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September 2009 Volume 16 No. 9

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Preview

ON THE COVER LG, Panasonic, Sony, Toshiba, and VIZIO face off for the title of best small flat panel. Additional gear from Acoustic Energy and Denon. Screen images courtesy of Everett Collection.

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web

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16



20



20



39

20

Five on the Line



COLUMNS

Home Theater University: Spears and Munsil
High Definition Benchmark. by Kris Deering

16

Curtain Call

Answers, Man! by Michael J. Nelson

82

FEATURES

Five on the Line
Face Off at 40" to 42".

20

Home Theater Design

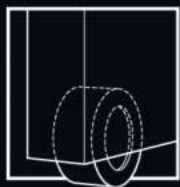
Homeowners work around two difficult tree trunks to create a stunning home theater.

39

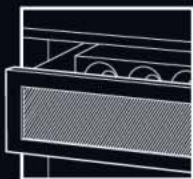


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76



76

DEPARTMENTS

Prologue A Face Off and some shrewd choices.
by Shane Buettner

8

Letters Are you willing to put your plasma's picture on the line? How to be burn-in safe.

12

Cinema Scope

Coraline, *Dr. Strangelove*, *Knowing*, and more of the hottest new titles on Blu-ray.

70

Top Picks

Not sure what to buy? Check out this exclusive listing of our reviewers' recommended gear.

76

Dealer Locator Before you run out to buy a product we've reviewed, find a quality dealer near you.

78



70

FROM THE

Test Bench

HIGH END

P46-50

Denon AVP-A1HDCI Surround Processor and POA-A1HDCI Amplifier

Both guns blazing.

P46

MIDRANGE

P52-64

B&W Panorama Soundbar Speaker

5.1 channels in one.

P52

Oppo BDP-83 Universal Blu-ray Player

Dawn of a Blu universe.

P56

Acoustic Energy Radiance 1 Speaker System

Lord of the ring.

P62

ENTRY LEVEL

P66-69

Yamaha YHT-591 HTIB

Home theater comfort food.

P66



46



62

hometheatermag.com

on the web

VISIT THE "HOW WE TEST" link on our Website for a detailed explanation of our testing regimen and a list of our reference gear. www.hometheatermag.com

www.storemag.com



Systems Integrator: Erskine-Group
Masked 14' CineCurve front projection screen with Microperf X2

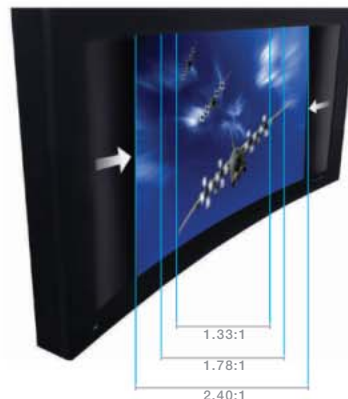
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The LG TV with exclusive TruMotion 240Hz is different from other 240Hz technologies. Others use an interpolation system which creates "pseudo frames" between each true frame. These interpolated frames are the TV's best guess as to what should be there, however, it could also produce unwanted picture artifacts.



LG TruMotion uses a different technology. By flashing on and off, the backlight produces actual black frames between true frames. Therefore, this method uses fewer processing steps and doesn't rely on "pseudo frames." The LG LCD TV with TruMotion 240Hz. Unsurpassed motion detail that lets you see clearer than ever before.



HOME THEATER Prologue

BY SHANE BUETTNER, EDITOR

SEPTEMBER 2009

Crunch Time

A Face Off and some shrewd choices.

It's impossible to pick up any printed publication these days and not observe the signs of the economy's effects on the finished product you hold in your hand. And certainly, after picking up the August and September issues of *Home Theater*, you'll see the evidence in the weight and page count. But what we on the editorial staff focus on is how hard each and every one of our pages works for the reader. This issue exemplifies our answer to this challenge and shows why these are the hardest-working pages in the biz.

This month, we've got 11 in-depth product reviews, including a report on a new universal Blu-ray Disc player from OPPO that's not only flawless, it's a legit alternative to the venerable PlayStation 3. And not just in the feature set, but in every aspect of performance, including speed and reliability. Finally a standalone player that stands tall next to the PS3!

Of course, with our September issue, we're saying hello to the fall, football, and flat-panel HDTVs. Five of 'em in a Face Off at 40 to 42 inches. Our Face Off of smaller sets isn't loaded with as much bleeding-edge technology as the sets from the February battle royal, and as a result this group isn't as entrenched in the high-end price range. But as always, there are a couple of surprises.

A few venerated names have dominated the market on setup and evaluation test discs since the DVD years. While the names Stacey Spears and Don Munsil might not be familiar, their *High Definition Benchmark* Blu-ray Disc, reviewed in this issue, will hopefully change that. We've been using test patterns and clips created by Stacey and Don for display setup and evaluation for years. Their current set of HD tests on Blu-ray is the foundation for the Video Test Bench results you read in our magazine for Blu-ray Disc players, A/V receivers, surround processors, and HDTVs. But what impresses me most about the *High Definition Benchmark* disc that's now available to consumers is that it's not just for geeks like us at *HT*. I'm not sure the process of properly setting up a display's user-accessible picture adjustments has ever been more clear and easy, even for newbies. For those who wish to drill down farther into tweaker territory, the tools are there, but just about anyone can grab this disc and get the basics right in a short order. I've been in enough homes to know there are a lot of people who've bought a sweet HDTV and are just a few smart button pushes away from a terrific picture. In these challenging times, getting genuine improvement from your system for \$25 is a pretty shrewd investment.

Shane Buettner



We focus on how hard each and every one of our pages works for the reader. This issue shows why these are the hardest-working pages in the biz.

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Letters

WE WELCOME QUESTIONS AND COMMENTS. E-mail them to htletters@sorc.com. Please note: Be sure to check the FAQ page on our Website (www.HomeTheaterMag.com) to see if we've already answered any questions you might have. Questions about the features and functions of a particular product are best directed to the manufacturer. Questions about what product you should buy are best directed to a dealer who knows all the details of your system, your preferences, and your personal habits. All submissions are considered the exclusive property of *Home Theater* magazine and Source Interlink Media. Due to the volume of mail that we receive, we regret that we cannot respond to every letter.

Don't Burn, Baby

I read with interest the letter from Phil Fritts titled "Burn, Baby, Burn" in the June 2009 issue of *Home Theater*. His concern was related to plasma burn-in. I decided to purchase plasma over LCD, as the issue that LCDs have with off-axis viewing is a deal breaker to me. Why purchase an expensive and beautiful large display that only two or three people (viewing from the center) can enjoy? I recently purchased a Panasonic 50-inch plasma display due in large part to reviews in *Home Theater*.

As I was upgrading from a 36-inch CRT, I was excited about this new purchase but also very concerned about burn-in. So I did a little investigation. On Pioneer's Website I came across a white paper that was based on a study of the burn-in issue. Much of what was said in this report has been discussed a lot over the years, but two things caught my eye:

1) While there can be temporary image burn-in with plasma displays, it is never permanent. Simply using the display for everyday viewing tends to clear any images that might exist.

2) The black level of plasma displays actually improves with age.

I have had my display for over five months and have used it quite a bit, and I've never seen an issue with image burn-in. I always watch content (including long movies) in its original format, which means I watch a lot of letterboxed and pillarboxed content. I look at the display with a very critical eye and have never seen any evidence of image retention.

I would like to hear any thoughts you might have.

George Winter
San Jose, CA

I have not read this report, but it has never been my understanding that phosphor-based displays are completely immune to burn-in. This is from the user manual for the Pioneer Elite KURO PRO-150FD plasma that's in my living room:

"All phosphor-based screens can be affected by displaying static images for a prolonged period. Plasma displays are no exception."

Further: "The following are typical effects and characteristics of a phosphor-based matrix display and as such, are not covered by the

manufacturer's limited warranties: permanent residual images upon the phosphors of the panel."

We at HT stand by our original recommendation that reasonable but not excessive precautions to avoid burn-in are prudent with plasmas. As to your second item, apart from gradual wear on the phosphors, which may subtly dim the overall image with age, we can't think of any mechanism that will improve a plasma's black levels over time.—SCB

Color Me Frustrated

When I read of the ever-expanding array of bells and whistles that manufacturers of HD display equipment provide, I find it a bit odd that they still ship equipment without accurate color adjustments. The calibration process is defined by adjusting a set of parameters to match a set of color measurements to a standard set of values. Setting up a test bench with a computer to automate these adjustments can't be beyond their abilities, so why have they not done this? This may be too much to ask for the economy models, but how can they justify shipping a flagship model with less than perfect adjustments?

Dennis L. Green

A hands-on, aftermarket calibration can take hours, and it involves a lot of judgment calls. This is something that no automated test, particularly one that must be done quickly enough to make economic sense, can do as well. The adjustments are often interactive, requiring a lot of back and forth until the end result is as good as possible. However, that's not to say that most manufacturers couldn't do a better job than they do at present. But it's likely much harder to set up such a program on an assembly line than we might imagine. Prior to testing, the set should be broken in to a point where its operation is

reasonably stable. It should be warmed up for at least 30 minutes before the test. It must also be designed so that its service port(s) can be used for the appropriate automated adjustments.

Proper testing must include aligned and calibrated optical sensing devices used in a dark environment. These devices can take several seconds to take each measurement, and a thorough calibration usually requires dozens of measurements. The test designer must also decide which of the set's picture modes to use, since a calibration made on one mode doesn't necessarily carry over to another. If you calibrate them all, it will add considerable time and expense to the test. All the preset video controls for those picture modes must also be individually tweaked; they are rarely accurate out of the box. Most sets currently roll off the line in a state that renders them watchable enough for the 90 percent of buyers who don't really care if their set is accurate as long as it looks good.

Perhaps the best we can hope for is a full set of useful calibration controls for those who want the best picture their sets can produce and are willing to pay for an aftermarket calibration. The existence of these controls in any given model is a hit-or-miss proposition. While the rise of independent testing and certification organizations such as THX is a hopeful sign, even THX acknowledges that there could be significant out-of-box calibration variations in the models it certifies.—TJN

CORRECTION

HT Labs Measures

REVEL ULTIMA2 SALON2 SPEAKER SYSTEM

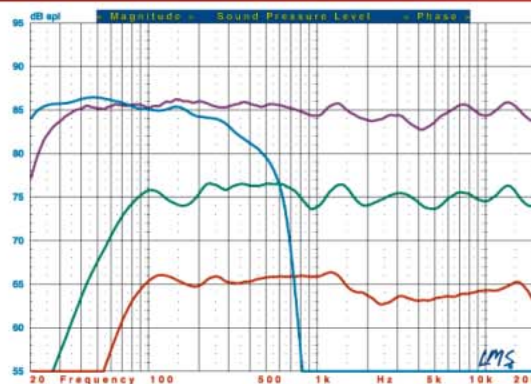
Unfortunately, the low-frequency extension of the Revel Salon2 was understated in the measurement box accompanying the review in our July 2009 issue. Many thanks to Kevin Voecks, Allan Devantier, Mark Glazer, and Greg Timbers at Harman for their help in determining that a recalcitrant

amplifier in our measurement system needed to be replaced.

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the Salon2 L/R (purple trace), B15a subwoofer (blue trace), Voice2 center channel (green trace), and Gem2 surround (red trace). All passive loudspeakers were measured with grilles at a distance of 1 meter with a 2.83-volt input and scaled for display purposes.

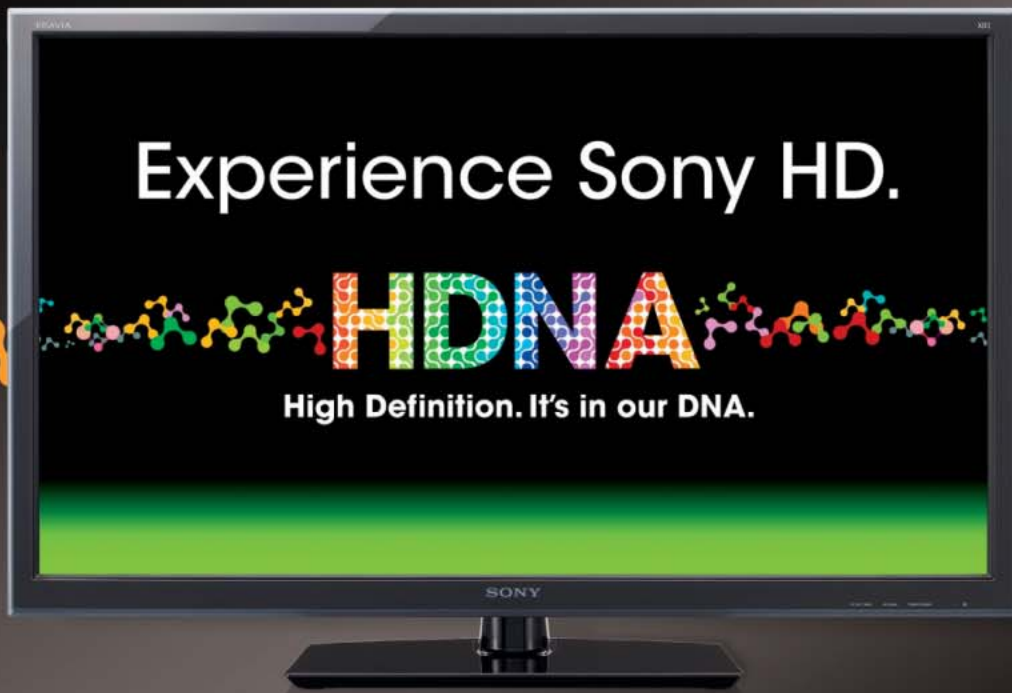
The Salon2's -3-decibel point is at 25 hertz, and the -6-dB point is at 21 Hz.—MJP

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HOME THEATER University

BY Kris Deering

Spears and Munsil

High Definition Benchmark

One of the questions I hear most from readers and enthusiasts alike is, "How can I make my video better?" Most of the time, they're looking for advice on upgrading their Blu-ray player, DVD player, or display, but more often than not, you can make a lot of worthwhile improvements by simply tweaking your existing setup. You wouldn't believe how often I visit someone's home theater to find that their equipment is set up improperly, crippling their experience. A proper setup can often provide even more improvement than component upgrades.

Unfortunately, the tools you need to correctly set up your components have been pretty sparse. And now with Blu-ray in full swing, the selections are even smaller. In steps Spears and Munsil's *High Definition Benchmark Blu-ray Edition* disc. This disc is available directly from www.spearsandmunsil.com for \$25. It offers an incredible array of test patterns and instructions that help you dial in your display settings for a more accurate picture. It also lets you test the quality of your components' HD video processing in a way that's similar to how we test here at *Home Theater*.

Not Just Pretty Pictures

Stacey Spears and Don Munsil designed the *High Definition Benchmark* disc. Both work at Microsoft in various video groups, and both have been in the video business for quite some time. You may even remember them as the founders of the "Progressive Scan Shootout" and "DVD Benchmark" over at Secrets of Home Theater and High Fidelity, the Website where I cut my teeth as a video reviewer. The test suite they developed there redefined the performance standards for

progressive-scan DVD playback. *High Definition Benchmark* aims to do the same for Blu-ray players, A/V receivers, and high-definition displays, in addition to offering patterns for display setup.

The disc's Demonstration Material section features a great montage of images from the beautiful Pacific Northwest. You're treated to some beautiful coastal scenery from the Astoria, Oregon, area and some extensive coverage of the Seattle area as well. Spears shot all of the montage footage himself on the new RED ONE 4K HD camera. This makes this the only Blu-ray Disc I know that has test material captured native at 4K (downconverted, of course, to 1920 by 1080 for the Blu-ray transfer). This makes it a great piece for video demonstrations and showing off your home theater.

Unlike most Blu-rays out there, *High Definition Benchmark* offers direct access to the top menu, which lets you bypass the opening montage and production credits. If you want to fire up the disc just to do a touchup on your HDTV, you can get right to it. The main menu offers direct access to all of the video evaluation patterns. You can also navigate a top menu that provides video processing tests and access to the montage. Although the disc doesn't provide audio test and setup signals, it includes the latest DTS-HD Master Audio and Dolby TrueHD trailers.

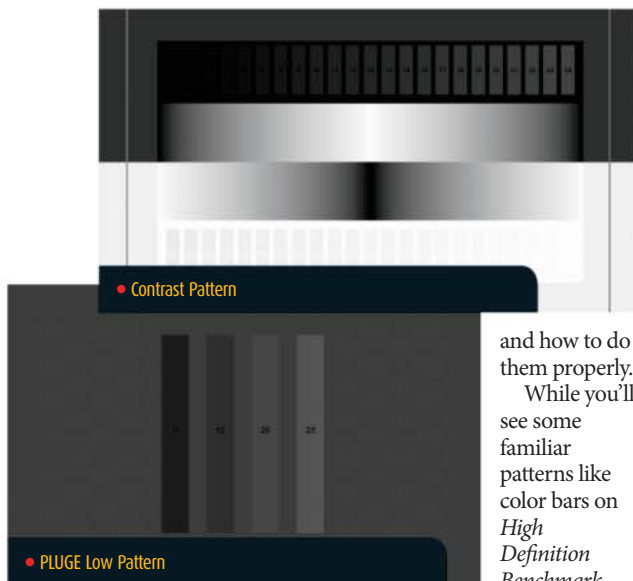
The Setup and Evaluation menu has an extensive list of patterns you can use to make the most of your display and player settings. Once you select a starting point, you can navigate from the

directional menu navigation keys as opposed to the standard chapter skip buttons. So you never have to move your fingers away from the navigation buttons on your remote. You also don't have to hit the Pause button to hold a pattern on the screen. You can press the right or left navigation keys to move to the last or next pattern or you can press the up button to access a help screen that shows information on the current pattern and how to use it. These onscreen guidelines typically provide a written description and graphics with examples of how to adjust the display with the pattern. When you press the down button, the help screen disappears. The navigation is intuitive, and the help screens make this a great tool for the pro as well as the novice who may not know where to start.

There are some other HD setup discs on the market (such as *Digital Video Essentials: HD Basics*), but most of them are geared toward aftermarket display calibration. While this disc does have some basic calibration patterns, its main focus is to help average consumers dial in their displays without any test equipment and help people understand why these changes are important



• The main menu lets you access all of the video evaluation patterns.



and how to do them properly.

While you'll see some familiar patterns like color bars on *High Definition Benchmark*,

the disc also includes newly designed patterns that do a far better job with basic display adjustments and settings. This includes the always frustrating brightness and contrast settings, which establish proper black and white levels. Correctly setting these two parameters is paramount for the best performance from your display. Some brightness- and contrast-adjustment patterns leave too much room for error and interpretation, but that's not the case here.

The Brightness Control sets the level of black on your display, which we sometimes call the black floor. In addition to the standard black stripes, the PLUGE Low pattern also features a clever checkerboard design. In order to set brightness in the past, you often needed a disc player and display that could pass below-black information (encoded below the digital value 16, which is the correct black floor). If you have this below-black information, you can set your display's brightness to the point where the below-black information in the pattern is invisible. This disc uses a different method that gives you a better reference for black. You don't need a display or player that passes a below-black PLUGE to set it correctly. The checkerboard in the PLUGE Low pattern is encoded with squares at digital 16 and digital 17, which makes it a snap to get the proper setting. You simply lower the brightness until the brighter squares (digital 17) disappear, and then you raise it up until they become visible again. This should be within a click or two.

It can also be tough to adjust contrast because not every display treats contrast control the same. The Contrast pattern here works in a similar fashion to PLUGE Low but for your display's white levels. Like black, white is encoded at specific

digital levels, with digital 235 being the standard reference for white. However, unlike black, a proper monitor setup doesn't clip (render invisible) the head room above reference white. This head room extends to the digital value of 255. If you set the contrast too high, you'll get clipping of these signals. *High Definition Benchmark's* Contrast pattern features vertical stripes with easily identifiable numerical values that extend throughout the white range. This lets you see exactly where your display is clipping as you adjust its contrast control. Since some displays never clip above white, this lets you see how much color shifting you induce in the gray scale as you drive up the contrast. It also shows any banding in the center area. The goal is to maximize your contrast level without adding these artifacts.

To set your contrast properly, you should retain all of the head room in the Contrast test pattern, meaning you should see the stripes all the way up to digital 253. But I realize that some people season to taste. We don't recommend that you set your display's contrast any higher than clipping at digital 240. You should also keep an eye on banding when you set the contrast. You can't get the full picture by simply looking at the clip points. To make sure there's no banding in the gray scale, look

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at some clips above and below the clip point you choose. A lower clip point (say, 240) provides a bit more contrast and light output at the expense of overall accuracy. *[In theory, there should be no information above a digital value of 235 in your program material, so clipping slightly above that figure should have no negative consequences. In practice, some programs do have information above that level. Nevertheless, count me among those who often find it too conservative to extend the clipping level to above 240, particularly with projectors that need extra brightness.—TJN]*

Some other great patterns are the Luma and Chroma Multibursts. We use these patterns to evaluate Blu-ray players and displays for resolution with 1080p signals. These patterns feature blocks that will be visible if your display or source components roll off the fine detail that full 1080p can provide. They can also show the nasty side effects that so many display enhancements can cause. Many so-called enhancements can have pretty severe side effects with fine detail. You can readily see this if you look at these patterns and engage the adjustments.

The disc also has patterns to help you set the sharpness, check to see if

probably thank both Spears and Munsil for this!

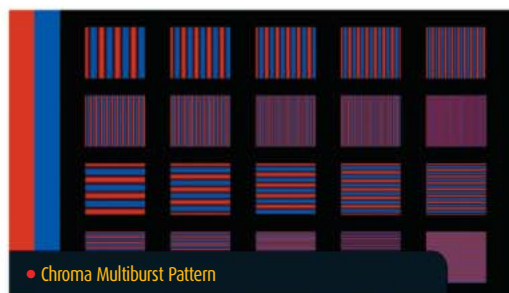
Getting the Frame Right

While most Blu-ray software these days is encoded as 1080p/24, a number of titles are still encoded as interlaced 1080i HD. This includes some TV shows (*South Park*), concert videos, and even a few feature film titles (*Short Circuit*). While this represents a very small part of the market, the list may continue to grow.

Spears and Munsil have created a great set of deinterlacing patterns that evaluate how well your Blu-ray player handles the conversion from interlaced to progressive playback (1080i to 1080p). You can also use these patterns to evaluate how well your display, AVR, or surround processor handles this conversion. You may find that your TV does a better job than your player. This shows you exactly what does what in your system so you can make informed decisions to maximize the performance of every component in your video chain.

If you want to test your Blu-ray player's ability to convert 1080i to 1080p, set it for 1080p output. But if you want to test the HD video processing in your A/V receiver or HDTV, make sure you set your Blu-ray player's output to 1080i. Most components show you the input resolution they're receiving so you can verify.

The disc includes tests for both film sources and video-based material. Film sources are typically shot at either 24 fps (movies) or 30 fps (concerts, videos, TV shows). If they are encoded as 1080i/60 on a Blu-ray Disc, different cadences need to be applied to play them back at 1080p. For a 24-fps source, a cadence of 3:2 is applied, while 30-fps sources use a cadence of 2:2.



• Chroma Multiburst Pattern

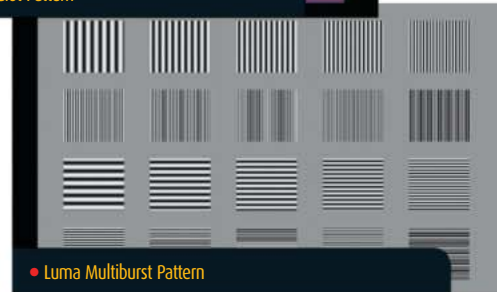
This disc includes tests for both. It also provides a host of other mixed cadences for various issues with cable broadcasts.

On the video side, there's no set cadence, and the player has to choose where to apply different types of basic deinterlacing on the screen. This is called motion-adaptive deinterlacing. This mode applies bob processing to moving objects and a simple weave to static parts on the same frame. There are also different solutions that do better with diagonal line processing that you can evaluate.

These patterns are the same patterns we use for our HD deinterlacing tests here at the magazine for Blu-ray players, A/V receivers, surround processors, and displays. Now you can make your own test regimen with the same tools we use.

Wrapping It Up

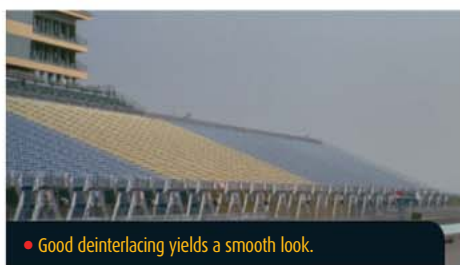
Spears and Munsil's *High Definition Benchmark* Blu-ray Disc represents the pinnacle of setup and evaluation discs. You can use this tool to get the most out of your video components, and you'll probably learn a lot while you make the improvements. You won't find a more detailed, yet easy to use, setup disc out there. If you have a Blu-ray player, you should have this in your library. 📀



• Luma Multiburst Pattern



• Poor deinterlacing produces a moiré pattern.



• Good deinterlacing yields a smooth look.

your display is clipping any pixels from the active image, and evaluate a player for signs of the chroma upsampling error. This was a very common trait with progressive-scan DVD players that can also manifest in Blu-ray players. Some early Blu-ray players had chroma upsampling errors, but the latest players have been devoid of the issue. You can



• Lines on the ship show jaggies.



• Here, we're jaggie free.



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5 ON THE LINE

Face Off at 40" to 42"

BY Thomas J. Norton

If you're like most *Home Theater* subscribers, you're probably opening this issue while it's still beach-blanket and backyard-barbeque time (say that three times fast). But fall will come soon enough, and it will bring a new television season, plus football, the World Series, and Blu-ray releases of all the summer's hot (and not so hot) movies. In other words, it's time to think about moving out your clunky old rear-projection set and getting a new-fangled flat panel.

Our last *Home Theater* Face Off (February 2009) leaned heavily toward larger, high-end sets. The challengers this time around cover the popular 40-to-42-inch (diagonal) range. While they're hardly cheap, they're less likely to break the old piggy bank.

The lineup here includes four LCDs and one plasma. The Sony BRAVIA KDL-40V5100 is the sole 40-inch entry. The VIZIO SV420M, Toshiba REGZA 42ZV650U, LG 42LH40, and Panasonic VIERA TC-P42G10 plasma are all 42 inches.

Move Me

The LCD sets here all use conventional CCFL (fluorescent) backlighting. They also operate at a 120-hertz refresh rate, with optionally selectable frame interpolation. The Toshiba takes this wrinkle a step further with its own variation on 240-Hz operation.

You may or may not like the frame interpolation process, which reduces motion blur. The latter has been a persistent problem with LCDs, although it has been significantly reduced in recent years, even without interpolation. The smoothing that interpolation provides can make film-based sources look like video, and there are mixed opinions of the process, even here at *Home Theater*. I switched this feature off during the group test and only demonstrated it to the panel members after they had completed their ratings. Assuming you like it, it worked well on all of the LCD sets here.

The Panel

Our judging panel consisted of Shane Buettner, editor of *Home Theater*, Scott Wilkinson, editor of our online sister publication, *Ultimate AV*,

Claire Lloyd, *Home Theater's* executive editor, and *Home Theater* contributors John Higgins and Debbie Stampfli. I was the test's show runner, so I didn't act as a judge. But my comments on other performance issues and features that were not specifically addressed in the group judging session are sprinkled throughout this report.

Studio and Setup

The five sets were arranged in a row with a gentle arc and camouflaged to conceal the brands and models. The panelists shifted seats and viewing distances frequently during the test to judge various aspects of each set's performance.

HDMI was used almost exclusively. We alternated between two Samsung Blu-ray players, the BD-P2500 and BD-P3600. The total cable lengths were about 10 meters from the sources to the sets, including the short lengths from the sources to the ACCCELL four-in/eight-out HDMI switcher-splitter used to drive all of the sets simultaneously. All the cables were from Monster Cable's 1000hd series, and we encountered no problems from the unusually long HDMI runs.

