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Unity Audio are a professional-audio product distributor and retailer with a very successful 15-year track record. However, in recent years Unity have also been involved in specifying and developing some bespoke and often very unusual designs, such as the EchoVerb tape echo unit, Monolith adjustable speaker stands, and the extraordinary range of Thermionic Culture valve preamp and analogue processing products. Their latest venture is a brave step into the highly competitive world of monitor loudspeaker manufacture, with The Rock — an active two-way nearfield monitor.

Unity have, over the years, distributed many of the best-known professional monitor brands, so the typical strengths and weaknesses of other commercial designs are well known to them, as (more importantly) are the requirements and expectations of professional users. With that in mind, the design goal for The Rock was to create a 'brutally honest tool' to provide the information required to make critical mix decisions. Design experience was brought in, in the form of studio designer and acoustician Kevin Van Green, ▶

# Unity Audio The Rock Monitor Speakers

The time-domain response of monitors is often sacrificed for level, but this sealed-cabinet design tackles that issue head-on...



**SOUND ON SOUND**

Unity Audio The Rock **£1856**

#### pros

- Impressive mid-range detail and clarity.
- Bass instruments start and stop cleanly and remain separate and identifiable.
- Dynamic changes and transients are portrayed naturally and cleanly.
- Goes much louder than the 70+30W amp pack would suggest.
- Non-fatiguing, despite the amount of information presented.
- Very attractively priced relative to the competition.

#### cons

- Stereo imaging is trickier to optimise and not quite as precise as some other designs.
- Ultimate volume is lower than similar sized ported-cabinet designs — but more than enough for most applications.

#### summary

This interesting new professional monitor design really does live up to the task implied in its description. It's a very revealing monitor that's hugely informative about the mix and very easy to work with, even on long sessions.

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► who developed the cabinet, and Tim De Paravicini (an audio electronics designer best known for his Esoteric Audio Research company's products), who created a bespoke discrete amplifier pack. The prototypes have also been auditioned by a Who's Who of the pro-audio industry.

### Overview

The first thing to say is that The Rock is visually attractive, which is important in a world full of very dull (and sometimes downright ugly) speaker boxes. Each speaker measures 220 x 325 x 290mm (WxHxD) and weighs 11.5kg. The sealed cabinet is constructed from a heavily braced 12mm-thick, nine-layer Baltic Birch plywood, a traditional cabinet material from the days before MDF become the standard. The front baffle is sculpted from DuPont's Corian, which is a man-made composite often used for kitchen worktops and the like. If you want to win extra points at your next pub quiz, Corian is composed of Aluminium TriHydate (essentially bauxite) suspended in an acrylic resin polymer (PolyMethyl MethAcrylate, or PMMA) — but whatever the chemistry involved, the end result is an immensely dense and solid material, which can be machined and finished to a beautiful standard. In this application, the machined Corian baffle has nicely radiused edges to minimise edge-diffraction, and is bonded to an underlying plywood chassis, with the drivers fitted from the front in the usual way.

The use of a sealed cabinet here, rather than the far more common bass-reflex or ported design, is an interesting decision, but one that seems to be becoming popular again... and I'm very pleased about that! Although sealed-cabinet monitors generally lack the power handling and efficiency of ported monitors, they can provide far better time-domain performance at the low end, and a much more gentle bass roll-off. Both of these characteristics are very important in a professional monitoring situation.

Judging the EQ and balance of bass instruments is hard when the speaker is smearing the low-frequency energy out over time, blurring one instrument into the next. Moreover, with a gentle 12dB/octave bass roll-off (the combined effect of cabinet and driver responses), rather than the 24dB/octave roll-off common in ported designs, it is still possible to hear what's going on in the bottom octaves, even from a modestly sized speaker. Kick-drum transients won't be flapping your trousers,

but at least you'll know the kick is there, and whether the bassist is playing the bottom 'B' on a five-string, or the second fret on an A-string!

Classic sealed monitor speakers like the BBC's LS3/5A and the Yamaha NS10 were revered because of their accurate time-domain performance, and the clear sonic window that this approach provided when mixing — and that's why many are still in use today. More recently, we've seen new sealed-cabinet speakers launched on to the market, such as Acoustic Energy's AE22 and Klein + Hummel's O300. Both are nearfield designs, but with much better power-handling capabilities than the 30-year-old designs mentioned above, thanks to improved driver and amp technologies. The Rock, then, is a very welcome addition to the fold as far as I'm concerned, purely on the basis that it is another excellent sealed-cabinet design.

