

# The big picture

**A good monitor is a vital ingredient of your PC system, so knowing the good from the bad is important. We invited 13 suppliers of 17in screens to let us test their mettle.**

**O**ne element of your computer is actively used more than any other: the monitor. Yet you rarely hear people boast about their monitor, it's always how fast their processor is or how much memory their graphics card has. The monitor, though, is the one part of your computer you interact with the most simply because the screen is where your PC interfaces with you. Yet how many of us are seduced by the magic numbers of the diagonal? That extra inch or two on the diagonal becomes the most important thing as we doggedly follow the 'bigger is better' maxim that applies to so many other aspects of computing.

But, and there is a but, should such an arbitrary method of monitor selection really be in force? Would you buy wallpaper for your living room based on how wide the roll was? Unlikely. The variation in monitors is as diverse as any other part of your PC, and considering you are actively looking at a monitor, rather than merely observing its performance, we thought it would be a good idea to test some 17in models that now represent the norm in PC use.

The monitor manufacturers that submitted screens for this group test were given only a couple of guidelines. The monitor was to be as flat as possible, while still being good value for money; and as the reviews on the following pages show, there is a great deal of variation within the 17in market.



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PHOTOGRAPH DAVID WHYTE



## ADI Microscan G710



**LITTLE BROTHER TO** the model that featured in our May issue's 21in monitor group test, the ADI Microscan G710 has the same brightness and contrast wheels under the front fascia as its sibling. These wheels offer easier and more accurate manipulation of settings than the standard button-driven digital on-screen display (OSD) method.

This unit is one of the few in the test with a built-in microphone, situated in the fascia above the screen, with output

at the rear. The G710's bezel is quite big, making the screen appear slightly smaller than some of the competing units. The included USB hub has four downstream ports and plugs into the back of the unit, extending on a short cable for easy access to the ports.

Setting up this FD Trinitron screen was both simple and quick – although with the brightness set to give the correct black level, the contrast could not be driven up high enough to give the required white level. This made the screen appear slightly dimmer than we would have liked. The OSD allows easy navigation for setup of the monitor's geometry, with the unit working at optimal levels within a couple of minutes.

On the DisplayMate image quality tests (see How we did the tests box later in the group test), the G710 performed well. The geometry was good, with no distortion or pincushioning. Power regulation was good, although focus at the corners of the image deteriorated noticeably. Colour was well represented, with regular colour purity across the

screen. There was no streaking or ghosting in the image and colour-fading consistency was excellent. However, the general dimness of the screen may have affected all the results because at lower contrast levels distortion is less likely to occur.

Overall, apart from the poor focus at the edges, this Trinitron screen performs well. However, the overall dimness of the display may cause a bit of eye strain with long-term use. The unit conforms to TCO99 standards, so emissions are not an issue, and at its mid-range price it's not a bad unit. Although for £20 more you could get the all-round better performing ViewSonic PF775 (see later).

### DETAILS

**PRICE** £260 (£229 ex VAT)

**CONTACT** ADI 020 8327 1900

[www.adimicroscan.com](http://www.adimicroscan.com)

**PROS** OSD easy to navigate

**CONS** Very dim screen

**OVERALL** The dimness of the screen pulls this unit down. Although performance appears good, this may be entirely due to low overall contrast. Eye strain may also pose a problem

IMAGE QUALITY	★★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★

## Belinea 10 30 50



**ONE OF FOUR** entrants in this month's test with a shadow-mask tube, the Belinea 10 30 50 had one of the best images based on initial impression at power-up. The colours were vibrant, and the image was sharp and focused – all-round, an excellent first impression.

The fascia surrounding the screen is narrow and gives the screen area a virtual boost. It also sports what at first appears to be three buttons and, tucked underneath, a wheel for adjustment.

After pressing the left and right buttons, though, we discovered they were merely adornment for the fascia. Using the centre button in combination with the wheel, the brightness, contrast and screen geometry can be set up. The OSD was simple to navigate: you just select the required option and then manipulate the settings by rotating the wheel.

Running the DisplayMate tests, the Belinea did not perform as well as we initially thought it would. This serves to highlight how an overall impression of a monitor can be just as valid a means of assessment as a program like DisplayMate.

Focus on the Belinea was excellent, and fine focus testing further reinforced the quality of the tube, with minimal deterioration towards the edges. Screen regulation was impressive, while pincushion and barrel distortion, plus other geometric features were not as good as the flatter aperture-grille models. Video bandwidth was excellent, with lines of varying thickness appearing at consistent intensity. The image also

experienced very little streaking and ghosting, only suffering mildly from the former on grey backgrounds. The anti-glare coating wasn't particularly good and colour representation in the tests wasn't wonderful, with patchiness in pure colours and irregular fading. The Belinea is TCO99 certified, so ergonomics and emissions are assured.

Overall, the working image on this monitor is great, with its failings in DisplayMate by no means affecting this. For general Windows purposes it is a fine monitor, even if the screen is a little curvy. However, its £304.33 price tag means it's eclipsed by cheaper models.

### DETAILS

**PRICE** £304.33 (£260 ex VAT)

**CONTACT** Belinea 01344 788 920

[www.belinea.co.uk](http://www.belinea.co.uk)

**PROS** Excellent image quality for general use, with striking colour and focus

**CONS** One of the most expensive 17in monitors we tested

**OVERALL** Apart from the price, this is a good monitor. Unfortunately, similar quality can be bought for less

IMAGE QUALITY	★★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★

## CTX PR705F



**THE PR705F IS A** 17in member of CTX's ProFlat series, all of which sport an 'absolutely flat screen'. Not only is it flat, but the fascia is constructed to highlight this, with sharp edges and barely a curved surface in sight. The only curves visible from the front are where the OSD control buttons are situated. At the back of the unit, along with the D-SUB input are BNC connectors for RGB input. The unit also conforms to the TCO99 standard.