The studio room we used for the tests is completely finished (walls, ceilings, and floor) in a dark, neutral gray. The panelists evaluated the sets mostly in total darkness, although I turned on the room's overhead lights and ran a few clips as well. They did affect the sets, but this test was not part of the scoring. The Panasonic's screen (when off) was closer to a matte gray than the darker tint of the others. This grayness was invisible when viewing an image in the darkened room. But when the lights were on, particularly overhead lights near the set, the reflections from the gray screen raised the Panasonic's subjective black level, which seriously compromised its outstanding dark-room performance.

We tested all of the sets in their most film-like picture modes, with the standard video controls adjusted for the most accurate image. I'd fully calibrated the sets using their white balance controls to dial in the color temperature. I used the color management controls, if provided and needed, to get as close as possible to the correct Rec.709 HD color gamut.



The LCDs' peak whites were reduced to the desired level by their backlight controls. These sets could be driven to even higher brightness than we used in the test, but these higher levels only make sense in a brightly lit room. Even at the modest brightness I chose for the test in our darkened studio (just over 25 foot-lamberts), no one complained that the images weren't bright enough.

The Program Material

All of the program material for the group tests was high definition, on Blu-ray Disc. I showed short clips from each of the following discs: *Seven Years in Tibet*, *The Dark Knight*, *Casanova*, *Fly Away Home*, *Spider-Man*, *Stargate: The Ark of Truth*, *King Kong* (2005), *Mission: Impossible III*, and a video-sourced excerpt from a Panasonic VIERA demo disc. The selections included a roughly equal mix of bright and dark scenes. The first five of these discs were 1080p/24 and played at that rate. The last two were either native 1080i (the Panasonic disc) or converted to 1080i by the player (*M:i:III*) to test for possible HD deinterlacing artifacts.

The Judging

Our panelists judged the sets in four specific performance categories: black level, shadow detail, color, and resolution. The judges rated them on a ten-point scale. After I averaged the scores (with equal weighting), I converted the raw scores to a five-point scale for our five-star rating system and rounded up or down as needed to the nearest half star.

flagged—that is, they have a digital code in the metadata that tells the set if the disc has been mastered with 3:2 pulldown and should be processed accordingly—some DVDs are not. A set should be able to recognize and deal with unflagged 3:2 pulldown.

The VIZIO was the only set that showed minor deinterlacing artifacts in the angular



The panelists judged a fifth category, value, only at the end of the testing, when I revealed the price of each set. The value ratings were kept separate and not included in the overall performance average.

The ratings in this test are relative to the price range covered, not absolute. A 4.5-star rating here is not equivalent to a 4.5-star rating in our last Face Off since nearly all of those sets fell into the high-end price range and these sets do not. Nevertheless, while the top sets here may not be high-end designs, some of them can most definitely play one on TV.

The brackets you'll see in the quoting of the judges' comments indicate words that I inserted to make the comments more readable and identify sets that were referenced in the written comments only by letters (since the judges didn't know which set was which at the time of judging).

SD and Other Random Thoughts

While the group test did not include any standard-definition material, I spent some time in the days following the panel test checking out the sets' performance on a variety of 480i DVD sources. These included not only dedicated 2:2 and 3:2 pulldown tests, but also a 4:3 disc (the 1951 version of *The Day the Earth Stood Still*), the original 2.35:1 letterboxed DVD release of *Titanic*, and a 16:9 enhanced DVD (*Gladiator*).

I had no complaints about any of the sets' overall SD picture quality. But there were some oddities. The Panasonic and Toshiba both failed a 2:2 test of a slow pan over trees and a garden lattice, and the Panasonic and Toshiba failed an unflagged 3:2 pulldown test. While all Blu-ray Discs are properly

details of the (computer-generated) ship gliding past the camera in *Titanic* (chapter 7). This is an extremely difficult deinterlacing test in a disc full of them.

While the Panasonic plasma came up to full brightness almost immediately when I turned it on, the LCDs ramped up slowly and were well below their full levels even after 5 minutes. However, within 30 minutes, all of them were within 10 percent of their calibrated brightness levels.

The sets' power consumption is shown in the accompanying Video Test Bench Charts on the following pages. I took these measurements in the conservative light output settings we used for the testing. I took the measurements for both a 100-IRE window and a 100-IRE full white field. The window reading is more representative of average program material.

Several of these sets offer optionally selectable variations of dynamic contrast under a variety of creative names and often with a choice of settings. I left all of these off for the formal group test. It's our position that if any of these enhancements actually improve a set's accuracy, rather than simply acting as band-aids for its weaknesses, they should be a standard and non-defeatable part of the basic design, rather than optional features.

Nevertheless, for the sake of completeness, I did check the various dynamic contrast enhancements in the days following the group tests. Did they help? Subjectively, on some of the sets, yes—to a degree. Would they have taken their host sets up to a level that would challenge the two top scorers (which either did



not have this sort of feature or had it and didn't need it)? Unequivocally, no. More on this in the individual reviews.

All of the sets except the VIZIO offer features that automatically adjust their brightness depending on the lighting in the room. We didn't use these in our tests, and I generally don't recommend them for serious viewing.

None of the remote controls are likely to win Remote of the Year from Remotecentral.com. None of them had backlighting for all of the set's important functions. (The Panasonic was the most generous here, with illuminated channel and volume controls.) But I had no problems or issues with any of them.

Finally, we didn't test the audio on these sets. It's rare that a flat panel offers anything special on the audio side (the Toshiba does feature Dolby Volume). A random check suggested that the sound on these sets lives up to the middling level of most of their predecessors. That's OK for casual use, but we assume you'll be adding an external audio system to your shopping list—if you don't already have one.

Let it begin...

Toshiba REGZA 42ZV650U LCD HDTV

PRICE: \$1,300 **AT A GLANCE:** 240-Hz-like operation with 120-Hz refresh • Outstanding calibration adjustments • Sub-par contrast and black level

If any of the sets here offers a list of features that's often lacking in far more expensive sets, it's this one.

The Toshiba includes full color temperature adjustments and Red-, Green-, and Blue-Only modes for properly adjusting the color and tint controls with a suitable test pattern. It also has a full (and I mean full) color management system and 240-hertz operation—sort of (more on this below). And this doesn't even begin to address its slew of other features, some useful, others not so much.

Behind the Curtain

The Toshiba's setup controls are far above the norm. Its color management system—in Toshiba-speak, ColorMaster—is one of the most complete we've seen. It offers Hue, Saturation, and Brightness controls for all six primary and secondary colors (red, green, blue, yellow, magenta, and cyan).

The Toshiba's side and rear jack panels offer all of the usual suspects, including four HDMI ports and two component video inputs (which Toshiba calls ColorStream HD). You can play back photos, music, and movies stored on USB devices through the set's USB port, or photos via its SD card slot—this was the only set that includes both options. It also has a PC connection, but it doesn't have picture-in-picture, dual-picture capabilities, or an Ethernet (LAN) terminal for hookup to a home network.

The set has six preset Picture modes. I chose Movie for our tests, with appropriate adjustments. You can set up the video controls (including the Color Temperature and ColorMaster controls) separately for each picture mode and differently for the same picture mode when you're using it on more than one input.

An oddly named Expert mode lets you turn on only the red, green, or blue portion of the

signal. This is very useful for setting the Color and Tint controls in conjunction with a color bar pattern. It's an accurate substitute for the imprecise color filters that some sets use for this purpose.

At a setting of -10, the Toshiba's Static Gamma control produced a gamma of about 2.2 to 2.3 across most of the range, but it dropped to 2.85 in the darkest measurable region. (Gamma is the relation between the level of the input signal and the brightness of the displayed image. A higher number indicates a darker image. Expert opinions concerning the correct playback gamma range from 2.2 to 2.5, depending on your video guru du jour.)

Resolution+ is a feature that's designed to help SD material look a bit more like HD. As far as we could see, it merely adds a trace of edge enhancement that serious videophiles will want to avoid.

DynaLight is said to improve the black level, and the separate Dynamic Contrast control offers adjustments from 0 to 10. As I noted in the introduction to this

report, we didn't use these features for the formal tests. But I did try them out. When used together, the two controls enhanced the Toshiba's subjective black level and shadow detail, which added a little welcome punch on dark, difficult scenes. This might have made the Toshiba more competitive with the set that finished immediately above it. However, in the final analysis, my viewing suggested that this would not have changed its position at the finish line.

While other LCD manufacturers are providing 120-Hz operation in nearly all of their latest sets (the other three LCDs in this test have it), Toshiba has added 240-Hz operation, of sorts, by way of its ClearScan 240 feature. 240-Hz operation will cost you far more money elsewhere, since it's now a flagship feature for many manufacturers' top lines.

How did Toshiba put 240-Hz technology into a \$1,300 set? By using a pseudo-240-Hz technique. The set has a native 120-Hz refresh rate, but this is supplemented by a scanning backlight

| | |
|---------------------------------|-------|
| TOSHIBA REGZA 42ZV650U LCD HDTV | |
| BLACK LEVEL | ★★★★★ |
| SHADOW DETAIL | ★★★★★ |
| COLOR | ★★★★★ |
| RESOLUTION | ★★★★★ |
| OVERALL PERFORMANCE | ★★★★★ |
| VALUE | ★★★★★ |
| Composite Scores | |

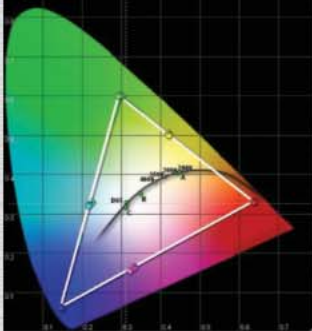
that's said to achieve some of the benefits of 240 Hz.

The Toshiba can accept 1080p/24 program material. With ClearScan 240 off and a 1080p/24 input, it repeats each real frame four additional times to reach the set's 120-Hz refresh rate (5:5 pulldown). With ClearScan 240 on (and the Film Stabilization control on Smooth), some of the added frames are interpolated. In either case, the blinking of the scanning backlight creates the effect of two frames for each actual frame, approximating 240-Hz operation. With a 1080p/60 source (or any source that the set upconverts to its native 1080p resolution), a single frame (repeated or interpolated, as determined by the control settings above) is added for each real frame.



Screen image courtesy of Sony Pictures

HT Labs Measures



TOSHIBA REGZA 42ZV650U LCD HDTV

0.039 25.14

FULL-ON/FULL-OFF
CONTRAST RATIO: 645:1

For the control settings used in this review, go to www.HomeTheaterMag.com. All of the measurements here, unless noted otherwise, were taken in the Movie mode, through an HDMI input, with the set adjusted as needed for the most accurate picture in a darkened room.

Our measured peak contrast ratio for the Toshiba is the worst of the group, and its black level is the highest—nearly five times that of the set

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

with the darkest blacks (the Sony). This is consistent with the viewing results. The set produced a peak white level of 115 foot-lamberts in the factory Sports mode.

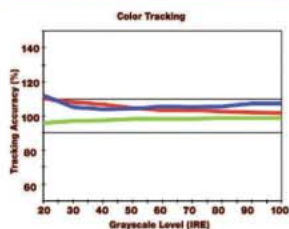
As delivered, the set performed best with its Color Temperature control set to 3. The Before Calibration color tracking in this setting isn't too bad, but its Delta-E ranged from 5.7 to 8.5 between 30 and 100 IRE, which increased to 14 at 20 IRE. (Delta-E is a figure of merit that indicates how close the color temperature comes to the ideal white point of D6500. The lower the number, the better. Experts generally recommend a maximum of between 3 and 4 for results that are visibly indistinguishable from lower values.) After calibration, the Delta-E was under 1.9 from 30 IRE to 90 IRE, 2.8 at 100 IRE, and 4.9 at 20 IRE.

The set's color gamut, as shown by the white triangle on the CIE chart, is about as close to the ideal Rec.709 HD color gamut (the black triangle) as it's possible to get.

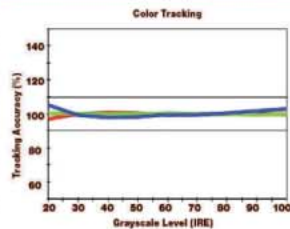
As shown in the accompanying Video Test Bench chart, the Toshiba passed all of our HD Video Test Bench challenges (which includes a single SD test: scaling from 480p to 1080p). It also passed the HD *M:I:III* Vatican wall and stairs tests (chapters 7 and 8).

We also tested for 1080i horizontal resolution through a component input—the only component test here. The Toshiba passed the 18.5-megahertz burst, but it did not pass the maximum 37.1-MHz burst. —TJN

BEFORE CALIBRATION



AFTER CALIBRATION



Color-tracking charts were generated in Datacolor ColorFacts.

| 3:2 HD | 2:2 HD | MA HD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING | POWER DRAW 100-IRE WINDOW (WATTS) | POWER DRAW 100-IRE FIELD (WATTS) |
|--------|--------|-------|----------------|-----------------|-------------------|---------|-----------------------------------|----------------------------------|
| PASS | FAIL | PASS | PASS | PASS | PASS | GOOD | 73.3 | 76.4 |

As I mentioned in the introduction, we defeated all motion-compensating, frame-interpolating features, such as ClearScan 240, in our panel evaluation sessions. However, I did spend

some time viewing them after the group sessions were complete. With most real-world program material, the action of Toshiba's ClearView 240 feature was obvious, but it was never more



Connections

INPUTS: VIDEO: HDMI 1.3 (4), PC RGB (1), component video (2), S-video (1, shared), composite video (2, 1 shared), antenna/cable (1) **AUDIO:** Stereo analog (4), PC (L/R minijack) **OUTPUTS: AUDIO:** Stereo analog (fixed), digital audio (TosLink optical) **ADDITIONAL:** USB (1), SD card slot (1), IR out, service port

noticeably effective than the 120-Hz features on the other LCDs in the group. And on at least one or two tests, which offered more rapid motion, the Toshiba appeared to have *more* motion blur than some of the other sets.

With a 4:3 source in the 4:3 aspect ratio setting, or with a source that needs to be played in a zoom mode to fill the full width of the screen, the Toshiba can produce a geometrically correct image. That is, except in zoom mode with an SD source that's upconverted to 720p, 1080i, or 1080p before it arrives at the set. In the latter case, the image is stretched out of shape at any aspect ratio setting, even TheaterWide 2's zoom mode, which is usually the best. (Toshiba calls its zoom modes TheaterWide, and there are three of them.) This is not an issue with sources that require a full aspect ratio setting, such as native HD material and DVDs that are enhanced for widescreen.

The Nitty Gritty

It's clear from the results that, like some of the other entries in this Face Off, Toshiba designed the 42ZV650U to look best at high brightness settings in a well-lit room. When the lights came up, the Toshiba, VIZIO, and LG looked like much better sets, although this was largely a result of the bright lighting obscuring their elevated black levels.

Features

TOSHIBA REGZA 42ZV650U LCD HDTV

TYPE: LCD

SCREEN SIZE (DIAGONAL, INCHES): 42

NATIVE RESOLUTION: 1920 by 1080

HD TUNER: ATSC, QAM (cable in the clear)

BACKLIGHT: CCFL

WALL MOUNT OR STAND INCLUDED?: Stand

DIMENSIONS (W x H x D, INCHES):

41.7 x 28.2 x 3.7 (without stand);

41.8 x 28.7 x 13 (with stand)

WEIGHT (POUNDS): 48.5 (with stand)

PRICE: \$1,300

But our interest here is evaluating the sets in an environment that provides the best movie watching. And that means a dimly lit or even darkened room. That's also the only sort of environment we can use that the average viewer can easily duplicate, apart from variations in room reflections. This helps make our results reasonably repeatable in your room. It's also the most challenging test a display can experience; poor black levels and mediocre shadow detail have no place to hide.

The Toshiba came in last in both subjective and measured black level, and it also placed last in shadow detail. It did take a solid second place in color (two other sets tied for first), where its extensive color adjustments pulled it through. And its resolution landed it at a near-tie for second place with three other sets.

Commenting on the Toshiba's black level, one panelist generously offered that it "wasn't great. I generally prefer a deeper black than what I see here." But she did note that the set looked "amazingly better with the room lights on." She also saw "a surprising amount of detail in the shadowy temple shot" from *Seven Years in Tibet* (chapter 10). Another judge thought the black level was OK: "Not the worst, but not the best either."

But a different panelist thought the Toshiba was the worst of all the sets with the *Stargate* star field scene. He said he saw very little shadow detail in the deepest blacks on other material. He also thought the image fell to pieces off axis. There was also a negative comment on how the Toshiba (and the VIZIO as well) lost all detail on Kong's fur in *King Kong* (chapter 48).

While not all of the panelists were equally enthusiastic about

VIZIO SV420M LCD HDTV

PRICE: \$900 **AT A GLANCE:** The price is right • Good detail • Mediocre black and shadow detail

the Toshiba's color, two praised its natural-looking fleshtones on different program selections. Another panelist was put off by the set's reds, but he thought its greens were good.

One judge commented that the Toshiba looked softer than the VIZIO. But another gave it a 10 for detail, and a third, while less enthusiastic in her numerical score, said she "could almost feel the texture of the book pages" in *Casanova* (chapter 7) and wished "we could print *Home Theater* on paper like that."

Conclusions

The panel results make it hard to be upbeat about the Toshiba. Still, there appears to be a good set in there trying to get out. It's hard to fault the overall color quality—or the color adjustments that can help a good calibrator get there. While the set's resolution only drew middling praise, several of the sets were tightly clustered in their scores for this category. I don't think any potential buyer will be unhappy with the Toshiba's color or resolution, particularly on mid-level and bright scenes.

The black level and shadow detail are another matter. But as with VIZIO and LG, Toshiba is now introducing sets that will use LED backlighting with local dimming to improve black level and shadow detail. They should be available by the time you read this. Such sets will not immediately filter down to this price range, but they should still be relatively affordable (at press time, the first Toshiba 46-inch LED local dimmer was priced at \$2,300). Hopefully this development will answer our concerns.

Toshiba • (800) 631-3811 •
www.tacp.toshiba.com
Dealer Locator Code T05

VIZIO SV420M LCD HDTV

Coming from nowhere just a few years ago, this relatively new television manufacturer has managed to muscle its way into

the ranks of the market leaders by selling its sets largely through major discount warehouse retailers like Costco. As the song goes, you gotta have a gimmick, and a low price with a high perceived value is a pretty good one. The SV420M is the least expensive entry here.

Behind the Curtain

While it may seem like an odd place to start this discussion, I'd like to give a shout-out to VIZIO's clear, uncluttered, thorough (without being impenetrable), and downright classy manual.

But on to meatier stuff. Of course, the set offers a more-than-adequate set of inputs and outputs. But it lacks an Ethernet (LAN) port. In addition, the USB port is designed for service use only, not for viewing photos or listening to music from a USB storage device. The latter is a bit of a shame. In my limited time with the onboard audio on these sets, the VIZIO's was among the best—but it's still unlikely to inspire praise in lusty sing-alongs over audiophile campfires.

The compact onscreen menus offer the usual assortment of

standard video controls, plus a few advanced features. There are nine different and very ESPN-friendly picture modes, including Game, Football, Golf, Basketball, and Baseball. The mind boggles trying to imagine how a picture should be varied to serve the needs of, say, football versus baseball. We used the more sedate Movie mode, with adjustments, for all of our tests.

The set has overall red, green, and blue calibration adjustments in the user menu for the color temperature settings, but it doesn't have separate high and low settings. While the manual suggests that these calibration settings are only available for the Custom color temperature option, I found that each of the selections offers them. For our purposes, a separate Color Enhancement control worked best in its Off position.

When you use the same Picture mode for the same types of inputs (such as three different HDMI sources), its settings are global, and you can't adjust them separately for each one. But you can have different setups in the same Picture mode for different

| | |
|----------------------------|-------|
| VIZIO SV420M LCD HDTV | |
| BLACK LEVEL | ★★★★★ |
| SHADOW DETAIL | ★★★★★ |
| COLOR | ★★★★★ |
| RESOLUTION | ★★★★★ |
| OVERALL PERFORMANCE | ★★★★★ |
| VALUE | ★★★★★ |
| Composite Scores | |

types of inputs, such as HDMI and component video.

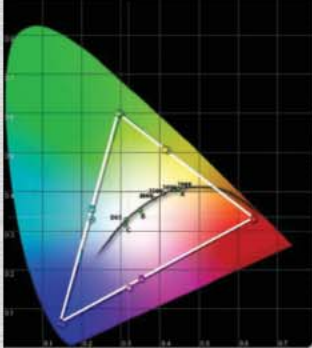
The VIZIO includes two features that are designed to affect its shadow detail and contrast. The first is Backlight Control, which is different from the manual Backlight control, with a lower-case c (it's easier to distinguish the two in the menus than to explain them here). It offers two active settings. The OPC setting relates to power consumption, and I didn't spend any time with it. The other, Mega DCR (Dynamic Contrast Ratio), appeared to actually raise the black level.

A separate control, Advanced Adaptive Luma, improved the VIZIO's subjective shadow detail in its Extend mode (there are also several other, less effective choices). We didn't use this during the group tests (I address the



Screen image courtesy of Universal

HT Labs Measures



VIZIO SV420M LCD HDTV

0.024 25.24

FULL-ON/FULL-OFF
CONTRAST RATIO: 1,052:1

For the control settings used in this review, go to www.HomeTheaterMag.com. All of the measurements here were taken in the Movie mode, through an HDMI input, and with the set adjusted for the most accurate picture in a darkened room.

The VIZIO's full-on/full-off contrast ratio is limited, as are all the sets here, apart from the top two scorers. In its Vivid mode, the VIZIO was the light cannon of the group, generating

a peak white output of 135 foot-lamberts.

As delivered, the set was at its best with its White Balance control set to Normal. But even there the color temperature hovered around 6000K. Delta-E ranged from 12.7 to 16.5 across the measurable brightness range. (Delta-E is a figure of merit that indicates how close the color temperature comes to the ideal white point of D6500. The lower the number the better. Experts generally recommend a maximum of between 3 and 4 for results that are visibly indistinguishable from lower values). However, after calibration, the Delta-E was good, ranging from 0.5 to 2.23 from 20 IRE to 90 IRE, increasing to 4.6 at 100 IRE).

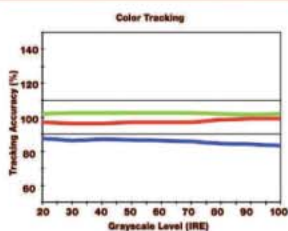
The VIZIO's color gamut, as shown by the white triangle on the CIE chart with the Color Enhancement off, was solid. It was a near match to the ideal Rec.709 HD color gamut (the black triangle) apart from slightly displaced magenta and cyan secondaries.

As seen in the accompanying Video Test Bench table, which includes primarily HD and a single SD test (scaling from 480p to 1080p), the VIZIO turned in the best video processing results of the group, including a passing grade on the *M:I:III* Vatican wall and stairs tests (chapters 7 and 8). It also passed a separate test for 1080i horizontal resolution (chroma and luma) through a component input. But it was the only set to show artifacts in *Titanic* (a 480i, non-enhanced, letterboxed DVD). —TJN

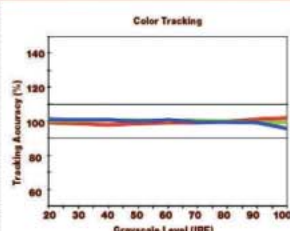
Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

BEFORE CALIBRATION



AFTER CALIBRATION



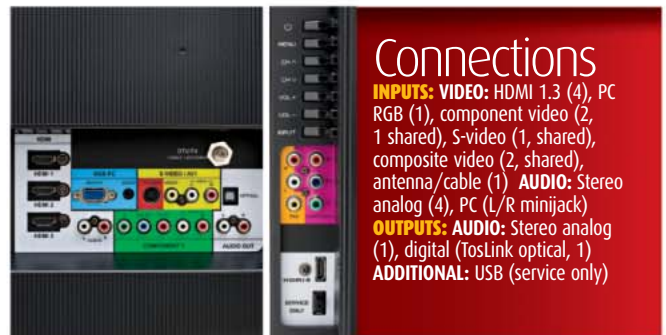
Color-tracking charts were generated in Datacolor ColorFacts.

| 3:2 HD | 2:2 HD | MA HD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING | POWER DRAW 100-IRE WINDOW (WATTS) | POWER DRAW 100-IRE FIELD (WATTS) |
|--------|--------|-------|----------------|-----------------|-------------------|---------|-----------------------------------|----------------------------------|
| PASS | PASS | PASS | PASS | PASS | PASS | GOOD | 78.5 | 81.6 |

reasoning for that in the introduction to this report). However, in my individual evaluation of this feature, it subtly enhanced the subjective shadow detail, although by no means to

the point where it would have challenged the sets with the top scores.

As with all the LCD sets here, the VIZIO operates at a refresh rate of 120 Hz. And as such, it



Connections

INPUTS: VIDEO: HDMI 1.3 (4), PC RGB (1), component video (2, 1 shared), S-video (1, shared), composite video (2, shared), antenna/cable (1) **AUDIO:** Stereo analog (4), PC (L/R minijack) **OUTPUTS:** AUDIO: Stereo analog (1), digital (TosLink optical, 1) **ADDITIONAL:** USB (service only)

offers its own aptly named motion-smoothing feature: Smooth Motion. It has two separate adjustments: Smooth Mode Effect and Real Cinema. If the set receives a 1080p/24 input with the Smooth Mode Effect control off, it repeats each frame four times (5:5 pulldown) in order to reach the displayed 120-Hz refresh rate. With Smooth Motion Effect on (in any of its three active modes—Low, Middle, or High) and the Real Cinema control set to Smooth, the set also adds four new frames for each real one. In this case, the frames are interpolated. Oddly, if Smooth Motion is on and the Real Cinema control is set to Precision, the VIZIO first converts 1080p/24 to 1080p/60 and interpolates a single added frame to reach 120 Hz.

With a 1080p/60 input (or a lower-resolution input upconverted by the set to 1080p/60) and Smooth Motion turned off, the VIZIO adds a single repeated frame to each real frame to reach 120 Hz. With Smooth Motion on, it interpolates a single added frame.

While the VIZIO has no gamma adjustments, the gamma in its Movie mode was just over 2.3. Expert recommendations for playback gamma (which characterizes how a set's brightness level varies with

changes in the input level) range from 2.2 to 2.5.

When the VIZIO plays back a 4:3 source in the 4:3 (Normal) aspect ratio setting or a letterboxed source that needs to be played in a zoom setting to fill the full width of the screen, the set can only produce a geometrically correct image when the input is 480i or 480p. When 720p, 1080i, and 1080p inputs are externally upconverted to these resolutions from standard-definition sources, they are squeezed or stretched, and no aspect ratio choice can put them right. (This is *not* a problem with sources that require a Full setting, such as native HD material and enhanced-for-widescreen DVDs.)

The VIZIO has one other unique feature: It's the only set in the group that offers a picture-in-picture (PiP) option. But this is only available through the set's onboard tuners or A/V (composite or S-video) inputs, which limits its usability.

The Nitty Gritty

The VIZIO landed in fourth place overall for black level and shadow detail combined, just marginally behind the LG and in front of the Toshiba. True, the VIZIO did tie with the LG for second place in shadow detail. But first place was also a tie, and the spread of the scores between the first tied group of two and the second-place pair was a chasm.

