




PHOTOGRAPHY DAVID WHYTE

Monitor mania

For something you spend so much of your time looking at, the humble monitor simply doesn't get the attention it deserves. With a rash of affordable larger models hitting the market, there has never been a better opportunity to stake your claim for a decent-sized chunk of desktop real estate. We surveyed the land and found a few nice places to settle.

contents

• Monitors tested and reviewed by David Fearon.

ratings

★★★★★ **EXCELLENT**
★★★★ **VERY GOOD**
★★★ **AVERAGE**
★★ **BELOW AVERAGE**
★ **POOR**

The current vogue in the world of desktop computer displays may be LCD flat panels, but the less fashionable area of cathode-ray tube monitors has been undergoing something of a revolution in the past few years too. Quality has been rising massively, while prices have been dropping, so much so that the display category once the domain of the super-high-end workstation is now the same price as a modest 17in display was a couple of years ago.

Not only are 21in displays now cheaper than ever, but the quality is higher, too. The most obvious advance is the advent of Sony's FD Trinitron and Mitsubishi's Diamondtron NF flat-screen tubes in 21in and 22in sizes, but the humble shadow mask has also benefited from both improved focusing and beam-shaping techniques, and the space-saving advantages of short-neck tubes.

Monitors this size aren't for everyone: it's advisable to try and arrange to sit down in front of one of these and try it for a while before you buy, since some people find that such a large expanse of screen requires too much head movement to be comfortable. But anyone who's fed up with constantly scrolling and shuffling windows around on their desktop will find the high resolutions these displays take in their stride will provide a genuine productivity boost. The good part is that the best of these displays cost less than a third of the price of an 18in LCD flat panel, while providing twice the desktop real estate. You pay with a reduction in physical desk space – a 21in monitor needs a lot of room – but if you're serious about your computing you need to be serious about your display.

ADI MicroScan G1000

ON HAULING the MicroScan G1000 out of its box, first impressions aren't that good. You'll need to attach the base of the monitor yourself: an inconvenience with a 17in unit, but a positively hazardous manoeuvre with a 21in beasty weighing over 31kg.

Once it's up and running, things improve considerably. For starters, its short-neck tube is certainly short: the unit is just 440mm deep, compared, for instance, to the CTX's 545mm. The video and mains cables aren't recessed though, increasing the effective depth by an inch or so.

Controls-wise, the G1000 is the only unit here with dedicated analog contrast and brightness controls, in the form of thumbwheels under the fascia. Although they're out of fashion, there's certainly something to be said for the fast access and easy adjustment they provide.

Round the back there are both D-SUB and BNC input connectors, although input selection is via OSD rather than a dedicated switch. As with most of ADI's displays, a USB hub is a £20 optional extra, rather than a standard inclusion. You do, however, get an integrated microphone, which is set into the bottom of the fascia with output at the rear.

Firing up DisplayMate to assess image quality, the G1000 gives a good account of itself. The shadow-mask tube isn't the last word in CRT technology, but geometry performance is good, although a little pincushion distortion remained despite extensive tweaking. Power regulation is excellent, while resolution is good, but focus deteriorated noticeably towards the extreme corners of the image. Vertical convergence was fairly wayward towards the top of the screen, as well.

When it came to assessing colour purity, things were not at all impressive. Pronounced dark patches across the screen spoil any attempt at accurate colour rendition, although the problem looked as though it was a one-off from our review unit which was one of the first in the country.

Given that its price is at the lower end of the scale, and assuming the colour purity problems are a one-off, the G1000 represents a competent display. The compact dimensions may appeal, however, and any emissions worries are taken care of by TCO99 certification.

DETAILS

★★★

PRICE £629 (£535 ex VAT)
CONTACT ADI 020 8327 1900
www.adimicroscan.com
PROS Relatively cheap, very short-neck tube saves desk space
CONS Quality is only fair
OVERALL A possibility for those short on space

CTX E1200

FOR SOME TIME NOW, CTX's range of monitors have all sported the same look, and the E1200 is no exception. The overriding first impression is the depth of its case – at 545mm it's not going to suit you if your desk is shallow. Given its low price, however, you can't expect cutting-edge technology.

Rather than the popular minimalist OSD approach, the E1200 sports 12 control buttons. A slight grumble over these is that it's actually quite hard to read the button legends, as they're simply moulded into the plastic of the fascia and are the same colour. Compared to some of the others here, the controls available are pretty sparse: there's no facility for adjusting the horizontal or vertical colour convergence, for example, which is irritating since it's not very accurate, particularly in the vertical plane. Geometry is acceptable, aside from a definite tapering of the image from left to right – subtle but noticeable.

At 1,280 x 1,024, corner-to-corner image focus is good, and power regulation is rock-steady. This monitor isn't really comfortable going to high resolutions, though: it'll only manage a vertical refresh rate of 75Hz at 1,600 x 1,200, and at this resolution things are noticeably less distinct, with the slight streaking of high-contrast transitions we observed at 1,280 x 1,024 becoming more obvious.

At the back of the E1200 are both D-SUB and BNC inputs, with the OSD exit button acting as a dedicated signal selector switch when the OSD itself isn't active. Offsetting the depth is the fact that the signal and mains cables are slightly recessed, allowing the unit to be positioned fairly close to a back wall. There's also a USB hub, although given that all four downstream ports are on the back panel rather than the sides, they're really no more convenient than the ones on the back of your PC.

Unlike most of its competition, the E1200 only has TCO95 rather than TCO99 certification, although as far as emissions go there's no difference.

If you really can't stretch to spending more on your 21-incher, the E1200 puts in a better performance than the other budget unit here, Taxan's Valuevision 2175. In the end though, you'd probably be better off with a high-end 19in model at this price.

DETAILS

★★★

PRICE £586 (£499 ex VAT)
CONTACT CTX 01923 810 800
www.ctxmonitors.com
PROS Cheap, image quality acceptable
CONS Not much good for very high resolutions: few image adjustments
OVERALL A fair bet for those who can't afford more, but a decent 19in display makes more sense at this price point

Hitachi CM813ET Plus

NEVER ONE FOR SNAPPY product names, Hitachi has been producing monitors for the corporate market for donkeys years. The CM813ET Plus is the latest update in a long line of similarly styled 21-inchers.

First things first: don't be taken in by Hitachi quoting a 0.21mm horizontal mask pitch in its specifications. Horizontal mask pitch is not the same as dot pitch, and the 0.21mm figure equates to a dot pitch of around 0.27mm.

That aside, the 813ET is a fairly reasonable performer. There's no OSD in the normal sense: all image adjustment is done via the array of 12 control buttons, six of which select adjustment category and four of which adjust the selected parameters: the on-screen display simply serves as visual confirmation that you've selected the right adjustment.

