# REDBACK®

# Operating Manual

**A 2548** 4 Channel Mixer With USB Output & Effects



Note: Please read this manual thoroughly to get the most out of the product and ensure long-term, trouble-free use. Keep this manual for future reference.

## Introduction

A perfect little mixer companion for your PC/laptop for home recording and podcasting. Measuring only 124mm wide it takes up very little desk space while still offering features found on mixers twice the size, such as fader level control, 3-band EQ and effects. The low noise mic preamp offers excellent performance for small home studios or use in the field as a secondary mixer. Powered by USB (5V DC @ 0.5A min) Type 'B' connection, the USB interface functions like a plug and play external sound card for a computer.

## Features

- Ultra-compact design, Powered via USB

- USB Stereo Input/Output (Mixer functions like an external soundcard for computer connectivity)

- Windows & Mac OSX compatible (works with most software drivers, e.g. Audacity, Cubase)

- 4 Input Channel Mixer (2x Mono, 1x Stereo with L/Mono, Balanced or Unbalanced)

- Fader level control on CH1 input (XLR/TRS Combo socket)

- Phantom Power +48Vd.c. on CH1 for condenser mics

- 3-Band EQ (LOW/MID/HIGH) on CH1

- CH1 GAIN Control -14dB to +40dB and PAD switch -20dB

- Effects (DELAY) on CH1 with MUTE button

- Headset option (3.5mm mic input and stereo phones output)

- MAIN L/R output (Power Amplifier or Monitor) with MUTE button
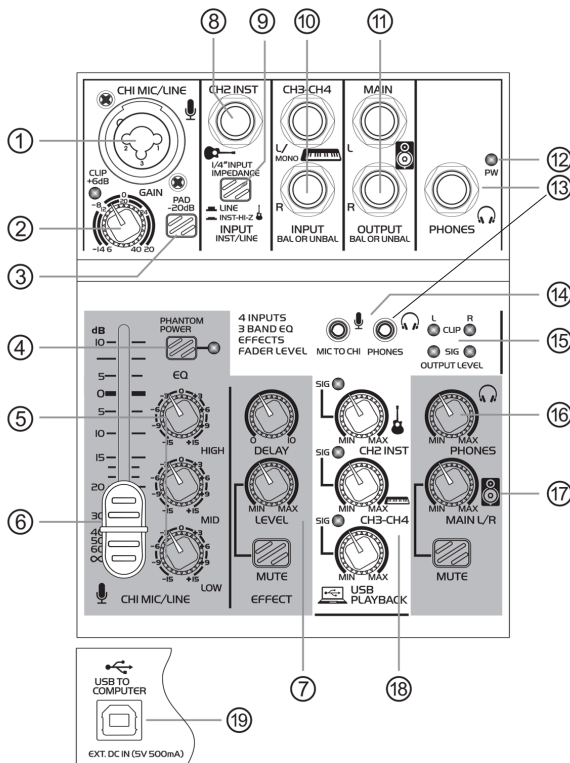
- PHONES level knob

## In the Box

1x Mixer
1x USB Cable (2m A Male to B Male USB 2.0 Patch Lead)
1x Instructions

## Controls and Functions

### Figure 1



1. CH1 MIC/LINE input (XLR/TRS combo socket, (BAL/UNBAL)
2. CLIP LED / GAIN knob
3. PAD -20dB switch
4. PHANTOM POWER switch +48V d.c. LED
5. LOW/MID/HIGH EQ (3-band for CH1)
6. CH1 MIC/LINE fader
7. EFFECT processor (DELAY & LEVEL knob/ MUTE switch)
8. CH2 INST (Guitar – ¼" INPUT) jack (BAL/UNBAL)
9. INPUT - INST / LINE (LINE / INST-HI-Z) Impedance switch
10. CH3-CH4 input line jacks (6.35mm or 1⁄4", BAL/UNBAL)

11. MAIN OUTPUT (Monitor) jacks (BAL/UNBAL)
12. PW power on LED
13. PHONES output jacks (6.35mm & 3.5mm)
14. MIC TO CH1 input jack (3.5mm)
15. OUTPUT LEVEL meter (SIG, CLIP)
16. PHONES volume knob
17. MAIN L/R volume knob / MUTE switch
18. INPUTS level knobs
19. USB TO COMPUTER (USB 2.0 Terminal)

