http://audacity.sourceforge.net> for an excellent tutorial on its operation.

Audacity is a free, easy-to-use audio editor and recorder for Windows®, Mac® OS-X®, GNU/Linux and other operating systems. You can use Audacity to:

- Record Live Audio
- Convert tapes and records into digital recordings or CDs
- Edit Ogg Vorbis, MP3 and WAV sound files
- Cut, copy, splice and mix sounds together
- Change the speed or pitch of a recording

Following is a list of features offered by Audacity, the free audio editor:

Recording

Audacity can record live audio through the SPX mixer, or digitize recordings from cassette tapes, vinyl records, or minidiscs.

- Record from microphone, line input, or other sources.
- Dub over existing tracks to create multi-track recordings.
- Record up to 16 channels at once (requires multi-channel hardware).
- Level meters can monitor volume levels before, during, and after recording.

Import and Export

Import sound files, edit them, and combine them with other files or new recordings. Export your recordings in several common file formats.

- Import and export WAV, AIFF, AU, and Ogg Vorbis files.
- Import MPEG audio (including MP2 and MP3 files) with libmad.
- Export MP3s with the optional LAME encoder library.
- Create WAV or AIFF files suitable for burning to CD.
- Import and export all file formats supported by libsndfile.
- Open raw (headerless) audio files using the "Import Raw" command.

Note: Audacity does not currently support WMA, AAC, or most other proprietary or restricted file formats.

Editing

- Easy editing with Cut, Copy, Paste, and Delete.
- Use unlimited Undo (and Redo) to go back any number of steps.
- Very fast editing of large files.
- Edit and mix an unlimited number of tracks.
- Use the Drawing tool to alter individual sample points.
- Fade the volume up or down smoothly with the Envelope tool.

Effects

- Change the pitch without altering the tempo, or vice-versa.
- Remove static, hiss, hum, or other constant background noises.
- Alter frequencies with Equalization, FFT Filter, and Bass Boost effects.
- Adjust volumes with Compressor, Amplify, and Normalize effects.
- Other built-in effects include:
 - Echo
 - Phaser
 - Wahwah
 - Reverse

Sound Quality

- Record and edit 16-bit, 24-bit, and 32-bit (floating point) samples.
- Record at up to 96 KHz.
- Sample rates and formats are converted using high-quality resampling and dithering.
- Mix tracks with different sample rates or formats, and Audacity will convert them automatically in realtime.

Plug-Ins

- Add new effects with LADSPA plugins.
- Audacity includes some sample plugins by Steve Harris.
- Load VST plugins for Windows and Mac, with the optional VST Enabler.
- Write new effects with the built-in Nyquist programming language.