At the back of the unit are two D-SUB video inputs, with a dedicated signal selector switch at the front, making the 813ET ideal for sys admins with a main workstation and a server they need to keep an eye on. It can be set up to switch automatically to the other input if there's no signal on the first. A blanking plate next to the video inputs betrays the fact that USB is an optional extra. Cables are partially recessed to keep effective depth down. Any emissions worries will be allayed by the TCO99 sticker.

The reasonably flat shadow-mask tube is backed by competent electronics: geometry performance is acceptable in all areas; power regulation is good; and vertical and horizontal convergence are both within acceptable limits, despite there being no way of adjusting them. Resolution in the extreme corners tails off more than others here, but it's not bad. Colour fade characteristics aren't too consistent, so this isn't one to go for if you're a graphic artist. The tube suffers from some graininess, so although it's perfectly usable at 1,600 x 1,200, small text is less legible than it could be.

Hitachi has never been synonymous with exciting computer products, and the 813ET isn't about to buck trends in that department. It's a reasonable monitor, but as the superior Mitsubishi Diamond Plus 200 costs a good deal less, we can't recommend the 813.

DETAILS

★★★

PRICE £767 (£653 ex VAT)
CONTACT Hitachi 01628 643 000
www.hitachi-eu.com
PROS No particularly bad performance areas, good-quality electronics
CONS It's fairly unexciting in comparison to some of the competition
OVERALL The 813ET is competent enough but looks overpriced in the company of the flat-screen competition

Iiyama Vision Master 502

ANOTHER FAMILIAR and venerable member of monitor tests, Iiyama's Vision Master family will be instantly familiar to many users. The basic external design hasn't changed for years.

Like all Vision Masters of 17in and above, the 502 has BNC and D-SUB inputs, with signal selection via the OSD. The three-button OSD control system was revamped relatively recently, but Iiyama managed to make it worse in the process: navigation through the menus has to be one of the least intuitive possible, and the lack of a labelled OSD exit button can make adjustment irritating: the secret is to press the Menu and Minus buttons together, a tricky task in itself.

The 502 is the lower end of the two Iiyama models on test this month, and it sports a standard FST shadow-mask tube. In contrast to some other models, its quoted maximum resolution is just 1,600 x 1,200 at a vertical refresh rate of 85Hz.

At the test resolution of 1,280 x 1,024 at 75Hz, the 502's performance is initially encouraging, although the anti-reflective screen coating isn't that effective. Basic geometry performance is good, with little pincushion distortion and good geometric linearity. Turning to power regulation tests, however, shows that the unit doesn't have quite the grip on its guns that it should: the picture wobbles noticeably when changing from primarily bright to primarily dark images. Horizontal resolution wasn't as clear as we'd expect either, and the relatively low bandwidth means that sharp, bright transients aren't reproduced properly.

In its favour, the 502's colour convergence is good, which goes a long way to making up for a lack of absolute resolution in everyday use. It remains perfectly usable at its maximum resolution, although inevitably image quality suffers to some extent. Colour-fading characteristics are consistent, although in the green colour-purity tests there was a little brightness variation evident at the top and bottom edges of the screen, with no adjustment available.

We were rather surprised when Iiyama told us the price of the 502: just £24 less than the Pro 510. Given that fact, we can't really see why anyone would then want to go for the 502.

DETAILS

★★★

PRICE £734 (£625 ex VAT)
CONTACT Iiyama 01438 314 417
www.iiyama.co.uk
PROS Good geometry performance, dual inputs
CONS That terrible OSD, power regulation, price
OVERALL Even the hardened Iiyama fan would have to be daft to go for this when the superior Pro 510 is only £24 dearer

Iiyama Vision Master Pro 510

HERE IS THE FIRST unit this month to bear a flat-screen aperture grille tube, in the form of Mitsubishi's Diamondtron NF. Although these tubes are rated as 22in units, this is a bit of a misnomer since, at 20in, their viewable diagonal is the same as most 21in tubes.

Externally, the Pro 510 is almost identical to the 502, and every other Vision Master, save for the flat, rather than gently curved, bezel. That same three-button OSD is there, as are the BNC and D-SUB inputs round the back. As with the 502, there's no sign of any USB ports, but both displays do comply with the stringent TCO99 emissions and environmental standards.

After letting the Pro 510 warm up, the overriding impression on sitting down in front of it is that those classic aperture grille characteristics are very much present and correct: vibrant colours and bright whites, with high contrast and excellent definition. Closer inspection at the test resolution of 1,280 x 1,024 shows exceptionally good geometry performance: a full-screen square is as close to truly square as you could expect from a CRT, and overall linearity across the screen is also superb. Screen power regulation is far better than the 502's, although there is still room for improvement. The Pro 510 has high-bandwidth electronics, as evidenced by its maximum resolution of 1,800 x 1,440 at 85Hz, and this shows at lower resolutions with excellent response to the sharp transients of, for instance, single-pixel vertical lines. That bandwidth also helps with resolution performance, which is excellent.

It's not all a bed of roses, however: horizontal and vertical convergence at the edges of the screen were not as good as some of the competition, and this reduces the effective resolution of white text in the corners. Overall focus tails off in the corners, too: it's still good, but it doesn't match the performance of the Mitsubishi or Sony units.

If you're looking for the vibrancy of an aperture grille with the best geometry performance possible, the Pro 510 is the display for you. For overall image quality though, the Sony and Mitsubishi entrants pip the Pro 510 to the post.

DETAILS

★★★★

PRICE £758 (£645 ex VAT)
CONTACT Iiyama 01438 314 417
www.iiyama.co.uk
PROS Exemplary geometry, fine overall quality from the Diamondton NF tube
CONS Convergence and corner focus not perfect
OVERALL With its superb geometry it's an excellent display for CAD work, but Sony and Mitsubishi are better overall

LG Studioworks 221U

LG ELECTRONICS, the company formerly known as Goldstar, isn't especially renowned for its displays, although it has a comprehensive range. The 221U is a shadow-mask unit with a couple of features that make it stand out from the crowd.

Setting the unit up on the test bench, the first thing we noticed was a peculiar little window on the left of the fascia: it's dubbed the Digital Eye, and allegedly allows the 221U to automatically adjust its brightness and colour setting to suit its operating environment. The eye is placed just where people tend to stick yellow sticky notes, so you may have to adjust your working habits if you plump for a 221U. There are separate options to enable the colour and brightness automation. The manual warned that the differences may not be visually discernible when the eye is activated, and it was right – they weren't.