Four buttons allow access to the OSD and navigation was clearly set out and easy to use. Unfortunately, the CTX proved to be one of the most difficult units to set up correctly. The main problem was getting the geometry correct. Every time one geometric aspect was changed, it seemed that another had to be reset or altered to compensate for a new error. The setup took a long time in comparison to other monitors.

There was one problem we were unable to resolve through the OSD: the top edge of the screen was not straight. As none of the OSD geometry controls address top and bottom curvature on any monitor, this problem unfortunately had to stay, and the straight lines of the fascia only served to highlight the imperfection.

DisplayMate reinforced our thoughts on this monitor's good points and the performance showed it to be a quality unit. Text focus was fairly sharp across the image, although the ViewSonic was sharper in the corners. The flatness of the FD Trinitron screen

meant that distortion and curvature were minimal, except for the top edge problem, which obviously let it down. Screen regulation was overall very good, as was colour purity, although there was some minimal streaking from colours and greys. As for desktop resolution, it managed 81Hz at 1,280 x 1,024 while 85Hz would have been preferable.

Leaving the DisplayMate tests and looking at the CTX in normal use, the PR705F had a good overall image quality – assuming the curvature problem with the top edge was an idiosyncrasy of our test unit. You could do a lot worse for £222 inc VAT.

### DETAILS

**PRICE** £222 (£189 ex VAT)

**CONTACT** CTX 01923 810 800

[www.ctxmonitors.com](http://www.ctxmonitors.com)

**PROS** BNC as well as D-SUB input gives some versatility

**CONS** The curve on the top edge of the screen; general setup difficulties

**OVERALL** Setup was lengthy, but image quality was OK apart from the curve at the top of the screen

**IMAGE QUALITY** ★★

**CONTROLS** ★★

**VALUE FOR MONEY** ★★

**OVERALL RATING** ★★

## Hansol 710D



**HANSOL ELECTRONICS** started manufacturing displays in 1995 with the introduction of its first 17in monitor, the Mazellan 700P. Since then, it has built up a reputation for monitors with good picture quality at equally attractive prices. The Hansol 710D, one of four monitors in Hansol's current professional series, is no exception. The unit encases a Samsung-designed DynaFlat shadow-mask tube that has a virtually flat screen.

The first thing that strikes you when you switch it on is the overall sharpness and liveliness of the screen. This is comparable to some high-end models on test here. Both the dot pitch and maximum resolution are decent at 0.25mm and 1,600 x 1,200 at 75Hz, respectively. However, using this resolution will leave you squinting. Nevertheless, it does comfortably handle 1,024 x 768 at 85Hz – the more appropriate screen resolution for a 17in monitor.

Starting up DisplayMate, the 710D showed little evidence of blooming, while text is finely resolved right across the screen

and into the corners. Moving on to power regulation, the Hansol performed better than the other two budget models from Mitsubishi and Taxan, but it's not perfect. When compared directly to other models it was obvious that a small displacement existed in the top left-hand corner, revealing that beam control needs fine-tuning.

Basic geometry is acceptable, although when the monitor arrived we needed to make some adjustment to

rectify a skewed tilt. The slightly awkward four-button OSD has most of the necessary options to set the picture squarely within the bezel. Vertical and horizontal convergence tests were passed with flying colours, but if the three beams decide to migrate off their factory settings then you're pretty much stuck, as no colour convergence controls exist. At the back of the unit is a captive D-SUB connection – something we expect to see on a lower-priced model.

All in all, the picture quality offered by the 710D is very respectable. If you're looking for a vibrant and bright picture but don't want to overstretch your budget, the 710D is ideal.

### DETAILS

**PRICE** £210 (£179 ex VAT)

**CONTACT** Hansol 01276 418 213

[www.hansol-uk.com](http://www.hansol-uk.com)

**PROS** Fine overall quality from the DynaFlat tube

**CONS** No horizontal or vertical convergence controls

**OVERALL** An excellent screen for an attractive price

**IMAGE QUALITY** ★★★★★

**CONTROLS** ★★★★★

**VALUE FOR MONEY** ★★★★★

**OVERALL RATING** ★★★★★



## Iiyama VisionMaster Pro 410



Mitsubishi 17in Natural Flat model, with a 0.25mm aperture-grille pitch. The viewable area is 15.9in and the screen reflectivity is thankfully low. As with all aperture-grille monitors this one exhibits the ubiquitous damping wires that some users may find distracting. This aside, the tube provides excellent image quality and its ability to display images with vibrant colours and in sharp focus is very commendable, only being eclipsed by Sony's Multiscan E200. The resolution specifications are decent too, managing a comfortable 1,280 x 1,024 at 85Hz, and an eye-

straining 1,600 x 1,200 at 75Hz.

The styling is characteristic of all Iiyama monitors, with clean lines and a fascia that bears its old three-button OSD controls. These are not the most intuitive and can only be navigated in a long-winded manner because the buttons have multiple functions. That said, the four menus do include geometry controls, horizontal convergence correction, moiré reduction and a colour control with three pre-set options and

ANYONE WHO IS familiar with the name Iiyama will know that this Japanese company has a reputation for producing high-quality display units. However, you may also know that its monitors have been criticised in the past for their power regulation. Thankfully, it would seem that Iiyama has addressed this problem as the VisionMaster Pro 410 put in a fine performance in our regulation tests.

