

## INTERNATIONAL LIMITED WARRANTY

ARX Systems (ARX) warrants to the first purchaser of any ARX equipment that it is free from defects in materials and workmanship under normal use and service. ARX's sole obligation under this warranty shall be to provide, without charge, parts and labour necessary to remedy defects, if any, which appear within twelve (12) months from date of purchase, and for a further twelve (12) months supply parts only.

**This is our only warranty.** It does not cover finish or appearance items, or if the equipment has been, in ARX's sole judgement:

- Subjected to misuse, abuse, negligence or accident;
- Repaired, worked on, or altered by persons not authorized by ARX;
- Connected, installed, adjusted or used for a purpose other than that for which it was designed.

This warranty gives you and us specific legal rights and you may also have other rights which may apply.

### **Warranty Service Procedure**

Should it become necessary to have your equipment serviced under the terms of the warranty, please follow these steps:

1. Call your ARX distributor for a Return Authorization (RA) number;
2. **Carefully** repack the unit, in its original packaging where possible, including a note with a description of the problem, and a copy of the receipt showing date of purchase. Attach these to the actual unit itself. Don't forget to write your name and address clearly, and include a phone number where you can be contacted during normal business hours. Make it easy for our service technicians to contact you if they have a question. Also, use **plenty** of packing material - better to be safe than sorry.
3. Send the unit freight prepaid to ARX Systems, at the address given you with your RA number. We will pay the return freight when the serviced unit is returned to you.
4. We strongly recommend you insure the package. We can't fix it if it gets lost! Send it by UPS, Fedex, or any similar service that can track the package. Parcel Post is *not* recommended

If Warranty Registration Card is missing, please write to ARX in the country of purchase, stating model and where purchased, or to ARX, PO Box 15, Moorabbin, Victoria 3189, Australia.

Or you can Email us at: [info@arx.com.au](mailto:info@arx.com.au)

# Balance

8 channel  
Audio Balancer and

Level Optimizer

## OWNER'S MANUAL



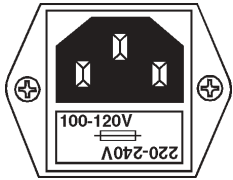
ARX Systems Pty Ltd, PO Box 15,  
Moorabbin, Victoria 3189, Australia  
Phone: (03) 9555 7859 Fax: (03) 9555 6747  
International Fax: +61-3 -9555 6747  
On the Web: [www.arx.com.au](http://www.arx.com.au)  
Email: [info@arx.com.au](mailto:info@arx.com.au)



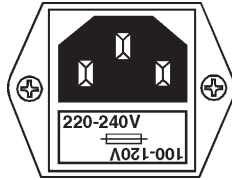
## IMPORTANT - PLEASE READ THIS FIRST



This is a dual voltage unit. It is essential that you check that the voltage on the fuseholder cover below the AC connector on the rear of the chassis is set correctly before connecting it to AC power.



THIS IS SET FOR  
100 V AC TO 120 V  
AC OPERATION



THIS IS SET FOR  
220 V AC TO 240 V  
AC OPERATION

To change, pull fuseholder out and rotate 180°, then push in again. Do not insert power cable into unit until voltage has been correctly set. Do not plug power cable into AC power until voltage has been correctly set

### WARNING SYMBOLS USED ON THIS EQUIPMENT



This symbol is intended to alert you to the presence of important operating instructions contained in this owner's manual



This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol indicates that a Slow Blow fuse is used in this equipment. Replace with same type and value only



#### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE  
COVER OR BACK OF UNIT  
NO USER-SERVICEABLE PARTS INSIDE  
REFER SERVICING TO QUALIFIED PERSONNEL

#### WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT  
EXPOSE THIS UNIT TO RAIN OR MOISTURE.

#### ATTENTION

RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



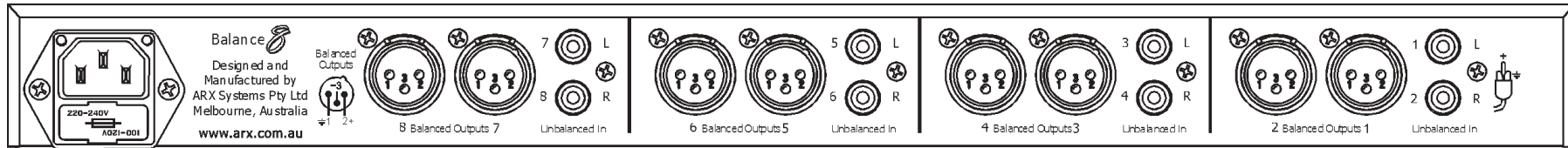
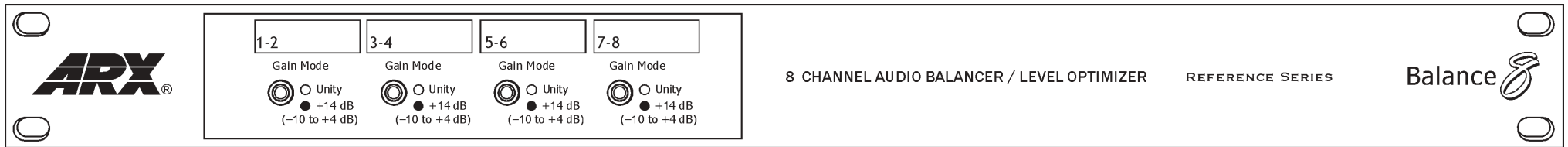
Complies with 89/336/EEC EMC Directive,  
amended by 92/31/EEC and 93/68/EEC and  
meets the following standards: EN 55013 :  
1990, Sections 3.2 and 3.5 EN 55020 : 1988,  
Sections 4.3, 5.4, 6.2, 7.0, 8.0.

Complies with Australian Standard AS/N25  
1053

### Specifications

Input Impedance	22K Unbalanced
Input Headroom	+24dB
Input Connector	RCA (Phono)
Output Impedance	300 Ohms Balanced
Output Level (max)	+24dB
Output Connector	Male XLR, wired Pin 1 Gnd, Pin 2 + Hot, Pin 3 – Cold
Frequency Response	10Hz- 30KHz ±0.25dB
Signal to Noise Ratio	-96dB unweighted -102dB A weighted
Distortion	.003% THD, 100Hz .0025% THD, 1KHz .00325% THD, 10KHz
Dynamic Range	120dB
Gain	• 0dB Unity, mode switch out, • 14dB, mode switch in (-10dB to +4dB level match- ing)
Power	100-120/220-240 VAC 50/60Hz 5VA (5 watts) on 3 pin IEC connector with removable cable

Latest information updates always avail-  
able on the comprehensive ARX website:  
[www.arx.com.au](http://www.arx.com.au)



### Front panel

- Channel 1 and 2 Gain Mode switch
- Unity Gain LED and -10dB to +4dB status LED. One of these will always be illuminated if the unit is connected to AC mains power

*Channels 3 to 8 identical*

### Rear Panel Connectors

- Channels 1 - 2 Unbalanced RCA Input sockets. Pin + (Hot), Sleeve Ground
- Channels 1 - 2 Balanced XLR Output sockets. Pin 2 HOT +, Pin 3 Cold -, Pin 1 Ground
- IEC 3 pin AC connector and integral fuseholder. Replace fuse with correct value only: 100 - 120 V AC 1 amp, 220-240 V AC 0.5 amp. Please also refer to voltage details on Page 2

*Channels 3 to 8 identical*

### Architects' and Engineers' Specifications

The unit shall be an 8 channel device that electronically converts unbalanced audio signals to balanced signals. 4 switches on the front panel (1 per pair of channels) shall offer the option of unity gain or -10 dB to +4 dB level matching.

It shall be mounted into a standard 1 RU all steel chassis with extruded aluminium front panel.

