

QUAD 67

£790

Few things are more certain in life than that the latest product from Quad will be immaculately presented, both outside and in. Jonathan Kettle asks whether the 67 sounds as good as it looks

Ask any BBC engineer to name his or her favourite brand of amplifier and the chances are that the answer will be Quad. Hypercritical musicians like the pianist Alfred Brendel use Quad ESL63 loudspeakers. Indeed, Quad's credentials are such that you half expect its equipment to carry a Royal seal of approval.

For years, though, much of the hi-fi press has regarded Quad with little more than unalloyed nostalgia. Despite the introduction in the 1980s of the ESL63 electrostatic loudspeaker, a tuner and several amplifiers, Quad spent the Thatcher years vainly trying to shrug off an image of being yesterday's innovator.

Nothing would have delighted audiophile scribes more than the chance to wax lyrical over a latter-day Quad ESL, II/22 or 33/303. In truth many of the chances went begging. Until this

year, when Quad launched what is still only its second CD player, known simply as the Quad 67. Feedback from a variety of sources suggested that Quad at last had a CD player that lived up to the company's original ideals.

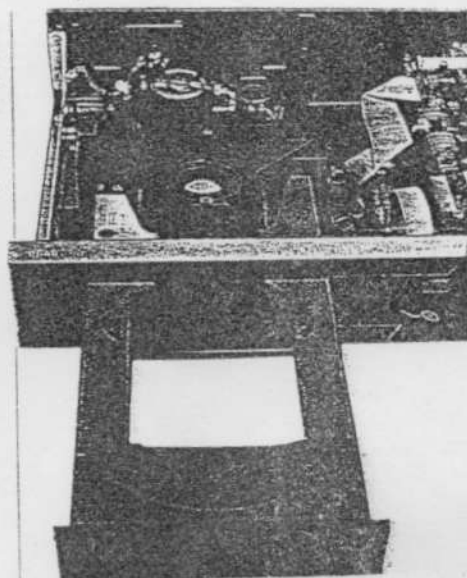
Unlike with the ESL63, the name of the new CD player doesn't signify the year the design programme was initiated, and by Quad's standards, the 67 was conceived, developed and built in almost unseemly haste. More to the point, it is the fruit of a new generation of enthusiast engineers steeped in admiration for Quad's tradition. As one of them explained

"WHAT STRUCK ME TIME AND AGAIN WAS THE STABILITY AND CONSISTENCY OF THE SOUND"

to me, the development time may have been relatively short, but Quad's traditional meticulous approach is quite evident.

It's not the heaviest, bulkiest, or even the most eye-catching CD player you can buy. But from the moment I lifted the 67 out of its packing it was obvious that the unmistakable Quad aura of domesticity, purposefulness and sheer desirability was there. The care and attention to detail in the casework and the display leaves the best of the rest standing. And you don't have to be an electronics engineer to see that the same design ethic is at work inside the player. It's difficult to imagine a neater piece of craftsmanship. The 67 looks as if it's made to last forever.

If CD is all about high quality sound with the minimum of fuss, no player embodies that ethos better than the 67. A five year old could set it up and use it. There are no transit bolts to worry



about; the instruction manual is a delight, written for music-lovers rather than for hi-tech snobs; and the design allows you to push shut the drawer as an alternative to using the designated control button. All very tactile and comfortable. The remote handset is carefully laid out to aid ease of track programming. And the display is designed so that while a track is played the remaining track time, track and index number are shown.

The 67 is not beyond criticism though. First I would have liked Quad to follow Meridian's example by providing some user options for the display - 'total elapsed time' and 'track elapsed time' are two useful alternatives to 'remaining track time' that Quad could have provided. The remote control Play button is not as close to the track number buttons as I'd like. You have to fiddle with the handset or else resort to two-handed operation if you want to set the player working quickly. On the other hand I like the neatly offset pairs of Index, Search and Track toggle controls; the speed of searching increases conveniently, logically reflecting users' likely intentions as they cue through a track. But the strange symbol for drawer open/close and the positioning of the button aren't ideal. Surely the Play, Open/Close, Stop and Store controls