The tube comes in the form of a

one user-defined option where only the red and blue levels can be adjusted.

BNC inputs are provided at the rear, however, you'll have to use the clumsy OSD to switch between them. On the plus side, these connections along with the power lead are recessed and allow the unit to be pushed up against a wall.

Although the design is perhaps looking a little outdated now, it is difficult to fault the VisionMaster Pro 410 especially in terms of the overall visual result. With the added bonus of BNC connectivity and a non-captive D-SUB lead – which the Sony display lacks – the Iiyama VisionMaster Pro 410 is undoubtedly one of the best 17in monitors around.

## DETAILS

PRICE £276.12 (£235 ex VAT)

CONTACT Iiyama 01438 314 417

[www.iiyama.co.uk](http://www.iiyama.co.uk)

PROS Excellent image quality and colour vibrancy

CONS That awkward OSD

OVERALL The 17in CRT of choice at an attractive price

IMAGE QUALITY	★★★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★



## Glossary of monitor terms

**Aperture grille** Instead of fine holes like a shadow mask, this display uses a mask of very fine vertical wires held in place by two just visible horizontal damping wires. No masking in the vertical direction leads to a brighter and more vivid picture.

**Barrel distortion** Defines the straightness of the sides of the image area – called barrel, because of the convex appearance of the image area.

**Bezel** The part of the monitor casing that surrounds the edges of the screen, effectively framing the picture.

**BNC connectors** The five separate connections around the back of some monitors. These are in place to separate the video signals into red, green, blue, and horizontal and vertical synchronisation signals. This decreases interference as the signals are shielded from each other.

**Cathode-Ray Tube (CRT)** A partially evacuated tube, whereby electrons striking an internal phosphorescent coating form a picture.

**Convergence** Describes how well the three colour guns (red, green and blue) intersect at each pixel. The better the guns converge, the more closely the colours overlap, creating a sharper image.

**Degaussing** The removal of magnetic fields that have built up within the display. These fields cause image or colour distortion and are either degaussed by an internal coil when the computer is turned on, or by manually selecting a degauss option.

**D-SUB connector** Standard video cable that may already be connected internally to the monitor (known as captive), or it may plug independently into the monitor's D-SUB port.

**OSD (on-screen display)** Graphical interface in which the user selects screen adjustment options usually using the buttons on the front of the monitor.

**Pincushion distortion** Inverse of barrel where the distortion resembles a pincushion, in that the sides of the image area have a concave appearance.

**Refresh rate** The rate at which the screen is redrawn, measured in cycles per second or Hertz (Hz). If the rate is not high enough the human eye will detect the decay in screen brightness between refresh cycles – known as flicker. Flicker is noticeable below a refresh rate of 75Hz.

**Screen regulation** How well the screen can control the electron beam between areas of high-beam intensity and low-beam intensity. Determined by flashing white

areas against a black background.

**Shadow mask** A sheet of alloy – usually the iron-nickel alloy invar, used because of its low thermal expansion properties – perforated with many small holes into which the beams from the three guns converge. This sits in front of the phosphor layer.

**Streaking and ghosting** Another indicator of the quality of the beam intensity electronics. When the beam is scanned from a high-intensity area (white) to a low-intensity area (black) the beam has to switch from on to off. If this is not precise then the white area will appear to streak or ghost into the black area.

**VESA (Video Electronics Standards Association)** An association of companies that co-operate in establishing common standards for video display systems.



## LG Flatron 795FT Plus



This produces a screen that has excellent non-reflective properties.

The 795FT Plus borrows technology from both aperture-grille and shadow-mask designs, in that it uses a 'slot mask' whereby a mask with slots rather than holes is used in front of the phosphor. The stripe-pitch is rated at 0.24mm, equivalent to a 0.25mm dot-pitch tube. The Flatron 795FT has a 16in viewable diagonal and reaches an unusable maximum resolution of 1,600 x 1,200 at 77Hz. It handles all other VESA resolutions with ease.

**CONVENTIONAL CRTS** are still based on a screen that is formed from part of a glass sphere – or a cylinder for Sony's Trinitron displays. However, some screens are designed with a completely flat front surface such as Mitsubishi's Diamondtron NF and FD Trinitrons. Although these tubes can produce wonderful results, the internal surface remains curved to compensate for beam diffraction. This is where the LG Flatron differs as both sides of its tube are flat.

Considering tube performance, the image is not as bright as other aperture grilles. Focus is slightly lost in the corners of the screen and vertical resolution is not the finest.

Geometry, however, cannot be faulted. The only area where the LG really trips up is in regulating the screen's power and electron beams. It was nevertheless a little more stable than the Mitsubishi and Taxan offerings.

The OSD is one of the simplest to navigate because the touch-sensitive

controls are a pleasure to use, as well as being laid out on the fascia in the same fashion as the icons in the OSD menus.

Colour convergence is adjustable in both planes, while there are settings for moiré correction and overall colour purity, together with a couple of extra pincushion geometry options.

Connectivity is dealt with by a non-captive D-SUB lead along with one upstream and four downstream ports at the expense of BNC connections. Two USB cables are included.

The LG Flatron 795FT Plus employs different technologies, but this comes at a price as this is the most expensive model in the group test.