### Drivers

The drive units are both sourced from the German manufacturer Elac (the company name being a contraction of ElectroAcoustic GmbH) and comprise a 6.5-inch woofer along with a folded ribbon 'Jet III' tweeter. It's a little known fact that a British Elac subsidiary (called the Electro Acoustic Company) was the biggest manufacturer of loudspeakers in the UK in the 1970s and 1980s, making many highly regarded speakers — including some of the classic KEF designs, for example. So, although perhaps not as well-known today as some other loudspeaker manufacturers, Elac do have a long and proud pedigree in high-quality driver designs.

Most people today will (rightly or wrongly) probably associate folded-ribbon tweeter technology with the Adam brand, but the technology actually goes back to 1973 and a Dr Oskar Heil, who also invented the Field Effect Transistor or FET. Heil's 'Air Motion Transformer' (AMT) design uses a ribbon material placed between the poles of very strong Neodymium magnets. However, instead of operating as a simple flat piston (like a ribbon mic's diaphragm) the AMT's ribbon diaphragm is deeply folded, a bit like a concertina. In the case of the Elac Jet III incarnation used in The Rock, those folds are only 0.84mm wide.

As the audio signal current flows around the ribbon folds, it interacts with the magnetic field and forces the folds to move in such a way that they actually 'pump' the air in and out, rather than just

pushing it back and forth. This configuration makes the design much more efficient than a simple planar ribbon, and because the diaphragm is also the motor, there's a much lower moving mass involved than any moving-coil driven cone or dome tweeter design. Interestingly, the actual diaphragm movement is also much smaller and slower than a conventional driver (roughly four times slower than the sound it produces), and this results in a better transient response, wider bandwidth (up to 50kHz in this case) and lower distortion than a conventional cone or dome tweeter, as well as better power efficiency.

The woofer used in The Rock is another bespoke Elac unit, based on a fairly conventional 180mm paper-pulp cone design. However, a veneer of aluminium just 0.2mm thick is glued on to the pulp cone to help improve its stiffness and control the 'break-up' modes that lead to unwanted harmonic distortion. An asymmetric rubber surround with a double fold is used to enable a large excursion range of over an inch, and that helps enormously with LF power handling — a traditional weakness of sealed-cabinet designs.

### Amplifier

Since The Rock uses unusual materials for the cabinet, baffle, tweeter and woofer designs, you'll be expecting something unusual in the amplifier chassis too. There are no cheap 'chip amps' here; it's not even a 'modern', highly efficient Class-D design. The Rock uses a fairly traditional, discrete component, bi-polar, class-AB amplifier chassis designed by Tim De Paravicini, who is well known in esoteric hi-fi circles for his high-quality, often unusual EAR amp designs, as mentioned earlier. The Rock's amp is no less unusual.

Providing 70W to the bass/mid driver and 30W to the tweeter, the amps incorporate custom-wound transformers to couple the amp outputs to the drivers. This is quite an old-fashioned idea but still has merit in some situations, particularly when working with the very low impedance of a ribbon tweeter. The overload protection for each driver is done passively, and the amps feature very low levels of negative feedback, which is always good from the point of view of transient response. The raw distortion figures might not look as good as some more conventional designs, but low-feedback circuitry always sounds better on music to my ears. As yet there are no published specifications for The

Rock anyway... but I'd be surprised if they turn out to be anything other than exemplary. There are no EQ controls and no room-alignment switches on The Rock, just a volume control on the rear panel, along with the power switch.

### Listening

The Rock is a relatively modestly sized speaker, comparable with the likes of the Mackie HR824 or the PMC TB2, and so would sit comfortably on the meter bridge of a big console, or behind (or on) the DAW desk. Hooking the speakers into my monitoring system was easy enough, and the variable input-sensitivity control on the rear panel allows a wide range of sensitivity matching.

My first feeling was mild surprise at how good The Rock's bass extension actually is. I was expecting it to sound somewhat lightweight, as most old-school

sealed-cabinet speakers do — but actually it comes across as quite full bodied and very well balanced indeed. As I said earlier, it's not going to set your flares flapping, but you still won't be desperate for a subwoofer. Regardless of the quantity of bass — which is sufficient for all but those with a penchant for rearranging their internal organs in time with the kick drum — the quality of the bass is a major strength here. As I mentioned earlier, the benefit of good sealed-cabinet designs is in the time-domain accuracy of the bottom end. There are no smearing LF resonances and no huge phase shifts, just precise, clean, transparent accurate bass notes, all with clearly defined starts and ends and individually recognisable in pitch and timbre. That's exactly what a true 'monitor' should do, but what so many going under that moniker fail spectacularly to achieve.

With no room-placement EQ options available, some care is required when it comes to locating these monitors. I found a position well away from side and rear walls gave the most balanced and natural sound. The bottom end builds progressively and predictably as they are moved closer to rear walls, of course — although some care is needed to avoid a lower-mid or upper-bass 'bloom.' Height can also be an issue: I first started using these speakers on domestic 24-inch floor stands, but found they sounded better on taller stands. The tweeter seems to have a very wide vertical dispersion characteristic, and so mirror-point reflections on the floor, desk or ceiling might be more of an issue than usual.