DATA

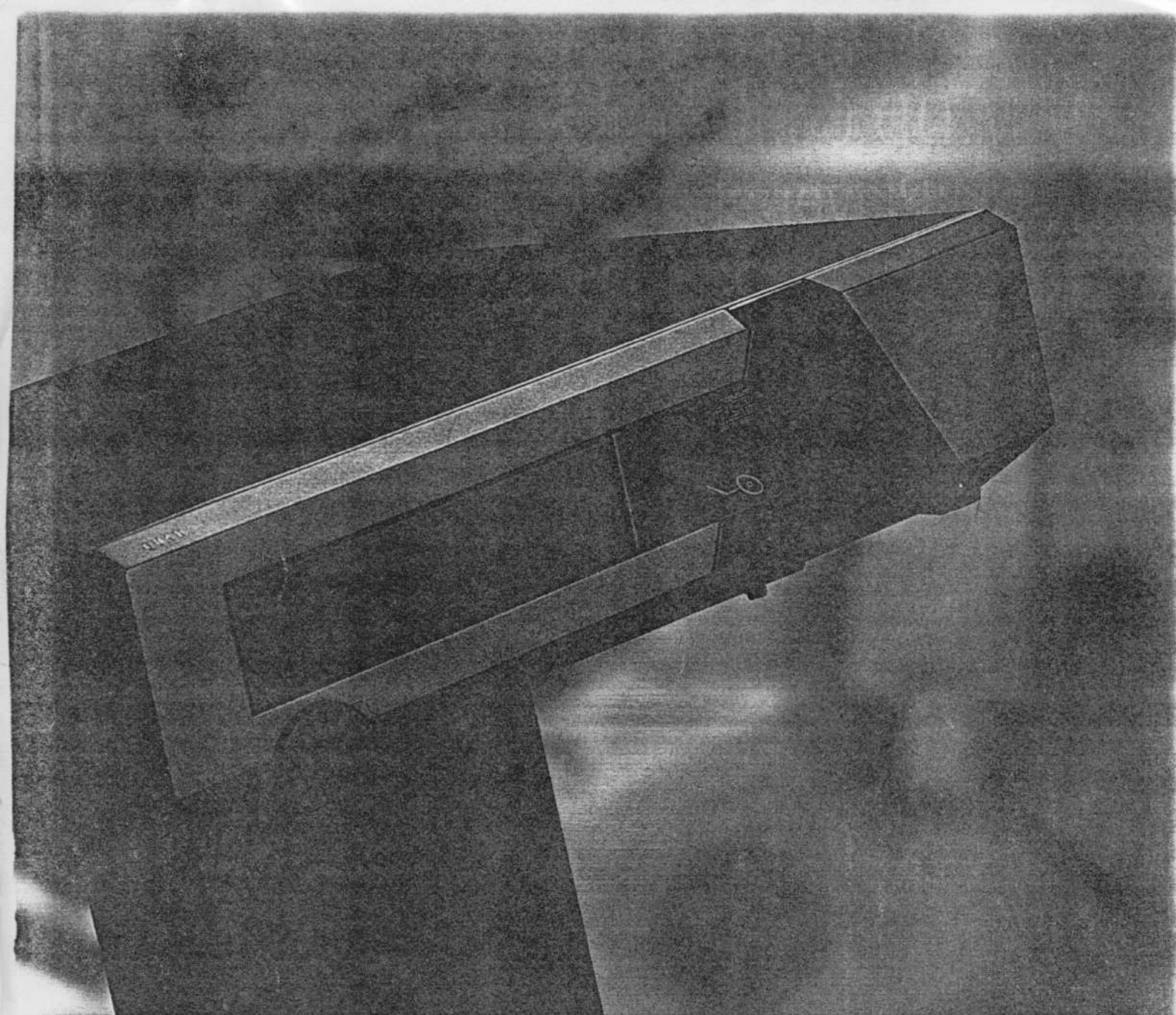
Price:	£790
Size:	321x240x80mm
D/A:	Crystal CS4328 Delta Sigma
Memory:	50 programmes (no fixed track limit)
Outputs:	Analogue and digital phono
Headphones:	No

DESIGN

- ▶ Compact, robust, simple-to-use, high performance one-box CD player
- ▶ Philips CD-M9 transport and digital electronics
- ▶ Seven discrete locally regulated power supplies
- ▶ Circuits and construction designed for low noise and low distortion

PERFORMANCE

- ▶ Stable, clear, focused, controlled, dynamically wide ranging sound
- ▶ Absence of normal fascia controls could be problematic
- ▶ Exceptionally high build quality
- ▶ Elegant, functional, modern styling