### DETAILS

**PRICE** £340.75 (£290 ex VAT)

**CONTACT** LG Electronics  
01753 500 400

[www.lge.com](http://www.lge.com)

**PROS** Touch-sensitive controls; self-explanatory OSD; non-reflective screen

**CONS** Expensive; poor power regulation

**OVERALL** An innovative display but with a premium price to match

IMAGE QUALITY	★★★
CONTROLS	★★★★★
VALUE FOR MONEY	★★
OVERALL RATING	★★★★

## Mitsubishi Diamond Plus 73



areas of the display, passing every sharpness and resolution test. As for maximum resolution, your graphics card need not worry as the Diamond Plus 73 can only handle 1,280 x 1,024 at a flickery 66Hz, but it comfortably achieves the standard 1,024 x 768 at 85Hz. Anti-glare was fine, while colour fading was constant and colour purity rich and even.

By far the worst results were obtained when testing the Diamond Plus 73's power regulation. This revealed a gun untamed by its electronics, failing all of DisplayMate's regulation tests with the entire

screen expanding in bright areas and contracting in dim areas.

On the front are three buttons that give you simple access to the basic OSD. Most of the usual display controls are present but to keep costs down Mitsubishi has left out advanced controls such as moiré, and colour convergence – a shame because the colour registration was off in both directions. Nevertheless, the available settings can be adjusted very finely and

**JOINING MITSUBISHI'S** expanding line-up of Diamondtron NF (Natural Flat) colour monitors, the Diamond Plus 73 sports a vibrant aperture-grille display, housed in a case that lacks some of the design *finesse* seen elsewhere. That said the bezel does frame the tube with enhancing narrow borders.

For this price the grille pitch is an admirable 0.25mm, and it does not vary from the screen's centre to the corners. Indeed the resolution was good in all

not in jerky steps as with other displays. Still, this didn't help us with geometry correction as we had difficulty centring the display within the bezel and removing an intrinsic vertical and horizontal curvature to the picture.

The only thing that's around the back is a captive D-SUB lead.

Even though the Mitsubishi Diamond Plus 73 uses a Diamondtron Natural Flat tube it didn't perform to the standards we are used to seeing from Mitsubishi. The best thing about this 17in is the price, but the Diamond Plus 73 will struggle to compete with the Hansol offering.

### DETAILS

**PRICE** £222.07 (£189 ex VAT)

**CONTACT** Mitsubishi 01707 278 684

[www.mitsubishi.com](http://www.mitsubishi.com)

**PROS** User-friendly OSD; vibrant flat screen; attractive price

**CONS** Basic controls; poor power regulation and colour convergence

**OVERALL** A budget monitor that suffers from flaws that will be noticeable to the discerning end user

IMAGE QUALITY	★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★

## NEC MultiSync FE750



**WITH ITS NATURAL FLAT** aperture-grille tube and a narrow fascia, this is a fine looking monitor. It does, however, have one unusual aesthetic feature. At the bottom of the screen where the OSD controls are situated is a small piece of clear plastic displaying the MultiSync logo. The orange/green LED signalling the monitor's standby/on status is behind this so the logo changes colour with the light. Whether you like this feature is a matter of personal taste, but

at least it looks different from the rest of the pack.

The OSD is menu driven and navigation is simple, with the monitor quick and easy to set up. The overall impression at this stage was that the image was reasonably focused across the screen, with well-represented vibrant colours.

As with the Belinea screen, the DisplayMate testing revealed a different side to NEC's entrant – again, both the testing and the general feel of the monitor should be borne in mind.

DisplayMate highlighted a degree of blooming and some defocusing towards the

periphery of the monitor. Screen regulation and general resolution across the image were also not up to the same standard as some of the other units. However, the anti-glare coating was excellent and colour fading was pretty much uniform across the spectrum, the geometry was outstanding, with no pincushion or barrel distortion and no evident horizontal or vertical curvature.

The MultiSync's lack of gun control was highlighted by the display being

prone to mid-range streaking. This weakness was further exemplified with problems in both a white-level and black-level shift. Basically this manifests itself in a slight change in what should be a uniform colour, due to the presence of other colours on the screen. Green colour purity was also not what it should have been, with the screen becoming slightly faded towards the corners.

At a price of £304.32 some of these performance issues should not have arisen. Having said that, for Windows use this is a perfectly adequate display, though you can get better quality for less cash.

### DETAILS

**PRICE** £304.32 (£259 ex VAT)

**CONTACT** NEC 0645 404 020

[www.nec.co.uk](http://www.nec.co.uk)

**PROS** Good colour representation and screen geometry

**CONS** Regulation and streaking proved to be a problem

**OVERALL** This display is adequate for general use, although there are monitors with better images for the money

IMAGE QUALITY	★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★

## Philips 107P



**ON PULLING THE** Philips 107P out of its box, the first thing that strikes you is the styling of the unit. With limited desk space in mind, the 107P is designed with a narrow back and sweeping flanks that curve to the front of the chassis. The bezel is also quite narrow making the screen look much bigger than it really is. On the front are some unusual silver OSD controls comprising four arrow keys and an 'OK' button. Even the flimsy on/off switch has had the silver paint

treatment. Around the back is an independent D-SUB socket and BNC connectors. No internal USB ports exist, although a USB base is available as an optional extra.

The tube is an aperture grille with a pitch of 0.25mm and a maximum resolution of 1,920 x 1,440 at a refresh of 60Hz – pointless considering that the only time you will ever use this setting would be out of curiosity. 1,280 x 1,024 at 85Hz is the highest practical resolution for this screen.