At the rear of the 221U are two inputs: a standard D-SUB as well as a 13W3C connector, which is used by some CAD workstations. Much better for the average user would be a second D-SUB connector. Nestling at the rear is also a USB hub with four downstream ports: as with the CTX, it would make much more sense to have them at the sides or the front. Input selection is via the five-button OSD. This is a little tricky to navigate, but comprehensive, with an auto-sizing control, separate top and bottom pincushion compensation and overall colour purity in addition to the basics.

Image quality from the 221U is fair: basic geometry performance is acceptable, although there was some horizontal curvature that couldn't be corrected. Power regulation is good, but with its maximum 1,600 x 1,200-rated resolution, bandwidth is lacking, which shows up as a lack of definition to sharp transients. LG has done a good job with its focusing and gun alignment: resolution and sharpness remain consistent to the extreme corners of the tube, and colour convergence is good.

As with some of the other units here, the LG's ultimate downfall is its price: coming in more expensive than the Mitsubishi Diamond Plus means that unless you can find it significantly cheaper, there are better deals to be had.

DETAILS

★★★

PRICE £793 (£675 ex VAT)
CONTACT LG 01753 500 400
www.lge.co.kr
PROS Consistent corner-to-corner performance, comprehensive OSD
CONS Digital Eye is a gimmick, non-standard second input connector
OVERALL For what it is, the 221U is simply too expensive to be competitive

Mitsubishi **Diamond Plus 200**

COMING FROM the manufacturers of the Diamondtron tube, the Diamond Plus 200 is Mitsubishi's mid-range 22in offering. The company has built a huge reputation for itself in the past year or two, so we were keen to see how the Plus 200 would fare.

Outward appearance is much the same as the rest of the range. The extra bulk of the tube means the casing looks a little podgy from the side, but overall the unit is quite attractive.

The Plus 200 has the most sensible type of dual-input configuration: two standard D-SUB connectors, with a front-panel selector switch that doubles as an OSD exit control when the OSD is active. An unusual feature of the back panel is an upstream USB port that's not partnered by any downstream ports at all: the only thing you can use it for is control of the monitor itself.

Unlike the Iiyama Pro 510, which has a grille pitch that varies from 0.25mm in the centre of the screen to 0.27mm at the edge, the Plus 200 sports a newer 'uni-pitch' tube with a constant 0.24mm grille pitch, which bodes well for resolution.

The 200's OSD could use a little work: it's rather sluggish, long-winded to navigate and slow to respond to key presses, but it offers a comprehensive range of adjustments, including individual corner purity controls.

In the image-quality tests, the Plus 200 turns in a very good performance indeed. Geometry is not as good as the Pro 510, but it's well within tolerable limits, and there's no sign of geometric linearity distortions. Power regulation is excellent, as is both vertical and horizontal resolution, courtesy of the fine-pitched tube. The Plus 200's colour reproduction is rich, with a more laid-back feel than the other Diamondtrons: in fact it's more reminiscent of Sony than Mitsubishi.

Image quality remains almost as good at 1,600 x 1,200 as it is at 1,280 x 1,024, and in fact it's feasible to use this display at 1,792 x 1,344 if your graphics card can handle it.

But the best part of this display is the price: for this money the Plus 200 easily gives the best price-performance ratio here. For those with an eye for a bargain, the 200 is the one to go for.

DETAILS

★★★★★

HIGHLY COMMENDED Previously COMPUTER WORLD

PRICE £692 (£589 ex VAT)
CONTACT Mitsubishi 01707 278 684
www.mitsubishi-monitors.co.uk
PROS Excellent quality, good range of adjustments
CONS OSD slightly cumbersome, not quite as good as the very best here
OVERALL This is a very good display for an excellent price

Mitsubishi **Diamond Pro 2040u**

THE BIG BROTHER of the Diamond Plus 200, the Pro 2040u is Mitsubishi's newest and highest-end 22in display. For the extra £100 or so over the Diamond Plus 200, you get a slightly improved specification all round.

The 2040u is outwardly pretty much identical to the Plus 200, although there are differences. Peer round at the back panel and you'll see the Plus 200's two D-SUB video connectors have become one D-SUB and one BNC. The value of this is debatable, as few people claim there's any discernible improvement in image quality using a BNC cable. More interestingly, the single upstream USB port of the Plus 200 has become two, and these have been joined by two downstream ports: this allows you to share USB devices between two computers. You can configure the active port to switch automatically when you switch video inputs via the OSD. Back round at the front, a third downstream port nestles under the left-hand side of the bezel.

The Diamond Pro's more capable electronics give it a maximum resolution of 1,920 x 1,440 at 75Hz, although there's not yet a monitor on the market that could sensibly be used at such a high resolution.

Those souped-up electronics mean the 2040u passes video bandwidth and transient response tests at 1,280 x 1,024 with flying colours: horizontal and vertical resolving ability is also difficult to fault. There was, however, a little extreme top pincushion distortion that couldn't be corrected: a minor quibble, but noticeable in everyday use.

Uniquely in this group, the 2040u sports an adjustable black level control, albeit with only two levels available. We have to say, however, that with the lower of the two levels, light greys that should have been visible were compressed to black, so we switched back to the higher level. This resulted in significantly reduced contrast in comparison to the 2040u's main rival, the Sony G500.

Colour reproduction and purity were excellent, although the corner purity controls needed some tweaking. However, the 2040u remains usable at resolutions of 1,600 x 1,200 and above.

Overall the 2040u is a superb monitor, but we were slightly disappointed that it didn't come closer to knocking Sony off the top spot.

DETAILS

★★★★

PRICE £798 (£679 ex VAT)
CONTACT Mitsubishi 01707 278 684
www.mitsubishi-monitors.co.uk
PROS Excellent all-round quality, usable at very high resolutions
CONS A little lacking in contrast
OVERALL A great performer by anyone's standards, but not as good as we'd hoped

Nokia **445Pro**

WITH ITS MASSIVE pre-eminence in the mobile-phone market, it's easy to forget that Nokia makes monitors too, and pretty good ones at that. The 445Pro breaks with most of the other flat-screen models here in that it uses a Sony FD Trinitron, rather than a Diamondtron NF picture tube.

The 445Pro is, like most Nokia products, rather nice to look at, with elegant but purposeful styling. The fact that it bears just three buttons for its OSD control doesn't bode too well, but, in practise, the system of expanding menus is easier to use than most three-button arrangements. The range of OSD adjustments is limited: unusually for an aperture grille there are no convergence controls, and nothing in the way of extended geometry compensation over and above the usual arrangements, but you do get corner and edge colour-purity adjustments.

The rear of the unit is sparse: there are no niceties such as USB, and only one video input. This is a monitor intended for the design professional rather than geeks with several systems and gadgets galore to attend to.

