

REDGUM Audio *Award-winning Hi-Fi Components & Systems*

Made in Australia – truly!



Best Buy Awards Winner, 2003:

2 Ch Hi-Fi Amplifier/CD System/Loudspeaker System - RGi60s + RGCD2 + RGSB
Stereo Hi-Fi & Home Theatre Consumer Guide 2003 AVL Australia

"The entire system gels you're held in its multi-layered sonic charms."
"... taking you on a rollicking rollercoaster ride across the frequency spectrum." (AVL, #116, 2002)

RGi60 + RGCD5 + RGS28i
Gramophone

U.K., Jan 2001

As a system, an extra special something seemed to be added to the equation.
... offering the full excitement captured, whether orchestral or solo performances. (Summary)

Reviewers' Choice 2001:

RGH900 6 Ch Home Theatre Amplifier
HomeTheaterSound Canada, May 2001

"It is able to sort out complex passages in films, with voices represented with a realism
... not previously heard ... while still reproducing dynamic sound effects and music simultaneously."

Best Debut Product 2000, Reviewers' Choice Annual Awards:

RGi120 Integrated Amplifier
SoundStage! Canada, Dec 2000

"... it just passes on what is there, and that's exactly what a great amplifier should do."

Best Buy Awards Winner, 2000:

RGi60 Integrated Amplifier
Stereo Hi-Fi & Home Theatre Consumer Guide 2000 AVL Australia

"If musical insight is your idea of hi-fi heaven, then the
RGi60 amp will take you there and back." (AVL, #80, 1999)

RGS Regnans Loudspeakers
Audio Video Lifestyle

Australia, Aug 2004

"... the Regnans reach deep into the complex orchestral arrangements and deliver genuine musical purity.
"... rich and resonant sound melts from their drive units like honey. ." (AVL, #141, 2004)



www.redgumaudio.com

RGM175 Monoblock Amplifier
SoundStage!

Canada, Jan 2002

"... The RGM175 seemed to elicit the best of both the tube and solid-state worlds, featuring the smooth highs and colorful (but not colored) midrange of valves, coupled to the sheer power and bass definition of the best transistor devices."

The Inner Ear Report

Canada, 2001 (Vol 13 #3)

The review panel were unable to determine whether the source was valve or solid state. The REDGUM sound was finally likened to that of valve gear. (Summary)

Australian Hi-Fi

Australia, Oct/Nov 2002

"... [REDGUM's] amplifiers are extraordinary. Bright, lively and dynamic, their 'real-world' performance is as exceptional as their appearance."

ABC Radio 24 Hours

Australia, Sep 2002

"... if you want arrestingly clean and powerful sound, then there's plenty of that."
"Another winner. Outstanding quality; a world-class Australian product."

RGi120 Integrated Amplifier
Bound For Sound Report

U.S., Feb 2000

"... an amplifier you should listen to even if it's not expensive enough for your budget."

Audio Ideas Guide

Canada, Summer/Fall 2000, Vol 19 #4

"... the best MOSFET amplifier I've heard, and easily the most powerful integrated amp in my experience. clean as a whistle, and very quick with transients."

RGi35 Integrated Amplifier
Audio & Video Lifestyle

Australia, #120, 2002

"... the top end has an effervescent sparkle and plenty of vigour."
"... provides excellent bass drive, fine midband projection and treble having just the right combination of attack and control."

RGH900 6 Ch Home Theatre Amplifier
Secrets of Home Theater & Hifi

U.S., Jul 2001

"... I found the sense of realism and involvement to be emotionally frightening ..."
"... presented with a wonderful soundstage , impressive dynamics, depth, and an all round beautiful reproduction of the source."
"... Very impressed with the unit as a stereo amp ..."

RGCD2 CD Player
Secrets of Home Theater & Hifi

U.S., Mar 2000

"... its sonic qualities are comparable to players 2-3 times the price."

RGCD5ENR CD Player
SoundStage!

Canada, Feb 2001 (of core design, RGCD5)

"Almost uncanny smoothness and clarity this player gets the voice right."

Audio & Video Lifestyle

Australia, #137, 2004

"It doesn't really matter if you're a chronic headbanger or a classical opera buff, ... Redgum designs have that unerring ability to work its sonic magic with all types of musical styles."

Hi-Fi Component System

REDGUM AMP/CD/SPEAKERS



Winning Category:

2-Channel Hi-Fi

Component System

Ever get the urge to fully support

your local hi-fi industry? It's something that's easily done if you're after a pair of loudspeakers - there's plenty of Aussie brands to choose from. And we've our fair share of amplifier manufacturers too, but if you really want to 'buy Australian' completely, there's not many manufacturers that can offer you source components, amplification, loudspeakers and even matching furniture to put it all on. Correct me if I'm wrong, but Redgum Audio's the only single Aussie hi-fi manufacturer that does the lot.

We've had a fair few examples of Redgum's gear through the AVL office over the years and in that time, the Melbourne-based manufacturer has expanded to the point where it now produces CD players, a tuner, a range of amplifiers both two and multichannel, two loudspeaker models, a sumptuous equipment rack and most recently, a DVD player has just joined the Redgum ranks. It's a prolific line-up and it's all 'True Blue'.

We've looked at both the RGi60 and RGCD2 in the past, but there's been some pretty significant changes, especially to the amp, and partnering the electronics here is a pair of the standmountable RGS13 loudspeakers. The sumptuousness of the system is beautifully enhanced by the addition of the Redgum Audio Stand - one of the most attractive pieces of hi-fi furniture you're likely to come across.

As the name and picture opposite suggests, there's a fair bit of wood in Redgum's products and this aesthetic signature is just one element that makes these truly unique hi-fi and AV products. Redgum's also one of extremely few Aussie brands that have made successful inroads into both the American and European markets, with the unique styling and design concepts proving a popular combination in these saturated and tough markets. Part of the products' success is down to their distinct Australian flavour, but also the engineering and conceptual design also makes them tremendously appealing.

Keep the Mr.
Sheen
Handy, as
there's
plenty to
polish on this
all- Aussie
System

Vital Statistics

Dimensions:

420 x 360 x 93mm (RGI60s & CD2)

Weight:

9.1kg (RGI60s), 7.3kg (CD2)

Price:

\$6,289 (complete, as tested)

Distributor:

Redgum Audio Pty Ltd
Factory 3, 25 Clarice Road
Box Hill South, VIC 3128

Telephone:

(03) 9897 1277

Facsimile:

(03) 9897 1399

Website:

www.redgumaudio.com



Apart from drop-dead gorgeous looks, there's plenty happening under the lid of these components and within the speakers' cabinets. The source component is the WCD2, a combined CD transport and Digital-to-Analogue converter (DAC). It's not quite unique in its design, but shares a similar design principle to what's regarded as probably the world's best CD/13V13 player Meridian's \$25,000 800 Series machine. The CD2 will only set you back \$995, but both machines use a computer CDROM drive as the principle laser assembly and transport mechanism. A Creative infrared drive has been the preferred choice over the past few years, but what with the ever-changing nature of the computer industry, the CD2 now comes equipped with a 52x speed BenQ/Acer device. There's no longer any remote control ability, a feature most owners found useful, but not absolutely necessary, according to Redgum, and there's plans to develop an affordable DVD-Video playing version in the near future.

Apart from the sonic value of using a CD-ROM drive, there's a huge economic reason too and being able to swap the drive as the laser life comes to an end makes huge long-term operating sense.

The RGi60 has seen some changes, both internally and cosmetic since I last played with one with a few notable finetuning improvements. Gone are the cooling fans that used to be noticeably noisy at low listening levels and the amp's now equipped with heavier-duty 4mm binding posts. The output remains the same at 60 watts and there's five line level inputs. Redgum also produces a standalone phono preamp for vinyl spinners to use in conjunction with any of its amps.

The amp comes in two versions with either single or dual volume controls and the trademark Redgum key acts as the power on/off switch.

It's also got some practical value in that you can 'lock' the amp up so the kids can't blow things up with their Eminern CDs and Redgum also holds a registry of key numbers and holders, so if the amp happens to go walkabout, there's a list of stolen serial numbered amps on Redgum's website.

The wooden panels on both the CD player and amp are cosmetically matched, making for aesthetic twins and are machined from the same piece of solid timber. Highly polished and lacquered, the end result is audio gear that looks more like pieces of quality furnishings, rather than an ugly black box. And what can truly be described as a piece of furniture in its own right is the beautiful Audio Stand that also bears the Redgum badge. It's a threepiece design with both legs and crosspiece machined from solid Red Gum. Three bevel-edged clear glass shelves slide snugly into machined grooves and with the electronics in place, the result is a stunning-looking system.

Technotalk

Product Type:
Hi-Fi component system

Amplifier Power:
60 watts RMS, 132 watts IHF pulse

Amplifier Signal To Noise Ratio:
100dB

Amplifier Peak Current:
More than 150 amps

CD Player Signal To Noise Ratio:
100dB

CD Player Frequency Response:
0Hz - 24kHz (± 2 dB)

CD Player Output Impedance:
100 ohms

Total Harmonic Distortion:
0.0010%

Loudspeaker Power Handling:
30 - 150 watts RMS

Loudspeaker Frequency Response:
40Hz - 20kHz

Loudspeaker Crossover Point:
3kHz - woofer to tweeter

Technotalk specifications and recommended retail prices are supplied by the manufacturer

To cap it off, the CD player and amp are joined by a pair of RGSB Link Series speakers, finished in Red Gum veneer (what else) and it's very rare that you ever come across such an attractive hi-fi system. The RGSBs are the smaller of two models from Redgum, and are a fairly straightforward, but very solid pair of 2-way bass reflex design. The speakers construction is first class, with a craftsman-like finish and level of build quality that leaves no small detail overlooked.

The final (although very important) consideration is the accessories. Here, we've partnered the speakers with a pair of Concorde SP24 speaker stands - a solid metal single column design that can be lead-filled. The CD2 comes with a decent interconnect (not the throw away patch cords) and Redgum included some heavy gauge Neotech multistrand speaker cable and substantial Neotech locking 4mm banana plugs. All you need do is supply the electrical juice and some CDs.

It's so complete in fact, that one lucky AVI- reader will win it. We always have a really tempting subscription prizes and over the next six issues, if you subscribe to Audio & Uideo Lifestyle your name will go into the draw and you'll be in the running to win the entire package - cables and all, worth over \$6,289.

But before we pack it all up and ship it off to one incredibly fortunate reader, we thought we'd better review the system in its entirety, so whoever wins it know's what to expect and the rest of us can drool over it.

Whether it costs you just the price of a subscription, or you part with the full cash amount, either way, this is one tasty 2-channel system. Not only does it look the absolute business, it supplies a pedigree sound, and one with its own signature. The entire system gels and from the very first few notes that emerge from the speakers, it's clear that there's an immediacy and purpose to this Redgum system. It's something that grabs your attention straight from the word go and you're held in its multilayered sonic charms.

The first ingredient into the mix is the technical make-up of the CD2. It uses a Burr-Brown DAC, namely its PCM1710U dual 20-bit chip. The rest of the actual digital design was by another Aussie hi-fi guru, John De Sensi of MusicLabs, while the analogue and power supply stages were the responsibility of Redgum. The sonic nature of the CD player works hand in hand with any of the Redgum amps, and the RG160s in particular is grateful of the quality of this source. The two combined deliver the system's obvious enthusiasm, something that's also reflected by the RGSB speakers.

Of course, the true test of any system is its musicality, and there are some pieces of music that demand a little respect. One such track is Jeff Buckley's Grace from his album of the same name. All 10 songs are wonderfully crafted and his passionate vocals sound full of emotion on the Redgum system. It gives a strong feeling of intimacy and proximity to the artist without forcing the music upon the listener. Listening to Jeff Buckley means you often have to be in the right frame of mind - these Redgums will definitely put you in it.

On a very different musical tack, it's a different set of qualities that are put into action with the ambient atmospherics of Moby's 18. The system submerges you in a lush, tilting sound, delivering fluid depth that urges you to take the plunge. There's enthralling presence with this sort of easy-going music and on the odd occasion when a couple of the 18 tracks' tempo picks up, the change in pace is duly noted by the Redgums.

So far, so good. It's worth mentioning at this stage of the proceedings how impressive the RGSB speakers are. The review (and prize) pair came with a set of single-wire terminals and having lived with them for a number of days, slowly settled into the job at hand. The cabinets are of medium proportions, although the speakers are easily capable of producing a much substantial 'out of the box' listening experience. Soundstaging and bass weight are both greater than you'd expect at first sight and they have an pleasant ability to sound larger than their physical dimensions.

Forward-firing, bass reflex in design, they don't complain unduly if shoved up against a rear wall, although because there's some truly useful bass weight here, the speakers' remain tightest with around half a metre to spare from the Giprock. Allied to this low-end clout there's plenty of speed and attack too. Further up the frequency range the clarity and pace is maintained, with a smooth, clean crispness that brings a vivacious openness to vocals and guitars, another aspect well demonstrated by the Jeff Buckley CD.

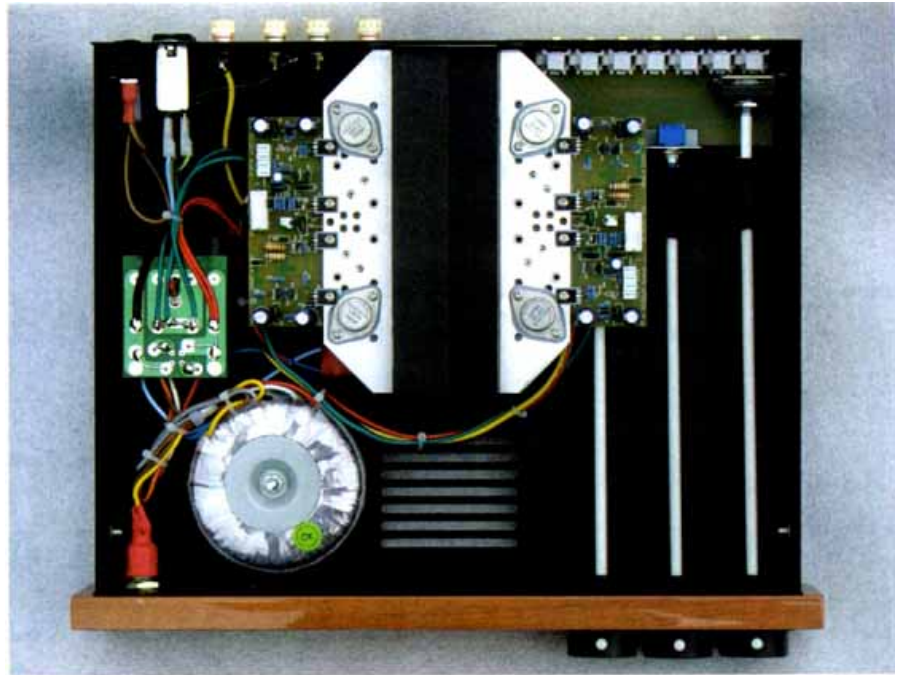
Thanks to a very high 92dB sensitivity and nominal 8 ohm impedance, these speakers are an easy load for modest amps and the 60 watts of the RG160s certainly goes a very long way. Out of curiosity I also tried the Redgums on the end of some additional Aussie amplification, an ME 24/55011 pre/power combination and the RGSBs are happy to relish the extra grip a more hefty power amp can provide.

They and the whole system are very good with gentler music too, with the RGSB's soft dome tweeter sounding sweet and forthright, but without a hint of spit or sizzle. Best of all is the way the entire sound hangs together. They do appreciate the hefty pair of stands and it would be best to fill the Concorde SP24s with lead shot or dry sand.

"Not only does it look the absolute business, it supplies a pedigree sound, and one with its own signature.

The entire system gels and from the very first few notes that emerge from the speakers, it's clear that there's an immediacy and purpose to this Redgum system.

It's something that grabs your attention straight from the word go and you're held in its multi-layered sonic charms."



A 'naked' RGI60s integrated amplifier shows what its got under the bonnet, using quality components like the four MOSFET output transistors

It's only fair, I thought, to give the system some punishment, to see how it handles the rough stuff, so in went a taste of Nine Inch Nail's super-dynamic *The Fragile*. This two-disc set could almost be described as a gothic rock odyssey, if there's such a thing, but regardless the Redgum system responds by taking you on a rollicking rollercoaster ride across the frequency spectrum - the system managing to hone the music's adrenaline-storming aggressive tendencies into a sound that strikes hard with driving impact. Guitars sear through the air, as rhythms collide with forceful cohesion. Just as quickly, the music can subside, and when it does the Redgum delivers all of the fast moving transients.

Musical and involving, there's nothing about the performance of this system not to like. The only possible gripe is some of the operational parameters of the system. The CD2 might prove a bit fiddly to some. There's no remote, so playing a CD means opening the front panel, load a disc and hitting the small CD-ROM Play button. You can also only skip forwards through tracks - there's no going back. That aside, what this Redgum delivers in sheer listening enjoyment more than makes up for this and it's got to be the best-looking AVL magazine subscription prize we've ever offered. **AVL**

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O p i n i o n

The 'Opinion' expressed here is that of the reviews, summarised in the form of a 5-star rating system, and should be considered as an integral part of the full contents of this Audition Equipment Review. As such, each category should be judged on its own merits and not necessarily used as a comparison with other equipment reviews in this, or other editions of Audio & Video Lifestyle magazine.

- ★ Shocker
- ★★ Average
- ★★★ Good
- ★★★★ Excellent
- ★★★★★ Perfection

"...there's a fair bit of wood in Redgum's products and this aesthetic signature is just one element that makes these truly unique hi-fi and AV products."

Performance
★★★★★

Build Quality
★★★★★

Compatibility
★★★★★

Value For Money
★★★★★

“The Redgum System is anything but wooden”

Original Review by Andrew Everard

Summary of Review by LLG, REDGUM

Andrew Everard reviewed the REDGUM integrated 60 Watt amplifier with its recommended matching Bookshelf speakers, (RGS28i) and combined these with the REDGUM RGCD5 DAC/CD player as its source. As well, all units were tested separately in other systems and still found to be able to firmly stand alone on their sonic merits. However, once all units were brought together as a REDGUM system, he found an extra special something seemed to be added to the equation.

Though one of the smaller amplifiers in the range, the 60W amplifier was content when driving even larger speakers of the reviewer's choice. All the same, he felt that the performance of the REDGUM bookshelf speakers would satisfy those who would normally need to consider a floorstanding model for such a level of performance.

The sound quality of the DAC was highly praised even when compared against a Marantz CD63 MkII KI-Signature player. Whether using the RGCD5 as a DAC or a CD player, the interpretation by each performer was deemed to lose none of its great clarity and translucence.

Everard was quickly convinced of the extreme flexibility gained from REDGUM's use of dual mono volume controls instead of the conventional separate volume and balance controls.

The detail and spaciousness of the soundstage were always found to be most engrossing and offering the full excitement captured by the recording, and this was regardless of whether for orchestral or solo performances. From the highest to the lowest frequencies for voice or instrument, the naturalness of the sound was always apparent and without any loss of authority or intensity whatever.

LLG

Stereo Amplifiers: Redgum RGi60



There's not much more we can say about Redgum Audio other than this Australian-made amplifier has won this year's 'Best Amp' title ahead of some

pretty hot competition from the UK and the USA. And this was the first of the suburban Melbourne manufacturer's products to be reviewed by *Audio & Video Lifestyle* magazine, which, incidentally has since been followed by a review of the unique Redgum DAC/CD player.

Redgum Audio was formed five years ago by Ian Robinson, a gentleman with three decades of hi-fi industry experience under his belt and designer of the Redgum range of amplifiers. Currently there are four 'models' in the range, although the entire range shares the same intrinsic design qualities so you'd be better off thinking there's one Redgum amplifier that comes with different power outputs.

The entry-level amp is this, the RGi60 - a 60 watt integrated single unit. The next model is the RGi120, a stereo power amp/passive pre, rated at you guessed it, 120 watts. Next up, the RGM175 monoblocs and topping the range off, the most powerful, the RGM300 monoblocs. There's also the aforementioned CD2, a DA converter that works with any computer CD-ROM drive as its transport, a six-channel 240 watt AV power amp and a couple of loudspeakers which Ian enlisted the help of leading Aussie speaker maker, Axis Loudspeakers to design.

Back to the matter in hand, the RGi60 amplifier. Now, Redgum amps aren't your everyday sort of amplifier. The product literature will tell you in great detail what makes the Redgum amps different and there's a number of design features that sets Redgum truly apart from the crowd.



The first thing you'll notice is that the amplifier comes with a key. It's a feature I've only ever once come across, a few years back, when Thorens did a similar thing. The lock doubles as the on/off switch - so no key and you can't switch it on. Great if you want to keep the kids away from the hi-fi. It also acts as a security feature - any would-be thief isn't going to get much joy out of it without the key. Every Redgum amp has its own key and Redgum keeps a registry of keyholders, so a keyless amp is bound to raise suspicions.

Novel, yes, but also practical.

Another thing you'll notice is that the RGi60 has two volume controls. The dual mono design is a deliberate attempt to reduce the amount of distortion the volume pot contributes to the sound quality by reducing the amount of contact with in the volume control. In fact Redgum amps don't use conventional carbon potentiometers at all, instead opting for a volume control made of conductive plastic.

Other features (or lack of them) to maximise sound quality abound. Redgum works with the philosophy of 'less is more', and maintains its guiding design principle is 'not to use insane bunches of components, when one unit will do.' It's a principle at the heart of amplifier design - some of the world's finest sounding amps are often the simplest in design.

The main aesthetic feature of all Redgum amps is the use of a single

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by Nic Tatham

"If musical insight is your idea of hi-fi heaven, then the RGi60 amp will take you there and back ... A true Aussie stunner!"

piece of Red Gum wood adorning the amps fascia, which also makes every Redgum amp unique. It's a striking look with each solid panel selected and finished to maximise the character of its grain. One look at the finish, and it's no surprise when you learn that Ian also used to be a cabinet maker.

Redgum wanted to produce amplifiers that would last a long time and to make them as reliable as possible. To this end, MOSFETs are used in the output stage of all its amps as they don't degrade and need replacing as with valves, and offer significant benefits over conventional transistors. Those used in the Redgum amps are higher specified than found in a lot of other MOSFET designs and Redgum claims its MOSFETs make a circuit so robust that it is indestructible. It's a bold claim sure, but it's one that Redgum backs with a seven year warranty, which shows it must have confidence in its products.

The RGi60, as with all Redgum amps, is line-level only; incorporating a passive preamp with five inputs comprising two for tape, CD, VCR and a tuner. There's no phono stage, nor do Redgum produce one, so if you're still into vinyl, you'll need a separate phono amp to listen to your favourite LPs. This omission was also a deliberate one; Redgum believing an internal

phono stage again leads to a reduction in sound quality and recommends an external device for the best vinyl reproduction.

As with all amplifiers, the Redgum begins to really fire after some running in and warming up.

The sound is immediately appealing, even when cold, though only improves with use. Leaving it to 'cook' gently for a weekend works wonders. Fed by a TEAC/Musical Fidelity CD combination and driving a pair of Mission 752s the Redgum positively fizzes through Pearl Jam's raucous *No Way*. Lead singer Ed Vedder's voice is solidly positioned at the heart of the soundstage, while the snare drum's crack is tight and crisp.

Choose a purer recording, like John Lee Hooker's *Tupelo* and the RGi60 sounds excellent, hammering out his powerful, quick-fire guitar, and capturing the intimacy of his wheezing, rattling breath. If musical insight is your idea of hi-fi heaven, then the RGi60 amp will take you there and back.

In many ways the sound of the Redgum is the antithesis of its attention-grabbing appearance, the presentation being understated in the best possible way. Sure, it has its own character - all hi-fi does - but this is benign, and within a short space of listening it's very easy to accept the amp's version of the music as the truth.

The Redgum is smooth in the way that many people believe only valve amplifiers can be - there's an impressive lack of edge or hardness to the sound that encourages long listening sessions.

Don't mistake 'smooth' for lack of bite, however. This amp has enough attack to satisfy all but the most hard-bitten thrash merchants, and in terms of balance, it is just about spot-on. Any warmth present is in the recording and not added by the amplifier to spice up the presentation.

Rhythmically the Redgum is excellent, having a natural fluidity that manages to be precise without sounding mechanical or forced. This works as well with tracks by Fat Boy Slim as it does with the Acid Jazz of Jamiroquai or a Beethoven symphony. This is perhaps the amp's greatest strength - it works well with all kinds of music and expresses no preference. While revealing and analytical, it never

makes a meal of poor recordings. On the other hand, its wide-ranging dynamics and exceptional detail retrieval skills make the most of good recordings.

If soundstaging is also important to you, there are few around this price-point capable of such a spacious and well focused soundstage. Depth is handled particularly well, and with suitable recordings the back wall of the listening room virtually disappears.

It's a potent 60 watts too, and the amp has enough poke to cope with difficult speaker loads with maybe only a slight loosening of the collar. It combines great looks with a truly Australian feel with a sound quality that'll rival the best from anywhere in the world.

The Redgum isn't only different; it's a totally homegrown product with a very affordable price tag that makes it even more appealing compared to pricier imported rivals. With amplifiers such as this, there really is no reason to look elsewhere. A true Aussie stunner! **AVL**

Winner: Stereo Amplifiers

Specifications

Power Output:

60 watts RMS per channel

Total Harmonic Distortion:

Less than 0.009% (below clipping)

Intermodulation Distortion:

Less than 0.005% (below clipping)

Signal to Noise Ratio:

More than 100dB

Input Impedance:

10k

Slew Rate:

More than 65V/uS

Damping Factor:

More than 150

Frequency Response:

0.8Hz-80kHz (-3dB points)

Peak Current:

More than 150 amps

Inputs:

2 x tape, compact disc, video cassette recorder, tuner

Dimensions:

420 x 360 x 76mm

Weight:

8kg

Price:

\$1,495

December 2000

Redgum Audio RGi120 Integrated Amplifier

*High power, unique styling,
thoughtful design, and terrific
sound.*



by Doug Schneider

Redgum: If you haven't heard of this company or the type of wood that is its namesake, I'm not surprised. However, if you see them once -- the wood or the company's products -- you will not likely forget them.

Redgum, the company and wood, comes from Australia. Redgum Audio has been building amplifiers for many years, but they've only been exporting since 1995. Recently, through NuView Audio, a Canadian-based company with an office in the US, Redgum products have been brought to the North American market.



The person behind the organization is Australian Ian Robinson, a self-described "analog man." I met him at the recent audio show in Toronto. Redgum produces other products, like a CD player that will be reviewed here in the future, but Robinson sticks to the analog portion of the designs (someone else designed the digital stage of both of the company's CD players). As far as designing goes, Robinson is a very down-to-earth guy who favors high value over frivolous cost. And that's not to say that he likes lower-cost products better. He just doesn't believe a product has to cost a lot in order to sound really good. Therefore, if you look at his company's product line, you will see some *very* reasonable prices. Redgum boasts the way plenty of companies do, but after meeting Ian Robinson, I can assure you that Redgum really means it when they say that their products are designed to be the best-sounding audio electronics you can buy. The RGi120 is priced at a very reasonable \$1700 USD and is capped off with a lengthy seven-year warranty.

Review Summary

Sound "Clean, clear, fast and precise" with "no type of fatiguing anomalies"; "I listened to this unit so much because I simply wanted to, not because I had to."

Features Greater-than-average power output for an integrated amp in its price range; unique styling; dual volume controls.

Use Volume controls are not stepped; power-on switch is replaced by the turn of a key; no remote control.

Value "Can easily be compared to [units] costing much more money."

Distinctive features

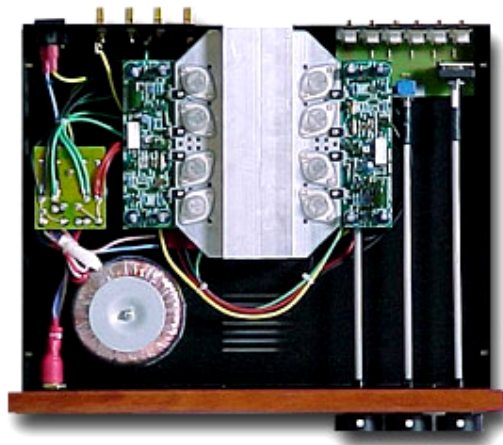
It's hard to stand out in the crowd these days, but there are two things that make the Redgum amplifiers unique. The first is the faceplate, which is a solid piece of redgum wood. It has as attractive reddish/orange look that gives the amps their novel appearance. The fact that there are only three knobs on the front -- volume for each channel plus the input selector -- further shows off the wood. The knob on the far right is the input selector, which simply "clicks" into place for up to six input sources. The two volume controls, one for *each* channel, take some getting used to. I like simplicity, and I also like the idea of dual mono volume controls to possibly improve the performance of the unit (dual mono is done to increase channel separation and also negates the need for a balance control). But the implementation of it here is my only real quibble with this otherwise excellent amplifier.

So I took this complaint straight to the top! In Toronto, I pointed out to Ian Robinson that "I have an issue with...." I only had to start moving my hands to the volume controls. Robinson started into a big sigh. He knows.

See, the Redgum volume controls are *not* stepped attenuators that click with each increment. Furthermore, there is only a white dot on each volume control and nothing to line that up with on the faceplate. Essentially, ensuring correct channel balance takes a keen set of eyes *and* ears to get it *just* right. However, this is a quibble, and really minor when I think just how good an integrated amp this is in terms of sound. Get it to your favorite volume setting, leave it and you may not care. Robinson tells me he is working on a locking mechanism that will "strap" the two volume pots so they can both be moved together.

The other interesting feature is the key that turns the unit on. Yes, a key, not a power switch, complete with a Redgum key chain and a locking mechanism on the wood faceplate that is similar to what you would see for a car door. While I'm sure some audiophiles will speculate as to the inclusion of the wood and key mechanism, I'm pretty sure these exist so the product gets noticed and remembered. And it works! Simplicity is the hallmark of Redgum designs, so there is no remote control.

The RGi120 is MOSFET based and rated at 120Wpc into 8 ohms. Redgum makes two other integrated amps that look very similar, the RGi35 and RGi60, but they have lower power outputs and, hence, are lower in price -- \$995 and \$1250 respectively. There are also high-current versions of each of the integrated amplifiers, and these are priced somewhat higher too. They have beefier power supplies (bigger transformers and that sort of thing) that will output the same power into 8-ohms, but they offer better output into 4-ohm loads. For myself, with the speakers I have on hand, the RGi120 worked just fine. I would say that if your speakers are of lower and nastier impedance, you may be wise to look at the higher-current version, which costs \$2500. If your speaker load's benign, you can save a little money. Adding to the features, Robinson says his integrated amps are virtually indestructible, and I could try to short the RGi120 out if I wanted. I didn't take him up on the offer.



Around the back you can see the good-quality speaker binding posts lining up horizontally (the high-current version of the integrated amp has slightly better posts), along with the RCA input jacks. Heatsinks are located internally and vented out the back. All in all, I found this to be an understated and elegant unit that will be a pleasure for the eyes of many audiophiles. As well, it is quite small in size despite a fairly hefty power rating. This will make the RGi120 a welcome sight for many people tired of behemoth-sized equipment.

System and sound

I used the RGi120 in my regular listening room with a group of components I have been using of late -- some new, some up for review -- that end up working exceedingly well together. In particular, the Resolution Audio CD55 CD player, the Magnan Bronze interconnects and Signature speaker cables, along with an assortment of speakers from Cliffhanger, Axiom Audio, and PSB, among others.

As mentioned, the RGi120 has no trouble powering any of the speakers I threw at it. However, it should be noted that none of these constitute any type of unreasonable load. They are all of at least average efficiency and are reasonable loads. Having something, say, like Cliffhanger's Bulldog loudspeaker that I reviewed months ago (an excellent monitor, but one that needs *plenty* of rock-solid power) would have been a better test. However, that particular speaker is not in my room anymore. Still, the type of speakers I use have specs that are representative of more than 80% of the speakers on the market and likely similar to what would be used with this amplifier

After turning the key, the amplifier gives a slight *thmmp*, and you're ready to roll. Although I found the amp to sound just a touch better after a short warm-up period, I was surprised how good it sounds from a cold start. I guess if Redgum wanted to do something really unique, they could have made it so you have to turn the key a few times to mimic those winter cold-car starts.

There is no better way to describe the RGi120 than to say it sounds exceedingly neutral. Put into more descriptive terms, it is clean, clear, fast and precise. What's more, those superlatives remain even when comparing it to power amps or integrated amps of any price. Imaging is tight and stable, and detail is excellent. I'm used to my reference-level Blue Circle gear, stuff that excels in letting all the details through, and this Redgum integrated amp is definitely right up there -- so close, in fact, that given its price it's downright scary!

I queued up all my favorite discs and came out with nary a criticism. If I were just listening to this amplifier without seeing it and someone told me that it cost \$3k or \$4k, I wouldn't have thought twice. The depth of stage and image specificity from "Everest" on Ani DiFranco's *Up Up Up Up Up Up Up* [Righteous Babe Records RBR-013-D] came *very, very, very, very, very, very* close to what I heard when I had the outstanding JMLab Mini Utopias running with my Blue Circle amps. To give you more perspective, *that* combo was among the best I've ever heard in my room. Given the price of the gear here, the Redgum RGi120 is all the more impressive.

"Passion and Pride" from the Inakustic demo disc (this track is also available on *Friedman: Passion and Price* [Biber 76671]) was rendered with lightning speed and tremendous articulation. This track also has stellar dynamics, and I could hear some of the smaller speakers puttering out before the amp had a hint of strain. No, this amp does not have quite the low-end "whump" that a super-high-current separate power amp has, but it's not far off and more than sufficient for my own use. And even at high volumes, there was no clouding or congestion, which indicates very good performance and control. Highs are pristine without any sort of "tizz." Lows are deep and tight. Midrange is spot-on and without any exaggeration or bloat. At both low and high volumes, detail and retrieval of ambient cues are outstanding. Image placement and depth of stage remain stable and are very impressive. Sometimes with lower-priced gear, there is a flat-as-a-pancake type of presentation. Not with the RGi120. This type of performance, along with the fact that I found no type of fatiguing anomalies, is why I believe this integrated amp can easily be compared to those costing much more money.

