

*Master Sounds*

---

Radius 4  
Operation Manual



# Index

1: Safety instructions	pg3
2: Overview	pg4
3: Front panel controls	pg5
4: Rear panel controls	pg7
5: Warranty	pg9
6: Technical specification	pg9

# 1: Important safety instructions - Read first

**READ THE INSTRUCTIONS** – Read and retain these instructions for future reference. Read the instructions on the Safety Sheet provided separately. Adhere to all warnings printed here and on the console and its power unit.

**COVERS** – Do not remove the power unit cover. Operate the console with its cover correctly fitted. Refer servicing work to authorised personnel only.

**MAINS POWER** – Connect the console power unit to a mains power supply only of the type described in this user guide and marked on the unit. The power source must provide a good ground connection. Do not remove or tamper with the ground connection in the power cord. Use the power cord with sealed mains plug appropriate for your local mains supply as provided with the console. Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against it.

**INSTALLATION** – Install the console and its power unit in accordance with the instructions printed in this user guide. Do not connect the output of power amplifiers directly to the console. Use audio connectors and plugs only for their intended purpose.

**VENTILATION** – Ensure adequate ventilation around the console and its power unit. Do not obstruct the ventilation slots or position the unit where the air flow required for ventilation is impeded.

**MOISTURE** – To reduce the risk of fire or electric shock do not expose the equipment to rain or moisture or use it in damp or wet conditions. Do not place containers of liquids on it which might spill into any openings.

**ENVIRONMENT** – Locate the units away from direct sunlight and any equipment, which produces heat such as power supplies, amplifiers and heaters. Protect from excessive dirt, dust, heat and vibration when operating and storing. Avoid tobacco ash, drinks spillage, and smoke, especially that associated with smoke machines. Do not mount the power supply on any surface subject to resonance or vibration.

**HANDLING** – To prevent damage to the controls and cosmetics avoid placing heavy objects on the console surfaces, scratching the surface with sharp objects, or rough handling and vibration. Protect the controls from damage during transit. Use adequate packing if you need to ship the unit.

## 2: Overview

Originally launched in 2016, the Radius 2 two-channel rotary DJ mixer became an instant hit with the high-end DJ and club installation community, followed by the introduction of the Radius 4 four-channel version, two valve-based versions (Radius Two and Four Valve), an FX unit and dedicated LinearPOWER supply accessory.

*"Four years on, the brand has seen remarkable growth, but the higher production costs of a premium rotary mixer rules them out for DJs on a tighter budget. "Designer, Andy Rigby-Jones, and I decided to do something about it, and the challenge was to redesign the compact Radius 2 and Radius 4 to make them more affordable but without compromising any of the features, the feel, or the audio fidelity of the original model," explains MasterSounds' founder, Ryan Shaw.*

The new generation Radius 2 and 4 offers clean, open, and dynamic sonic quality on both LINE and RIAA inputs, as well as improved usability. Both mixers feature easy-reading analogue VU meters, a responsive Master EQ/Isolator, a smooth natural sounding hi-pass filter on each channel, and an AUX send/Return system with insert button for easy integration of external effects, including MasterSounds own FX unit. Radius 4 also includes 2 mic inputs, selectable via the rear panel.

*"The redesign challenge meant going back to the drawing board to see where we could simplify the circuitry without impairing performance. For instance, the Split Composite Passive RIAA stage remains identical to the previous generation but we have simplified the post-fader circuitry. The biggest change was to the internal construction and PCB board shapes, where we have optimised them for maximum efficiency through our in-house fabrication plant which has made them a lot easier to manufacture. What we haven't compromised on is the quality of the components used, and the third-generation mixers all feature Alps pots/switches, close tolerance resistors/capacitors, and Panasonic electrolytics. I am very happy with the result of the engineering changes, and these compact mixers offer exceptional value for money," explains Union Audio's Andy Rigby-Jones.*

Union Audio has evolved and experienced some radical changes since Radius 2's inception four years ago, which has equipped the team to implement the design changed. Moving into a new unit in 2017, Rigby-Jones has developed a sophisticated design and production facility, coupling traditional analogue engineering with ultra-high specification manufacturing.

*"The Radius 2 and 4 hold a special place in my heart, it's the mixer Andy and I began our audio journey with, and one that gives the user a really unique way of blending records. Both Radius 2 and 4 are desktop products, with a small footprint, which makes them perfect for home, touring, and club use, or all three! It was the right time to re-engineer Radius, giving more DJs the opportunity to experience our wonderful product, at a price unseen given each mixer's quality of build and fidelity of sound," concludes Shaw.*

### 3: Front panel controls



**AUX** – The AUX send level pot adjusts the amount of channel signal level sent to the Aux Mix Buss, (and on to an external FX unit). Fully clockwise the signal level is boosted by +10dBu, allowing for precise adjustment of FX signals.