Analysis

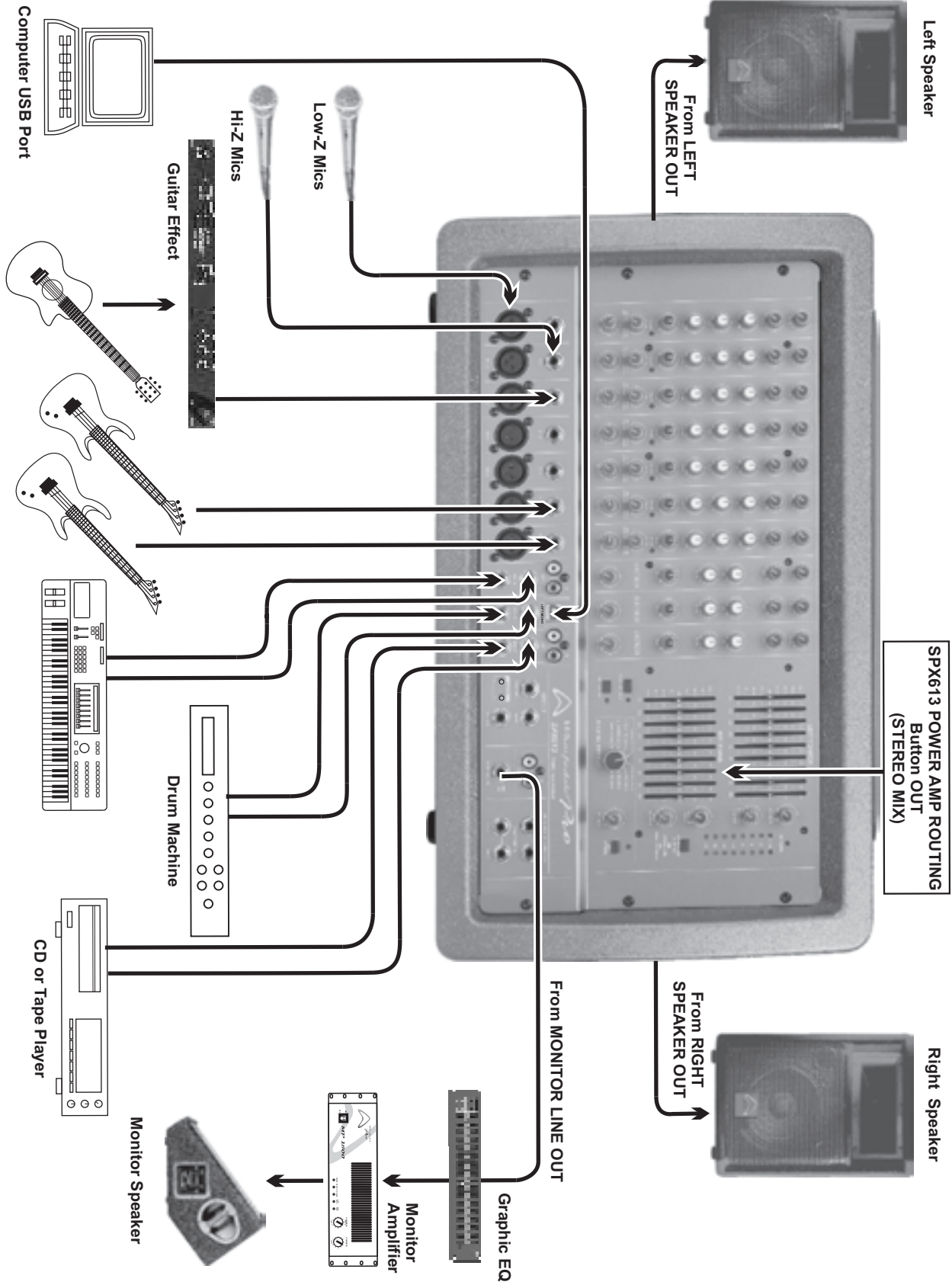
- Spectrogram mode for visualizing frequencies.
- Plot Spectrum” command for detailed frequency analysis.