The next aspect of The Rock's design that both surprised and pleased me was that it proved capable of going surprisingly loud for a sealed-cabinet nearfield design. ▶



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► We're not talking levels that would satisfy a plutonium rock-band musician from the Gagrakacka Mind Zones (sorry... obscure Douglas Adams reference...), but clearly the amplifiers have a lot of dynamic headroom, and the drivers seem able to cope with significant levels without sounding distressed in a nasty way. One other aspect of the amps that's worthy of comment is how low the background noise is. I really object to hearing a constant hiss from monitor speakers when they're not playing anything, and this is a surprisingly common problem with a lot of active designs. The Rock amplifiers are so quiet that you need to press your ear up against the ribbons just to hear the background hiss — and I think that's a very welcome bonus!

On playing any kind of music, the quality of the transient detail is impressive. These come across immediately as very fast, responsive speakers, with masses of attack and information. This really brings percussion and brass instruments to life and is very revealing of any unwanted clicks, ticks and pops in a track. It comes across as a kind of upper-mid forwardness, but it's not a level thing at all, it's a speed thing. In fact, The Rock is a generally very revealing and honest-sounding speaker, especially through the critical mid-range region. Some

might even describe it as 'brutal' in the way it reveals poor mix decisions and balance flaws — but in a monitor, of course, that is a very good thing.

Don't go away with the impression that these speakers are aggressive or tiring to listen to (as so many 'revealing' monitors are), though. For a tweeter claimed to extend to 50kHz, the top end seems surprisingly tame, and it's certainly not aggressive in any way. In fact I would say The Rock has a very 'British' sound character — by which I mean that the top end is definitely there, and it is pleasantly open, airy and detailed, but it's not hyped, brittle, edgy or excessive in any way. In a straight comparison with some other speakers (including those with folded-ribbon tweeters), The Rock might be perceived by some as sounding a tad dull — but I know which I'd rather be working with over an eight-hour session, and I have absolutely no concerns about missing out on any top-end detail.

### Stereo

The Rock's stereo imaging was the one area, perhaps, that didn't shine quite as brightly as all the rest. I managed to get solid and stable centre images, but I had to work harder than usual with the speaker positioning relative to boundaries, and the toe angles relative to the listening position, to really optimise the stereo imaging. The problem was that the image didn't initially spread well from the extreme left across the middle and out to the right. It tended to puddle at the edges or in the centre, with pan-position resolution in intermediate areas being more imprecise than I'm used to.

However, it became clear that the imaging is very sensitive to early reflections — which is presumably because of the wider dispersion characteristic — and I found that listening distance is more critical with these speakers than some in obtaining a wide and stable stereo image, with

The rear panel of Unity's The Rock offers no room-correction EQ — but there's arguably less need for it, given the sealed-box design.

### Alternatives

Similarly priced speakers include Adam's P33A, Dynaudio's BM15A, and Genelec's 8240A, but unless volume comes higher on your priority list than clarity I think The Rock will impress even when auditioned alongside significantly more expensive monitors.

an acceptable sense of depth. You really do need to think in terms of equilateral triangles here: if the listening position is much closer or further than the apex of an equilateral triangle, things tend to lose positional focus. The 'spaces' between instruments across a stereo image didn't seem quite as clear as I know they can be with my more familiar reference monitors (such as the PMC TB2s), but I am being picky here.

On a more positive note, there's no evidence of any coloration as you move up and down, or side to side, in front of these monitors, so the whole crossover region is clearly very well aligned, and this means you can move around freely without having to worry about tonal inconsistencies or comb-filtering effects.

### A Serious Pleasure

My slight reservations about stereo imaging notwithstanding, I found these monitors to be a real pleasure to work with. There was no hint of fatigue even after long, intense editing and mixing sessions, and their ability to reveal mid-range detail and low-frequency timing makes it very easy to hear what you're doing, whether it's making EQ decisions, adjusting dynamics, balancing instruments or checking edits. Adjusting stereo panning was slightly less precise than it could have been, perhaps, but in practice I didn't have any problems. Good balances stand out clearly on The Rocks but, more importantly, so do poor mixes. That may well scare some users, or at least cause some frustration, but it's what a good monitor should do. The benefit is that once you know what's wrong, you can fix it, and with the problem areas clearly audible, you'll know without any ambiguity when you've fixed them. If only all 'monitors' were so honest and reliable.

Given their level of performance, The Rock monitors are priced very attractively in the UK, and an audition is highly recommended. **SOS**

### information

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