As I mentioned, I found very little to criticize, and this is what makes the RGi120 increasingly difficult to describe. The RGi120 does not bloat, emphasize, or warm up the sound. It conveys what's there. I just bought Paul Simon's *You're The One* [Warner Bros. CDW 47844]. On the whole, it is well recorded, and Simon's voice has a full, fleshed-out sound on many of the tracks -- and that's just the way it sounds played through this integrated amp. The RGi120 doesn't add any unnatural warmth, and it certainly doesn't take it away either. Like I said, it just passes on what's there, and that's *exactly* what a great amplifier *should* do.

Overall, this performance is very similar to what I hear from the excellent products from Simaudio. There is a clean, neutral and natural sound that many don't often associate with solid state (solid state often brings about terms like gritty or grainy). But if it doesn't sound like solid state, does it sound like tubes? Well, certainly not tubes in the traditional (*i.e.*, historical) sense. If what you are looking for is the warm, fat, and bloated sound of tube amps of yesteryear, you won't get that here. That's perhaps an unfair characterization of tube gear because many of the excellent tube-based amps today don't sound like this. But the point is to get across the characteristic (coloration) that some associate with the sound of certain amplifiers. Vocals are not unnaturally pronounced here, and bass frequencies are not overly warm or unnaturally full-sounding. No, the RGi120 doesn't do any of that. In my system, its sound is exceedingly clean, wholly natural and completely listenable. In fact, I listened to this unit so much because I simply wanted to, not because I had to. And that's the highest compliment I can give it.

Conclusion

There will be a group of audiophiles for which an amplifier like this will simply be "too cheap." Then there are others who may bypass it for separate components, feeling that separates are the only way to get the ultimate in performance (and there is a point there if you are going for the ultimate statement in sound). And there are others who may have a hard time with a wood faceplate, feeling black or silver metal is the only way to go. Frankly, I don't blame these people because we all fall prey to our superstitions.

But I found this \$1700 integrated amplifier to be a sonic knockout and every bit the equal of much pricier gear. It joins the select group occupied by the likes of Musical Fidelity and Audio Analogue -- superbly built, nicely styled, great-sounding equipment that doesn't cost a whole lot. Perhaps the high-current model will be better in some applications, but in my room, I wasn't even tempted. In the end, forget the price and just listen to music -- and don't be scared to pair this with speakers of *any* price. It's that good.

...Doug Schneider

das@soundstage.com

Redgum Audio RG120 Integrated Amplifier

Price: \$1700 USD.

Warranty: Seven years parts and labor.

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Phone: 61-3-9897-1277
Fax: 61-3-9897-1399

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Website: <http://www.redgumaudio.com/>

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E-mail: info@nuviewaudio.com

Website: <http://www.nuviewaudio.com/>

- [Current Issue](#) Equipment Reviews

May
2001

Reviewed by
[Roger Kanno](#)



Redgum Audio RGH900 Six-Channel Amplifier



Features SnapShot!

Description

Price: \$2800 USD

Dimensions: 16.5"W x 14.2"D x 3.35"H

Weight: 24 pounds

Warranty: Seven years parts and labor

Features

- Six channels rated at 150Wpc
- High-quality binding posts
- Single-ended RCA inputs
- Removable IEC power cord
- Cooling fan
- Unique and attractive cosmetics featuring solid Redgum wood front panel
- Keyed power switch
- Compact design

If you have not heard of Redgum electronics, you are probably not alone. Designed and manufactured in Australia, they are relatively unknown in the North American market. However, Redgum markets a full line of preamplifiers, power amplifiers, integrated amplifiers, CD players and DACs, even speakers. They are not inexpensive, but they are reasonably priced and seem to offer good value. Doug Schneider reviewed the Redgum RGi120 integrated amp for *SoundStage!* and saw fit to give it a Reviewers' Choice recommendation. Not only that, but it was later given the coveted *SoundStage!* Best Product Debut Award at the 2001 CES. Doug found it to be "exceedingly clean, wholly natural, and completely listenable" -- high praise indeed.

Like many other hardware manufacturers, Redgum offers a multichannel amplifier designed for home-theater use, which is the subject of this review. The RGH900 appears to be similar in design to the RGi120, but could Redgum construct a multichannel amplifier that sounds as good as their two-channel integrated?

Description

All of the Redgum components share the same basic appearance that features a distinctive front panel constructed of varnished redgum wood, presumably the genesis of the name. But the on/off switch of these products is their most unique design feature: a key that comes with a Redgum-logo key chain. Thankfully the key can be removed whether in the on or off position so that it does not always have to be inserted in the amp. However, if you lose the key, you will have to contact Redgum to receive a replacement, which can be reproduced from the serial number of your unit. Depending on your point of view, you may think of these design features as gimmicky, but I found the nicely finished front panel to be quite attractive -- although I was less enthusiastic about the key.



The RGH900 is very small for a multichannel amplifier and is actually smaller than many two-channel amplifiers that I have encountered. However, it is suitably hefty and features a cooling fan and heavy-duty gold-plated five-way binding posts. I found the back panel of the amp to have a little *give* to it, which was a little disconcerting when connecting or removing very tight-fitting RCA connectors. Otherwise, the RGH900 looked and operated like a high-quality amplifier.

The sound

I will admit that after reading Doug Schneider's very positive review of the Redgum integrated amp, my expectations were raised for this multichannel amplifier, but I was still not expecting the extremely high level of performance that I received from the RGH900. Although I have not heard the Redgum integrated that Doug found so enticing, I suspect that the sound of the two amps is very similar based on his observations and what I experienced with the RGH900. The multichannel Redgum was also able to exhibit a very neutral character that was powerful and yet retained a refined sound when called upon. One day I even invited a friend over to listen to the Redgum and used it at one point to play back some CDs in two-channel mode. It sounded so good that he thought it was an expensive stereo amplifier and was surprised to discover that inside the compact chassis there were actually six channels of very high-quality amplification.

Two channels

The Redgum RGH900 spent a fair amount of time in a two-channel setup with my Krell integrated acting as a preamplifier. In this configuration, it proved to be an excellent performer. Because the Redgum's sound was so neutral, it is a little difficult to describe. There were no glaring deficiencies to the sound, nor were there any areas in which it seemed to excel more than others. The sound was balanced from top to bottom and differed very little from the sound of my reference Krell when it is used as an integrated amplifier.

Although the sound was neutral, it was in no way anemic or uninvolved. To the contrary, the sound was big, bold and well defined from left to right and front to back. Both Eva Cassidy and Ani DiFranco were suitably "there" in the presentation of their vocals, with a great amount of inflection in their voices that provided the nuances required to make vocals palpable. Not only were their vocals solid and powerful with plenty of air around them, they did not distort or become compressed when the amp was pushed hard. Rachmaninoff's Piano Concerto No. 3 with Arcadi Volodos and the Berlin Philharmonic [Sony SK 64384], which I acquired based on Srajan Ebaen's review, was reproduced beautifully, with a broad, deep soundstage. The timbre of the piano was bang-on, with the imaging of the instrument not being overly precise but naturally near the center of the soundstage and offering good layering and placement of the rest of the orchestra.

Multichannel

The Redgum amp was just as accomplished with movie soundtracks as it was with two-channel music. Rated at 150Wpc, the RGH900 demonstrated the same sophisticated sound that it displayed on music: a stunning combination of power and authority. With excellent dynamics and the ability to play very loud without coloring the sound, this amplifier brought movie soundtracks to life with amazing realism. For instance, while most amps can reproduce the diffuse, flowing vocals and sweet strings of Chapter 27: "Home Again" from *Gladiator*, the Redgum also gave Connie Nielsen's voice a lifelike quality that was startling. Her voice in this scene is very revealing of center-channel speakers and amplification as it is recorded at a very high level that will cause lesser components to have fits trying to reproduce it.

Funky techno soundtracks also sounded terrific, such as in "Fake War Casualties" from *Romeo Must Die*. The driving bass line was taught and punchy, and synthesized instruments imaged precisely and solidly across the front soundstage. Foley effects, such as the gunfire, changed timbre along with the camera angle and the sounds of ejected shell casings and the gun actions were remarkably well delineated amongst the general din of the scene.

Comparison

There really was no comparison between the Redgum and my budget reference multichannel amplifier, the Anthem MCA5, which was easily bettered in nearly every aspect by the RGH900. The Anthem amp could play louder and had more punch down low, but the Redgum was definitely the more accomplished amplifier. Even though the Anthem could reveal a lot of detail and imaged well, the images were more "cut out," with less air around them, and the soundstage lacked the depth and lateral space that the Redgum amp exhibited. The Redgum costs twice as much as the Anthem (\$1399), putting it a little on the expensive side of things, but in this case you really do get what you pay for, and the added cost is money well spent.

When pitted against my reference two-channel Krell integrated amp (\$2500), the Redgum did not suffer much in comparison, even with the added set of interconnects required to utilize it. Going back and forth between the Redgum and the Krell, I kept searching for something that would prove that the Krell was demonstrably better, but I could not find anything. Yes, the Krell still had better control in the bass regions and could extract more detail from recordings, but the Redgum had a slightly more holistic sound that was smoother and more refined overall. There were certainly differences in the sound of the two amps, but they were minor, and the Redgum amp was just as pleasing to listen to over the long haul as the Krell.

Conclusion

The Redgum RGH900 is an impressive amplifier. It combines exceptional sound quality, relatively high power output, and unique and attractive cosmetics all in a compact package. It is not cheap at \$2800, but the added performance over less expensive amplifiers is more than commensurate with the increase in price. Its six channels of amplification make it ideal for 6.1 surround formats such as Dolby Digital EX and DTS-ES. More importantly, it makes both music and movie soundtracks really come alive. It is able to sort out complex passages in films, with voices presented with a realism that I had not previously heard in my system, while still reproducing dynamic sound effects and music simultaneously. The RGH900 sounded like a more expensive amplifier than it is and actually sounded less like a "multichannel home-theater amplifier" and more like what many would expect from a high-quality stereo amp. In fact, it was so good that I lived with it for many weeks as the main source of amplification for my combined home-theater and music system -- happily.

Review System

Speakers - Infinity Compositions Prelude (mains), Boston Acoustics 555x (center), Definitive Technology BP-10 (surrounds), Paradigm PW-2200 subwoofer

Amplifiers - Anthem MCA5, Krell KAV-300i

Processor - Sherwood Newcastle AVP-9080R, Arcam AVR100

Sources - Pioneer DV-626D DVD player, Teac VRDS-T1 transport, MSB Link DAC III with 24/96 Upsampling, Half Nelson, and P1000 power supply upgrades, Monarchy 24/96 DIP

Cables - Nordost, Sonic Horizon, Straightwire, Audio Quest, Monster, ESP power cords and power distributor

Monitor - Toshiba CX32H60 direct-view

Manufacturer contact information

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SECRETS of **Home Theater** and **High Fidelity**

Product Review - Redgum RGH-900 Six-Channel Home Theater Power Amplifier - July, 2001

David Wurtz



Specifications:

Power Output: 150 Watts
RMS/Channel into 8 ohms

Frequency Response: -3dB @ 0.2 Hz and
300 kHz

THD: 0.009%

S/N: 100 dB

Input Impedance: 10k Ohms

Size: 3" H x 16 1/2" W x 13 1/2" D

Weight: 18 Kg (40 Pounds)

MSRP: \$4,500AUS (About \$2,500 US)

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Web <http://www.redgumaudio.com/>

Introduction

Early last year, I had my first serious experience with a Redgum amplifier. To say I was impressed is an understatement, so much so, I ended up purchasing the unit I had for review. Ian Robinson (Redgum's designer) has been working on a six-channel version since then, and sent us (Secrets) the first unit for review. With the popularity of multi-channel audio and home theatre, the market for such items is very large. When using five or six matching speakers for DVD-V, DVD-A, DD, and DTS, it makes an enormous amount of sense to have the same type/model of amplifier driving all these speakers. Let's see how it went through my testing regime.

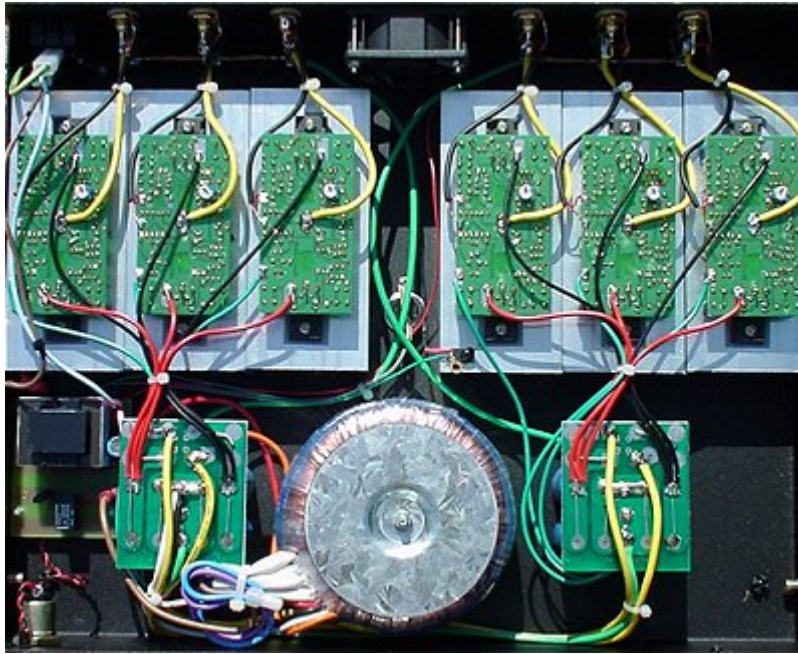
The Unit

The RGH-900 resembles all other Redgum products in having the unique key type on/off switch, a black textured metal chassis, and a solid piece of Redgum timber as the front panel.

The main external visible difference appears at the rear of the amp, with six gold plated RCA inputs and six pairs of gold plated banana plug terminal speaker outputs (photos below, left and right). These terminals are well mounted and very sturdy. The six inputs and outputs are labeled from left to right as; Centre – Right rear – Right front – Left front – Left rear – Subwoofer. Realistically, the subwoofer module would not be used for this purpose, as most subs these days have their own internal amplification. This is not a wasted module, of course, as it could be used for the "Centre Rear" in Dolby or DTS EX applications.



Weighing 18 kilos it is heavy for its physical size, and the build quality is excellent. Internally, the RGH900 has a 300 VA toroidal transformer with DC rail of 63.1 Volts and 8 x 4700uF (total 37,600 μ F) electrolytic capacitors (photo below). This gives the power supply a total energy resource of 75 Joules. After the transformer, the power supply is actually split into two separate paths with each of the two supplies powering three of the amp modules.



The individual amplifier modules have two "flat pack" output transistors, two per module (1 NPN 10P20 - 9602 and 1 PNP 10P20 - 9621) mounted on individual heat sinks. These use the same PN junction as the T03 packages used in the two-channel and monoblocks that Redgum produces, except that Ian had them manufactured into a T0220 package, as space and cost were the premium in the box he had chosen. It was far less expensive to use and mount flat packs than T03s, and he wanted to keep the cost down to make the unit available to more users. The minute PCB on which the outputs (and other associated components) are mounted is extremely well designed, and ultimately makes a very short signal path. Each module also has thermal protective circuits installed. These are set to cut out when the temperature on the heat sinks hits 80⁰ Celsius.

The review unit's individual test report (which comes standard with all Redgum amplifiers) states:

Short term RMS Watts, 2 Channels Driven into 8 Ohms: Left - 288.9 Watts Right - 288.9 Watts

Continuous RMS Watts, 1 Channel driven into 8 Ohms: 168.9 Watts

Continuous RMS Watts, 2 Channels driven into 8 Ohms: Left - 168.9 Watts Right - 168.9 Watts

(These figures are calculated from Voltage readings taken just below clipping.)

I replicated these tests using an 8 Ohm dummy load and received almost identical results.

Each of the 6 modules is theoretically capable of producing 150 Watts RMS of output power (into 8 Ohms), but the measurements (both Ian's and mine) show it is closer to 170 Watts RMS. This is realistically not going to happen for all six channels at one time, since the power supply is obviously not large enough to drive all channels @ 170 watts (totalling a specified output of around 950 watts). He maintains an expected 10 - 15% duty cycle (the actual time all channels are used at any given time during a particular sequence in a movie or musical sequence) will maintain all channels with enough available power out of the supply.

The Sound

I first spent several weeks using the amp as a straight two-channel stereo amp. In this configuration, I believe it to be slightly better sounding than its sister unit, the RGi120 that I own and love. The main reason for this is the larger power supply. Needless to say, I have contacted Ian in regards to beefing up the power supply in the RGi120. Speaking in absolutes, the high frequency response was slightly more controlled than the 120, and bass transients were a little tighter but more dynamic, while still being very weighty. Low mid and mid range speed and control were fantastic. Overall, I was very impressed with the unit as a stereo amp, albeit at twice the price of the RGi120.

In a home theater situation, using the Yamaha DSP-A1's preouts, I connected six individual loudspeakers (for the record it was four 6 Ohm Osborn F4s [for Front and Rear, Left and Right] and two 8 Ohm JBL 4410A Studio Monitors (which I had set up as the centers), and the listening results were just as impressive. Playing the DVD "Gladiator", I found the sense of realism and involvement to be emotionally frightening, even to the point of having to wipe a little tear from my eye from a movie that I have seen several times before. In my opinion, you just can't put a price on realistic audio production, and the RGH900 delivers in spades. I auditioned several DVDs and was never let down.

"The Matrix" had me on edge again with superlative bass reproduction and transient response being pumped into me by the Redgum. Basically, it lacks nothing and gives you everything. At listening levels in my sound room of around 90 dB (this was the approximate average, with transients measured up to 100 dB), the Redgum held together nicely during different scenes (chosen because of complex information and/or large amounts of bass) that I auditioned from "The Fifth Element", "Lost in Space", "Independence Day", "Gladiator", "U571" and "The Matrix". I knew the amp should run out of go at some stage, but it just didn't!

I also ran the amp with the DTS Surround (20 Bit - 5.1 Channels) when playing the discs, "Classic Beethoven" and Sting's "Ten Summoners Tales" with more than admirable results. I was presented with a wonderful soundstage, impressive dynamics, depth, and an all around beautiful reproduction of the source.

At no time did the thermal cutouts on any channel activate, even though the overall temperature of the casing was noticeably hot and the internal cooling fan was pumping out enough heat to make me want to turn up my home air conditioning!

Conclusion

This amp delivers nothing short of a superlative home theater listening experience. If you are looking for one of the illusive "one box amplifier solutions" give the RGH-900 a demo. You won't be disappointed!

- David Wurtz -

audition

equipment review

Reproduced courtesy of Audio & Video Lifestyle magazine

Redgum RGS Regnans Loudspeakers

It has been a while since an all-new loudspeaker sported the Redgum badge, but this well-known Aussie electronics manufacturer is once again able to lay claim to being one of the only all-Australian hi-fi manufacturers that produces a complete audio system.

There are three models in the Redgum loudspeaker line-up, the existing RGSB, RGS38i and these, the just released, brand new flagship RGS Regnans. I hadn't a clue what Regnan meant or stood for, until leafing through the supplied manual, which explains it means (in a Latin botanical sense) ruling or reigning, referring to

height. Well, the name at least is apt, with these impressive looking floorstanders measuring over a metre in height.

These are physically, quite large loudspeakers, although the design is still reasonably slim and they'll work well in mid to larger listening rooms.

The Regnans came about after a request from Redgum's distributor in the USA to build a top-of-the-range loudspeaker better than the RGS38i floorstanders, which themselves sounded far better than his own US\$25,000 designs. So that's precisely what Ian set about doing.

Needless to say, the Regnans are finished in a real wood Red Gum timber veneer and lots of it too. They look like a lovely piece of Australian timber furniture and the veneer extends to every panel, corner and inch of the loudspeakers. They are heavy too, which is a sign of quality construction. The other way to tell is a hard rap of the knuckles on the top and the more dead the response, the better. The Regnans use three separate internal cross braces within the cabinet and each are cut as on piece to add to overall rigidity.

Drivers come from one of Scandinavia's finest producers – SEAS, a supplier to many of the world's finest loudspeaker designs and these have been made to Redgum's own requirements. Not happy with magnetic shielding that was provided supplied by the driver's main magnet, those used in the Regnans employ a separate magnet

Reigning from
on high
(botanically-
speaking),
Redgum
Audio's new
flagship
loudspeaker
system

Vital Statistics

Dimensions:

210 x 315 x 1100mm

Weight:

23kg (each)

Price:

\$5,800 per pair

Distributor:

Redgum Audio Pty Ltd
Factory 3, 25 Clarice Road
Box Hill South, VIC 3128

Telephone:

(03) 9897 1277

Facsimile:

(03) 9897 1399

Website:

www.redgumaudio.com

By Nic Tatham

for this purpose, as well as its own specs regarding the dust cap material and structure. Magnetic shielding is nowadays an expected feature of most loudspeakers, especially if they are to be used in a home theatre system. But, as Redgum points out about how it has gone about this with the Regnans, it's was not content with relying on the driver's main magnet to provide the shielding. Doing it this way means 'bleeding' the main magnet of its magnetic force, which is what fundamentally makes a loudspeaker driver work, hence the addition of a separate magnet to provide the source of the drivers' magnetic shielding.

Redgum also designs and makes its own crossovers in all its speakers and those that have gone into the Regnans use nothing but quality components. Some speaker designers believe the crossover is the single most important component and it certainly does play a large part in overall sound quality. Here, things like metallised polypropylene capacitors and 1.5mm heavy gauge bass coil wire are used, along with silver soldered connections and the drivers are connected internally to the crossover using 12mm OFC copper wire. Mass produced, commercial crossover units are readily available and

many loudspeaker manufacturers opt to just use these, rather than investigate and design their own. Thankfully, Redgum isn't one of them.

Decent 4mm binding posts mean you can use some meaty cables with the Regnans and they are biwireable. I tried them both single-wired while running them in and later biwired and preferred the performance of the latter. Some disagree that biwiring makes a difference, but it depends on things like just how revealing the speaker is and the quality of the crossover and with these, they definitely sound their best with the connecting pins removed and with a decent quality biwireable cable, such as QED's Silver Anniversary that I use, or Redgum's own Expressive Line cable.

There's a set of carpet-piercing spikes supplied with each speaker and these should be fitted. The speakers are a 2-way/ three driver arrangement with a centrally placed 25mm soft dome tweeter, which is slightly off set, meaning you can use them with the tweeter on either the inside or outside, depending on the room size and speaker position. It's all about experimentation and trying different positions, with these speakers, just as any versatile design should allow, and in a small to medium sized room, try them on the inside. If you've a larger space to fill, then they're best positioned on the outside. The twin SEAS drivers measure 165mm and the cabinet is bass reflex in design with a flanged front port. This helps make them quite room-friendly with placement and you can get away with having them fairly close to rear walls without the bass sounding too overblown.



They are amplifier-friendly too, with nominal 6 ohm impedance, very high 94dB sensitivity and Redgum recommends amplification between 50 and 400 watts RMS per channel. I ran the Regnans in using a 50 watt integrated, then did the serious listening on an ME 24/550II amp combination, with 200 watts on tap. Naturally, Redgum recommends its own amplification and has three of its models in mind for these speakers, namely the RGi120 integrated or either the RGM175 or RGM300 preamplifier/ monoblock combinations.

After three days to run in, the Regnans sound more composed, but are still mightily impressive straight out of the box. They much prefer more capable amplification, which was clearly

Technotalk

Product Type:

Floorstanding loudspeakers

Driver Complement:

2-way, three driver system

25mm soft dome tweeter

2 x 165mm polypropylene mid/
bass drivers

Bass Loading:

Bass reflex, front ported

Frequency Response:

30Hz-20kHz

Sensitivity:

94dB

Impedance:

6 ohms (nominal)

Signal To Noise Ratio:

88dB (50mW)

Crossover Point:

2.8kHz (woofers to tweeter)

Cabinet Finish:

Red Gum wood veneer over MDF
core

Technotalk specifications and recommended
retail prices are supplied by the manufacturer

evident when hooked up to the MEs and initial impressions are of a soundstage of substantial depth and portrayal of any musical form with smooth, weighty presence. The last Redgum loudspeakers I heard were the much smaller RGSB standmounters and as part of a complete Redgum system. The much larger Regnans share much of the sonic attributes of their smaller stable mates, but simply offer much more of each of them. Play well-recorded acoustic music and rich, resonant sound melts from their drive units like honey. They sound warm, but despite this, still produce ample focus in the midband and treble to convey oodles of fine detail and very impressive imagery.

Down below, there's great weight and breadth to the bass allied with excellent control and pace. Never sluggish nor pondering, on big works such as Holst's *The Planets*, the Regnans reach deep into the complex orchestral arrangements and deliver genuine musical purity. I've listened to this piece of music countless times and only a certain number of speakers are able to make it an emotional experience, these Redgums do it effortlessly. The speakers' ability to do justice to the scale and superb dynamics of the piece, plus resolution that makes it possible to follow every musical strand, put this in this elite category.

Not expecting them to take too well to rock or pervasive dance, I was pleasantly surprised. Despite their poise and control, their bass speed and precision works a treat with the likes of Supergrass or Faithless. The bass performance is suitably weighty with the more up-beat tracks on the new Faithless CD *No Roots*, especially the infectious track *What About Love?* Rhythms are infectiously tight and dynamics are superbly handled. Maxi Jazz' vocals sound tonally natural, imaging is pin-sharp and soundstaging is spot-on.

Musically speaking, there's not much to fault these floorstanders and they are quite happy with a wide variety of very different music styles. Build quality is excellent and the build matches the sumptuous of their sound quality. If there's a but, it's only the price. Just shy of six grand a pair puts them in some pretty elite loudspeaker company, both

“Never sluggish nor pondering, on big works such as Holst’s *The Planets*, the Regnans reach deep into the complex orchestral arrangements and deliver genuine musical purity. I’ve listened to this piece of music countless times and only a certain number of speakers are able to make it an emotional experience, these Redgum’s do it effortlessly.”

homegrown and imported. Redgum gear doesn't come cheap and these loudspeakers are no exception either. They are a lot of money for a conventional floorstanders, and there's no shortage of tasty loudspeakers at this sort of price to deplete your bank balance. Nevertheless, they're exceptionally well designed, built and sound like it too.

Redgum needed a flagship loudspeaker to call its own and the Regnans are bound to do the brand proud. They aren't just a loudspeaker that need be considered as part of an all-Redgum system, although would be perfect as such. Partnered with quality electronics, these are loudspeakers that reflect the quality of what's driving them. They are also well and truly handcrafted and you've got to expect to pay for the privilege of owning such a loudspeaker. **AVL Ancillary Equipment:** ME 24/550III pre/power amplifiers, Onkyo DV-SP800 disc player, Black Box mains conditioner, Nordost Flatline speaker cable

O p i n i o n

The 'Opinion' expressed here is that of the reviewer, summarised in the form of a 5-star rating system, and should be considered as an integral part of the full contents of this Audition Equipment Review. As such, each category should be judged on its own merits and not necessarily used as a comparison with other equipment reviews in this, or other editions of Audio & Video Lifestyle magazine.

- ★ Shocker
- ★★ Average
- ★★★ Good
- ★★★★ Excellent
- ★★★★★ Perfection

“Musically speaking, there's not much to fault these floorstanders and they are quite happy with a wide variety of very different music styles.”

Performance

★★★★★

Build Quality

★★★★★

Compatibility

★★★★★

Value For Money

★★★

RGS Regnans Floorstanding Loudspeaker

7 year Warranty

Power Handling:	300 Watt RMS – peaks in excess of 600W
Frequency Response:	30Hz to 20kHz (within 1.5db from 100Hz to 15kHz)
Crossover point (2 way):	2800Hz (via 2 totally separate crossovers to allow true bi-wiring)
Crossover type:	Air-Cored inductors – ALL Polypropylene capacitors (no resistor padding)
Internal wiring:	12AWG (4mm) OFC copper wiring as standard
Sensitivity:	94dB @ 2.83v at 1 meter)
Nominal Impedance:	6 Ohms (Min. 3.1)
Maximum suggested SPL:	112db (allowing additional unclipped transients of +15dB)
Driver Complements:	25mm soft dome tweeter – 2 x 171mm modified polypropylene bass
Cabinet type:	Front ported reflex
Cabinet Construction:	All 6 surfaces are real Red Gum wood veneer over 19mm MDF Solid Red Gum inlay on all 4 front edges - 3 x one-piece internal braces
Internal Damping:	25mm minimum of semi-closed cell foam on all wall surfaces
Rear Terminals:	4 x Ultra high quality, heavy gauge, gold plated 5 way binding post.
Suggested Amplifiers:	50-500Watt RMS – REDGUM all models from RGi60 to RGM300ENR
Overall Dimensions:	1100mm (H) x 210mm (W) x 315mm (D)
Shipping weight:	25.0 kg each



REDGUM

Redgum RGM175 Passive Pre & Dual Mono Power Amplifiers

Doing it differently seems to come naturally to the few Australian companies that make hi-fi equipment. Halcro in South Australia makes one of the only amplifiers in the world with a power-factor-corrected power supply. Melbourne-based Whise makes the only subwoofers in the world with acoustic filters and Sydney's Dan A Digital builds active loudspeakers powered by Class-A valve amplifiers. Redgum, a small company based in Victoria, makes the only amplifier in the world that has an ignition key instead of a power switch.

But it isn't only the ignition switch that sets Redgum amplifiers apart: their internal circuitry is also highly unusual. It came about because the company's founder and chief designer, Ian Robinson, started out servicing and repairing hi-fi equipment, which gave him a unique insight into how other manufacturers built their products. Robinson was the first service centre in Australia to become 'computerised', 'way back in the early 70's using a program Ian wrote himself, which is why he can be absolutely certain that it was only after he'd completed exactly 18,244 repairs that he closed down his servicing

business and started building amplifiers based on what he'd learned fixing other manufacturers' oversights, mistakes and shortcuts. Redgum now boasts a range of 14 amplifiers, two CD players, two phono stages, two loudspeakers and a DVD player, with an FM tuner on the way.

The Redgum RGM175 system is made up of two single-channel power amplifiers and a separate pre-amplifier (all of which are available separately, and in a variety of configurations). The front panel of each is carved from a billet of solid Australian Red Gum hardwood, which is then hand-sanded and lacquered to a high gloss finish. To switch the system on, a car ignition key must be inserted into the preamp and turned to the right. That it's a great sales gimmick there can be no doubt, but it's also a great way of stopping other people from using your hi-fi system!

The same key can also act to switch the power amplifiers on and off, but this takes place via voltage sensing from the pre-amp, and requires an additional electrical connection between the pre-amplifier and the power amplifiers. It's very handy if you position the power amplifiers remotely from the pre-amplifier.



If you don't want the additional wiring, the power amplifiers can be set up for manual on/ off power switching.

Whereas most hi-fi amplifiers use ordinary bipolar transistors to drive the loudspeakers, all Redgum amplifiers use MOSFETs (Metal Oxide Semiconductor Field Effect Transistors). Robinson is firmly of the opinion that MOSFETs are not only more reliable than bipolar transistors, but enable much lower output impedances and increased stability into capacitive and inductive loads. Controls are specifically selected for reliability. The volume control uses conductive plastic instead of carbon and the input switch has silver-coated contacts again for reliability as much as for performance. Unusually, there's no over-current protection in **the output** stage. Instead, Redgum has a unique power supply shut-down circuit to protect the amplifier in the event of a loudspeaker failure (about which more later).

LISTENING SESSIONS

No more than a few seconds into my very first listening session, I was reduced to scouring through

the Redgum manual, because the very low bass frequencies were very obviously being boosted, yet I could not for the life of me find a loudness contour control-either as a switch or a rotary control.

It being rather late at night at the time (too late to ring Redgum for advice) and I had a deadline looming, I decided to continue the session. After listening to a piano CD, I established that the boost was not exactly like a loudness contour, because there was no boost at all above G2 on the piano, which is almost two octaves below middle C, although there was a fair amount of boost below this frequency, which increased considerably with decreasing frequency.

In view of this, I switched from listening to my regular review speakers which are, rather large with a very extended bass response, to using a pair of bookshelf speakers. I was surprised to discover that not only did the bass prominence disappear, but that the Redgum amps really made the smaller speakers 'sing' across the midrange. But the bass prominence didn't just disappear,

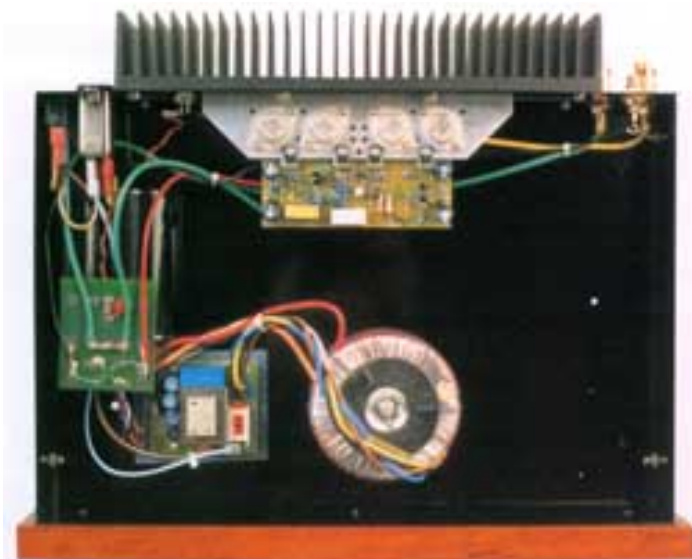
the Redgums actually gave the bass response of the small speakers quite a kick, so the bass was far tighter and more solid than I'd heard from them before, yet because there wasn't any boost above G2 (98Hz), I wasn't hearing the 'loose' boomy sound you get when you activate a loudness control. That said, if you're using the Redgums with small bookshelf speakers, I think you would be best advised to be a little careful with the volume control, because the combination of the low-end boost and the enormous power output of which the Redgum RGM175s are

Brand: Redgum
Model: RGM175
Category: Pre/Power Amplifiers
Suggested Price: \$4,995.00*
Warranty Period: Seven Years
Distributor: Redgum Audio Pty Ltd
Address:
3/25 Clarice Road
Box Hill South
Victoria 3128
Tel: (03) 9897 1277
Fax: (03) 9897 1399
E-mail: info@redgumaudio.com
Web: www.redgumaudio.com

For additional information, turn to page 98 and circle 0380 on our Reader Information Service Card.