Overall performance of the 445Pro is not as good as Nokia's reputation might suggest. While its electronics are high quality, with excellent power regulation and fine bandwidth and transient response characteristics, there are problems. Geometry was not great, with uncorrectable, extreme top and bottom pincushion distortion, and a noticeable amount of horizontal curvature. Resolution and focus into the corners of the screen was the worst of the aperture grille units, with performance deteriorating away from the centre of the screen. Switching up to 1,600 x 1,200 results in a more pronounced degradation in sharpness and resolution.

This isn't to say the 445Pro is a bad monitor: given the price it's a good buy, and its colour purity is top-notch. It knocks the more expensive Panasonic display, for instance, into a cocked hat. But the Mitsubishi Diamond Plus 200's superior overall quality, combined with its lower price make the 445Pro a tough unit to recommend unconditionally.

DETAILS

★★★★

PRICE £704 (£599 ex VAT)
CONTACT Nokia Display Products 01793 512809
www.nokia.com
PROS Certainly looks the part, good electronics, fine colour reproduction
CONS Suffers in the geometry and corner-to-corner consistency departments, no extra features
OVERALL Good performance for a good price, but with enough flaws to make it difficult to recommend

Panasonic **PanaSync/Pro P110i**

THE NAME PANASONIC doesn't crop up often in *PCW* – the most notable PC product the company has come up with lately is its DVD-RAM drive.

The PanaSync/Pro P110i allegedly bears an FST shadow-mask tube. We can vouch for the fact that it's a shadow-mask, but the moniker FST (flat square tube) is harder to swallow. Compared to the rest of the shadow-mask models on test, the P110i's screen is horrendously curved: it puts us more in mind of a cheapo 14in goldfish bowl monitor than a high-end 21in unit. The curvature of the screen isn't the only basic problem with the unit's tube: the anti-reflective screen coating is very poor.

The monitor has a very strange power arrangement: there's a USB hub in the base, with one upstream and four downstream ports. This has a mains connector plus a captive pass-through cable, while the display itself has its own mains input, into which the pass-through needs to be plugged if you want to use the monitor and the hub at the same time.

The P110i has dual D-SUB and BNC connectors, that are well recessed to keep the depth down. Signal selection is via the four-button OSD rather than a more convenient front-panel selector. The OSD itself is not very intuitive, which isn't helped by the fact that two of the buttons are cryptically labelled '1' and '2'. It does offer a good range of adjustments, though, including vertical edge and centre linearity.

Image quality of the P110i is, in most areas, rather average. Despite the surface curvature, geometry is fair, as is power regulation. Colour convergence is slightly wayward, but not terribly so, and colour purity is also fairly consistent. Corner resolution was let down by an unusual blooming-type effect from the blue gun – possibly a one-off problem in our review sample. Horizontal line resolution is not up to the standard of the rest of the field, with finely-spaced vertical lines appearing to merge.

The PanaSync/Pro 110i doesn't really add up to a very impressive package. That excessive screen curvature makes it very hard to use and renders it a display that can really only be recommended as a presentation screen rather than a monitor you could use on a day-to-day basis.

DETAILS

★★

PRICE £705 (£600 ex VAT)
CONTACT Panasonic 08700 100 464
www.panasonic.com
PROS None
CONS Terribly curved and reflective screen, relatively poor image quality
OVERALL The PanaSync is comprehensively outclassed by the competition

Philips 201B

WHILE FEATURING in most monitor group tests, Philips' displays have often failed to make much of an impact. The 201B, however, certainly raised a few eyebrows with its design when it was pulled out on to the test bench. The unit seems very compact, which is partly an illusion due to its design, and partly down to the fact that it really is quite skinny, at least towards the top. The bottom half of the main body melts downwards in Dali-esque fashion. The thinness of the bezel adds to the illusion, and the short neck tube keeps the depth down to 467mm. The design definitely falls into the love it or loathe it category, and we have to say it might look a tad out of place in most office environments.

The rear of the unit sports D-SUB and BNC connectors, and, like the Mitsubishi Diamond Plus 200, there's just an upstream USB port for control. A downstream hub is an optional extra. Signal selection is via the OSD: the 201B's system is one of the easier to use in this group: a collection of four arrow keys and an 'OK' button keep things intuitive.

The 201B's image quality is fairly high across the board: it's one of the better shadow mask displays here. First impressions are of a clean, detailed display with no obvious flaws. Running DisplayMate at 1,280 x 1,024 shows good geometry performance, and the electronics show fine power-regulation and transient-response characteristics. Corner-to-corner sharpness and focus is also good. Colour convergence isn't perfect though, and the unit suffers slightly from a lack of convergence adjustment controls. Colour purity – for which there is also no adjustment – was less than perfect, with definite brightness variations across the screen surface, and a little shadow mask graininess.

Philips boasts that the 201B will run at up to 1,920 x 1,440, but omits to mention that it'll only manage 60Hz refresh at this resolution: 1,600 x 1,200 at 85Hz is the highest practical resolution for this display.

Overall the 201B is an impressive little unit, and while it can't ultimately compete with the Diamondtron and Trinitron displays of this world, if you must have a shadow mask, you could do a lot worse than the 201B.

DETAILS

★★★★

Highly Commended Personal Computer World

PRICE £657 (£559 ex VAT)
CONTACT Philips 020 8665 6350
www.pcstuff.philips.com
PROS Compact design, fine quality for a shadow mask
CONS Colour performance not so good, the design may not appeal to all
OVERALL It's no world-beater, but the 201B puts in a good performance

Sony Multiscan G500

THE NAME SONY is synonymous with high-quality displays. The inventor of aperture grille technology back in 1968, the company has continued to lead the field since then.

The G500 comes in at the upper end of this group's price range, so we were expecting something pretty good. The tube is, unsurprisingly, an FD Trinitron, with 0.24mm grille pitch across the screen. Outward design has evolved over the past few generations, but remains basically the same: the four-way OSD controller is still present, although it's now hidden under the fascia facing downward. The OSD remains the easiest to use: you can get the adjustment category you need faster than with any other display.

The G500 naturally has dual input connectors, with both D-SUB and BNC mounted facing vertically downwards to save space, and a dedicated slide switch under the front left of the fascia to toggle between them.

By now, we're all used to super-sharp, flat-screen displays, but the thing that strikes you first about the G500 is its contrast. Sony has employed an extremely dark-tinted glass, but it has done so without compromising white intensity. The result is a superbly vibrant display with a full dynamic range from jet black to bright white, far superior to Mitsubishi's tubes.