"Not good," was one panelist's succinct summary for both of these categories. Another found the VIZIO's shadow detail to be the least impressive of the group on the *Seven Years in Tibet* clip. A third rated the black level as "disturbingly high," but she rated the set's shadow detail in the middle of the pack and called it "pretty good." However, she did remark that the set lost some

Features

VIZIO SV420M LCD HDTV

TYPE: LCD
SCREEN SIZE (DIAGONAL, INCHES): 42
NATIVE RESOLUTION: 1920 by 1080
HD TUNER: ATSC, QAM (cable in the clear)
BACKLIGHT: CCFL
WALL MOUNT OR STAND INCLUDED?: Stand
DIMENSIONS (W X H X D, INCHES): 39.41 x 25.63 x 3.8 (without stand); 39.41 x 27.12 x 9.5 (with stand)
WEIGHT (POUNDS): 36.75 (without stand); 38.45 (with stand)
PRICE: \$900

LG 42LH40 LCD HDTV

PRICE: \$1,400 **AT A GLANCE:** Superb adjustability • Outstanding color • Mediocre contrast and black level

shadow detail when part of the image was very bright. The effect of this on other aspects of a set's performance was emphasized by a panelist who commented that objects didn't look as dimensional and lifelike as they did on some of the other sets.

Three of the panelists saw deterioration in the set's image quality when they moved off axis. But on the positive side, others noted that the set looked much better overall with the room lights on.

The VIZIO's color was controversial and brought out the most disagreement on the panel. One of those who rated its color tops praised its punchy yellows and reds (although possibly a bit too red with fleshtones) on *Seven Years in Tibet*. She also liked its "sharp, bright picture," with "natural, bright blues on *Fly Away Home*" and "really vivid colors on *Casanova*. Eye-popping—this is exactly the kind of movie I would watch with this one." The other judge who rated the VIZIO high for color also praised the saturated hues on *Casanova* and *The Dark Knight*, as well as the set's beautiful green, reds, and browns in *Fly Away Home*.

But the other panelists weren't so positive. Three of them thought the skintones looked a little unnatural, and one of those commented that the colors were too vibrant. Another rated the VIZIO's reds as the worst of the group and the greens as the second worst. While the set finished last in the composite scores for color, two of the panelists rated it highly, giving it a 9 out of 10, while others were much less enthusiastic. This shows just how personal the reaction to color can be. Even with careful calibrations, there can be underlying differences in sets that the available controls can't completely dial out.

But a second-place finish in resolution did earn the VIZIO some bragging rights. One panelist thought *Seven Years in Tibet* looked juddery and the

detail too sharp, with some artifacts. He also thought the set had difficulty holding detail with motion. But he still gave it a respectable score. One of those who gave the VIZIO's color a high rating commented that the color made details pop, especially compared with the Sony's paler colors—a clear reflection of how difficult it can sometimes be to isolate the various aspects of a video display's performance. Another panelist commented on the clear textures on the temple walls in *Seven Years in Tibet*, along with its clarity in showing Brad Pitt's scars and wrinkles!

Conclusions

While the VIZIO didn't turn in a great performance overall, remember that it is less than 75 percent of the cost of the next least expensive set in the group. I found it much more watchable than the group's scores might suggest, and its HD video processing also handily beat out the other players in the group.

You can do better if you're willing to spend more, but this is a respectable set at an attractive

price. And VIZIO is on the cusp of interesting new models, some of which may well compete more aggressively with the other sets here in the \$1,300-to-\$1,500 range. It's also about to join the parade of new local-dimming, LED-backlit sets, which should answer the black level and shadow detail issues, but at a price that might keep other manufacturers awake at night.

VIZIO • (888) 849-4623 •

www.vizio.com

Dealer Locator Code VIN

LG 42LH40 LCD HDTV

Korean-based manufacturer LG began as a Lucky Goldstar and evolved into a Life's Good maker of a wide range of consumer electronics goods. It's now one of the biggest makers of flat-panel televisions on the planet, if not the biggest.

The set under review here is so loaded with features, you wonder how LG can afford to offer them all. But based on my reading of the owner's manual, these features appear to be generic across a wide range of LG's LCD sets, from the

| | |
|----------------------------|-------|
| LG 42LH40 LCD HDTV | |
| BLACK LEVEL | ★★★★★ |
| SHADOW DETAIL | ★★★★★ |
| COLOR | ★★★★★ |
| RESOLUTION | ★★★★★ |
| OVERALL PERFORMANCE | ★★★★★ |
| VALUE | ★★★★★ |
| Composite Scores | |

modestly priced to the most expensive. Thanks to the gods of firmware.

Behind the Curtain

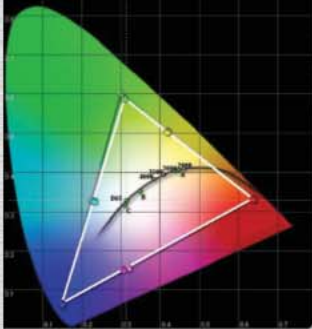
The LG 42LH40 comes with a skimpy 23-page owner's manual. As with the Sony's enclosed pamphlet, this is sufficient to get you started, but it offers little more. Still, long before I discovered the LG's biblical, 136-page single-language manual online, I had already discovered, by trial and error, just how flexible the set's controls are.

Of course, it has the usual complement of inputs and outputs, including a USB port for playing back your MP3 music files and JPEG photos. It also has the expected video adjustments, which offer an unusual split of the Sharpness into two separate



Screen image courtesy of Sony Pictures

HT Labs Measures



LG 42LH40 LCD HDTV

0.022 25.79

FULL-ON/FULL-OFF
CONTRAST RATIO: 1,172:1

For the control settings used in this review, go to www.HomeTheaterMag.com. All the measurements here were taken in the Expert1 Picture Mode over HDMI, with the set adjusted for the most accurate picture in a darkened room.

The LG's blacks and shadow detail, while not the worst of the group, were slightly higher than we like to see in a 2009 set. In Vivid mode, the LG pumped out a peak white level of 114 foot-lamberts.

As delivered, the set was at its

best with its White Balance (color temperature) control set to Warm. The Before Calibration color tracking is visibly satisfactory, though the Delta-E ranged from 3.7 to 7.2 across the full brightness range. (Delta-E is a figure of merit that indicates how close the color temperature comes to the ideal white point of D6500. The lower the number the better. Experts generally recommend a maximum of between 3 and 4 for results that are visibly indistinguishable from lower values.) After calibration, the Delta-E was exceptional—the best of the group by far and quite possibly the best we have ever measured. It barely peaked above 1.0 across the full brightness range (1.05, to be exact). Credit for this must go to the LG's 10-point white balance controls.

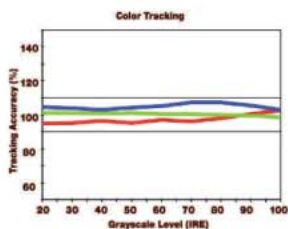
The set's color gamut, as shown by the white triangle on the CIE chart, is a very tight match to the ideal Rec.709 HD color gamut (the black triangle).

As you can see in the Video Test Bench chart, which is primarily HD but includes a single SD test (scaling from 480p to 1080p), the LG's overall video processing turned in a mixed result, failing both the 3:2 and 2:2 HD 1080i pulldown tests. It also failed the *M:I:III* Vatican deinterlacing tests (the brick wall in chapter 7 and the stairs in chapter 8). But it cleared the rest of the video processing hurdles, and its scaling performance was, by a small margin, the best of the group. It also passed a separate test for 1080i component horizontal resolution (not shown in the chart).—TJN

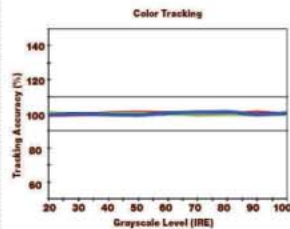
Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

BEFORE CALIBRATION



AFTER CALIBRATION



Color-tracking charts were generated in Datacolor ColorFacts.

| 3:2 HD | 2:2 HD | MA HD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING | POWER DRAW 100-IRE WINDOW (WATTS) | POWER DRAW 100-IRE FIELD (WATTS) |
|--------|--------|-------|----------------|-----------------|-------------------|---------|-----------------------------------|----------------------------------|
| FAIL | FAIL | PASS | PASS | PASS | PASS | GOOD | 75.1 | 79 |

controls, V Sharpness (vertical) and H Sharpness (horizontal).

Accompanying these basic controls is a genuinely innovative feature: the Picture Wizard. It provides built-in patterns to help

you adjust Brightness, Contrast, Color, Tint, and both of the Sharpness controls. Color me skeptical at first, because too often, such tools are mere toys. But with the exception of



Connections

INPUTS: VIDEO: HDMI 1.3 (4), PC RGB (1), component video (2), composite video (2), antenna/cable (1) **AUDIO:** Stereo analog (4), PC (L/R minijack) **OUTPUTS:** AUDIO: Digital (TosLink optical) **ADDITIONAL:** USB (1), RS-232 (service)

Brightness, the Picture Wizard got me within a couple of steps of the settings I derived from my manual setup.

The set includes the desirable high and low (two-point) color adjustments for red, green, and blue, along with an option to adjust the color at 10 points across the brightness range. You can make the LG's adjustments with either internal or external test patterns. It also has a color management system (CMS) with Color and Tint controls for the primary (red, green, and blue) and secondary (yellow, magenta, and cyan) colors. The LG lacks brightness controls for each color. But the available adjustments put me so close to a superb result that I didn't miss them.

There's a wide range of Picture modes, but the two you'll want to use are Expert1 and Expert2. They offer ISFccc capabilities (including lockable setup controls once a calibration is complete), and they are the only two modes that offer the full color calibration and color management adjustments I mentioned above.

The set's Color Filter menu has controls that let you turn on each color separately. This is the best way to set up the Color and Tint controls. Few sets offer this feature, although two in this group do—the other one is the Toshiba.

The LG also has a Dynamic Contrast control. As I noted in the report's introduction, we left such

features off for most of our tests, including the panel sessions. But in the days following those group tests, I determined that the Medium setting of this control somewhat enhanced the LG's pop and shadow detail in dark scenes. But in my judgment, it wouldn't have been enough to change the LG's final standing, much less make it a challenger for the top two finishers.

There are also a number of other controls, but apart from performing a full calibration around the Warm Color Temperature setting, I left most of them in their off or default positions.

As with all the LCD sets here, the LG operates at a refresh rate of 120 Hz. With a 1080p/24 input, if you turn off TruMotion 120Hz (LG's motion-smoothing, frame interpolation feature), the set performs 5:5 pulldown on the 24-Hz input, adding four repeated frames to reach the display's refresh rate of 120 Hz. With TruMotion 120Hz turned on, the LG interpolates the added frames.

With a 1080p/60 input (or a lower-resolution input upconverted by the set to 1080p/60) and TruMotion 120Hz off, the set adds a single repeated frame to each real frame to get to 120 Hz. With TruMotion 120Hz on and an input with 3:2 pulldown, it recognizes the 3:2 cadence, converts the signal to 1080p/24, and then interpolates four new frames for each real one. However, if a source has 2:2 pulldown, it pulls it down to 30p and then interpolates three new frames to reach 120 Hz.

The LG's Gamma control provided three well-chosen options, particularly with the Middle (2.25) and High (2.5) settings. I chose Middle for the tests.

The LG was the only one of the sets that produced a geometrically accurate image at all resolutions with a 4:3 source, or a source that needs to be played back in a

Features

LG 42LH40 LCD HDTV

TYPE: LCD

SCREEN SIZE (DIAGONAL, INCHES): 42

NATIVE RESOLUTION: 1920 by 1080

HD TUNER: ATSC, QAM (cable in the clear)

BACKLIGHT: CCFL

WALL MOUNT OR STAND INCLUDED?: Stand

DIMENSIONS (W X H X D, INCHES):

40.7 x 25.8 x 3.5 (without stand);

40.7 x 28.3 x 11.6 (with stand)

WEIGHT (POUNDS):

37.6 (without stand); 41.6 (with stand)

PRICE: \$1,400

Zoom setting to fill the full width of the screen. However, the Zoom mode did squeeze the image slightly in the vertical. This was visibly subtle on most program material, but it could be distracting to some viewers. (None of the judging panel sessions or measurements used program material that required either the 4:3 or Zoom aspect ratio settings. Rather, they used Just Scan, which worked properly.)

The Nitty Gritty

The LG turned in terrific scores for color (where it finished in a first-place tie with Panasonic) and resolution. It tied for second place in shadow detail, but two sets also tied for first in that category, and the second-place scores were well below the first-place ratings.

In fact, the LG fell decidedly mid-pack overall, largely because of its relatively mediocre black level and (despite that tie) shadow detail. "Black uniformly poor," wrote one panelist. Another thought its black level might have been the highest (according to the measurements, it wasn't). Some non-uniformity was also visible when the screen faded to full black, in the form of a slightly higher black near the upper right-hand corner. Another panelist noted that the LG had a particularly tough time in a scene from *Seven Years in Tibet* (chapter 10), where several characters walk through a semi-darkened temple. Another commented on the faded blacks in the star field in the *StarGate* scene, and also remarked that the blacks appeared to fade out when he moved off axis.

There was a positive comment about the shadow detail on the wall panels in the interior scenes from *Casanova* (chapter 7), although this is not, overall, a dark scene. The same individual remarked that the shadow detail in *Spider-Man* (in the

low-contrast scene in chapter 13) was notably faded. While the comments on shadow detail were generally critical, at least one panelist remarked that it was better than she expected compared with her impressions of the LG's black level.

Things brightened a lot when the comments turned to color. One judge favorably cited the bright and sharp (but not excessively sharp) colors in the *Spider-Man* balloon scene (chapter 17). Three commented on the natural fleshtones, and two specifically cited *Casanova*, where one declared the LG's fleshtones were perhaps the best in the group. The reds came in for praise as well; one panelist called them "radiant and gorgeous."

Although one respondent observed that the colors were noticeably washed out when viewed from off axis, there was some disagreement about this point. Two judges commented that they thought the colors held up well. Two other panelists, who gave optional scores for the sets' off-axis performance (not included in the composite scores), differed as well. One of them rated it good (3.5 stars), and the other rated it poor (1.5 stars). As with all the LCDs, the off-axis performance appeared to vary considerably with the angle, viewing distance, and program material. (Off-axis problems can sometimes be hard to assess in a store demo. The bright settings used in a showroom tend to hide it.)

Detail proved to be the hardest call for the panelists on all of the sets. The LG again landed in the middle, but the comments were generally positive. "Excellent," wrote one. Another remarked on how the painted temple walls in *Seven Years in Tibet* looked "wonderfully textured." However, one panelist remarked that

motion in the image diminished the detail significantly (this is a problem with LCDs in general, which lack motion compensation), but the same panelist only repeated this criticism against one other set, the Toshiba.

Conclusions

Altogether, the LG turned in a respectable but not star-making showing. Its strength was in its color, no doubt due to its remarkably flexible calibration controls. Its biggest weaknesses, which it shared with two other sets in the group, were its blacks and shadow detail.

These problems were not as obvious when I briefly turned on the studio's overhead fluorescent lights after the formal scoring was over. This means that you'll be unlikely to see them in a brightly lit showroom. Perhaps not at home, either, if you rarely watch the set with the room lights dimmed—or turned off.

We're anxiously waiting to see what LG has in store in its upcoming local-dimming sets. They should greatly improve on these issues (although for a price), giving the company's accomplishments in other aspects of image quality a chance to shine.

LG Electronics • (800) 243-0000 •
www.lgusa.com
Dealer Locator Code LGE

Sony BRAVIA KDL-40V5100 LCD HDTV

As the most expensive entry in the group, as well as the smallest—though not by much in either case—a lot was expected of the Sony. True, it lacks many of the bells and whistles that raise a ruckus on the company's higher-end sets. There's no sign here of Sony's award-winning Xross Media Bar (XMB) menu system. It doesn't have optional color matrixes or color gamuts, a color management system (CMS), or a DRC (Digital Reality Creation). It also doesn't have picture-in-picture or another way to display two images on the screen at the same time—unless of course it's in the source (such as a PiP commentary on a Blu-ray Disc).

But the set doesn't really need a CMS (the color gamut needs no help), the menus use many of the same icons that decorate the

XMB, we've never found Sony's DRC truly useful, and many PiP features don't always let you choose the two sources you want to see.

The Sony does have a useful lineup of features; some were useful, others not so much. More importantly, its black-level performance and shadow detail surprised almost everyone when I revealed the sets' identities.

Behind the Curtain

The KDL-40V5100 is the smallest model in Sony's V5100 series, which includes 46- and 52-inch siblings. It offers the usual complement of inputs on its side and rear jack panels, including four HDMI connections and two component video connections. It also has a USB connector to access your photo and music files, but it doesn't have an Ethernet (LAN) terminal for connection to a home network.

The Sony's single-language, 24-page owner's manual is one of the skimpiest we've ever seen for a television. Sony must have been reading studies showing that most folks never crack them open. But at least this one isn't intimidating. It will get you up and running quickly, even if it leaves you uninformed about the most of the set's features. Sony also offers a larger manual on its Website.

Apart from the usual video controls and picture modes (we used Cinema, tweaked as needed, for the tests), these features start with the set's color adjustments. As I noted above, the Sony doesn't offer a color management system. But it does have the usual color temperature options. You'll want to choose Warm, as we did. There are also white balance adjustments at both the high and low end of the brightness range for use in a full calibration.

You can set up the video controls separately for each input and picture mode. If you choose the same picture mode for more than one input, you can also adjust the controls differently for each of them. This provides tremendous flexibility. But if you want to use the same settings for different active inputs, you'll have to remember to manually copy them into each one.

Sony's Motionflow is the company's 120-Hz technology. It





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Sony BRAVIA KDL-40V5100 LCD HDTV

PRICE: \$1,500 **AT A GLANCE:** Plasma-like blacks and shadow detail • Good color and resolution • At its best with 1080p sources



worked about as well as any similar feature I've seen, although I'm not a fan of this sort of processing, particularly for movies. It does smooth out motion, which some viewers might find useful on sports or other video-based programming.

The Sony accepts 1080p/24 material and displays it by either repeating each real frame four times to reach the display's refresh rate of 120 Hz (in other words, 5:5 pulldown). Or, with Motionflow engaged, by inserting four interpolated frames for each real frame. It does the same with 1080p/60 (either a native 1080p/60 at the input or upconverted from 1080i or a lower resolution to 1080p by the set's internal processing). However, in this case, it inserts a single interpolated frame instead of four to reach the set's 120-Hz refresh rate.

The Advanced Contrast Enhancer dynamically adjusts the backlight in response to the image's characteristics. Sony's literature claims that the set offers Dynamic Contrast, but unless this is the same as the Advanced Contrast enhancer, I couldn't find another control that performed this function. We didn't use the contrast enhancements on any of the sets for the panel tests. More to the point, the Sony's black level and shadow detail didn't need them.

The Sony offers a multi-step Gamma control, but I found that the best setting was Off. This produced a gamma of about 2.2.

I was initially unable to get the Sony to consistently display, without geometric distortion, sources that required either the Normal or Zoom aspect ratio settings. A firmware update that Sony sent us for our sample, which turned out to be from a pre-production run, appeared to cure the problem.

The Nitty Gritty

The Sony scored in the low-middle range in color and last in detail. In reality, only the Panasonic's raw score in the latter

category was the clear leader of the pack, with the others tightly clustered below it. But the Sony achieved a winning score in blacks, together with a tie (with the Panasonic) in shadow detail. Its solid second-place finish overall (first among the LCDs) and first-place preference by two of the five panelists are also nothing to sneeze at.

In my own time with these sets, the Sony's black level and natural punch impressed me in a way that I never expected from an LCD without an advanced and expensive technology like LED backlighting with local dimming. The only distraction from the Sony's uniformly rich blacks and solid shadow detail was a patch of lighter black in one corner, which was only visible on a very dark or full black image. (This suggests that a gnome with a flashlight had settled in there for the night.)

The judges definitely agreed. "Best black level on axis and best shadow detail of the bunch," wrote one judge, although he was a bit bothered by the way bright scenes washed out as he moved off axis. He also observed that the Sony had more video noise than the

others in dark scenes. But none of this kept him from giving it solid 10 scores for both black level and shadow detail.

"Did a great job on *The Dark Knight*," commented another, who also found the off-axis fading noticeable—but curiously more on bright scenes than on dark ones. On a scene in *King Kong* that shows a dark close-up of Kong's hairy face and shoulders (chapter 48), the same panelist noted that the Sony had the best shadow detail of the group. "I keep coming back to this set on the dark nighttime scenes," another one wrote. She then noted in the best analogy of the day that while the Sony (and the Panasonic) looked amazing on the star field from *Stargate*—like stargazing in the desert—viewing it on the other three sets was like looking up at the night sky in Los Angeles. Anyone who has lived in or visited any big city will immediately understand what she meant.

Two panelists marked the Sony's color high, one graded it low, and two put it in the "meh" zone. Some found the colors a little on the pale side, which may have been due to a

| | |
|----------------------------------|-------|
| SONY BRAVIA KDL-40V5100 LCD HDTV | |
| BLACK LEVEL | ★★★★★ |
| SHADOW DETAIL | ★★★★★ |
| COLOR | ★★★★☆ |
| RESOLUTION | ★★★★☆ |
| OVERALL PERFORMANCE | ★★★★★ |
| VALUE | ★★★★☆ |
| Composite Scores | |

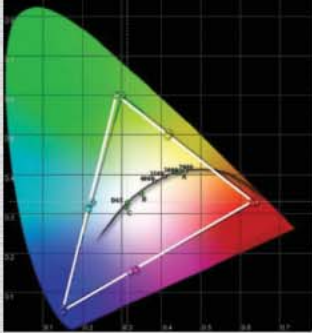
too-conservative approach in setting the color during setup. The Sony lacks a blue-only mode to assist with this. While one of the two most positive boosters thought that the set changed dramatically when viewed off axis, the other thought it held up except at unnaturally wide off-axis positions. More than one of the judges thought that the Sony was the best-looking set with the lights on. One of them even remarked that he thought it looked the best in both lighting situations—lights on and lights off.

While the Sony didn't draw raves overall for its resolution, at least one panelist rated it highly. However, another who also gave it a high rating commented that it fell down on really fast motion. And while a third thought it looked a little soft overall compared with the others, a



Screen image courtesy of Sony Pictures

HT Labs Measures



SONY BRAVIA KDL-40V5100 LCD HDTV

0.008 25.94

FULL-ON/FULL-OFF CONTRAST RATIO: 3,243:1

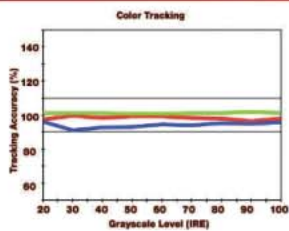
For the control settings used in this review, go to www.HomeTheaterMag.com. The measurements here were taken in the Cinema mode, through an HDMI input except as noted, with the set adjusted for the most accurate picture in a darkened room.

The Sony had the deepest blacks and the highest full-on/full-off contrast ratio in the group. As most of the panelists reported, it edged out the Panasonic plasma for top of the heap in those categories—a result that the plasma fans among us would not have anticipated. The Sony also put out a peak brightness level of 115 foot-lamberts in its Vivid mode.

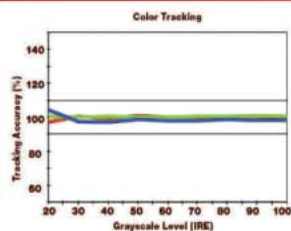
Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

BEFORE CALIBRATION



AFTER CALIBRATION



Color-tracking charts were generated in Datacolor Colorfacts.

| 3:2 HD | 2:2 HD | MA HD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING | POWER DRAW 100-IRE WINDOW (WATTS) | POWER DRAW 100-IRE FIELD (WATTS) |
|--------|--------|-------|----------------|-----------------|-------------------|---------|-----------------------------------|----------------------------------|
| FAIL | FAIL | PASS | PASS | FAIL | FAIL | GOOD | 78.7 | 80.8 |

fourth commented that on *Casanova* it did a great job showing Heath Ledger's worry lines.

Conclusions

The Sony came in a close second in the judging. Two members of the five-judge panel voted it first

Out of the box, the Sony was at its best with the Color Temperature set to Warm. The Before Color Tracking had a Delta-E ranging from 4.2 to 7.0. (Delta-E is a figure of merit that indicates how close the color temperature comes to the ideal white point of D6500. The lower the number, the better. Experts generally recommend a maximum of between 3 and 4 for results that are visibly indistinguishable from lower values.) After calibration, the Delta-E was 2.3 or less from 30 IRE to 90 IRE, increasing to 4.5 at 20 IRE.

The set's color gamut shows a trace of undersaturation in red and oversaturation in green, but these deviations are minuscule. The result is shown by the white triangle on the CIE chart and is very close to the ideal Rec.709 HD color gamut (the black triangle).

As you can see in the accompanying Video Test Bench chart, which is primarily HD but includes a single SD test (scaling from 480p to 1080p), the Sony's overall video processing was the poorest of the group. It is definitely at its best with 1080p inputs, but even there it had some luma and chroma resolution quirks. On the highest frequency bursts (lower bursts were fine), its vertical luma resolution failed, but its horizontal luma passed, while its vertical chroma resolution passed and its horizontal failed. It also failed the *M:I:III* Vatican deinterlacing tests (the brick wall in chapter 7 and the stairs in chapter 8, with the player set to output 1080i). But it did pass a separate test for 1080i component horizontal resolution (not shown in the chart).—TJN



Connections

INPUTS: VIDEO: HDMI 1.3 (4), PC RGB (1), component video (2), S-video (1, shared), composite video (1, shared), antenna/cable (1) **AUDIO:** Stereo analog (4), PC (L/R minijack) **OUTPUTS:** AUDIO: Stereo analog, digital (TosLink optical) **ADDITIONAL:** USB (1), service port, cable/antenna

overall, and two rated it second. No one really disliked it. I can't say how I might have voted had I been participating blind, but I like to think I would have placed it on top, given my partiality to serious viewing in a darkened room and the resulting need for great black levels. As I noted earlier, the Sony also won raves for its performance with the lights on—although that was a very short part of the test and not included in the scoring.

This Sony may not have grabbed a victory here, but it's still a clear winner.

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Panasonic VIERA TC-P42G10 Plasma HDTV

Panasonic's current lineup of plasma televisions is remarkably affordable compared with plasma sets of a few years ago. At \$31 per diagonal inch, the new TC-P42G10 is far cheaper than even Panasonic envisioned in the caviar days of flat panels.

And just in time. LCDs have made remarkable headway in both price and performance, to the point where prices are a toss-up between the two technologies, and performance is, well... read on. One thing seems certain, however: While

Panasonic makes both LCDs (in smaller sizes) and plasmas, its heart (and most of its production capacity and capital investment as well, I suspect) is in plasma.

Behind the Curtain

The new G10 series falls above Panasonic's S1 and X1 ranges of sets. At 42 inches (diagonal), the TC-P42G10 is among the smallest plasmas the company makes. It is also the only set in this Face Off that is THX certified.

Most 2009 Panasonic VIERA plasma sets sport the most current Neo PDP (Plasma Display Panel). This is said to offer a number of improvements, including deeper blacks (Panasonic refers to it as Infinite Black, which is a bit of a stretch), 1,080 lines of resolution with moving images, and dramatically reduced power consumption.

The set will display sources up to 1080p/60p. For 1080p/24 material, a 24p Direct selection in the menu lets you choose either 48-Hz playback (2 x 24 frames per second, with no 3:2 pulldown) or 60 Hz. In the latter mode, the set converts 24-fps sources to 60p by adding 3:2 pulldown. We used the 60-Hz setting on the Panasonic for this review, as it provided significant added brightness. It needed this to match the brightness of the other sets as closely as possible. It also eliminated an image flicker that's visible when 24-fps sources are displayed at a 48-Hz refresh rate.

Most of the TC-P42G10's inputs are on the back panel, including two of the set's three HDMI 1.3 ports and two component connections. A side panel includes an SD card slot that you can use for displaying JPEG still photos or playing back motion video recorded in either MPEG2 or AVCHD. There are no PiP or dual-picture capabilities.