**PRE** – The Pre button switches the Aux send feed from Post Fader to Pre Fader (i.e. set to Pre Fader it will still send to the Aux Mix Buss with the rotary fader down).

**TRIM** – The trim pot adjusts the input signal level from OFF up to a maximum of +10dBu, enabling accurate level matching between different musical sources.

**LINE/RIAA** – This toggle switch selects either the RIAA (Phono) level Input in its top position, or the LINE Input in the bottom position.

**HPF** – HPF stands for “High Pass Filter”. The HPF is 12dB per octave and can be swept from 10Hz to 1.5kHz by turning the rotary pot clockwise. The HPF is a great performance tool and has been designed to sound natural, aiding smooth mixing.

**CUE** – Each cue button routes the channel signal to the headphones, and displays the channel pre-fade signal level on the VU meters. Pressing the cue button illuminates the red LED. When no cue button is active the headphone signal is automatically routed to the Master Mix Buss.

**CH1/CH2 ROTARY FADER** – Each channel has a large rotary fader for precision control of its level when mixing. The rotary ranges from fully off when anti- clockwise to unity gain (0dB) when clockwise. For best performance operate these controls near to their fully clockwise position for normal music level.

**VU METERS** – The Radius 4 features two high quality analogue VU (Volume Unit) meters, which accurately measure the left and right audio signals. The meters show the post EQ sound level. An added feature of the VU Meters is that when driven over +6VU the meter will illuminate **RED** to warn against clipping. In **SPLIT MODE** the LEFT VU Meter indicates the cue signal level, and the RIGHT VU Meter indicates the MIX level, (see **SPLIT** below).

**MASTER EQ/ISOLATOR** – The MASTER EQ /ISOLATOR functions as a normal isolator using 12dB/octave filters with crossover frequencies at 350Hz and 3.5kHz making for a very musical Isolator. We have positioned the layout of the pots so it easily works as a Master EQ (The hi-pass filters on each channel are used instead of a conventional 3 or 4 band EQ).

**MASTER** – The MASTER rotary pot adjusts the signal level sent to the Main Output XLRs (House Mix) ranging from off to +10dBu of gain. Set the control to approximately 1 o'clock for unity.

**BOOTH** – The BOOTH rotary pot adjusts the signal level sent to the Booth Output TRS Jacks (Monitor Mix) ranging from off to +10dBu of gain. Set the control to approximately 1 o'clock for unity.

**SPLIT** – The SPLIT CUE button illuminates **RED** when activated and links to the cue Buttons and VU Meters. When the SPLIT CUE is active and a channel CUE is pressed, the Mix Buss Level will be shown on the Right Meter, and the channel Pre-Fade signal (CUE) shown on the Left Meter, enabling you to balance the two levels for smoother mixing. The Split button also sends the cued source to the Left headphone and the mix source to the Right headphone which is very useful if mixing in a quiet environment. SPLIT CUE is automatically disabled when the Channel CUES are Off, and the Meters and Headphones revert to monitoring the Stereo Master Mix Signal.

**PHONES** – Use the headphone pot to control the sound level sent to your headphones. Please take care when monitoring with headphones as excessive sound volumes can cause premature deafness. The 1/4" jack headphone input is located on the front of the mixer as shown on the headphone graphic.

# 4: Rear panel controls



**MASTER OUT** – Output level is +14dBu when the MASTER level control is fully clockwise and the VU meters read -4VU. The XLR output is designed to operate with balanced equipment such as powered monitor speakers and amplifiers.

**AUX SEND & RETURN/INSERT** – The AUX SEND & AUX RETURN system has ¼" TRS (balanced) jack sockets for connection to an external FX unit. The SEND is connected to the FX units' input, and the FX units' output is connected to the RETURN, (see USING THE EXTERNAL SEND & RETURN SYSTEM).

**INSERT ON BUTTON** – Reconfigures the Aux Return Jacks as a Mix Buss Insert, giving the user unparalleled flexibility for FX integration, simply at the press of a button. (See USING THE EXTERNAL SEND & RETURN SYSTEM).

**GROUND POST** – Unscrew the knurled nut and attach the turntable(s) ground lead(s) and screw back into place without over tightening the nut.

**RECORD OUT** – Twin RCA sockets enables the user to make a stereo recording of a performance. The overall volume of the Master Output does not affect the record out function, this outputs at -6dBu

**BOOTH OUT** – The ¼" TRS (balanced) Jack Booth Output feeds the DJ's booth (local Monitor) amplifier/loudspeaker system.