## Controls and Functions

### Figure 2 - Connection Example
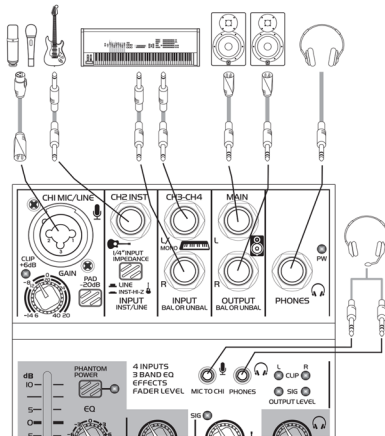


### 1. CH1 MIC/LINE inputs (XLR/TRS combination socket, balanced / unbalanced)
Connect to a microphone, an instrument or other audio device. This socket supports balanced / unbalanced connections for both XLR and phone TRS plugs.

### 2. CLIP LED / GAIN knob
Lights up when the volume of input sound is too high. If it is lit, turn the GAIN knob to the left to lower source the volume. The GAIN knob determines the basic volume for CH 1. Adjust this knob so that the Clip LED seldom flashes when the input audio volume is at its loudest.

### 3. PAD -20dB switch
Turning the switch on will attenuate the sound input to CH 1. If you hear distortion or the CLIP LED lights frequently despite the GAIN knob being turned fully to the left, then turn PAD on.

*Note: Slide the fader to minimum before toggling the PAD switch on and off. Otherwise, a noise spike may be produced.*

### 4. PHANTOM POWER Switch +48V d.c. LED
When this switch is pressed on, the LED lights up and +48V d.c. phantom power is supplied to the XLR plug on CH1 MIC/LINE Input jack. Turn this switch on when using a phantom powered condenser microphone.

## Controls and Functions

### Figure 3



Figure 3

### 5. LOW/MID/HIGH EQ (3-band for CH1)

A responsive 3-band EQ provides independent controls for LOW/MID/HIGH frequency bands. The Low and High bands are shelving filters which operate on the low frequencies below 80Hz and the high frequencies above 12kHz respectively. The Mid band is a bell shaped peak/dip filter, which impacts the mid-range frequencies centring on 2.5kHz.
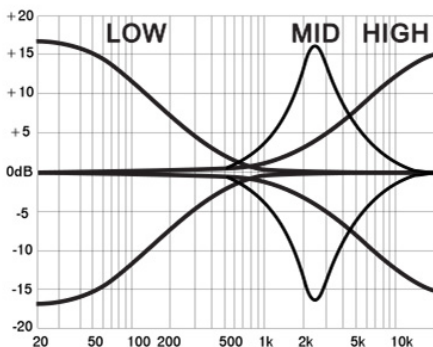
### 6. CH1 MIC/LINE fader

Adjust the volume of the sound input from the microphone or other line source connected to CH1. Also controls the volume for the headset microphone input.

### 7. EFFECT processor (DELAY & LEVEL knob/ MUTE switch)

A high-quality digital effect processor for the CH1 input.
- DELAY: Adjust the time interval of echo repeat.
- LEVEL: Adjust the EFFECT volume, add to CH1.
- MUTE: Press to turn off CH1 effect rendering.

