REDGUM Audio

Loudspeakers

RGSB

RGS38i

Owner's manual

REDGUM Audio Pty Ltd
Factory 3, 25 Clarice Rd
Box Hill South, VIC, 3128, Australia
Ph: +61 3 9897 1277
Fax: +61 3 9897 1399
redgumaudio.com
ABN 45 093 132 515

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Why REDGUM?

The river red gum is Australia's most widespread and recognised tree, and it produces a wood that is truly unique. It yields the second hardest timber in the world, and this strength saw its widespread use in the railway lines that sprang up to connect the rapidly expanding colonies of early 20th century Australia. Its resistance to termites also made it the natural choice for building foundations, and to this day it continues to support some of our most historic structures.

The river red gum can be found on most river banks in mainland Australia, where its roots tap into water stored in the sands and its leaves provide food for the indigenous wildlife. It presence is synonymous with the Australian outback, at once a symbol of life sustaining water and the struggle against a harsh climate. When conditions turn dry, the red gum will adapt by shedding huge branches from its trunk in an effort to conserve moisture. As anyone familiar with camping in the Australian bush will tell you… don't ever pitch your tent underneath a red gum tree!

A celebrated part of our culture, it has perhaps been made most famous through the landscape paintings of Hans Heysen and Ronald Bull.

And while it was in wide use throughout Australia's history, it was not until the invention of the carbide saw that it was possible to cut the wood accurately. And only then could the real beauty of this unique hardwood be unveiled.

When polished it reveals a deep red lustre, highlighted by an intertwining and tightly packed grain structure. Fine irregularities add to this beauty, and it is highly sought after as a decorative wood for these unique aesthetic properties. No two pieces of red gum will match exactly, and this is as it should be. Like our products, each piece is outstanding and unique.

Now that you've heard the story of the Australian river red gum, it's time to listen to your very own REDGUM. We've carefully selected and lovingly crafted each piece before coupling it to some of the finest audio engineering that money can buy. The results? Stunning! Trust us, you won't believe your ears.

Connecting your speakers to your amplifier

To connect your speakers to your amplifier you will need speaker cables of the correct length for your listening room. We recommend using heavy gauge speaker wire for the best sound (for more information on choosing cables see the section on 'Loudspeaker Cables').

Your REDGUM speakers have two sets of input terminals at the rear of the speaker. This means that you can connect your speakers to your amplifier in one of two ways: 'typical connection' or 'bi-wire connection'. Bi-wiring your speakers requires two sets of speaker cables, and a little more effort, but some audiophiles believe the results to be worthwhile (typically a more 'open' sound).

Note

Before making any connections please ensure that your amplifier is turned off and disconnected from mains power to avoid the risk of electrical shock and/or damage to your equipment. During connection it is important to tighten all connections securely (finger pressure only) and ensure that there are no loose strands of wire. If loose wires touch one another or another terminal this may result in poor sound or even damage to your amplifier.

Typical connection

The terminals at the rear of your speakers are colour coded red (+) and black
(-). Follow the procedure below to connect only the upper pair of input terminals on each speaker to your amplifier.

Typical connection procedure

Step	Action
1	Connect the: ✍ red (+) amplifier terminals to the respective red speaker (+) terminals; and ✍ black (-) amplifier terminals to the respective black (-) speaker terminals. Make sure when doing this that you connect the left/right speakers to the left /right channel outputs on the amplifier.

2	Ensure that all connections points are clean, and that all connections are secure. Check that wiring terminations look neat and that no loose strands of wires are touching any other terminals. Your speakers are now ready for operation.

Note

We recommend using heavy gauge speaker cable for the best quality sound (the heavier, the better and with a 2mm minimum).

When using a typical connection, the upper and lower sets of terminals must be connected to one another for the speakers to operate properly. For this purpose, your speakers come supplied with gold bridging pieces already in place making this connection.

Bi-wire connection

The terminals at the rear of your speakers are colour coded red (+) and black
(-). Follow the procedure outlined below to bi-wire your speakers. Please note that bi-wiring requires two sets of loudspeaker cables.