Features

SONY BRAVIA KDL-40V5100 LCD HDTV

TYPE: LCD
SCREEN SIZE (DIAGONAL, INCHES): 40
NATIVE RESOLUTION: 1920 by 1080
HD TUNER: ATSC, QAM (cable in the clear)
BACKLIGHT: CCFL
WALL MOUNT OR STAND INCLUDED?: Stand
DIMENSIONS (W X H X D, INCHES): 38.9 x 25.2 x 3.75 (without stand); 38.9 x 27 x 10.75 (with stand)
WEIGHT (POUNDS): 37.3 (without stand); 41 (with stand)
PRICE: \$1,500

Panasonic VIERA TC-P42G10 Plasma HDTV

PRICE: \$1,300 **AT A GLANCE:** Excellent blacks and shadow detail • Superb off-axis performance • Performs best in subdued lighting



The set also includes Panasonic's VIERA CAST feature, which provides a direct link to specific Internet sites through an Ethernet connection to the Internet. These sites include YouTube, Picasa, Bloomberg, Weather, and Amazon's Video on Demand. There is an Ethernet (LAN) port for this purpose, which can connect the set to the Internet either directly via a cable modem or other Internet link or through a home network. We tested this feature for the larger TC-P46G10 we reviewed in the July 2009 issue of *Home Theater*. That article is available online.

The Panasonic offers five preset picture modes. All of them (including THX) are individually user adjustable. I used the THX mode, tweaked as needed, throughout this review. You can set up and assign different picture modes for each input. You can also use the same mode for different inputs. However, in that case, the settings will be global; each input must have the same settings.

The Color Temperature control offers five settings. The THX mode produced reasonably good results in its Warm2 setting on a wide range of program material. But calibration produced a further improvement. However, there are no user-accessible color temperature calibration controls; they are only available in a hidden service menu.

Of the modes that offer at least a shot at an accurate image (THX, Custom, and Standard), THX mode produced the best gamma. Gamma is the relationship between the input signal's strength and the displayed brightness. The Panasonic has no gamma control, but its gamma in THX mode measured just under 2.5. (The optimum values range from 2.2 to 2.5. Within this range, experts differ on the best choice.)

The Panasonic's Color Management control isn't a real CMS. It is said to enhance green and blue, but it's simply an on/off

option with no control over individual colors. I left it off for the tests and reviewing.

An Advanced menu includes additional controls. I left most of these in their default settings. The Light setting for Black Level reproduced above white and below black. Size2 on the HD Size control produced the lowest overscan, but as with several other adjustments, it is grayed out and not accessible for some sources.

When playing back either a 4:3 source setting or a 4:3 aspect ratio setting or a source that needs to be played back in a zoom setting to fill the full width of the screen, the Panasonic can produce a geometrically correct image only when the input is 480i or 480p. 720p, 1080i, and 1080p inputs that have been upconverted from SD sources prior to arriving at the set were squeezed or stretched, and no aspect ratio choice would put them right. (This is not a problem with sources that require a Full setting, such as native HD material and enhanced-for-widescreen DVDs.)

The Panasonic's side bars, when present on 4:3 material, are

medium gray, and you can't make them darker.

The Nitty Gritty

The Panasonic was clearly the judges' favorite, and everyone rated it first or second. It pulled in first-place finishes in the composite scores (including ties for color and shadow detail) in three of the four main performance categories. It finished second only in black level and not by much.

If the set has a downside, it's the lack of gray scale adjustments in the user menus, although this might also be regarded as a plus, as it prevents tampering with a good calibration. I'd also like to see Panasonic offer a good color management system.

Also, as with plasmas in general, the Panasonic isn't as bright as most LCDs. Still, we found it more than sufficient here, especially in a level playing field with the other sets adjusted for comparable output. It also draws more power than the LCDs. While current Panasonic plasmas are better than those of past years in this respect, LCDs are typically better still.

PANASONIC VIERA TC-P42G10 PLASMA HDTV

| | |
|----------------------------|-------|
| BLACK LEVEL | ★★★★★ |
| SHADOW DETAIL | ★★★★★ |
| COLOR | ★★★★★ |
| RESOLUTION | ★★★★★ |
| OVERALL PERFORMANCE | ★★★★★ |
| VALUE | ★★★★★ |
| Composite Scores | |

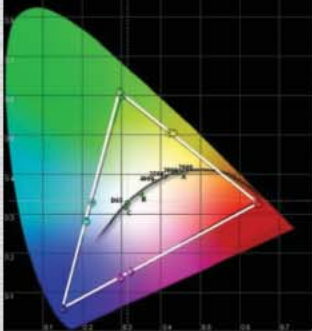
The Panasonic was generally thought to look its best in a dimly lit or (as in the panel test) a fully darkened room. It deteriorated to worst in show with the overhead lights on.

Everyone on the panel liked the Panasonic's blacks, although some favored them more than others. One rated them a solid 10 out of 10, two others a 9. "This one and [the Sony] ran circles around the others for blacks and shadow detail," gushed the 10-rater, who also saw "excellent blacks on *Dark Knight*... [and] best of the blacks on the *Stargate* scene." Another commented on the latter scene as well, noting that while one other set's blacks were deeper behind the star field (the Sony), the stars were brighter on the Panasonic. Only one judge was a bit lukewarm, offering faint praise. "Pretty good black level for this bunch of



Screen image courtesy of Summit Entertainment

HT Labs Measures



PANASONIC VIERA TC-P42G10 PLASMA HDTV

0.014 25.97

FULL-ON/FULL-OFF
CONTRAST RATIO: 1,855:1

For the control settings used in this review, go to www.HomeTheaterMag.com. All the measurements here, unless noted otherwise, were taken in the THX picture mode, through an HDMI input, with the set adjusted as needed for the most accurate within the requirements of the viewing tests in a darkened room.

The Panasonic had the next to the best black level and full-on/full-off contrast ratio in the group. While the Panasonic can produce a higher brightness level in other picture modes (as much as 80 foot-lamberts in Vivid), it looked best in our darkened room in its calibrated THX setting.

Due to a quirk in the calibration process and the fact that all the

calibration controls are in a service menu, the Before Calibration settings shown here are for the Standard Picture mode and the After Calibration result is for a calibration in the THX mode—both of them in the Warm2 Color temperature setting. The Before Calibration result produced a Delta-E that ran from 3 to 9.1. (Delta-E is a figure of merit that indicates how close the color temperature comes to the ideal white point of D6500. The lower the number, the better. Experts generally recommend a maximum of between 3 and 4 for results that are visibly indistinguishable from lower values.) After calibration, it was 3.1 or less from 30 IRE to 100 IRE, increasing to 6.5 at 20 IRE.

The set's color gamut, as shown by the white triangle on the CIE chart, is very close to the Rec.709 HD color gamut (the black triangle). The secondaries are slightly off, but less so than we often see. There's a trace of oversaturation in red and green, but it's hardly noticeable, and the red deviation isn't deep enough to explain why only the Panasonic's reds often looked crimson. The limited evidence (four sets versus one) suggests that the inaccuracy was in the Panasonic. But some panelists found it pleasing.

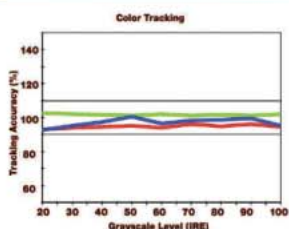
As you can see in the accompanying Video Test Bench chart, with the exception of the 2:2 HD test, the

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

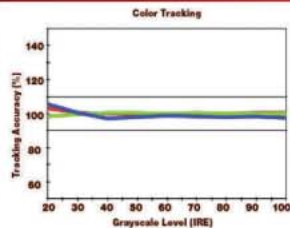
on the web

Panasonic passed all of our HDMI HD tests (including a single SD test of 480p-to-1080p scaling). However, it failed our M:I:III deinterlacing test on the Vatican wall (chapter 7) and was borderline on the stairs in chapter 8 of the same disc. But it did pass a separate test for component 1080i component horizontal resolution (not shown in the chart).—TJN

BEFORE CALIBRATION



AFTER CALIBRATION



Color-tracking charts were generated in Datacolor ColorFacts.



Connections

INPUTS: VIDEO: HDMI 1.3 (3), PC RGB (1), component video (2), S-video (1, shared), composite video (2, 1 shared), antenna/cable (1) **AUDIO:** Stereo analog (4) **OUTPUTS:** AUDIO: Stereo analog, digital (TosLink optical) **ADDITIONAL:** Ethernet (LAN) port, SD card slot

sets," he wrote, "but I'd still prefer darker." No doubt, this was a recovering Pioneer KURO junkie.

Shadow detail also earned praise, scoring below 9 from only one judge. "Looked crazy-good... especially in the beginning scenes [in *Spider-Man*] where Spider-Man is flying around the dark city streets," wrote one. "Blacks almost as good as on [the Sony]," wrote another, "but [the Panasonic] has better shadow detail." However, he allowed that perhaps the Panasonic's blacks might have been able to show that detail because its blacks were slightly elevated compared with the Sony. One panelist rated the shadow detail as middling, neither the best of the group nor the worst. Another thought it was the best of the group and rated it highly, but he still said that it didn't blow his socks off.

The Panasonic drew mixed comments for its color, but it still managed to tie for first in this category and drew respectable scores. Its calibrated palette stood out among all the sets, and while some liked this, others did not. "Color slightly different than the others, more muted," wrote one panelist. "Best color so far," scribbled another. "Greens in *Fly Away Home* look natural, if maybe the slightest bit lime in the brightest shots." But the dissenter thought the colors had a greenish/

yellowish cast in *Seven Years in Tibet* (a Blu-ray transfer with exceptionally natural color). He saw a strong blue cast in one of the *Stargate* clips but commented on the very natural reds, with Spider-Man's suit almost crimson. Indeed, I was surprised that more of the panel didn't comment on these crimson-looking reds, which were also obvious on Amy's red jacket in *Fly Away Home*. They were far different from the relatively similar reds on the other sets. The question is, which is right? (For more comments on this, see "HT Labs Measures.")

The Panasonic also topped the group in its resolution. In fact, there were few comments on this, apart from the high numerical scores. But one judge remarked on the good detail in Heath Ledger's face in *Casanova*. Others also noted the set's lack of motion blur, although one panelist felt that the motion was slightly more juddery than the others. This might be traceable to the fact that the Panasonic was running at a frame rate of 60 Hz with 3:2 pulldown, as noted above.

Conclusions

There's not a lot to say here, since the Panasonic nearly ran away with this Face Off. Only the Sony issued a strong challenge. In the raw scores, the Panasonic grabbed nearly 10 percent more points than the second-place Sony, 28 percent more than the third-place LG, and 43 percent more than the Toshiba. It was also the clear value leader.

If you don't need the extra brightness that an LCD can provide and you do most of your serious viewing in a room with subdued lighting, this could be your new flat-panel set. ¶

Panasonic • (800) 211-PANA • www.panasonic.com
Dealer Locator Code PAN

Features

PANASONIC VIERA TC-P42G10 PLASMA HDTV

TYPE: Plasma

SCREEN SIZE (DIAGONAL, INCHES): 42

NATIVE RESOLUTION: 1920 by 1080

HD TUNER: ATSC, QAM (cable in the clear)

RATED HALF LIFE: 100,000 hours

WALL MOUNT OR STAND INCLUDED?: Stand

DIMENSIONS (W x H x D, INCHES):

40.6 x 26.1 x 3.8 (without stand);

40.6 x 27.8 x 13.2 (with stand)

WEIGHT (POUNDS):

55.2 (without stand); 59.6 (with stand)

PRICE: \$1,300

| 3:2 HD | 2:2 HD | MA HD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING | POWER DRAW 100-IRE WINDOW (WATTS) | POWER DRAW 100-IRE FIELD (WATTS) |
|--------|--------|-------|----------------|-----------------|-------------------|---------|-----------------------------------|----------------------------------|
| FAIL | PASS | FAIL | PASS | PASS | PASS | GOOD | 174.5 | 415 |

What Do You THINK?

Shane Buettner, Editor

For our February Face Off, I helped choose the sets, and we aimed high: local-dimming LCDs versus plasma for the best-of-the-best title. This time around, I had a vague idea what brands would be involved, but TJN chose and acquired the sets. I knew nothing of their feature sets or capabilities, so I was definitely brown-bagged for this tasting appointment.

February's Face Off told me I'd know which sets were LCDs and which were plasmas as soon as I looked at them off axis. Sure enough, the Panasonic plasma quickly revealed itself as the set that made every seat the best seat in the house. But the only thing that immediately gave away the Sony's secret identity as an LCD was the slightly smaller 40-inch screen size. I had to get farther off axis to see the image degrade than with the other LCDs tested here. The Sony's blacks were not only astonishing, they were *better* than the plasma sitting next to it. Shadow detail favored the Panasonic, and in mixed scenes with strong light and dark areas, the Panasonic showed more punch in the bright areas. But it was still neck and neck. Did someone sneak a local-dimming LCD into the mix? While the plasma still had a better picture off axis, the Sony's color fidelity was far more natural and consistent, which is entirely inconsistent with my overall experience with LCDs. To top it off, turning on even a little room light killed the plasma, while the Sony still looked awesome. I'm a kook who prioritizes nighttime movie watching, but the Sony had the better blacks with the lights out, too. So my little world was really turned upside down. I'm a plasma guy. I own a plasma. I love my plasma! But this Sony was the best of the bunch.

It's probably obvious from the word count here that the Sony and Panasonic sets were in a different class in the top two slots. At *HT*,

we're movie lovers, and for us blacks and contrast matter. The other sets simply lost it in darker scenes. And not torture-test scenes—we didn't run *Dark City* or *Master and Commander* here. I'd like to say that the VIZIO, the cheapest set in this Face Off, was the little LCD that could. But next to these other sets, I can't say that the lowest-priced set yielded the best value. Nevertheless, it's clear that the days of plasma kicking sand in LCD's face are coming to an end. Plasma has undeniable strengths, but it doesn't win a Face Off just by showing up anymore. The LCD is a live underdog!

John Higgins, Contributor

When we have a Face Off that mixes technologies, I always find it interesting to see how they stack up against each other. In the past, the difference between LCDs and plasmas was easily discernible, if only by the black level. But over the past couple of years, LCDs have come so far in that regard that plasmas don't stand out as much due to black level—especially with the recent loss of Pioneer's KUROS.

That being said, I'm not surprised that I was drawn to the one plasma display in the Face Off. The Panasonic had what looked to be the best black level and shadow detail of the group. Still, when the lights were turned on, the image looked washed out, which isn't totally unexpected from a plasma display. If you're thinking about it as your display, I recommend that you only use it in a dark room. I found the color on the Panasonic to be the most acceptable to my taste. Grass looked natural, but reds seemed to be slightly off. The overall detail was above average, especially on a 42-inch screen. Being a plasma, it also didn't have motion blur tendencies that are inherent with LCDs. While the 120-hertz modes on the other displays help the

problem, I've never been a fan of how the processing affects the image.

The Sony was a close second for me. It also had a low black level with detail in blacks, which was especially noticeable with King Kong's facial hair in Peter Jackson's epic. There was a crispness to the stars in *Stargate: The Ark of Truth*, but some light leakage from the top right corner took away from the image. It might have just been in the display we had, but I encourage any consumer to check for it. I was also thrown by the way the image changed when I moved off axis. When I moved just a seat or two away from the center, I found that the colors looked washed out and the black level seemed higher. My fellow Face Off participants didn't have the same impression I did, but I would be reticent to use this set in a setup that didn't have all viewers sitting as close to center as possible. It could also be a great excuse to cuddle up with someone for the night and watch some movies.

Claire Lloyd, Executive Editor

After a full day cooped up in a dark room, watching the same demo clips over and over again, my respect for our hard-working video reviewers has taken another step up. It isn't all fun and games, friends. These guys are patient, they watch boring material, and don't even get me started on the shock the sun gives you when you leave the testing studio for lunch.

That being said, it was engrossing to be part of the video reviewer's world for the day and see the surprising way this Face Off unfolded—for me, at least. As the master of all things organizational here at *Home Theater*, I knew beforehand that one of the sets in the test was a plasma model. I sat smugly in the Face Off, confident that the Sony's stunning black level and shadow detail marked it as the plasma lurking in the herd of LCDs. This was the set my eye inevitably wandered back to





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during the dark demo clips from *The Dark Knight* and *Stargate: The Ark of Truth*.

Naturally, I got the wind knocked out of my sails when Tom revealed the sets' identities at the end of the day. Since I was in a roomful of video experts, I refrained from blurting out

The Panasonic handled motion admirably and had very acceptable color and shadow detail. But its black level dropped substantially when the room lights were on, and that alone was enough to lose it my first-place vote.

the fact that I'd misidentified the plasma. That's our secret. The Sony's black level and shadow detail were remarkable—that's all there is to it.

In the color department, the VIZIO was my initial favorite. However, after a couple of hours of its candy-coated goodness, I came to appreciate the Sony's more realistic, natural palette. For example, in the chase scene from *The Dark Knight*, the reds, oranges, and yellows of explosions nicely punctuated the background's deep blues. The colors were pleasing without quite popping. This is a set I could live with at home for day-to-day watching.

Overall, the Panasonic plasma came in at a very close second on my scorecard, earning just three points less than the Sony. The Panasonic handled motion admirably and had very acceptable color and shadow detail. But its black level dropped substantially when the room lights were on, and that alone was enough to lose it my first-place vote.

This also makes two Face Offs in a row that I've picked the most expensive set in a blind test. Can I smell it? My fiancé thinks so. At \$1,500 for a 40-inch HDTV, the Sony is still a great value for the performance you get.

Debbie Stampfli, Contributor

I am not a home theater expert by any stretch of the imagination. Although I've worked for *Home Theater* for more than a year, editing copy, reading about all the latest gear, and writing product roundups about the latest things to hit the home theater scene, I'm possibly the least qualified person to rate flat panel HDTVs. Don't get me wrong, I'm just as impressed by a great picture as the next person. And I'm not blind (although



my impressions might lead some experts to believe I could be). A couple of these sets clearly surpassed the others in quality, color, and depth.

My favorite of the bunch was the Panasonic TC-P42G10 plasma. If I could've taken this home in the trunk of my car without anybody noticing, I would have. At *Home Theater*, the buzz is always about the deepest and darkest blacks. This HDTV ran circles around the others with its incredible blacks. A space scene from *Stargate: The Ark of Truth* made this screen pop. I could see stars in the vast blackness of space that didn't even exist on any of the other screens. Best of all, the Panasonic didn't lose any of its picture quality when I changed seating positions.

My second favorite was slightly more controversial. While all the experts in the room seemed to dislike the VIZIO VL420M LCD HDTV, I really enjoyed watching it. I have a soft spot for bright, vivid colors, and this one delivered colors that were supernaturally bright. Scenes like the crowd scene in *Spider-Man* literally came to life on the screen. Were the colors super accurate? Not particularly. Was it a fun, bright set to watch? Absolutely. And for the price, it definitely passed my test.

I was disappointed by the difference in many

I had a hard time choosing between the Panasonic and Sony as my top pick. I settled on the Panasonic because of its superior off-axis performance, better black-field uniformity, and rich colors, which included a slightly more crimson red than the LCDs. The Sony's colors were just a tad undersaturated for my taste, although some of the other panelists preferred them to the Panasonic's.

of the LCD screens when I viewed them off axis. This is a known problem with LCD HDTVs, but it's a completely different scenario when you view it firsthand. Although the blacks in the Sony KDL-40V5100 LCD HDTV were excellent, the picture faded out dramatically when it was off axis. It was a deal breaker for me.

Although I can't say I've become a certified expert after this Face Off, it certainly opened my eyes to the advancements in LCDs and plasmas, as well as some of their faults. Overall, these sets show that a great quality HDTV can still be a winner regardless of budget or expertise.

Scott Wilkinson, Contributor

When the five flat panels in this Face Off were displaying bright scenes, they all looked quite good, with excellent detail and relatively minor differences that only became apparent as we carefully studied many clips. However, dark scenes were a different story. Two of the sets stood out dramatically, with deeper blacks and much better shadow detail than the other three, making this a Face Off between the Panasonic TC-P42G10 plasma and the Sony KDL-40V5100 LCD.

Going into this, I knew that there was one plasma in the bunch, which I expected to do well in the black-level department. What surprised me was how well the Sony LCD did in that department. In fact, its blacks looked even a bit deeper than the Panasonic's. This is amazing since its backlight is a conventional CCFL, not LED with local dimming.

Even more astonishing, the Sony's off-axis performance on dark scenes was remarkable. Yes, the apparent black level did rise a bit, but it wasn't nearly as much as the other LCDs in the Face Off or just about any other LCD I've seen. On the other hand, bright scenes were totally washed out when viewed from off axis, which was very strange. Of course, the Panasonic plasma's off-axis performance beat all the LCDs hands down.

We did most of our viewing with the lights off, but we turned them on briefly just to see what would happen to the pictures, even though all the sets had been calibrated for a dark environment. All the LCDs, especially the LG, Toshiba, and VIZIO, looked a lot better under some room light. The Panasonic plasma looked much worse, with gray blacks and a seriously washed-out image. This was a clear demonstration of why LCDs sell better than plasmas in brightly lit showrooms. Unfortunately, many LCDs that look great at the retailer don't live up to that promise once you put them in a light-controlled room.

I had a hard time choosing between the Panasonic and Sony as my top pick. I settled on the Panasonic because of its superior off-axis performance, better black-field uniformity, and rich colors, which included a slightly more crimson red than the LCDs. The Sony's colors were just a tad undersaturated for my taste, although some of the other panelists preferred them to the Panasonic's. And if the set was going to be watched in a room with some ambient light, I'd definitely opt for the Sony. Either way, this Face Off uncovered two gems in the 40-inch flat-panel category. 🍷



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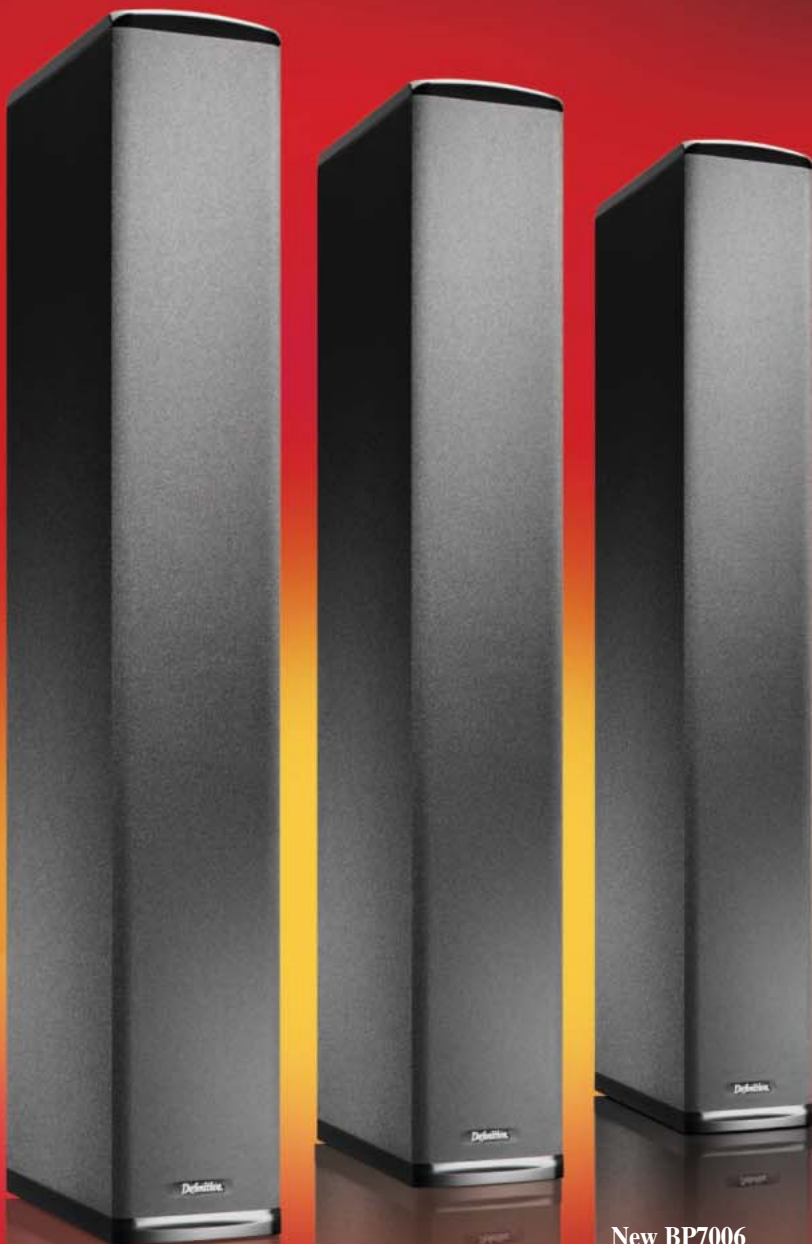
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DESIGN



TREE TRUNK THEATER pg.40

Turning a structural challenge into a decorative asset.

Tree Trunk Theater

TURNING A STRUCTURAL CHALLENGE INTO A DECORATIVE ASSET.





BY Kim Wilson
PHOTOS Kim Christie



Retrofits always have unique challenges, and Canadian systems integrator Graytek faced a highly unusual challenge when it designed this basement theater. The room had three tree trunk posts, and since they were part of the home's structural integrity, they had to stay intact. Since the trunks were in the middle of the room, Graytek had to work around them while still maximizing the screen size and seating area.

To accommodate the specified 120-inch screen, the team notched out the side of one pillar to provide a path for the image to project through. The seating area is built around the posts and uses them as a decorative element. To maximize the seating for comfort and appearance, the back row includes two custom-designed oversized armchairs. Graytek also honored the client's request to refrain from using wall treatments; instead, it used heavy suede drapes and shading to improve the acoustics.

The homeowner had certain expectations with respect to the system's quality and performance, so high-end products featuring the latest technologies and calibration techniques were essential. To make the theater easy to use and functional for every member of the family, operations had to be ultra simple, regardless of the system's complexity.

The theater's centerpiece is a curved screen with a CinemaScope aspect ratio (2.35:1) and a Vidikron three-chip 1080p projector that's outfitted with an anamorphic lens. The beauty of this configuration is that when the homeowner projects movies in their original theatrical aspect ratio, no black bars will appear across the top and bottom of the screen.

The team carefully chose and engineered the Bay Audio speakers and subwoofers in this 5.3-channel system to maximize the room's depth and achieve high-volume performance without distortion. Bass levels are perfectly balanced with three custom subwoofers that are built into the custom cabinetry and millwork beneath the screen. The left, right, and center speakers are housed behind the transparent screen. Each speaker and sub was custom

INTO THE WOODS

Graytek worked with this room's existing tree trunks to create a one-of-a-kind home theater experience. The team notched out the side of one of the pillars to allow the Vidikron 1080p projector to easily display movies.





DESIGN

designed and engineered to fit into the cabinetry and behind the screen. A Crestron-based automation system controls the lighting, drapes, and A/V components using Crestron keypads and an RTI handheld remote control.

In order to obtain the best possible audio performance, the team used an audio analyzer to perform preliminary calibrations, which tuned and balanced the three subwoofers. They isolated and listened to each sub with the main speakers to ensure the best in-room performance. After these individual adjustments, the team tested the subs together and adjusted them to create a two-way subwoofer system that enhanced the overall bass quality. They then used Audyssey MultEQ XT Pro, which is accessible from the Integra surround processor, to optimize and correct each speaker based on its location in the room. Some filter suggestions were adjusted, and a custom curve was created. In this particular setup, the separate subwoofer calibration was crucial since the Audyssey system doesn't recognize more than one sub during its calibration.

The video calibration got the same level of attention. Graytek performed pre- and post-calibration tests and adjustments on all inputs and resolutions, including brightness and contrast settings, color gamut (both primary and secondary color adjustments), color temperature, gamma, the color decoder, and sharpness. The calibration adjustments for each input are stored in the Vidikron projector's ISF Night memory.