No display is perfect, however, and the Sony's only flaw is its geometry. It's not as good as the Iiyama Vision Master Pro 510's, with a little top pincushion that we couldn't get rid of: there's no extreme top adjustment in the geometry OSD menu. That niggle aside, the G500 beats all comers in pretty much every other category. Vertical and horizontal line resolution are impressive, and begged for the unit to be switched up from its 1,280 x 1,024 testing resolution. It's crisp and usable even up to 1,800 x 1,440 at 75Hz, and 1,600 x 1,200 presents no problems whatsoever. Corner-to-corner performance is exemplary, with virtually no drop-off in focus or resolution towards the edges of the tube.

Trinitrons are renowned for their colour purity, and the G500 is no exception, with extremely smooth and rich colour reproduction, and excellent fading linearity characteristics.

With the G500, Sony shows once again that it's the master of all things display-related.

DETAILS

★★★★★

Editor's Choice Personal Computer World

PRICE £911 (£775 ex VAT)
CONTACT Sony 0990 424 424
www.sony-cp.com
PROS Near flawless image quality, superb OSD
CONS Expensive, geometry not quite perfect
OVERALL The one to go for if image quality is your prime concern

Taxan Ergovision 2280TCO99

YET ANOTHER MODEL to bear a Diamontron NF tube, the Ergovision 2280 has the slightly dubious honour of being the most expensive monitor here by some margin. Taxan has a very good reputation for middle-range 17 and 19in shadow masks, but isn't often associated with high-end displays.

If weight were the only measure of quality, the 2280 would win outright: it's not far off 40kg, and two pairs of hands is a definite boon if you're moving it around. The tube itself is a nominal 22in, but as with the other 22-inchers the viewable diagonal is only 20in.

The large fascia makes the Ergovision look a little dowdy, and it's the home of six very confusing buttons that work the OSD: they're positioned diagonally with respect to one another, so you're never quite sure if they're supposed to have a left-right or up-down effect on the parameter you're adjusting. On the positive side, the range of adjustments available is the most comprehensive here, and includes top and bottom pincushion, top and bottom convergence and, uniquely, horizontal and vertical focus compensation. On paper, the 2280 also provides the highest performance of this group, with a maximum quoted resolution of 1,920 x 1,440 at 83Hz.

In reality, running our standard tests produced a good, if not winning, set of results. Geometry performance is second only to the Iiyama Vision Master Pro 510's showing, while power regulation is exemplary. Horizontal line resolution is good, but not up to Sony's standard, and similarly, corner-to-corner focus and sharpness, while excellent, doesn't match the best. There was also a problem with vertical colour convergence, which remained wayward despite adjustment.

Upping the resolution from the standard 1,280 x 1,024, the Taxan coped well. But going past 1,600 x 1,200 into the realm of 1,792 x 1,344, image sharpness was not as coherent as the Sony at the same resolution. Colour purity was not as smooth and flawless as on the Sony or the Mitsubishi either.

If the Ergovision cost £200 less, it would present a serious value challenge to the Sony and Mitsubishi offerings. As it is, it's not clearly better than either of them, and the Sony is our favourite by some margin, regardless of price.

DETAILS

★★★★

PRICE £998 (£849 ex VAT)
CONTACT Taxan 01344 484 646
www.taxan.co.uk
PROS Undoubtedly extremely capable...
CONS ...but still not a match for the Sony, and it's more expensive with a confusing OSD
OVERALL It's worth taking a look at the 2280, but it needs to be cheaper to be competitive

Taxan Valuevision 2175TCO99

AT THE OPPOSITE END of the scale from the 2280, Taxan's second offering this month costs getting on for half the price: the company has submitted the cheapest as well as the most expensive display.

The Valuevision has a 21in shadow mask tube with a 19.5in viewable diagonal – the smallest here, but not by much. The screen is a little more curved than the best shadow mask displays, but not greatly so. Unsurprisingly, the unit is free of such extras as dual inputs or USB hubs, but, as the name suggests, it does comply to TCO99 standards, something that's far from cost-free from a manufacturing perspective.

It's a no-frills design, with a single captive video cable sporting a standard D-SUB connector on the graphics card end. The simple OSD is controlled by a digital rotary control and two buttons: adjustments are limited to the basics.

The Valuevision, like the ADI, can't manage an 85Hz vertical refresh at 1,600 x 1,200: its maximum is 75Hz. At this rate some people may perceive some flicker on a screen this size, but many will find it perfectly acceptable. It is usable at this resolution, but you'll probably find that a good 19in display will be more legible, despite its smaller size.

Sitting down in front of the Valuevision put us in mind of the Panasonic as far as screen reflections go – it's a little mirror-like. That aside, our raft of image quality tests produced a result that showed competence in most areas – geometry, resolution and video bandwidth are acceptable – but quite a few flaws in the colour department. Horizontal convergence wasn't correct at any point on the screen, while red, green and blue purity tests showed some patchy variations in intensity around the screen's edges. Some fairly noticeable streaking was evident at high-contrast edges, although this was possibly down to the quality of the video-connecting cable.

To be honest, there aren't that many reasons for opting for a display such as this over a cheaper and better quality 19in unit, including those made by Taxan itself. Those looking for a presentation display may be interested, but the rest of us would be better off looking elsewhere.

DETAILS

★★

PRICE £551 (£469 ex VAT)
CONTACT Taxan 01344 484 646
www.taxan.co.uk
PROS Cheap
CONS Quality leaves something to be desired
OVERALL Not really a sensible choice for most people

A variety of choices behind the screens

Until a couple of years ago, you only had one basic choice of display technology if you wanted a high-resolution monitor: a shadow-mask CRT (cathode ray tube) display.

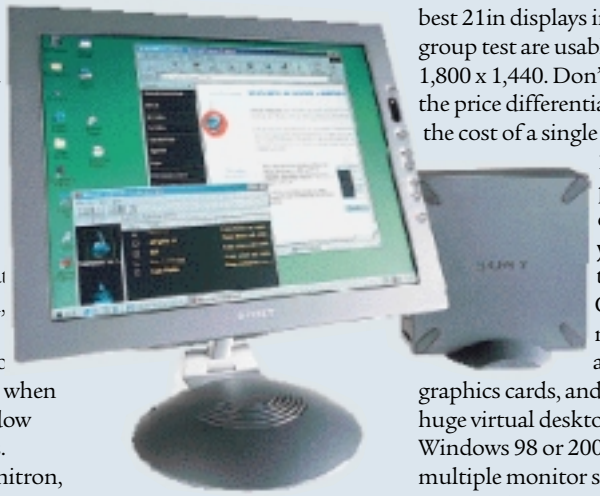
These days your choices are more varied. As well as shadow masks there are now aperture grille displays available in sizes above 17in, and if you've a big budget you can even consider stretching to an LCD (liquid crystal display) flat panel.

