



## ATC SCM20A

### Pro Active Monitors

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**PAUL WHITE tests what must be the ultimate small monitor, but finds that you pay for it in pounds -- both fiscal and gravitational.**

ATC have a unique approach to building loudspeaker systems, which stems from the obsession of designer Bill Woodman. While other manufacturers are struggling to find cheaper and lighter components, the British-made ATC monitors are still characterised by heavily engineered, well-damped drivers designed to produce a wide dynamic range with minimal power compression and distortion. This tends to make their designs a little less efficient than some of their competitors', but today's amplifiers are not short on power, so this is not a significant limitation.

A recent ATC innovation is the use of rings made from pressure-formed powdered iron to form part of the driver pole-piece. Using these rings to form the inner and outer surfaces of the magnetic gap greatly reduces eddy currents in the pole pieces, producing a dramatic drop in the level of third-harmonic distortion -- a problem that's plagued speaker designers ever since someone first had the bright idea of gluing a coil of wire onto the back of a cardboard cone. This new pole-design technology, known as SL, has been incorporated into all ATC's bass drivers from the SCM20 upwards.

The original SCM20, a firm favourite with classical mix engineers because of its accuracy, is a passive 2-way design in an infinite baffle enclosure, and the bass/mid driver features a large, soft-dome centre section that is largely responsible for the system's smooth and accurate mid-range performance. Its current version, the SCM20 SL Pro, is basically the same, but now has the SL driver fitted. In designing an active version of this classic design, ATC didn't simply bolt a power amp/crossover pack to the back of the box, but instead brought in an industrial designer. This resulted in a radical new look, but there's a lot more to the new presentation than cosmetics.

Still a 2-way unported design, the SMC20A Pro is built into a cast aluminium enclosure with a solid MDF baffle almost two inches thick. This is radiused at the edges to reduce diffraction, and the drivers are front mounted into machined recesses. Damping panels are fixed to the inside of the aluminium case, and the heatsink fins for the power amplifier are an integral part of the aluminium casting. Apparently, the tooling for the aluminium cabinet was very costly, but the plus side is that manufacture is cheaper, and the finished assembly is acoustically deader than the wooden equivalent.

The bass/mid driver is around 6.5 inches in diameter, with a 3-inch centre dome, and is driven by an edgewise-wound copper voice coil in a magnetic gap that has relatively little clearance, to facilitate higher power handling with good reliability. The magnetic assembly is simply massive, almost the same diameter as the front of the driver, and of course the pole pieces include the SL rings for lower distortion. Both the dome and cone are heavily damped using a viscous material, and the result is a wide, even dispersion with very little in the way of unwanted resonances. The dome part of the driver is similar in appearance to the separate 3-inch dome used in ATC's larger 3-way designs; to some extent, the outer cone is mechanically decoupled at higher frequencies, producing a progressive crossover characteristic between the bass and mid range. The active crossover between the mid/bass and the tweeter is at 2.8kHz.

**"The imaging and sense of detail are extraordinary." "These are the most astonishingly natural small monitors I've ever heard at any price."**

A Vifa tweeter delivers the high end: again, this is a soft-domed design that exhibits low distortion and well-controlled dispersion. In the horizontal plane, the speakers have a coherent dispersion angle of  $\pm 80^\circ$ ; in the vertical, better than  $\pm 10^\circ$ . The quoted frequency response between the -6dB cutoff points is 60Hz-20kHz when the speakers are used free-standing, but, as with all ATC's designs, the critically damped low-end response means that there's a lot of usable energy below the cutoff frequency.

The SMC20A's bass/mid driver is driven by a class A/B MOSFET power amplifier of around 250W, derived from those used in ATC's larger studio monitors; the tweeter is driven by a MOSFET amplifier of around 50W, making possible SPLs of up to 108dB at one metre. The HF amplifier design is designed to work in class A,

as it's at high frequencies that crossover distortion artifacts are most evident. A fourth-order filter provides greater driver protection than the second-order filter used in earlier active designs, and these are individually set up for optimum phase correction and time alignment. You might expect to find a toroidal transformer driving the power section, but the SMC20A's design uses the same conventionally laminated transformer as the bigger systems. This is a really heavy transformer and is very conservatively rated, to minimise power supply sag at high listening levels.