Free and Cross-Platform

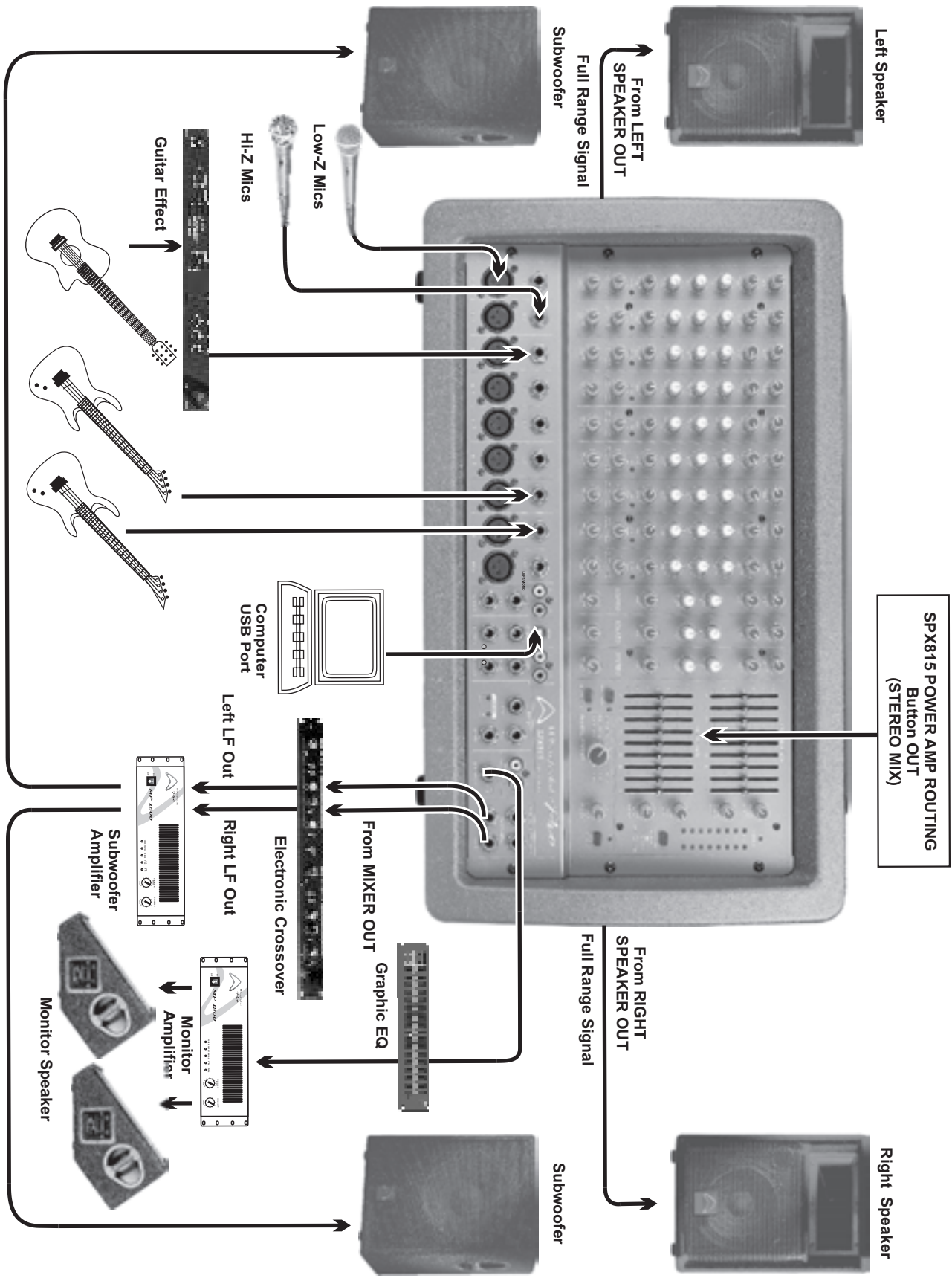
- Licensed under the GNU General Public License (GPL).
- Runs on Mac OSX® ,Windows®, and GNU/Linux.