[*Separately, each RGM175 sells for \$2,250 (\$4,500 per pair) and the Passive pre sells for \$995.00, so the 'package' price offers a considerable saving.]

REDGUM



capable (about which more later) means that if you're not, you may end up overpowering a small bass/midrange driver.

The next day, a telephone call to Redgum revealed that there is no loudness contour circuit as such inside the RGM175, but that the rise is due to a circuit inside the amplifier associated with Robinson's other (excellent!) philosophy of having no capacitors in the signal path. Robinson says that sensitive listeners will hear that this rise 'fattens' the bass but told me that *'since most loud~ speakers start rolling off below 100Hz, boosting the bass beneath this frequency gives a sound effect that's closer to the real thing, and when you compare the sound from an RGM175 [and speakers] to live sound, what we achieve is sound that is closer to the real thing.'* (The amount of boost applied is 0.4d13 at 100Hz, increasing to 2.5d13 at 50Hz, 5.5d13 at 20Hz and 9dB at 10Hz.)

I found that the bass sound that is produced by the Redgum RGM175 is certainly super-tight, so kick drum, for example, comes through with a fantastic 'thwack' but no overhang whatsoever, so the amp is obviously keeping very tight control over back EMF from the woofer.

Across the midrange, the Redgum had a beautifully limpid sound that reproduced vocals to perfection. A favourite disc of mine at the moment is Jenny Morris' new hit & myth

(Yep Records YEP005), and this received many repeated plays through the Redgum system, just for the sheer pleasure of the music as much as the sound quality, the 'listening notes' from

the album having been written after only a few auditions. I just loved the vocals on *Downtime* (despite the overproduction and overdubbing). There's also a lot of 'lelectronica' on this track, which the Redgum handled beautifully.

On more purely recorded vocals (Eva Cassidy), the fluid, coherent sound of the RGM175 combo worked like magic, and the atmosphere around Eva's voice was so apparent you could cut it with a knife. Like all the best amplifiers, the Redgum lets you separate multiple 'voices' and listen to them individually, or relax your hearing and hear how they mesh, or be aware of both effects at the same time.

At the extreme top end, the sound was very clean and accurate, with lots of sparkle, but never to the point of being overly bright. The definition around triangles, small bells and other high-pitched percussion instruments was beautifully delineated, and it was easy to hear them 'through' even the thickest of orchestral textures.

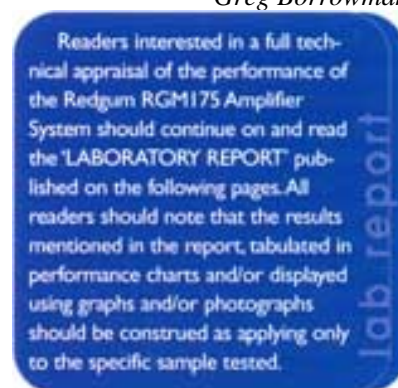
Switching back to my large speakers, I turned the volume up to levels 'way above what I'd normally listen and discovered I just couldn't clip the RGM175s, even though the speakers are quite inefficient and my room is larger than the average lounge room. I can, therefore, quite confidently say that the RGM175s are easily capable of delivering more

power to your loudspeakers than you're ever going to be able to use. I also have to mention the way the power is delivered, which is absolutely instantaneously, which made the RGM175s sound more lively and dynamic than any amp I have heard in a long time. I suspect at least one of the reasons for this is the absence of any conventional protection circuitry in or around the signal path. Robinson has a fairly unconventional approach when it comes to amplifier protection, because his power supply circuit is essentially 'self-limiting' in that if the speakers try to draw too much current, the output voltage drops, which means the amplifier will continue to operate into a dead short (though in this situation 'a thermal cut-out on the heatsink will eventually shut the power supply down until the heatsink cools down.) Along with the highly dynamic sound came an exceptionally low noise floor with no hiss or hum audible at either high or low volume levels. This was no doubt aided as much by the fact that the pre-amplifier is passive, as by the 'minimalist' approach to the power amplifiers' circuitry, but when you're listening to music, it does guarantee lovely silences between notes!

CONCLUSION

As you can tell, Redgum is not your ordinary hi-fi manufacturer, so it's really no surprise that its amplifiers are extraordinary. Bright, lively and dynamic, their 'real-world' performance is as exceptional as their appearance. Highly recommended. AHF

Greg Borrowman



TEST RESULTS

This is the first amplifier I think I have ever reported on that does not have a flat response. There is a considerable boost at the bottom end of the frequency response, starting at +9dB at 10Hz, decreasing to +5.5dB at 20Hz then +0.4dB at 100Hz. There's also a slight boost at the high frequency end of the response that starts at 6kHz to become +0.2dB at 10kHz and increases to be +0.8dB at 20kHz before shelving at around +3dB at 200kHz.

The output impedance of the Redgum is exceptionally low, with the result that this frequency response is identical when it's driving a loudspeaker -- something that can't be said for the amplifiers we've recently tested using *Australian HI-FI Test Laboratories'* new 'simulated loudspeaker' load. This imperviousness to load is shown on the second of the frequency response graphs, where the scale has been expanded to 0.4dB per vertical division. The lower of the two traces is the response into an 8-ohm load; the other trace is the response into the simulated loudspeaker load.

Australian HI-FI Test Laboratories measured the power output of the Redgum RGM175 power amplifier (since the amplifiers are monoblocs, only one channel was tested) as being slightly under the 175-watts claimed in the brochure, as you can see from the figures tabulated in Table 1, which showed an output at 1kHz of 126watts (21.0dB) into 8 ohms, 170 watts (22.3dB) into 4 ohms and 192 watts (22.8dB) into 2 ohms.

Closer examination of Redgum's published specifications showed that its power output results were obtained whilst powering the RGM175 with a mains voltage of 260-volts, some 20volts higher than the Australian standard of 240-volts (though a $\pm 10\%$ variation is permitted within the standard), so the amplifier was re-tested at this higher mains voltage, the results of which are tabulated in Table 2.

Although power output increased significantly with the higher mains voltage, the amplifier still fell somewhat short of delivering the continuous power output claimed, returning 148-watts (21.7dB) into 8-ohms, 200watts (23.0dB) into 4-ohms and 227watts (23.5dB) into 2-ohms (1kHz).

Power Output Table (Redgum RGM175 amplifier) (240-volt supply, see copy)				
Channels Driven	Load	20Hz	1kHz	20kHz
1	8 Ω	130 (21.1)	126 (21.0)	122 (20.8)
1	4 Ω	175 (22.4)	170 (22.3)	164 (22.1)
1	2 Ω	192 (22.8)	192 (22.8)	170 (22.3)*

Note: Figures in brackets are dBW—decibels referred to one watt)
*Zero cross distortion limit, not clipping.

Power Output Table (Redgum RGM175 amplifier) (260-volt supply, see copy)				
Channels Driven	Load	20Hz	1kHz	20kHz
1	8 Ω	164 (22.1)	148 (21.7)	155 (21.9)
1	4 Ω	213 (23.2)	200 (23.0)	200 (23.0)
1	2 Ω	230 (23.6)	227 (23.5)	194 (22.8)

Note: Figures in brackets are dBW—decibels referred to one watt)

Power Output Table (Redgum RGM175 amplifier) (250-volt mains supply, see copy) Second sample				
Channels Driven	Load	20Hz	1kHz	20kHz
1	8 Ω	183 (22.6)	175 (22.4)	178 (22.5)
1	4 Ω	268 (24.2)	271 (24.3)	240 (23.8)
1	2 Ω	204 (23.0)	253 (24.0)	194 (22.8)

Note: Figures in brackets are dBW—decibels referred to one watt)

TEST RESULTS	
Freq. Resp. @ 1 watt (-1dB):	2.5Hz– 207kHz
Freq. Resp. @ 1 watt (-3dB):	1.8Hz– 271kHz
THD+N @ 160 watts:	0.02%
THD+N @ 1 watt:	0.007%
S/N Ratio (re 1 watt out):	-73dB (unweighted)
S/N Ratio (re 1 watt out):	-85dB (IHF A-weighted)
S/N Ratio (re rated o/pt):	-91dB (unweighted)
S/N Ratio (re rated o/pt):	-105dB (IHF A-weighted)
Input Sensitivity (CD input):	764mV (for rated output)
Input Sensitivity (CD input):	68.6mV (for 1 watt out)

Lab staff then noted that individual test report supplied with the RGM175 showed that Redgum's own QC department had measured the maximum output of this very review sample at 165.7-watts continuous into 8ohms,

some 10-watts (0.2dB) short of its own brochure claim. The lab rang *Australian HI-FIs* editor, Greg Borrowman, who in turn put in a call to Redgum and it transpired that the expensive glossy brochures are 'old stock', designed and

printed when the RGM175 was fitted with a different power transformer. This particular transformer proved to be unsuitable for export, because it could not easily be adapted for mains voltages in other countries (primarily the US market). In the course of redesigning the power supply section, Robinson tried three other power transformers before finally designing and manufacturing a special low-regulation model himself.

During the re-design process, Robinson said he was focusing primarily on ensuring the amplifier could deliver the highest possible power output on transients, irrespective of the line voltage on which it was operating, a design aim in which he says he was successful. It was only later when testing the first production models that he realised the continuous power output of the amplifiers using the new transformers had dropped slightly, but that since the drop amounted to less than a single decibel, he considered the gains in dynamic power output outweighed the loss in continuous power output.

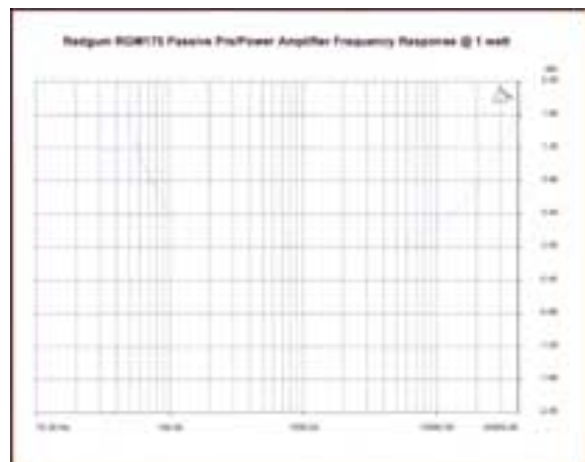
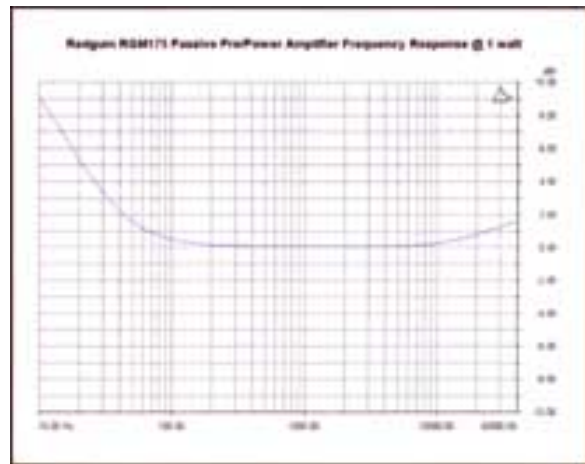
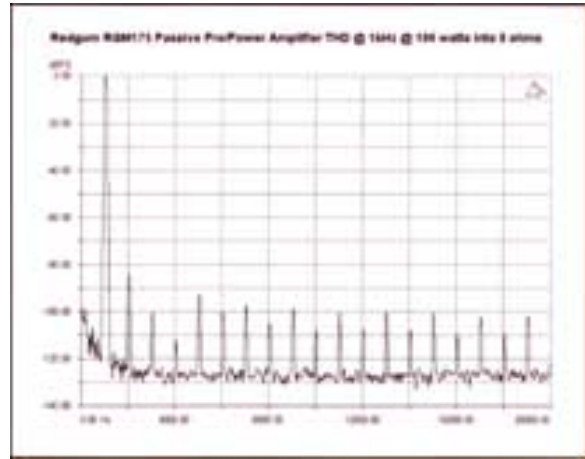
As for the power output being measured with a 260-volt supply voltage, Robinson says the mains voltage at Redgum's factory in the Box Hill South suburb of Victoria averages 262volts, and that's where the final QC testing takes place. As for the numerals in the model number of the amplifier itself, Robinson says the 175' is still appropriate because the amplifier will deliver more than 300watts into 8-ohms under the US IFIF A-202 amplifier standard and more than 175-watts continuously into 4-ohm loads.

Just before we went to press with this review, Ian Robinson e-mailed to tell us he had redesigned the power transformer yet again, gaining a small increase in continuous power output whilst still maintaining very high dynamic

power. This new transformer will be fitted to all models with a serial starting with S.N. ##### ##0575. He sent us a sample RGM175 fitted with the new transformer for testing at 250volts. This amplifier's power output came in at more than 175-watts continuous at all three test frequencies into 8-ohms. The full results for all other load impedances are tabulated in the third (lowest) power output table on page 42. The frequency response was extended, stretching from 2.5Hz to 207kHz -1dB and from 1.8Hz to 271kHz -3dB. Note that these are only down-points (not \pm limits) because of the non-flat nature of the frequency response within the audio band, as noted in the first paragraph of this test report. The 'normalised' \pm dB response across the audio band is 20Hz-20kHz \pm 2.75dB.

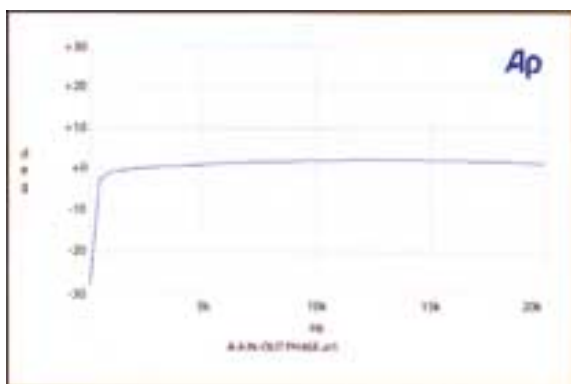
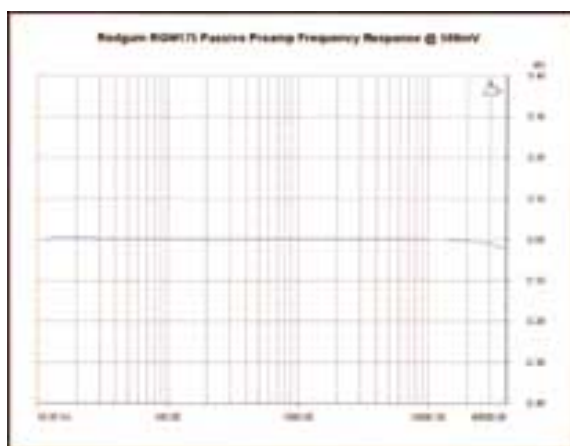
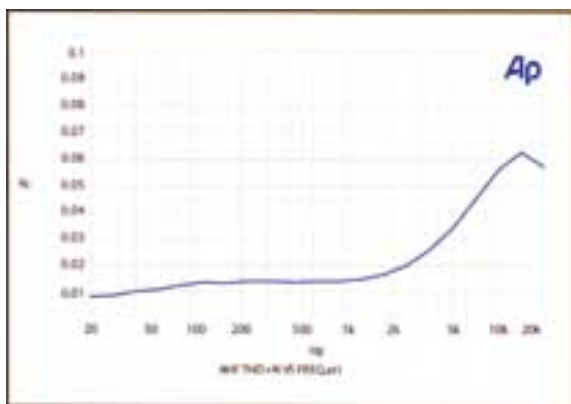
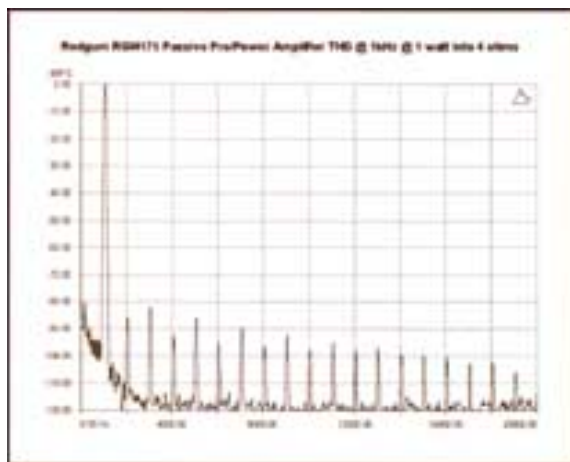
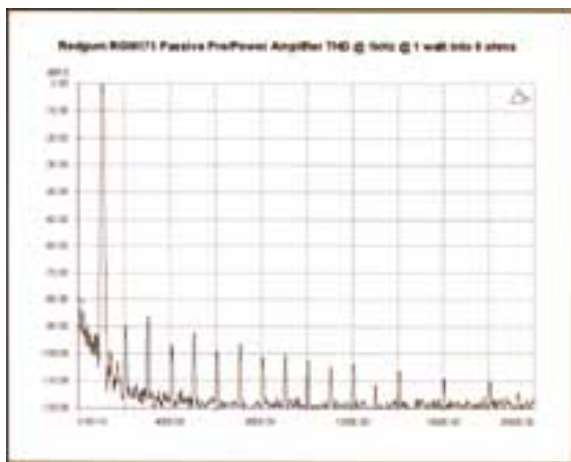
Signal-to-noise ratio was high, even though it was the result for the complete signal chain, including the passive pre-amplifier and the necessary interconnects between the two. Referenced to one-watt output, the lab measured -73dB unweighted improving to -85dB with IHF-A weighting. Under the same conditions, but this time referenced to rated output, as this specification is usually reported, the Redgums returned signal-to-noise ratios of -9dB (unweighted) and -105dB (IHF-A).

Input sensitivity was measured at 68.6mV for one-watt output, and 764mV for 126watts output. This will be more than sufficient for most sources, but some cassette decks and FM tuners may not be able to produce much more than 500mV or so, in which case they would not be able to push the Redgum to its full rated output-though they'd get close. THD+N was measured at a low 0.02% for one-watt output, decreasing to just 0.007% at rated output. The spectrum of distortion is shown in the



accompanying spectrograms. At one watt into 8ohms, all harmonics were below -90dB with the sole exception of the third, at -86dB (0.005%). All harmonic above the eighth were more than 100dB down (0.001%). Distortion increases very slightly when the amplifier is driven into 4-ohm loads, with a second harmonic at -85dB (0.005%) a third at -82dB (0.007%), a fourth at -94dB and a fifth at -86dB. All others are below -90dB.

Distortion *decreases* at higher power levels, something that is not overly clear on the graphs because for some reason the graphs showing distortion at the higher power levels were re-scaled,



so that the bottom line is at -140dB, rather than the -120dB used for the one-watt graphs [Australian HI-FI Test Laboratories has assured us it will provide us with similarly-scaled graphs for future reviews... Editor]. At 100-watts into 8-ohms, the second harmonic is at -85dB (0.005%), but all higher harmonics are below -100dB with the exception of the sixth at -94dB and ninth at -98dB. At 160watts into 4-ohms, the second was at -82dB (0.007%), but most other components were more than 90dB down and, in most cases, at or better than 100dB down. The reduction in noise and distortion is also obvious on the Audio Precision graph showing THD+N vs Power Output. The steep rise at the end is the point at which the amplifier starts to clip (see power output table). Distortion and noise vs frequency is shown in another graph from the Audio Precision System Two, and is an excellent result.

The Redgum's phase accuracy was nigh-on perfect, as you can see, and the amplifier doesn't invert polarity. The very low output impedance also means the amplifier has a superb damping factor, which was measured at 600 at 1kHz. **AHF**

Steve Holding

ME 550 power amp. \$2,160
ME 24. \$1,750 (not shown)

BASED IN DYERS CROSSING, NSW, THE ME COMPANY has been manufacturing amplifiers since 1976. One of its most popular models is the ME 550. I tried it with its companion preamplifier, the ME 24. These units are built very solidly, with a keen regard for quality. ME designer and founder Peter Stein values the stress-free enjoyment of music above just about everything else. The combination projects a powerful and vivid image of the music. The Vienna Philharmonic's *New Year's Day Concert* with Nikolaus Harnoncourt (Teldec 8573-83563-2) waltzed into my room with a surprising level of presence and warmth. Many of the pieces have prominent

instrumental solos, like the trumpet in the "Electro-Magnetic Polka". It had a satisfyingly round, plump sound, with that burnished metallic quality. Bass was very good, with plenty of the "slam" that is usually found only in very expensive super-amps. Ambience retrieval was excellent, as was the sense of the recording space – amply demonstrated in Renée Fleming's *The Beautiful Voice* (Decca 467 049-2). Fleming's voice has an effortless sense of power, which ME revealed gloriously. This is a highly musical product which deserves recognition. Peter Stein clearly designs for people who love music. **Verdict:** Equal to many imports at three times the price. Excellent value.

ME Sound, Tel: 02 6550 2254. www.me-au.com

Redgum RGM 175, \$4,995

THIS IS A MORE POWERFUL VERSION OF AN integrated amp in Redgum's lineup, and comes in three boxes (passive pre-amp and two mono power amps). The Redgum has startlingly good performance, but if you want bells and whistles, this won't do. There's only one blue lamp to indicate the thing's running, just above the key (!) which powers up the whole system. Apart from that, there's a level control for each channel, and one knob which selects your source. That's all. But if you want arrestingly clean and powerful sound, then there's plenty of that. Harnoncourt's *New Year concert* has bird effects in Josef Strauss's "Swallows from Austria". The Redgum amp delivered those



delicate sounds with great effect and subtlety. Renée Fleming sounded like she was singing in an opera theatre, with a big, open and delicate sound. There was also a purity to this sound of these components which was very rewarding. The RGM 175 also had great texture and colour even at low level. As with the ME combination, only line level sources were provided for. If you want to run a turntable, then you'll need a dedicated phono stage. Why doesn't Redgum design an active preamp with a phono stage? Then we'd have something even more attractive.

Verdict: Another winner. Outstanding quality; a world-class Australian product.

*Redgum Audio, Tel: 03 9897 1277.
www.redgumaudio.com*

Halcro dm58, \$42,000 (pair)

THIS IS NOT ONLY AN EXTRAORDINARY AMPLIFIER, BUT a genuinely revolutionary product. Halcro designer Bruce Candy believes it to be the first really new design in amplifiers in 50 years. Certainly, to hear the dm58 for the first time was quite startling. It had a degree of clean, pristine sound that I wasn't prepared for. "Natural" is the single word I would choose above all others to describe it. Instruments sounded just like they do in the concert hall, and voices even more so – there can be no higher praise for an electronic component than that. There was no evidence of electronics in the sound produced. You're going to be limited far more by your speakers (no matter how much they cost) than by these strange-

looking components. Everything I tried through them revealed more about the quality of the recording than I'd ever heard before. If you believe Halcro's claim that there is virtually no distortion in their designs, then it should follow that, if you turn up the level, you should hear gain, but not pain. (With most ordinary amplifiers, harshness increases exponentially with loudness). With the Halcro dm58, all I heard was music that was louder. And louder. The effect was quite extraordinary. Renée Fleming sounded just as she did in recital in Sydney a few months ago. This is awesome performance. **Verdict:** A revolutionary product, with a fittingly astronomical price.

Halcro, Tel: 08 8238 0807. www.halcro.com

January 2002 Redgum Audio RGM175 Mono Amplifiers

by Andrew Chasin

If Redgum Audio's intention was to distinguish the MOSFET-based, 175Wpc RGM175 monoblocks from their more conventional, me-too, black-box competition, they've certainly accomplished it. With solid redgum-wood faceplates and a key-operated master power switch on the integral passive preamplifier, the RGM175s make a unique visual and ergonomic statement.

The \$3300 USD RGM175 consists of three chassis of identical, and relatively small, dimension -- 3"H x 16 1/2"W x 13 1/2"D. Two of the chassis contain the monoblocks proper, while the third is a passive preamplifier that acts as a control unit for the amplifiers' cooling fans and power-up relays. Together, the three units weigh 56 pounds. A pair of supplied "control" cables (terminated with locking BNC-type connectors) tether the passive preamplifier to each monoblock. Neither the RGM175 user's manual nor the Redgum website sheds any light on the rationale behind this unorthodox arrangement. I'd rather see the preamplifier, and the extra pair of interconnects required by it, eradicated from the RGM175 package, but the product's current design mandated its use for the purposes of this review.

The passive preamplifier section of the RGM175 provides RCA inputs for five line-level sources: CD, Tuner, Tape 1, Tape 2, and VCR. The preamplifier's output signal is delivered via a pair of RCA jacks, and an IEC connector is provided to facilitate power-cord swapping. Aside from the keyed power switch, the front panel of the preamplifier has an input selector and a pair of non-stepped volume controls. Although Redgum's designer, Ian Robinson, readily admits that "no one likes the dual volume controls," they've been employed here because, according to Robinson, they "minimize both the number of contact points within the volume controls and the resultant distortion of the sound." Each mono power amplifier boasts two pairs of sturdy five-way binding posts for easy biwiring, a pair of RCA input jacks to accept the output of the passive preamp, and an IEC power jack.



Review Summary

Sound "Fairly neutral from top to bottom, with a slightly soft, laid-back demeanor" and "grain-free midrange"; "proved the near-equal of the superb Simaudio Moon W-5 in terms of low-end pitch definition"; "but I'd be remiss if I didn't point out the RGM175's inability to render the last iota of air around and between instruments."

Features "Somewhat quirky in design and execution" -- "three chassis of identical, and relatively small, dimension": "the [MOSFET-based] monoblocks proper" and "a passive preamplifier that acts as a control unit for the amplifiers' cooling fans and power-up relays."

Use Three chassis design as well as "the passive preamp's dual volume controls...", "the noisy variable-speed cooling fans installed in the power amplifiers...", and "the lack of a power-on indicator" subtracted from the RGM175's overall ergonomics; "erred more frequently on the side of politeness, which may suit some systems (and listeners) just fine."

Value "If Redgum could find its way to deep six the passive preamplifier, then we might just start to hear everything of which this already impressive amplifier is capable."

Ergonomically and aesthetically, the Redgum RGM175 is a bit of a mixed bag. On the plus side, the small chassis dimensions and ability to stack the three chassis vertically (fully endorsed by the manufacturer, in case you were wondering) make for a relatively compact and unobtrusive package. Also, the redgum-wood faceplates added some warmth and color to an otherwise cold, sterile, black anodized audio system. And the key, while quirky at first blush, could be useful for preventing unauthorized use of one's audio system. On the negative side was the passive preamp's dual volume controls (which might have been more tolerable, had I not been using an Audible Illusions Modulus 3A for phono duties, itself with dual *stepped* volume controls), the noisy variable-speed cooling fans installed in the power amplifiers (which seem out of place in dual-mono, solid-state amplifiers of this power rating), and the lack of a power-on indicator on any of the three chassis.

Review system and space

I listened to the RGM175s in the context of my usual reference system, which consists of the VPI Aries/Graham 2.0/Transfiguration Spirit analog front-end, the Audible Illusions Modulus 3A preamplifier with John Curl-designed Gold moving-coil phono board (used here as a phono stage driving one of the line-level inputs of the RGM175's passive preamplifier), and Anthony Gallo Acoustics Nucleus Solo loudspeakers. Isolation for the Aries was provided by an Arcici Air Head platform. The rest of the system, save for the power amplifiers, which were spiked directly to the floor, was housed in a Target audio rack. All interconnects, speaker cables and power cords were by Harmonic Technology. My usual Simaudio Moon W-5 power amplifier, another 175Wpc solid-state device, was on hand for comparison.

A few brief notes on my listening room are in order, as this is the first review I've conducted in the new space: The room's dimensions are a generous 20'x20' with an 8' ceiling. The walls are 2"x6" construction and finished with plaster over lathe (my Northern California home was built in the mid-1950s). The floor of this ground-floor space is covered with oak-strip hardwood and provides a very solid underpinning for the audio system. Acoustical damping is provided by an overstuffed three-seater couch and thick drapes covering the five large double-hung windows, which bathe the room in abundant sunlight.

Power to the audio system is provided by dedicated outlets with isolated grounds. The proximity of these outlets to the electrical panel meant that less than eight feet of Romex was required for the connection. The Gallo Nucleus Solo loudspeakers sit 8' apart and 4' from the rear wall. The left loudspeaker is just over three feet from the side wall, the right speaker ten feet (one portion of the listening space is shared with the dining room, mandating that the speakers be positioned asymmetrically with respect to the side walls). The listening seat is just over eight feet from the front plane of the loudspeakers. Whatever the reason (my wife and I continue to speculate), my reference system in this room provides me with the best depth, sharpest imaging, and lowest noise floor I've experienced at home.

Listening

On the whole, the RGM175 had no significant sonic character of its own. If pressed, I'd characterize it as fairly neutral from top to bottom, with a slightly soft, laid-back demeanor, which made it easy to listen to for extended periods -- yet another example of the recent convergence of solid-state and tube sound. Indeed, the RGM175 seemed to elicit the best of both the tube and solid-state worlds, featuring the smooth highs and colorful (but not colored) midrange of valves, coupled to the sheer power and bass definition of the best transistor devices.

Take low-frequency percussion instruments, for example. Many amplifiers rob them of heft and weight and smudge their leading edges. Not the RGM175. On the title track of Doug MacLeod's *Come to Find* [AudioQuest AQ1027 LP], the RGM175 did mastering maven Bernie Grundman proud as it managed to get *all* of the staccato bass-drum kicks he so impressively cut into the LP's seemingly incapable grooves. Similarly, the *fff* tympani strokes heard in the dying moments of Ravel's *Rapsodie Espagnole* [Decca/Speaker's Corner SXL 2312 LP] startled with their sheer power and impact via the diminutive Redgum monoblocks. For more low-bass thrills, check out almost any track on the Classic Records double-vinyl reissue of Holly Cole's *Temptation* [Classic Records/Blue Note JP5003]. The lowest of the low notes here can turn into sonic muck if the gear (and the listening room) isn't up to snuff, but the RGM175 proved the near-equal of the superb Simaudio Moon W-5 in terms of low-end pitch definition, making it easy to follow the goings-on down below.

On top, the RGM175 continued to impress, carefully walking the fine line between detail and smoothness and rarely stumbling too far onto one side or the other. If anything, the Redgums erred more frequently on the side of politeness, which may suit some systems (and listeners) just fine. In *Rapsodie Espagnole*, Ravel's brilliant orchestration makes tantalizing use of tambourines, triangles, cymbals, snare drum and castanets, little of whose shimmer and sparkle eluded the RGM175. Clamp the superb Speaker's Corner vinyl reissue of Edgar Varesé's *Arcana* [Decca/Speaker's Corner SXL 6550 LP] to the platter and you'll hear the violent clangor of no less than 39 different percussion instruments exploding into the soundspace, a torturous score handled gracefully by the Redgum monos, which never turned bright or offensive throughout the sonic onslaught. And although a little counter-intuitive, this is perhaps an example of one of the RGM175's minor shortcomings -- a penchant to round the jagged edges of music like *Arcana* through its slight softening of high-frequency transients. No, the RGM175's rendering of the ghoulish *Arcana* never forced me to recoil or wince, but it didn't have quite the requisite "fear factor" heard through the Moon W-5 either.

Lovers of the female voice will find much to admire in the RGM175's liquid, grain-free midrange, which lacked the bleached, threadbare character for which solid-state devices have been traditionally maligned. Although sonically superb, I'd relegated Jacintha's debut album *Here's to Ben* [Groove Note 1712 LP] to the "cure for insomnia" pile. It's another example of the great audiophile conundrum -- fantastic sound married to so-so music. But the RGM175 managed to imbue her insipid voice with a sense of life and body that I hadn't experienced before. Holly Cole's covers of Tom Waits' compositions on *Temptation* exhibit equal helpings of edge, sardonic wit, and painful longing, all of which were communicated in convincing fashion by the Redgums (thanks to Classic's treatment, the LP manages to kick the pants of the already great-sounding CD, and it has a couple of bonus tracks to boot). I also had some memorable evenings listening to an original deep-groove pressing of Ella Fitzgerald's *Ella Swings Lightly* [Verve MG VS-6019]. Even the slight surface noise and dated recording couldn't dampen my enjoyment of this disc, aided by the Redgum's ability to articulate the superb phrasing and timing for which Fitzgerald was known. The orchestra, conducted by Marty Paich, is similarly brilliant.

In the areas of dynamics and pacing, the RGM175 was hard to fault, tracking huge volume swings and maintaining music's rhythmic drive with aplomb. I don't usually pay much attention to specifications, but the Redgum's impressive 65V/ μ s slew rate and 150A of peak current may play a factor here. On Ahmad Jamal's *Rossiter Road* [Atlantic 81645-1 LP], Jamal tears into his Steinway with unbridled ferocity, his pounding chords rumbling through the listening room, yet the Redgum amps barely broke a sweat, although the amps' cooling fans could be heard grinding away in high gear between tracks. Throughout Jamal's keyboard pyrotechnics, the RGM175 steadfastly maintained the rhythmic underpinning of James Cammack's bass lines (played in a style highly reminiscent of the late, great Jaco Pastorius) and the inspired percussion work of Herlin Riley and Manola Badrena. Brilliant!