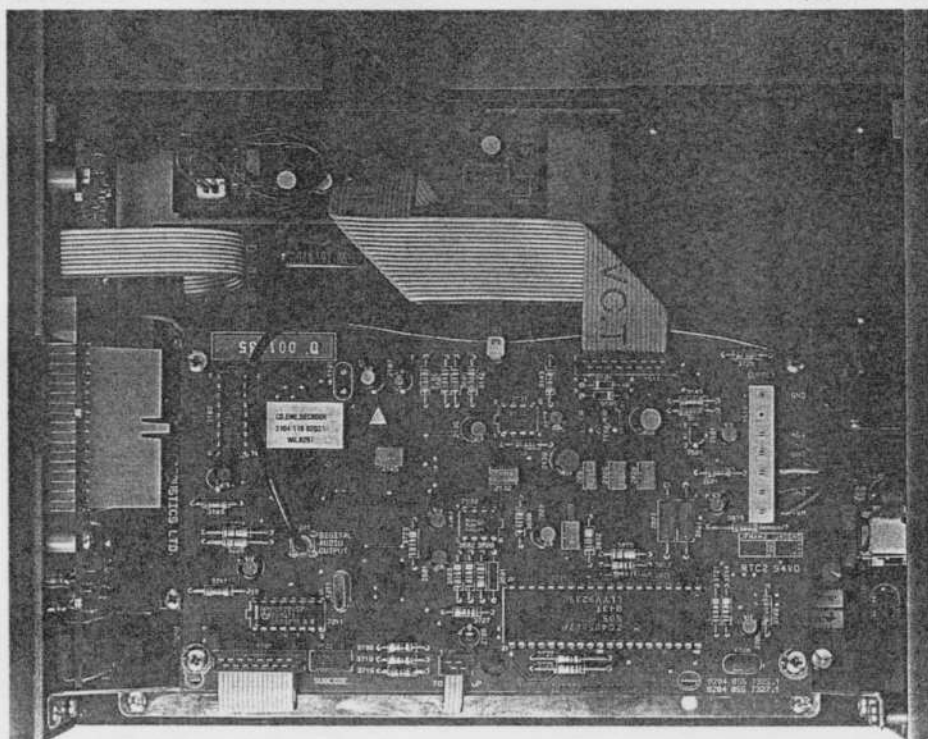


should take priority position at the top of the handset. Finally, and most inexcusably of all, the player's front panel has no track programming or secondary operational controls. Suppose someone loses or misplaces their remote control handset – what then?

Quad could be accused of taking simplicity of operation just a shade too far by removing all but the Play and Open/Close functions from the 67's fascia. The flawed reasoning, of course, is that any serious listener will invariably want to play albums from start to finish. Sadly the time pressures that are placed on even the most ardent music lover are such that this is probably now the exception rather than the rule.

But listen long enough to the 67 and you just might start contemplating a change of lifestyle. The overriding impression that I got, after short-term listening and then after weeks spent using the 67, is that it has breathtaking poise, stability and authenticity. Focus is another word that keeps springing to mind. The sound rarely leaps out and whacks you around the head, though I

The board visible here is from Philips, but much of the rest of the circuitry was designed in-house by Quad engineers



INSIDE THE QUAD 67

The elegance, precision and build quality of Quad's external casework and fascia is mirrored by an immaculate interior. To the casual observer the Philips preamp and decoder boards, most readily visible with the top panel removed, suggest nothing unusual. But that would be to ignore the D/A board and analogue output stage hiding beneath the decoder board and shielded from it by a horizontal metal plate.

At the heart of the D/A board is the Crystal CS4328 Delta Sigma stereo DAC chip which handles the 64-times oversampling digital filters and noise shaping. Its performance so impressed Senior Design Engineer Jan Ertner that he chose it in preference to the more cumbersome three-chip Philips DAC7 and Burr Brown PCM67 alternatives.

What Ertner liked was the neatness of the Crystal chip. Its functional integration was achieved without noise emission or distortion penalties. Crystal's specifications and evaluation boards indicated good noise and distortion performance; Quad's own tests confirmed as much. Spectrum analysis and Total Harmonic Distortion tests showed the Crystal chip to be on a par with the more unwieldy DAC7. The 'clever scheme' Crystal uses to relate bitstream density (the numbers of ones in the word) to the amplitude of the output signal appealed to Ertner because of its inherently low jitter susceptibility. Apparently the time required for the switch capacitors to reach full charge is shorter than the duration of the activating pulse. This means that irregularities in the clock pulse won't lead to a build up of jitter.