SPX613 & SPX815

Powered Mixers



CLUB STEREO PA SYSTEM SETUP



CLUB STEREO PA SYSTEM WITH SUBWOOFER

GENERAL SPECIFICATIONS

Output Power:	SPX613: 300W/4 , 200W/8 @ (1% THD at 1kHz)	
	SPX815: 400W/4 , 300W/8 @ (1% THD at 1kHz)	
Frequency Response:	20Hz-20KHz +1dB, -3dB@1W output into 8 (speakers out) 20Hz-30KHz+1dB, -3dB@+4dB output into 10K (Main Out, Monitor Out, Effects Out)	
Total Harmonic Distortion:	Less than 0.3%@20Hz-30kHz, (Main Out, Monitor Out, Effects Out)	
Hum & Noise:	-58dB residual output noise (Speaker Output)	
	-100dB residual output noise (Main Out, Monitor Out)	
	-90dB (Main Out, Monitor Out)	Channel Level Control: minimum Master Level Control: nominal level
	-75dB (Main Out, Monitor Out)	Master Level Control: nominal level Channel Level Control: nominal
	-78dB (Effects Out)	EFX Master Level Control: nominal Channel Level Control: minimum
Maximum Voltage Gain:	-74dB (Effects Out)	
	EFX Master Level Control: nominal Channel Level Control: nominal	
Maximum Voltage Gain:	Mic to Main and Monitor Out: 75dB Mic to Effects Out: 90dB Mic to Record Out: 60dB Hi-z to Main and Monitor Out: 60dB Input Super Hi-Z to Main Monitor Out: 40dB Left / Right Line to Main and Monitor Out: 24dB	
Crosstalk at 1KHz:	70dB adjacent input	
Input Channel Equalization: (+/-15dB maximum)	3 band EQ: High Frequency: 12kHz shelving Mid Frequency: 2.5kHz shelving Low Frequency: 80Hz shelving	2 band EQ: High Frequency: 10kHz shelving Low Frequency: 100Hz shelving
USB Record	Record input: -20dBm, 44.1kHz, 16bit, 172kB/s	
	Record Frequency: 1kHz, Master Out: 0dBm	
Level Meters	7 segment LED Bar Graph Meters at Main and Monitor Outputs	
Graphic Equalizer:	9 bands Main / Monitor Out (+/-12dB maximum)	
Channel Peak LED:	Illuminates at 3dB below clipping	
Phantom Power:	+48VDC (balanced mic input only)	
Digital Effect:	8 preset effects: VOCAL 1, VOCAL 2, VOCAL 3, ROOM 1, ROOM 2, MEDIUM HALL, LARGE HALL, VOCAL DELAY	
Protection Circuit (Power Amp):	Short circuit, Power switch On / Off mute, DC detection, Temp (Heat sink Temp>=90°C)	
Fan circuit	Stop - low speed(50°C) - high speed(70°C)	
Foot Switch:	Digital Effects Mute on / off	
EFX Bypass:	Digital Effects on / off	
Power Consumption:	SPX613SD: 800W / SPX815SD: 1000W	
Dimensions(HxWxD):	310 x 526 x 347mm / 12.2" x 20.7" x 13.7"	
Weight:	SPX613: 20.5kg / 45.1 lbs, SPX815: 21.4kg / 47.1 lbs	
Supplied accessories:	AC power cord & owners manual	
Product details and specifications are subject to change without notice.		

INPUT SPECIFICATIONS

Input	Connecter Type	Gain/Trim	Actual load	Input Level	
				Nominal level	Max Before Clipping
Mono Channel (MIC)	XLR Mono Channel	max	3KΩ	-66dBm(0.36mV)	-40dBm(8mV)
		min	3KΩ	-23dBm(55mV)	+4dBm(1.2V)
Balanced (SUPER Hi-Z)	Phone jack Unbalanced	max	470KΩ	-32dBm(19mV)	-5dBm(440mV)
		min	470KΩ	+10dBm(2.5V)	NA
Mono Channel (Hi-Z)	Phone jack Balanced	max	10KΩ	-60dB (0.8mV)	-33dBm (17mV)
		min	10KΩ	+12dBm(3V)	
Stereo Channel Line Input	Phone jack Unbalanced	no	30KΩ	-12dB(195mV)	NA
Stereo RCA input	RCA	no	35KΩ	-12dB(195mV)	NA
Effect Return	Phone jack Unbalanced	no	10KΩ	-12dB(195mV)	NA