Our tests produced mediocre results pretty much across the board. Nowhere did the 107P

excel, but there are areas where it didn't do well, for example it faltered over blooming. This had a blurring effect on text and gave the whole screen a slightly soft feel. Geometry is another problem because the picture has an intrinsic curve to the left-hand side of the screen. The display was also sensitive to vibrations, wobbling when the bench was tapped. However, power regulation is adequate.

The OSD is intuitive, helping you

along with clear prompts, and the range of options is impressive with extra controls for precise purity adjustment. An 'Auto Calibrate' option regularly readjusts the luminance and black level with the colour settings to maintain their original relative values. The 107P is also the only monitor in this test to offer direct switching between the D-SUB and BNC inputs, albeit through a simultaneous press of the 'OK' and 'UP' buttons on the control panel.

On the whole, the Philips 107P isn't a bad monitor, but we expect better image quality from a company with a history in electron beam technology.

### DETAILS

**PRICE** £311.37 (£265 ex VAT)

**CONTACT** Philips 020 8665 6350

[www.pcstuff.philips.com](http://www.pcstuff.philips.com)

**PROS** Space-saving design; BNC/D-SUB direct switching; range of controls

**CONS** Blooming; geometrical imperfection; vibration-sensitive

**OVERALL** A monitor with an excellent set of controls, but a disappointingly average performance

IMAGE QUALITY	★★★★
CONTROLS	★★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★



## Samsung SyncMaster 700FT



and easy to navigate and covers all the usual geometry setup requirements, as well as allowing the input to be selected – so that two computers could be connected at the same time via the D-SUB and BNC connectors. Not included in this though are the contrast and brightness control wheels, which are situated under the front fascia. The accuracy of wheels for these settings is always preferable, despite the fact that they are no longer in vogue. Between the OSD and the wheels, the monitor was easily set up.

**ALTHOUGH APERTURE-grille** technology appears to be the preference in 17in monitors, with most of this month's entrants using it, the Samsung SyncMaster 700FT has an Infinitely Flat Tube (IFT) shadow-mask screen.

The SyncMaster's fascia is quite plain and generally uninspiring. However, pressing the bottom of the fascia releases the OSD control buttons that swing out on a small block – a nifty feature indeed. The OSD is intuitive

Putting the SyncMaster to the test with DisplayMate we found it was not too bad, but certainly not groundbreaking. The screen was fairly well in focus across the display and the anti-glare coating functioned adequately. As for geometry, although it passed all the tests, it excelled in none. There was minimal pincushion and barrel distortion, while vertical and horizontal curvature, although present, was minimal. Resolution was not the worst in the group, but a general focus

problem in the bottom left of the screen let the unit down. The Samsung did, however, pass the screen regulation tests with flying colours.

One of the biggest problems was colour. Colour scale fading consistency was fine, but there were general problems of colour streaking. This may have been partly due to the red gun's inability to give an even colour in the red colour purity test. There was also some black-level shifting, although it wasn't awful.

At £280.82 inc VAT, this monitor isn't too bad, but unfortunately other units of a very similar price outperform it and look better in general terms.

### DETAILS

**PRICE** £280.82 (£239 ex VAT)

**CONTACT** Samsung 020 8391 0168

[www.samsung.com](http://www.samsung.com)

**PROS** BNC input, good screen regulation

**CONS** Mediocre performance

**OVERALL** The input options give this unit versatility. But for a similar fee, a better and equally versatile monitor is available from Iiyama

IMAGE QUALITY	★★★
CONTROLS	★★★
VALUE FOR MONEY	★★★
OVERALL RATING	★★★

## Sony Multiscan E200



supported resolution is also limited to 1,280 x 1,024 refreshing at 81Hz. However, a setting above this will rarely be needed on a monitor of this size.

As for image quality, the E200 delivers the wonderfully rich colours that we have come to expect from this type of aperture-grille tube. Colour fading is uniform while contrast is particularly good, covering a wide intensity range from the darkest black to a brilliant white. This gives rise to excellent greyscale performance attributable to a near perfect balance that Sony has struck

**SONY REQUIRES** little introduction when it comes to CRTs. Having invented the vertically flat Trinitron tube, it has also brought us a truly flat display in the form of the FD Trinitron. Built around this technology, the Sony Multiscan E200 is an entry-level model and, as such, its specifications are not the highest. Lacking any BNC inputs, the E200 also has a captive D-SUB lead so if this goes wrong, the whole unit will have to be returned. The maximum

glass and beam intensity. The E200 did show some evidence of streaking and ghosting, but this was minimal. Text appears very sharp in all corners of the screen, while reflections are hardly noticeable. Geometry is praiseworthy, but, surprisingly, vertical colour registration was not quite as spot on as the Iiyama screen. However, Sony does give you both horizontal and vertical convergence controls.

Styling is of a typical Sony standard

with the screen surrounded by a narrow and shallow bezel that enhances its apparent size. At first glance, the only control seems to be a power switch, but on closer inspection, you'll find a small four-way joystick facing downwards from the base of the bezel. Moving it will navigate you through the OSD and pressing it makes selections. This is a bit tricky at first due to its light operation, but you soon get used to it.

The Sony Multiscan E200 achieved a slightly higher score in our tests than the Iiyama VisionMaster Pro 410, but not by much. Restrictions to connectivity means that the Multiscan E200 just misses out on our Editor's Choice.