But I'd be remiss if I didn't point out the RGM175's inability to render the last iota of air around and between instruments, manifest on recordings of acoustic instruments made in a real, naturally reverberant space. On Strunz and Farah's *Misterio* [Water Lily Acoustics WLA-CS-08 LP], an all-tube, purist recording made at Christ the King Chapel in Santa Barbara, California, the space in which the brilliant guitar duo is immersed, and the way in which the plucked strings of their guitars illuminate that space, were somewhat diminished by the effects of the RGM175 in the signal path. It would be interesting to hear the RGM175 *sans* passive preamplifier (and the extra set of cables it requires) to see if the latter isn't hindering the retrieval of the last vestiges of low-level ambient detail on this recording and others like it.

Comparisons

Comparisons to the 175Wpc, single-chassis Simaudio Moon W-5, the only other solid-state amplifier I had on hand, proved somewhat surprising. I expected the iron-fisted Canadian brute to kick sand in the face of the scrawny Aussie monoblocks, particularly in terms of dynamics and low-end control and definition (the W-5's hallmarks). While I did find that the W-5 had a hint more impact and control on the bottom and managed slightly more convincing macrodynamics, the RGM175 was only a hair off the mark. Where the W-5 did better the RGM175 was in the areas of top-end extension and transparency in the rendering of low-level ambient detail and spatial cues. Some have thought the W-5 somewhat cool and bright in the treble, but I don't agree -- certainly not with analog sources. I'd also give the W-5 the nod in terms of build quality, ergonomics and aesthetics, although the latter is certainly a matter of personal taste. In purely sonic terms, however, the RGM175 was a close second to the Moon W-5, which, given the almost unanimous acclaim for the Canuck design, is high praise indeed -- especially considering that the W-5 checks in at around \$1500 more than the pair of RGM175s and preamp.

Conclusions

While the Redgum RGM175 is somewhat quirky in design and execution, I came to forgive these transgressions when it was time to make music. And make music it did, unfailingly throughout the review period. The RGM175 locked horns with the superb Simaudio Moon W-5, an amplifier I've lived with happily for more than three years, and came away with only a few minor scratches -- very impressive performance for this young Australian brand.

I fear I'm beginning to harp on this point, but if Redgum could find its way to deep six the passive preamplifier, then we might just start to hear everything of which this already impressive amplifier is capable. I look forward to hearing that product.

...Andrew Chasin
andrew@soundstage.com

Redgum Audio RGM175 Mono Amplifiers

Price: \$3300 USD. **Warranty:** Seven years parts and labor.

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Box Hill South 3128
Melbourne, Australia Phone: 61-3-9897-1277 Fax: 61-3-9897-1399

E-mail: sales@redgumaudio.com
Website: <http://www.redgumaudio.com/>

North American distributor:
NuView Audio
446 Harrison St.,
Sumas, WA 98295 Phone: (877) 361-3630 Fax: (250) 833-4332

E-mail: info@nuviewaudio.com
Website: <http://www.nuviewaudio.com/>

Redgum responds:

As always, thanks for an edifying read. I cannot suggest any amendments to the facts or technical bits, but I can offer an update as to where the product currently stands. We have been fast on our feet recently here at the factory -- and yes, we have been listening.

Namely, as of the beginning of this year, we offer the RGM175 amplifier:

- As a single-volume model
- As fan-free amp with a heavy external heatsink (same as the RGM300) that does not affect the front visuals; see:

www.users.bigpond.net.au/redgumaudio/rgm300s_interior.html
www.users.bigpond.net.au/redgumaudio/rgm300s_output.html

- With a power-on indicator -- *i.e.*, the key is illuminated when turned on (via a sexy blue light)
- With the key switch as optional -- a choice of rocker or toggle
- With a general cosmetic upgrade (chassis, badges, and front-panel finish)

The control cables are no longer a vital part of the hook-up. They are only necessary if you wish to power up both monoblocks with the flick of one switch. If you choose not to use the control cables, there are now individual rocker switches on the rear of each monoblock.

Our thanks as always for your interest in our "quirky" products!

Ian Robinson
Redgum Audio

- [Current Issue](#) Equipment Reviews

The Inner Ear Report

Vol 13, #3, 2001, p38-41

“Redgum Monoblocks & Passive Preamplifier Model RGM175”

Overall rating 3 ½ out of 4

Summary of Review by LLG, REDGUM

To the amazement of the reviewing panel, the changeover from a warm-up session with their Wyetech Lab Topaz/Opal system to a REDGUM RGM175 Monoblock amplifier resulted in a very pleasant surprise. The expected loss of musicality and accuracy was not in evidence; nor whether the source was valve or solid state. Several hours of listening were required to formalize a description of the REDGUM sound – a solid state MOSFET amplifier sounding more like a valve source. That this took so long was taken as giving credence to the musical versatility of the amplifier.

Connected to The Inner Ear Report’s reference speakers (Gershman Opera Sauvage and JMLab Mezzo Utopia), the REDGUM showed its ability to accurately reproduce music of all kinds, regardless of inherent difficulty. The stereotypical qualities usually attributed to MOSFET designs were not to be heard. On the contrary, across all frequencies the amplifier retained the sweetness and warmth that is the hallmark of valve gear. Treble-bass balance, detail, image, and especially depth were all heard to contribute to an exemplary soundstage.

From the very highest frequencies showing no signs of roughness to the strength and richness of the upper bass, the ability of the amplifier’s design to accurately reproduce music rather stunned the review panel. The midrange was seen as particularly impressive, creating a spaciousness expected only from far more expensive amplifiers. One minor point of criticism was the desire for a slightly fuller lower bass (see Ed. Footnote), though only when compared to more costly units.

The REDGUM 175 Watt Monoblocks were deemed to be true sonic competitors to amplifiers double the value – offering a musicality equal to the physical beauty of the red gum wood of its fascia. The reviewers felt that the only difficulty in owning a RGM175 would be where to draw the line when buying speakers to match – a choice within a range of almost \$20,000! LLG

(Editor’s Footnote:- The normal REDGUM extended bass output had been modified on the unit reviewed above. This was done at the request of a planar-style speaker manufacturer with whom REDGUM was exhibiting in Canada.)

audition

equipment review

REDGUM RGi35

Integrated Amplifier

By Nic Tatham



Redgum Audio is one Aussie company that's actively promoting itself overseas. It so far exports to over 20 countries and is one of a

handful that has made it (or even bothered to) onto the fickle and overcrowded UK market.

The list so far comprises, the United States, Canada, South America, most of Europe, Africa, the Middle East, Asia and of course, in our own neck of the woods. Where a lot of Australian manufacturers fear to tread, Redgum's unique Aussie flavour has a truly global appeal. Its blend of real Australian river Red Gum wood panels,

keylock operation, plus terrific engineering and performance, gives its products individuality and a class all of their own.

The product range comprises several amps, CD players, DA converters, analogue tuner, loudspeakers, equipment rack and cable accessories, and it's constantly growing. Here at AVL magazine we've reviewed a fair chunk over the years and our latest subscription prize is one of the tastiest, best looking (not to mention, sounding) that we've ever offered. A complete CD based system on Redgum's new rack, some lucky AVL reader is going to be very, very happy.

Redgum's baby integrated has a lot more kick than the specs suggest....

Redgum's mainstay are its amps and it produces a wide range from integrated to pre/powers for both 2channel and home theatre use. There are four integrated models and this side of the Redgum family starts with the RGi35. This 35 watter is Redgum's entry level amp and is aimed at those after decent, but affordable amplification. Externally, it shares the same Redgum aesthetic simplicity as all of its amps the trademark keylock operating switch, a couple of volume controls and an input selection switch - that's it. Round the back is a circuit breaker switch, heavy-duty 4mm cable binding posts, gold-plated RCA input and output sockets and a reasonably new addition to Redgum's amps 3.5mm socket remote switching capability.

Internally, all Redgum amps share the same construction techniques, namely gold-plated connectors, silver solder work and all have high-current output stages. This is one of the things about Redgum amps although the rated output in watts per channel might seem low in comparison, it's the current capacity that really counts when an amplifier is asked to drive a pair of loudspeakers and with the baby of the bunch, it's still a very high 120 amps. So, despite only rated at 35 watts RMS into 8 ohms, there's plenty of juice and grunt on tap. Believe me, there is.

Technotalk

Product Type:
Integrated amplifier

Power Output:
35 watts RMS into 8 ohms
(measured 56.2 watts continuous,
112.9 watts short term)

Harmonic Distortion:
0.009% (below clipping)

Intermodulation Distortion:
Less than 0.005% (below clipping)

Frequency Response:
0.2Hz - 80kHz (-3dB points)

Signal To Noise Ratio:
More than 100dB

Peak Current:
120 amps

Input Impedance:
10kohms (matches 600 ohms - 50k)

Audio Inputs:
Five - line-level

Warranty:
Seven years (parts & labour)

Technotalk specifications and recommended retail prices are supplied by the manufacturer

All Redgum amps are transistor based and use MOSFET power output stages. The design keeps signal paths to a logical minimum and the internal layout keeps the stages in close operating proximity, again to minimise signal loss.

The design, both on the inside and out, has been significantly improved over the past few years, particularly heat dispersion. The older amp design used a cooling fan to bring the temperature down and at times were quite audible. The latest amps don't get nearly as warm and even on a stinking hot summer's day and driving hard, the operating temperature is noticeably lower. If things do go astray and the heatsinks reach over 80C, thermal cutoff protection cuts in. Usually this would only be brought on by continued short-circuiting of the speaker leads and once the amp cools back down to the normal operating temperature, things return to normal.

The RGi35 offers five line-level inputs and a single pair of RCA preamp outputs so you can hook up an external power amplifier if necessary. There's no built-in phono stage Redgum produces a dedicated phono preamp for vinyl users, the RGP2.

I mentioned two versions and it's something that Redgum now offers with all but one of its integrated amps, a choice of dual or single volume controls. The detailed manual informs you how to adjust the volume of the dual control with one hand, maintaining an accurate output balance, or previously unbeknownst to me, there's a belt that slips round them both so one knob controls them both. Redgum will gladly supply said belt. The dual control allows output level differences on each channel, for 'acoustic' reasons as the literature states. So, if you're unable to position the speakers in the conventional manner (ie -equidistant either side of the amp or equidistant from the listening position), left and right channel output can be individually adjusted to achieve a perceived level balance.

And that's about it, regardless to say that it needs suitable time to run in and warm up before you can fully determine the qualities of this understated integrated amplifier.

Vital Statistics

Dimensions:
420 x 93 x 360mm

Weight:
8kg

Price:
\$990 (\$1,150 RGi35s)

Distributor:
Redgum Audio Pty Ltd
Factory 3, 25 Clarice Road
Box Hill South, VIC 3128

Telephone:
(03) 9897 1277

Facsimile:
(03) 9897 1399

Website:
www.redgumaudio.com

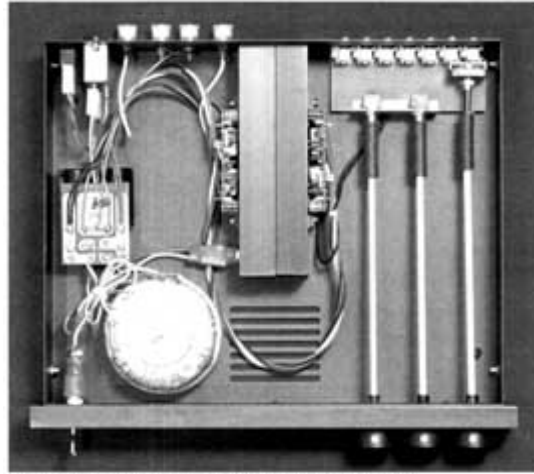
Initially the amp sounds and acts as though there are 100, not 35 watts of output.

The specs also state that the IHF pulse output is 90 watts RMS and an individual test report supplied with each Redgum amp shows that the short term output per channel at 8 ohms was 112.9 watts and long term rated at 56.2 watts. As I said, these figures really mean nothing when it comes to actual power output and volume - in Redgum's case, it's that high current capacity that really cuts it.

Speaker matching is something that generally needs plenty of care and attention, but this Redgum will happily drive more than its fair share. I tried a wide range to see how it coped from an easy-to-drive bookshelf model to more fickle ribbons that can suck a less than capable amplifier dry. For the most part, I couldn't get the RGi35 to even break a sweat.

Hooked up to a pair of amplifier accommodating Axis LS-8 bookshelf speakers with a nominal 8 ohm impedance and 96d13 sensitivity, the RGi35 let rip. It, like all the other Redgum models I've tried, is an exciting amp to listen to. There's good low-down weight and speed; meaning dance and heavy rock rhythm sections are as well resolved as orchestral basses. An open and expressive midband and treble give excellent presence and character to solo instruments and voices and although initially some might find the high treble a little bit too persuasive, with well balanced speakers, the top-end has an effervescent sparkle and plenty of vigour.

"Speaker matching is something that generally needs plenty of care and attention, but this Redgum will happily drive more than its fair share. I tried a wide range to see how it coped from easy-to-drive bookshelf model to more fickle ribbons that can suck a less than capable amplifier dry. For the most part, I couldn't even get the RGi35 to even break a sweat."



Simple, but thoughtful - the RGi35's internal layout

Switching to a pair of Dali Euphonia MS4s (also reviewed this issue) certainly showed this to be the case. A \$1,000 amp driving a \$19,000 pair of loudspeakers isn't likely to happen in the real world, but I wanted to see just how capable and flexible the baby Redgum really was. The Dalis are also amplifier-friendly, but only deliver the goods with suitably capable amplification, and the RGi35 did a good job in the driving seat. It couldn't squeeze the last ounce of dynamic juice out of the flagship Dalis and when pushed, there's no longer that feeling of effortless power, but the Redgum never sounds breathless. Instead it once again provides excellent bass drive, fine midband projection and treble having just the right combination of attack and control.

A pair of Rega Elas provided the best balance though and loaded up with a disc like Prince's *The Rainbow Children*, the combination faithfully reproduced Prince's soulful guitar based reinvention of his former self. The amplifier creates a wonderful soundstage in which his vocals just hang in the room, as close-focused as you could possibly want, and with a gorgeous breathiness.

Meanwhile the talented accompaniment has good weight and substance and as the level of the funk-ed-up track *Willing to do the Work* rises the Redgum remains totally in control - it just gets louder without any hint of harshness or compression setting in. The same's true with all sorts of music - genre specific, the RGi35 ain't.

A surprising potent little amp, the RGi35 is a remarkably capable performer for under a thousand dollars. It displays all the usual Redgum amplifier sonic characters namely a gutsy, exciting and above all, musical sound. Combining versatility with practicality, the RGi35 is able to drive loudspeaker loads well beyond its safe' operating range.

For anyone after a quality local product and one that's going to provide years of reliable service, the entry-level of Redgum's range is a superb place to start. AVL

Ancillary Equipment: TEAC VRDS-10 CD player, Musical Fidelity X-DAC D/A converter, Axis LS-8, Rega Ela and Dali Euphonia MS4 loudspeakers, Nordost Flatline speaker cables

O p i n i o n

The 'Opinion' expressed here is that of the reviewer, summarised in the form of a 5-star rating system, and should be considered as an integral part of the full contents of this Audition Equipment Review. As such, each category should be judged on its own merits and not necessarily used as a comparison with other equipment reviews in this, or other editions of Audio & Video Lifestyle magazine.

★ Shocker
 ★★ Average
 ★★★ Good
 ★★★★ Excellent
 ★★★★★ Perfection

"...although the rated output in watts per channel might seem low in comparison, it's the current capacity that really counts..."

Performance
 ★★★★★
 Build Quality
 ★★★★★
 Compatibility
 ★★★★★
 Value For Money
 ★★★★★



SECRETS of Home Theater and High Fidelity

Product Review - Redgum RGi120 Two-Channel Integrated Amplifier - January, 2000

David Wurtz



Redgum RGi120 Two-Channel Integrated Amplifier

120 Watts/Channel rms into 8 Ohms, both Channels Driven, 20 Hz - 20 kHz

THD: < 0.009%

S/N: 100 dB

Input Impedance: 10 kOhm

MFR: 0.8 Hz - 80 kHz \pm 3 dB

Size: 3" H x 16 1/2" W x 13 1/2" D

Weight: 17.5 pounds

MSRP: \$2,095 (Australian), \$1,200 (USA)

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Introduction

To date, it's been difficult for audio purists to find products that meet their needs on all levels, including, for example a high quality sound coming from an aesthetically pleasing product manufactured in a locality of your choice. I mean, wouldn't you rather buy a product that was designed, engineered, and built in your own country (Australia) and that could be pigeonholed with some of the best products around? Well, I believe I've found it.

Welcome to the world of Redgum Audio, established 6 years ago by Ian Robinson in the suburbs of Melbourne, Australia. Ian's goal after 30 years in the audio industry was to design and build a product "that was sonically pure and reliable". Of course, most manufacturers have similar goals. Let's see if Ian has accomplished his.

There are 5 models in the Redgum range starting with the "entry level" model, a 60 watt Stereo Amp (with passive preamp) at \$A1395, all the way up to the 300 watt Monoblocks (2 of with a passive preamp) at \$A10,995.

The Features

All Redgum amplifiers boast the same excellent features and technological advancements, such as

- Ultra high current power supply and output's.
- Gold plated input and output connectors.
- Minimal signal processing and shortened circuit paths.
- A solid Redgum (a natural Australian hardwood) fascia and removable key style on/off switch. (great if you leave the house and don't want the kids to play with your gear).
- A "No blown fuse" design with short circuited output protection. Ian's theory is that, "The amp must always work" and proven with a 7 year warranty.
- All components and wiring have been silver soldered. No more dry joints (crimps).
- Conductive plastic tracked potentiometers.
- Innovative P-channel MOSFET design which doesn't exhibit the wear and tear of valves (tubes) or the negative temperature coefficient of bi-polar transistors. (MOSFETs conduct *less* current when they heat up, while bipolars conduct *more*, which can sometimes cause "runaway" problems if the bipolar circuitry is not protected well enough.)
- Low noise toroidal transformer and 18,800 μ F power supply filtering.
- Each unit is individually hand built, "burn-in tested" and has its own specification report.
- You can buy direct from the factory in Australia - They ship by UPS to any destination in the world within a few days and most major cities within 48 hours.
- Redgum Audio offers a full money back guarantee if you are not completely satisfied - however, freight costs BOTH WAYS must be paid by the customer.



This review targets the “second up” model in the range, the RGi120, which is Redgum’s 120-watt/ch power amp (with built-in passive preamp) at a RRP of \$A2095.

On initial inspection the RGi120 demonstrated that it has a very Australian look (wood front instead of metal) with the solid Redgum fascia and key style on/off switch. It stands 2 rack units high and has a high quality build (which was fully confirmed after opening up the covers) for its overall weight of 8 kilos. The only controls on the front of the unit are three large black knobs which are the dual mono volume controls and an input function switch. As for the dual mono volume controls, I honestly, at first, found them a bit annoying. Upon thinking back though, I have at times wished for something like this, especially when both channel levels are slightly uneven and I wanted to correct it. Let’s face it, a balance control is just an extra burden in the circuit to degrade the sound quality. So, the end result is that I might even learn to like using two knobs instead of one. The markings (CD, VCR, etc.) on



the function switch are in a straight line across the top of the knob. I would have preferred them to be more accurately spaced in a crescent around the knob. On the back I found gold plated input and output connectors that were very sturdy when I

terminated the cables.

Upon switching it on for the first time I heard a slight thump, so I turned off. Approximately 10 seconds later I noticed the speakers thump even louder. What? Was there something wrong I thought? I consulted the additional info to find that this has been purposefully left alone because, in the designers experience (30 years servicing such products), speaker “de-thump” relays cause problems (in particular, the metal contacts) and one of this amp’s design philosophy is **not to break down**. Other notable internal features include multi-contact conductive plastic tracked volume potentiometers. Plastic I hear you say, well in actual fact, conductive plastic “pots” tend to be more reliable and have lower distortion figures than their carbon counterparts, albeit at 10 times the price! Maybe that’s why other manufacturers seldom use them? There is a mini cooling fan, which is thermostatically controlled and whisper quiet. Lastly, I couldn’t help myself and had to short the speaker outputs to test the short circuit protection, and, as expected, nothing happened (except that my heart rate got back to normal).

The Sound

I connected the RGi120 into my system, namely, a Sony CDP-C545 CD player and JBL 4410 Studio Monitors. I first played one of my favorite CDs by a great Oz band “The Rockmelons” called “Form One Planet”. Wow, the sound stage widened to a breadth and depth I’ve seldom experienced from any amplifier . . . and the stereo separation! I know a lot of amplifier companies that boast extremely high stereo separation figures, but I really noticed it in this baby! Digital effects, hi-hats, cymbals, bells and whistles on the album made the room come alive, almost to the point of wondering where the walls had gone! I was continuously looking over my shoulder and hearing “bits” in the music that I’ve not heard before. It was almost like surround sound with 2 speakers. I pulled out another Australian album with a high quality production by Midnight Oil. In particular, the tune “One Country” with Peter Garrett’s powerful voice, Bones Hillman’s haunting vocal melodies, and Rob Hirst’s perfectly natural sounding kick drum. I was genuinely drawn into the song. The Redgum excelled in all facets of the reproduction. Deep, accurate, and well rounded bass, life-like vocal reproduction and a sweet sweet top-end.

I also spent time listening to classical music. Of particular note was Beethoven's "Piano Concerto No. 5 in E flat Major". Now there was no doubt in my mind that the RGi120 had excellent dynamics/ transients and WOW, that channel separation (didn't I mention this earlier?) All in all, a superb reproduction of the source.

I thought the ultimate test would be to see how it handled a whole bunch of tough-load things going on at once (hard rock /metal). I chose Metallica's "Black" album and particularly the song "Enter Sandman". It has lots and lots of deep bass with Lars Ulrich's deep electronic drum samples and those "huge sounding" guitars. Bob Rock has done an exceptional job with the production on this album. Bass reproduction was excellent going all the way down and never losing its body. The most notable feature though, was the snare drum. I've not previously realized how sharp it is (proof again of the excellent transients and high slew rate of the amp). It stood out clearly, nearly ripping both my ears off. The vocals again sat nicely on top of the music and most importantly in the center of the sound stage, the Redgum handled it all. I wound up both volume controls way above comfortable listening levels, admittedly there wasn't much adjustment left. There was no sign of the amp distorting at all. It is a very powerful but clean 120 watts. This is probably due to the oversized power supply and outputs, which will handle transients of up-to 240 watts. The power supply has a total capacitance of 18,800 μ F, and the DC voltage across the caps is 63.6 Volts, totalling energy storage of 76 joules. I also feel this is confirmed according to the amps individual test report. It possessed a pre 0.01% THD (Total Harmonic Distortion) with an rms output of 147 watts left or right channel driven and 121 watts with both channels driven.

Conclusion

Redgum Audio holds an interesting place as one of the few amplifier manufacturers in an Australian market, flooded by American units offering more bang for the buck. The RGi120 has the panache, power, electronic stability, and longevity to be classed with the best around, and best of all "Australian Made". It took everything I threw at it, and gave me more back, which kept continually surprising me as I thought I had heard "all the little bits in the music" of most of my CDs. For a shade under \$A2100 I believe there is not much around that could claim to be a better all-round option.

I can't wait for a five-channel version! The only unfortunate thing for me is I'll have to send it back, but maybe I'll send him a check instead?

- David Wurtz -

Bound Sound For Report

Est. January 1989

LET THE SUN SHINE IN: The Redgum integrated amplifier

By H. Richard Weiner

(Note: This review has been rated "No-Hype." There are no worn out, tacky references to the Land Down Under where the product is manufactured. Not a word is spoken about koalas, kangaroos, water rotating backwards in toilets, shrimp the size of your head on a bar-BQ, large sharks, strong ale, nude beaches, or the Sydney Opera House. The people who make Redgum electronics are proud of their country, but they want to be judged solely on the merit of their product and, not the mystique of a land faraway where things work just a little differently. G'day mate.)

This is the first North American review of an amplifier you should listen to even if it's not expensive enough for your budget.

At the past two Winter Consumer Electronics Shows in Las Vegas, I have spent more than my share of time in rooms occupied by Ambience loudspeakers and Redgum electronics. In a sea of noise and clamor, musical sanity was the norm in the Redgum room. Without room treatments, special source material, or exculpatory whining about room conditions, the sound was realistic, correct in tone and harmonics, with an excellent sense of life and air.

The people behind the products were refreshing too. They didn't claim occult powers, or otherworldly technologies. As I did discover later, the products do possess some unusual sonic properties widely sought after, though seldom achieved. The designers were content to rely upon my cognitive powers to properly assess their achievements, rather than indulging in exorbitant self promotion. So you should know right now, that the integrated amplifier under scrutiny retails for about \$1,100, and after some time with it one-on-one, it has caused me to ponder if there is really any legitimate reason for spending more, at least when using the superb Ambience loudspeakers.

The two central design features of Redgum electronics are reliability and clarity. You have to design for reliability. Ian Robertson, the man behind Redgum, has by his own estimation repaired over 17,000 pieces of electronic equipment during his prior life as an electronic repair person. The experience of fixing other people's mistakes was invaluable in finalizing his design; it taught him about preparing for, and designing out, errors that can't be detected or measured on the test bench. That's a big part of the Redgum reliability story.

The other goal, clarity, was achieved by designing a circuit free of colorization and sonic preference. Consequently, all design directions flowed from this priority; circuit paths are kept short; dual mono construction to minimize crosstalk; and a high gain power amp section to make passive attenuation easier. Component count is kept to a minimum, you won't find a box full of caps, resistors and IC's in a Redgum amplifier. Electronics are not sold by the pound, so good design is substituted for bulk. Of course, simplicity of construction promotes dependability.

On the other hand, dual volume pots are oftentimes associated with simplicity, though I'll admit that I care for such dual attenuators not one bit. The Audible Illusions and Aronov preamps have them, and by my estimation they induce neurosis; one is forever adjusting, fiddling and fudging, and never quite getting them right - or so it seems. The Redgum uses mono, or dual pots for attenuation, and while I wasn't wild about this arrangement at the beginning, I must admit, when the channels are balanced correctly, the image snaps into remarkably sharp focus.

Amplifiers Should Be Seen And Not Heard.

I'm serious. The point of amplification is signal enlargement, not signal enhancement. (*A crude but useful description.* - Ed.) We've all read amplifier reviews where the critic raves about a product's powerful bass. "The KushTech KT-300 really took control of the woofers. Never has the Tricorder Audio speaker had so much bass..." Of course, when you get the thing home, every record seems to have more bass than ever before. The midrange is sort of distant, and the treble is forward and aggressive. But it has bass.

I'll start to explain the above with an oversimplification. In general, solid state amplifiers control the bass better than do tube amplifiers, sound a little thin in the midrange, and are often extended, but harsh in the upper ranges. Tube amps excel in midrange richness, but sound a little slow and underdamped in the bass, and may round off the highs. (Remember, this is an oversimplification.) Every couple of years some audio journalist praises a product by rehabilitating a forty year old cliché: "The unit under test finally bridges the gap between tube and transistor." I have found that such a statement usually means that the virtues of one system have been sacrificed, but not replaced, by the virtues of the other.

With that in mind, several times I tried to pin down the Redgum sound, a sonic signature if you will, but had great difficulty in doing so. It didn't seize the woofer voice coils and wring out preternatural bass. It didn't sweeten the midrange, nor did it do anything especially noticeable in the highs other than drive the tweeters cleanly. If you have ever heard a passive preamplifier working properly in a system (and there are many that don't) you know what the Redgum does: It passes the signal without discernable comment. That's my impression of the Redgum. It's not what one would call would call "fast", "etched", "powerful", "extended", "detailed", or any of the other code words that are so often interpreted in good and bad ways. It doesn't impose "gray", "white", or "caramel" colors to the music. If you don't like the sound coming from this machine, it means that you don't like the sound of the associated equipment, or the software itself - the Redgum does little to alter what you hear.

A couple of months with the Redgum forced me to reconsider my feelings about solid state amplification. I like a bit of warmth added to my music, especially on a cold digital day, which is why I tend toward tube electronics. The Redgum doesn't "improve" the music the sound the way tubes can, instead, it is content to be honest to the source without the aggressive character of most solid state and without the blurred sound of solid state designed to sound "tube-like."

The amplifiers I would compare the Redgum to are those from Goldmund, for its lightness, and the FM Acoustics for its transparency. Both units bring out the best in some loudspeakers; generally, in speakers that need a little tightening in the bottom couple of octaves. But, why spend the big dollars associated with Goldmund and FM, when essentially the same quality can be obtained with the Redgum.

Looks-wise, Ian Robertson has not dressed up the amplifier for the American market. Let's see, an amplifier this good should have a half inch thick front face, a slab of black with silver letters engraved into the metal, massive heatsinks on both sides of the amp, and weigh in at around 90 pounds. Of course, such window dressing would make the amp retail for seven or eight thousand dollars, all of which would not make this amp or any other amp sound any better. I like it the way it is. 100 wpc, for a little over eleven hundred dollars, and the red-wood finish on all sides sliding into just about any decor one could create.

The Last Word

We've come a long way from the time when MOSFETs meant lots of cheap soft sounding power, and bipolars produced prodigious bass and a zippy midrange. Ian Robertson has identified the elements of sound that matter, and at a modest price achieved a remarkable success. The Redgum amplifier brought me a great deal of listening pleasure, and I'm delighted to recommend it very strongly to people who buy gear because it sounds good without regard for price.

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AIG System Reviews

Redgum Integrated Amp and CD Player

Redgum RGi120 Integrated Amplifier
(Suggested Retail: \$2200 CDN)

Redgum RGCD5 CD Player
(Suggested Retail: \$1999 CDN)

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**(Reprinted from the Summer/Fall 2000
Audio Ideas Guide)**

Redgum is an Australian hardwood that, when finished in a glowing lacquer as on this company's products, looks stunning. It's used for the faceplate of both the amplifier and CD player, the latter flipping down to reveal controls and disc drawer. Redgum audio is an Australian company (obviously), based in suburban Melbourne, which makes amplifiers and CD players.

The RGi120 is rated at 120 watts per channel, and uses MOSFET output devices that manage very high current. There are only 3 front-panel controls: a pair of ganged level potentiometers, and a rotary selector. Inputs are provided for CD, VCR, AmFm, and a pair of tape monitors. The level controls are linked by an internal elastic band, this setup allowing individual adjustment of balance by moving one while holding the other. The pots themselves are conductive plastic, these said by designer Ian Robinson to be more reliable and to have lower distortion than their carbon counterparts. They also cost a great deal more.

The output devices are arranged around a convection tunnel aluminum frame with a fan at the inner end. Though the amplifier is said to be dual mono, there is a single power transformer that may be double wound. The amplifier claims a peak current output of 150 amps, which may be a bit optimistic, given the size of the transformer.

However, this review sample came with a test result sheet (like all Briston amps) that specified 315 watts short-term power per channel with both channels driven, 153.1 watts rms, one channel driven, and 121 watts rms, both channels driven. This latter figure suggests that a beefier power supply (ie; bigger or dual transformers) would turn this already powerful integrated amp into a monster.

Redgum claims that the RGi120 will operate into a dead short, and is virtually indestructible. The company is so confident that it does not use output fuses. And just to make sure that the kids don't try to blow it up when Mom and Dad go to the Outback for the weekend, the on/off switch is a key, the most literal form of "parental lockout" yet devised. These keys are all different, so they also serve as an anti-theft device, though, as with cars, there's nothing stopping a thief from hot-wiring the amp when he gets it home.

The RGCD5 CD player is among the most unusual I've encountered. Not only is it the first with a wood fascia, but its transport appears to be a computer mechanism, with its controls beneath the drawer. The drawer itself has "Infra 6000" and "Creative" written on it, while the remote control is a credit-card type also festooned with the Creative logo. Transport buttons on the remote are orange,

with blue numeric ones underneath, and a vertical row of silver ones at right that are inoperative, including volume up/down.

No literature was supplied with the player, so we're left only to guess at Ian Robinson's reasons for using a computer CD transport. The rear panel sports an RCA coaxial digital out, but also a digital in, along with the analog RCA outputs.

Though there is no technical information supplied for this new player, in its two-piece sibling, the RGCD2, the transport uses the same mechanism, and perhaps we can infer that the identical Burr-Brown PCM1710U dual 20-bit DAC chips used in the DAC are also employed in the digital processor of the RGCD5. With 8-times oversampling and a special Cirrus Logic CS8412 low-jitter input clocking device, the DAC section is designed to handle 20-bit signals and provide high resolution digital decoding for its own and other digital sources. And there must be even more than all this in the single box RGCD5, because it costs almost twice as much as the two-box RGCD2.

When I started our standard tests the CD player underlined another peculiarity of the computer CD-ROM transport: no display. Unfortunately that made it impossible to do a reliable Verany disc dropout check, since I not only couldn't see what track it was playing, but couldn't even find my way to track 25, where these tests of increasing dropout size begin.

However, the Canadian CD Check disc came in handy, the transport able to track only the first two of 5 levels of error. In our random error test, the player was typical of good transports, playing to the two-minute mark before skipping ahead looking for good data. It wouldn't play the see-through poorly aluminized disc at first, but a second try resulted in loud ticking and very audible distortion. I also discovered, playing one of our own emphasized recordings, that like most computer transports, this one does not recognize emphasis flags, so such CDs have notably brighter upper octaves. In sum, I'm not sure that this type of transport was a particularly astute design choice, since it's not a great tracker (though its performance on the random error disc was good), won't tell you anything about the CD you're playing, and does not have a de-emphasis correction circuit.

Nonetheless, it proved to be an outstanding player sonically, the DAC among the better ones I've heard. Switching to the digital input is automatic, based on whether there's a disc in the transport. And I thought that the DAC sounded even better when it was fed from another transport, in this case the Talk Electronics Thunder 1. I liked the player's freedom from grain, or that digital hardness that makes me put on LPs. It was dynamic, clean, and detailed, without much listening fatigue.