The designers took further advantage of the room's tree trunk structure to create the adjoining bar area, where visitors have a full view of the screen. A game room is located behind the bar, and an exercise room, lobby bar, and restroom adjoin the theater. The basement's open floor plan was designed to integrate with the home's West Coast decorative style. 🏡

CONTACT Graytek, (604) 936-1034, www.graytek.ca



GOLDEN STATE

Although this home theater is a beauty to look at, the homeowners didn't skimp on the gear. The room features a 120-inch curved projection screen with a CinemaScope aspect ratio and a 5.3-channel Bay Audio speaker system.



Serious listeners understand the all-important role of tight, distortion-free bass in movie soundtracks and many music genres. The high-performance Revel® Concerta™ B120 powered subwoofer makes adding realistic bass to any movie or music system a simple matter. With a choice of direct line-level inputs or a connection via an optional wireless transmitter, the B120 offers you unequalled placement flexibility. A parametric Room EQ function, with separate frequency, level and bandwidth controls, allows you to easily tune the output to minimize room-induced response anomalies. But it's the 12" Micro Ceramic Composite-cone woofer, with its massive 1-1/2" excursion and 2"-diameter copper voice coil, that gives the B120 its ultimate authority. To find a dealer near you, please call 516.594.0300, or visit www.revelspeakers.com for more information on the B120 subwoofer – and discover the impact genuine Revel bass can add to any home entertainment system.

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FROM THE

Test Bench

OUR GEAR...

● *Home Theater's* test bench uses state-of-the-art instruments, and our testing regimen is the most rigorous in the industry. Our strict methodology ensures that the gear we review can meet the highest standards of performance, a must for a component to earn recognition as a Top Pick or a RAVE Award winner.



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- Fluke 189 multimeter
- Leader LT-446 HDTV test generator
- Leader LV5700A waveform monitor
- LG OS-9020A oscilloscope
- LinearX loudspeaker measurement system
- Minolta LS-100 luminance meter
- Photo Research PR-650 SpectraScan colorimeter
- Staco variable transformer 3PN2210B (22-amp)
- TecLab TWS-1510 test benches

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GOOD
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REFERENCE

PERFORMANCE
FEATURES
ERGONOMICS
VALUE
BUILD QUALITY



RATINGS

HT's product ratings are specific to the product category and the price range of the component under review. Each component's ratings are specific only to its price range: Entry Level, Midrange, or High End. For guidance, each product's price range is designated in the Preview, on this page, and at the top of its review.



56



62

HIGH END

P46-50

Denon AVP-A1HDCI Surround Processor and POA-A1HDCI Amplifier

Both guns blazing.

P46

MIDRANGE

P52-64

B&W Panorama Soundbar Speaker

5.1 channels in one.

P52

OPPO BDP-83 Universal Blu-ray Player

Dawn of a Blu universe.

P56

Acoustic Energy Radiance 1

Speaker System Lord of the ring.

P62

ENTRY LEVEL

P66-69

Yamaha YHT-591 HTIB

Home theater comfort food.

P66



46

Test Bench

BY Kris Deering

Denon AVP-A1HDCI Surround Processor and POA-A1HDCI Amplifier

PRICE: \$15,000 **AT A GLANCE:** State-of-the-art video and audio performance • Customizable amplifier • Sets the bar for connectivity • Tedious GUI and remote

Both Guns Blazing



The separates market has long been the pinnacle of audio performance for high-end home theater setups. But you've always had to pay a price for that performance: the lack of bleeding-edge features. While standalone processors typically set the bar for pure audio performance, many of them lack the latest features that A/V receivers offer. I've been guilty of envious glances at the latest high-end receiver designs, wishing that those cutting-edge features would find their way into a reference-level surround processor. But unfortunately that hasn't been the reality—until now, that is.

It's been a long time coming, but Denon has returned to the separates market with the AVP-A1HDCI surround processor (\$7,500) and POA-A1HDCI amplifier (\$7,500). Denon didn't tiptoe into this market; its new flagship designs nearly obliterate the competition at any price point for features. In other words, Denon has delivered what most manufacturers have only dreamed they could bring to this market—and maybe even a bit more.

The Beauty of the Beasts

These components have the scale of Denon's flagship AVRs. Rather than the standard-sized processor chassis, Denon used the chassis of its massive AVR-5308CI AVR, then ripped out the guts and designed the interior of the AVP-A1HDCI from the ground up. This includes four dedicated Burr-Brown 24-bit/192-kilohertz digital-to-analog converters (DACs) per channel that operate in dual-differential mode. It also

has state-of-the-art HD video processing, two massive toroidal transformers (plus five others), and separate power supplies for audio and video sections.

The THX Ultra2-certified AVP-A1HDCI incorporates Denon's latest styling. You could easily mistake it for Denon's flagship AVR without close inspection. The front panel shares the same wave style design as the AVR line. A front flip-down door reveals a control panel that leaves no adjustment in the cold. Nothing about this design feels flimsy. The quality of the machined knobs and massive number of connections on the back remind me of more expensive boutique brands. While this combo's price is nothing to shrug at, it redefines what to expect from separates at this price point. It will probably inspire other high-end brands to rethink their price structures.

The AVP-A1HDCI's back panel is where the reality of this thing's capabilities really kicks in. Denon used every last inch of real estate, and it includes the most impressive connectivity I've seen on any product, period. Every base is covered and then some. I could go on and on, but I'll try to keep it to the highlights, which make most surround processors look embarrassingly sparse.

For video, Denon includes some rare connections for the high-end enthusiast. It has component video connections that utilize BNC connectors, six HDMI 1.3a inputs, and two HDMI outputs that work simultaneously.

For audio, Denon provides the typical analog and digital options, along with two digital audio



inputs with BNC connectors, a fully balanced two-channel XLR input, and a 7.1-channel analog input with full DSP support.

If that isn't enough, don't worry; there's plenty more. The AVP-A1HDCI also features Ethernet and Wi-Fi support for your home network. This lets you seamlessly integrate with media like music and photos. It also has an optional iPod dock that integrates with the processor and allows full playback of iPod audio and video with an onscreen interface. The Denon also supports HD Radio, and it's satellite radio ready (Sirius).

For outputs, the AVP-A1HDCI has a full slate of balanced outputs and single-ended RCA options. Very few surround processors offer true differential processing. The AVP-A1HDCI's noise floor was the lowest I've heard in my system. Even when I put my ear right up against my loudspeakers when my system was on, I couldn't detect any noise at all. It's this kind of noise floor that makes music playback a transporting experience. All of the main channels have XLR outputs, including extras for multiple surround speakers or multiple subwoofers.

The POA-A1HDCI is equally impressive and represents the pinnacle of flexibility in amplifiers. At more than 130 pounds, this monster features 10 channels of highly customizable power that can handle demanding speakers. Each channel is rated to deliver 150 watts of power for an 8-ohm load. Individual channels share four power transformers, but each has its own transformer windings and power supply components.

The POA-A1HDCI shares the AVP-A1HDCI's curved faceplate design and features three power meters on the front panel. You can set these meters to read the power output from one of several channels: L1-L4 for the left meter, R1-R4 for the right meter, and R5 or L5 for the center meter. You can also dim the meters. The POA-A1HDCI has a hard power switch and a standby switch.

The back panel is similar to the AVP-A1HDCI's in its impressive layout and flexibility. Each of the ten channels features a high-quality single-ended RCA input

and an XLR balanced input. Every channel also has two pairs of speaker posts, so you can biwire each channel if you want. Along the bottom, you'll find switches to select the mode you want each pair of channels to run in (biamp, normal, or bridged). The Denon also includes RS-232 connections for remote systems and communication connections to mate the amp with the AVP-A1HDCI. The amp uses a single power cord and is rated at 12 amps.

Only have a 5.1 system? No problem. You can bridge the amps to double your power to each speaker. When you bridge two channels, the output goes up to 300 watts per channel with an 8-ohm load. Another option is to put the amp in biamp mode to power each section of your loudspeaker individually. The choice is yours, and Denon makes it simple so you don't have to fuss with the amp's back panel settings. A communication cable connects the processor and amp. When the amp powers on in conjunction with the AVP-A1HDCI, the latter configures the amp channels for your selected setup. The AVP-A1HDCI can even pass a digital 5.1 signal to a second zone, although it can't decode it and then output it to the POA-A1HDCI.

If there were a drawback to these models, it would have to be their massive size. Both components stand tall, and with a combined weight of nearly 200 pounds, they can create a problem for standard rack placement and integration into the average home theater. If you're considering this pair, make sure you verify the

DENON AVP-A1HDCI SURROUND PROCESSOR
PERFORMANCE ★★★★★
FEATURES ★★★★★
ERGONOMICS ★★★★★
VALUE ★★★★★

DENON POA-A1HDCI AMPLIFIER
PERFORMANCE ★★★★★
FEATURES ★★★★★
ERGONOMICS ★★★★★
VALUE ★★★★★

capabilities of the shelves you plan to place them on. I recommend that you have everything in place prior to installation. Trust me, you don't want to have to move these beasts more than once.

It's What's Inside That Counts

While the AVP-A1HDCI and POA-A1HDCI cast a daunting glare on the outside, their true performance comes from inside. Whether it's audio or video, Denon went all out.

Audio

At the heart of the AVP-A1HDCI are three floating-point DSPs that provide all the power the processor needs for the latest audio processing. Denon is always on the cutting edge of audio processing, and the AVP-A1HDCI leaves no stone unturned. The processor decodes all of the latest audio formats, including the full Dolby and DTS suites. It can also handle the full complement of popular DSP modes, including Dolby's Pro Logic II suite and THX Ultra2 processing.

One of the biggest highlights for audio lovers is Denon's inclusion of Wi-Fi and Ethernet connectivity. The AVP-A1HDCI



| DENON AVP-A1HDCI | 3:2 HD | 2:2 HD | MA HD | 3:2 SD | 2:2 SD | MA SD | MOTION ADAPTIVE | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING |
|------------------|--------|--------|-------|--------|--------|-------|-----------------|----------------|-----------------|-------------------|-----------|
| DIGITAL | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | EXCELLENT |
| ANALOG | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | BORDERLINE | GOOD |

VIDEO TEST BENCH The AVP-A1HDCI uses the same video processing section that we looked at last year in our premiere AVR video processing shootout with the AVR-5308CI (June 2008). We were more than impressed by its video performance then, and we still are today.

As you can see from our table, the AVP-A1HDCI is more than capable as a standalone video processor. It handles high-definition and standard-definition signals with equal aplomb, and its analog-to-digital conversion is among the best we've seen. While most processors show some noise with their cross-conversion, the Denon offers an incredibly

clean output with only some mild artifacting with its chroma and luma resolution.

The HQV video processing did a tremendous job with our deinterlacing tests and handles all of the major cadences. The Realta chip is also one of the few on the market that handles mixed cadences that we don't even include in our typical testing. You'd be hard-pressed to find this level of deinterlacing in your display, so I highly recommend that you take advantage of the AVP-A1HDCI's processing for your cable or satellite video sources rather than relying on your display, regardless of its price point. —KD

Visit our Website for a detailed explanation of these video tests



HT Labs Measures

DENON AVP-A1HDCI SURROUND PROCESSOR

Analog frequency response in Pure Direct mode:

- 1.39 dB at 10 Hz
- 0.44 dB at 20 Hz
- 0.15 dB at 20 kHz
- 19.58 dB at 50 kHz

Analog frequency response with signal processing:

- 1.38 dB at 10 Hz
- 0.44 dB at 20 Hz
- 0.15 dB at 20 kHz
- 18.84 dB at 50 kHz

The chart below shows the frequency response of the left (purple), center (green), LFE (red), and left surround (blue)

channels at the preamp outputs of the Dolby Digital decoder. The left channel measures -0.04 dB at 20 Hz and -0.21 dB at 20 kHz. The center channel measures -0.21 dB at 20 Hz and -0.21 dB at 20 kHz, and the left surround channel measures -0.04 dB at 20 Hz and -0.20 dB at 20 kHz. The LFE channel, normalized to the level at 40 Hz, is -0.01 dB at 20 Hz, reaches the upper -3-dB point at 118 Hz, and reaches the upper -6-dB point at 121 Hz.

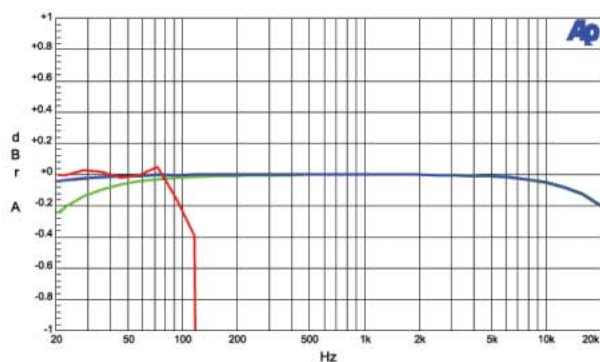
Response from the multichannel input to the main output measures -0.09 dB at 10 Hz, -0.02 dB at 20 Hz, -0.00 dB at 20 kHz, and -0.00 dB at 50 kHz. The analog THD+N is less than

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

0.03 percent at 1 kHz with a 100-millivolt input and the volume control set to 4. Crosstalk with a 100-mV input was -89.28 dB left to right and -88.22 dB right to left. The signal-to-noise ratio with a 100-mV input from 10 Hz to 24 kHz with "A" weighting was -109.56 dBrA.—MJP

DENON AVP-A1HDCI SURROUND PROCESSOR



takes advantage of the various media you have on your home network, and it can also connect to the Internet for Internet radio, firmware updates, and hardware troubleshooting when you run into issues. This is the first surround processor I've seen with firmware updates that are available right over the Web. We've become quite pleased with this feature on various Blu-ray and DVD players.

The built-in media player supports WAV, FLAC, and WMA files, and it will even play back video files directly from your server. The interface is simple to use, and the processor had no trouble finding media on my home server.

The processor also features Audyssey MultEQ XT setup and room correction, plus Audyssey Dynamic EQ, Audyssey Dynamic Volume, and a low-frequency correction that's exclusive to Denon. Our review sample of the AVP-A1HDCI did not have Dynamic Volume installed when we received it, but Denon provided it later in a free firmware update. We got a chance to give this new feature a whirl in our review of the Integra DHC-9.9 (HT, July 2009), and it's nice to see Denon offer this kind of free upgrade. Many times, companies talk about supporting their products with future upgrades as new audio processing comes out. And many times they instead put



Connections

AVP-A1HDCI SURROUND PROCESSOR

INPUTS: VIDEO: HDMI 1.3a (6), component video (6), S-video (7), composite video (7) **AUDIO:** Coaxial digital (4), optical digital (4), 7.1-channel analog (1), stereo analog (9) **OUTPUTS:** VIDEO: HDMI 1.3a (2), component video (3), S-video (5), composite video (6) **AUDIO:** Optical digital (4), 7.1-channel XLR (1), stereo analog (5), preamp (9.3) **ADDITIONAL:** RS-232 (2), 12-volt trigger (4), Sirius (1), XM Radio (1), Ethernet (1), Wireless LAN (1), USB (1), Denon Link (1), iPod controller (1), amp control link (1)

a new processor on the market, which requires buyers to reinvest for the latest processing.

In the future, maybe we'll see a Denon firmware update to incorporate Audyssey's new DSX process. DSX is designed to provide up to 11 full-range channels of information (produced via DSP from the 5.1 channels in most surround source material). This makes it a natural fit for the Denon POA-A1HDCI's 10 amplifier channels.

Like the Integra, the Denon surround processor ships with Audyssey's most current microphone and measurement system. This results in a very obvious difference in low-end resolution and extension compared with the puck-style microphone that previously shipped with Audyssey-licensed components.

Denon hasn't skimped a bit on the AVP-A1HDCI's analog audio section. As I mentioned before, each channel has four dedicated Burr-Brown DACs that run in dual-differential mode. This is one of only a few surround processors that's also fully balanced in the analog output section. You usually find this feature in price-no-object designs that cost substantially more. Dual-differential designs use

common mode rejection to eliminate noise in the audio signal. Denon claims this lowers the noise floor and increases dynamic range.

Like its AVRs, Denon also includes multiple surround sound speaker options. This lets you select different surround speakers in different locations for movie and multichannel music playback. Some recording studios use different near-field monitor placement for movie soundtrack mixing than for multichannel music mixing. This feature lets you replicate the mixing environment in your home.

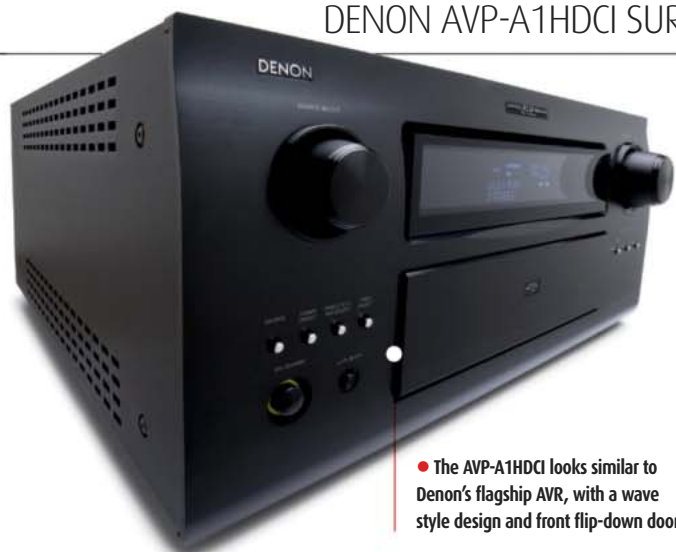
Denon's subwoofer configurations are also a huge highlight. Rather than a simple subwoofer output, you can configure your bass setup to your preference, including true stereo subwoofer support for LFE playback. I haven't seen this feature on many processors, and it provides a lot of flexibility if you're using multiple subs in your room.



Along with a touchscreen remote, Denon provides a simple, user-friendly secondary remote.

Video

On the video side, Denon continues to favor the HQV video processing that it premiered with its flagship DVD players. The video section is identical to its flagship AVR-5308CI AVR that



• The AVP-A1HDCI looks similar to Denon's flagship AVR, with a wave style design and front flip-down door.

we featured in our first AVR video processing roundup last year (*HT*, June 2008). The HQV Realta's processing performance more than impressed us then, and it still does today. HQV Realta offers top-of-the-line video processing performance for both high-definition and standard-definition signals. Its array of noise reduction features for HD video makes it a great addition for anyone who gets annoyed with those crummy HD cable signals. The HQV Realta processing reduces common artifacts such as blocking. It can add a nice level of sharpness to broadcast signals without adding a slew of other artifacts like many video processors do.

However, I wanted a bit more customization with the video processing. I recently reviewed the Integra DHC-9.9 (*HT*, July 2009), and I was impressed by how much flexibility Integra offers with its per-input video processing modes and ISF support. While the Denon offers full deinterlacing and scaling for both HD and SD signals and full cross-conversion of analog video to HDMI, its settings were global across all inputs. It didn't have the tweakability that I know HQV Realta can bring to the table.

Maybe this is something Denon will integrate into future firmware updates for the unit.

Setup

Typically, my biggest impression of any audio system comes from its setup and interface. You can have the greatest audio processor and amplifier in the world, but if the interface leaves you frustrated, the experience suffers. When I looked at the Denon's long list of features, I was worried about how easy it would be to get it up and going.

Every manufacturer approaches this in a different way, and they all have pluses and minuses. Honestly, I think the only manufacturer that has made an incredible interface for a vast amount of control is Apple in its iPod products. They epitomize simplicity yet still allow for a broad range of control that never leaves you wanting.

For control, Denon supplies two remotes with the AVP-A1HDCI. This is similar to the company's approach with its higher-end AVR designs that give you a separate remote for each zone. The main remote features a touchscreen on the upper part of the remote and standard buttons for more common commands on the lower



Kris preferred the secondary remote over the main touchscreen remote, shown here.

part. I've never been a fan of this remote, though. The touchscreen doesn't always do what you think it would, and it can be frustrating to navigate. The second remote has a simpler design and was my preferred method of control.

Denon used to rely on a simple GUI. It walked you through a series of options and typically got the job done. It was never pretty, but it didn't miss anything. In the last few years, Denon has moved on to a prettier GUI that incorporates onscreen images and a media bar format that's very similar to what Sony uses in its PlayStation 3 and select A/V products. The problem is the huge number of options that the Denon offers. With so many features and the ability to tweak all of them, the menus are dense, and I got lost more than a few times. It was often frustrating to figure out where I was and how I got there, especially if I had to find my way back later.

This is the blessing and curse of this much adjustability. It could become an issue for enthusiasts who are less experienced in setting up components. Thankfully, Denon offers another option: online-based setup that you can access from a PC. I found that this interface was much easier to navigate, and the per-input setup was a breeze. If you're considering this processor, I suggest that you go this route for setup.

Another plus is the auto audio setup. The surround processor's Audyssey room correction is a twofold blessing here. Audyssey does a tremendous job correcting for your room without the need for lots of acoustic treatments (although they almost always help), and it also performs basic setup features like setting speaker distances, crossovers, and levels. Since this is all part of the calibration process, it takes care of a lot of the details with very little effort.

Since Audyssey does the bulk of the audio setup duties, you'll mainly use the menus to adjust the preferences for the different inputs and audio processing.

In Use

Once I finally had everything set up, the experience was nothing short of spectacular. I've used

Features

DENON AVP-A1HDCI SURROUND PROCESSOR

AUDIO DECODING:

DOLBY: TrueHD, Digital Plus, Digital 5.1, EX, Pro Logic II

DTS: DTS-HD Master Audio, DTS-HD High Resolution Audio, DTS, ES Matrix, ES Discrete, Neo:6

PROPRIETARY: THX Ultra2 Cinema, THX Surround EX, THX Music

THX CERTIFICATION: THX Ultra2

VIDEO PROCESSING: HQV Realta

AUTO SETUP/ROOM EQ: Audyssey MultEQ XT Pro/Dynamic Volume/EQ

DIMENSIONS (W X H X D, INCHES):

17.13 x 8.44 x 19.22

WEIGHT (POUNDS): 59

PRICE: \$7,500

plenty of separates in my time, and few have delivered the performance that this combination does.

To start, I tried out Denon's media server capabilities. The Wi-Fi connectivity made it simple to tap the AVP-A1HDCI into my home network, and the Denon had no trouble finding my media files. I love the fact that Denon supports not only MP3 and WMA files, but also FLAC, which is what I primarily use in my media server. All the information I needed was right there on the screen, and navigation was simple and intuitive. Denon also offers an iPod dock, which I didn't use for this review.

For my home theater demos, I connected several components to the AVP-A1HDCI, including a Panasonic Blu-ray player, the Xbox 360, and a PlayStation 3. I wanted to see how the processor would work with a variety of sources and different audio formats. Since the Denon

features complete onboard audio decoding of all the latest audio flavors, I set the Panasonic to bitstream mode and let the Denon do the heavy lifting. The AVP-A1HDCI did a tremendous job with all of the Blu-ray Discs I threw at it.

The Denon showed obvious improvements over the previously reviewed Integra in low-end refinement with aggressive soundtracks and noticeable infrasonic improvements. The lossless soundtrack for Michael Bay's popular blockbuster *Transformers* is a great example. The end battle in the city has some incredible bass sweeps with



HT Labs Measures

DENON POA-A1HDCI AMPLIFIER

Seven channels driven continuously into 8-ohm loads:

- 0.1% distortion at 169.3 watts
- 1% distortion at 182.3 watts

Five channels driven continuously into 8-ohm loads:

- 0.1% distortion at 173.5 watts
- 1% distortion at 188.2 watts

Frequency response with RCA input:

- 0.04 dB at 10 Hz
- 0.01 dB at 20 Hz
- 0.03 dB at 20 kHz
- 2.98 dB at 50 kHz

Frequency response with XLR input:

- 0.07 dB at 10 Hz
- 0.01 dB at 20 Hz
- 0.12 dB at 20 kHz
- 3.15 dB at 50 kHz

This graph shows that the POA-A1HDCI's left amplifier channel, with two channels driving 8-ohm loads, reaches

0.1 percent distortion at 179.8 watts and 1 percent distortion at 197.2 watts. Into 4 ohms, the amplifier reaches 0.1 percent distortion at 268.5 watts and 1 percent distortion at 318 watts. An input level of 103 millivolts was required to produce an output of 2.83 volts into an 8-ohm load, indicating an overall gain of +28.80 decibels using the RCA input. When using the XLR input, a level of 208 millivolts was required to produce an output of 2.83 volts into an 8-ohm load, indicating an overall gain of +22.69 dB.

THD+N from the amplifier was less than 0.002 percent at 1 kilohertz when driving 2.83 volts into an 8-ohm load using the RCA input.

When using the XLR input under the same conditions, THD+N was less than 0.002 percent.

Crosstalk at 1 kHz driving 2.83 volts into an 8-ohm load was -111.95 dB left to right and -110.75 dB right to left using the RCA inputs and -110.11 dB left to right and -111.55 dB right to left using the XLR inputs.

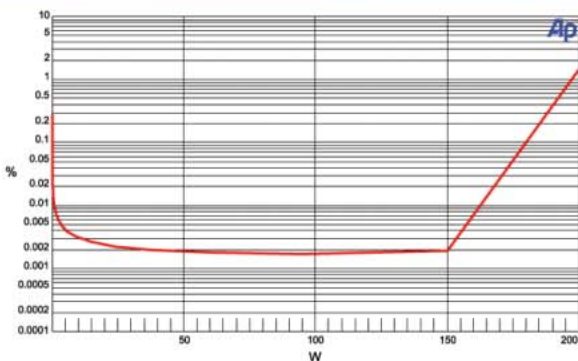
The signal-to-noise ratio with 2.83 volts driving an 8-ohm load from 10 hertz to 24 kHz with "A" weighting was -114.05 dB using the RCA input and -114.57 using the XLR input.

—MJP

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

DENON POA-A1HDCI AMPLIFIER



plenty of low bass range. The Denon resolved the sweeps with aplomb, and the bass control was a clear step up from what I experienced with the Integra processor.

While movie playback was always a treat, I wanted to get a sense of how musical the Denon was. At this price point, the AVP-A1HDCI competes directly with higher-end surround processors that have had the audiophile crowd's ear for years. My reference for

high-resolution audio playback is Denon's DVD-5910CI flagship universal DVD player, and the AVP-A1HDCI upholds that same level of refinement. It might even create a new standard.

The Denon's noise floor was incredibly low with CDs. When I used a digital transport with the AVP-A1HDCI to take advantage of its DACs and processing, there was a marked improvement over even the DVD-5910CI's performance.



Connections

POA-A1HDCI AMPLIFIER
INPUTS: XLR (10), RCA (10) **OUTPUTS:** Five-way binding posts (40) **ADDITIONAL:** RS-232 (1), 12-volt trigger (1), Control link (2)

The imaging was incredible, and the level of refinement in vocals and bass was as good as anything I've heard from the high-end crowd. The processor's performance with DVD-Audio and SACD was even more satisfying, but most components do a great job with material at this resolution.

The POA-A1HDCI proved to be an outstanding mate for the AVP-A1HDCI. While it isn't a fully balanced design, the POA-A1HDCI still offers balanced inputs, and I ran the main and center channels bridged. This gave my Paradigm Signature S8 mains and C5 center more juice for full-range playback. The amp's ability to add a bit more to a speaker's lower-end performance reminded me of Krell designs. On the upper end, the amp had a great sense of transparency, and it didn't seem to impart its own character on the voicing of the speakers. It provided crisp, detailed highs. If you're looking for plenty of power and great low-end

Features

DENON POA-A1HDCI AMPLIFIER

NUMBER OF CHANNELS: 10
RATED POWER (WATTS PER CHANNEL): 150 watts into 8 ohms
SPECIFIED FREQUENCY RESPONSE: 10 Hz-100 kHz +1/-3 dB
DIMENSIONS (W X H X D, INCHES): 17.09 x 11.06 x 14.2
WEIGHT (POUNDS): 132
PRICE: \$7,500

performance from a full-range speaker, you should consider the POA-A1HDCI, even if you don't pair it with the AVP-A1HDCI.