Bi-wire connection procedure

Step	Action
1	Remove the gold bridging pieces conmnecting the upper and lower sets of input terminals on each speaker.
2	Connect the **left** speaker. For both upper and lower pairs of speaker terminals, connect the: ✍ red (+) terminals to the amplifier's **left** red (+) terminal; and ✍ black (-) terminals to the amplifier's **left** black (-) terminal.
3	Connect the **right** speaker. For both upper and lower pairs of speaker terminals, connect the: ✍ red (+) terminals to the amplifier's **right** red (+) terminal; and ✍ black (-) terminals to the amplifier's **right** black (-) terminal.
4	Ensure that all connections points are clean, and that all connections are secure. Check that wiring terminations look neat and that no loose strands of wires are touching any other terminals. Your speakers are now ready for operation.

Where to put your speakers

Most people will place the speakers in the most convenient position, based on the surrounding décor. While this is perfectly acceptable, you can improve the sound quality by paying a little attention to the proper placement and set-up of your speakers. The information below is provided to assist you in this.

Placing your speakers in the best position

Deciding on the best placement for speakers is a very individual thing, as each of us have our own listening preferences. Try moving your speakers around while listening to some favourite tracks until you find the result which suits you best.

Distance from the surrounding walls

Placing your speakers right in the corners of the room can result in bass which sounds 'boomy'' and unclear. Try to keep your speakers at least 20cm (8 inches) from both the rear and side walls. Bigger distances will usually bring about an additional improvement in the sound.

Distance between the speakers themselves

The correct distance between the speakers will depend on the size of your listening room, and your personal taste. Start by experimenting with the speakers from two to four metres (six to twelve feet) apart.

Distance between the speakers and the listening position

The best stereo imaging will be achieved when the listening position forms the point of a triangle, where the other two points are made by the speakers themselves. Start with your listening position as the point of an equilateral triangle, and experiment by moving forwards and backwards.

The angle (“toe-in”) of the speakers

At REDGUM Audio we recommend a 30 degree angle between the speakers. This provides a strong central image, and suitable 'timing' to provide good rear projection for home theatre. You should experiment, however, to find the sound that suits you best as room acoustics can vary widely (See section ‘Getting the most from your listening space’).

Using stands and spikes to improve the sound

My speakers are already low in resonance. Do quality speakers really need such extras?

When buying quality hi-fi speakers, the customer rightly assumes the most important basics of speaker design have been attended to. However, as you set up the speakers it is still possible to enhance their performance through the use of stands and spikes. (True, there are other ways, but let us focus in some detail on a tried and trusted, simple, cost-effective method that anyone can use.)

The first assumption to make of quality speakers is that the cabinet is constructed of a uniform, rigid material, commonly MDF (Medium Density Fibreboard). A manufacturer's ability to create near identical enclosures from MDF is (part of) your guarantee that your speakers are sonically a "matched pair". Unfortunately, speakers made of solid red gum (or any other) wood could never be a visually, or sonically matched pair, so a pair of REDGUM speakers is only able to present you with the real wood as a beautiful veneer.

The rigidity provided by the materials and construction method will result in a speaker cabinet that is low in resonance. Both REDGUM Bookshelf and Floorstanding speakers are constructed of 19mm (¾ inch) MDF, and have internal cross-bracing to add to the rigidity of the enclosure. This rigidity is important as you wish to hear only the music recorded through your speakers, and not the intrusive additional "music" (or resonance) created by the speaker cabinet's own response to the stored energy within its walls.

To test whether your speaker cabinet is low in resonance:- tap the outside of the speaker with your knuckles. It should produce a dull "thud" sound. True, there is a sound, but it does not continue to "ring" – the sound begins, but it seems to be "swallowed up" as the vibration is unable to continue for the usual length of time expected with solid wood. It sounds "dead".

How "low" is low in resonance? As the ideal construction materials for a virtually resonance-free speaker would be lead, or concrete, and often involve sand-filled walls, commercial and domestic (!) considerations make the cost, and exertion, of moving such speakers prohibitive. When cheaper, more manageable solutions exist with audibly measurable improvements, it is worth considering the use of rigid speaker stands on spikes, and even lead shot (see Section on 'The addition of lead shot' below).