CRT types

The original type of tube, used in monitors and TVs, is known as the shadow mask. It's so called because a fine metal sheet mesh – the mask – is placed just behind the phosphor dots on the inside of the screen. The dots glow when the electron beams, fired from the gun at the back of the tube, strike them. The mask gives the beams hitting the phosphor dots a clean shape and prevents 'smudging' from stray electrons hitting adjacent dots, giving a sharper and more accurate image.

In 1968, Sony invented the aperture grille display, giving it the proprietary name Trinitron. The main feature of Trinitron is the fact that the shadow mask is replaced by a grille consisting of a row of very fine, tensioned, vertical wires. This allows more energy from the electron beams through to the phosphor, producing a brighter image, which in turn allows a darker tint of glass to be used for the tube, giving improved definition and contrast. It also allows a screen to be flat in the vertical direction, as there's no tendency for the electron beam to change shape as it does when passing through a shadow mask at extreme angles.

The drawback of Trinitron, and other aperture grille derivatives, such as Mitsubishi's Diamondtron, is that the grille has to be stabilised by two fine horizontal wires running across the screen at one-third and two-thirds the way up. Some people find the slight resulting shadows on the screen irritating.



With Sony's SDM-N50 flat panel, you get perfect geometry and a good helping of style, too

If resolution is your premium, and desk space is not, then the CRT is what's needed

It was only fairly recently that aperture grille displays larger than 17in became widely available, while recent improvements in dynamic beam-focusing techniques have made it possible to produce aperture grille screens that are totally flat in both the horizontal and vertical directions. Sony's variant of this is called FD (flat display) Trinitron, while Mitsubishi's is dubbed Diamondtron NF (natural flat). Other companies, such as Samsung, have their own flat-screen tubes, but currently only Sony and Mitsubishi produce them in 21in and 22in sizes.

The advances in gun technology and beam-shaping techniques have also led to shadow-mask tubes with far shorter necks – the increased deflection angle of the electron beam and dynamic focusing requirements can now be dealt with, whereas previously they would have led to terrible corner-focus and resolution problems.

CRTs vs LCDs

There's a general conception these days that while CRTs are all very well, LCD flat-panel displays are inherently superior in all respects. But don't go abandoning your thoughts of buying a new CRT display: there's plenty of life in the old dog yet. First, if you're reading this group test, you're likely to be on the lookout for a high-resolution display. The highest resolution, commercially available flat panels are only capable of a maximum of 1,280 x 1,024, whereas the best 21in displays in this group test are usable at up to 1,800 x 1,440. Don't forget the price differential too: for the cost of a single 1,280 x 1,024 panel you could get yourself two 21in CRT monitors and two graphics cards, and run a huge virtual desktop using Windows 98 or 2000's multiple monitor support.

LCDs do have a considerable advantage in terms of geometry: the fixed position of each pixel produces an inherently perfect picture. But for professional designers and artists, CRTs have the upper hand in terms of vibrancy and colour reproduction, which in LCDs is, at best, only approaching that of an aperture grille display. The limited viewing angle of LCD displays also leads to perceived colour changes, depending on the position of the viewer's eyes relative to the screen. With some panels this effect is sufficiently pronounced so that each eye sees a significantly different image, causing subconscious brain-strain and cancelling out the fatigue relief derived from an LCD's sharpness.

There's no denying, however, that 21in CRT monitors are great brutes that produce a lot of heat and need a lot of space – the primary reasons that financial centres and trading rooms are migrating rapidly to LCD. Monitors which offer a resolution of 1,280 x 1,024 are perfectly sufficient for most people, and if your activities are text rather than graphics-led, an LCD could be the best choice. But for the resolution junkies, there's just no alternative to a 21in CRT, if you want the most Windows desktop space possible to do your coding or design work.

Protection from emissions

As the number of electronic devices in our surroundings increases, so does our paranoia. The current obsession with the possible health effects of mobile phone use is only the latest manifestation of fears about devices that produce magnetic and electro-magnetic fields. CRT monitors generate both these types of fields, and electromagnetic emissions are generated at a wide range of frequencies, from 200-300MHz down to a few tens of Hertz (cycles per second).

It should be pointed out that, as with mobile phone radiation, there's precious little evidence that radiation from CRT monitors has any effect on health. But the technology and health-savvy Swedish government nonetheless went ahead and introduced the MPRII standard for emission control in the late 1980s. MPRII was designed as a standard that could effectively cut emissions without significantly increasing the design and manufacturing costs of CRTs.

A little while later, the Swedish trade union TCO came up with the TCO92 standard, which was considerably more rigorous. After that came TCO95. This didn't incorporate anything significant into emissions restrictions, but adds other environmental and ergonomic requirements into the package.

The latest and even tighter standard is TCO99, which covers a whole host of requirements. For a product

to be TCO99 certified, the company producing it must have an environmental policy, and must prepare the product for recycling. Specific requirements for monitors dictate levels of geometric distortion, screen reflectance and levels of light produced, as well as acoustic noise and ergonomic factors like tilt and swivel mechanisms.

If you fancy reading up on the gory details of all the processes your new monitor had to go through to get that little TCO99 sticker, head on over to www.tco-info.com and read all about it.

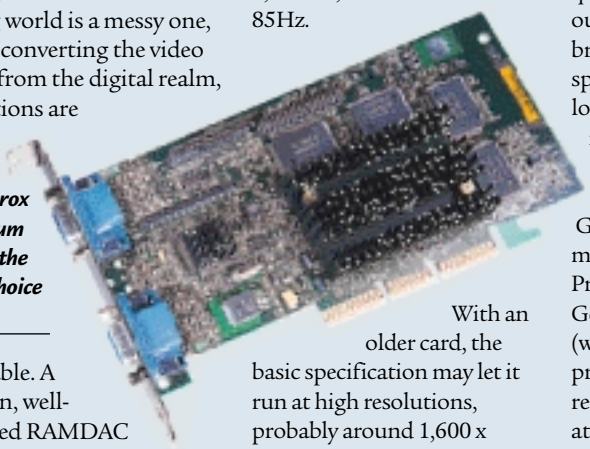
Certain people have expressed cynicism that TCO certification is over the top and has more to do with trade union politics and bureaucracy than real safety, but there's no doubt that the TCO99 label has become an important piece of paper for manufacturers to have.

If all you're worried about is emissions, however, the MPRII standard is generally regarded to provide all the protection that's required against harmful radiation. And given that these days most of us hold microwave transmitters to our heads for several hours a week, it's probably wise not to get overly concerned about a monitor that's sitting several feet away and radiating a lot less energy.