Wrapping It Up

Denon's return to the separates world is an atom bomb—and I'd expect nothing less from Denon. If you're looking for the most feature-laden separates imaginable that offer true flagship-level flexibility, performance, and features, this combination is almost impossible to beat. 🏆

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Test Bench

BY Mark Fleischmann

B&W Panorama Soundbar Speaker

PRICE: \$2,200 **AT A GLANCE:** 5.1-channel decoding in a single soundbar • Decoding for Dolby Digital and DTS, not lossless • Strong bass even when subwoofer output is not used

5.1 Channels in One

Why shouldn't respectability and innovation be on speaking terms? In loudspeakers, that's not as easy as it sounds. Much of the recent audio innovation in home theater has come in products that are designed to complement flat-panel TVs. These products are morphing before our eyes—into soundbars, on-walls, and ever-smaller satellites. They are also moving beyond the standard five-speakers-and-sub configuration in their deployment of surround's 5.1-channel array. This makes for a striking contrast when you look at the high-end speakers that grace audiophile short lists. These include a staid group of medium-density fiber-board boxes whose fundamentals, in many cases, haven't changed in decades. Traditional speakers can sound great, but that's not often enough to make people buy them.

Who will step up and combine the innovation of home theater with the performance of audiophilia? One likely suspect would be Bowers & Wilkins, more widely known as B&W, which has spent decades invigorating audiophile products with distinctive design gambits. B&W likes to get around—its speaker lines cover a lot of ground. It was only a matter of time before the world got a look at the company's first soundbar, the Panorama.

This is not an entry-level product priced to be an afterthought to a flat-panel TV purchase. At \$2,200, it may cost more than some of the TVs it will be used with. In fact, for that kind of money, you could easily mate a mid-priced receiver with a decent 5.1-channel speaker

package. What on earth could B&W be up to?

Famous Dimples

The Panorama is slightly less than 43 inches wide, for the benefit of those who would like their soundbars to precisely match the width of their flat-panel TVs. At 31 pounds, its glass-filled ABS plastic enclosure is more solidly built than other bar speakers I've reviewed. The front features a perforated aluminum grille, which offers protection from curious little fingers. A sheet of mirror-black titanium-coated stainless steel curves around the top, back, and bottom. In back is a pair of B&W's famous dimpled Flowports, which are pocked like golf balls in an attempt to improve air flow and reduce port turbulence. You can use the supplied bracket to wall-mount the product or place it on a table, as I did. There is a bass EQ setting to complement your choice.

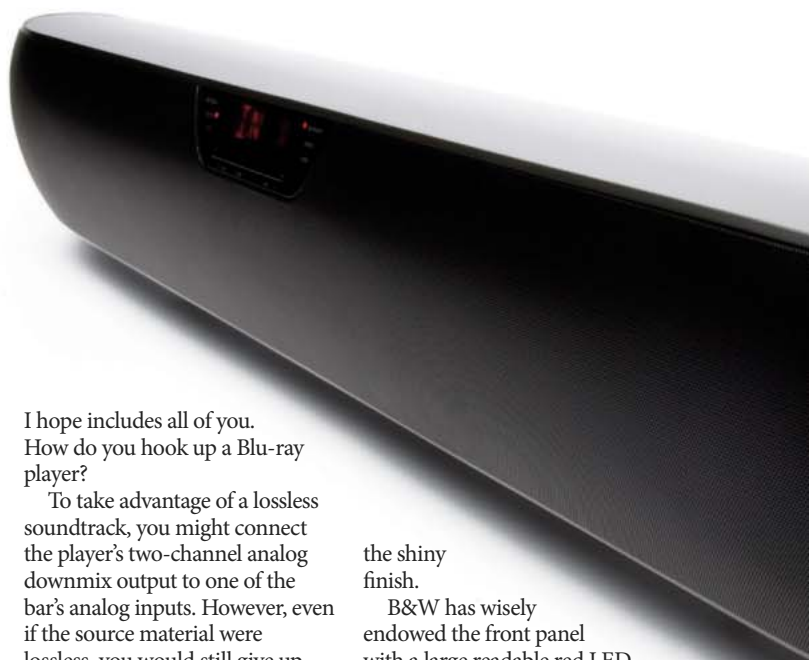
Drivers within the soundbar include a single 1-inch aluminum dome tweeter, a pair of 3-inch glass-fiber cone midranges, four 3-inch glass-fiber surrounds, and a pair of 3.5-inch Kevlar-paper drivers that B&W refers to as subwoofers in this configuration. The tweeter attaches to a tapered tube enclosure adapted from B&W's world-beating Nautilus line. This claims to minimize energy coming from the back of the tweeter and prevent it from polluting what comes out the front. The subwoofer drivers are set into a sub enclosure that makes the most of the aforementioned Flowports. Regarding the surrounds, B&W says: "We took advantage of their natural 'beaming' at higher frequencies, coupled with DSP and the curved

enclosure, to help create the immersive surround field."

On the back are five inputs, three digital and two analog. Two of the digital inputs are optical, and one is coaxial. The analog inputs are stereo RCA jacks. The sole output is for a subwoofer (I reviewed the product without one). The Panorama has onboard decoding for Dolby Digital 5.1 and DTS. However—like many soundbar speakers on the market—it has no HDMI input. It also doesn't have onboard decoding for Dolby TrueHD, Dolby Digital Plus, or either variety of DTS-HD. This raises a question for Blu-ray users—which

B&W PANORAMA SOUNDBAR SPEAKER
PERFORMANCE ★★★★★
VALUE ★★★★★
BUILD QUALITY ★★★★★

recommends that you use the optical or coaxial input, which would receive either a legacy Dolby Digital or DTS signal from the player, or one of those signals from an alternative soundtrack on the disc itself. The Panorama comes with two optical cables among the supplied accessories. It also includes two stereo analog cables, screw-in feet for table placement, brackets for wall mounting, and a soft cloth to buff



I hope includes all of you. How do you hook up a Blu-ray player?

To take advantage of a lossless soundtrack, you might connect the player's two-channel analog downmix output to one of the bar's analog inputs. However, even if the source material were lossless, you would still give up the benefits of discrete channels. Instead, the player would rely on the soundbar's Dolby Pro Logic II matrixing to steer information to the center and surround channels. As an alternative, B&W

the shiny finish.

B&W has wisely endowed the front panel with a large readable red LED display and enough buttons to operate the product's main functions if the remote should retreat to the sofa cushions. One button switches between power-on and standby. If you press it a

Features

| SPEAKER: | PANORAMA |
|-----------------------------------|--------------------------------------|
| TYPE: | Soundbar |
| TWEETER (SIZE IN INCHES, TYPE): | 1, aluminum dome |
| MIDRANGE (SIZE IN INCHES, TYPE): | 3, glass fiber cone (2) |
| SURROUND (SIZE IN INCHES, TYPE): | 3, glass fiber cone (4) |
| SUBWOOFER (SIZE IN INCHES, TYPE): | 3.5, Kevlar-paper cone (2) |
| RATED POWER (WATTS): | 5 x 25, center/surround; 1 x 50, sub |

few more times, it cycles among the inputs. Another button selects one of the three listening modes: Surround, Stereo, and Stereo-wide. Two more buttons handle volume up and down. The oval-shaped remote resembles a change purse and includes the same controls that are on the soundbar. Plus, it has a Mute button and a Voice button. The Voice mode emphasizes vocal content in movies and TV programs. The manual explains: "When reproducing Dolby Digital-encoded material, Voice mode implements the compression and filter algorithm inherent in the encoding. When other digital or analog material is reproduced, Voice mode implements a custom B&W-designed filter algorithm."

While you can use the Panorama out of the box, B&W includes various options if you're

willing to operate menus via the remote control and front-panel display. The sound menu includes bass, treble, bass EQ (for wall or table placement), external sub level, and sub distance. There's also a room menu that has three presets and a custom setting. Each of these encompasses three other settings: the distance of the soundbar from the seating position, the offset of the speaker's center from the seating position's center, and the three wall positions (soft, medium, hard) that affect the way the sides of the soundbar reflect surround effects off the walls. Other adjustments include analog-input gain, lip-sync delay, language, units, and display. The latter can be brightened or turned off. As with any speaker you place close to a screen, it's helpful to be able to turn off the front-panel display, especially when it's big and red.

● B&W's Panorama pairs a perforated aluminum grille with a glass-filled ABS plastic enclosure for a solid design.

Associated equipment for this review included a Panasonic DMP-BD55 Blu-ray player, which I used for BD, DVD, and CD. I used an optical connection on everything except the third movie selection.

Solid Gold Bar

Solidity is the Panorama's strong suit. When provided with substantial amounts of bass information, the built-in sub drivers produced low-frequency apocalypse. The thundering wind effects of *The Day the Earth Stood Still* (DVD, Dolby Digital) practically pinned my ears back. There was a suggestion of directional activity from helicopters. My asymmetrical long-wall placement may have left the soundbar's surround-producing mechanism at a disadvantage. However, there was discernibly more surround presence in the bar's Surround mode than when I switched to the Stereo or Stereo-Wide modes. In the switching process—something I did a lot of throughout the review—I noticed that the oval remote worked best when I aimed it on axis and tilted it slightly downward. This probably indicates that the infrared emitter is in the top surface.

In an emotionally intricate drama like *Lake City* (DVD, Dolby Digital), with Sissy Spacek as the rural mother of a troubled son, vocal clarity is key. The Panorama was impressive in this regard, with virtually no intelligibility shift as I ranged around the sofa. The soundfield was also

impressively stable, with no synthetic-sounding nonsense going on as I changed positions. In the opening song, the rhythm section was nice and tight, and Lucinda Williams' distressed-leather voice was well focused and affecting. When someone pounded on a door, the *bam bam bam* once again reminded me of the Panorama's prowess with the impact and tuning of bass effects.

I wandered off B&W's chosen path with *Pineapple Express*. I used the Blu-ray release's Dolby TrueHD soundtrack, with the player's stereo analog downmix output going into the soundbar's analog input and using the speaker's Dolby Pro Logic II surround processing. In this case, the theoretically increased transparency of Dolby TrueHD made little difference. However, it was obvious that the soundbar had less directional information to work with in the absence of discrete surrounds. The raucous stoner-buddy comedy follows the conventions of the genre, with James Franco as the stupid one and Seth Rogen as the slightly less stupid one. As they got into three-way shout-fests with other intoxicated characters, the Panorama kept up with the vocal chaos. And when a fight scene threw someone down on a collapsing coffee table, the thump reminded me yet again how well this speaker handles bass.

Three Modes of Pleasure

For music, there really wasn't a bad choice among the three modes—DPLII Surround, Stereo-Wide, and Stereo. In the live half of Pink Floyd's *Ummagumma* CD, the Stereo-Wide mode emphasized the interplay between Rick Wright's organ and David Gilmour's guitar. Both are very spacey on this album, and each is as distinctive as a fingerprint. Even in Wright's most ethereal moments, which include some of his best playing ever, the Panorama's low-level resolution held my attention. But the rhythm section fared best in the DPLII Surround mode, which supported the powerful drum sound best among the three modes. Even when I upped the bass control in Stereo and Stereo-Wide, DPLII Surround still had the strongest kick drum. The downside of using

HT Labs Measures

B&W PANORAMA SOUNDBAR SPEAKER

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the B&W Panorama's left channel (purple trace) and center channel (green trace). The soundbar was measured with its grille at a

distance of 1 meter.

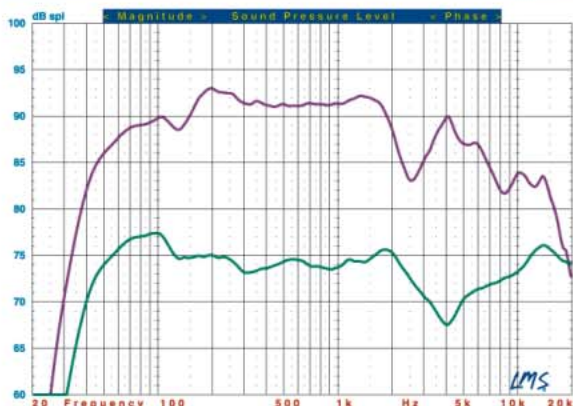
The left channel's listening-window response (a five-point average of axial and ± 15 -degree horizontal and vertical responses) measures $+1.90$ -9.39 decibels from 200 hertz to 10 kilohertz.

The center channel's listening-window response measures $+1.43$ -6.68 dB from 200 Hz to 10 kHz. An average of axial and ± 15 -degree horizontal responses measures $+1.18$ -7.46 dB from 200 Hz to 10 kHz. The -3 dB point is at 42 Hz, and the -6 dB point is at 37 Hz.—MJP

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

B&W PANORAMA SOUNDBAR SPEAKER



the DPLII Surround mode is that it's based on Dolby Pro Logic II's Movie mode and therefore pushed much of the front soundstage toward the center.

The tradeoff between bass and width continued with the *Paul Galbraith Plays Haydn* CD. Galbraith's classical guitar is a unique eight-stringed instrument with a long cello-like pin that rests on a wooden resonating box that sits between the guitarist's feet. It has more bass than any acoustic guitar I've ever heard. At first, I preferred hearing it through the weightier DPLII Surround mode. But in the end, I came to prefer the Stereo-Wide mode, which was spatially superior for the guitar's

midrange—a little better than straight stereo and much better than movie-oriented surround. Haydn probably would have been pleased to hear his keyboard sonatas so cleverly transcribed (with changes in key) and so beautifully played on such an extraordinary instrument.

I couldn't have hoped for a better variety of vocal performances than I got from a compilation called *Carnegie Hall Presents: Lift Every Voice (Honoring the African American Musical Legacy)*. The singers, who were recorded from 1946 to 2005, demonstrated 20 different ways to access beauty and emotion on this two-CD set from Sony Classical.

The B&W's change-purse-sized remote includes a Voice button that emphasizes vocal content in movies and TV shows.

Connections

B&W PANORAMA SOUNDBAR SPEAKER
CONNECTIONS: Optical (2), coaxial (1), stereo analog (2) sub out (1) **CROSSOVER BYPASS:** None; fixed crossover at sub out **AVAILABLE FINISHES:** Black and Dark Silver **DIMENSIONS (W X H X D, INCHES):** 42.91 x 5.11 x 7.32 **WEIGHT (POUNDS):** 31 **PRICE:** \$2,200

The big surprise was that even mono recordings benefited from the DPLII Surround mode. It did the best job of delivering Paul Robeson's rich baritone in "Ol' Man River." It not only supported his considerable bottom octave, but it also brought out midrange details of vocal timbre and Carnegie's familiar concert-hall ambience. In modern stereo recordings where the soundstage mattered more, such as "On Children" performed by Sweet Honey in the Rock, the Stereo-Wide mode performed best. Five of the 19 all-star soloists tackled classical selections, including an unforgettable performance of Schubert's "Du bist die Ruh" by Roland Hayes. I would like to hear this material played in every audio demo at the forthcoming CEDIA show in Atlanta.

Of the soundbar speakers I've reviewed in the past year, the B&W Panorama is by far the

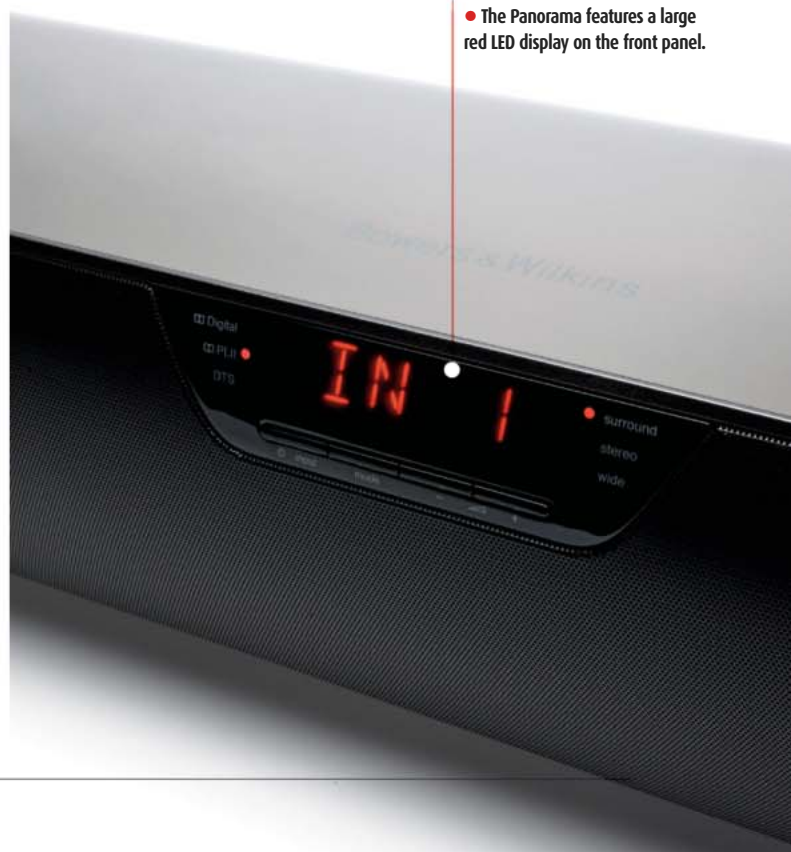
handsomest and the most solidly built, and it has the most powerful built-in bass. This product's \$2,200 price tag won't buy you surround effects as good as you'd get from a good set of conventional speakers. But it just may expand the audience for soundbar speakers among those who want a high-end implementation that does a convincing job with music in particular.

In future years, I hope to see soundbar speakers with HDMI and lossless decoding. Until then, the Panorama will likely remain the class act of the field.

* Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* (www.quietriverpress.com).

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Test Bench

BY Kris Deering

OPPO BDP-83 Universal Blu-ray Player

PRICE: \$499 **AT A GLANCE:** Reference-quality Blu-ray performance and video processing • Full interactivity and audio decoding • Fast operation and load times • SACD and DVD-Audio

Dawn of a Blu Universe



OPPO Digital may not be the most recognized name on the block, but if you've used its products in the past, you'll certainly remember it. OPPO has been in the DVD player market for a few years now and does all of its business online. You won't find its products stocked in your local Best Buy or specialty retailer, so the brand doesn't have the broad market awareness of other Blu-ray player manufacturers. But OPPO's DVD players have a loyal following and offer incredible performance for the dollar. OPPO's reputation for excellent performance at a lower price point and its outstanding customer support quickly gained a big following. So it's been with bated breath that many of us have waited for OPPO to enter the Blu-ray market.

Well wait no more, OPPO has delivered its first entry into the market in a big way, and its debut is unique as it's a universal player. The BDP-83 combines Blu-ray playback with universal DVD playback that includes SACD and DVD-Audio. If you're anything like me, this gives you the opportunity to finally replace the DVD player that may still be lurking in your rack. There have been some Blu-ray players that provide great upconversion for DVD, but I have a decent catalog of SACD and DVD-Audio titles that I still enjoy. I've been waiting for a solution that would take advantage of these formats. Panasonic's first Blu-ray player offered DVD-Audio playback, and Sony's early PS3 supported SACD playback, but no player has offered both in one unit. The only other player that now offers it is the new Denon DVD-A1UDCI, which comes in at a hefty \$4,500.

The Complete Package

OPPO built the BDP-83 from the ground up. It features a completely new video decoder from Mediatek, which also provides the bulk of the decoding chips for OPPO's DVD players. OPPO also includes the newest video processing chip solution from Anchor Bay Technologies (ABT), which is best known for its DVDO line of video processors. The BDP-83 uses the same video processing solution that's in DVDO's Edge processor (\$700). The player features full Bonus View PiP capability and BD-Live connectivity, and it even includes the required minimum 1 gigabyte of memory on board.

When I received the BDP-83 for review, I was quite surprised by the packaging. Once you open the box, you'll find that the player is packed very nicely and wrapped in a fabric bag that you can reuse for shopping. *[At press time, we were unable to obtain a photo of Mr. Deering using his OPPO bag at the grocery store, but we hope to provide a follow-up in an upcoming issue.—Ed.]* This is the type of packaging that high-end boutique brands use, and it makes a very nice first impression. The player is black, made from

machined parts, and has a hefty feel. It definitely lacks the cheap plastic look that's typical of this price point; it looks and feels like a high-end product.

The elegant front panel's large tray and display are flanked by a USB port (capped off when not in use) and controls for playback and basic operation. Its simple touch interface features a ring and center button that you can use to navigate the player's menus and give basic commands. You can dim or completely disable the front display, which is a feature that I wish more manufacturers offered. If you turn the display off, it will turn on when it receives a command and then promptly shut off again. Perfect.

The fully featured back panel includes a nice host of video and audio connections. For audio, OPPO includes two sets of analog audio options: a full 7.1-channel output and a dedicated two-channel output. It has both TosLink optical and coaxial digital audio outputs, and of course an HDMI 1.3 output along with component and composite video outputs. The player does not have an S-video connection.

For Internet connection, OPPO offers a standard Ethernet

OPPO BDP-83 UNIVERSAL BLU-RAY PLAYER
PERFORMANCE ★★★★★
FEATURES ★★★★★
ERGONOMICS ★★★★★
VALUE ★★★★★

connection. Unfortunately, the BDP-83 doesn't have built-in Wi-Fi, which is a feature that Blu-ray players sorely lack. However, OPPO does offer a wireless system that you can purchase separately for \$80. It's preconfigured for the player and creates a wireless bridge with your home router if you'd rather forgo the hard-wired Ethernet route. While it isn't the ideal solution, it's nice to know that OPPO has a wireless option.

The back panel can accommodate an optional RS-232 connection for remote systems (\$89), and there's another USB slot. The BDP-83 can play a wide range of media files from the USB drive, including AVCHD and MKV files recorded onto discs or USB media. This means you can play back home videos, including HD ones, from a USB drive. If you don't connect the player to the Internet, you can perform firmware updates from a USB stick. You can also use the USB ports to expand the player's





| OPPO BDP-83 | 3:2 HD | 2:2 HD | MA HD | 3:2 SD | 2:2 SD | MA SD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING |
|-------------|--------|--------|-------|--------|--------|-------|----------------|-----------------|-------------------|-----------|
| | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS | EXCELLENT |

storage for BD-Live supplements if you've filled up the internal memory or simply don't want to use it. It's handy that one of the USB ports is accessible from the player's front panel.

Another interesting feature is the BDP-83's power supply. The player uses a universal power supply that can accept any of the voltages used throughout the world so you don't have to worry about transformers or voltage changes. This is a nice touch for international users who are looking to import.

Start It Up

When I first turned on the BDP-83, I was greeted with a setup walkthrough that got most of the work done right up front. The setup guides you through the video and audio settings and provides a pretty well-defined explanation of the settings. The player's GUI is intuitive and simple to navigate. You can call it up at any time, even during movie playback, without interruption.

OPPO includes some pretty extensive player setup options on both the audio and video sides, and I loved its firmware update options. Since frequent firmware updates are common with Blu-ray players, it's important to make this process as uncomplicated as possible. The BDP-83 does a great job, although I'd still like to see built-in Wi-Fi on more Blu-ray players, since both firmware updates and BD-Live are apparently here to stay.

You can update the BDP-83 in several different ways. Since this is a network-capable player, you can simply update the firmware using the Ethernet connection. You can also set the player to automatically ping OPPO's server to alert you when a firmware update is available. Downloads were pretty quick on my cable Internet connection, and the updates took just seconds to complete. If you don't plan to connect the player to the Internet, you can download the latest firmware directly from OPPO's Website and load the file

onto a USB stick or CD. The process is pretty painless, and the player recognizes the firmware right away and starts the process. OPPO is by far the most responsive and timely company I've encountered with firmware updates. It constantly looks for ways to improve the experience the player offers. Aside from the PlayStation 3, I don't think you'll find another player this well suited for future upgrades.

The included remote provides a full complement of interface controls and quite an assortment of direct controls for various player features. The remote is on the large side for a player, and it's completely backlit. I liked the remote's layout and didn't find any deficiencies in the control options. However, the buttons are a tad spongy and lack the tactile response I like.

Video Processing

Without a doubt, one of this player's biggest highlights is its video processing solution. OPPO made one of the best DVD players I've ever tested, the DV-983H. Since that player also featured ABT processing, I was eager to see what kind of performance OPPO would deliver here. The BDP-83 supports several playback resolutions via the HDMI output, including 480i, 480p, 720p, 1080i, and 1080p. It also provides 1080p/24 playback of both Blu-ray and DVD. For the international film lover, the BDP-83 does 50-hertz playback of DVDs and Blu-ray and offers frame-rate conversion for displays that don't support

PAL refresh rates. This means you can either play back titles that are encoded as 1080i/50 at 1080p/50 (for displays that support it) or have the player deinterlace and frame-convert them to 1080p/60. The BDP-83 supports 1080p/24 output for both Blu-ray Discs and DVDs. Just make sure your display supports the resolutions you decide on, and let the OPPO do the rest.

OPPO gives you the option to use a preset output resolution or set the player to Source Direct mode. Source Direct bypasses all of the player's video processing. Since the player offers exceptional video processing, I don't see any reason to use the Source Direct mode. However, it's nice that OPPO offers this option if you still want to use an outboard video processor or use the processing in

Features

OPPO BDP-83 BLU-RAY PLAYER

BD-LIVE: Yes (Built-in 1-GB flash memory, upgradeable)

BONUS VIEW: Yes (Built-in 1-GB flash memory)

FIRMWARE VERSION: BDP83-27-0601

AUDIO DECODING:

DOLBY: Dolby TrueHD, Dolby Digital Plus, Dolby Digital

DTS: DTS-HD Master Audio, DTS-HD High Resolution Audio, DTS

HDMI VIDEO RESOLUTIONS: 1080p/24, 1080p, 1080i, 720p, 480p, 480i (PAL Supported)

COMPATIBLE PLAYBACK FORMATS: BD-Video, DVD-Video, AVCHD, DVD-Audio, SACD, CD, Kodak Picture CD, CD-R/RW, DVD±R/RW, DVD±R DL, BD-R/RE, MKV

DIMENSIONS (W x H x D, INCHES): 16.88 x 3 x 13.25

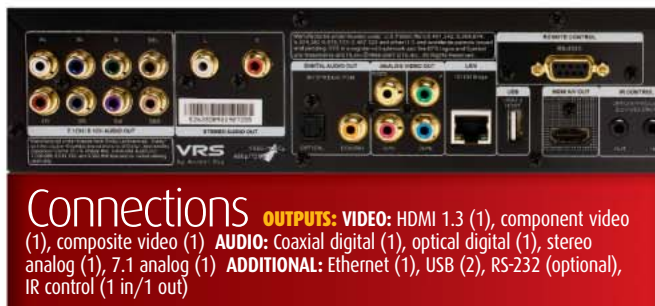
WEIGHT (POUNDS): 11.2

PRICE: \$499

a downstream component like an AVR, surround processor, or HDTV. In the latter cases, the Source Direct mode will still utilize the ABT chip's color space conversion, and you can select from RGB or Y/Cb/Cr options of 4:2:2 and 4:4:4. Since all Blu-ray Discs are encoded as Y/Cb/Cr 4:2:0, this conversion has to be done, and the ABT chip does it correctly.

Switching the output resolution on the OPPO is easy; the player lets you do it on the fly. All other BD players I know of, apart from Pioneer's, make you stop the disc and go to the setup menu to make an output resolution change.





Connections **OUTPUTS: VIDEO:** HDMI 1.3 (1), component video (1), composite video (1) **AUDIO:** Coaxial digital (1), optical digital (1), stereo analog (1), 7.1 analog (1) **ADDITIONAL:** Ethernet (1), USB (2), RS-232 (optional), IR control (1 in/1 out)

I put the OPPO through our full complement of HD and SD video tests, and the player passed with flying colors. Its SD deinterlacing and scaling was as good as anything I've seen, and its HD video processing is nearly without equal. Setting this player to 1080p is a set-it-and-forget-it deal regardless of what type of disc you put in the tray. I'm a fan of ABT's video processing performance and its DVDO line, and I was delighted to see ABT make its way into a Blu-ray player. I'm sure we'll be seeing more of ABT in the coming years in future players.