Why anchor the movement caused by the cone?

For a driver to produce a sound, theoretically only the cone need move forward to create the air pressure wave that we hear. However, as we all learnt at school, Newton's Third Law of Physics states: to every Action, there is an equal and opposite Re-action. Depending on whether the speaker cabinet is anchored or unanchored, the interaction of the speaker cabinet with the cone movement is like the difference between diving off the concrete edge of a swimming pool and diving off a small rowboat on the water.

If the swimmer is compared to the speaker cone, then diving from the concrete edge is like having a speaker coupled to/on a stand on spikes, whereas diving from the rowboat is when the speaker cabinet is not anchored by spikes or is not on a stand. Diving from a rowboat, the energy of your forward/upward movement is partly lost because as you push down against the boat, it moves away in the direction your legs push it (i.e. downwards/backwards). This results is much less forward/upward energy, and is far less controlled than when pushing against the solid pool edge.

This image of the lost energy of motion parallels the losses in the quality of sound when the speaker assembly (cabinet, driver frame, stand, spikes) moves independently of the cone. When the cone moves forward, how much of the motion/energy is translated into an accurate sound wave will depend on how much cumulative movement there is in the total 'assembly'. For a speaker on a stand without spikes, the cabinet responds, in effect, like a punching bag on a pole. The speaker's weight is uppermost; the movement is a forward/backward rocking motion. Even if the speaker is placed directly on the floor rather than a stand, the backwards rocking effect will occur/be the same, though the lack of height provided by the stand will create less of a levering action/effect.

The addition of a stand provides a rigid platform to hold the speakers securely. It also increases the overall mass (adding lead shot can further enhance this). The combination of a stand with spikes will have the greatest effect on minimizing speaker movement. Whether anchored directly by spikes or placed on a stand with spikes, the rocking of the speaker cabinet will be lessened (though it cannot be removed altogether). All the same, these measures create an improvement in the sound quality that is most definitely audible.

Testing for the improvement in the sound

A convincing display of the improvement in performance is easy to set up. Check the sound of your system as you progressively anchor the speakers by the addition of stands, and then spikes. As a way of measuring the change in the sound quality, play a recording where there is an exposed section of drums, especially with loud, sharp rim shots. Repeat the track after each alteration to/addition of stand and spikes. As the rigidity of the structure supporting the speaker increases, the isolation of the speaker cones from unwanted vibrations and resonances increases. This can be heard as a ”tighter”, faster bass with better image and clarity. Transients are ..... truly transient!

The practicalities of using stands and spikes

Speakers the size of the REDGUM Audio RGSB's are commonly described as 'Bookshelf' speakers. While it is true that small speakers may be placed on or even in a bookshelf, they will perform better when placed on a rigid set of stands.

When choosing stands for either Bookshelf and Floorstanding speakers, look for ones that will support the speakers at the ideal listening height (tweeter at about ear level when seated). Stands should also be constructed of a rigid material, such as steel, and are most effective when they come with spikes to ensure a solid connection with the floor. The possibility of being able to increase the weight of the stand by filling its interior is always a plus/of benefit. (See section on 'The addition of lead shot' below.)

To ensure a good connection between the base of the speaker and the stands (Speaker Coupling), place a small pea-sized piece of blu-tack/poster tack on each corner of the stands. If you do use blu-tack/poster tack, please note the following caution.

Note

Blu-Tack/Poster Tack is strong enough to tear veneer off a speaker box! So do not try to lift the speaker directly off the stand. While holding both the speaker and its stand firmly together, place the speaker face down on the floor, and wait for gravity to work. The “Blue-Tack/Poster Tack” will slowly release its grip between the veneer and the stand, and the stand will gently slide to the floor. Less than one minute's patience keeps the speaker veneer in perfect condition.