These qualities were carried through the RGi120 amplifier with great transparency and energy. This is the best MOSFET amplifier I've heard, and easily the most powerful integrated amp in my experience. It is quite possible that the elimination of a separate balance control and the use of plastic pots has reduced distortion, because this amp is as clean as a whistle, and very quick with transients. I found it particularly impressive with 96 kHz DVDs, the absolute live performance quality of these fully conveyed.

If you have no Denon CDs (most of which are emphasized), you might find the RGCD5 enjoyable for its sound quality, but you'll have to get by wondering what track is playing and how long it might be. However, I have no such reservations about the RGi1210, easily the best integrated amplifier I've heard since the Jeff Rowland Concentra, which is more expensive and more refined. But the Redgum delivers (as the casinos like to claim) excitement, this time Aussie style.

Andrew Marshall



REDGUM DAC accepts ...

BYO Remote Control

Should the style of REDGUM's "less than conventional mass-market appeal" CD player stretch your comfort zone a little too far ...

... a simple Solution to work around the lack of a remote and readout in the REDGUM CD Player is ... B.Y.O. Remote" i.e. *create your own quality CD Player* by the addition of a REDGUM DAC only!

To achieve this, we suggest connecting *any* inexpensive DVD player, or your current "under-performing" CD player, (either being used simply to provide the transport) to the DAC version of a REDGUM CD player. In this way, you can dramatically improve the sound quality of the DVD or CD player up to Hi-Fi levels whilst enjoying the comfort of the "bells and whistles" from the DVD or CD player via its remote. Most basic DVD players these days have the necessary Digital Out to allow this connection.

You may be reeling from the idea of "matching" a cheap DVD player with a Hi-Fi REDGUM DAC!?! This combination is, however, a great match as the quality of the DVD player becomes irrelevant because of what happens to the signal *after* it leaves your chosen player.

Once in the REDGUM DAC, the digital stream is fully reclocked and reshaped in a separate, additional chip. This additional chip also provides the buffer for the storage of the data stream in real time, thus removing the problem of jitter. Thus, there is a clear delineation of the digital signal from the "brand X" DVD player changing to the digital signal in the REDGUM DAC.

Just as REDGUM uses only the Rolls Royce of ICs from Burr Brown, having such an extra chip is definitely not the norm! This difference then makes sense of comments (i.e. shows the contrast) re the transport being not/important. In this way, if the quality of the transport is important (i.e. non-REDGUM, no extra chip), then and only then does having a dedicated CD player makes sense.

Doing the sums on this combination also gives a positive - by using a DAC, what you don't pay for the CD ROM drive usually covers the cost of an inexpensive DVD player acting as the "replacement transport".

When you move on to your next DVD player, the DAC remains as part of the system, providing you with long-term sound quality along with the flexibility to keep up with the latest development in DVD players.

The original concept of the REDGUM CD Player was formed in 1997 and based on a twofold principle. Firstly, it was aimed at the audiophile for whom sound quality had to be outstanding, and at the same time who could live without all the extra "conveniences" that a readout provides especially because of the convenience provided by the second design principle. Namely, as the transport is the most likely section to fail of any CD player, that section in a REDGUM is made to be "instantly replaceable / serviceable".

This is possible as the drive in a REDGUM is quickly and safely accessible by a basic technician so that when it fails, a replacement drive can be sourced from any computer shop without loss of time and immediately inserted at minimal cost. In this way, the universal weakest link in conventional CD player design disappears as a long-term liability for the REDGUM customer. Within the scope of these terms, the product has definitely held its own with customers. CDROM drives can come and go, but their REDGUM DAC is theirs for life.



At first glance, the 'ergonomics' of a CDROM drive do make it just a little more difficult where many and rapid changes are required, such as demonstrating in a retail situation. However, we consistently find that the RGCD models are welcomed by customers who just listen to discs in their entirety (as is generally the case with audiophiles). From its first design concept, it was never intended to be a mainstream product.

The initial RGCD models used ROM drives that offered remote control. However, due to quality control issues totally out of REDGUM's hands, REDGUM replaced that drive brand in 2002 with the BenQ CD ROM drive, which has proved itself bullet-proof ever since. Regrettably, this drive and others currently on the market are only available without a remote facility.

Seemingly quirky as the REDGUM CD Player design is, its purpose is re-justified by its ability to act as a DAC with any level of transport quality (from a CD or DVD player). The fact that at REDGUM we use a CD ROM drive as our transport indicates our assuredness that after the signal leaves the transport, what happens inside our DAC must, and does, bring the signal up to and hold it in top notch condition. A coherent digital stream is needed if the sound quality is to be optimal, which it is. (No point in being modest here. It IS !!! How many of our customers have left their "well-known" brands behind after hearing even just the RGCD2!!)

We know you will agree that there is magic to weave by doing things *just a little* differently!

REDGUM is delighted to offer you ...

"Insight for Sore Ears!"

And the difference between a DAC2 and a DAC5?

The **RGDAC5** (and the RGCD5ENR) have the 'top of the line' American Burr-Brown' DACs - **the PCM1702** - these are the first sigma-delta DACs designed by Burr-Brown and are regarded as the Rolls-Royce of DACs. The RGDAC5 **uses 2 separate DAC units** which are combined with, and direct coupled to, 2 x Analog Devices ultra low noise BiMosfet single channel op amps as output stages. This combination is supplied with its digital information via a Cirrus Logic Reclocking and Reshaping chip with its own internal crystal clock (to remove jitter entirely,) and an NPC (Japanese) close tolerance digital filter.

The entire product is direct coupled, silicon to silicon, from the digital stream input to the RCA sockets on the back! - no capacitors (or phase angle changes of any sort throughout). This is made possible by the use of 7 (yes, seven) independent internal power supplies. There is currently no better way of getting clean audio from a digital stream.

As to the **RGDAC2** and the RGCD2, once the PCM1702 DAC was established, Burr Brown saw the possibility of making 'economy versions' of this DAC (as the development cost of the Sigma-Delta circuitry was now covered). So they then released a dual channel 'surface mount' Sigma-Delta DAC - **the PCM1710**. This has **both channels in the one surface mount chip**, and can be supplied with a single operating voltage (5v), thus simplifying the power supply needs. In the RGDAC2, REDGUM uses this PCM1710 supplied with the same Cirrus Logic reclocked digital stream as in the RGCD5ENR (but without the extremely expensive NPC digital filter). The PCM1710 drives into a dual channel version of the Analog Devices BiMosfet chip (as mentioned above), but these stages need to be capacitor coupled from the DAC (as are 99.999% of all CD Players) as there is a 'bias' voltage on the output of the PCM1710. The result is that the RGCD2 is better sonically than virtually any mass-produced CD player.

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Redgum RGCD5 ENR DAC/CD Player



While home theatre and multichannel music and video has been forging their own ever-upward path, plenty of companies are quick to jump on the bandwagon. It's almost to the point that with some formats and latest fads, you've got to get in while the going's good, in order to cash in on the short-lived demand. Other companies like to concentrate on what they do best and I'm happy to say Redgum Audio is one of them.

Sure, it has entered the world of home theatre and has a couple of products aimed at AV enthusiasts,

namely a 5.1 channel preamplifier and couple of multichannel power amplifiers. There are also loudspeakers that bear the Redgum badge, with recent additions including an active subwoofer and centre channel speaker. And it is one of very few Australian companies that can claim manufacture of an entire system – right down to the equipment rack and cables. If you fancy your hi-fi system all Australian and all Redgum, there's now a wide-ranging line up of 2-channel products.

We presented, as a prize, an entire Redgum system to one lucky subscriber back in AVL-116, and it's been a while since any new product turned up at the *Audio & Video Lifestyle* office. So, during a recent trip to Melbourne and a visit to

**Redgum's top
CD playing
machine gets
an upgrade**

By Nic Tatham

Redgum's expanded factory, an AVL colleague was able to bring back the latest upgraded version of its top of the range CD player.

Redgum prefers to call these machines a D/A converter with CD-ROM, which if you're the least bit familiar with them, is a far more accurate description than 'CD player.' Using a CD-ROM drive as the transport mechanism has numerous design and sonic benefits and Redgum isn't alone in this computer component use approach. It's a technique adopted by only a handful of high-end manufacturers, such as Meridian with its 800 Series which comprises a \$25,000 DVD player that use an everyday DVD-ROM drive (or two) as its principle transport mechanism. These drives cost around \$100 to replace, so you'd hope the money is being put to good use elsewhere in the design.

This is very much true of the Redgum design and its latest; the RGCD5 ENR represents the 'Signature Series' of Redgum's CD playing components. It replaces the original RGCD5, owners of which can upgrade to the ENR specification with a DIY kit available from Redgum. This is another aspect that

makes Redgum gear quite unique - the DIY factor. One of the reasons a CD-ROM drive is used is that it can be easily serviced by the owner and avoids those costly and timely service bills. Any speed and IDE-interfaced CD-ROM drive can be used in the CD5 ENR and as they are an almost disposable commodity, the cost is negligible, with most computer shops selling them these days for under \$75. So if and when the laser fails, instead of an expensive laser mechanism replacement, all that's required changing the drive is a couple of cable connections and four screws. So easy, anyone can do it.

Tests have also found that these CD-ROM drives don't sound half-bad and that they make excellent transport mechanisms in their own right. Redgum now fits the CD5 ENR out with a Creative 52-speed drive as standard and now that they come in black, the look of the machine is much improved once you lower the Redgum panel. There are however, some operational constraints by using these drives and compared to a conventional CD player, the Redgum design is very low on the feature and facility count. There's no display or remote control (unless you fit one of the few remote controllable CD-ROM drives), plus functions are limited to just stop, play and track accessing, depending on the drive used. This isn't something that's going to worry prospective Redgum owners though and playing a CD on this sort of machine is a bit like days of old cueing up an LP- it's very hands-on.

Operating idiosyncrasies aside, the electronics and design make-up of this CD playing unit are what makes it special. Ian Robinson, designer and founder of Redgum Audio puts a great deal of effort into all of his products and the technical specs and componentry in the CD5 ENR are impressive. As for the number crunching, the digital-to-analogue converter (DAC) is based around 20-bit Burr Brown PCM-1702 chipsets for each channel. As with previous Redgum CD players, the digital design work was done in conjunction with John De Sensi of Musiclabs, while Ian took care of the analogue stages and power supply design.

The main difference between the old CD5 and the ENR is the use of

Vital Statistics

Dimensions:

420 x 95 x 360mm

Weight:

7.3kg

Price:

\$3,170

Distributor:

Redgum Audio Pty Ltd
Factory 3, 25 Clarice Road
Box Hill South, VIC 3128

Telephone:

(03) 9897 1277

Facsimile:

(03) 9897 1399

Website:

www.redgumaudio.com

new NPC ICs used in the digital filtering. This forms the main component in the upgrade kit (available for \$595 with full installation instructions) for the older CD5 to bring it up to current spec.

All this means nothing though if the net sonics aren't up to scratch. As with all other Redgum gear I've heard, there are no worries here as the CD5 ENR sounds simply terrific. Play Everything But The Girl's *Walking Wounded* and the level of clarity and detail retrieval is such that unless comparisons are made to significantly pricier gear, it's hard to believe that there's any more info left on the disc. What's more, the up-beat set comes across with tremendous power, yet without any sacrifices in control or exposure. Tonally, this Redgum walks that very narrow path of accuracy with great skill. It reminds me of Naim CD players, which perform a similar act of balancing sonic thrills and spills with poise and panache. Not many products do it successfully, although with an array of different musical styles, the Redgum performs this feat, disc after disc.

I thought this power and enthusiasm might work against it with brighter commercial recordings, although this machine proves a lot less fatiguing to listen to than some with this sort of material. A good example is Jamiroquai's *A Funk Odyssey*, which lacks some of depth of previous recordings. However, treble is still smooth and free of any real

Technotalk

Product Type:

Compact Disc player

Disc Compatibility:

CD-Audio, MP3, CD-R (W)

Data Reclocking:

Cirrus Logic CS8412

Output Impedance:

47 ohms

Frequency Response:

0Hz-24kHz (± 2 dB)

Signal To Noise Ratio:

110dB

Dynamic Range:

98dB

Audio D/A Conversion:

20-bit, Burr Brown PCM 1702 (twin DACs)

Digital Output:

Coaxial

Digital Input:

Coaxial, accepts 16 or 20-bit input data

Technotalk specifications and recommended retail prices are supplied by the manufacturer

“This is a sonic characteristic, I’ve always found with Redgum gear and it’s one that makes it perform right across a wide musical spectrum. It really doesn’t matter if you’re a chronic headbanger or a classical opera buff, this and all other Redgum designs, have that unerring ability to work its sonic magic with all types of musical styles.”



There's not a lot going on round the back of the RGCD5 ENR, however a notable inclusion is a coaxial digital input which accepts 16 or 20-bit data.

nasties and bite and attack is never rounded off. Bass is weighty and taut and there's plenty of to get down and funky on *Little O*. Pop in a better-recorded disc and the Redgum shows what it can really do. There's good impact and drive, with rhythms delivered in toe-tapping fashion and the CD5 ENR does an excellent job with the shaping and characterisation of instruments and vocals, both male and female. David Sylvian and Rain Tree Crow's *Every Colour You Are* sounds great with bags of presence and emotion. A wonderfully instrumented track with slide guitar, wah wah saxophone and soundbite samples of shortwave radio, it's all opened up beautifully by the Redgum.

Switching to the classics, the Redgum proves it's musical worth with all sorts of styles. Holst's *Saturn* is a moody piece and the Redgum does a fine job of communicating this: there's a good sense of scale and the dynamic flow is full of momentum. Its big, powerful bass is perfectly in balance with the open and informative midband and crisply explicit treble, giving an overall impression of massive amounts of detail, which adds to, rather than distracts from, the music.

This is a sonic characteristic, I've always found with Redgum gear and it's one that makes it perform right across a wide musical spectrum. It really doesn't matter if you're a chronic headbanger or a classical opera buff, this and all other Redgum designs have that unerring ability to work its sonic magic with all types of musical styles.

Build quality and finish have also been improved. The rear panel and top cove are now fitted and finished better than previous models and, of course, the Redgum wooden front panel's as lovely as always.

It's an expensive little CD player though and not without plenty of more conventional competition. But,

the thing about Redgum, and the people who own it, is that both are not interested in convention. With its unique appearance, user-serviceability and upgradability, Redgum's flagship DAC with CD-ROM machine is a very classy act and well worth investigating if you fancy something a bit different.

AVL

Ancillary Equipment: ME 24/550III pre-power amplifier, Audiolink Sterling II integrated amplifier, Black Box mains conditioner, KEF Q8 loudspeakers, Nordost Flatline speaker cable, Audioquest Jade interconnects, SAP Relaxa 1 isolation platform

O p i n i o n

The 'Opinion' expressed here is that of the reviewer, summarised in the form of a 5-star rating system, and should be considered as an integral part of the full contents of this **Audition Equipment Review**. As such, each category should be judged on its own merits and not necessarily used as a comparison with other equipment reviews in this, or other editions of **Audio & Video Lifestyle** magazine.

- ★ Shocker
- ★★ Average
- ★★★ Good
- ★★★★ Excellent
- ★★★★★ Perfection

"Operating idiosyncrasies aside, the electronics and design make-up of this CD playing unit are what make it special."

Performance

★★★★★

Build Quality

★★★★★

Compatibility

★★★★★

Value For Money

★★★



REDGUM

RGCD5 CD Player/DAC



Buying Australian is an admirable ethos at the times, but given the current parlous state of the Aussie dollar, it also makes good financial sense. However, when it comes to buying hi-fi equipment, it's easier said than done. Buying Australian-made loudspeakers is easy; there are literally dozens of manufacturers able to accommodate you, with anything from a pair of budget-priced two-way bookshelf loudspeakers to a full state-of-the-art, eight-channel home theatre speaker system, including a powered subwoofer. Buying an amplifier is a little more difficult, but there are at least ten manufacturers that can help you out, the best known of which is undoubtedly ME. If you want to include a radio in the system, your choice narrows down to just two or three, including Amber Electronics and Audiosound Laboratories. However, when it comes to adding a CD player to your system, you have virtually no choice at all. Redgum Audio is a small, Melbourne-based outfit that makes just two CD players, the Redgum RGCD5 reviewed here and a cheaper version, the RGCD2 (\$999).

The RGCD5 doesn't actually look like a CD player, because its front panel is made from a solid billet of polished wood - good old Aussie Redgum, naturally - and when you pull the panel down off its magnetic catches, it looks even less like a CD player, because instead of fitting a standard CD drive, Redgum uses a computer CD-ROM drive from well-known Creative, (a Creative infra52X) complete with all the tiny, colour-coded transport controls.

THE EQUIPMENT

The advantage of using a CD-ROM drive is that these drives are so cheap to buy that when the laser eventually wears out, owners will be able to fix their RGCD5 themselves, using nothing more technical than a screwdriver. It's simply a matter of buying a new CD-ROM drive (almost any CD-ROM drive will do, you don't necessarily have to buy a replacement from Creative), unplugging the old drive and plugging in the new one. A bit like Aladdin's legendary lamp - out with the old and in with the new. The RGCD5 has been designed so cleverly that you don't even have to dismantle the chassis to exchange the drives: the four screws that hold the drive in place are underneath the case, not inside it. This means you can never be exposed to dangerous voltages, even if you're silly enough to try to swap drives while the CD player is plugged into mains power.

However, although using a CD-ROM drive has its advantages, it also has several disadvantages. The most obvious of these is that you can't use the drive's analogue output, because of the extremely high levels of distortion. (To be fair, the drives were never intended for hi-fi audio applications, so you can't blame designers for skimping on the audio stages in order to keep costs down.) A less obvious problem with the use of CD-ROM is the high level of jitter in their digital output. Again, digital jitter isn't really a problem when you're talking about computer data, but when the digital bitstream contains audio that will be converted to analogue,



jitter is a real problem, even in tiny amounts.

Redgum solves the problem of the analogue output by not using this output at all. Instead, the company uses the digital output. Here, Redgum gets around the problem of excessive jitter by completely re-clocking the digital output before sending it to a pair of Burr-Brown 1702 digital-to-analogue converters. Since this is much the same approach Meridian uses with its Reference 800 DVI player (a superb bit of kit that will set you back a cool \$23,000 or so), Redgum is in pretty good company in terms of the way it's approached the design.

So you can get the most benefit from the expensive Burr-Brown-based digital-to-analogue conversion circuitry inside the RGCD5, Redgum fits an

few of the buttons, such as Menu, Shift and Enter don't work at all (for obvious reasons). Finally, the CD-ROM drive is not programmable, so if you're used to programming your CDs so the tracks play back in any order other than the usual numeric sequence, you should be made aware that you can't do this with the RGCD5.

But perhaps the most frustrating and annoying aspect of the remote's operation is that it will work reliably only when the front panel is hinged down. This is because the infra-red receiving window is fixed to the CD

room between the rear of the panel and the sensor, so this could be a tricky 'fix'.

However, the user-unfriendliness of the remote control's operation pales in comparison with the user-unfriendliness that derives from the fact that the CD-ROM drive does not have a front panel display. This means you get no visual feedback as to what the CD player is doing: there's no readout of the tracks on a CD, no indication of the number of the track that is playing, or visuals showing the elapsed or remaining time on a CD. Neither can you get

REDGUM gets around the problem of excess jitter by completely re-clocking the digital output.

ROM drive itself, so when you close the solid wood front panel, you block off the window. It's true that if you position the RGCD5 very carefully, so that the front panel sits proud of the surface on which the player is resting, it's possible to operate the CD-ROM drive with the door closed, but it doesn't work very well. The obvious solution to the problem would seem to be to drill a hole in the front panel, but when I suggested this to designer Ian

any immediate visual confirmation that you have pressed the correct button on the remote control (such as a command to switch to track 9, for example).

Although you can, with some difficulty, access tracks easily enough, using the remote, the lack of an elapsed time indicator makes it completely impossible to find passages in, say, a symphony. There are only five front panel



external digital input socket on the rear panel. This can be used to upgrade the performance of any older CD player with a digital output, or a DVI player. One reason you might like to do this is because the RGCD5 is not very user-friendly. The tiny, credit-card-sized infra-red remote control that must be used to operate the RGCD5 is designed for computer use, not audio, and as a result has strange computer icons on its buttons, rather than the more-familiar CD ones. A

Robinson at Redgum, he said he'd already tried this, without much success. Apparently the problem is that because of the thickness of the front panel, any hole in it has to be huge before the remote will work anywhere in the room. Otherwise, you have to stand directly in front of the player, and hold the remote at exactly the same height as the hole. If you're particularly keen, you could consider using one of the after-market infra-red extender systems on the market, but there's not much

controls on the Creative Infra52x drive, and two of these don't work. The obvious non-starter is the 'Turbo' button. Not quite so obvious is the rocker volume control. This doesn't work at all: instead, the rear panel output voltage is fixed. There's also a problem with the FWD button which generates a 'crack' sound when it's used to skip tracks and 'tick' sounds when it's used as a fast forward control.

LISTENING SESSIONS

I had to delay my first A-B comparison of the Redgum RGCD5 because the volume level of the analogue output was so much higher than the CD player I used as a reference (a much re-worked Luxman D105) that any attempt to make a comparison would have been meaningless. (In A-B comparisons, playback levels should be matched to within 0.1 dB for a proper assessment, otherwise listeners will always prefer the louder of two CD players). This very high output level means that if you wish to audition the Redgum under showroom conditions, you will have to make certain the volume level is matched precisely. Once the output was padded down, the sessions proceeded quite well, although very slowly because, due to the lack of the front panel display, it was slow process to cue up the tracks I wanted and I could not isolate specific musical phrases within tracks as I normally do in an attempt to speed-up the review process.

Redgum's RGCD5 proved to have a fresh, clean sound, with wide dynamics. The noise floor was whisper-quiet and perfectly even, without any skew to prefer one band of frequencies to another, as well as being completely imperceptible at normal listening levels. When reproducing peaks on a CD approaching 0 dB, there was no audible overload in the analogue output stages - the sound remained clean as a whistle, so the power supply is obviously up to the task. Stereo imaging was excellent, with the Redgum able to provide exceptional focus without straying too much into either the 'ping-pong' or 'pinpoint' areas that would have detracted from the overall effect.

I briefly listened to the headphone output, but it's a standard CD-ROM type, and the sound quality is not up to scratch, no matter what type of headphones you use, so for high fidelity applications, Redgum's RGCD5 should be regarded as not having a headphone socket at all,

even though one is physically present. This is actually a bit of a shame: I would have thought it would have been relatively inexpensive to add a headphone output that sourced from the in-built Redgum DAC.

Redgum will also have to rethink the way the front panel is supported when it's open (that is, hinged down). On my sample, the panel's descent is stopped by the metal edges of the chassis, when they hit the inner surface of the wood panel. After only a few weeks of use, the right-hand edge of the chassis had gouged a small hole in the rear of the panel. What's needed here is some sort of small rubber or plastic pad, or some alternative means of restraining the panel.

CONCLUSION

I wouldn't go quite so far as to say that Redgum's RGCD5 is a CD player that only its designer could love, but it has so many operational quirks and foibles that I think you're either going to love it or hate it; there's not much room for any middle ground!

The credit-card remote control is pretty upsetting, but you could get around this annoyance by substituting (at additional cost!) a full-sized, programmable, learning remote. However, even if you do this, you will still have to accept the fact that the Redgum will not reliably accept remote commands unless you operate the player with the front panel open. Whether or not this is a serious problem depends on how you use your CD player. If you tend not to use a remote, but simply play your discs all the way through, you won't need to use the remote at all, and will also be able to operate the player with the panel closed, so it won't be a problem at all.

I imagine that for some people, the lack of a front panel LCD display may present the most difficulty. After several weeks of using the Redgum, I slowly became used to not having the display, but I can't exactly say that I ever enjoyed not having one. Again, I didn't miss the display when I was playing complete CDs, all the way through, but when I was trying to



play only a particular track, I always found it frustrating (along with the lack of Programmability). Also, because I like listening late at night using headphones, I sorely missed having access to a high-quality headphone output. (In retrospect, probably a good excuse to upgrade to a pair of electrostatic headphones!) The Redgum does have its fair share of positives. The polished Redgum front panel means the player looks beautiful, of course, but it also makes the player very distinctive. The black steel chassis is built from thick steel plate, so it's tough and durable. And, of course, the RGCD5 is one of the few CD players on which you can replace the transport yourself. Internally, you'll find all the parts are readily available and, being socketed rather than soldered, are easily replaceable (by a qualified technician) so in the extremely unlikely event of an out-of-warranty component failure, the repair cost would be negligible. That said, Redgum provides a long, seven-year warranty (which does not include the CD-ROM drive), so an out-of-warranty failure is unlikely. The fact that the internal DAC is accessible, so you can use it to upgrade the performance of any other component with a digital output (including older CD players, DVI3 players and even some portables) is yet another plus.

AHF

greg borrowman

Readers interested in a full technical appraisal of the performance of the Redgum RGCD5 should continue on and read the 'LABORATORY REPORT' published on the following pages. All readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

TEST RESULTS

The frequency response of the Redgum RGCD5 was as flat as the proverbial. For those who'd prefer me to hang some figures on it, the response was 0.05dB down at 2Hz and 0.07dB down at 20kHz. Channel separation was better than 100 dB right across the band. Output voltage was very high, at 3.315 volts (left channel) and 3.292 volts (right channel), so channel balance was an excellent 0.06 dB.

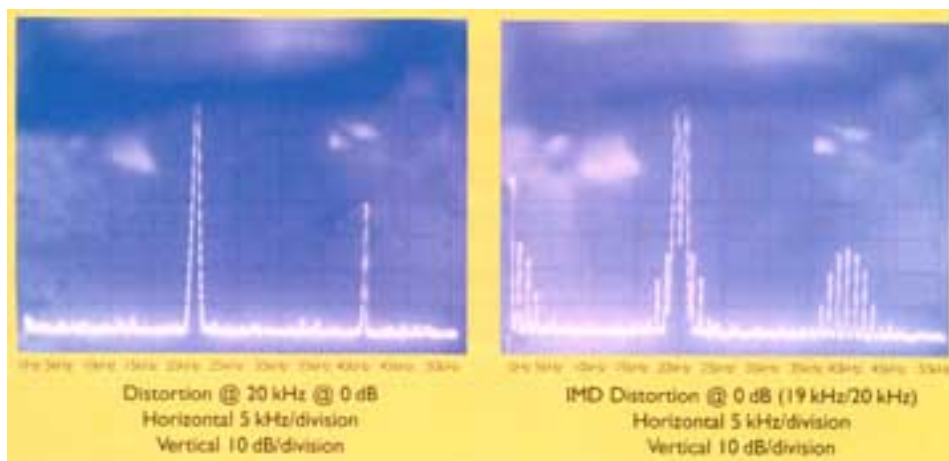
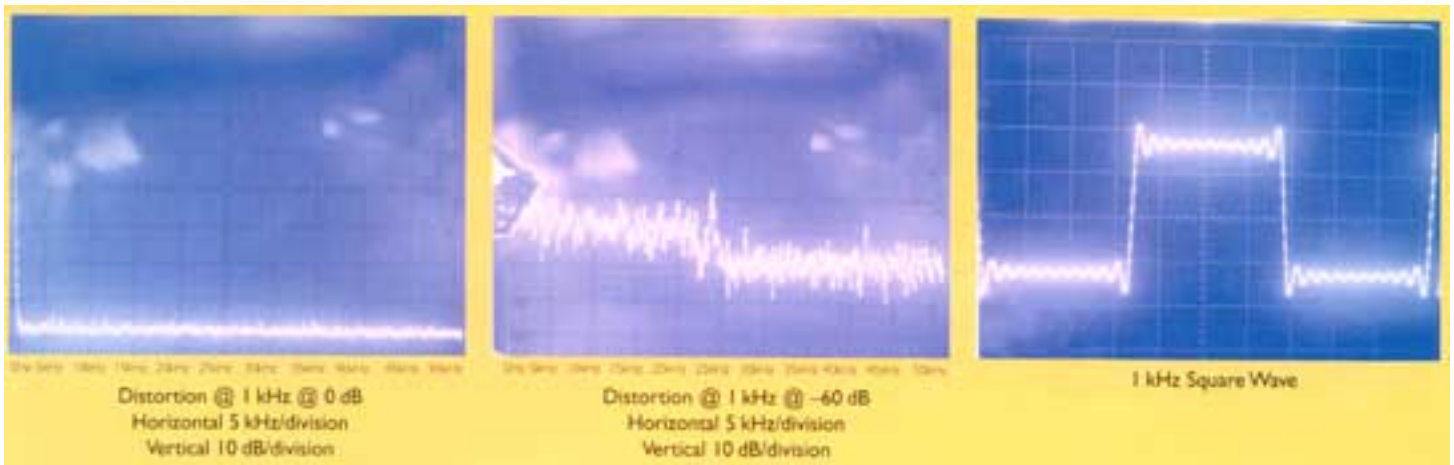
Spectrum analysis revealed that with a 1kHz/0 dB sine wave test signal, all noise and distortion was more than 90 dB below reference, between 2Hz and 50kHz. Reducing the test signal to -60 dB saw the noise and distortion increase to be -55 dB below the test signal (that is, -105 dB below OdB) between 20Hz and 20kHz, improving a further 15 dB above 20kHz. Two distortion components, at 24kHz and 43kHz, are visible at -108 dB and -117 dB.

Performance with the difficult twin-tone 19/20kHz IMD test signal was not outstanding. As you can see, on the spectrogram, the two tones are accompanied by unwanted sidebands. More significantly, in-band distortion components are introduced at 1kHz (-62 dB), 2kHz (-68 dB) and 3kHz (-78 dB) as well as six inaudible components centred on a sampling derived 39kHz image at -63 dB. This performance appears to be an artefact inherent in Burr-Brown's PCM 1702 DAC when it is operated at 0 dB at

high frequencies (above 15kHz). Since this level will never occur at these frequencies in any situation involving music signals, it's really of only academic interest. The SMPTE IMD twin-tone test (which is a more realistic test, and more representative of what might occur in real music) was passed with flying colours, with the Redgum returning text-book performance (no distortion components visible above the 90 dB noise floor of the analyser). Driven with just a single 20kHz test signal, the Burr-Brown DAC doesn't introduce any distortion in the audio band, but there is an out-of-band sampling artefact at 40kHz that is just 50 dB down.

The 1kHz square wave shows the reversal that's typically induced by digital filtering and a little more ringing that I would normally expect to find on a CD player in this price range. The waveform also shows evidence of the presence of higher, unrelated, distortion components.

AHF
Steve Holding



February 2001

Redgum Audio RGCD5 CD Player

Review Summary

Sound "Almost uncanny smoothness and clarity with a complete absence of grain"; "not necessarily *tubey*-sounding...but...smooth and seductive"; "gets the voice right."

Features Simple face plate hides a Creative Labs CD-ROM mechanism; but "what makes a CD player sound so good is not in the number crunching, but the analog output stage, which in the case of the Redgum RGCD5 is designed by [Redgum's] Ian Robinson.

Use No track/time display; because of its use of a CD-ROM drive, the RGCD5 is user serviceable; a power cord is not included.

Value "Makes music, but...gets a mixed recommendation due to the ergonomics, or lack thereof."

by Doug
Schneider

In what are now the twilight years of CD playback, I figured that we would be hard-pressed to see someone do something *really* different. Redgum Audio, the innovative company from Australia that makes the RGI120 integrated amplifier I like so much, has gone and done something that's taken me quite by surprise. From the outside, the \$1600 USD Redgum RGCD5 looks like the rest of the Redgum line -- black, all-metal chassis with the trademark solid piece of redgum wood as a faceplate. It's a slick design that pictures don't really do justice to -- up close it looks a whole lot nicer. The RGCD5 doesn't need a "key" for powering on the unit, like the RGI120 integrated amp, but I guess this makes sense because an audio system needs only one "ignition" point. Since there are no controls on the front panel, not even the drawer, the RGCD5 has a simple and elegant look.

So where's the surprise? Drop RGCD5's hinged front plate. "What the?!" was my first reaction when I saw the Creative Labs CD-ROM mechanism inside. That's right -- a computer-based CD-ROM drive complete with the same ol' faceplate and the teeny-weeny remote control that comes with it if you have one in your computer. Many of the buttons on the remote, like Volume and Menu, don't work since they have no functionality here. As with other companies that use off-the-shelf parts, I would have thought Redgum would have tried to perhaps hide what the RGCD5 is -- but no. Instead, there's a reason behind the "openness."

I talked with designer Ian Robinson, and he made it all quite clear. According to him, when researching CD playback, he played with all kinds of transport mechanisms, and the differences in sound were negligible compared to other parameters -- like the analog section. Hogwash, you say? Well, since the company Redgum reclocks the data off the transport with a Cirrus Logic CS8412 chip, Robinson and his digital designer felt that this makes the RGCD5 more or less transport insensitive. According to Robinson, the way to give customers the greatest value (and keep the price down) is to give them the cheapest transport mechanism and put more effort elsewhere.

A side benefit of this is that the RGCD5 becomes user serviceable should it fail some years down the road. I've seen CD-player transport mechanisms fail long before the other inner or outer workings. According to Redgum, with the RGCD5 you simply need to take out the mounting screws on the bottom and slide a new compatible drive in. Undoubtedly tweekers will love this feature -- the chance to try different drives to see if differences are more than minuscule.

While I can certainly sympathize with Redgum's logic in terms of maximizing performance for the dollar, there is a down side to this approach. Despite the ability to service RGCD5 yourself, the usability of the player is not that good. There is no front display whatsoever. This means you'll never know what track you're playing unless you know it in your head. So the RGCD5 is about as minimalistic as it comes, with not much more than the ability to start and stop a disc as well as skip tracks. Using the RGCD5 is a bit of a pain, but I should give Redgum a break because in the unit's literature the company calls the RGCD5 a DAC with "compact disc compatibility." This would insinuate that it's not *really* meant to be a CD player in the traditional sense (although I suspect that with a drawer, most will think of it that way).

