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GUIDE
to
HOME THEATER

Electronically Reprinted from June 2003

HIGH-DEFINITION PLASMA DISPLAY

Fujitsu Plasmavision SlimScreen P50XHA10U

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“**R**emarkable things are happening in the plasma-display market . . . a big, flat screen hanging on the wall has universal appeal.”

I wrote those words in my February 2002 review of Fujitsu's first 50-inch consumer plasma display, the PDS-5002. They remain true today, the only difference being that prices of plasma displays continue to drop. That earlier Fujitsu listed for \$15,000. While still far from a bargain, the new Fujitsu P50XHA10U goes for just under \$11,000, and may well represent the state of the art in 50-inch plasma displays.

Regular readers will recall that I was blown out of my chair by the PDS-5002. Of course, visual memory can be misleading, but everything I see in the new model suggests that, in nearly every respect, it's as good as that original design. Is it better? That's impossible to say without a direct comparison, but I'm just as enthusiastic about this new model.

Change is Good

To keep readers who saw my review of the PDS-5002 from drifting off, I'll restrict my discussion of the P50XHA10U's features to how it differs from that earlier design. Those unfamiliar with the original review can refer to the sidebar “Déjà Vu All Over Again,” or, better yet,

check out the review of the earlier model in the Archive section of our website, www.guidetohometheater.com.

Apart from a relocation of the on-set controls to the lower right corner of the front bezel and some small trim changes, the P50 is very similar in appearance to its predecessor, very nearly the same size, and exactly the same weight. There are now component inputs, and the DVI connection is now specified to be HDCP-compliant.

The newer Fujitsu also has a built-in 12Wpc

stereo amp (for use with external speakers, not included), but I suspect that most buyers will ignore it in favor of a separate, home-theater sound system. As with most plasma displays, there is no built-in NTSC or ATSC tuner; the P50XHA10U is strictly a monitor.

The remote differs slightly from Fujitsu remotes of the past. It isn't illuminated, but its simple layout makes it relatively easy to use by touch alone. But don't lose it! Not all of the control functions are accessible from the set's front panel.

SPECIFICATIONS

Plasmavision SlimScreen P50XHA10U

16:9, 50" (diagonal), high-definition plasma display

Native resolution: 1366×768

Video inputs: composite, S-video, 2 wideband component (Y-Pb-Pr), DVI-D (w/HDCP), RGB on D-sub, RS-232

Audio inputs: 3 L/R analog audio

Audio outputs: L/R at 12Wpc (EIAJ) into 6Ω

Display capabilities: SDTV component (480i, 480p), HDTV component (720p, 1080i), composite & S-video (480i)

Current rating: 4.9 amps

Dimensions: 47.8" × 28.7" × 3.9" (W×H×D)

Weight: 99.2 lbs

Price: \$10,999;
optional P-50TT01-SA stand, \$499

Manufacturer

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The P50 offers a range of color-temperature settings, but in an unusual way. There's a Standard setting, specified as 6500K, which can be adjusted up or down in 500K increments to a maximum of $\pm 3500K$. There's also a User setting, which provides separate *overall* adjustment of red, green, and blue. If there are separate adjustments for each color at the top and bottom of the brightness range, they must be in a separate service menu for which Fujitsu declined to provide us access information.

The set provides a so-called Picture Mode adjustment with five settings: Dynamic, Fine, Real1, Real2, and Static. The primary effect of this control appears to be on the set's gamma—the way in which a display's brightness changes as the input level increases. I experimented with the three most promising of these settings—Dynamic, Fine, and Real2—and ended up preferring Real2 for

most of my serious viewing. Dynamic proved a little too punchy, and Fine was often too pallid, although it worked well with some program material and very dim (or no) room lighting. However, none of these options looked their best without proper adjustment of the User Picture controls using a good

REVIEW SYSTEM

Sources

HD Cable: HBO, Showtime, Discovery

HD Theater

Panasonic DVD-RP56 DVD player

Faroudja Digital Cinema Source (768p native rate)

Cables

Monster component video, DVI

setup DVD like *Video Essentials* or *The Avia Guide to Home Theater*, or, even better, a full calibration.

Repeat Performance

I'll first address the traditional drawbacks of plasma displays. Most significant is a limited depth of black, combined with less-than-sparkling shadow detail. The Fujitsu P50-XHA10U didn't eliminate those problems. An image-free screen on this display—as from an open input—didn't look all that dark. It was a deep gray rather than true black, and not the equal of an HD2-chipped DLP projector on a Stewart FireHawk screen, much less a good CRT.

But with most video images, the picture never looked pallid or washed-out, and it had the sort of 3-dimensionality usually found only on displays with exceptional blacks.