The importance of a good graphics card

Your monitor is only one half of the image-quality equation. At the other end of the video cable sits the graphics card. If the connection between the graphics card and the monitor were a digital one, we'd have nothing to worry about: all cards would be equal, as far as image quality was concerned.

But CRT monitors are analog devices: they can't be directly fed with the digital information in your graphics card's frame buffer. To drive an analog monitor, the contents of the frame buffer have to be converted from a perfect sequence of discrete digital bits into a continuously variable analog video signal. This is where the card's RAMDAC comes into play. The RAMDAC (random access memory digital to analog convertor) is, as the name suggests, responsible for the digital to analog conversion. The analog world is a messy one, and in converting the video signal from the digital realm, distortions are inevitable. A modern, well-designed RAMDAC will minimise these distortions, however.



The Matrox Millennium G400 is the card of choice for 2D

The basic measure of a RAMDAC's capability is its operating frequency: this determines the maximum graphics resolutions and refresh rates that it can handle. Most RAMDACs in modern cards operate at 300MHz or above, allowing resolutions typically up to 1,800 x 1,440 at 85Hz.

With an older card, the basic specification may let it run at high resolutions, probably around 1,600 x 1,200 at 85Hz. But a card running at the limit of its specification is at the point where its bandwidth is tailing off: consequently, the fast intensity transients of, say, white text on a dark background will not be faithfully reproduced and image sharpness will suffer.

RAMDAC bandwidth isn't the end of the story. The quality of a graphics card's output can vary, despite broadly similar RAMDAC specifications. Matrox has a long reputation for high 2D image quality, which is why we use its cards for testing.

Replacing the Millennium G400 in one of the test machines with a Guillemot 3D Prophet, sporting nVidia's GeForce 256 graphics GPU (with integrated RAMDAC) produces a slight, noticeable reduction in image sharpness at resolutions above 1,280 x 1,024. The same is true of ATi's Rage Fury MAXX card.

Compared to older cards, any card with one of the newer chipsets gives superior quality, and the difference between them is less marked than that between old and new generations. If you want the best 2D quality to partner your monitor, go for a Matrox.

Table of features






Manufacturer	ADI	CTX	Hitachi	Iiyama	Iiyama	LG
Model	MicroScan G1000	E1200	CM813ET Plus	Vision Master 502	Vision Master Pro 510	Studioworks 221U
Price (ex VAT)	£535	£499	£653	£625	£645	£675
Price (inc VAT)	£629	£586	£767	£734	£758	£793
Telephone	020 8327 1900	01923 810 800	01628 643 000	01438 314 417	01438 314 417	01753 500 400
URL	www.adimicroscan.com	www.ctxmonitors.com	www.hitachi-eu.com	www.iiyama.co.uk	www.iiyama.co.uk	www.lge.co.kr
Tube type	FST shadow mask	FST shadow mask	FST shadow mask	FST shadow mask	Diamondtron NF aperture grille	FST shadow mask
Nominal tube size	21in	21in	21in	21in	22in	21in
Actual viewable diagonal	20in	20in	20in	20in	20in	20in
Dot/grille pitch	0.26mm	0.26mm	0.21mm horizontal mask pitch	0.27mm	0.25-0.27mm	0.26mm
Power consumption						
Power consumption (max)	125W	120W	145W	160W	165W	180W
Power consumption (standby)	N/A	N/A	Less than 15W	10W max	10W max	15W
Power consumption (sleep)	N/A	N/A	N/A	10W max	10W max	15W
Power consumption (deep sleep)	5W	5W	Less than 5W	6W max	5W max	5W
Available connections						
USB hub (upstream ports, downstream ports)	✗	1x U, 4x D	✗	✗	✗	1x U, 4x D
Integrated microphone	✓	✗	✗	✗	✗	✗
Video inputs	D-SUB, BNC	D-SUB, BNC	2x D-SUB	D-SUB, BNC	D-SUB, BNC	D-SUB, 13w 3C
Refresh rates						
Maximum VESA refresh at 1,024 x 768	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz
Maximum VESA refresh at 1,280 x 1,024	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz
Maximum VESA refresh at 1,600 x 1,200	85Hz	75Hz	85Hz	85Hz	85Hz	85Hz
Maximum resolution/refresh rate	1,920 x 1,440/75Hz	1,600 x 1,200/75Hz	1,856 x 1,392/72Hz	1,600 x 1,200/85Hz	1,800 x 1,440/85Hz	1,600 x 1,200/90Hz
Other information						
Dedicated front-panel input select	✗	✓	✓	✗	✗	✗
Highest emissions compliance	TCO99	TCO95	TCO99	TCO99	TCO99	MPRII
Dimensions (mm) (w x h x d)	508 x 490 x 440	510 x 506 x 545	488 x 482 x 470	493 x 490 x 490	493 x 490 x 482	498 x 510 x 512
Net weight	31.5kg	30kg	27.5kg	31kg	33kg	30kg

How we did the tests

Monitors need a carefully controlled environment for accurate and fair testing. For this group test we used a dual setup of two identical PCs, both equipped with Matrox Millennium G400 graphics cards: the choice of graphics card is important, since if the monitor isn't being fed with a high-quality signal it can never give of its best (see the boxout on the importance of a good graphics card). We used two systems in testing so that we were able to make instant and accurate A-B comparisons, without having to mess about with disconnecting and reconnecting cables, or using signal-degrading splitters.

As important as the graphics card driving a monitor, or the software used in testing, is the physical testing environment. A monitor relies on magnetic fields to steer its electron beams and produce a picture. Consequently, any monitor is susceptible to external magnetic fields, and these can both distort geometry and affect colour, and the effect can be particularly noticeable with the larger displays of this size.