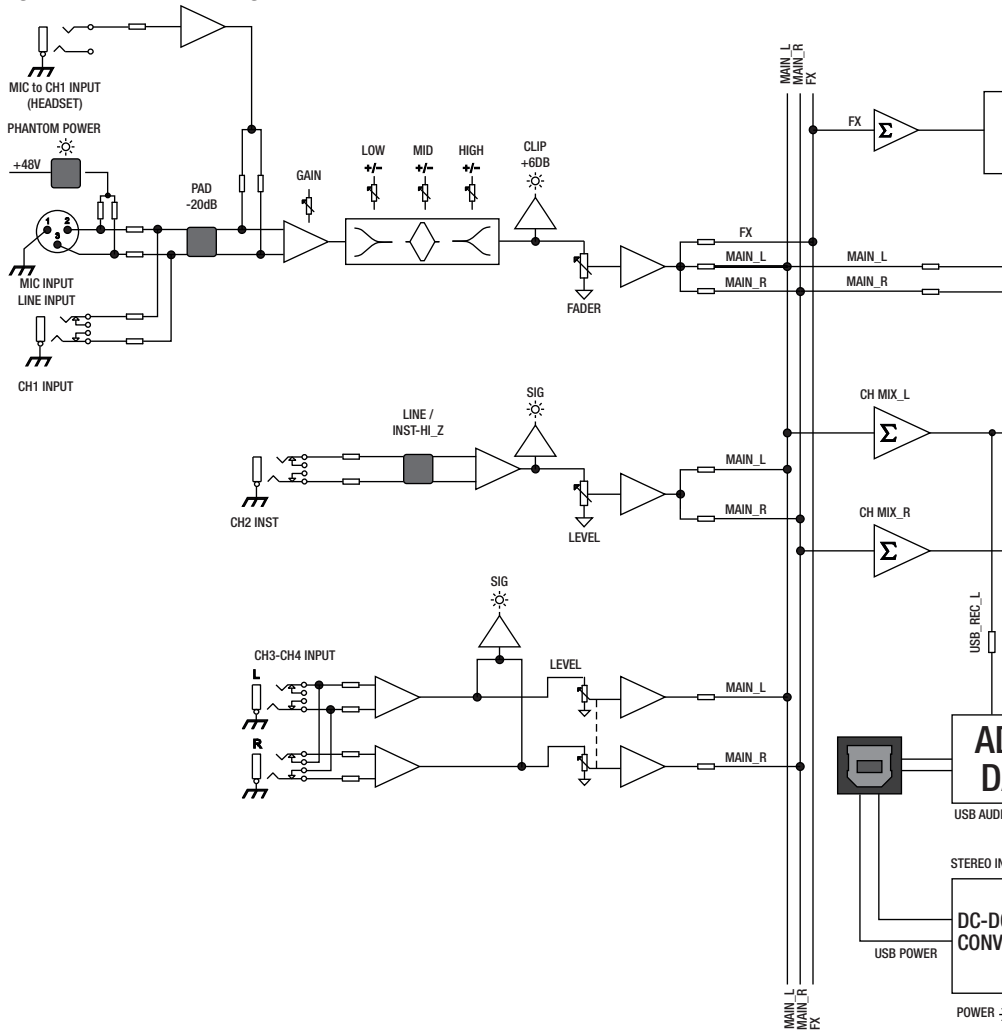### 8. CH2 INST (Guitar – ¼" INPUT) jack (UNBAL MONO)