If the additional height given by a stand is of no advantage, spikes may be also used directly with our floorstanding RGS38i model. The benefits here are the same as for stands with spikes – spikes allow the speakers to be rigidly coupled directly to the floor, increasing the isolation of the speaker cones from unwanted vibrations (both from other equipment and up through the floor) and speaker resonances. Adjust the height of your spikes so that all of them are making good contact with the floor, and the speakers' sides are vertical. This can be checked by applying some strong sideways pressure to make sure that the speakers do not rock in any direction. This lack of movement should also be checked for when speakers are mounted on stands with spikes.

Using spikes to connect your speakers to the floor may sound a little drastic, but it really is one of the simplest and most effective improvements you can make to your sound system. For those with polished floorboards or other similar surfaces, place a large coin under each spike to minimize any marks on the floor. The coins can be safely secured to the floor by using pea-sized pieces of blu tack/poster tack.

The addition of lead shot

As has been mentioned in passing in the section above on Stands and Spikes, using lead shot (or sand) is one way of adding to the mass of a speaker stand and thus increasing its resistance to the movement set up by the cone's forward excursion. Any way of increasing the inertia of the speaker-stand combination will be effective at reducing the rocking motion which creates the unwanted resonances that lessen performance. Thus, it follows that being able to add lead shot directly to the speaker cavity is also desirable/effective.

The RGS38i Floorstanding model has an isolated chamber in the base of the cabinet for this purpose. A metal "plug" can be unscrewed on the rear panel of the cabinet and through this lead shot (or clean dry sand) can be added. As lead shot is deceptively heavy, we recommend deciding on the final position of the speakers before filling the cavity. Lie the speakers face down from that position so that the effort to lift the "filled" speaker will be required only for a brief moment.

Caring for your speakers

Your speaker cabinets may be cleaned as required with a soft cloth dampened with water. No further care is required as the veneer of real red gum wood has been fully sealed with a synthetic coating of Polyurethane.

You should avoid wiping either the speaker cones or the tweeters themselves. However, if you prefer to listen to your speakers with the grilles removed, dust build-up can become a problem. In this case, we recommend the use of a small, soft brush (e.g. an *unused* paintbrush) to lightly flick the dust off.

Finally, if you want to use the speakers outdoors for a party, make sure they are well protected from moisture at all times! To ensure that there is no danger of the speakers being pulled off their stands, also make sure that the connecting cables are laid out carefully on the ground. It is a good idea to tape the cables to the floor to ensure that no-one trips over them.

Other equipment

Amplifiers

Model RGSB (Bookshelf) – are designed for use with quality amplifiers that have a power rating of 30 - 150 watts RMS (for example, the REDGUM Audio RGi35, RGi60, or RGi120).

Model RGS38i (Floorstanding) – are designed for use with quality amplifiers that have a power rating of 50 - 200 watts RMS (for example, the REDGUM Audio RGi120 or RGM175).

Loudspeaker cables

Cable quality and construction do make a difference to sound quality, and we recommend the use of thick copper cables. When choosing cables, look at a cross-section of the bare cable to determine its actual thickness, unmagnified by the surrounding plastic. Choose a cable that offers a large perimeter of copper, as a large surface area will assist transmission of the signal.

To minimise the effects of RF interference, keep your speaker cables uncoiled and away from mains power cables. Wherever possible, keep the lengths of cable the same for the left and right channels.

Note

Important safety note – Always remember that all speaker cables carry electrical current. Never touch bare wires! Do not leave any wires with bare ends exposed where they can come into contact with other cabling, terminals or humans. Any bare sections of wire should be secured by covering with electrical insulation tape.

Achieving the best sound from your system

This section is provided to offer some general assistance to those seeking to get the very best performance from their system. You will be surprised by just how much improvement can be had be experimenting with a few simple factors. The following advice is based on our own years of trial and error, and we hope that checking through it makes a positive difference to the sound of your system.

Your listening room

Strange as this may sound, the room itself will have a profound affect on how your audio system responds. In fact, many experts consider the room to be as important to the sound as any other component in your system!