Even the earth's own magnetic field can have a subtle effect, so when testing, all the monitors were set up facing in exactly the same direction. We also








	Mitsubishi Diamond Plus 200	Mitsubishi Diamond Pro 2040u	Nokia 445Pro	Panasonic PanaSync/ Pro P110i	Philips 201B	Sony Multiscan G500	Taxan Ergovision 2280TCO99	Taxan Valuevision 2175TCO99
	£589	£679	£599	£600	£559	£775	£849	£469
	£692	£798	£704	£705	£657	£911	£998	£551
	01707 278 684	01707 278 684	01793 512 809	08700 100 464	020 8665 6350	0990 424 424	01344 484 646	01344 484 646
	www.mitsubishi-monitors.co.uk	www.mitsubishi-monitors.co.uk	www.nokia.com	www.panasonic.com	www.pcstuff.philips.com	www.sony-cp.com	www.taxan.co.uk	www.taxan.co.uk
	Diamondtron NF aperture grille	Diamondtron NF aperture grille	FD Trinitron aperture grille	FST shadow mask	FST shadow mask	FD Trinitron aperture grille	Diamondtron NF	FST shadow mask
	22in	22in	21in	21in	21in	21in	22in	21in
	20in	20in	20in	20in	20in	19.8in	20in	19.5in
	0.24mm	0.24mm	0.24mm	0.25mm	0.25mm	0.24mm grille pitch	0.25-0.27mm	0.26mm
	140W	155W	Less than 160W	148W	Less than 104W	145W	Less than 160W	170W
	N/A	15W	95W	Less than 10W	7W	100W	N/A	Less than 15W
	5W	15W	10W	Less than 10W	7W	15W	Less than 8W	Less than 5W
	N/A	3W	3W	Less than 5W	Less than 2.8W	1W	Less than 5W	Less than 5W
	1x U	2x U, 3x D	✘	1x U, 4x D	✘	1x U, 4x D	1x U, 4x D	✘
	✘	✘	✘	✘	✘	✘	✘	✘
	2x D-SUB	D-SUB, BNC	D-SUB	D-SUB, BNC	D-SUB	D-SUB, BNC	D-SUB, BNC	Captive D-SUB
	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz
	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz
	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	85Hz	75Hz
	1,800 x 1,440/72Hz	1,920 x 1,440/75Hz	1,800 x 1,440/82Hz	1,800 x 1,440/70Hz	1,920 x 1,440/60Hz	1,920 x 1,440/75Hz	1,920 x 1,440/83Hz	1,600 x 1,200/75Hz
	✔	✔	N/A	✘	N/A	✔	✔	N/A
	TCO 99	TCO99	TCO99	TCO99	TCO99	TCO 99	TCO99	TCO99
	500 x 500 x 482	500 x 500 x 482	512 x 500 x 501	498 x 502 x 495	482 x 476 x 467	497 x 480 x 478	505 x 500 x 495	500 x 504 x 490
	29.5kg	31kg	31kg	28kg	28kg	32kg	37kg	29kg

made sure that each display on test was at least one metre away from any others to avoid the possibility of any magnetic or electromagnetic interference: the same went for any other electrical equipment in the vicinity that might give off significant levels of EMI.

The units were all tested under constant, artificial light. Each monitor was given a warm-up period of half an hour before we commenced testing: again, this is vitally important for any monitor, but especially so for 21 and 22in models, since the larger screen means larger shadow masks or aperture grilles, which will tend to expand that much more than those of smaller screens as they are bombarded with electrons from the guns.

This variation is taken into account when monitors are factory-calibrated, and image quality can be noticeably superior once a unit has had enough time to properly warm up.

Testing itself was done using the industry-standard DisplayMate utility by Sonera. With this, a monitor undergoes an exhaustive set of tests, and every aspect of image quality is looked at, including geometry performance, focus, resolution, corner-to-corner consistency, power regulation, colour purity and linearity.

All the formal testing was performed at a resolution of 1,280 x 1,024 with a 75Hz refresh rate. As well as formal testing, however, we also looked at how subjectively usable the units were at higher resolutions where this was appropriate.

Editor's **Choice**

After finishing this month's testing and collating our results, we were left with two distinct impressions. The first is that there's little doubt that the growth of the monitor market shows no signs of slowing down after the massive acceleration that began about two years ago, following a long period of calm in which prices hardly dropped and quality hardly improved.

These days, monitor manufacturers are producing new models almost as fast as the graphics card manufacturers are producing new cards to drive them. For a while the 21in market was left behind by 17in and 19in screens, but now it's catching up with a vengeance. As the 17in monitor has replaced the 15in unit as the entry-level screen size, and as 19in displays start to challenge 17-inchers for the same crown, so 21in displays are becoming more mainstream.

Our second impression was that, particularly with large screens such as these, the days of the curved shadow mask display are definitely numbered. It's not something you can measure in an objective test, but sitting in front of one of the Diamondtron NF or FD Trinitron screens feels far more, well, natural than working with a curved, shadow mask display. At the same time it's far easier to forget that you're looking at a monitor and just concentrate on the job in hand. Add to that the better definition, contrast and vibrancy that are inherent to aperture grille displays and we felt compelled, when giving out our awards this month, to favour the flat screens.

If you're looking for a 21in monitor, the chances are you're going to be primarily concerned with quality rather than the absolute best value around. This is the reason that we decided to award the overall **Editor's Choice** to the best-performing monitor, regardless of price.

That accolade goes to the Sony G500, which, through a combination of cutting-edge technology and, we suspect, a fairly large measure of old-fashioned design expertise, manages to comfortably beat the competition in almost all areas of image quality. The stunningly high contrast, pin-sharp definition and superb colours on Sony's monitor add up to a display that'll suit literally any application. Added to the superb image quality is the best OSD in the business as well as a comprehensive range of adjustments. And to cap it all, there's that Sony badge on the front.

We couldn't ignore the value side of the equation, but quality has to be an important consideration in a monitor, no matter what the price. So our first **Highly Commended** award goes to the Mitsubishi Diamond Plus 200. Mitsubishi has been playing Sony at its own game over the past couple of years and coming off pretty well, particularly with the now near-legendary Diamond Pro 900u, and at £692 including VAT the Diamondtron NF tube in the Diamond Plus gives top-notch results for a low price.

There's no doubt Mitsubishi is the name of choice for displays that combine no-compromise quality with decent value.

We do accept that although we find the arguments for going with flat-screen aperture grille technology to be too compelling to ignore, there are those who prefer the more laid-back and less clinically precise quality of shadow mask displays. Some people, particularly users in non-graphics fields, swear by them, so we thought it was our duty to find and award the best of the shadow masks.

This was a harder decision to make than the Editor's Choice, as shadow mask technology is so mature and the differences between the shadow mask units were small. Overall, though, the final **Highly Commended** award goes to the innovatively-styled Philips 201B.

While some may find this monitor's design odd, there's no doubt it's more interesting than your average shadow mask, and its good resolution and ability to resolve a decent amount of detail, coupled with a space-saving design and good price make it the one to go for if shadow masks are your thing.

Finally, after spending a week or two testing these units and getting used to the huge amount of desktop area that the high resolutions can offer, we'd urge anyone who spends significant amounts of time using their computer to invest in one of these displays. LCD panels may be fashionable, but for serious users the CRT still reigns as king.

The Sony Multiscan G500 outperformed the competition, gaining the Editor's Choice

The Mitsubishi Diamond Plus 200 offers top-of-the-range quality and great value

Philips' 201B, with its distinctive styling, scoops the award for the best shadow mask