Connect an electric guitar/bass using a mono phone jack. This socket can also be used to connect a mono line level instrument. Just release the impedance switch for a line input. See point 9 below.
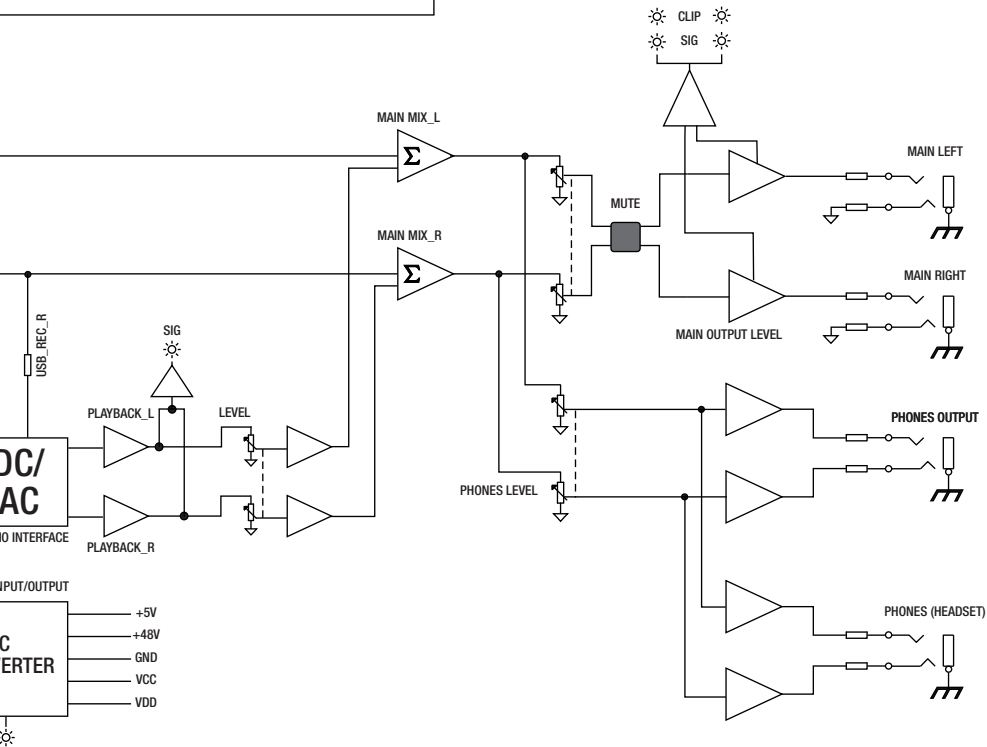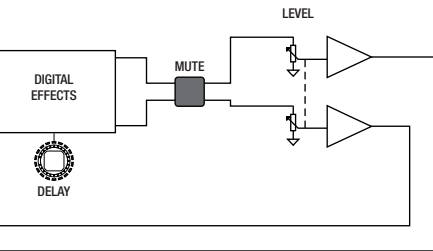
### 9. INPUT - INST / LINE (LINE / INST-HI-Z) Impedance switch

Press this switch on when directly connecting an instrument with high output impedance to the CH2 INST unbalanced mono input jack, such as an electric guitar or bass. Release this switch when connecting a regular line-level unbalanced mono instrument to the CH2 INST phone socket.

*CAUTION: When operating this switch, use an unbalanced cable with ¼"phone plugs for connecting devices to CH INST, and turn all output controls (such as the MAIN L/R and PHONES knobs) fully to "0" minimum position. Sudden high level peaks caused by the switching operation can damage external devices, as well as the hearing of those present.*

**Figure 4 - Mixer Block Diagram**

DIGITAL EFFECTS

MUTE

LEVEL

DELAY

CLIP

SIG

MAIN MIX_L

Σ

MAIN MIX_R

Σ

MUTE

MAIN OUTPUT LEVEL

MAIN LEFT

MAIN RIGHT

USB_REC_R

SIG

PLAYBACK_L

LEVEL

ADC/
DAC

IO INTERFACE

PLAYBACK_R

PHONES LEVEL

PHONES OUTPUT

PHONES (HEADSET)

INPUT/OUTPUT

C
ERTER

+5V
+48V
GND
VCC
VDD

## Controls and Functions

### 10. CH3-CH4 input line jacks (6.35mm or 1/4", BAL/UNBAL)
Connect line-level devices such as an electric keyboard or an audio playback device (CD, MiniDisc, USB Players etc). Use the L/Mono line-level jack on CH 3 for other instruments, etc. with mono output. In such cases, the sound input to the L/Mono jack is output from both the L channel and R channel.

### 11. MAIN OUTPUT (Monitor) jacks
Connect to powered monitor speakers or an amplifier. These jacks support 6.35mm phone plugs (balanced/unbalanced).

### 12. PW power on LED
When this light is on mixer is in operation and receiving adequate voltage from the USB connection.

### 13. PHONES output jack
Connect to stereo headphones. Main connection supports 6.35mm phone plugs (TRS Stereo). Secondary connection support 3.5mm stereo plugs suited for headsets.

### 14. MIC TO CH1 (Headset Microphone) input plug
For connecting a 3.5mm microphone plug for your headset. The unbalanced mic's audio input is sent to CH1, pre-EQ, Pre-Fader.

### 15. OUTPUT LEVEL meter (SIG, CLIP)
If the sound level sent to the computer via the USB interface exceeds -3dBu, SIG (green LED) will turn on. If the level reaches 3dB before clip level (+6dBu), CLIP (red LED) will light up. To send the appropriate volume to the computer, adjust the volume of each channel until SIG remains lit and CLIP occasionally flashes only momentarily when there is a loud sound. If CLIP is always red, your signal will be distorting.