Shadow detail wasn't quite as impressive, but the missing detail disappeared into a subjectively deep black, not a foggy gray. In other words, it was a limitation that was easy to ignore 99% of the time. Only on dark images with little inherent contrast did the P50 remind me that it wasn't a CRT, but even on these difficult scenes, its performance was never less than satisfactory. **I've yet to see another plasma display that produces better blacks than this one.**

Then there's false contouring, a common limitation of plasma displays that can cause a stair-stepped, paint-by-numbers appearance in images that should fall off gradually from light to shadow. This can be particularly noticeable on faces, at its worst making live actors look like cartoons. The Fujitsu was not entirely free of this, but I never saw any obvious sign of it on good program material. I did see it once, on a particularly bad, low-quality Replay PVR recording of so-so cable reception, but it was rare even with such poor material. Again, it did not detract from my enjoyment of the picture.

Most significant, the Fujitsu suffered from the Plasma Green Goblin Effect: Certain shades of bright green took on an unnaturally glowing, almost painted look. Brightly lit foliage was the biggest offender, particularly grasses. Most of us know instinctively what greenery should look like, and it doesn't look like this. I was able to soften it slightly by

cutting back a few steps on the color level, but going too far in this direction made the other colors lose their pop. I would prefer more natural greens; this is the one aspect of performance that I would most encourage Fujitsu to work on for the next generation of the P50.

But the P50XHA10U looked *so* good in other respects that you'll risk being \$11k lighter in the wallet by just looking at it in a store. It was amazingly sharp and detailed, but never to an artificial degree. **I've never seen a CRT rear-projection set of anywhere near this size look this crisp.** Video noise—a problem with some earlier plasmas—was not a factor. Apart from those bright greens, the colors were vivid yet natural, and flesh tones—after a good calibration—were as good as I've ever seen from a video display. Viewed side by side with a properly calibrated Hitachi CRT of the same size, the P50's image did show a subtle green shift, but this was almost never evident when I watched the Fujitsu on its own.

The strengths of the P50 were never more evident than on high-definition images. I found myself watching movie after movie on HBO and Showtime HD. The display was so compelling that I even watched such sterling fare as *Ace Ventura*, *Pet Detective*, *Dr. Doolittle II*, *Buffy the Vampire Slayer*, and *Evolution*. I drew the line at *Queen of the Damned*. (Please, HBO/Showtime: I love your HD service, but

let's get more A movies in addition to the occasional *Shrek* and *A Beautiful Mind*!) And the remake of *Gentle Ben* on Discovery HD Theater also looked great, even with all that mountain greenery. Discovery HD puts out a consistently great picture and impressive sound, but one can watch only so many documentaries about Canadian rivers (a *lot* of Canadian rivers). Programming limitations aside, the images produced on the P50 with this hi-def material almost defied adequate description. It was impossible to do anything else while watching. The P50 simply commanded that I dim the lights and watch. Resistance was futile.

The Fujitsu's performance was nearly as good with first-rate DVDs. All of my current reference discs—*The Lord of the Rings: The Fellowship of the Ring*, *Star Wars Episode II: Attack of the Clones*, *High Fidelity*, *Charlotte Gray*, *Monsters, Inc.*—looked as good as I've ever seen them, except for the occasional very dark, low-contrast scene.

I did most of my serious viewing with component (Y-Pr-Pb) sources. With more conventional sources, such as cable or even (as noted earlier) a standard-definition program recorded on tape or PVR with a composite or S-video feed, the images were less amazing. You can't eliminate the problems from a poor source, and a high-resolution display such as the P50 will simply display what you feed it, warts and all. But you don't buy a set like this

DÉJÀ VU ALL OVER AGAIN

The Fujitsu PlasmaVision SlimScreen P50XHA10U can be mounted on a wall or on its own optional stand. All of its inputs are located on the bottom edge, just behind the frame. There are aspect-ratio settings for any commercial program material, plus a setting that stretches 4:3 material to fit the 16:9 screen with minimal distortion at the center of the image.

All input sources are converted to the Fujitsu's native resolution of 1366×768 pixels (progressive), using Fujitsu's Advanced Video Movement (AVM) processor-scaler. The P50 can also accommodate a wide range of computer sources.

All important functions are controlled from onscreen menus, including a 24-frame video mode that deals properly with 3:2 pulldown on film-based sources. There are also four levels of Video Noise Reduction, though I rarely used anything higher than the minimum setting. The set will

not implement any setup change unless you press Enter before backing out of the menu. The controls can be individually adjusted for each input, and there are eight different memories for saving your most frequently used settings. Most of the picture adjustments have numbers assigned to them for accurate resetting, if needed.

Like most plasmas, the P50XHA10U is power-hungry. It uses a cooling fan to take care of the heat generated by the 4.9 amps it consumes (slightly improved from the PDS-5002's 5.7 amps). You can hear that fan if you get within a few feet of the display, but it never bothered me from my viewing position about 8 feet away, even with the sound off.