The BDP-83 also offers a host of video processing features that let you tailor the image to your taste. I'm not a big fan of video enhancements, but I realize that we all have our own tastes and not all source material is created equal. OPPO offers the full complement of picture adjustments, such as contrast, brightness, and color. It also provides some tweaker-friendly adjustments like Y/C delay and border levels. You can also engage ABT's noise reduction, which helps with material that shows slight digital noise.

The BDP-83 supports HDMI's Deep Color specification, but there's currently no native Deep Color program material on the market to take full advantage of it. All of today's consumer sources, either SD or HD, are limited to 8 bits per color (times three colors, for a total of 24 bits of data per pixel). Thanks to the ABT chipset, the OPPO lets you select an 8-, 10-, or 12-bit output (per color) through the HDMI Deep Color menu—even for today's sources. The extra bits are essentially upconverted. They do not provide true Deep Color, which would require material with a higher native bit rate. But if your display also supports 10- or 12-bit Deep

Color operation, the upconversion can provide extra precision for display enhancements and color space conversion. This avoids potential rounding errors in the video signal path that can occur during the conversion back to 8-bit depth.

Another perk that Blu-ray players haven't supported before is a zoom mode and scaling for a constant-height or anamorphic projector setup. The BDP-83 does the vertical squeezing to properly display via a projector with an anamorphic lens, which eliminates the need for a video processor for the scaling. I don't have an anamorphic setup myself, so I was unable to test this feature.

Another big plus is the BDP-83's inclusion of the *Spears & Munsil High Definition Benchmark* Blu-ray Disc. (See *Home Theater University* on page 16.) This disc has outstanding demo material sourced from a 4K camera (downconverted to 1920 by 1080 for the Blu-ray transfer). Plus, it gives you an incredible set of test tools to make sure your display chain is set up correctly and evaluate its performance, with clear guidance for every test. While some people don't see the benefits of different player designs, this disc can highlight how the BDP-83 improves on the video processing that most Blu-ray players offer. This disc is also one of the references we use in our own testing. You can directly compare your results with ours and perform your own tests with other players you may have lying around.

Audio Processing

Over the last year, there's been a big change in the Blu-ray player market. It wasn't very long ago that there was a big disparity in Blu-ray hardware profiles. Some players offered BD-Live, and

some only offered basic playback and possibly Bonus View compatibility. The more recent crop of players seem to have this locked down. Now the market is differentiating itself with expanded playback capabilities like YouTube and Netflix streaming, along with a host of other Internet streaming capabilities. But one area that hasn't gotten any real attention is the universal player market.

In the latter days of DVD playback, shortly before the dawn of HD players, universal players that could also play back multichannel music via SACD and DVD-Audio in addition to DVDs and CDs were all the rage. Those who got a taste of high-resolution multichannel music usually became hooked, despite dwindling software support for those formats. While neither format expanded beyond a niche of dedicated enthusiasts, new SACD offerings still hit the market regularly, although they're typically from smaller classical and jazz labels.

The BDP-83 offers full playback of both of these high-resolution music formats, including native DSD output via HDMI. The OPPO is one of a very few players that can output SACD as a native DSD data stream (DSD is the digital encoding format that SACD uses), and only a few surround processors and A/V receivers can accept it in that form. The OPPO can also convert the DSD stream to a linear PCM output, which most up-to-date surround processors and AVRs can handle. You can adjust the maximum PCM sampling rate to ensure that the digital output is compatible with the rest of your A/V chain. The BDP-83 can also

convert the native DSD or converted PCM version to analog and route it to its 7.1-channel outputs.

Those analog outputs have full bass management and time alignment. The distances are set in pairs, so odd configurations (for example, mains that are different distances from the sweet spot) may be an issue. The BDP-83's Small speaker setting uses a fixed crossover of 80 Hz. Unfortunately, there's no test tone for level calibrations, so if you plan to use the analog outputs, make sure you have a disc with test tones.

OPPO is also working on

Dolby Pro Logic II processing, a feature that's normally reserved for AVRs and audio processors. This will be a nice perk if you don't have this feature in your receiver and want to derive 5.1 sound from a stereo source.

On the Blu-ray front, the BDP-83 features the full gamut of advanced audio processing and includes full 7.1-channel analog outputs. It provides internal decoding for all the Dolby and DTS offerings, including Dolby TrueHD and DTS-HD Master Audio. You can pass these soundtracks in bitstream form to your receiver or processor and decode them there, or the player can decode them and provide a multichannel PCM output. With onboard decoding to PCM, the BDP-83 allows for audio mixing that

lets you listen to the PiP commentaries and additional sounds on Blu-ray Discs that need to be mixed in with the main soundtrack. If you select bitstream, you can't take advantage of these features unless you change the player's audio setup in the menus.



OPPO's remote is nicely equipped, with plenty of direct controls, fully backlit buttons, and a large layout.



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In Use

If you've used other Blu-ray players, the first thing you'll notice about the BDP-83 is its speed. This is one of the biggest gripes about standalone players. It seems like the more expensive a player is, the slower it is. Not so with the OPPO. The BDP-83 turns on immediately, and its tray response is excellent. Load times are on par with the PlayStation 3, which has been the speed king from the beginning. This is the level of performance we should see from players across the board. Gone is the frustration with initial loading and Java-intensive titles and features. What takes some players well over a minute typically takes seconds on the OPPO. Even the hardest disc takes less than half the time of some more expensive platforms I've reviewed.

Operation is smooth across most formats. I've had the chance to use the player for quite some time, and I haven't come across a hitch with a Blu-ray title at all. However, some SACDs and CDs had a brief dropout on occasion. At press time, OPPO had just



recently offered the BDP-83 for sale to the general public after extensive beta testing and its "early adoption" market trial program. OPPO is committed to timely firmware updates to address any little bugs that might pop up. Thankfully, there hasn't been any significant issues with my unit. In fact, I'd say this is the most trouble-free player I've used in my system considering the breadth of titles (and formats) I play regularly.

The BDP-83's everyday use is without a doubt the most refreshing experience I've had with a standalone Blu-ray player. I've been quite impressed by specific areas from a wide range of manufacturers, but up until now, no one has made a one-stop shop for great performance across the board. The BDP-83 is just that. Its video performance with Blu-ray and DVD playback is as good as anything I've used, and nothing beats its source-direct HD performance. When you couple this level of performance with its general operation, you have a machine that stands out among its peers. In fact, aside

from the obvious investments in build quality, many enthusiasts will be hard-pressed to find any real performance benefit in typical home theater applications from the current crop of price-no-object players on the market.

When I watched some of my favorite recent Blu-rays, the BDP-83 delivered reference-quality video and audio every time. The breathtaking color rendition and small object detail in the recent *A Bug's Life* Blu-ray release blew me away. And Criterion's recent treatment of David Fincher's *The Curious Case of Benjamin Button* showed why Blu-ray is clearly several steps beyond DVD.

I dusted off the few DVDs I have left in my collection, and it proved to be a pretty painless endeavor. The BDP-83's upconversion is second to none. While the overall quality of DVD is still a distant second to Blu-ray, I was surprised by how good this player made DVDs look. I let the OPPO convert my DVDs to 1080p/24 for playback, and it didn't have any issues with tearing or frame drops. A few other manufacturers

offer 24p support for DVDs, but I sometimes noticed occasional frame drops with some material. The OPPO's DVDO processing didn't seem to have the same issue with the titles I tested. If you still watch a lot of DVDs, this alone makes the OPPO a worthwhile investment.

Conclusion

Finally, here's a standalone Blu-ray player that truly offers the complete experience. The BDP-83 is a reference video and audio transport regardless of the format you throw at it. But it's also the most user-friendly standalone player I've had the pleasure of using. While some players provide outstanding performance in certain areas, the OPPO never hiccupped in any department. It's truly the most complete package of a Blu-ray player I've yet reviewed. It's now my standing reference as a source component and one that should be on your short list, regardless of your budget. ☞

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Test Bench

BY Mark Fleischmann

Acoustic Energy Radiance 1 Speaker System

PRICE: \$4,200 **AT A GLANCE:** Ring radiator tweeter civilizes high frequencies • DXT lens matches tweeter's dispersion to woofer's • Subwoofer includes adjustable notch filter

Lord of the Ring



Sometimes a single moment of greatness defines a person or a company, even if other moments of greatness follow. For Judy Garland, it was “Over the Rainbow” in *The Wizard of Oz*. For Acoustic Energy, a British loudspeaker brand, it was the AE1. The monitor took recording studios by storm when it made its debut in 1988, and it soon became a favorite among consumer-level audiophiles as well.

Since then, Acoustic Energy has moved from West London to the bucolic Cotswolds, formed an alliance with a Malaysian manufacturer, and given birth to various speaker lines, including several newer variations of the AE1. One of these days, I’ll have to capture five of the classic monitors and put them through their paces. First, let’s talk about a new line, the Radiance series, which includes a tower, two monitors, a center, and a sub. This review covers a favorite configuration of mine, with five of the smaller Radiance 1 monitors and the Radiance Sub.

Ring Radiation

The Radiance 1 is about a foot and a half tall. It doesn’t loom large, perhaps because its width is a little more than 7 inches. Its sides curve toward the back, which is an excellent way of minimizing the polluting influence of standing waves inside the enclosure. The overall visual impact is that of a satellite speaker half the size. It didn’t crowd me.

Veneer choices are light Natural Oak or darker Antique Oak. I had the former and found it unassumingly beautiful. Its light satin finish was minimal and natural, not glossy or ruthlessly

sanded down. I could feel the wood grain when I ran a fingertip over its surface.

Pull off the well-made aluminum grilles—with especially strong magnets that practically fly onto the speaker—and you’ll find this simple two-way design’s drivers. They include a tweeter with a 1-inch doped-fabric diaphragm and a woofer with a 5-inch deep-anodized aluminum alloy cone in a die-cast aluminum basket. Acoustic Energy says the woofer’s dual-wound aluminum voice coils provide the benefits of low distortion and high power handling.

The tweeter is not a conventional dome but the latest iteration of Vifa’s ring radiator,

according to AE. “Through the use of motor optimization and special flux stabilizing rings, it has a 10-decibel reduction in motor distortion over previous models. To get the best from this new motor, we went through an intensive process of evaluating different diaphragm materials and varying source, type, and doping levels in order to find the perfect combination, which would give us the widest bandwidth and lowest distortion.”

AE says the phase plug at the tweeter’s center “helps the directivity at high frequencies by shaping the loading process across

ACOUSTIC ENERGY RADIANCE 1
SPEAKER SYSTEM

PERFORMANCE ★★★★★

VALUE ★★★★★

BUILD QUALITY ★★★★★

the tweeter diaphragm.” The tweeter is recessed into a die-cast aluminum waveguide, which AE calls a DXT lens. Most tweeter waveguides focus the tweeter’s output while controlling its interaction with the room. In this case, it’s also designed specifically to match the tweeter’s dispersion with the woofer’s, improving



• The Radiance 1 incorporates dual-wound aluminum voice coils in its woofer for low distortion and high power handling.



• The Radiance Sub has a front-mounted pulp cone driver along with several knobs on the back.

Features

| SPEAKER: | RADIANCE 1 |
|-----------------------------------|--|
| TYPE: | Two-way, monitor |
| TWEETER (SIZE IN INCHES, TYPE): | 1, doped fabric ring radiator with DXT |
| MIDWOOFER (SIZE IN INCHES, TYPE): | 5.12, aluminum alloy cone |
| NOMINAL IMPEDANCE (OHMS): | 8 |
| RECOMMENDED AMP POWER (WATTS): | 20-150 |
| AVAILABLE FINISHES: | Natural Oak, Antique Oak |
| DIMENSIONS (W X H X D, INCHES): | 7.28 x 12.6 x 9.84 |
| WEIGHT (POUNDS): | 17.64 |
| PRICE: | \$1,200/pair |

integration around the crossover point. On the back are biwire transparent-nut binding posts.

Notch Your Problems Away

The Radiance Sub includes a front-mounted pulp cone driver of a little less than 9 inches in diameter that's housed in a sealed box, to which you may fit the supplied rubber feet or spikes. Seven knobs adorn the back panel. In addition to the usual three for volume, crossover, and power, the sub also has a continuously adjustable phase control and three more controls that apply a notch filter for room correction. While I've had varying results from the room correction/EQ features that are built into A/V receivers, I'm a strong

believer in EQ built into subwoofers.

Bloated, uneven, or otherwise imperfect bass response is a common sonic flaw in most rooms. Often it's the one flaw on which all listeners agree, regardless of their hearing acuity. If you experiment with subwoofer placement, it usually helps, and some rooms benefit from an extra sub in a second location. But as worthwhile as those strategies are, they can only take you so far. It's sometimes desirable to finish the job by notching out the most objectionable, exaggerated frequency hump. To that end, the Radiance Sub has three controls that manipulate a notch filter.

These adjust the notch's frequency (30 to 150 hertz), its slope or width (min/max), and its level (zero to -12 dB).

To get the best out of a notch filter, you really need to know the frequency and other parameters of the bass hump you're trying to correct. The Radiance Sub's manual recommends that you experiment with different notch frequencies, aiming for a high slope and a low level. But there's a better way to determine what kind of correction your room really needs. You'll need to measure the room's bass response.

Some subwoofer makers—those reviewed in these pages include Infinity and Mordaunt-Short—supply test CDs and sound pressure level (SPL) meters that are optimized for measuring bass. They encourage users to plot their room responses on a paper graph and adjust accordingly. For this purpose, I recommend the Infinity Room Adaptive Bass Optimization System (R.A.B.O.S.) kit, sold for \$60 at www.harmanaudio.com and www.bhphotovideo.com. The measuring process takes about 20 minutes, but when it's done and you've twiddled the knobs in an appropriate manner, you'll be amazed by how much better your room sounds without a standing wave the size of a whale pounding you every time the subwoofer gets a gob of bass signal.

Associated equipment for this review included a Rotel RSX-1065 AVR and Panasonic DMP-BD55 Blu-ray player. With the exception of one movie selection, I did all of my listening with the sub EQ running.

Football Players, Robots, Honeymooners

Oliver Stone's *Any Given Sunday* (BD) is a bleak, harrowing, jarring vision of the football business. I knew it would be a rough ride when Al Pacino started yelling his head off 12 minutes into the running time—he usually waits until the last third of a movie. The film starts with an extended action scene that immediately plunged me, via Dolby TrueHD, into a world of dynamic extremes. Thudding impacts alternated with shocking silences, which showed off the Radiance Sub's controlled impact and transient response. A variety of football-friendly music came through beautifully; the hip-hop and techno beats were powerful, focused, and tuneful. The sub EQ was clearly a resounding success.

Crowd noise was surprisingly muted and panned in a way that suggested its psychological impact on the characters, as opposed to a crowd perspective. To keep the dialogue at an intelligible level, I cranked the master volume higher than usual. This made the playing-field scenes fiercely loud, but the ring-radiator tweeters seemed to love the extra power. They were mercifully devoid of the compressed, crunching, fatiguing characteristics of an overstressed tweeter.

Wall-E (DVD), my token Dolby Digital selection, was the only one that didn't benefit from the sub EQ—I watched it before I dialed in the notch adjustments for my room. The result was what I usually hear from a decent sub trying to make itself heard through my room's standing wave. When the spacecraft lifted off, the midbass was strong but muddy, which made me feel like turning it down. Most of the soundtrack consists of mechanical noises, with strings that periodically soar overhead, which is an excellent strategy for a movie of this kind. The Radiance 1



• AE's Radiance speakers come in two beautiful oak finishes. My review samples were in the lighter Natural Oak.

HT Labs Measures

ACOUSTIC ENERGY RADIANCE 1 SPEAKER SYSTEM

Satellite Sensitivity:
85.5 dB from 500 Hz to 2 kHz

This graph shows the quasi-anechoic (employing close-miking of all woofers)

frequency response of the Radiance 1 satellite (purple trace) and Radiance Sub subwoofer (blue trace). The passive loud-speaker was measured with its grille at a distance of 1 meter with a 2.83-volt input.

The Radiance 1's listening-window response (a five-point

average of axial and ± 15 -degree horizontal and vertical responses) measures $+1.42/-1.52$ decibels from 200 hertz to 10 kilohertz. An average of axial and ± 15 -degree

horizontal responses

measures $+1.53/-1.41$ dB from 200 Hz to 10 kHz. The -3 -dB point is at 57 Hz, and the -6 -dB point is at 44 Hz. Impedance reaches a minimum of 5.58 ohms at 205 Hz and a phase angle of -33.77 degrees at 120 Hz.

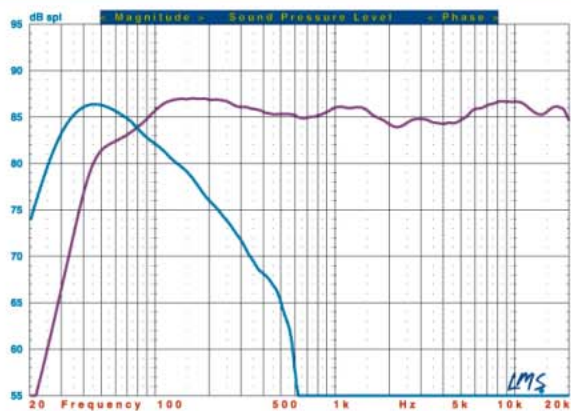
The Radiance Sub's close-miked response, normalized to the level at 80 Hz, indicates that the lower -3 -dB point is at 27 Hz and the -6 -dB point is at 23 Hz. The upper -3 -dB point is at 119 Hz using the AV Subwoofer Line-In connection. —**MJP**

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web



ACOUSTIC ENERGY RADIANCE 1 SPEAKER SYSTEM



made the noises palatable and filled the boundaries of an agreeably large soundfield with the strings.

The Heartbreak Kid (BD), in Dolby TrueHD, has Ben Stiller flying through marital mayhem as if he'd been shot from a cannon. Whoever picked the soundtrack music was clearly a David Bowie fan. Several classic songs enjoy the benefits of remixing in clean lossless surround—most notably “Suffragette City,” which plays over the end credits. As with most comedies, this one was mixed like a good TV program, so I could watch the whole thing at a low

master volume setting without missing any dialogue.

Celebration, Psychedelia, Percussion

André Previn: An 80th Birthday Celebration (CD) is a showcase for the composer, conductor, and jazz pianist, with material from 1961 to 1995. With sterling stereo performance and five matched speakers for Dolby Pro Logic II, I often had a hard time deciding which mode I preferred. They were both satisfying on some level. In stereo, there was so much happening between the speakers that it was rarely advantageous to



Connections

RADIANCE SUB SUBWOOFER ENCLOSURE

TYPE: Sealed **WOOFER (SIZE IN INCHES, TYPE):** 8.66, pulp cone **RATED POWER (WATTS):** 200 RMS, 400 peak **CONNECTIONS:** LFE-mono in and stereo line-level in/out, RCA **CROSSOVER BYPASS:** LFE **AVAILABLE FINISHES:** Natural oak, antique oak **DIMENSIONS (W X H X D, INCHES):** 14.17 x 16.14 x 12.8 **WEIGHT (POUNDS):** 37.48 **PRICE:** \$1,200

activate the center channel. Incidentally, that's a hallmark of a great speaker. But in surround, the soundstage became an equally seamless soundfield, with greater depth, yet without the unevenness that an often ill-conceived horizontal center can impose. Either way, the string sound was natural and so euphonic that even dissonant moments in Previn's more ambitious compositions were wholesome and nourishing, not cold and harsh. Ideally sculpted midrange performance complemented highs that were fully developed but not edgy or hyped.

Jefferson Airplane's live album *Bless Its Pointed Little Head* (LP) documents the band at Fillmore West and East in its glory days, circa 1968. The charismatically loose-limbed performance was unfortunately complemented by some slackness at the mixing desk. Perhaps the biggest casualty was Jack Casady's barnstorming and texture-rich bass. The Radiance Sub accordingly reflected its reduced status in the mix, but I wondered if a simple sub volume hike would bring it back up to par. With most subs, this is a move I wouldn't attempt because my room's standing wave would clobber me. But with a calibrated sub in my arsenal, I took courage and goosed the 200-watt sub's volume knob to 60 percent of the max (higher than usual for my smallish room). That brought Jack back to life with a roar. The band's abundance of singers (Grace Slick, Marty Balin,

Jorma Kaukonen, Paul Kantner) all got their chances to shine. The Radiance 1 seemed to cherish Slick's voice, bringing out its typical steely cutting edge and some almost subliminal velvet timbre.

Music for Piano and Drums by Patrick Moraz and Bill Bruford (LP) may be a victim of 1983-vintage digital recording, judging from the blurred *bish* of the cymbals. But Bruford's drums thrived in all their restless eloquence—each one precisely tuned, given the ideal measure of impact, and suspended in a three-dimensional space that persisted in stereo or surround. The light, bright piano sound that Moraz favors shared the space, and his glittering glissandos cascaded through the soundstage. There was so much to listen to, I barely noticed the absence of a bass player.

With the Radiance line, Acoustic Energy lives up to its 20-year reputation for making fabulous loudspeakers. Listening to the ring radiator tweeter was a particular pleasure. If you find your current speakers harsh, but you don't want to give up extended frequency response, you may love the Radiance 1 (and its Radiance kin). The Radiance Sub delivers the benefits of in-room EQ in spades. It's like waking up from a bad dream—oh, so that's what bass is supposed to sound like! These are great speakers and overachievers in their price range. Try them, and you may fall in love. **T**

* Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* (www.quietriverpress.com).

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DESIGN. INSPIRATION. SOLUTIONS

Test Bench

BY Mark Fleischmann

Yamaha YHT-591 HTIB

PRICE: \$650 **AT A GLANCE:** A/V receiver, five slim speakers, and powered sub • Slightly rolled-off treble, but pleasing sound • Good remote, lousy supplied cable

Home Theater Comfort Food

On my first trip to London, when I was much younger, my first meal was a mediocre steak in a fifth-rate restaurant full of reveling Australian soccer fans. It was one of the most disappointing meals I've ever had. While Britain doesn't exactly lead the world in cuisine, you can eat well there if you know what you're doing. The reason I got stuck with a leathery, tasteless, uninspiring piece of meat was that I was jet-lagged and desperately hungry, I didn't know

my way around, and I couldn't find anything better. HTIBs can be like that. People who might be better served by a higher-quality component system settle for a less fulfilling one because they don't know their way around the labyrinthine world of A/V receivers and speaker systems. Mixing and matching surround gear can be too steep a hill to climb.

There are good HTIBs, but finding one is a crapshoot. It's like wandering out into the streets of a strange maze-like city, selecting a

restaurant at random, and hoping for the best. Much like any consumer, that's the position I placed myself in when I reviewed the Yamaha YHT-591 All-in-One Digital Home Theater System, as the box refers to it. Feeling slightly guilty that I don't review enough HTIBs, I arbitrarily picked this one and served as your surrogate. Here's what I found.

The One-Box Solution

The YHT-591 comes in a single large carton. It includes five slim speakers, a subwoofer, and the

YAMAHA YHT-591 HTIB
PERFORMANCE ★★★★★
FEATURES ★★★★★
ERGONOMICS ★★★★★
VALUE ★★★★★
BUILD QUALITY ★★★★★

HTR-6240 A/V receiver. The AVR comes from Yamaha's relatively unsung value line, where it sells separately for \$380. In most HTIBs, the speakers and AVR are designed to go with each other exclusively.

• The NS-AP8805BLS surround speaker uses drivers identical to those in the floorstanding main speaker.

• Unlike most traditional subs, the YST-SW216 has a driver in front and a port on its right side.



Features

| SPEAKER: | NS-AP8805BLF | NS-AP8805BLC | NS-AP8805BLS |
|---------------------------------|----------------------------|----------------------------|----------------------------|
| TYPE: | Three-way, monitor | Three-way, center | Two-way, surround |
| TWEETER (SIZE IN INCHES, TYPE): | 0.75, silk dome | 0.75, silk dome | 0.75, silk dome |
| WOOFER (SIZE IN INCHES, TYPE): | 2.25, white paper cone (4) | 2.25, white paper cone (4) | 2.25, white paper cone (2) |
| NOMINAL IMPEDANCE (OHMS): | 6 | 6 | 6 |
| RECOMMENDED AMP POWER (WATTS): | 40-120 | 40-120 | 30-100 |
| AVAILABLE FINISHES: | Black | Black | Black |
| DIMENSIONS (W X H X D, INCHES): | 3.69 x 17 x 4.75 | 17 x 3.69 x 4.75 | 3.69 x 10 x 4.75 |
| WEIGHT (POUNDS): | 5.29 (6.28 with pedestal) | 5.29 | 3.53 |



Connections

YST-SW216 SUBWOOFER ENCLOSURE TYPE: Vented **WOOFER (SIZE IN INCHES, TYPE):** 10, paper cone **RATED RATING (WATTS):** 50, RMS **CONNECTIONS:** Speaker-level, in/out, line-level, stereo in, RCA's **CROSSOVER BYPASS:** No **AVAILABLE FINISHES:** Black **DIMENSIONS (W X H X D, INCHES):** 13.38 x 13.38 x 15.16 **WEIGHT (POUNDS):** 24.7

Since you can purchase the AVR alone, presumably that's not the case here. Yamaha says that more intrepid users can experiment with different speakers as long as they have a minimum impedance of no less than 6 ohms and power handling of up to 105 watts. You can adjust the minimum impedance in an advanced setup menu for either 8 ohms (the default setting) or 6 ohms (which Yamaha recommends for other speakers).

With a footprint of less than 4 by 5 inches, the speakers won't overwhelm your living space with bulk. Somewhere in the Far East, a manufacturer of 2.25-inch paper-coned woofers is very happy. The front speakers use four each, and the surrounds use two each. Yamaha wisely invested in a 0.75-inch silk-dome tweeter for

all five speakers. As I later discovered, this system has a smoothness that's surprising in an HTIB with a three-figure price tag. The enclosures are made of good, solid, vinyl-clad fiberboard, so cabinet resonance is likely to be minimal compared with similarly priced products with plastic enclosures.

The speakers include keyholes for a quick-and-dirty mounting job and threaded inserts for something fancier (Yamaha doesn't include wall-mount hardware). For freestanding use, the horizontal center comes with two rubber pieces that serve as a cradle. The left and right satellites include a 7-inch base, which reconciles its tiny footprint with its 17-inch height. A plastic piece that's slightly smaller than the speaker enclosure's footprint fits

between the speaker and the base. This gives the whole thing a floating appearance when it's assembled. Even when assembled, the satellites aren't tall enough for floorstanding use, but they would fit nicely on a long knee-high cabinet, presumably surrounding a flat-panel TV. There's nothing comparable for the surrounds. Presumably, Yamaha believes you're more likely to hang them.

The subwoofer has a 10-inch driver on the front and, interestingly, a port on the right side. I don't recall seeing this kind of asymmetrical side-ported sub before (perhaps I should get out more). If you place the sub along your theater room's side wall, as some experts recommend, be certain that the port has sufficient clearance. Given the smallness of the woofers in the other speakers—just 2.25 inches, which means the bass extension is likely to be quite limited—I placed the sub below the center speaker, where it could operate to a somewhat higher frequency and fill in the lower part of male voices and other upper bass effects.

The sub has a volume knob and high-cut switch on its back panel. The latter serves as the only crossover control on the sub

itself—it doesn't have any other crossover or phase controls. The high-cut has two positions, and the sub's manual charts their rolloff. One reduces sub output above 70 hertz, while the other reduces it above 100 Hz. Yamaha recommends the bottom position for "optimum tone balance," but it allows the higher one to let the sub deliver higher bass when the limited extension of smaller satellites demands it.

Yamaha made an interesting ergonomic choice with the HTR-6240 A/V receiver's front panel. To select your source, you must use the two small buttons toward the bottom. The four larger Scene buttons above them select frequently used inputs and associated soundfield options.