### 16. PHONES knob
Use to adjust the volume of the connected stereo headphones as needed, both the main PHONES connection as well as the headset PHONES connection (i.e. same mixed audio is output to both and volume controlled by the same knob). The signal is always the master mix MAIN L/R output (including USB input), even when MAIN L/R output is muted.

## Controls and Functions

### 17. MAIN L/R knob/MUTE switch

Use the knob to adjust the volume of audio signal sent to the powered speakers or a powered amplifier connected to the MAIN OUTPUT jacks (balanced / unbalanced). MUTE: Press to mute all audio output to the MAIN OUTPUT jacks. (You can still hear the master mix audio in connected headphones through PHONES).

### 18. Input level knobs

Set the volume so it's balanced between each channel i.e. no source is overpowering the others:
• Adjust the volume of the guitar input or other mono source connected to CH2 INST.
• Adjust the volume of the keyboard input or other stereo or mono source connected to CH3-CH4.
• Adjust the volume of the computer input via the USB PLAYBACK terminal.

*Note: The sound input from the computer via the USB 2.0 terminal can only insert into the mixer audio before the PHONES and MAIN L/R output volume level control knobs. See mixer block diagram (Figure 4)*

### 19. USB TO COMPUTER (USB 2.0 Terminal)

This terminal allows you to connect a computer to the mixer, in effect making the mixer function like an external USB sound card. When connected, the computer will supply power to the mixer, and also allow audio to be sent between the computer and the mixer (USB PLAYBACK). The USB PLAYBACK input cannot be sent back to the computer for recording i.e. this mixer does not have LOOP-BACK feature! But it does take the sum of the analogue channel mix audio (Left and Right) back via the USB 2.0 terminal to the computer, where it can be recorded on compatible audio software. Each input control (CH1-4) on the mixer sets that channel's volume in the sum of channels mix that is then uploaded to the PC via the USB Interface.

*Caution: Do not connect any device to the USB 2.0 terminal that is not a personal computer or tablet. Please read the safety precautions for the USB power adapter or USB mobile battery that you are using. Use a power source and cable that can supply power via a USB male type B plug based on the following USB standards; Output Voltage: 4.8V to 5.2V and Output Current: 0.5A or greater.*

## Specifications

| 4 Input Channel Functions | Specifications |
|---|---|
| CH1 MIC/LINE: XLR/TRS combination 1x Mono – includes MIC to CH1 Headset | Gain, -14~40dB |
| | PAD: -20dB |
| | CLIP +6dB (LED turns on when 3dB below clip ) |
| | EQ LOW/MID/ HIGH: 80Hz, 2.5KHz, 12 KHz (+/-15dB) |
| | PHANTOM POWER: +48V LED |
| | Fader Level |
| | EFFECT: Digital Echo on CH1 (DELAY, LEVEL, MUTE) |
| CH2 INST: 1x Mono (LINE/GUITAR with impedance switch) | LINE/INST-HI-Z Switch |
| | Signal LED: -3dB |
| | Level Knob |
| CH 3-CH4: 1x Stereo (LINE – L/Mono & R) | Signal LED: -3dB |
| | Level Knob |
| Output Channels | MAIN L/R Out: 1 |
| | PHONES: 2x Stereo (includes HEADSET phones 3.5mm) |
| BUS | 1x Stereo + Effects |
| LEVEL METER | 2x2 point L/R LED meter (CLIP, SIG) |
| POWER REQUIREMENT | DC 5V, 500 mA (via USB) |
| POWER CONSUMPTION | Max. 2.5W |
| DIMENSIONS | 124 x 40 x 157 mm |
| WEIGHT | 0.67kg |
| USB AUDIO Input and Output | Stereo Input / Output |
| | USB Audio Class 2.0 – like external sound card to PC |
| | Sampling Frequency: Max 48KHz |
| | Bit Depth: 16-Bit |
| | Connector: Type B |
| | Signal LED: -3dB |
| | Playback LEVEL Knob |
| | Stereo ADC: THD+N=0.01%; snr=89 dB; Dynamic Range = 89 dB; OUTPUT |
| | Stereo DAC: THD+N=0.005%; snr=96 dB; Dynamic Range =93 dB; INPUT |

**Warning**

To avoid the possibility of malfunction/damage to the product, damage to data, or damage to other property, follow the notices below.