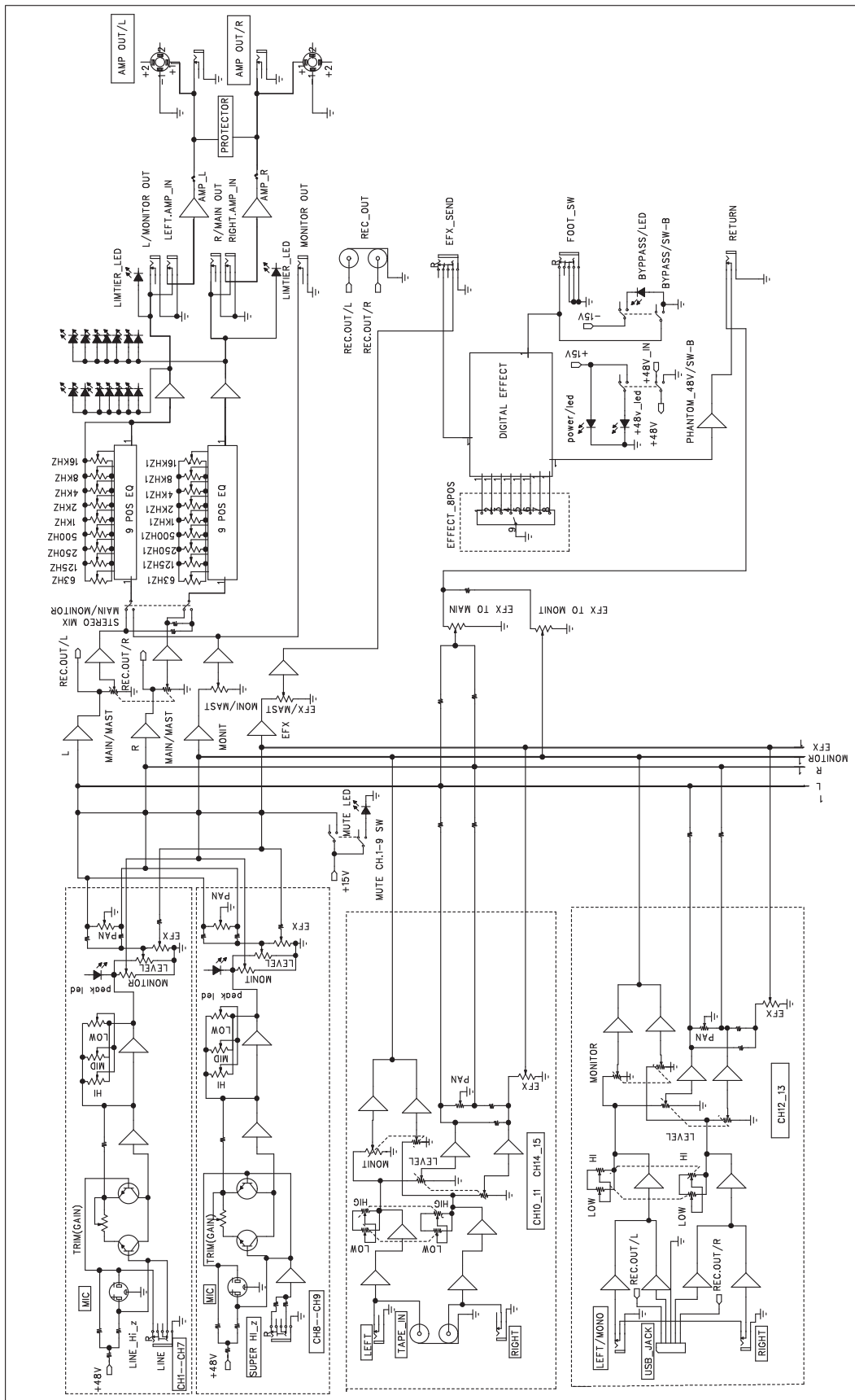
- * 1. Sensitivity is the lowest level that can produce an output of +4 dB (1.23 V) or the nominal output level when the unit is set at maximum gain. (All level controls are at maximum position.)
 - * 2. Balanced.
 - * 3. Unbalanced.
- 0 dB=0.775 Vrms, 0 dBV=1 Vrms.

• OUTPUT SPECIFICATIONS:

Output	Connecter Type	Actual source Impedance	Nominal Impedance	Output level	
				Nominal	Max Before Clipping
Speakers out (L/R)	Phone jack or Speakon type connector	0.1	4/8 speaker	NA	SPX613 300W/4 SPX815 400W/4
Main out (L/R)	Unbalanced Phone jack	600	10K lines	+4dB (1.23V)	+20dB (7.75V)
Monitor Out	Unbalanced Phone jack	600	10K lines	+4dB (1.23V)	+20dB (7.75V)
Effect Out	Unbalanced Phone jack	600	10K lines	+4dB (1.23V)	+20dB (7.75V)
REC out (L/R)	RCA jack	600Ω	10K lines	-10dB (240mV)	+20dB (7.75V)

- All output jacks are unbalanced.
- 0 dB=0.775Vrms, 0 dBV=1 Vrms.

Signal Flow Diagram





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