### DETAILS

**PRICE** £276.12 (£235 ex VAT)

**CONTACT** Sony 0990 424 424

[www.sony-cp.com](http://www.sony-cp.com)

**PROS** Image vibrancy and colour purity

**CONS** Captive D-SUB lead and lack of BNC connectivity

**OVERALL** A very competent tube; with a vast heritage behind it. Although it's let down by limited connectivity it's still worth a look

IMAGE QUALITY	★★★★★
CONTROLS	★★★★★
VALUE FOR MONEY	★★★★★
OVERALL RATING	★★★★★





## Taxan Valuevision 1710 TCO99



**THE TAXAN VALUEVISION** range of monitors, as the name suggests, target the value-oriented monitor buyer. However, having the word value in the name of a monitor makes one think that the quality isn't up to scratch even if that isn't the case. Unfortunately, in this instance the quality was disappointing. As the cheapest monitor in the group test, though, value is perhaps apt. The unit is TCO99 certified, so there's no scrimping on emissions

issues. But apart from this, and the overall aesthetically pleasing shape of the fascia, there is little to recommend this monitor. The first problem we encountered involved the setup. The OSD is accessed through four buttons unobtrusively situated on the front of the monitor, and proved easy to navigate. However, when the OSD is used there are problems: first, its presence on the screen causes the image to expand due to the intensity of the OSD; and second, when the brightness and contrast are set correctly and the OSD is switched off, the dynamic of the image (minus the OSD) changes, making the brightness and contrast settings incorrect. In other words, setup can only be done by best guess rather than accurately. DisplayMate only served to further prove the weaknesses of the Valuevision. The display was prone to defocus and blooming. The geometry was adequate, but not nearly as accurate as some of the other models. The biggest failure was, of course, regulation; its failings on all the regulation tests sheds some light

on the OSD setup problems. Also troubled was horizontal line and corner resolution. At 1,280 x 1,024, maximum refresh was 67Hz making the VESA maximum viewable screen resolution only 1,024 x 768. There were things the Valuevision did well, namely a general lack of streaking and ghosting and relatively pure colour representation, but overall this unit did not represent good value for money. We were unable to set up the display correctly, so it's impossible to recommend the 1710, which is a shame when you consider Taxan's usually high-quality displays.

**DETAILS**

**PRICE** £163.32 (£139 ex VAT)  
**CONTACT** Taxan 01344 484 646  
[www.taxan.co.uk](http://www.taxan.co.uk)  
**PROS** Aesthetically pleasing fascia; and good OSD navigation  
**CONS** Appalling regulation reduced setup to guesswork  
**OVERALL** With an OSD that hindered an effective setup, there is little about this monitor to recommend it

IMAGE QUALITY	★★★
CONTROLS	★
VALUE FOR MONEY	★★
OVERALL RATING	★★

## ViewSonic PF775



**EMPLOYING A SONICTRON** aperture-grille absolute flat tube, the ViewSonic PF775 image was pretty impressive from the moment it was turned on. The colours were bright, the image sharp and that was before we had even set it up optimally. The minimal recessing of the screen from the fascia increases the overall flat look of the screen, although the bezel is quite big and square, giving the illusion of a smaller screen size than some units.

The OSD was not the most intuitive system, with two of the four buttons situated below the screen used to select colours, rather than one. Frequent pressing of the wrong select button was a little irritating, but once this aspect was mastered, setting up this display was a simple operation. The OSD has all the necessary options for manipulation to an optimal image – although a curve existed on the top edge of the screen that could not be removed. Intrigued by some of the results on other screens with DisplayMate, we found the ViewSonic to perform fairly well across the tests. The anti-glare coating was good and text was in focus across the screen. The geometry was fine, with minimal pincushion and barrel distortion, although there was some horizontal curvature. The bane of the Taxan, screen regulation, was very good on the ViewSonic, with only minimal movement of the pixel-thick lines that were edging a white flashing image. Overall resolution was good, although horizontal lines were better resolved

than the vertical lines, which were also not wonderfully sharp in the corners. A high degree of gun control was evident in the video bandwidth test, as well as in colour registration tests. Colour purity was commendable, with regular colour across the whole display from each gun. But no monitor is perfect, and the ViewSonic suffered from slight streaking problems, specifically coming from pure white, which streaked in almost every instance. Despite this, though, at £280.82 inc VAT, TCO99 certification, good colours and a fine image, the PF775 is a good-quality monitor.

**DETAILS**

**PRICE** £280.82 (£239 ex VAT)  
**CONTACT** ViewSonic 01293 643 900  
[www.viewsonic.co.uk](http://www.viewsonic.co.uk)  
**PROS** Good focus, regulation and colours  
**CONS** Square bezel gives the impression of a smaller screen  
**OVERALL** A good-quality monitor, only a whisker behind this month's winners. Certainly worth checking out if you're in the market for a 17in monitor