**POWER SWITCH** – "0" = OFF. Press the "-" to power the mixer ON with the external power supply connected.

**POWER INPUT SOCKET** – Connect the external 18v power supply to the input socket as labelled on the rear panel. CH ONE/CH FOUR – Both LINE and PHONO inputs feature twin (Left & Right)

**CH ONE/CH FOUR** – Both LINE and PHONO inputs feature twin (Left & Right) RCA Phono Sockets. The PHONO input provides gain and RIAA equalisation for turntable cartridges. The LINE inputs on CH1 & CH2 provide input for CD players.

## Using the external Send & Return System

Connect the Mixer Aux Send outputs to the FX unit Inputs, and connect the FX units Outputs to the mixer Aux Returns. Set the FX unit to unity gain.

Turning up the mixer Channel Send control feeds the channel signal to the FX unit. This signal is processed by the FX unit and its output is fed back into the mix, adding an echo, delay, reverb etc. to the track that's playing. Turning down the Mixer channel send stops the channel signal feeding to the FX unit and so also stops the effect. Turning up the mixer channel send increases the level of FX.

Normally the feed to the channel Aux send is also controlled by the channel fader, so turning down the fader also turns down the level of FX, but if the Aux Send PRE button is pressed the Aux send takes its signal before the Channel Fader so even if the fader is off you can still send the channel signal to the FX Unit. This can be quite a cool way to mix into a new track, just by introducing a low level delay (for instance) of the track you about to mix into, before actually mixing in the new track by bringing up the channel fader.

**Mix Insert** – The Radius 4 incorporates a unique feature that allows the Aux Return Jack Sockets to be reconfigured as a Mix Buss Insert point, just by pressing the INSERT ON button. This allows you to run the entire mix though an external FX processor or other devices, such as a compressor, limiter, or graphic equaliser. With the button pressed the two 1/4" TRS Jacks become a conventional mixer Insert, with the Tip being the SEND, and the Ring being the Return.

## 5: Warranty

MasterSounds warrants that the Mixer shall be free of defects in workmanship and materials for a period of twenty four months (2 years) from the date of delivery. In the event that the product fails to operate as intended, MasterSounds will repair or replace the product subject to the following conditions.

1. That the failure was not due to improper installation, operation, cleaning or maintenance, accident, damage, misuse, abuse, or non-approved modifications to the Mixer.
2. The warranty does not cover normal wear and tear or any other event, act, default or omission outside MasterSounds control.
3. Faulty products must be returned to MasterSounds or an authorised service agent along with the original invoice or proof of purchase, and the mixer must be returned packed in the original shipping box. Please contact MasterSounds before shipping a faulty unit.
4. The warranty applies only to the original purchaser and is not transferrable.
5. At their sole discretion, MasterSounds may either repair the defective product or replace with an equivalent service exchange item.
6. This warranty constitutes the purchaser's sole remedy. MasterSounds shall not be liable for any other repair or replacement cost or any damage or loss directly or indirectly related to the malfunction of this mixer.



MasterSounds Radius 2 complies with the European Electromagnetic Compatibility directives 2014/30/EU and the European Low Voltage directives 2014/35/EU.

# 6: Technical specification

## Power Requirement

Each mixer is supplied with a compact switch-mode power supply for anywhere in the world and we supply the correct IEC lead for your country.

External Power Supply	Universal 90V – 265V AC 50/60Hz
	18V 18W Max
DC Internal Power Rails	+/- 18V DC

## Audio Performance

Residual Output Noise	<-95dBu 20Hz to 20kHz un-weighted
Mix noise Unity Line IN to Mix Out	<-88bBu 20Hz to 20kHz un-weighted
Distortion THD+N 0dBu	= 0.0025% Line IN to Mix OUT
Distortion THD+N +10dBu	= 0.0001% Line IN to Mix OUT
Dynamic Range	>115dB
Maximum Signal Level	±27dBu
Frequency Response	10Hz – 100kHz +0.5/-2dB
Headphone Output Power	800mW RMS into 32 Ohms

## EQ/Filters

Channel High-Pass Filter Range	10Hz to 1.5kHz
Master EQ/Isolator Cut/Boost	OFF to +12dB
Master EQ/Isolator Crossover	Fc 350Hz and 3.5kHz
RIAA Accuracy	Within 0.25dB 40Hz – 20kHz.

## Dimensions

Weight	W = 350 L = 190 H = 83 (mm)
Packed Dimensions	3.3KG
Packed weight	W = 480 L = 270 H = 200 (mm)
	4.7KG

## Dimensions

Weight	W = 14 L = 7.5 H = 3 (inch)
Packed Dimensions	7.5lb
Packed weight	W = 19 L = 10.5 H = 9 (inch)
	10.5lb

\*\* MasterSounds reserves the right to change the specification without notice. \*\*



*MasterSounds*

 UNION AUDIO

Radius 4 Operation Manual  
Copyright © 2020 MasterSounds Audio. All rights reserved  
[www.mastersounds.co.uk](http://www.mastersounds.co.uk)