Did you ever notice how it's difficult to talk in some restaurants because you can't hear each other over all the other conversations going on around you? Yet another similarly sized restaurant is perfectly suited to intimate romantic murmuring. The difference lies in the surfaces around you. Here is a simple test – go into your bathroom and clap your hands; then clap them again in a room with carpet, curtains and other soft furnishings. Notice the difference? In a room with many hard reflective surfaces sound waves bounce around a lot before dying out. Not even the most expensive stereo in the world is capable of sounding good in such a challenging acoustic environment.

When it comes to your listening room the same principles apply. Wooden floorboards, polished concrete and slate are all highly reflective surfaces. In a room without curtains or other wall furnishings the sound may be overly 'bright' or aggressive.

Similarly, it is possible for a room to be too 'damped' or absorptive. Where there are no reflective surfaces at all the sound may seem 'dead' or lacking in energy.

Luckily for us, most household rooms are a combination of the two. And, generally speaking, a combination of the two will bring about the best results.

Too many hard surfaces?

If your room is sounding too 'bright', try placing a large rug on the floor between your listening position and the speakers. Or hang some soft furnishings from the walls.

Too many soft surfaces?

If your room is sounding too damped, try removing some of the soft furnishings from the walls or rugs from the floor.

Managing the bass

Sometimes, low frequency waves can also bounce around and cause problems in a listening environment. This may be the result of the shape of the room, or the materials it is constructed from. Large pieces of furniture in a room can often help to break up these 'standing waves'.

While few of us will feel the need to redesign a room to improve its sonic properties, sometimes a small change, like placing a rug on the floor, can make a big improvement to the sound.

Other helpful hints

Corrosion and sound system terminals

Atmospheric corrosion can build up on speaker cable and interconnect terminals under normal conditions over time. Should this occur, simply removing and re-inserting wires and cables will clean and improve the contact and hence the quality of signal transmission. Always remember to turn off all equipment before connecting or disconnecting any wires or cables.

Amplifiers (other than REDGUM) as a source of speaker damage

If the amplifier in your system is not, repeat, not a REDGUM, your speakers may suffer damage from "switch on" surges, or other noises that may cause over-excursion of the cones. These situations are more likely to occur if you have separate, unmatched Pre- and Power amplifier units.

The safe order for turning such a system on and off is: Power amp On last, Power amp Off first.

Put another way - when turning your amplifier on, Pre amp comes first and then Power amp. When turning Off, simply reverse the order.

Following this procedure will help protect your speakers.

Placement of components in your sound system

Lots of fresh air is important to the health of your electronics. The louder you play your music, the more important it is to ensure that components receive adequate ventilation. Amplifiers, in particular, will generate a lot of heat. Placing the amplifier at the top of the stack, and ensuring

adequate ventilation, will help to ensure that heat can be dissipated as it should.

Amplifier volume and use of tone controls

Any amplifier can damage any speaker regardless of the power rating of the amplifier or power handling capacity of the loudspeaker. When an amplifier is played too loudly, sudden peaks (transients) in a musical passage can cause the amplifier to attempt to deliver more power than it can safely deliver. The result is amplifier 'clipping', which is a dangerous form of distortion. Some amplifiers may also produce low frequency pulses that can damage both woofers and crossover networks. There is only one 'fail-safe' method - due care! Learn the maximum safe volume position of your amplifier (visually around 12 o'clock on the dial for REDGUM amplifiers – other brands will vary) and learn to live within this limit.

You should also bear in mind that tone controls are not quality controls, and cannot adequately compensate for the poor sound of a system or a recording. If your amplifier has 'Bass' and 'Treble' controls, try to avoid setting these at high levels as this can place considerable strain on your amplifier.

Whenever changing input sources, cueing a record or cleaning a stylus, make sure you turn down the volume.

Troubleshooting

The following troubleshooting guide is designed to assist you in identifying and rectifying any problems you may experience with your speakers.