IMAGE QUALITY	★★★★
CONTROLS	★★★
VALUE FOR MONEY	★★★★
OVERALL RATING	★★★★



### Table of features

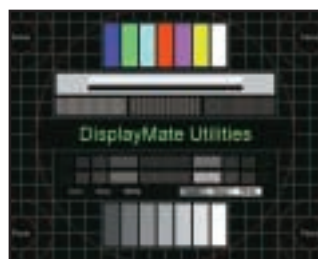


MANUFACTURER	ADI	BELINEA	CTX	HANSOL	IYAMA
MODEL	MICROSCAN G710	10 30 50	PR705F	710D	VISIONMASTER PRO 410
Price (ex VAT)	£229	£260	£189	£179	£235
Price (inc VAT)	£260	£304.33	£222	£210	£276.12
URL	<a href="http://www.adimicroscan.com">www.adimicroscan.com</a>	<a href="http://www.belinea.co.uk">www.belinea.co.uk</a>	<a href="http://www.ctxmonitors.com">www.ctxmonitors.com</a>	<a href="http://www.hansol-uk.com">www.hansol-uk.com</a>	<a href="http://www.iiyama.co.uk">www.iiyama.co.uk</a>
Tube type	FD Trinitron aperture grille	CRT shadow mask	FD Trinitron aperture grille	FST shadow mask	Diamondtron NF aperture grille
Nominal tube size	17in	17in	17in	17in	17in
Actual viewable diagonal	16in	16in	16in	16in	15.9in
Dot/grille pitch	0.24mm	0.26mm	0.24mm-0.25mm	0.25mm	0.25mm
<b>POWER CONSUMPTION</b>					
Power consumption (max)	130w	95w	125w	85w	110w
Power consumption (standby)	15w	Less than 15w	15w	Less than 65w	10w max
Power consumption (suspend)	5w	Less than 3w	5w	Less than 15w	10w max
Power consumption (off)	N/A	N/A	N/A	Less than 5w	5w max
<b>AVAILABLE CONNECTIONS</b>					
USB hub (upstream ports, downstream ports)	1 x U, 4 x D	x	x	x	x
Integrated microphone	✓	x	x	x	x
Video outputs	Captive D-SUB	Captive D-SUB	Captive D-SUB	Captive D-SUB	D-SUB, BNC
<b>REFRESH RATES</b>					
Maximum VESA refresh rate at 1,024 x 768 (Hz)	85	85	85	85	85
Maximum VESA refresh rate at 1,280 x 1,024 (Hz)	85	85	81	85	85
Maximum VESA refresh rate at 1,600 x 1,200 (Hz)	79	77	N/A	75	75
Manufacturer's proposed maximum resolution/refresh rate (Hz)	1,600 x 1,200/75	1,600 x 1,200/64	1,600 x 1,200/67	1,600 x 1,200/75	1,600 x 1,200/75
<b>OTHER INFORMATION</b>					
Dedicated front-panel input select	x	x	x	x	x
Highest emissions compliance	TCO99	TCO99	TCO99	TCO99	TCO99
Dimensions (mm) (w x h x d)	439 x 441 x 441	420 x 428 x 454	418 x 448 x 447	418 x 417 x 419	412 x 424 x 420
Net weight	21kg	18.1kg	20kg	17kg	21kg



### How we did the tests

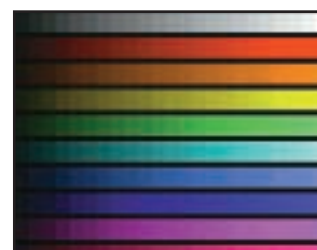
Monitors need a carefully controlled environment for accurate and fair testing. For this group test we used a dual setup of two identical PCs, both equipped with Matrox Millennium G400 graphics cards as they are considered to give the best 2D display performance. The choice of graphics card is important,



DisplayMate Master test

since if the monitor isn't being fed with a high-quality signal it can never give its best. 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. Although this is more pronounced in larger screens, 17in



Colour fading consistency test

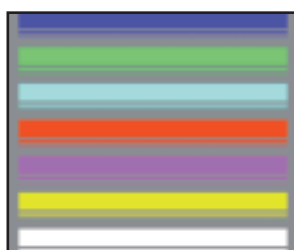


Geometric linearity test screen

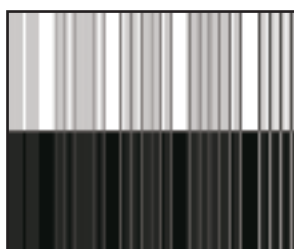




LG	MITSUBISHI	NEC	PHILIPS	SAMSUNG	SONY	TAXAN	VIEWSONIC
FLATRON 795FT PLUS	DIAMOND PLUS 73	MULTISync FE750	107P	SyncMASTER 700IFT	MULTISCAN E200	VALUEVISION 1710 TCO 99	PF775
£290	£189	£259	£265	£239	£235	£139	£239
£340.75	£222.07	£304.32	£311.37	£280.82	£276.12	£163.32	£280.82
<a href="http://www.lge.com">www.lge.com</a>	<a href="http://www.mitsubishi.com">www.mitsubishi.com</a>	<a href="http://www.nec.co.uk">www.nec.co.uk</a>	<a href="http://www.pcstuff.philips.com">www.pcstuff.philips.com</a>	<a href="http://www.samsung.com">www.samsung.com</a>	<a href="http://www.sony-cp.com">www.sony-cp.com</a>	<a href="http://www.taxan.co.uk">www.taxan.co.uk</a>	<a href="http://www.viewsonic.com">www.viewsonic.com</a>
FST 'slot mask'	Diamondtron NF Aperture grille	NF aperture grille	Flat aperture grille	IFT shadow mask	FD Trinitron aperture grille	FST shadow mask	PerfectFlat aperture-grille
17in	17in	17in	17in	17in	17in	17in	17in
16in	16in	16in	16in	16in	16in	16in	16in
0.24mm	0.25mm	0.25mm	0.25mm	0.24mm (diag)	0.24-0.25mm	0.27mm	0.25mm
130w	100w	75w	92w	120w	120w	Less than 100w	130w
8w	N/A	N/A	Less than 11w	60w	15w	Less than 15w	N/A
8w	Less than 15w	Less than 15w	Less than 11w	Less than 15w	15w	Less than 5w	15w
3w	Less than 5w	Less than 5w	Less than 2.4w	Less than 3w	3w	Less than 5w	3w
1 x U, 4 x D	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x
D-SUB	Captive D-SUB	Captive D-SUB	D-SUB, BNC	D-SUB, BNC	Captive D-SUB	Captive D-SUB	D-SUB
85	85	85	85	85	85	85	85
85	N/A	85	85	85	81	N/A	85
77	N/A	77	79	79	N/A	N/A	77
1,600 x 1,200/75	1,280 x 1,024/66	1,600 x 1,200/65	1,920 x 1,440/60	1,600 x 1,200/75	1,280 x 1,024/81	1,280 x 1,024/65	1,600 x 1,200/77
x	x	x	✓	x	x	x	x
TCO99	TCO99	TCO95	TCO99	TCO99	TCO99	TCO99	TCO99
415 x 439 x 435	403 x 420 x 420	403 x 427 x 440	399 x 410 x 419	415 x 438 x 418	404 x 414 x 420	408 x 377 x 425	417 x 430 x 450
21kg	18.8kg	16.5kg	19kg	18.8kg	20kg	15.5kg	20kg