The rest of the player gets back to what would be considered "normal." On the back are a set of single-ended outputs, as well as a coaxial digital input and output (the input allows you to hook up your own transport should you wish). There is also an IEC power receptacle on the back (although the RGCD5 ships with no power cord, so you must supply it).

The digital design is attributed to Jon De Sensi of MusicLabs. For D/A conversion, he chose to use dual Burr-Brown PCM1710U 20-bit DACs with an 8x oversampling filter. Digitally, there is nothing really cutting edge in this design. What with upsampling and the talk of how many bits one needs -- 16, 20 or 24, depending whom you talk to -- this player is using pretty standard, tried-and-true technology.

Sound

Idiosyncratic operation aside, the sound of this player is splendid, a testament to the fact that a lot of what makes a CD player sound so good is not in the number crunching, but the analog output stage, which in the case of the Redgum RGCD5 is designed by Ian Robinson. Among the best digital playback today it is hard to hear any *massive* differences, but there are some subtle things that separate the top dogs. This Redgum player has an almost uncanny smoothness and clarity with a complete absence of grain. It's not necessarily *tubey*-sounding, like Audio Aero's Capitole, but it's easily as smooth and seductive. Bass is as strong and tight as any player I've heard, save for the Simaudio Eclipse operating in its 24/96 mode. Highs are clear and extended, with a kind of bell-like clarity I like so much but rarely hear from CD players -- this, the Resolution Audio CD55, and the Audio Aero Capitole players (standard and 24/192 version) are the only ones I hear it from.



Associated Equipment

Loudspeakers – Axiom M3Ti, Cliffhanger CHS-2/W-2, JMLab Chorus 706, PSB Image 2B, Revel Performa M20.

Amplifiers – Blue Circle BC2 mono amplifiers, Redgum RGi120 integrated amplifier, Vecteur I-4 integrated amplifier.

Preamplifier – Blue Circle BC3000.

Digital – Audio Aero Capitole 24/192, Resolution Audio CD55, Simaudio Eclipse.

Interconnects – Nirvana S-L, Nordost Quattro-Fil.

Speaker cables – Nirvana S-L, Nordost Red Dawn II.

I spent an entire afternoon listening to Bruce Cockburn's wonderful *Humans* [Columbia CK-48748] on the RGCD5. It's a 1980 release, the last with Cockburn's exclusive use of acoustic guitar. It's my favorite album of Cockburn's, and the LP has the distinction of being the only record I ever wore out! I played it so many times that I have every musical nuance memorized. The RGCD5 brought out all the glory of the album. Vocals were smooth, full and rich. Acoustic guitar shimmered with resonance, body, and excellent high-frequency extension. Drums (recorded in a late-'70s way) bloomed with warmth and weight. Hugh Marsh's violin stood out with great clarity. It didn't matter that the RGCD5 has no track display. I know this album all too well, and I just played it over and over again. The kind of natural ease I hear here is akin to that of more expensive players like the Audio Aero Capitole and Resolution Audio CD55.

Much the same goes for Ani DiFranco's *Not a Pretty Girl* [Righteous Babe Records RR007-D]. "Tiptoe" can sound hollow, distant, closed in, or worse depending on how well a player can handle vocals. With the RGCD5, it sounded clear, smooth and wholly natural -- this player gets the voice right. The RGCD5 is not quite as bulbous as the full-sounding Capitole (regular model), but it is as smooth and assured. Guitar is fast, detailed, and never brittle. Soundstaging is precise, and there is little to quibble with unless you go and compare the sound to that of the state-of-the-art Resolution Audio CD55 or Audio Aero Capitole 24/192. The very best CD players offer a little more depth by perhaps squeaking out just a smidgen more resolution.

I also like to play the warm and sappy "Falling Down Blue" from Blue Rodeo's *Tremolo* [Discovery 73001]. This track has a very liquid feel and plumb bottom end. I wondered if the RGCD5, with its own sense of smoothness, would exacerbate these into something *too* bloomy. It didn't. Instead, the disc sounded as smooth and full as ever without any bloat or exaggeration.

The soundtrack to the movie *Gladiator* [Polygram 467094] is rich- and powerful-sounding with an expansive soundstage. With the RGCD5, there is good image specificity, a nice sense of depth and lots of low-level detail. The track titled, "Battle," is particularly rousing, and the RGCD5 handled all the dynamics with aplomb. Instruments and musical textures were natural, and the stage was as wide and deep as the recording allowed. All in all, the sound was completely listenable and with little to criticize.

Finally, I pulled out a demo favorite -- "Passion and Pride" from the Inakustic demo disc (this track is also available on *Friedman: Passion and Price* [Biber 76671]). This cut is designed to test transparency and dynamics, and does so in spades. When I played this disc with the RGCD5, I was using the Revel Performa M20 speakers wired with Nordost Red Dawn II speaker cables. This speaker/cable combination is as neutral and transparent as anything I've heard. Everything was rendered in a laser-sharp fashion and had great stage definition and depth. In the "hand-clapping" part, there is excellent delineation and separation. You can really hear *into* the recording. However, more impressive were the midrange and high frequencies, which were never harsh or spitty, even through the extremely extended Revel speakers. Like I said, this is one *smooth* player.

Conclusion

I love the way the Redgum RGCD5 CD player makes music, but in the end it gets a mixed recommendation due to the ergonomics, or lack thereof. The RGi120 integrated amp had its own little operational quirks (the unstepped dual volume controls mainly), but the RGCD5 goes far beyond this. While I can live with some things, I can't live without others. If the RGCD5 *at least* had a numerical display, it would be much more usable.

But even so, this player sounds great -- don't look by it just yet. It's also proof positive that all the latest marketing and buzzwords don't mean as much as solid implementation of technology -- the RGCD5 is still a well-designed player that, in the end, sounds very good. People with other Redgum components who wish to match the pieces of their system aesthetically will definitely want to try the RGCD5. Like the other Redgum components, it is unique, compact and elegant. And there may be people who won't care about the limited functionality -- or they'll connect the player to another transport mechanism -- and in this regard, it will be wholly suitable.

Whatever the case, the Redgum RGCD5 is certainly a unique CD player and worth looking into for its sound quality.

...Doug Schneider
das@soundstage.com

- [Current Issue](#) Equipment Reviews

Redgum Audio RGCD5 CD Player
Price: \$1600 USD.
Warranty: Seven years parts and labor.

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Box Hill South 3128
Melbourne, Australia
Phone: 61-3-9897-1277
Fax: 61-3-9897-1399

E-mail: sales@redgumaudio.com
Website: <http://www.redgumaudio.com/>

North American distributor:
NuView Audio
446 Harrison St.,
Sumas WA 98295
Phone: (877) 361-3630
Fax: (250) 833-4332

E-mail: info@nuviewaudio.com
Website: <http://www.nuviewaudio.com/>

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audition

equipment review

Redgum RGCD2 Compact Disc Player / DAC



Compact disc player technology has evolved less dramatically than other areas of the home entertainment industry, which is perhaps something of a blessing. Certainly refinements to the Sony/Philips' universally accepted digital audio format have been more subtle - and far more digestible - than the changes seen recently in the development of surround sound decoding.

Indeed compact disc players seem to age more gracefully, at least in terms of their technology and, despite upgrade options extending to external DACs and the like, current CD player models will

remain in vogue for years to come. This is good news for buyers.

But current model compact disc players are not like early model machines in many important ways. A lot of work has been done by companies to ensure their machines perform in-line with current expectations. CD transports are now given plenty of attention, with companies searching for the best ways to hold a disc in place while spinning, including stable platters, vibration-free disc clamping and rigid disc holding systems, which all help the disc to travel smoothly.

Then there's the work to laser pick-up, digital to analogue converters, control circuits, power supplies and output sockets that has been done

**From Aussie
amp maker
Redgum Audio,
a CD player
with a
difference**

By Sian O'Neale

during the past decade. CD players today stop, play, search, open and close in ways that are generations ahead of the first models. And they sure sound better too.

Technology is nothing, however, if it's not incorporated into the product properly. Laser pickups, transport mechanisms and power supplies are all bones that make up the complete sonic skeleton, but if one is out of sync, then the final structure is compromised. And if it's not well built then it won't last.

Redgum Audio is an interesting and innovative player on the local and export hi-fi scene. It is unusual in that its core products (unlike the majority of companies in the Australian manufacturing industry, with some notable exceptions) are not loudspeaker models but electronics, and in particular amplifiers. I am certainly pleased to see an Australian company break the mould and focus its energies on high quality, no compromise amplifier designs - and the success of its current range shows that the investment is paying off. The company's Rgi60 60 watts per channel integrated model is quite stunning, both visually and sonically; plus it looks like no other design, thanks to Redgum's distinctive wood front panelling.

I am particularly impressed with Redgum's commitment to Australian design and manufacture, rather than just design.

It is often found that in this world of cost-cutting, even high-end audio products from respected brands which have been designed in their country of origin, are in fact manufactured on the cheap in another (less affluent) country. It is reassuring to see Redgum's electronics made in Australia in the good old suburbs of Melbourne!

The Redgum RGCD2 is one of two high quality CD player models in the company's current line-up. And it's a rather fascinating and unique product, which is something we've come to expect from the brand.

The innovation of the world's first digital to analogue converter that can be added to an existing system or upgraded to a CD player is worthy of attention and unique. Redgum's reason for this approach is that the most common type of customer complaint about CD players is the tendency of the laser assembly to malfunction, which involves costly repairs to fix. But the Redgum DAC can be purchased separately or with a CD ROM drive.

At a recommended retail price of \$945 the RGCD2 is not at the budget end of the CD player market. However, this being an Australian product means that an equivalent import with similar specifications and performance is likely to be much more expensive.

The RGCD2 is a visually unusual compact disc player, with both 'pluses' and 'minuses' in the cosmetics department. Its looks will be a matter of personal taste; you will either love the player's appearance or hate it. It's certainly different to the usual black box, that's for sure.

The front panel takes the elegant minimalist approach and only features the brand name to the far left, but it is made from unfilled natural timber, specially selected and beautifully finished to match the panelling on the company's range of amplifiers. This front panel is cleverly attached by magnets. Once the wooden 'drawbridge' is down, the CD ROM drive can be seen - a Creative Infra 48.

I have to admit I have never found computer equipment to be particularly attractive and the appearance of the CD ROM drive in Redgum's otherwise excellent housing looks out of step with the overall aesthetic, but in this design there is no way around it.

There are some serious operational quirks on this machine that will have to be overcome by the user. Firstly, the CD ROM drive lacks the solidity and smoothness of operation that you would expect on a conventional compact disc transport, particularly at this price point. Secondly, there is nothing by way of a display that shows you what track is playing or what the trick play function modes are doing. This could be a problem for some users. Thirdly, the infra red remote control, which is a standard Creative design, is rather small. But the questions regarding build quality and operating logic come into context when the Redgum is put through its paces and given a real sonic workout. After a few short listening sessions, suddenly the few shortcomings and ergonomic problems seem to be reasonable considering the upside of such a design. An operational nightmare, yes, but oh, what a composed, detailed and wonderfully revealing sound!

Inside this box is perhaps one of the most impressive no compromise digital to analogue converters available; the DAC, according to Redgum, uses the

“If the company is aiming for a ‘live’ performance with its range of products, then it is well on its way to achieving it ... music in a more subtle, realistic way with a tonally natural quality about it which is easy to listen to ...”

high quality Burr-Brown PCM1710U dual 20-bit DAC chip with audiophile grade support components. The specifications are impressive; eight times oversampling, a digital filter, multi-level Delta-Sigma DAC and an analogue low pass filter.

In keeping with its Melburnian heritage, the digital circuitry was designed by Jon De Sensi of Music Labs.

The overall sound quality of the Redgum is smooth and cultured and of a highly revealing nature. The choice of DAC in a sub \$1,000 player is commendable and responsible for the involving presentation. The work Jon De Sensi has certainly paid off and this player has some superb characteristics.

This Redgum is not a dramatic, in-your-face CD player. It delivers music in a more subtle, realistic way with a tonally natural quality about it which is easy to

listen to throughout longer listening sessions. As with Redgum's 60 watt amplifier, this CD player will have you re-discovering your CD collection as its information retrieval skills are particularly noteworthy.

Classical music is treated to a warm and sensitive handling. Large orchestral works sound alert and satisfying thanks to the player's ability to treat individual instruments with equal ability. Stringed instruments such as violins and violas sound distinctive and expressive whether in solos or *en masse*. Wind and brass are also capably reproduced with the conviction and projection of a more expensive player.

No matter what your taste in classical music, the Redgum can deliver the sonic goods. It's a great performance with all classical music.

Instrumental music from the likes of Stanley Clarke is also handled with the same class. The saxophone, which can sound wonderful with the right equipment, is an engaging listen and bass extension is always weighty and controlled. If the company is aiming for a 'live' performance with its range of products, then it is well on its way to achieving it. There are some acoustic passages that have the necessary atmosphere and presence that would indicate a live performance; the soundstaging and stereo imaging is first rate.

With popular chart music I once again applaud Redgum in delivering a satisfying all round performance. The RGCD2 has a sweet and strong midrange with both male and female vocals and groups, and an upbeat, lovely tonal quality. Midrange clarity is as much a high point as efficient bass delivery so everything from Five, Human Nature and 98 Degrees sound as convincing as hard-driving tracks from Fatboy Slim.

Pulsating dance music and heavier rock needs a less cultured, more uncouth presentation than you'll find from the RGCD2, but the player sure wins its all-rounder tag.

In this world of compromise, it's pleasing to see a Australian company that doesn't.

There is much to like about the Redgum RGCD2. It offers a high level of performance from excellent audiophile components and, if you can forgive some of its operational eccentricities, you will be well rewarded.

AVL

TECHNOTALK

REDGUM RGCD2

Product Type:	Integrated compact disc player - digital to analogue converter with CD ROM drive
Digital to Analogue Converter:	Ultra high quality Burr-Brown PCM1710U with audiophile-grade support components
CD ROM Drive:	Creative Infra 48
Audio Output Connection:	Rear panel gold RCA outputs
Frequency Response:	0Hz-24kHz +/-2dB
Signal to Noise Ratio:	+100dB
Output Impedance:	100 ohms
Cabinet Finish:	Solid Redgum timber front panel with textured black steel chassis
Dimensions:	420 x 360 x 76mm
Weight:	7.3kg (including carton)
Price:	\$945
Distributor:	Redgum Audio 25 Clarice Road Box Hill South, VIC 3128
Telephone:	(03) 9897 1277
Facsimile:	(03) 9897 1399

**Technotalk* specifications and recommended retail prices are supplied by the manufacturer*

THE LAST WORD

The 'Last Word' is included so as to be used in conjunction with the full contents of this equipment review. The ratings in each category are determined by the reviewer as an overview of this product only, and should therefore be considered as an integral part of this review. As such, each category should be judged on its own merits and not necessarily used as a comparison with other equipment reviews in this, or other issues of Audio & Video Lifestyle magazine.

“The overall sound quality of the Redgum is smooth and cultured and of a highly revealing nature.”

- | | |
|---|---|
| 1 | Shocker! Don't even think about a product that scores so low! |
| 2 | Just OK, but this could be better. |
| 3 | Average to good, the minimum requirement. |
| 4 | Very Good! What should be expected of today's technology. |
| 5 | Excellent, 100 percent perfection. A rarity! |

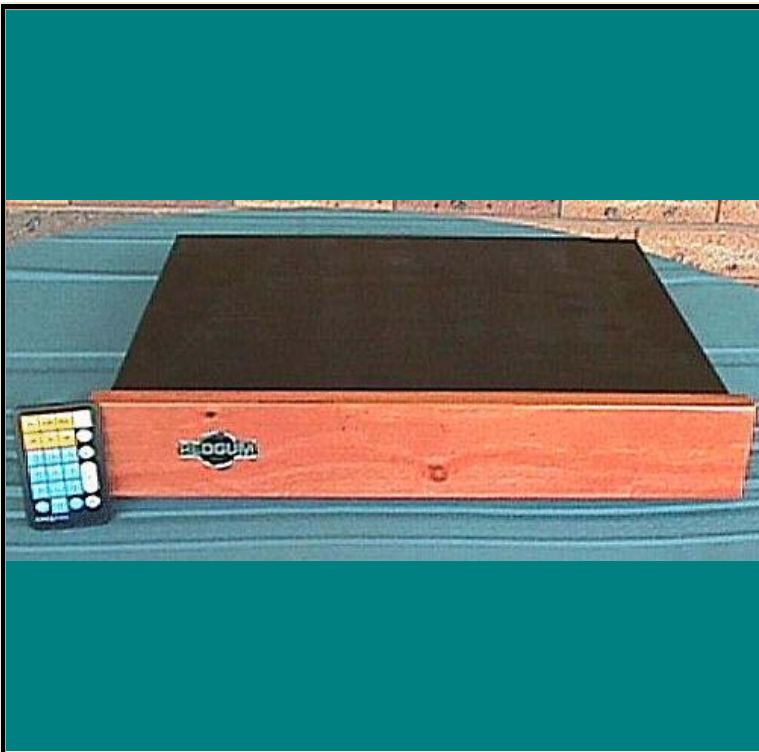
	1	2	3	4	5
Performance:	★	★	★	★	★
Build Quality:	★	★	★	★	★
Compatibility:	★	★	★	★	★
Value For Money:	★	★	★	★	★



SECRETS of **Home Theater** and **High Fidelity**

Product Review - Redgum Audio RGCD2 CD Player with User Replaceable CD-ROM Drive - March, 2000

David Wurtz



Redgum RGCD2 CD Player

Burr Brown PCM1710U Dual 20-Bit Digital to Analogue Converter

THD and noise: -92dB

Dynamic Range: 98dB

S/N: > 110dB

Frequency Range: 0 Hz – 24 kHz \pm 0.2 dB

8 X Over-Sampling

Size: 3" H x 16 1/2" W x 13 1/2" D

Weight: 17 pounds

MSRP: \$945 (Australian), \$650 (USA)

Redgum Audio, Factory 3/25 Clarice Road, Box Hill South, 3128 Melbourne, Australia; Phone 61-3-9897-1277; E-Mail redgumaudio@hotmail.com; Web <http://www.redgumaudio.com/>.

Introduction

The RGCD2 compact disc player is another quality product from the Redgum Audio, Australia range. Ian Robinson, its designer, labelled it "The Ugly DACling" because of its unusual appearance and its high quality Digital to Analogue Converter (or DAC). Ian's 30 year audio repair experience has led him to design and produce audio equipment that lasts. Now he has produced a "User Serviceable" CD player - which is a rarity these days! With this very useful option in mind, the most obvious question remains, does it sound good?

The Product

The Redgum RGCD2 is a unique product in the market because it allows the user to easily replace the laser transport assembly (i.e. the whole CD-ROM unit). This is the part most susceptible to failure in the majority of CD players. It is quite heavy as CD players go, coming in close to 17 pounds. It has the distinctive solid Redgum fascia that is characteristic of all Redgum products. This fascia flips down to reveal the power switch and a personal computer CD-ROM. The CD-ROM is mounted in the case with high quality electronics and one of the most credited/raved-about DACs in the world.



Over 30 different CD-ROM units have been tested with these electronics, and all have worked perfectly. Ideally, if you needed to replace the CD transport unit, you would require a CD-ROM unit with at least a Play and FF function. The CD-ROM unit supplied was a Creative Labs 48 speed with Play, Track FWD and FF, Track Back, REW, and Eject buttons plus its own remote control, which had individual track selection.

If the laser goes faulty, (i.e., skipping) a replacement unit costs about \$80AUS as opposed to many hundreds for a normal repair at your local hi-fi repair shop, and takes about 10 minutes to install with some basic tools. Keep in mind that a user-replaceable CD-ROM unit in a CD player is extremely unusual, and characteristic of only a handful of CD players in the world.



The digital bit stream (zeros and ones) is fed straight off the laser (the only use of the electronics in the CD-ROM unit) into a Cyrus Logic CS8412 "8 X over-sampling Digital Jitter correction chip which is fed from its own crystal timing clock. This in turn, is fed into another Cyrus Logic digital splitter for left-right channel separation and jitter correction, and the signal then goes to the highly credentialled Burr-Brown PCM1710U Dual 20-bit DAC. Jon De-Sensi of MusicLabs, Melbourne, designed the Digital Analogue Converter circuitry. The final output stage, designed by Redgum Audio, is driven by an AD712J Dual Precision, high speed, BiFET OP Amp. The unit has four gold plated RCA output connectors which are mounted very securely on the back of the chassis, these being left and right line level out and a digital in and out. The digital in and out enable this unit to be used as a stand alone DAC, bypassing the transport and going straight to the DAC. The unit can be purchased without the CD-ROM unit and used as a DAC only.



Only two real notable features missing from the unit, one is an LCD display. I got used to functioning without it, though I would have obviously preferred to have one. If you're one of those people who just puts a disc in and presses play, then it's really not a

problem. The other problem is that the remote control doesn't work if the front of the Redgum fascia is closed.

All Redgum products come with a 7-year warranty, but in this case, it is 7 years for everything except the CD-ROM drive. There is also a "purchase price" money back guarantee if you are not 100% happy with the product (although all freight must be paid BOTH WAYS by the customer).

All components and connections are silver soldered which is a lot stronger and less likely to fatigue in comparison to the 70/30 lead/tin solder used by nearly all other hi-fi manufacturers.

The Sound

I was fortunate to be able to connect the RGCD2 CD player into my reference system (Yamaha PC 5002M power amp and JBL 4410 Studio monitors), and also into Redgum's own 120-watt power amp, the RGi120. Now, was the minor lack of functionality going to typify its sound? NO WAY. From the first disc I fed the CD-ROM unit, I was very impressed with the overall sound quality. Every facet of every CD I played seemed to be improved over my other player, and all along the audition, I felt that this product was nothing short of top shelf. I selected an album named "Taste the Salt" by Australian artist Daryl Braithwaite. This album has a number of songs with a high amount of studio compression (this is a recording studio process that reduces the dynamic range of a song or album by trying to make all the instruments and vocal the same volume level). The RGCD2 actually seemed to increase the dynamic range of the music, and this is a tough task, as other units I've played reproduced the album the way I always heard it before. I don't mean to say that you get something for nothing, because there is no such thing. None-the-less, the CD seemed to increase a previously lifeless albums and gave them a heartbeat.

I like using classical music to test dynamic range, as I find there is a greater variance in sound level due to the nature of the many instruments that can be added or subtracted from various parts of the work. From the soft sweet piano and violin verses to the forte bass notes

and full-on passages, the music can have a dynamic range of up to 20 dB. In real terms, this is equivalent to the softest notes being say, 1 Watt and the loudest notes (forte) being 20 dB louder at 100 Watts, or the difference between 90 dB SPL and 110 dB SPL (which is very loud). The player excelled in this area, reproducing the soft notes with delicacy and the louder more complex passages with accuracy and authority. The stereo imaging and soundstage were near perfect (there's no such thing as perfect). On a straight vocal track, the artist's voice was perfectly central, while on more complex rockier tunes, all the bits of audio were in the places they were meant to be and reproduced without any noticeable distortion.

Switching back and forth between the Redgum RGi120 power amp and my big Yammie amp (all 130 pounds of it), I found slightly improved the overall spaciousness of the sound with the Redgum. I think my amp, being a monitor series, is slightly more laid back in the top end. The slight accenting of those higher frequencies and the increased (perceived) channel separation made the Redgum combo (Amp and CD) quite an exhilarating sonic experience.

There is one quite obvious problem with the unit and appears when accessing different tracks. A loud buzz, followed by a crack is heard when the FWD button is used (on the player) to skip tracks. There is also a quite noticeably loud ticking noise when the FF button is used to search through a track. I spoke to Ian at length about this, and he said it was something that he had been working on (getting the muting right when it's moving between tracks and attenuating the ticking noise when searching), but as yet he has had no reasonable success at resolving it.

NB. This problem **does not** occur when using the unit's remote control, so it's a problem that can be easily counteracted. Nor does it occur when the CD is just playing by itself from track to track.

Conclusion

The Redgum RGCD2 Compact Disc Player has a unique place in the market with its user serviceability, high quality design, and high quality audio output which more than compensate for any ergonomic and functional deficiencies. I believe its sonic qualities are comparable to players 2-3 times the price. All the music played in the unit, from classical through to hard rock, was extremely accurate. So, if you're in the market for a high quality CD player that can be repaired or indeed upgraded by yourself at a very reasonable price, then this is the unit should be on your short list.

- David Wurtz -

REDGUM Audio Products - FAQ

www.redgumaudio.com

Why the name REDGUM?

If any one wood conjures up the essence of Australia, it is the wood of the red gum tree. The grandeur, complexity, and variety of colour and texture of this wood is a reflection of the quality of the sound from a REDGUM amplifier – so alive and durable. Each REDGUM front panel is made from one solid piece of unfilled natural plantation timber, selected and finished to maximize the character of its grain. Red gum wood has played a role in Australia's history from its earliest days - it is a part of the national psyche. To see and touch the wood creates its own atmosphere and emotions – the sound of a REDGUM does the same.

REDGUM Audio Products

*designed and made in Australia
the only Australian manufacturer of an
award-winning complete Hi-Fi range*

It still it takes people by surprise that a full range of Hi-Fi products is designed and made (from the ground up!) by one company in Australia. This is because, regrettably, some HiFi brands today tell you very clearly on their packaging only half the story. Sometimes with the help of national flags, the buyer is informed of where the product was *designed or engineered*. Only the canny buyer takes the time to hunt down the actual reference to where the product was *made* - without fail, *not* in the country where it was so proudly designed. We are proud that REDGUM Audio products really are made in the suburbs of Melbourne!

REDGUM products have passed the C-Tick test

*the Australian standard for RF emission
a plus for export markets*

REDGUM Audio is delighted to be able to assure its customers that REDGUM amplifiers pass the **C-Tick** test , not just individually, but when combined with the REDGUM DAC/CD Player. (As REDGUM speakers are passive electrically, they do not require testing.) The C-Tick standard is based on other international standards and is an important factor when marketing a product for export. REDGUM Audio is presently active in the export markets of the US, Canada, the U.K., Hong Kong, China and Korea. Other markets will follow soon.

The need for the C-Tick test is because of the world's reliance on mobile communications and devices using microprocessors. A serious consequence of this is the interference to radio communications, an ever-increasing problem as the use of electrical and electronic products is so widespread. This interference is caused by the lack of compatibility between products and the electromagnetic environment. The enforcement of radiofrequency (RF) emission standards attempts to reduce unintended emission levels.

Just as the European Union has set its own standard with the **CE Mark**, so Australia required all electronic and electrical products sold from 1 Jan 1999 to bear the **C-Tick Mark**. By law, stringent tests are carried out only by accredited testing houses. REDGUM passed these with flying colours!

REDGUM Amplifiers

*“the amp with the key”
designed and made in Australia
a distinctive solid Red Gum wood front panel*

In the early nineties, the designer of REDGUM amplifiers, Ian Robinson, set out to make an amplifier that was worth selling on two counts- one that, above all, made you feel that you were “really there”, but also one that was reliable, indestructible and reasonably priced. With thirty years experience in the Hi-Fi industry in both retail and as Authorized Service Agent for many major brands, Ian had a very clear picture of what worked with a product and what did not. When this was combined with his love of a uniquely Australian wood, REDGUM amplifiers was the result. An on/off key switch completed this distinctively individual product. Many other features are incorporated into the electronics, with the resultant sound of having “live musicians at the end of the room” (personal communication, Rich Weiner, reviewer, Bound For Sound).

REDGUM Loudspeakers

*Australian-made with real Red Gum wood veneer
Dual - magnet shielded 2 channel & multi-channel*

Designing speakers is not new territory to the electronics' designer of REDGUM, Ian Robinson. Drawing on the experience in the '70s of designing his successful range of Link speakers was a natural progression to complete the presentation of what is now "the REDGUM sound". With the support of the LEAP software (as developed by Thiel and Small), REDGUM has been able to develop a range of speakers that keep pace with a rapidly changing audio industry's requirements. The now extended range incorporates shielded drivers using dual magnets for all models, thus allowing the versatility of 2 and/or multi-channel use.

A REDGUM system aims to leave nothing but its hallmark of sonic neutrality on the signal. This involves both a fine balance between the active units, plus the electronics being carefully matched to the passive unit, the speakers. Within the speakers themselves, there is another balance to be attained. The speaker box shape, providing the audible and visceral impact, needs to complement the visual impact, which relies on the veneer used. REDGUM believes it has captured the best of both aspects. The musical training and live performance experience of the design team has permitted their ears to tune the system to its finest point, a worthy match of aural to visual beauties.

The Veneer: REDGUM Bookshelf and Floorstanding Speakers use real red gum wood for the veneer. Regardless of the make of a speaker, sonic consistency within each pair and between all pairs of speakers requires that the speaker box is constructed from MDF board. However, this visually uninteresting material needs to be covered with a veneer for the sake of durability and aesthetics. Only in recent times was the technology first available to create red gum wood veneer, as it is such a difficult wood to reliably work with. To be able to offer our speakers in a wood of such grandeur, is to offer a uniquely Australian product.

The Speaker Shape: All of REDGUM's Bookshelf and Floorstanding Speakers are able to create such a realistic performance that the listener can experience the feeling of "being there". In part, this is due to the design of the speaker box. The internal structure for the Floorstanding boxes is separated into two (between the level of the drivers), with the dividing panel sloping downwards. In effect, the lower section acts as a subwoofer. The REDGUM Lucens Floorstanding Speaker has been successfully tested to the limits of an audiophile test disc - when the test tracks ran out at 20 Hertz, the speaker was happily performing and still ready for lower subsonic frequencies.

Transforming these same speakers into a practical Home Theatre combination was simple - use the same internal volume, and lay them on their sides! Thus, the fully shielded REDGUM Centre speaker and Subwoofer were created to form a space-saving pedestal base for a large screen TV.

REDGUM DAC/CD Player

*the world's first instantly serviceable CD Player
versatile as a DAC or CD player
designed and made in Australia
using Burr Brown components*

In 1998, REDGUM Audio produced the world's first Digital-Analogue Converter that had, and still has the versatility of enhancing an existing system as a stand-alone product or, by the simple addition of a CD ROM drive, being upgraded to a CD Player. It still is a unique product in Hi-Fi. And it came into being because the most frequent point of failure in a hi-fi system is the CD player's laser assembly. REDGUM Audio's designer believed that no customer should have to be told by their service agent - "It's cheaper to get a new player!!"

So, as a solution to "short-lived" CD players, REDGUM's logic was simple – build a product where it is possible to *remove only what needs to be discarded* when that most usual of repair problems arises. This is made possible because REDGUM CD Players accept a CD or DVD ROM drive in the place of a conventional CD laser assembly, an idea that has since been widely followed by other audio manufacturers. One further advantage is the simplicity of servicing a REDGUM CD - the owner can have the faulty laser assembly immediately "repaired" (i.e. the drive replaced) or, if they choose, "upgraded" to a drive of their choice. In this way, REDGUM owners can continue to enjoy the high quality sonics provided by the Burr-Brown Integrated Circuits, the Rolls Royce of DA chips.

Whether it is the RGCD5ENR offering 2 separate DACs (i.e. one per channel) or the dual DAC of the RGCD2, both of these units carry an *additional* Reclocking and Reshaping chip to remove jitter entirely. So, contrary to the industry norm, it *does not* matter what quality of transport is connected in front of the REDGUM DAC! For those customers preferring a Remote Control facility (which is not offered by many ROM drives), this can be achieved by connecting *any* CD or DVD Player with its own remote to the REDGUM CD Player. Result - a clarity of design as clear as the REDGUM DAC/CD sound!!

www.redgumaudio.com



"the amp with the key"

Spellbinding!

"Why we do things differently!"

**The simplicity of amplifier design from REDGUM
RGi 35/60/120, RGM 175/300 and RGH900**

- On - Off Key Switch** - you choose who uses your amplifier!
- individually mastered key - a stolen amp without a key is useless
- Dual Mono Volume** - reduces the number of contact points, so minimizing distortion
- easier adjustment than standard Volume/Balance control
- Conductive Plastic Volume Controls
Single Volume Control** - no cheap carbon "pots" used, thus distortion is minimized
- available as a convenience, also using audiophile quality "pots"
- Solid Red Gum Wood Front Panel** - a truly beautiful, natural product - the epitome of Australian woods
- Australian Designer & Manufacturer** - Ian Robinson – more than 30 years experience in Hi-Fi
- Yet another amplifier!" Why?** - REDGUM uses only components that are necessary to give truly accurate audiophile sound reproduction. "Less gives more." The sonic result is Neutrality -"less is more" of the Real Thing, the music
- Why no valves?** - valves have a short life span & their circuitry is inherently noisy
- Why no transistors?** - transistors are inherently unstable because they have a negative temperature co-efficient
- they fail suddenly, due to unforeseen events (eg. power surges)
- REDGUM amplifiers use MOSFETS** - MOSFETS, solid-state valves, have a positive temperature co-efficient, thus protecting the circuit from thermal runaway. The resultant, simpler circuit design does not require thermal feedback components
- High Current Delivery** - results in sharper transient reproduction
- REDGUM "Ultraflex" Power Supply** - higher voltage is available to allow supply of transients to almost any impedance (down to 0.7 Ohm)
- Amplifier Longevity** - all connection points in REDGUM amplifiers are hard soldered
- No Relays in the Speaker Line** - the greatest source of amplifier failure, aging relays, is removed
- power stability when turned on and off removes the need for this relay. REDGUM's own Ultraflex power supply gives a longer life
- improves the sound quality of high current transients
- delicate signals at low volumes are not distorted by contact grime
- No Multiple Point Contacts** - REDGUM amplifiers are designed using independent circuit boards
- no cumulative distortion as signals do not need to pass repeatedly through deteriorating contact points
- Mains Filters Standard Equipment** - found in the power socket, this 5 - element, advanced feature is specifically tuned to match all REDGUM electronics, thus eliminating the need to purchase an "after market" power filter
- Phono Preamp? Stand-alone RGPH2
a better option than installed in amplifier** - either installed in the turntable, or as a stand-alone unit, so producing better sound quality than when installed directly in the amplifier
- Stereo & Home Theatre - All Hi-Fi
separates or combined systems** - whether standard or ENR Signature Series models, single or dual volume, 2 Channel or Home Theatre, all REDGUM amplifiers are built according to the core principles of simplicity of circuit design, and the use of audiophile quality components to achieve **"Stunning!"** Hi-Fi

For the BIGGER PICTURE on SOUND.....