Symptom	Likely cause	Recommended action
Stereo image is vague/ bass response is lacking	Speakers out of phase	Check that the correct + to + and – to – connections have been made between the amplifier and your speakers (see 'How to connect your speakers to your amplifier' above)
There is bass but no treble, or vice versa	Typical connection – upper and lower terminals at rear of speaker not connected by bridging pieces	Check the bridging pieces are in place (see 'Typical connection' above)
	Bi-wire connection – upper or lower terminals not connected to amplifier	Check that all required cable connections are in place (see 'Bi-wire connection' above)
Too much bass/undefined bass	Speakers too close to rear wall	Re-position speakers (see 'Where to put your speakers' above)
Buzzing or crackling sound when connecting wires	Equipment is turned on	Turn off all equipment before making any cable connections
Distortion at low volumes	Speaker wires are touching each other, or another terminal, and shorting the signal	Ensure that all cable connections are clean with no loose wires
	Amplifier is damaged	Check/repair amplifier
Distortion at high volumes	Amplifier is overloaded	Turn down the volume to avoid damage to your speakers and amplifier

If the problem cannot be resolved by any of these recommended actions you should make certain that the problem lies with the speakers, as malfunction within other components may also be the cause of the symptoms. You can do this by borrowing a CD player and amplifier that you are certain are working, and replace your normal components with these to test the speakers in isolation. If the problem persists, please see your local REDGUM Audio dealer.

Specifications

RGSB

Product Type: Bookshelf Speakers

Cabinet Finish: real Red Gum Wood Veneer over MDF core

Bass Loading: front ported Bass reflex

Driver Complement: 2-way, two driver system 1x25mm soft dome tweeter plus 1x165mm polypropylene woofer/midrange

Frequency Range: 40hz-19khz

Sensitivity: 92db/W/m

Impedance: (nominal): 8 ohms

Crossover Point: 3kHz woofer to tweeter

Suggested Amplifier: RGi35, RGi60, or RGi120 (30 - 150 watts rms)

Dimensions: 210 (W) x 273 (D) x 425(H) mm

Features: Bi Wiring as standard

Connections: 5 way gold binding post

Crossover: Polypropylene capacitors, air-cored inductors, wire wound resistors

Shipping weight: 18.3 kg (22.3 kg cubic) per pair

RGS38i

Product Type: Floor-standing Speakers

Cabinet Finish: real Red Gum Wood Veneer over MDF core

Bass Loading: Bass reflex, twin rear ported

Driver Complement: 2-way, three driver system, 25mm soft dome tweeter, 2 x 165mm polypropylene woofer/midrange

Frequency Range: 32hz - 20khz

Sensitivity: 94db/W/m

Impedance: 6 ohms (nominal)

Crossover Point: 2.8 kHz woofer to tweeter

Suggested Amplifier: RGi120, RGM175, (50-200 watts rms)

Dimensions: 210 (W) x 273 (D) x 985 (H) mm (changed order of numbers ✍)

Features: Bi-Wiring as standard; lead shot chamber

Connections: 5-way gold binding post connections

Crossover: Polypropylene capacitors, air-cored inductors, wire wound resistors

Shipping weight: 19.8 kg (26kg cubic) each without lead shot

Warranty

REDGUM speakers are warranted to be free of defects in material and workmanship, subject to the following conditions, for FIVE (5) years from the date of purchase by the original owner. Warranty claims must be accompanied by proof of purchase, including date.

This warranty is subject to the following conditions and limitations:-

This warranty is void and inapplicable if the speakers have:

- not been used in accordance with the instructions contained in the manual;
- been subject to misuse or abuse, one example of which would be burned voice coils;
- been modified, repaired or tampered with by anyone not specifically authorised in writing to do so by REDGUM or its agents;
- been subject to inputs in excess of the maximum rating, or inputs from unstable or clipped amplifiers;
- been damaged by accident, intent, neglect or transportation.

Should the product be faulty, the owner is liable for the cost of freight to the nearest REDGUM repair agent, or the factory. Should the product be found to be without fault, the owner will be liable for the return freight also.

Warranty Registration

Complete for warranty registration:

Name

Address

City

Zip/Post Code

Country

Date of purchase

Place of purchase

Model No

Serial Number (if any)

Fax this page to the REDGUM Audio factory at +61 3 9897 1399

Alternatively, you may email the details (including serial number) to warranty@redgumaudio.com