**Handling and Maintenance**
• Do not use the device in the vicinity of a TV, radio, stereo equipment, mobile phone or other electric devices that may generate electrical and RF noise.
• Do not expose the device to excessive dust, vibration, extreme cold or heat (e.g. direct sunlight, near a heater, in car during the day) in order to prevent the possibility of panel disfiguration, unstable operation or damage to the internal components.
• Do not place vinyl, plastic, or rubber objects on the device as this may discolour the panel.
• When cleaning the device use a soft dry cloth. Do not use paint thinners, solvents, cleaning fluids or chemically impregnated wiping cloths.
• Condensation can occur in the device due to drastic changes in ambient temperature, when the device is suddenly moved from one location to another where the environmental conditions a different. Using the device while condensation is present can cause damage.
• Avoid setting all equalizer controls and faders to their maximum setting. Depending on the condition of the connected devices, doing so may cause feedback and potentially damage the speakers.
• Do not apply oil, grease or contact cleaner to the faders. Doing so may cause problems with electrical contact or fader motion.
• When turning on the AC power in your audio system, always turn on the power amplifier LAST to avoid speaker damage. When turning the power off, the power amplifier should be turned off FIRST for the same reason.

**Precautions when using the USB 2.0 and 5V DC Terminals**
When connecting the computer to the USB 2.0 connector, make sure to observe the following points. Failure to do so risks freezing the computer and corrupting or losing data.
• If the computer or mixer freezes, restart the application software or the computer OS, or disconnect the mixer and then turn the computer on again.
• Use an AB male type USB 2.0 cable. USB 3.0 cable cannot be used.
• Before connecting the computer to the mixer's USB 2.0 terminal, exit from any power-saving modes of the computer (suspend/sleep/standby).

Altronic Distributors warrants this product for 12 months from date of purchase from Altronics or its resellers to the consumer. If this item is part of an installation or another product, please contact the installer or supplier for your warranty.

During the warranty period, we undertake to repair or replace your product at no charge if found to be defective due to a manufacturing fault. The warranty excludes damage by misuse or incorrect installation (i.e. failure to install and operate device according to specifications in the supplied instruction manual), neglect, shipping accident, or no fault found, nor by use in a way or manner not intended by the supplier.

For repair or service please contact your PLACE OF PURCHASE.

If this item was **purchased directly from Altronics** please make a warranty claim by:
1.  FOR MAIL ORDER CUSTOMERS (includes school and trade orders),
    a)   Ringing us on 1300 797 007 and quoting your Tax invoice number.
    b)   Upon contacting Altronics, we will issue an R.A. (Return Authorisation). As Altronics have a number of service agents throughout Australia, a copy of the R.A. will be emailed, faxed or mailed to you with full instructions of how and where to send the goods. The freight for shipping goods back to Altronics for all repairs is at the customers expense.
    c)   A copy of the R.A. form, (or at the very minimum, the R.A. number) must accompany the goods to effect the repair.
    d)   Altronics will pay the return freight to the customer where the warranty claim has been accepted.
    e)   Please quote the R.A. number in any correspondence to us.

2.  FOR OVER THE COUNTER PURCHASES; to make a warranty claim, please return the goods to us in any of our stores, with a copy of your proof of purchase (tax invoice).
    a)   Upon leaving the goods at one of our stores, an R.A. (return authorisation) number will be issued to you.
    b)   Once repaired, you will be contacted, advising that the goods are ready to be collected from the store.

It is at Altronics discretion as to whether the goods will be repaired or replaced (whilst under warranty); and as to whether identical goods will be used to replace the item due to changes of models / products.

Note: Under no circumstances should you attempt to repair the device yourself or via a non-authorised Altronics service centre, as this will invalidate the warranty!

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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