Plasmas are susceptible to phosphor burn, which can leave a permanent, ghostlike image on the screen from stationary pictures displayed too long. Widescreen "scope" films (i.e., wider than

1.85:1) that don't quite fill the screen from top to bottom did leave a very subtle after-shadow on the Fujitsu's screen after about an hour, but this disappeared with a few minutes of full-screen use. The P50's picture-orbiter function moves the image around by a few pixels (not enough to be clearly visible), but this functions only with an RGB input.

To minimize the risk of burn-in with any phosphor-based display, whether CRT or plasma, avoid excessive contrast settings, extended display of stationary images, or material with bright, stationary logos. Avoid spending an excessive amount of time watching aspect ratios that don't fill the screen—for example, day after day of watching standard 4:3 programming at high contrast levels. You don't need to be paranoid about this, only aware and cautious. The same cautions apply to a CRT set such as a rear-projection display.—TJN

to view nothing but shows recorded at the slowest speed on a PVR. I found the picture on such material watchable, particularly with the noise filter turned up a bit, but this by itself wouldn't justify the set's price. However, even apart from that sexy, hang-on-the-wall thing, the P50 made an irresistible case for itself with hi-def and DVD sources.

While I was unable to try a high-definition DVI source with the P50, I did briefly try DVD through a DVI connection, courtesy of Faroudja's Digital Cinema Source, a combined player-scaler configured to operate at the 768p native rate of the P50. It worked superbly—though it required significantly different Brightness and Contrast settings than the component feed. It will take a lot more watching of this and other equipment before we can judge whether or not DVI offers significant performance advantages. It looked great here—but then, so did a component connection from far less ambitious and expensive players.

Fujitsu's AVM processor-scaler was every bit as effective in the P50XHA10U as it had been in the PDS-5002. Apart from occasional twittering on such fine horizontal details as venetian blinds (a problem with most dis-



plays), I was never distracted by scaling artifacts. The scaler's 24-frame film mode worked as advertised, properly dealing with the 3:2 pulldown inherent in film-to-video transfers. There was no Auto setting to automatically engage the Film mode when it detects the "film" flag in properly coded material, but I left Film mode on all the time and never detected a problem.

It's the Same Old Story

When I reviewed the Fujitsu PDS-5002, I said: "If I had the cash and was looking for the best 50-inch picture I could find, the Fujitsu PlasmaVision PDS-5002 is the one I'd buy." I'd say the same about the Fujitsu PlasmaVision SlimScreen P50XHA10U. You'll get better blacks from a CRT. And for roughly the same price, you can get a big, immersive, nearly as crisp image from one of the new DLP projectors with a 16:9 HD2 chip. **But if you want a one-piece display that will produce a vivid, compelling picture in everything from average room lighting to full darkness while taking up virtually no space, and that's big enough for a real home-theater experience, you're unlikely to do better than this one.**

CALIBRATION

Prior to calibration, the Fujitsu PlasmaVision SlimScreen P50XHA10U's Standard color-temperature setting, in the Fine picture mode, produced a color temperature of 10,500 kelvins at 100 IRE and 9100K at 30 IRE. (Pre-calibration measurements are not plotted in the accompanying graph.) Backing off the color-temperature setting to -2500K reduced that to 7600K at 100 IRE and 6200K at 30 IRE.

I experimented with three of the P50's gamma settings: Dynamic, Fine, and Real2. Of these, Real2 and Dynamic produced the best post-calibration gray-scale results (see graph). The Fine mode, despite its less-than-ideal gray scale, had better black-level retention than Real2. The bottom line: I alternated between Fine and Real2, depending on the program material. I didn't often use Dynamic with high-quality program material, however; it looked a little too punchy and realer than real—or realer than reel (pun intended).

The gray-scale results shown in the graph were very close to the correct coordinates for true D6500, with the exception of the readings above 60 IRE at the Fine setting. The red ($x=0.643$, $y=0.348$), green ($x=0.286$, $y=0.647$), and blue ($x=0.153$, $y=0.079$) color points of the display indicate a red shifted slightly toward orange (a very common deviation in consumer displays), blue marginally shifted to greenish-blue (but not visibly so), and green shifted into a deeper green than the standard. The green deviation was the most pronounced, which may indicate why bright greens could look too "electric" on the P50.

Using the test patterns on the *Video Essentials* DVD, I measured contrast three different ways, with the Picture controls set for the best results with real program material and the gray scale calibrated. Comparing a full-screen 100

IRE flat field (a full white screen at maximum brightness, such as chapter 18-14 on *Video Essentials*) to a black screen (the set turned on but switched to an open input), I obtained contrast readings of 743 in the Real2 setup, 1055 in Fine. Next, using the averaged readings from the checkerboard pattern on *Video Essentials* (chapter 17-28), I measured ANSI contrasts of 170 in Real2, 168 in Fine. And comparing the widest maximum to minimum adjacent values in the checkerboard (this is how contributor Peter Putman takes his peak contrast measurements), I got 199 in Real2, 183 in Fine—very close to the ANSI average result. —TJN