At the rear of the cabinet are the XLR input socket, the EC mains inlet and the power switch, along with a voltage selector for 240 or 120V operation. Additionally, there's a bass lift control that provides up to 6dB of low-end boost (40Hz) in five steps, starting with a flat reference position. Apparently, this was fitted at the request of end users who were used to working with bass-heavy systems, but I get the feeling that the purist in Bill Woodman would rather have left it out! Heavy heatsink fins account for a significant part of the cabinet rear, and four threaded holes are provided for mounting hardware. A recessed handle is moulded into the top of the cabinet, but this is more of a challenge than a practical proposition. The SCM20A may only measure 448 x 270 x 310mm, but it weighs 30kg – or 66lb in real money!

## LISTENING TEST

As well as checking out these speakers on my own system and with my own reference CDs, I took the opportunity to try them out in ATC's own listening room, using a CD player that undoubtedly had a more respectable provenance than my own. These speakers are designed to be used free-standing, so they must be mounted on stands, not fitted into wall soffits, and ideally not perched on the meter bridge of your console. Come to think of it, I don't know many console meter bridges that would take the weight...

Summing up the sound of a speaker is difficult, especially when the speaker in question is designed not to have a sound, and it's probably safe to say that the performance of the SMC20As is both natural and effortless. Bill Woodman kindly gave me a copy of Dave Brubeck's *Young Lions And Old Tigers*, a beautifully recorded album that includes, among other things, some very exposed passages of piano, vocals and acoustic bass. I've since tried this album on other monitors, some of which were quite expensive, but none of them has sounded as smooth and well focused as the SMC20As. Conversely, I put various pop mixes on trial, and the SMC20As left me in no doubt at all as to which were the good mixes and which ones left something to be desired. The imaging and sense of detail are extraordinary, but the detail isn't produced by accentuating transients or adding high-end distortion – it's absolutely clean. Of course, this can create a problem for ATC, because many engineers unconsciously associate distortion with loudness, so if the SMC20As are not distorting, they're not perceived as being as loud as something that is distorting. However, with a ceiling of 108dB, these monitors can go 18dB beyond a comfortable sustained monitoring level, and even when your ears are starting to give up, the SMC20As still retain their integrity.

## SUMMARY

In comparison with similarly sized active monitors, the SMC20As are undeniably expensive, at around £3000 a pair. It seems that ATC set a target price when they designed these speakers, but though they came close, they didn't quite meet it. Consequently, they decided to up the price slightly rather than compromise the design in any way, but I've no doubt this was the right decision. If it's a portable reference you want, you'd need to be fit to lug the SMC20As any distance, but for all that, these are the most astonishingly natural small monitors I've ever heard at any price, and their frequency range is wide enough for just about any sort of full-range mixing other than dance or film surround, in which case you might be better off with one of the larger ATC studio monitoring systems at the front. However, they make superb surround side and rear speakers and are perfect for mixing music in small and medium-sized control rooms. The almost total lack of sonic artifacts lets you hear right into a mix, and any flaws in the original material are readily exposed, whereas well-recorded material sounds stunningly realistic, and the imaging takes on an almost holographic width and depth. Not everybody will be able to afford these monitors, but if you get a chance to hear them, I think you'll appreciate where the money went.

## pros & cons

### ATC SMC20A PRO £3049

#### pros

- Incredibly low distortion and good off-axis response make these monitors sound extremely natural.
- High mass makes the speakers relatively independent of the type of stand used.
- Enough power and a wide enough frequency range to be used as main monitors in most mix situations.

#### cons

- Their high price puts them out of many people's range.
- Though technically portable (in the same way that an army tank is portable), the speakers are a challenge to carry any distance.

#### summary

These are without any doubt the best-sounding small monitors I have heard, but at the expense of high cost and weight.

## info

£ £3049.12 including VAT.

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