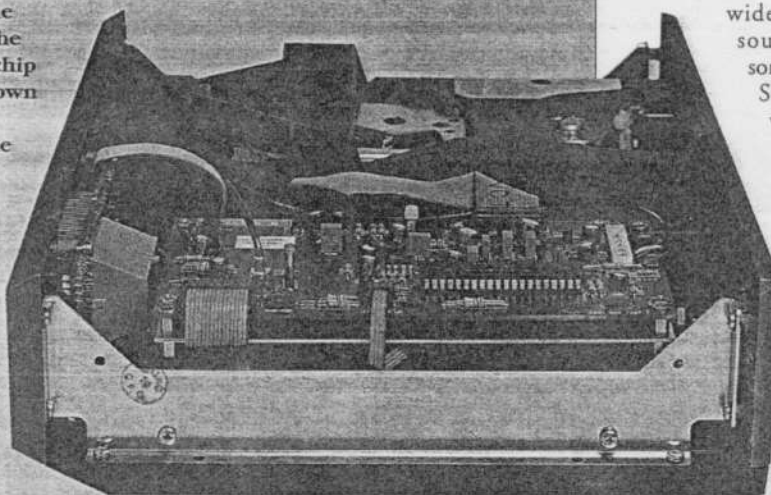
Given that the player had to be compact and neat to meet Quad's traditional requirements for domestic acceptability, Ertner's task had to make sure the DAC performed as well as possible given the close proximity of the mains transformer and other sources of potential interference.

His first priority was very careful board layout to avoid any loops with which magnetic fields could interfere. Next he ensured that the transformer was housed in a hefty

mild steel case to minimise electro-magnetic radiation.

Perhaps the most important aspect of the 67 is the presence of seven discrete local regulators which are designed to give critical parts of the player 'a stiff power supply'. The digital circuits have a separate supply, as does the motor. There's a $\pm 5V$ supply for the Crystal chip's analogue output and a further $\pm 10V$ supply for the Quad-designed analogue output circuitry, required to raise the player's output level to a nominal 2V and to provide for de-emphasis.

The 67's front panel display is the work of another Quad engineer, Andy Lake. He wrote the software



Thick metal shielding is just visible below the decoder board

for the remote control interface and developed the display/remote control interface circuit which sits vertically behind the display. Lake's work was carried out in parallel with Ertner's DAC and power supply development. There was little overlap.

While other manufacturers have made changes to the Philips digital boards, Ertner reckons there are no performance benefits to be gained. All he concedes is that discrete power supplies were important in his main aim: maintaining minimal noise induction and emission.

Ertner made one final point, brimming with irony. While the Quad 67 design may have been fraught with difficulties in keeping noise at bay, there was one advantage. The compactness of circuit layout helped him exploit the very low jitter performance of the Crystal Delta Sigma D/A chip. A two-box player would have been a greater challenge in this respect.

was suitably impressed after listening to the Quad play the first bars of Hickox's majestically vibrant recording of Britten's *Sinfonia da Requiem*. By comparison with the fashionable Micromega Leader, the Quad 67 sounded at times a shade lean, almost austere. But listening beyond the veneer of 'sound quality' (whatever that abstraction may be), to the heart of the matter – the music, the performance and the underlying message – it's the sense of rightness, purposefulness and sheer fluency that time and again put the 67 up with the best in its class.

Any player that can tell me what Tom Waits has to say is bound to win my affection. The Quad kept my nose well away from the lyric sheet, with only Waits' most outrageous lyrical twists and turns proving too much for me to decipher from the 67 on its own.

Fed a diet of piano music the 67 unveiled the differences in instrument timbre, recorded acoustic and performance style with consummate ease. The powerful, dynamically wide ranging, yet rich-textured sound of Brahms' third piano sonata played by Emanuel Ax on Sony contrasted dramatically with the more brightly lit sound of Howard Shelley's Rachmaninov on Hyperion, for example. The range of tonal colour across the different piano recordings quickly dismissed any idea that the 67 imposed an unsympathetically hard edge to the sound. The 67 could be criticised for over analysis. But that's as far as I'll go.

With orchestral music, the story is very similar, the occasional hardening of string tone perhaps betraying this player's sub-£1000 price tag. But the way the 67 captured a wealth of richly varied textures yet projected the playing with such effortless eloquence easily offset this marginal tonal aberration. What struck me was the stability and consistency of the sound of particular recordings. The atmosphere of different CDs beguiled well before any hint of hardness had a chance to be of any consequence.

The great musical significance of this poise and stability is that whether you're listening to John Coltrane's *Lush Life* or Harry Christophers' *The Sixteen in Songs from Eton*, the 67 lets you choose which part of the counterpoint you want to focus your attention on. It leaves the listener in control instead of presenting a wash of apparently detailed but unresolved instrumentation and lyrics. It's this quality that leaves me wanting to play album after album on the 67.

This sophisticated, stylish and exceptionally well-built CD player captures the drama and life in all sorts of music, from old and new recordings alike. Don't be surprised if demand soon puts the 67 into gold-dust territory. Welcome back to the mainstream, Quad!

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