All Inputs shall be unbalanced RCA (phono) connectors, wired Tip + (Hot), Sleeve Ground.

All Outputs shall be Balanced 3 pin XLR type, wired Pin 2 + (Hot), Pin 3 - (Cold), and Pin 1 Ground.

The Signal to Noise ratio shall be -96dB unweighted, and -102 dB A weighted.

The Input impedance shall be 22K Ohms Unbalanced, and the Output impedance shall be 300 ohms Balanced. Dynamic Range shall be 120dB.

Maximum Input headroom shall be +24 dB, and maximum Output Level shall be +24 dB. THD shall be 0.003% @ 100Hz, 0.025% @ 1KHz, and 0.0032% @ 10KHz.

AC power range shall be switchable 100 to 120V or 220 to 240V AC, using a standard three pin IEC connector, with built-in fuse and voltage change switch.

The unit shall be the ARX Balance 8

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## Applications

- Studio, Live and Broadcast
- Sound Reinforcement
- AV Systems/CD/Audio-for-Video
- Anywhere unbalanced signals need converting to professional balanced signals

The primary benefits of running balanced low impedance signals are (a) low noise, and (b) the ability to run a signal down long lengths of cable, e.g. multicore snakes from one end of an auditorium to the other, without picking up noise along the way.

Any induced noise is dumped to ground via the cable shielding and also cancelled out in the summing circuit of the balanced input receiving the signal.

## Setting Up

Like so many of our best ideas, setting up your **Balance 8** is simplicity itself.

Firstly connect the unit to AC power.

### **Please Note:**

This is a dual voltage unit. It is essential that you check that the voltage on the fuseholder cover below the AC connector on the rear of the chassis is set correctly before connecting it to AC power. See Page 2 for more details on this.

Your high impedance unbalanced signal plugs into the RCA input sockets of, say, Channel 1 and 2, and the balanced outputs appear at the corresponding XLR output connector next to them. Continue on for all 8 channels if required.

That's all there is to it. From the **Balance 8** the balanced signals can be run to the next item in the signal chain. Since each channel of the **Balance 8** is independent of the others, 8 different sources or 4 separate stereo pairs can be balanced in this way.

The Gain Mode switches on the front panel give you the choice of unity gain through pairs of channels on the **Balance 8**, using it as a balancer only; or as a level optimizer as well, bringing the -10 dB levels up to +4 dB (14dB overall gain) per channel pair.

LEDs on the front panel indicate which mode has been selected. One of these will always be illuminated if the unit is connected to AC mains power

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## Introduction

Thank you for choosing this ARX **Balance 8** Audio Balancer and Level Optimizer. We hope you enjoy using it as much as we enjoyed creating it. As with all ARX equipment, it has undergone extensive factory calibration and 'burn in' before shipping. To ensure continued trouble free use, please familiarise yourself with the contents of this manual before using the LEVEL 8.

## About the Balance 8

Silently interfacing -10dB unbalanced consumer electronics with +4 dB Balanced professional equipment has always been a problem. Hum and noise generated by a mismatch at this point will be amplified throughout the studio, broadcast or live sound system.

But luckily it's a problem of the past, now that ARX introduces the **Balance 8**, an 8 channel audio balancer and level optimizer specifically designed to handle this critical task.

ARX's proprietary balancing circuits take the -10dB levels from CD and DVD players, cassette and tape players, DAT recorders, digital 8 track recorders, and effortlessly transform them into the balanced signals that all professional audio systems expect. Inputs are unbalanced RCA connectors, and outputs are industry standard balanced 3 pin XLR type.

Pairs of Gain Mode switches on the front panel let you select unity gain through the **Balance 8**, using it as a balancer only, or as a level optimizer as well, bringing the -10 dB levels up to +4 dB (14dB overall gain). Status LEDs on the front panel indicate which mode has been selected.

Housed in a rugged all steel chassis with extruded aluminium front panel, the ARX **Balance 8** is the ideal professional engineer's tool for the critical task of impedance and level converting.