Why does REDGUM insist that bass below 20hz is important?

To understand why, one needs to understand the nature of hearing ... no less than from the perspective of the profoundly deaf percussionist, Evelyn Glennie.

“Hearing is basically a specialized form of touch. Sound is simply vibrating air which the ear picks up and converts to electrical signals, which are then interpreted by the brain. The sense of hearing is not the only sense that can do this, touch can do this, too. If you are standing by the road and a large truck goes by, do you hear or feel the vibration? The answer is both. With very low frequency vibration the ear starts becoming inefficient and the rest of the body's sense of touch starts to take over. For some reason we tend to make a distinction between hearing a sound and feeling a vibration, in reality they are the same thing. It is interesting to note that in the Italian language this distinction does not exist. The verb 'sentire' means to hear and the same verb in the reflexive form 'sentirsi' means to feel. Deafness does not mean that you can't hear, only that there is something wrong with the ears. Even someone who is totally deaf can still hear/feel sounds.

If we can all feel low frequency vibrations why can't we feel higher vibrations? It is my belief that we can, it's just that as the frequency gets higher and our ears become more efficient they drown out the more subtle sense of 'feeling' the vibrations. Evelyn spent a lot of time when she was young (with the help of Ron Forbes her percussion teacher at school) refining her ability to detect vibrations. She would stand with her hands against the classroom wall while Ron played notes on the timpani (timpani produce a lot of vibrations). Eventually Evelyn managed to distinguish the rough pitch of notes by associating where on her body she felt the sound with the sense of perfect pitch she had before losing her hearing. The low sounds she feels mainly in her legs and feet and high sounds might be particular places on her face, neck and chest.”

(The above text is part of a complete document that can be found at <http://www.evelyn.co.uk/hearing.htm>)

The reason that up until now it has been thought that humans can only hear 20hz to 20khz is that this test is far too frequently done wearing headphones, and of course this 'locks out' all the other 'hearing/feeling' sensory information!!!!

And it is not only bass that we think is important.....

REDGUM amplifiers have a frequency response up to way past 200khz

http://www.redgumaudio.com/review27_rqm175_sstage_measure.html for the following reasons:-

“At least one member of each instrument family (strings, woodwinds, brass and percussion) produces energy to 40khz or above, and the spectra of some instruments reach the test measurement limit of current analysis equipment, being 102.4kHz. Harmonics of muted trumpet reach to 80kHz; violin and oboe, to above 40kHz; and a cymbal crash was still strong at 100kHz. “ - James Boyk (1997), www.cco.caltech.edu/~boyk

Having all these 'missing' frequencies back in place again, you too will begin to 'feel' that
“**there are live musicians at the end of my room!**” – Rich Weiner, Bound for Sound, USA



REDGUM Amplifiers - Design Rationale

Aspects that interest and impress, in the order that people usually comment upon:-

THE KEY

According to Ken Kessler in HIFI NEWS & RECORD REVIEW (Nov 1995, p73), "Redgum: cool name and a cool feature. The company's amps can be locked with a key which serves as the on switch. Which is one way of keeping kids away from the hi-fi system. Named after the wood used for the fascia, Redgum offers a solid-state, MOSFET integrated amp with high sensitivity, passive inputs and an output of 60W/ch for AU\$1500. A separate stereo power amp rated at 130W/ch is available for AU\$2000."

Yes, we have been discovered and quite a while ago. Apart from the typo about the 120W amplifier, the price was right then for the 60Watter and almost still is five years later. The 120W REDGUM amplifier has required only a slight price increase in that same time period.

Parents with teenagers have reported to us that when they go away for the weekend, they take the key with them! - not that the kids could fry the electronics. Even shorting the speaker leads cannot damage a REDGUM amplifier. This amp has been built for "real life" use!

From the point of view of home security, should an amplifier be stolen it will be useless without a key. Just like houses, each REDGUM amplifier has a different key as its on/off switch. A key register is held by the manufacturer to match the warranty registration by the new buyer. A keyless amp will raise suspicions when presented by an unregistered "owner".

DUAL MONO VOLUME CONTROLS

No-one likes the two volume controls! so why does REDGUM use them?

Like all things in a REDGUM Amplifier, there is a very good reason for being persistently different! For any designer of hi-fi, sound quality must be the deciding factor. Therefore, REDGUM believes that a slight change in the way the controls are adjusted is a small price to pay for better sound. Having two volume controls (a "dual mono" system), makes REDGUM amplifiers visibly different. Besides this, using them is considered important as the way to minimise both the number of contact points within the volume controls and the resultant distortion of the sound. Adjusting an extra knob to get better sound quality seems worth it, surely.

How can two volume controls minimise distortion?

If not a 100% tight fit, all connection points (in series) in a circuit can add distortion. We have all had the experience of loose plugs, speaker leads and the like, and the problems they can cause. Well, a volume/balance/tone control is the original "loose connection". These controls (in the form of a potentiometer) consist of 1 or 2 metal fingers rubbing on a carbon deposit track and are in a little metal case open to the elements. (Imagine how badly effected the contact becomes with dust and grime over the years!) Even when brand new, these contact points react as "contacts between dissimilar materials".

If you set up a test sending fine detail information (such as a solo instrument playing quietly in the distance) through these controls, you will find that the distortion caused is immense! The finer the detail, the greater the destruction of the signal! Obviously then, the fewer the contact points in series (e.g. in the volume controls), the better the sound reproduction. Hence, with a separate volume control for each signal path, you can achieve volume and balance using only one moving contact point in each signal path. Compare this to the usual situation of one (internally dual) volume control connected to a (internally dual) balance control as well as a (dual) tone control, which is possibly connected on to other controls.....!

Is there an alternative to carbon "pots"?

However, REDGUM believes that the best method currently available to minimise distortion is by not using carbon potentiometers ("pots") at all. Therefore, REDGUM volume controls are made of conductive plastic! Other manufacturers tend not to use them because they are expensive the price of carbon "pots". Remarkably, even in exotic brands of Hi-Fi, manufacturers insist on using carbon ones simply because the price is cheaper.

The conductive plastic controls used by REDGUM have many fingers on the "pot" and so have many contact points, but they are in parallel. It is this combination of many parallel contacts on conductive plastic which minimises the generated distortion. Distortion at -60db using conductive plastic controls has been measured as less than one-hundredth the distortion generated by the cheaper carbon "pots".

THE WOOD

If any one wood conjures up the essence of Australia, it is red gum. The grandure, complexity and variety of colour and texture of this wood is a reflection of the quality of the sound from this amplifier - solid and real. Each REDGUM front panel is made from one solid piece of unfilled natural timber, selected and finished to maximize the character of its grain. The more interesting the grain, the more likely that slight imperfections will be present. For the stack of chassis that make up the three piece amp, the fascias are cut from the one piece of timber to get the greatest effect from complicated grain areas.

Red gum wood has played an important role in Australia's history from the earliest of times. For thousands of years, Aborigines used the trees to make canoes and weapons, for food (wonderful honey!) and medicine. Early European settlers took shelter in bigger red gums by hollowing out the boles. Later, the strength and durability of the wood was utilized for their dwellings and other structures. Nowadays, the wood is highly valued for its beauty when made into furniture.

WHO DESIGNED IT?

More than 30 years in the Hi-Fi retail industry (Chelsound Electronics, then The Contemporary Sound Centre for 26 years) has given REDGUM's designer, Ian Robinson, the reputation of giving clear, straightforward advice. Early on, his skills as a cabinet maker (RECAP Storage Cabinets - Parkdale, Vic), combined with his knowledge of electronics, led him to design and produce his own range of speakers. He marketed LINK speakers successfully for 15 years - again filling a niche that became apparent from customers' enquiries. In those days, "bigger" meant "better" with speakers, but Ian's back gave way under their load. (No gain, no pain?) As a result, LINK Bookshelf speakers were launched, and they are still alive and well-loved by their owners some 20 years later.

This time in the industry gave him a definite idea of what customers liked, wanted, could afford and were willing to spend on "good gear". After all these years repairing Hi-Fi equipment and performing authorized "under warranty" work on many major brands, he had a clear picture of what worked and what did not. He set out to create an amplifier that was worth selling - one that, above all, made you feel you were at the event, but was also reliable, indestructible and reasonably priced.

WHY THE NEED FOR "YET ANOTHER" AMP?

The ultimate goal at REDGUM is to design Hi-Fi products that make the listener feel that they are hearing "live" sound - facing the artist at that concert, feeling the indescribable atmosphere of "being there", sensing the emotion of that unrepeatable moment. Owners of REDGUM amplifiers are convinced that the designer, Ian Robinson, has done this. One reviewer described it as "There are live musicians at the end of my room." (Richard Weiner, Bound For Sound).

Listening to customers' specific requirements of equipment and complaints that quality sound can have an outrageous price ticket attached has guided Ian in the design of REDGUM audio products. Just because customers have a true appreciation of the sonic differences between a cheap "plastic" toy stereo and top end Hi-Fi gear does not also mean that they always have a big bank balance to fund such a purchase.

Hi-Fi prices sometimes can change exponentially as one works through product ranges and yet the improvement in the quality in the sonics can be less than linear. For Ian, the guiding principal when designing a REDGUM amplifier is "not using insane bunches of components where one unit will do" to achieve a quality sound. As a result of this philosophy, realistic pricing is attainable.

Having moved into the area of manufacture, Ian wanted to leave the world of repairs caused by less-than-well-thought-out design. He wants to grow old making a product he is truly proud of and stands by, rather than spending his future repairing it. In the seven years since their inception, REDGUM amplifiers have shown themselves to be truly indestructible. As proof, they are covered by a full seven year warranty.

Consider the following tale: A REDGUM amplifier plus speaker leads were installed for Mr L. of Ripponlea, Melbourne. A second set of leads were connected in another room and left on the floor, awaiting the delivery of his chosen speakers, Magneplanar (each the size of a door and notoriously hard to drive). Ian received a call to say that every 15 minutes the music was stopping, then starting again. Four hours later, Ian arrived to find the amplifier and speakers were still intact, in spite of the second set of leads having been permanently shorted on the floor in the next room all that time. The amp had only needed to protect itself by cutting off on thermal!!

WHAT MAKES IT DIFFERENT

The debate about the virtues of CDs versus vinyl will continue, but there will always be an amplifier involved to evaluate either. Therefore, another debate must be considered, that of valves versus transistors. From Ian's point of view, it is an argument not to be had as they both have inherent problems. (Having been involved the first time valves were popular, he is old enough to know he does not want to cope with such vagaries again!)

No valves?!

Valve purists are aware of the fact that the emission of a valve drops off from the moment it is first turned on. Consequently, they believe that to maintain optimal sonic quality, valves should be replaced every 18 months. A horrendous expense in itself, but even worse is the fact that the owner of the system has had to live with the constant deterioration of the sound quality from the very beginning. The heat generated by the valves 'cooks' the electrolytic capacitors, and the large resistors used in most 'good' valve amplifiers drift up OR down in value! As well, there is an inherent noise from valve circuitry, and so this intrudes on the enjoyment of today's ultra clean recordings.

No transistors?!

Transistors have the ultimate advantages that have made them so popular - they are cheap and quiet. However, they are inherently unstable because of their negative temperature coefficient. This means that when the temperature of the silicon in the active material rises, the resistance drops. A lower resistance allows more current to flow, which in turn raises the temperature. Because the transistor cannot be self-limiting, a downward spiral begins. It must eventually fail, doing so suddenly and without warning.

To guard against this, a circuit designer decides what set of criteria make up "normal working conditions". In a computer, for example, outside operating influences cannot effect the operating conditions of the transistors in the product. However, the situation for a power amplifier with its vulnerable output stage is different. Unfortunately, no designer of transistor circuits can factor in every possible eventuality, especially when humans, in all their variety, have control of the output stage, and the user has decided (rightly or wrongly) what the amplifier is capable of.

Consequently, birthdays and transistor amplifiers do not mix well together. Why does your amplifier "fry" itself at your annual party? Because you and your friends are in charge of what is demanded of the output stage, and this can easily exceed the designer's criteria of "normal" workloads. For example, at your party, the type of music chosen can be different and played suddenly at a much higher volume, or multiple pairs of speakers are played at once. These situations can lead to disaster because the thermal feedback transistor on the output stage will only keep thermal runaway under control most of the time, and so at your party it now may be running at a higher level than the amplifier has been accustomed to.

Transistors cause problems - so why not just improve circuit designs?

With the cost limitations placed on designers today, not all forms of overload can be prevented by the circuit design. At your birthday party, the transistors in your amplifier are likely to respond in the following way - through 'secondary breakdown'. A momentary overload results in the overheating of a small part of the transistor junction in the output stage. This is because, with a 'negative temperature co-efficient', the resistance of this heated area drops. The overheated section takes a greater share of the current, thus overheating further. Consequently, the junction takes all the more current, overheating even more. Within nanoseconds, it has happened. The junction temperature will reach over 400 degrees C, so it melts, creating a short circuit and no more party music.

So why do transistor amplifiers also "die" for sober living people who never celebrate noisily? Regardless of the due care by the designer, thermal feedback transistors and their support components are unreliable in their performance. As well, they are subject to aging, or the failure of these or other components. Added to this, unforeseen events can also create sudden overloads and inadvertent short circuits (at any time). These could be a bad speaker wiring joint, or external influences causing instability (eg. power surges, 2way radio breakthrough). Even if the owner of a transistor amplifier uses it within the limits of the criteria chosen by the designer, the amplifier can still "die" at any moment.

Paying more for your transistor amplifier in the hope that it will be more reliable does not necessarily solve the problem. A higher price for a transistor amplifier does not always indicate that the circuit design allows for a greater safety margin in the operational criteria set by the designer and/or manufacturer. The amplifier may just be running "closer to the edge" of (self-) destruction. The exotic imported amplifiers so popular in Australia are renowned for "catching fire" after a few years of use. The fact remains that in 30 years of business, Ian has never seen designers of transistor amplifiers use components that are big enough to cope with all unexpected, high-stress situations.

No valves + no transistors = ?

So what is left to use when the most frequently used components are considered not reliable enough? Is there a device that has the advantages of both, but none of these disadvantages? Mix the concepts and you have a solid-state valve that is a special form of transistor - a MOSFET (Metal-Oxide doped Silicon Field Effect Transistor). MOSFETs have a positive temperature coefficient which protects the circuit from damage - they are self-limiting because thermal runaway cannot occur.

When the original output MOSFETs were developed in 1975, one MOSFET was roughly equivalent to sixteen 2A3 valves in parallel push-pull class AB1. Substantial improvements have been made in the last 20+ years. Today's MOSFETs have the advantage of the low internal impedance of a transistor without its thermal instability and the advantage of being voltage-driven like a valve without a high internal impedance. This combination gives a stable platform on which to build better quality sound. How to enjoy listening to Wagner without fear of your amplifier's self immolation.

Using MOSFETs solves the technical problem of how to make a circuit so robust that it is indestructible. This can be achieved by choosing the right power devices for the final output stage so that the current available is balanced by the amount of power (that needs) to be dissipated. Two other things will affect circuit design when incorporating them. Firstly, you cannot simply replace a transistor or valve with a MOSFET - the circuit must be totally redesigned. Secondly, as MOSFETs do not experience thermal runaway (as do transistors), so the thermal feedback components are not required at all.

Having repaired amplifiers over the last 20 years as sole "Official Warranty Service" agent for several brands that used them, Ian has been able to follow the improvement in MOSFETs. For his REDGUM amplifiers, he has incorporated 'faster' and 'stronger' MOSFETs than are being used in most current designs which are "trying to" give MOSFETs a bad name. As with anything electrical, poor design can "fry" a MOSFET, when the incorrect/too low a rating is used. A transistor, by comparison, would "fry" faster.

ADDITIONAL REDGUM DESIGN FEATURES TO OPTIMIZE PERFORMANCE

"ULTRAFLEX" POWER SUPPLY

In an attempt at maintaining amplifier stability, most exotic amplifiers have a very rigid power supply voltage. As REDGUM amplifiers are inherently stable under rapidly changing power supply voltages, all our amplifiers have a power supply which is incredibly flexible giving almost unbelievable transient capabilities. Our 60W amplifier gives RMS transients of almost 200W!!! (or 20,000w in terms of multimedia hype!)

VARIABLE FAN ASSISTED COOLING

Making an amplifier robust is not enough if that endangers the quality of sound produced. Being powerful enough to run multiple speakers may, for example, lead to the need for an amplifier to be fan cooled. This is advisable for the health of the equipment, but not so for the listener if a fan clicks in at full speed in a quiet passage. To overcome this irritation, larger REDGUM amplifiers use a fan that is controlled by a solid state device which allows the fan to gradually start. This effectively minimizes the intrusion of the fan noise, which should remain below the threshold of the music. This device slowly increases the fan speed as the heatsink temperature approaches 57 degrees C. The fan is fully operational by 67 degrees C, thus preventing the heatsink from reaching the cutoff temperature of 80 degrees C.

HIGH CURRENT DELIVERY

Sharp transients such as 'rim shots' on a kettle drum require very high 'rise times' for the output current. In REDGUM Amplifiers, the peak output current available at the speaker terminals is maintained by the use of a power supply bypass within 6mm of the output devices. The combined outputs feed a star network to the ultra high-current linear crystal speaker line used for internal connection to the rear speaker terminals.

AMPLIFIER LONGEVITY

Ageing of Amplifiers - How Relays Do Not Help

Powering up or down an amplifier involves a large and sudden change in the power supply voltage. Most amplifiers are highly unstable in this situation, causing what can only be

described as a "frightening" noise as they are turned on and off. Fearing that customers would be horrified by this noise, manufacturers build a relay into the speaker line of the amplifier. Effectively, this turns the speaker off when the amplifier is switched on/off, so there is no resultant noise. The customer is unaware that there was ever a problem.

Unfortunately, the customer usually becomes despairingly aware later on in the amplifier's life that such a relay exists - it is the simplest, most troublesome component/product in amplifiers. Even when new, the relay has an effect on transient currents so that the transients you hear are not as responsive. As the relay ages, it becomes intermittent and causes immense distortion to delicate signals at low volumes.

Amplifier Longevity

Because a REDGUM output board is stable during power supply changes when the amplifier is turned on and off, this provides a way of solving the problems caused by these relays. By not needing to include them in their amplifier range, REDGUM amplifiers have a double advantage over other manufacturer's designs. Firstly, the immediate and long-term problems and costs caused by aging relays cannot occur if the source of the problem is not included in the product. Secondly, the sound quality produced will be consistently accurate as the non-existent relay cannot become intermittent or cause distortion, nor effect the transient currents.

If this relay in the speaker line of an amplifier is not included in a circuit, what protects the speakers from this "frightening" noise when the amplifier is powered up and down? Simply because a REDGUM output board is stable in this circumstance, a "frightening" noise is not produced. This is not to say, however, that there will be no sound made at that moment in the absence of the problematic relay.

Amplifier "thunks" - good or bad?

REDGUM amplifiers make audible "thunks" when powered up and down, but usually only the latter ones are noticeable to people. A REDGUM amplifier has no need to mask this sound with a troublesome relay in the speaker line. In fact, customers can be reassured that this sound is a healthy sign that the amplifier is flexible enough to cope with such rapid changes in the power supply.

What actually causes the "thunks" is best explained for the process during the powering down of a REDGUM integrated amplifier (35W, 60W or 120W), which has both channels run from a shared power supply. When the system is turned off, the first and weaker "thunk" comes from both speakers together, as the power in the supply (which is common to both channels) "settles" below the voltage required for stable operation. The voltage available to the amplifier continues to fall till eventually the output stage of one of the channels goes into conduction, thus grabbing and dumping the remaining stored power into the speaker line of that channel. This dumping causes the remaining supply of power to collapse, causing the third and loudest "thunk", but only through the channel where it was dumped.

As a result, the second channel is left with virtually no power to access from the shared supply. Since the separate output stages of the channels have reached their critical cut-off voltages sequentially, the second channel is deprived of the power required to produce a sound of the same proportions as the loud "thunk" from the first channel. Because of component tolerances, the final "thunk" sound is usually heard from the same channel.

This same process occurs with the 170W and 300W monoblock REDGUM amplifiers, but with both channels producing their final "thunks", each in their own time. Each channel has its own power supply, so the fall in voltage affects only that channel, causing it to collapse as described above.

Oversized Power Supplies and Capacitance

It makes an impressive party trick to be able to turn off a REDGUM amplifier and still hear it play. The combination of oversized power supplies with no need for relays in the speaker line make this possible. But is it necessary to have an excess of power available? Oversized power supplies are the norm in Hi-Fi, but when is "too much" more than enough? A "plastic fantastic" import would offer a measure of capacitance in the order of 23,000uF. REDGUM amplifiers offer you 10,000uF which is enough to play 2-3 transients after the system has been turned off. REDGUM's designer believes this is more than sufficient as the amplifiers instantaneous energy store (like sugar/glucose is to the body). More is not needed to do the job it already does so well. In this area, one is to be cautioned when thinking that "more is better".

NO MULTIPLE POINT CONTACTS

Not only cheap amplifiers use multiple contact points as a way of connecting several circuit boards in an amplifier. It is a cheap manufacturing method to make a product quickly, but the need for it is more the result of clumsy design and assembly. These contact points, in the form of metal pins or plates, are not accessible to be cleaned. The presence of atmospheric moisture plus the very fine electrical signals between the contact points causes electrolysis, resulting in deposits on the junction. The more these junctions deteriorate, the more the distortion that is added to the circuit. The effect of this distortion is cumulative as a signal can pass several dozen times through these contact points before it arrives at the output stage. To overcome this problem completely, REDGUM amplifiers are designed using independent circuit boards and all connections are made using silver solder.

NO PHONO PREAMP IMPROVES SOUND QUALITY

Why doesn't REDGUM include a phono input in the REDGUM amplifiers? There are 2 reasons.

Firstly, a system will sound substantially better if the phono preamp is installed in the turntable. This is because the phono preamp really should be located as close as possible to the cartridge in order to reduce background noise. If the phono preamp is installed in the amplifier, there will be at least one metre of lead (internally and externally combined) responsible for transferring the minute signal. Such a low level signal is very prone to being swamped by the noise inherent in the circuitry already in the amplifier. After this preamp modification is installed, the sound of a vinyl collection improves dramatically! And the second reason - most customers don't want to pay for a circuit that they will never use.

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REDGUM's Dual Mono Volume Adjustment

Prerequisites for Use: Two Ears + One Hand

The Dual Mono volume control REDGUM amplifier that you have chosen offers a greater degree of flexibility than is perhaps immediately obvious. Being able to independently adjust the volume level for each channel is effective in two ways. The most readily apparent benefit is the ability to bring the position of the performer back to centre stage (should the recording present the performer as off-centre).

With the more traditional Balance control designs, adjustments will cause the chosen channel to drop out quickly and *totally*. In other words, an adjustment of just 2° to favour one channel creates a drop of around 10dB in the other channel! In contrast, with the Dual Mono volume controls, while maintaining coherent volume levels from *both* channels, it is possible to set these controls with a difference of up to 10 degrees between them. So without causing any channel dropout (as per a traditional Balance Control), using Dual Mono has the effect of "balancing" the image, which is "seen" as the image of the performer moving by about 0.3m/1 ft back to a more central position.

A further advantage of Dual Mono is that the infinite variation within room acoustics can be directly compensated for. This micro adjustment is possible by the setting of the volume controls. Though perhaps initially viewed as less important, this second form of adjustment is really the principal hi-fi facility that Dual Mono volume offers and one that is constantly made use of.

Sadly, perfect acoustic spaces are more to be dreamed of than experienced daily. Fortunately, each time the volume level is adjusted using Dual Mono controls, the listener is subconsciously adjusting for the effect of the room acoustic in terms of how the image "snaps into position", rather than what appears to be simply a change in the volume level. In this way, our ears are the judge of what sounds balanced, rather than relying on a visual line-up of knob positions.

What may have seemed a complicated two-handed volume adjustment is simple done with one hand!! Start with only one volume control and make a quick choice of a generally acceptable volume level for that channel. Then, taking a little more care with the volume control for the other channel, match the volume levels *just by listening*. You will know when they are matched as the image suddenly, and unmistakably, "snaps into position".

Instantly, the performer has become a real person, inhabiting a clearly defined space! But if s/he has been recorded, or seems to be, too far towards one side of the soundstage, a further adjustment of the respective volume control will bring them more towards the centre of the image.

Once you are familiar with using the Dual Mono volume controls, you may find that the settings for both controls frequently share the same position, and so there is again the temptation to set them visually when fine-tuning the volume within a track. A quick way to overcome this is to use a **side-on hand position over the top edge of both knobs**. With the palm of the hand vertical and facing you, place the outer edge of your hand across the top of the two volume controls. With a light downward pressure as you move your hand sideways (i.e. changing the volume up or down), you will find that only a very minor adjustment of one channel is needed after that, if at all.

Obviously there may be a settling-in period needed for the use of the Dual Mono controls. All the same, we find that REDGUM customers report feeling comfortable with the adjustment within a matter of days, and in a week have forgotten about it as being something to actively consider. By this time, the Ears have fully taken charge of computing what adjustment is needed!!

As a backstop, a thin black drive belt can be supplied which externally couples the two volume control knobs together - this works well, but looks a little unprofessional, hence is not widely promoted. Viewed from the front when sitting, the belt all but disappears. Understandably, it is not to everyone's taste. And once customers have tried the ways of adjusting with one hand, well, ... it is requested even less.

It may seem that REDGUM is hanging out on a limb with this feature (hmm?) but to summarise what Gramophone magazine's reviewer, Andrew Everard, wrote in Jan 2001, p122-3 when reviewing a REDGUM system (60W amplifier RGi60 + our top line CD player RGCD5 + bookshelf speakers RG28i) he was able to obtain a more subtle fine tuning using the dual volume than if he had used the more conventional separate volume and balance knobs. REDGUM rests its case. And is sure you will agree once you have experienced the difference!



THE TRUTH ABOUT WHY PEOPLE HATE BUYING A HOME THEATRE SYSTEM

The concept behind Home Theatre is Entertainment, not the brain-strain of sorting out sales pitches. The "Will it?", "Do I need?", "Is it the latest?" merry-go-round of hair-raising questions can lead to the sound of your dreams, or the onset of inertia in acronym heaven.

You want "Home Theatre" to mean pick a disc, any disc

**PUT DISC IN
PRESS PLAY**

And just when you thought it was safe to go back in the water with proprietary multi-channel formats so well established

"Since early 2001 then, it would seem that audio professionals are becoming more demanding in their listening and less accepting of promotional hype. For example, one reviewer auditioned a multi channel amplifier from a highly respected company **using both DTS and Dolby Digital formatted discs** and made the following observation: **".....apart from the slight and inevitable 'dulling' of sound that both systems give compared to a full-range PCM signal,....."** (p. 82-3, Australian hifi Dec/Jan 2001 – 2002).

Stopping right there! **"inevitable dulling of sound"!**? The choice of the word "inevitable" is very telling, and sadly so when it is already being experienced as *the norm* by such a wide customer base. Fortunately, REDGUM at least does not believe that such a loss of sound quality is acceptable! Rather, just because proprietary formats hold the mainstream position, this need not imply there are no other ways of producing sound quality as close as possible to the high(er) standard of the PCM signal.

Perhaps it is worth pausing for a moment to consider what principles the most widely adopted multi-channel format is based on. From an Audiophile's point of view, this is all the more important to do as we now have truly hi tech delivery systems. What was once dreamt of, we now rightly expect. The question must still be asked - Are we really aware of what we are receiving from these much vaunted formats as applied to these hi tech delivery systems?

It takes only a brief exposure to quality audio to work out that "good" Front speakers are "a must"! With this idea as a starting point, consider that the first thing this **major proprietary format** does is **remove** the voice frequencies (the mid range, which contains so many directional cues) from the Front speakers and isolates them to be heard only from the mono Centre speaker, rather like having your own Karaoke speaker. Not content with that change, most of the bass as well is removed from the Front speakers, and all the other channels for that matter, and diverted to the Subwoofer.

Hearing only bass from a Subwoofer seems reasonable as such frequencies are, we are told, "non-directional". Tell that to your body when it *feels* the bass coming directly

from the position of the subwoofer presuming your Sub actually goes down that far. (i.e. lower than your Fronts but that's another story!)

Doing the sums, what this leaves the Front speakers able to pass on to you, the listener, is only the upper middle bass and the high treble. Some may say that neutering good Fronts doesn't really matter as you are busy watching the movie anyway. Strangely, that does seem a logical conclusion so far given the circumstances!

Perhaps all is not lost as the Rear speakers have not yet been accounted for in this rearrangement of frequencies? Perhaps. Not only has the bass been diverted from them, but also some of the treble. So, in fact, the stereo Rears are presenting a mix of mid range frequencies from behind as the mono Centre does from the front (still minus its directional cues).

Thank goodness the listener has two ears and a brain to put it all together again as an image of a 3D soundscape. If there is one qualifier of a "good" recording that is consistently demanded in Hi-Fi, it is **accurate image**. Its presence makes or breaks the chance for you to become totally engaged by/involved in a performance. Oops! Use the word "performance" and suddenly one begins to think only in terms referring to 2 Channel audio. This situation is more a matter of habit rather than necessity. It is as though we have forgotten that a movie is actually a "multi-leveled" performance. All the same, it should follow that an accurate Hi-Fi image is just as vital to Multi-channel "recordings", which happen to show pictures at the same time.

In the real world (yes, where people still have Hi-Fi Ears that are used more for listening than reading), why is there a growing sense that Multi-channel audio is "just not up to it"? Ignore for a moment, if you will, the fact that when using this widely accepted proprietary format ALL of your Multi-channel speakers are NOT giving you all the frequencies they are capable of (except the self-limiting Subwoofer). Instead, consider how sounds (effects) for movies are principally constructed *after the event* using **artificially-induced time delays/phase angles**.

Adding such delays upsets the accurate timing signals and volume levels which allow the viewer (aka listener) to perceive the direction and placement of sound. Similarly, the common addition of millisecond delays and echoes to the rear channels does not keep the aural information intact. These artificial ways of creating a soundscape that should surround you, more usually result in the sense of a "spread" (dare we say "smear"?) of sound around you, rather than a Hi-Fi image with 360 degrees of sound of pinpoint accuracy. So the outcome is unfortunate but predictable - **Hi-Fi and artificially-induced time delays don't mix** as a recipe for stunning hi-fi sound, as applied by this proprietary format.

Time to repeat the obvious – thank goodness that, whatever the circumstances while viewing, the listener still has two ears and a brain to construct an image of a 3D soundscape. Perhaps it is time to take the eternally logical Hi-Fi path of **"less is more"**. Or, in the current terms under discussion, **the less processing there is, the better the sound quality**. Which is not to propose that we all go back to movies in stereo! Multi-channel has much to offer as "processing" per se is not all bad!

To return to the quote at the beginning of this discussion, the **inevitable 'dulling' of sound that both systems**

give..." was noted when "... compared to a full-range PCM signal,.....". For those unfamiliar with the term PCM, the question that hovers is ...As PCM is apparently not a proprietary format, do any DVDs offer it? The answer is absolutely "Yes"! According to DVD White Paper specifications, **whatever the encoded format of the DVD you buy, a 2 channel (PCM) version has to be the default soundtrack available for access.**

So it was there all the time, but is just not being utilized by the big corporations in Audio! (A cynical thought intrudes ... as access to PCM is free of licensing fees, does this mean it is ignored because?) The fact remains that just because the implications/applications of PCM are not mentioned very often, this does not mean it ceases to be a source of superior sound quality! Indirect verification of this quality is to be found in a report of the October 2002 CEDIA trade show.

An exhibitor, Accurate Imaging, "showed a store-bought DVD disc played back on their own player, via their own encrypted DVD signal." (Jerry Del Colliano, audiorevolution.com 12Oct02) How did this form of encryption sound? **"The effects of removing as many as four layers of analog-to-digital conversion between a DVD player (a digital source) and a TV (also increasingly a digital component) is stunning, ..." (op. cit.)**

Looking at this statement carefully, presenting "encryption" in the sense of *removing* complexity (read "processing") certainly makes for an interesting use of the word in an audio context!! Regardless of the somewhat idiosyncratic terminology, the "stunning" end result reinforces the idea of "less is more".

Let us consider **PCM** further. – if simplicity of design is necessary to maximize audio quality for Home Theatre, then what potential is there in having access to a PCM signal when it is only 2 channel? Can it become more than just a fallback position as failsafe stereo?

Fortunately for Audiophiles, **a Multi-channel soundtrack can be created from a PCM signal.** In fact, REDGUM's RGH900p Processor uses exactly this PCM signal to create 5.1 channels which you hear as Home Theatre. Following on from the above discussion of problem areas that the main proprietary format creates by its form of processing, REDGUM's recreation of 5.1 from PCM does *not* rely on artificially-induced time delays to create timing signals. This, combined with the effect of a REDGUM processor *not* limiting the frequency range of all 5 channels, results, in short, in less processing.