Colour streaking test screen



Video bandwidth test screen

monitors are also affected.

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 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 (EMI): 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 one hour before we commenced testing, which is vitally important for



White-level shift test screen

any monitor, as both shadow masks and aperture grilles tend to expand 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 properly warmed up.

Testing itself was done using the industry-standard DisplayMate utility by Sonera. Utilising a series of test screens (see examples left) each monitor undergoes an exhaustive set of tests and every aspect of image quality is examined, 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 1,024 x 768 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

As the previous pages show, not only are there a lot of monitors to choose from, but there are also a number of factors that will affect that choice. The monitors we tested ranged from the not-so-good to the excellent and the prices ranged from £163.32 to £340.75 inc VAT – a differential that we think you will agree is pretty big: meaning that the cheapest is less than half the price of the most expensive monitor.

The trap is to assume that, because all of the units are the same size, price is a convenient way to help you to choose the monitor you need. Unfortunately, it is not such a simple equation. If only it were the case that the most expensive was the best and the cheapest the worst – although in this case the cheapest definitely came off worst in the group.

What it ultimately comes down to is value for money. Some of the most interesting comparisons were between units of a similar price. Evaluating these was difficult, as we were aware that on a limited budget, performance and features would be the deciding factors.

There are four aspects to each monitor: image quality, controls, value for money, and an overall rating. Image quality was marked on test performance, image sharpness, colour representation, as well as overall impression of the display for general use. The controls score is based on the ease of use of the input method to access the OSD, as well as the navigation of the OSD and general ease of setup. Value for money reflects the price versus the performance,

while the overall score is based on all the criteria.

One thing to bear in mind when purchasing a monitor is that personal preference will obviously sway your choice. We had disagreements about a number of issues with the monitors in the group test: some of us preferred certain fascias and controls, and others were hated and found to be totally unintuitive. However, despite our personal tastes, the DisplayMate tests ensure that there is as much objectivity projected onto the scoring as is possible, with anything clearly failing a test being marked accordingly. Exemplary performance was a little harder to gauge, although we managed to thrash it out between ourselves to pick the winners.

One final thing should be borne in mind if you are looking to buy a monitor. Try to see it in the flesh so you know you are happy with it. After all, you'll be looking at it for a long time, so it's worth getting it right.

## The winners

For the ultimate prize of **Editor's Choice**, the eventual decision came right down to the wire. The final contenders battling it out were the Iiyama VisionMaster Pro 410 and the Sony Multiscan E200. Both units performed excellently, although the Sony did achieve a slightly higher overall DisplayMate score than the Iiyama. In addition to very similar ratings, both monitors occupy the same price bracket, which left us with no option other than to base our final decision upon features.

Both units employ aperture-grille screens, the Sony with its FD Trinitron screen and the Iiyama using a Mitsubishi Natural Flat screen; and both are excellent, with colour, focus and overall image quality first-rate.

Showing greater versatility than the Sony as regards input, the Iiyama entrant comes with BNC input as well as a non-captive D-SUB. The Sony, by comparison, only has a captive D-SUB cable for input from the PC. This may seem a small point to note, but in the event of a cable failure on a monitor with a captive D-SUB, the whole unit has to be returned to the manufacturer, with all the inconvenience that is likely to cause. In the end, therefore, the Iiyama VisionMaster Pro 410 is this month's Editor's Choice, with the Sony Multiscan E200 coming a close second, and winning this test's first **Highly Commended** award.

For the second **Highly Commended** award we looked to the budget end of the group. In general, we found the lowest-priced units did not represent good value for money, due to screen geometry issues, regulation problems and poor overall image quality. One monitor that did not suffer from these problems was the Hansol 710D, with its reasonable performance and sharp, lively screen image. The DynaFlat shadow-mask screen is virtually flat and geometry on the unit is overall quite good. It's certainly not as good a monitor as our first two winners, but at £210 inc VAT, this is the best value for money in the lower price bracket.



*Iiyama's VisionMaster Pro 410 scoops Editor's Choice – an aperture-grille to thrill*



*Sony's Multiscan E200, with its excellent image quality, was pipped at the post*



*At the budget end, the Hansol 710D proved that the shadow mask isn't dead*