REDGUM's conviction about the stance "less is more" is upheld by the results of its RGH900p **processor's recreation of 5.1 from PCM – Stunning! sound quality.** And this is only the first of **3 major advantages** to the customer. As **no licensing fees** can be charged (!! for access to the PCM signal, so no proprietary fees are embedded in the cost of a REDGUM processor to the customer. And thirdly, by using PCM, REDGUM provides a truly elegant solution to the eternal problem of "Which format?", "What setting?" that proprietary products never release you from. (These are decisions that you "pay" for every time a disc is bought, or played!) In contrast, REDGUM's method of recreating the soundtrack into 5.1 means **your only decision to make, ever, is pick a disc, any disc and no need to worry about what its format is.**

REDGUM rests its case on any of those three advantages!! So when the RGH900p Processor is combined with the **RGH900, REDGUM's award-winning 5.1 Home Theatre Amplifier**, the simplicity of circuit design is continued through the system. *Stunning!* Home Theatre is assured, along with the versatility of having the highest quality of sound **regardless of the source material** – stereo, broadcast TV, cable, video, and all encoded proprietary formats for DVD.

How can it be this easy!, and *not* involve any proprietary format? How a processor can recreate accurate stereo from broadcast TV, cable, or video source needs no explaining. How it is possible to put *any DVD* disc into your player *and not have to reset to each different format* definitely needs explaining *only if* the PCM signal is *not* involved!!

According to REDGUM's designer, Ian Robinson, there is always room for lateral thinking - yes, even in audio! **What works best for the sound quality and what works best for the customer** are the 2 driving principles of his designs. As can be seen through the range of REDGUM products, not everything is done by the book!

Just as REDGUM Audio was outrageous enough to be the first to display a CD ROM drive in 1997 as the digital source for its CD Players, so the concept behind the REDGUM RGH900p processor stood very much alone in the field of audio thought when first designed in early 2001. With the REDGUM Home Theatre RGH900p processor, the designer was determined to show that there could be better sound quality than that from the widely promoted and accepted encoded formats.

And from the customer's angle when buying audio equipment that combines Hi-Fi and Home Entertainment, nowadays this involves issues of floorspace and finances as much as design. Again, REDGUM approaches this with simplicity in mind. When "real estate" is limited, the need for a separate, dedicated 2 channel hifi system is solved with the turn of the key in a REDGUM 900 + 900p combination - **from multi-channel to 2 channel, and back.**

But, if that wasn't easy enough, REDGUM's **magnetically shielded speakers** allow them to be placed right **next to your TV, or underneath it. Providing a base for a standard large screen TV, REDGUM's Centre speaker and Subwoofer are designed to be stacked together.** Putting it all together can be this simple, and still be something beautiful to look at!!

Isn't it time to relax about all the hard work of "Entertainment"? And enjoy some **"Insight for Sore Ears!"**.

We think REDGUM offers you all the solutions to your "hate" on buying Home Theatre
..... except, maybe, for silent movies?!

www.redgumaudio.com

REDGUM 5.1 Home Theatre

RGH900p	5.1 Home Theatre Processor
RGH900-1	(first released as Award-winning RGH900) 150W 8 ohm x 6 Channel Home Theatre Amplifier
RGH900-2	250W 8 ohm x 6 Channel Home Theatre Amplifier
RGS	various standmount, floorstanding, centre speakers & subwoofers available



REDGUM Home Theatre 5.1 Processor /pre-amplifier RGH900p

.... as designed for use with RGH900-1 or RGH900-2, REDGUM's 5.1 Home Theatre power amplifiers

Analogue decoder

The REDGUM RGH900p processor/pre-amplifier is the complement of the original RGH900 power amplifier which is now available in two versions, RGH900-1 and RGH900-2. The RGH900p processor is a rare animal as it is not a digital decoder! It is an analogue decoder and can operate in 2 modes.

In brief, the *decoding is done in the analogue domain direct from the 2 channel inputs*, so stereo inputs are all that is required! The decoded signal then has the 5.1 channels 'reconstructed' in either model of REDGUM's 5.1 Home Theatre power amplifier. The only complication occurs if the analogy signal out of the device has already been decoded. To counteract this is as simple as setting your DVD to the default output of 2 channel PCM, thus all decoding will be accomplished perfectly.

The RGH900p processor will not work if a digital decoder is placed in front of it, as the multi channel info has already been removed from the signal path!!! (a process that Dolby obviously encourages!!!)

2 Modes

In more detail, after turning on either model of the RGH900 power amplifier

1/ with the RGH900p processor's key switch turned 45 degrees from the vertical, the combination operates as a high quality **Stereo Power Amplifier with Passive Preamp**, one that has a single volume control and 'image balance' control. The power output measures 170+170W RMS (into 8 ohms) in 2 Ch mode for the RGH900-1.

2/ with the RGH900p processor's key in the horizontal position, the combination is configured as a full 900W (or 1500W) RMS **Home Theatre package**. The Centre, Left Rear and Right Rear signals are derived from the 'phase changes' inherent in all modern recordings and movies made since the 1960's. This reconstruction is so effective that it will work on any source! (We have watched the local news TV broadcasts here at the factory and heard ambulances on the screen pass behind us!!) In other words, the system will work with broadcast Television, DVD, MP3, CD, FM Radio, Video Tape and even modern recordings transferred to cassette tape.

Type of Decoding

No artificial delays, no compression or frequency limiting of any sort is employed, and the preamps used are the same ultra-low noise units as employed in REDGUM's high quality CD Players. The source material can be Dolby encoded, DTS or any other coding, provided that the standard Left Front and Right Front channels are available on the source device (the standard default).

In other words, the REDGUM RGH900p processor is fully analogue and reconstructs 5.1 from the final PCM stereo mix that all DVD's have (by DVD White Paper specifications). When this pre-amp is used in 2 channel mode, the decoder board is totally powered down. When the switch is moved to the multi-channel setting, the 5.1 decoder is activated and signals are sent to the Centre, Sub, Left Rear and Right Rear speakers. The 5.1 information is re-created from the 2 channel mixdown so all channels are full frequency (unlike some proprietary designs!). The sonic result is spectacularly cleaner than those proprietary systems - just like real audio, in fact!!

Subwoofer Channel

The system even has REDGUM's widely-used subwoofer filter built in so that any passive, or active subwoofer can be employed on the subwoofer channel. All the channel levels are preset at the factory, and will only need adjustment (on the rear panel) during initial setup if using a mixture of different speakers.

Ease of Use

Once that is done, the only control that you will need to 'fiddle with' is the volume - this is why it could be thought of as 'Home Theatre for Dummies'!! - it is just so easy! and with sound quality of the highest Audiophile standard. No more than would be expected because we use the same audio stages in the REDGUM RGH900p processor/pre-amplifier as in our renowned RGDAC5/CD5ENR CD player.

Other

The processor does not have any video switching. It currently does not offer a remote control, but this facility will be available soon (and retro-fitable).

www.redgumaudio.com



REDGUM's 5.1 Home Theatre Power Amplifiers

RGH900-1 and RGH900-2

Award - winning sound

The original REDGUM 5.1 power amplifier (RGH900) was awarded "Reviewers' Choice 2001" by "Home Theater Sound" in Canada. Not surprising, considering its pedigree! The design of the RGH900 is basically an overgrown version of REDGUM's 2 Channel amplifier range (also award-winning but, trying to be modest, that won't be mentioned again!!) So, to know what a RGH900 sounds like, it is a simple matter of listening to a REDGUM 2 Channel unit, and mentally multiplying!

Redesign

The RGH900 has since become the RGH900-1, with the same design being made more powerful to become the RGH900-2. For this unit, the most obvious visual change is the addition of large heat sinks forming the sides of the unit, with a resultant increase in height. The original RGH900 was rated at 150W/Ch into 8 ohms, and this design remains completely the same in the form of the RGH900-1. The new RGH900-2 offers 250W/Ch into 8 ohms using a 1kVA transformer. As with any REDGUM, there is more 'kick' in those specs than is apparent from just RMS values!

The re-working of the RGH900 design has come about in response to the now common trend to lower and lower impedances. (e.g. Peerless drivers have been measured at 1.8 Ohms!) What this change involves is that with every halving of impedance, the heat developed 'squares'. The need for greater heat dissipation at these very low impedances combined with speaker efficiencies (spl db/watt) generally falling has meant that at times the original RGH900 was starting to 'run out of breath'. On occasion in systems playing VERY loud (i.e. levels for "neighbourhood demolition work"), it was cutting-off on thermal overload. (All the same, the event of a thermal 'cut off' was considered a definitely better alternative than having the amplifier 'crash', like transistor units do !!!) A simple restructuring to accommodate more heat sinking was deemed to be wise!

Now adds up to

When compared with the original RGH900, the RGH900-1 and RGH900-2 offer these changes:-

- increase in chassis size so both the RGH900-1 and RGH900-2 at 480w x 180h x 330d mm are physically huge, with the RGH900-2 weighing 22kg
- the change to external heat sinking increasing the capacity for heat dissipation
- therefore, no need for an internal fan
- choice of 2 power supplies
- a) the original version (now the **RGH900-1**) remains, giving **150W RMS/Ch** into 8 ohms x 6 Channels, and will not cut-off on thermal when running down to as low as 0.5 ohms
- b) the **RGH900-2** giving **250W RMS /Ch** version into 8 ohms x 6 Channels, or 311RMS at 4 and 550RMS at 2ohms
- high gloss chassis
- other improved cosmetic features (as seen on current model amplifiers)

Multi-Channel Mix-and-Match

In the Land of Multi-Channel dreams, when will enough be enough?! REDGUM offers a flexible way to future-proof your Home Theatre with the potential to upgrade to 5, 7, 9, 11, 25, 99, (500?!) channel audio!!

You choose the number of REDGUM power amplifier channels to be linked (of any/mixed power, e.g. either model of the RGH900 5.1 amplifier, or using individual RGM Monoblocks). And with REDGUM's new "daisy chain" Cyclic Power-Up circuits as a standard feature, the channels will all be activated progressively, one after the other! Much kinder to your power system!!

www.redgumaudio.com

redgumaudio.com

RGH900-1 - 900 Watt 5.1 Channel Home Theatre Amplifier

Power Output:	6 Ch (all Full Frequency) x 150 WRMS (Transient RMS 285W x 6)	7 year Warranty
Harmonic Distortion:	0.009% (below clipping)	
Intermodulation Distortion:	< 0.005% (below clipping)	
Signal to Noise:	> 100dB	
Input Impedance:	10K (Matches 600 ohms - 50K)	
Frequency Response:	0.8Hz - 80KHz (-3dB points)	
Peak Current:	> 150 amp	
Audio Inputs:	5 inputs:- CD, DVD, Tun, AV1 & AV2	
Suggested REDGUM Speakers:	RGS Lucens or Regnans	
Cabinet Finish:	solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis	
Dimensions:	420 (W) x 360 (D) x 93 (H) mm	
Shipping Weight:	14 kg (8.16 kg cubic)	

RGH900-2 - 1500 Watt 5.1 Channel Home Theatre Amplifier

Power Output:	6 Ch (all Full Frequency) x 250 WRMS (Transient RMS 335W x 6)	7 year Warranty
Harmonic Distortion:	0.009% (below clipping)	
Intermodulation Distortion:	< 0.005% (below clipping)	
Signal to Noise:	> 100dB	
Input Impedance:	10K (Matches 600 ohms - 50K)	
Frequency Response:	0.8Hz - 80KHz (-3dB points)	
Peak Current:	> 150 amp	
Audio Inputs:	5 inputs:- CD, DVD, Tun, AV1 & AV2	
Suggested REDGUM Speakers:	RGS Lucens or Regnans	
Cabinet Finish:	black gloss powder-coated 1.6mm steel chassis	
Dimensions:	420 (W) x 360 (D) x 93 (H) mm	
Shipping Weight:	22 kg (8.16 kg cubic)	

RGH900p - 5.1 Home Theatre Pre-Amp / Processor (single volume control only)

Signal Output:	0 - 700 mV	7 year Warranty
Harmonic Distortion:	< 0.01% (below clipping)	
Intermodulation Distortion:	< 0.01% (below clipping)	
Signal to Noise:	> 90dB	
Input Impedance:	10K (Matches 600 ohms - 50K)	
Frequency Response:	0Hz (DC) - 4MHz	
Audio Inputs:	5 stereo inputs	
Level outputs:	separate for L rear, R rear, Centre & Subwoofer	
Cabinet Finish:	solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis	
Dimensions:	420 (W) x 360 (D) x 93 (H) mm	
Shipping Weight:	8 kg (8.16 kg cubic)	

RGSB (Manna) - Bookshelf Speaker (dual magnet shielding)

Cabinet Finish:	Red Gum wood veneer	7 year Warranty
Bass Loading:	Bass reflex, front ported	
Drivers:	2-way, 2 driver system, 25mm soft dome tweeter; 171mm polypropylene woofer	
Frequency Range:	40Hz - 20KHz	
Sensitivity:	92dB/W/m	
Impedance (nominal):	8 ohms	
Crossover Point:	3KHz woofer to tweeter	
Suggested REDGUM Amplifier:	RGI35, RGI60 or RGI120 (30 - 150WRMS)	
Dimensions:	425 (H) x 210 (W) x 273 (D) mm	
Features:	5-way gold binding post connections	
Crossover:	polypropylene capacitors, air-cored inductors, wire wound resistors	
Shipping Weight:	22 kg (25.9 cu. kg) pair	

REDGUM Audio Product Specifications

[for Home Theatre](#)

RGS Lucens - Floorstanding Speaker (dual magnet shielding)

Cabinet Finish:	Red Gum wood veneer	7 year Warranty
Bass Loading:	Bass reflex, twin rear ported	
Drivers:	2-way, 3 driver system, 25mm soft dome tweeter; 2x171mm polypropylene woofers	
Frequency Range:	28Hz - 20KHz	
Sensitivity:	94dB/W/m	
Impedance (nominal):	6 ohms	
Crossover Point:	2.8KHz woofer to tweeter	
Suggested REDGUM Amplifier:	RGI120 or RGM175 (50 - 200WRMS)	
Dimensions:	985 (H) x 210 (W) x 273 (D) mm	
Features:	bi-wireable, 5-way gold binding post connections	
Crossover:	polypropylene capacitors, air-cored inductors, wire wound resistors	
Shipping Weight:	21 kg (26 cu. kg) each	

New RGS Regnans - Floorstanding Speaker (dual magnet shielding)

Cabinet Finish:	high gloss over solid Red Gum wood inlay with Red Gum wood veneer	7 year Warranty
Bass Loading:	Bass reflex, front ported	
Drivers:	2-way, 3 driver system, 25mm soft dome tweeter; 2x171mm polypropylene woofers	
Frequency Range:	30Hz - 20KHz	
Sensitivity:	94dB/W/m	
Impedance (nominal):	6 ohms	
Crossover Point:	2.8KHz woofer to tweeter (2 totally separate crossovers)	
Suggested REDGUM Amplifier:	RGI60 to RGM300ENR (50 - 500WRMS)	
Dimensions:	1100 (H) x 210 (W) x 315 (D) mm	
Features:	bi-wireable; ultra-high quality heavy gauge 5-way gold binding post connections	
Crossover:	12AWG wiring, polypropylene capacitors, air-cored inductors, wire wound resistors	
Shipping Weight:	25 kg (26 cu. kg) each	

RGSC - Centre Speaker (dual magnet shielding)

Cabinet Finish:	Red Gum wood veneer	7 year Warranty
Bass Loading:	Bass reflex, twin front ports	
Drivers:	2-way, 3 driver system, 25mm soft dome tweeter; 2 x 171mm polypropylene woofers	
Frequency Range:	40Hz - 20KHz	
Sensitivity:	93dB/W/m	
Impedance (nominal):	6 ohms	
Crossover Point:	4KHz woofer to tweeter	
Suggested REDGUM Amplifier:	RGH900 (30 - 300WRMS)	
Features:	5-way gold binding post connections	
	when stacked, shielded RGSC Centre & RGSS Subwoofer form a pedestal base for widescreen TV	
Dimensions:	650 (W) x 380 (D) x 210 (H) mm	
Crossover:	polypropylene capacitors, air-cored inductors, wire wound resistors	
Shipping Weight:	21 kg (23.5 cu. kg)	

RGSS - Subwoofer (dual magnet shielding)

Cabinet Finish:	Red Gum wood veneer	7 year Warranty
Bass Loading:	Bass reflex, twin front ports	
Drivers:	2 x 171mm modified polypropylene woofer	
Frequency Range:	30Hz - 2KHz	
Sensitivity:	93dB/W/m	
Impedance (nominal):	6 ohms	
Suggested REDGUM Amplifier:	RGH900 or RGSW plate (30 - 300WRMS)	
Features:	5-way gold binding post connections	
	when stacked, shielded RGSC Centre & RGSS Subwoofer form a pedestal base for widescreen TV	
Dimensions:	650 (W) x 380 (D) x 210 (H) mm	
Shipping Weight:	19 kg (23.5 cu. kg)	

N.B. All specifications are subject to alteration without notification. All weights rounded.

redgumaudio.com

RGSW1 - 160VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 180 Watt RMS 8 ohms
Frequency Response: (relative to 20Hz/0dB) minus 3dB points are 1 Hz adjustable from 20 to 200Hz
Electronic Crossover: variable from 20 to 200Hz at slope 6dB/ octave
Damping Factor: > 200
Input Sensitivity: 220mV for 175W RMS (adjustable from 100mV to 25V)
Signal to Noise (output stage): > 110dB
Signal to Noise (overall): > 85dB
Slew Rate: 35V / uS
Input Impedance: 10K ohms
Plate Finish: Black anodised 3mm plate with integral heatsink
Plate Dimensions: 250 (H) x 172 (W) x (60 internal + 30 external) (D) mm
Shipping Weight: 3.0 kg

RGSW2 - 300VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 200 Watt RMS 8 ohms
Frequency Response: (relative to 20Hz/0dB) minus 3dB points are 1 Hz adjustable from 20 to 200Hz
Electronic Crossover: variable from 20 to 200Hz at slope 6dB/ octave
Damping Factor: > 200
Input Sensitivity: 220mV for 175W RMS (adjustable from 100mV to 25V)
Signal to Noise (output stage): > 110dB
Signal to Noise (overall): > 85dB
Slew Rate: 35V / uS
Input Impedance: 10K ohms
Plate Finish: Black anodised 3mm plate with integral heatsink
Plate Dimensions: 250 (H) x 172 (W) x (60 internal + 30 external) (D) mm

RGSW3 - 500VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 300 Watt RMS 4 ohms
Other specifications: more at www.redgumaudio.com/Store/Oz/

RGSW4 - SMPS Subwoofer Digital Amplifier Plate

1 year Warranty

Power Output: 900 Watt RMS 4 ohms
Other specifications: more at www.redgumaudio.com/Store/Oz/

RGSW5 - 600VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 700 Watt RMS 4 ohms
Other Electronic specifications: as for RGSW1 & 2
Plate Finish: Powder coated 2mm steel plate with external heatsink
Plate Dimensions: 250 (H) x 400 (W) x (80 internal + 47 external) (D) mm
Shipping Weight: 8kg

RGSW6 - 1000VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 1100 Watt RMS 4 ohms
Other specifications: more at www.redgumaudio.com/Store/Oz/
Plate Finish: Powder coated 2mm steel plate with external heatsink
Plate Dimensions: 250 (H) x 400 (W) x (80 internal + 47 external) (D) mm
Shipping Weight: 13kg

RGSW7 - 1500VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 1250 Watt RMS 2 ohms
Other specifications: more at www.redgumaudio.com/Store/Oz/

RGSW8 - 2000VA Subwoofer Amplifier Plate

1 year Warranty

Power Output: 1500 WRMS 8 ohms; 3000 WRMS 4 ohms
Other specifications: more at www.redgumaudio.com/Store/Oz/

N.B. All specifications are subject to alteration without notification. All weights rounded.

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REDGUM Audio is 2 Channel & Multi Channel

* Combinations for the Real World *

for Customer 1 REDGUM offers

"But I thought it would make it sound better!"

Customer has just bought a DVD player

but disappointed overall with the sound.

A widely-held perception by A / V customers

"Latest Technology"

= BETTER sound quality

Connect customer's DVD player through its Digital Out to our D-A Converter
RGDAC2 or RGDAC5

This allows full use of
all the DVD player features
(remote control & read-out)

for Customer 2 REDGUM offers

"I hate it when she changes all my settings!!"

Husband has set up his Home Theatre system

but his wife wants to play her music on it.

"His and Hers" from one system

(No need for "His versus Hers")

With only one room for A/V ...
RGH900 award-winning
5.1 Home Theatre amplifier

switchable with the turn of the key
from stereo to 6 channel system

If separate rooms available for A/V
a separate stereo REDGUM system
on a matching equipment rack
REDGUM 2 channel amplifiers
(35W to 400W per ch)
+ DAC/CD Players
+ Speakers

basic system e.g.

RGi35 + RGCD2 + RGSB + RGER1

for Customer 3 REDGUM offers

Wife:

"I don't want any big, black boxes in here!"

Husband:

"What's the point of being there

..... if they only look good?"

Whether Home Theatre or Audio ...

Beauty real Red Gum wood
vener suits any interior design

Practicality as a TV Pedestal base

stack our shielded

RGSC Centre Speaker

on our shielded

RGSS Subwoofer

(passive or active)

Shielded HT speakers small and large

RGSB Bookshelf Speaker

RGS Lucens Floorstander

for Customer 4..... REDGUM offers

"Which DVD format?! I just want to put a disc in and press 'Play' "

for Home Theatre surround sound
RG900p pre-amplifier plus
RG900 5.1 power amplifier

creates 5.1 from any disc
from the cleaner PCM signal
with minimal processing
use for Stereo, broadcast TV, cable, video

for Customer 5 REDGUM offers

"I like my 'bells and whistles'
but I want better sound!"

Whether CD or DVD players
all that is required is a Digital Out to
connect the customer's player to a
RGDAC2 or RGDAC5

or Tuner
RGT1 stunning FM/AM sound quality

or high quality Interconnects
RG OCC Silver interconnects

or Phonostage for vinyl enthusiasts
to revive your turntable's sound quality
RGPH2 switchable MM/MC

REDGUM Audio in 2005

Product range changes include:

New	RGS Regnans Loudspeaker	Big brother (1.1m) to REDGUM's first Floorstander
Ext	Home Theatre amplifier	REDGUM's award winning 5.1 amplifier in re-modelled
:	RGH900-1 & RGH900-2	chassis, with heavier duty heatsink, 150W or 250W /Ch
end		
:	Subwoofer amplifier plates	8 models offering power ratings up to 3000W 4 Ohms
ed	RGSW	,
Now	REDGUM AM/FM Tuner RGT1	transforming radio into real REDGUM sound quality
New	REDGUM Headphone Amplifier RGHF	"Either she goes, or my REDGUM 2 Channel - it was a tough choice! A marriage saver!"
2005	Remote Control function	with retro fit available to existing customers

RGHF (made to order) Dedicated Headphone Amplifier

2 gold-plated headphone sockets on rear; accepts 5 sources (e.g. CD/iPod/TV/MP3); balanced to customer's headphone sensitivity; single or dual volume (latter recommended); Red Gum front pane

RGi35 35 Watt + 35 Watt Integrated Amplifier

Power Output: 35+35 W/Ch RMS (Transient 90 + 90 WRMS)

RGi35ENR 50 Watt + 50 Watt Signature Series Integrated Amplifier

Power Output: 50+50W/Ch RMS (Transient 120 + 120 WRMS)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100 dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 120 amp

Audio Inputs: 5 inputs:- CD1, AV1, DVD, CD2 & AV2

Suggested REDGUM Speakers: [RGSB \(Manna\) Bookshelf](#)

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 9 kg/9 kg (8.2 kg cubic)

RGi60 60 Watt + 60 Watt Integrated Amplifier

Power Output: 60+60 W/Ch RMS (Transient 132 + 132 WRMS)

RGi60ENR 75 Watt + 75 Watt Signature Series Integrated Amplifier

Power Output: 75+75 W/Ch RMS (Transient 160 + 160 WRMS)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100 dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 150 amp

Audio Inputs: 5 inputs:- CD1, AV1, DVD, CD2 & AV2

Suggested REDGUM Speakers: [RGSB \(Manna\) Bookshelf](#) or [RGS Lucens](#)

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 10 kg/10 kg (8.2 kg cubic)

RGi120 120 Watt + 120 Watt Integrated Amplifier

Power Output: 120+120 Watt/Ch RMS (Transient 285 + 285 WRMS)

RGi120 ENR 150 Watt + 150 Watt Signature Series Integrated Amplifier

Power Output: 150+150 Watt/Ch RMS (Transient 293+293 WRMS)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100 dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 150 amp

Audio Inputs: 5 inputs:- CD1, AV1, DVD, CD2 & AV2

Suggested REDGUM Speakers: [RGS Lucens](#) or [Regnans](#)

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 10 kg/11 kg (8.2 kg cubic)

Both single & dual volume control models available for all amplifiers

Choice of key switch or rocker switch available for all amplifiers

RGM175 175 Watt + 175 Watt Monoblock Amplifier

Power Output: 175+175 W/Ch RMS (Transient 297 + 297 WRMS)

RGM175 ENR 200 Watt + 200 Watt Signature Series Monoblock Amplifier

Power Output: 200+200 W/Ch RMS (Transient 325 + 325 WRMS)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100 dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 150 amp

Audio Inputs: 5 inputs:- CD1, DVD, Tun, AV1 & AV2

Suggested REDGUM Speakers: [RGS Lucens](#) or [Regnans](#)

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 3 x chassis 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 28 kg/ 33 kg (24.5 kg cubic)

RGM300 300 Watt + 300 Watt Monoblock Amplifier

Power Output: 300+300 Watt/Ch RMS (Transient 596 + 596 WRMS)

RGM300ENR 400 Watt + 400 Watt Signature Series Monoblock Amplifier

Power Output: 400+400 Watt/Ch RMS (Transient 632 + 632 WRMS)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100 dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 150 amp

Audio Inputs: 5 inputs:- CD1, DVD, Tun, AV1 & AV2

Suggested REDGUM Speakers: [RGS Regnans](#)

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 3 x chassis 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 35 kg /37 kg (24.5 kg cubic)

RGPH2 – MM & MC Phono Pre-amplifier Signal to Noise > 70 dB

RGPH2ENR – Ultra Low Noise MM & MC Phono Pre-amplifier Signal to Noise > 90 dB

Maximum Output Volts: +/- 14V = 28V = 9.9V RMS

Frequency Response: 10Hz to 35KHz (follows RIAA curve +/- 0.5dB)

Channel separation: > 60 dB

Sensitivity: 2.5mV for 300mV out

Input Impedance: matches 47K ohms

Power Supply Requirements: AC or DC input min 6V / max 30V - 140mA (not supplied)

Case Finish: solid Red Gum wood fascia, anodized aluminium case

Dimensions: 70 (H) x 110 (W) x 125 (D) mm

Shipping Weight: 0.6 kg (140mm cubed)

**** All REDGUM amplifiers and phono-preamplifiers are covered by a 7 year Warranty ****
N.B. All specifications are subject to alteration without notification. All weights rounded.

redgumaudio.com

RGH900-1 900 Watt 5.1 Channel Home Theatre Amplifier (was RGH900) 7 year Warranty

Power Output 150 Watt RMS 8 ohm x 6 Full Frequency Ch (Transient RMS 285W x 6)

RGH900-2 1500 Watt 5.1 Channel Home Theatre Amplifier 7 year Warranty

Power Output 250 Watt RMS 8 ohm x 6 Full Frequency Ch (Transient RMS 335W x 6)

Harmonic Distortion: 0.009% (below clipping)

Intermodulation Distortion: < 0.005% (below clipping)

Signal to Noise: > 100dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0.8Hz - 80KHz (-3dB points)

Peak Current: > 150 amp

Audio Inputs: 5 inputs:- CD, DVD, Tun, AV1 & AV2

Suggested REDGUM Speakers: **RGS Lucens or Regnans**

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 14 kg/22 kg (8.2 kg/16.9 kg cubic)

RGH900p - 5.1 Home Theatre Pre-Amplifier / Processor (single volume control only) 7 year Warranty

Signal Output: 0 - 700 mV

Harmonic Distortion: < 0.01% (below clipping)

Intermodulation Distortion: < 0.01% (below clipping)

Signal to Noise: > 90dB

Input Impedance: 10K (Matches 600 ohms - 50K)

Frequency Response: 0Hz (DC) - 4MHz

Audio Inputs: 5 stereo inputs

Level outputs: separate for L rear, R rear, Centre & Subwoofer

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 360 (D) x 93 (H) mm

Shipping Weight: 8 kg (8.2 kg cubic)

RGSB (Manna) Bookshelf Speaker (dual magnet shielding) 7 year Warranty

Cabinet Finish: Red Gum wood veneer

Bass Loading: Bass reflex, front ported

Drivers: 2-way, 2 driver system, 25mm soft dome tweeter; 171mm polypropylene woofer

Frequency Range: 40Hz - 20KHz

Sensitivity: 92dB/W/m

Impedance (nominal): 8 ohms

Crossover Point: 3KHz woofer to tweeter

Suggested REDGUM Amplifier: **RGi35, RGi60 or RGi120 (30 - 150WRMS)**

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

Features: 5-way gold binding post connections

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

Shipping Weight: 22 kg (22.3 cu. kg) pair

RGS Lucens - Floorstanding Speaker (dual magnet shielding) 7 year Warranty

Cabinet Finish: Red Gum wood veneer

Bass Loading: Bass reflex, twin rear ported

Drivers: 2-way, 3 driver system, 25mm soft dome tweeter; 2x171mm polypropylene woofers

Frequency Range: 28Hz - 20KHz

Sensitivity: 94dB/W/m

Impedance (nominal): 6 ohms

Crossover Point: 2.8KHz woofer to tweeter

Suggested REDGUM Amplifier: **RGi120 or RGM175 (50 - 200WRMS)**

Dimensions: 985 (H) x 210 (W) x 273 (D) mm

Features: bi-wireable, 5-way gold binding post connections

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

Shipping Weight: 21 kg (26 cu. kg) each

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Audio range

RGS Regnans - Floorstanding Speaker (dual magnet shielding) 7 year Warranty

Cabinet Finish: high gloss, solid Red Gum wood inlay with Red Gum wood veneer

Bass Loading: Bass reflex, front ported

Drivers: 2-way, 3 driver system, 25mm soft dome tweeter; 2x171mm polypropylene woofers

Frequency Range: 30Hz - 20KHz

Sensitivity: 94dB/W/m

Impedance (nominal): 6 ohms

Crossover Point: 2.8KHz woofer to tweeter (2 totally separate crossovers)

Suggested REDGUM Amplifier: **RGi60 to RGM300ENR (50 - 500Wrms)**

Dimensions: 1100 (H) x 210 (W) x 315 (D) mm

Features: bi-wireable; ultra-high quality heavy gauge 5-way gold binding post connections

Crossover: 12AWG wiring, polypropylene capacitors, air-cored inductors, wire wound resistors

Shipping Weight: 25 kg (26 cu. kg) each

RGCD2 DAC/CD Player & RGDC2 DA Converter 7 year Warranty (exc. Drive 3 mth)

Digital to Analogue Converter: Ultra-high quality Burr-Brown with Audiophile support components

CD Player transport (3 mth Warranty): easily replaced &/or upgradable with CD ROM drive

(multistack or single play) or DVD ROM drive with Digital Out and Play button

Technical Specifications:

Burr-Brown PCM 1710U Dual 20 bit Digital to Analogue converter, Complete Stereo DAC,

8x Oversampling Digital Filter, Multi level Delta-Sigma DAC, Analogue low pass filter, output

amplifier. -92dB THD+Noise, 98dB Dynamic range, 110dB S-N. Accepts 16 or 20 bit input data.

Data re-clocking by Cirrus Logic using CS8412 I/C. Low-jitter, on chip clock recovery. Supports

AES/EUB, IEC958, S/PDIF, & EIAJ CP340 Professional & Consumer Formats. Final Audio Stage

by Analog Devices AD712J - dual precision, high speed, BiFET Op Amp, 30MHz min unity gain.

Signal to Noise: 100dB +

Frequency Range: 0Hz - 24KHz + / - 0.2dB (Burr Brown p 15 Fig 15)

Audio Output: via gold RCA Connectors on rear

Output Impedance: 100 ohms (Matches 100 ohms - 100K ohms)

Power Requirements: 180 - 260V ac 50/60 Hz via I.E.C. power socket on rear

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 340 (D) x 93 (H) mm

Shipping Weight: 8.5 kg (8.2 kg cubic)

RGCD5ENR DAC/CD Player & RGDC5 DA Converter 7 year Warranty (exc. Drive 3 mth)

Digital to Analogue Converter: Ultra-high quality Burr-Brown with Audiophile support components

CD Player transport (3 mth warranty): easily replaced &/or upgradable with CD ROM drive

(multistack or single play) or DVD ROM drive with Digital Out and Play button

Technical Specifications:

ata re-clocking by Cirrus Logic CS8412 crystal clock, followed by NPC digital filter. Each channel has

individual Burr-Brown PCM1702 20 bit Digital to Analogue converters feeding via direct coupling to

2 individual audio stages by Analog Devices AD711 - precision, high speed, BiFET Op Amps, 30MHz

min Unity gain. THD+Noise, 98dB Dynamic range, 110dB S-N. Accepts 16 or 20 bit input data. Low

jitter, on chip clock recovery. Supports AES / EUB, IEC958, S/ PDIF, & EIAJ CP340 Professional &

Consumer Formats. 7 internal power supplies from 2 transformers - 2 for CD ROM, and 5 for DAC.

Signal to Noise: 100dB +

Frequency Range: 0Hz - 24KHz + / - 0.2dB (Burr Brown p 15 Fig 15)

Audio Output: via gold RCA Connectors on rear

Output Impedance: 100 ohms (Matches 100 ohms - 100K ohms)

Power Requirements: 180 - 260V ac 50/60 Hz via I.E.C. power socket on rear

Cabinet Finish: solid Red Gum wood fascia, black gloss powder-coated 1.6mm steel chassis

Dimensions: 420 (W) x 340 (D) x 93 (H) mm

Shipping Weight: 9 kg (8.2 kg cubic)

An additional range of REDGUM Subwoofer Amplifier Plates are available with a 1 year warranty

N.B. All specifications are subject to alteration without notification. All weights rounded.