Connectivity options are minimal, but they're shrewdly chosen for the most part. They include four HDMI inputs and one output, and the receiver decodes lossless surround (Dolby

● The HTR-6240 lacks an onscreen GUI, but it does decode lossless audio.

● Each loudspeaker features a 0.75-inch silk-dome tweeter for a smooth sound.



HT Labs Measures

YAMAHA YHT-591 HTIB

Two channels driven continuously into 8-ohm loads:

- 0.2% distortion at 80.8 watts
- 1% distortion at 91.9 watts

Two channels driven into 4-ohm loads:

- 0.2% distortion at 99.3 watts
- 1% distortion at 115.7 watts

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the L/R (purple trace), subwoofer (blue trace), center channel (green trace), and surround (red trace). All passive loudspeakers were measured at a distance of 1 meter with a 2.83-volt input and scaled for display purposes.

The L/R's listening-window response (a five-point average of axial and ± 15 -degree horizontal and vertical responses) measures $+4.32/-2.32$ decibels from 200 hertz to 10 kilohertz. The -3 -dB point is at 119 Hz, and the -6 -dB point is at 108 Hz. Impedance reaches a minimum of 5.50 ohms at 16 kHz and a phase angle of -46.46 degrees at 208 Hz. Sensitivity averages 82 dB from 500 Hz to 2 kHz.

The center's listening-window

response measures $+5.32/-2.28$ dB from 200 Hz to 10 kHz. An average of axial and (± 15 -degree) horizontal responses measures $+4.95/-2.55$ dB from 200 Hz to 10 kHz. The -3 -dB point is at 121 Hz, and the -6 -dB point is at 111 Hz. Impedance reaches a minimum of 5.76 ohms at 15.6 kHz and a phase angle of -46.50 degrees at 208 Hz. Sensitivity averages 82 dB from 500 Hz to 2 kHz.

The surround's listening-window response measures $+6.37/-7.48$ dB from 200 Hz to 10 kHz. The -3 -dB

point is at 131 Hz, and the -6 -dB point is at 121 Hz. Impedance reaches a minimum of 5.50 ohms at 15.4 kHz and a phase angle of -57.55 degrees at 2.3 kHz. Sensitivity averages 82 dB from 500 Hz to 2 kHz.

The subwoofer's close-miked response, normalized to the level at 80 Hz, indicates that the lower -3 -dB point is at 58 Hz and the -6 -dB point is at 41 Hz. The upper -3 -dB point is at 106 Hz.

Crosstalk at 1 kHz driving 2.83 volts into an 8-ohm load was -77.29 dB left to right and -79.92 dB right to left. THD+N from the amplifier was less than 0.008% at 1 kHz when driving 2.83 volts into an 8-ohm load. The signal-to-noise ratio with 2.83 volts driving an 8-ohm load from 10 Hz to 24 kHz with "A" weighting was -106.88 dB.

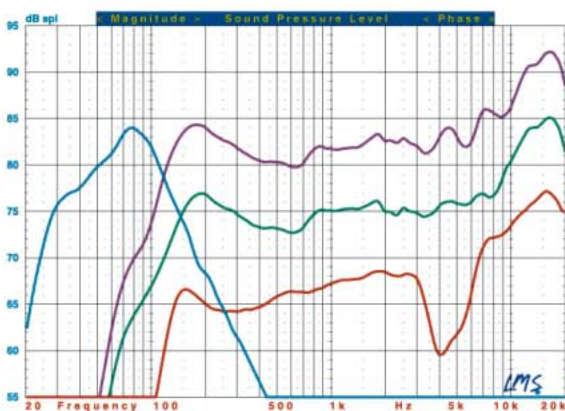
—MJP

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web



YAMAHA YHT-591 HTIB



TrueHD and DTS-HD Master Audio) from native bitstreams. The HDMI version is 1.3c, which is functionally equivalent to the more common 1.3a standard. Component inputs accommodate two additional HD sources, with another output. S-video is absent, but it's not sorely missed. Composite video supports up to five legacy sources, which should be sufficient for most users. It also includes an iPod docking jack on the back and a headphone input and stereo mini jack on the front.

Although the receiver has five amp channels, it supports 7.1-channel surround decoding, and it includes a line output for the back-surrounds. It might be easier to just buy the step-up model YHT-791, which has seven amp channels and associated speakers. However, I don't think back-surrounds are worth the extra two hundred bucks, unless you've got a huge room, and in that case, you shouldn't be buying an HTIB.

Many HTIBs come with pre-cut cables that are often color-coded to match the speaker terminals. This one comes with a single length of skinny wire. When I divided it up, I found I had enough for the surrounds (about 25 feet each) and for one of the front speakers. Other cables in my collection filled the gap. Even for a small room, the supplied cable isn't sufficient to do the job, and at 24-gauge, it's pretty flimsy. But don't regard this as a deal breaker. If you buy the system, plan to invest in a couple of rolls of cheap generic speaker cable. A 50-foot roll of 16-gauge goes for about 10 bucks on Amazon. Don't worry, anyone can cut and skin wire with a cheap tool from the hardware store.

The only limitation that alarms me is the mixed bag of speaker terminals. The receiver has collared binding posts that are only for the front left and right channels, while it provides spring-loaded wire clips for the center and surrounds. All of the speakers have wire clips. While wire clips are common in low-end products, they're frowned upon, as they provide a flimsy and fairly insecure connection with a tiny area of surface contact. Why binding posts for only the left and right channels? Yamaha says that

it's "to accommodate larger-gauge speaker wire for the main channels." It adds that most 5.1-channel programming delivers more power to the front than to the back. This still doesn't explain why the center—the hardest-working channel—is stuck with wire clips. Yamaha says: "Most center-channel HTIB speakers are smaller and do not require larger-gauge wire."

The remote is basic, old-fashioned, and does not include an LCD or any other fancy stuff. Still, the controls are well organized by color, background, and shape—I counted no fewer than seven different button shapes. Although the volume keys are larger than the rest, they could have been larger still, and I'd also add learning capability. But this remote is still better than one you'd get with a lot of pricier products.

Here's an important note about the onscreen graphic user interface. This receiver doesn't have one. You have to squint at the front panel when you choose the settings. Of course, you can mitigate this shortcoming if you use the automatic setup mode.

I only used one piece of associated gear for this review—the Panasonic DMP-BD55 Blu-ray player. I used this for Blu-rays (all movie demos) and CDs (all music demos).

Comfort Food

To my surprise and pleasure, the system immediately established a high comfort level. Its sins were mostly those of omission. The top end was definitely rolled off, the midrange could be a little gauzy, and the sub's dominant frequencies were eternally obvious. The crossover between the speakers' 2.25-inch woofers (calling them woofers may be stretching the definition a little) and the sub's 10-inch driver was also less than perfect. But while the system didn't have a lot of sparkle or whomp, it did offer a polite top end, a midrange that was always warm and sometimes involving, and a soundfield of decent proportions, with no glaring timbre shifts among the five speakers.

Defiance uses Dolby TrueHD to tell the story of an ad hoc community of Jews who survive

World War II in the harsh forests of what is now known as the Ukraine. The key sonic element is Joshua Bell, who adds eloquent solo violin to an orchestra that's vague (a common characteristic of soundtrack recordings) but agreeably smooth and full. The timbre-matched speakers made it spread throughout the soundfield without collapsing. Voices could have resounded more in the outdoor setting—this lack of ambience may have been one of the few drawbacks of the reticent top end. Still, they were clear enough, especially since you can play the system consistently loud without ill effects.

Let the Right One In, in DTS-HD Master Audio, is a vampire story that kept me in suspense. Were these blood-lusting Swedes really vampires, or did they just think they were vampires as they launched themselves at their neighbors' necks? The orchestral soundtrack, enhanced by solo guitar over the end credits, is practically a character in itself. It establishes a wistful humanity that offsets the story's Nordic bleakness and troubled characters. The sub's dominant frequencies could be a bit aggressive in musical peaks and even in small effects like a car driving away. I knocked the

volume down from 40 percent of the maximum setting to 33 percent.

College Road Trip, in multi-channel PCM, stars Martin Lawrence as a control-freak dad who drives his daughter to college-admission interviews with a menacing pet pig. The dynamics are limited, as they typically are in B-grade comedy. However, the music is well integrated and it sounded good, especially in the bus karaoke scene.

Boats, Punks, and the Perfect Marriage

While it's not terribly detailed on the frequency spectrum, the system's midrange is as comfortable as an old shoe. My musical demos didn't induce a single moment of pain. In Guy Clark's *Boats to Build*, mandolin and slide guitar solos came to the fore, while the remainder of the acoustic-guitar-centered arrangements were perhaps too defocused. The speakers emphasized the nasal quality of Clark's voice, but they didn't suppress his occasional rasp. At low volumes, the rhythm

section had an acceptable balance. But at higher ones, the sub's dominant frequencies were more audible. With all material, the system fared better in the Dolby Pro Logic II Music mode than in



Connections

HTR-6240 A/V RECEIVER
INPUTS: VIDEO: HDMI 1.3c (4), component video (2), composite video (5) **AUDIO:** Coaxial digital (2), optical digital (2), stereo analog (6), headphone (1), stereo mini jack (1) **ADDITIONAL:** iPod/Bluetooth dock (1), AM (1), FM (1) **OUTPUTS:** VIDEO: HDMI 1.3c (1), component video (1), composite video (2) **AUDIO:** Stereo analog (2), surround back (1), sub (1)

Features

HTR-6240 A/V RECEIVER

AUDIO DECODING:
DOLBY: TrueHD, Digital 5.1, EX, Pro Logic IIx
DTS: DTS-HD Master Audio, DTS, ES, 96/24
OTHER: 15 DSP modes, 5CH/7CH stereo
THX CERTIFICATION: No
NUMBER OF AMP CHANNELS: 5
RATED POWER (WATTS PER CHANNEL): 105 into 8 ohms, one channel driven
SPECIFIED FREQUENCY RESPONSE: 10 Hz to 100 kHz +0/-3 dB
AUTO SETUP/ROOM EQ: YPAO
DIMENSIONS (W X H X D, INCHES): 17.13 x 6 x 14.38
WEIGHT (POUNDS): 18.5
PRICE (IF SOLD SEPARATELY): \$380

exactly transparent, the presentation was certainly lucid, especially in the strings and the piano's middle keys, where most of the melodies reside. Serkin and Szell are a perfect marriage of minds. I never had a sense that the piano soloist and conductor were egotistically pulling away from each other. This old CD still moves me.

With the YHT-591, Yamaha establishes a modest and reasonable set of goals and meets them well. The speaker enclosures and tweeters are of unexpectedly good quality. You get your money's worth. In fact, you could spend the same amount of money and do far worse. **T**

* Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* (www.quietriverpress.com).

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The Yamaha's remote is a basic design, with well-organized buttons and a simple layout.

| YAMAHA HTR-6240 | 3:2 HD | 2:2 HD | MA HD | 3:2 SD | 2:2 SD | MA SD | VIDEO CLIPPING | LUMA RESOLUTION | CHROMA RESOLUTION | SCALING |
|-----------------|--------|--------|-------|--------|--------|-------|----------------|-----------------|-------------------|---------|
| DIGITAL | N/A | N/A | N/A | N/A | N/A | N/A | PASS | PASS | PASS | N/A |
| ANALOG | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

VIDEO TEST BENCH The Yamaha does not perform any video processing, either upconversion to higher resolutions and/or cross-converting from an analog video input to an HDMI output. Its video inputs are limited to switching, passthrough, and tapping the audio carried on HDMI. The only applicable results are shown in the table and were all performed at 1080p/60.—TJN

Visit our Website for a detailed explanation of these video tests.



my favorite recording of my favorite piano concerto—Brahms' *Piano Concerto No. 2*, as performed by Rudolf Serkin, George Szell, and the Cleveland Orchestra. Simply put, I played it loud, and it didn't hurt. If not

Cinema

SCOPE



RATINGS

| | Poor | Fair | Good | Excellent | Reference |
|---------------|------|------|------|-----------|-----------|
| PICTURE | ★ | ★ | ★ | ★ | ★ |
| SOUND | ★ | ★ | ★ | ★ | ★ |
| EXTRAS | ★ | ★ | ★ | ★ | ★ |
| INTERACTIVITY | ★ | ★ | ★ | ★ | ★ |

Reviews in High Definition



Coraline 2-Disc Collector's Edition

Curiosity Killed the Cat



Thanks to visionary director Henry Selick, the lost art of stop-motion animation continues to live in the world of CGI. *Coraline* is the story of a young girl who moves into an old Victorian house with her parents. Her mother and father are too busy to look up from their newspapers and computers to notice her, and her only friend is a nerdy boy named Wybie who plays with slugs.

Out of boredom, Coraline discovers a secret doorway in the house that leads to a parallel universe where alternate versions of her parents and neighbors reside. In this world, her parents are the antithesis of their human counterparts. They're saccharine sweet to the point of zombiedom and give Coraline everything she wants. The more bleak and colorless Coraline's reality seems, the more she gravitates to her newfound happy world. But even though everything seems all sunshine and smiles on the surface, an unsettling feeling of danger and dread lurks underneath. Once Coraline realizes her peril and tries to go back, she's prevented from leaving.



BLU-RAY

STUDIO: Universal, 2009
ASPECT RATIO: 1.85:1
AUDIO FORMAT:
DTS-HD Master Audio 5.1
LENGTH: 101 mins.
DIRECTOR: Henry Selick
STARRING: Dakota Fanning,
Teri Hatcher, Ian McShane

| | |
|---------------|-------|
| PICTURE | ★★★★★ |
| SOUND | ★★★★★ |
| EXTRAS | ★★★★★ |
| INTERACTIVITY | ★★★★★ |

Harkening back to those classic Rankin/Bass Christmas specials of yesteryear like *Rudolph the Red-Nosed Reindeer*, *Coraline* takes the dying genre a step further by being the first stop-motion animated film shot in the Digital 3-D format. Three different versions of the film are included on this 2-Disc Collector's Edition. Disc one contains both the HD presentation and the 3-D version. The second disc contains a Digital Copy for download. Four pairs of 3-D glasses are included.

The HD picture is fantastic. It doesn't have a single grain or blemish. The colors and textures of the puppets and the world they inhabit are so strikingly vivid that they seem to pop out at you. And that's just the 2-D version. The

3-D version makes for intriguing home viewing. The 3-D glasses are rendered for right eye red, left eye blue, and they lend the picture a sepia tint that's no less impressively vivid. The 5.1 DTS-HD Master Audio track is an absolutely pristine mix. Bruno Coulais' haunting score so perfectly complements the vibrant visuals that it almost functions as its own character.

Loaded with bonus content, the disc includes a feature-length audio commentary with Selick and a collection of completely animated deleted scenes. "The Making of *Coraline*" is a series of short vignettes that cover the many facets of the film's production, from the original source material to the painstaking animation process. A separate featurette covers the voice recording, and "Creepy *Coraline*" is a short feature on the story's scarier aspects.

The disc is also enabled for D-Box Motion Control for those whose theater systems are equipped with D-Box capabilities. BD-Live offers exclusive online content, and My Scenes lets you bookmark your favorite scenes. The U-Control feature offers three types of interactive content that you can access during the film: an Info Track, GPS, and picture-in-picture viewing. Your Blu-ray player must be profile 1.1 or greater to access the U-Control feature. Firmware updates are available through your player's manufacturer.

Coraline is a dark tale and may be too scary for younger viewers, but it's also one of the most visually exciting animated films you're liable to see for a while.

● Corey Gunnestad

QUOTE: You probably think this world is a dream come true, but you're wrong.

hometheatermag.com



Sony Pictures

THE INTERNATIONAL



DON'T EVEN USE THE ATM AT THIS BANK

The *International* is a smart thriller with a serious identity crisis. The ultra cheesy, guy firing an Uzi direct-to-video action movie cover on this Blu-ray offers no glimpse of this movie's strengths, which are considerable but entirely different than this imagery clumsily suggests. Admittedly, the weapons-dealing, evil bank scheming to take over the world story line lost some steam when the financial world became such a sad sack (right about the time this movie hit theaters, unfortunately). But the plot line is deeper than what they came up with for the last Bond movie, and its action set pieces are fewer but artistically superior (a shootout in the Guggenheim in New York is superbly staged). Its leads in Clive Owen and Naomi Watts are very engaging, and I especially admired that, for once, in spite of how attractive these actors are, the obligatory romantic angle was eschewed in favor of a grittier take. The ending cops out a smidge, but the rest of what's here is strong enough to make that forgivable, and the movie is still eminently watchable.

This transfer is astounding, a best-ever image quality contender. Its depth, fine detail, and "ohmigod I'm looking through a window" clarity is golden demo material. Establishing shots were reportedly shot with 70mm cameras, but they blend seamlessly with the 35mm footage. While its razor sharp, it's also perfectly natural and film-like, with beautifully evident but unobtrusive film grain. Colors are natural and at times eye popping. This is sensational stuff that every home theater buff needs to keep on hand to show people why we do what we do!

The Dolby TrueHD soundtrack is terrific, even if it's not the world beater the video transfer is. The dynamics are outstanding, and really punctuate the action sequences in startling fashion. The dialogue is clear, but it sounds a little hissy, like it was recorded on set. Surround envelopment is always present, adding to the ambience effectively.

Next-gen extras include a slick Bonus View PiP, and a Digital Copy of that film that's said to be Mac and PC compatible. If you choose, there's also a live chat function. I can't help but wonder if this movie's potential audience is right for these features. I'd never watch this on my iPhone. And while I can see some teenagers chatting while watching *High School Musical 3*, are the 30-plus-year-olds this movie aims at going to be caught dead doing that? Still, a competent thriller with to-die-for imagery, this Blu-ray is must-have video demo material. ● **Shane Buettner**



BLU-RAY

STUDIO: Sony Pictures, 2009
ASPECT RATIO: 2.40:1
AUDIO FORMAT: Dolby TrueHD 5.1
LENGTH: 118 mins.
DIRECTOR: Tom Tykwer
STARRING: Clive Owen, Naomi Watts, Armin Mueller-Stahl

| | |
|---------------|-------|
| PICTURE | ★★★★★ |
| SOUND | ★★★★★ |
| EXTRAS | ★★★★★ |
| INTERACTIVITY | ★★★★★ |



Sony Pictures

WALTZ WITH BASHIR



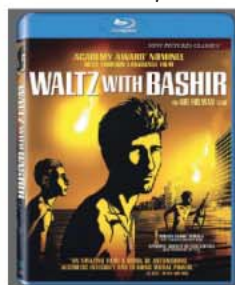
A SERIOUS CARTOON ABOUT MEMORY AND WAR

Waltz with *Bashir* should have won the 2008 Oscar for Best Foreign Film. It's a curiously engrossing and haunting film from Israel about a veteran of the Lebanon War. He finds himself unable to remember a thing about the invasion or the ghastly massacre in the Palestinian refugee camps (committed by Lebanese Christians but abetted by top Israeli officials), even though he was present at both. He looks up friends who served with him and asks about their memories. Some of them are equally dim or shrouded in symbolic nightmares—though others are disturbingly vivid. The story is told entirely in animation, which is extremely detailed but halting. The filmmakers adopted this relatively crude technique to save money, but it fits the movie's mood. It exudes the effect of a dream, as indeed, for most of the film, it is. In the end, when the protagonist's memory reawakens and we see live-action archival film of the massacre's aftermath, the contrast makes the revelation seem all the more shocking.

Ari Folman, the writer-producer-director, based much of the film on his own life. As we learn in the extra features, some of the friends that his character speaks with in the film are really his friends, while others answered an ad seeking war veterans to be interviewed about their experiences.

The Blu-ray looks stunning, as animation often does in HD media. The line drawings of dream imagery—bloodhounds madly running down the street, soldiers wading onto a beach at sunrise, a naked goddess plucking a dreamer from death at sea—are vivid yet slightly surreal, as dreams can be. Those images of starker reality—windy rainstorms, noisy street battles, or even simple face-to-face chats at a café over cigarettes—are no less gripping.

My only complaint is that the extra features—which discuss mainly the techniques of animation—say too little about the actual historical events. An Israeli audience knows about them very well, but most Americans don't, and my guess is that many viewers will be somewhat confused. (What was the invasion of Lebanon all about? What was the relationship between defense minister Ariel Sharon and the Christian militias of Lebanon?) If you've forgotten, or you never knew, a quick browse through Wikipedia might be a useful prelude. ● **Fred Kaplan**



BLU-RAY

STUDIO: Sony Pictures, 2008
ASPECT RATIO: 1.78:1
AUDIO FORMAT: Dolby TrueHD 5.1
LENGTH: 90 mins.
DIRECTOR: Ari Folman
STARRING: Ron Ben-Yishai, Ronny Dayag, Ari Folman

| | |
|---------------|-------|
| PICTURE | ★★★★★ |
| SOUND | ★★★★★ |
| EXTRAS | ★★★★★ |
| INTERACTIVITY | ★★★★★ |



Generation Kill

War Is Hell



Generation Kill opens with a platoon of Marines on a training mission in Kuwait shortly before the start of the Iraq War doing what Marines do best—kicking ass, taking names, and preparing for the most important event of their young lives. This is Bravo Company of the First Recon Marines, led by the bright but naïve Lt. Fick (Stark Sands). Like most kids, these guys are a little unsure of themselves and act a lot tougher than they actually are. I had to remind myself that these young men aren't our best and brightest, but they do a job that most of us aren't willing to do. Is some of their dialogue reprehensible? Yes. But given the circumstances, I'm willing to cut them some slack.

The seven-part series is based on the book of the same name by

Evan Wright, an embedded journalist working for *Rolling Stone*. He rode along with the Marines for 40 days in 2003 as they were the tip of the spear, leading the coalition force into Baghdad. Wright is portrayed by Lee Tergesen, and he spends most of his time riding along in the Humvee driven by Corporal Ray Person (James Ransone), the most cynical and funniest man of the group. Accompanying them is Sergeant Brad "Iceman" Colbert (Alexander Skarsgard), a professional soldier who doesn't approve of some of the troop's sophomoric humor but understands why they act the way they do—it's the only way to cope with the situation.

Like the men of Bravo Company, I was a bit leery of Wright when he's introduced to them. What was his purpose for being there? Was he going to report the truth or color it to imply that America is bad? In the end, I think his story is a mostly true account of those first 40 days, but it isn't pretty—it's war. In war, people get

killed, both civilian and military. When bullets are flying toward you, you shoot first and ask questions later. Do civilians get hurt? You bet. But it's unrealistic to think that it wouldn't happen given the circumstances.

HBO has delivered some outstanding video presentations on Blu-ray, and this is no exception. The dry desert landscape comes alive in 1080p, with heightened contrast to emphasize the extreme environment. Colors are well saturated and deep, but don't expect a cornucopia of hues given that the majority of screen time is given to the camouflaged Marines. Detail is outstanding in both foregrounds and backgrounds, and nighttime shots feature bottomless blacks that are shrouded with some heavy grain and noise. But this only serves to highlight the gritty conditions.

The video is upstaged by the exceptional DTS-HD Master Audio 5.1 soundtrack. Dialogue occupies

this nearly eight-hour miniseries most of the time, and it comes through clear and concise, with natural tone and balance. Despite the emphasis on dialogue, the soundstage is expansive, with ample panning effects of vehicles moving from side to side and helicopters flying overhead. When all hell breaks loose, the LFE is intense, and when that first bullet pangs off the Humvee, I was ducking for cover—it's that realistic.

The supplements include a making-of featurette, a video diary from actor Eric Ladin, six episode-specific audio commentaries, and some deleted audio-only dialogue sequences. The best of the bunch is "Generation Kill: A Conversation with 1st Recon Marines," which is a must-watch roundtable discussion with writer Evan Wright and the men depicted in the series. Interactive supplements include a Military Glossary, Chain of Command Chart, and Mission Maps, which are all available during the episodes by pushing the arrow buttons on the remote.

My only gripe with the series is the way it portrays the officers as a bunch of incompetent maniacs who don't have their priorities straight. If it was just one or two of them, I could buy it. But when

they're all painted with such a broad brush, it smacks of workers-versus-management animosity rather than true-life events. Granted, Wright did spend most of his time with the grunts, so maybe some of their feelings and frustrations rubbed off. Regardless, this is a fantastic presentation, and even better, it's an extraordinary show.

● David Vaughn



BLU-RAY

STUDIO: HBO, 2009

ASPECT RATIO: 1.78:1

AUDIO FORMAT:
DTS-HD Master Audio 5.1

LENGTH: 470 mins.

DIRECTOR: Susanna White, Simon Cellan Jones

STARRING: Alexander Skarsgard, James Ransone, Lee Tergesen, Billy Lush, Eric Nenninger, Chance Kelly, Stark Sands

PICTURE

SOUND

EXTRAS

INTERACTIVITY



hometheatermag.com



ROAD HOUSE



**FEATHER THE MULLET AND CLIMB
IN THE MONSTER TRUCK**

MGM

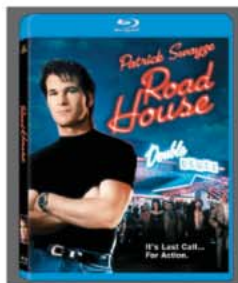
This is the gold-plated Cadillac of bad 1980s movies. It's easily the most entertaining film ever made about a world-famous bouncer and his struggle against an evil extortionist who has, evidently, grown fabulously wealthy solely by skimming money from a small, locally owned auto parts store. Patrick Swayze plays Dalton (first name? last name? no one knows), who has risen so high in the bouncing arts that he's recognized everywhere he goes. (If you can recognize more than a handful of bouncers by sight, it might be time to reassess the path your life is taking.) He is called upon by a Kansas City-area bar owner, at his place where "they sweep up the eyeballs at closing time," to throw out the bums and class his place up. His first round of layoffs (accomplished by the memorable phrase, "take the train") runs him afoul of Brad Wesley, a local tyrant and helicopter owner, and into the arms of Wesley's ex, an emergency room doctor with the hugely unimaginative name of Doc (Kelly Lynch). When the going gets tough, Dalton calls upon his friend and mentor Wade Garrett, played by Sam Elliot, with such sly conviction and hammy charm, it almost makes you want to believe in world-famous bouncers.

Is *Road House* a good movie? Heavens, no. It's hard to defend, but all I can say is that it's a hell of a lot of fun and perhaps even a little bit addictive. If you doubt me, try this experiment: at your next house party, wait till things get rolling, then without fanfare simply start *Road House* in an out-of-the-way room. Within half an hour, the entire party will have been magically drawn into that room. Such is its power.

Fortunately for fans, this is the best that *Road House* has ever looked. It looks good—not great but good. If this pains you, please recall the sage words of Dalton: "Pain don't hurt." Although it's not the sharpest Blu-ray ever, it's good enough not to fight over, least of all because, as Dalton reminds us, "Nobody ever wins a fight."

The extras are pretty decent (though not new), the centerpiece being a documentary retrospective that features a few of the main actors including Swayze, Lynch, and Dalton's rival, played by Marshall Teague. Nobody takes it too seriously, least of all Lynch who admitted she had a hard time keeping a straight face during some of the more implausible scenes.

● **Michael J Nelson**



BLU-RAY

STUDIO: MGM, 1989
ASPECT RATIO: 2.35:1
AUDIO FORMAT: DTS-HD Master Audio 5.1, Dolby Surround
LENGTH: 114 mins.
DIRECTOR: Rowdy Herrington
STARRING: Patrick Swayze, Kelly Lynch, Ben Gazzara

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★★★★
INTERACTIVITY ★★★★★



DR. STRANGELOVE



**NUCLEAR COMBAT,
WITH YUCKS (AND TRUTH)**

Sony Pictures

Stanley Kubrick's *Dr. Strangelove* is a blistering satire of the early-1960s nuclear-war machine, a savage critique of dehumanizing automation (a theme he would take up more explicitly in *2001: A Space Odyssey* and *A Clockwork Orange*), and, of course, a masterpiece. It's a blend of cinema verité and over-the-top sick humor that has since been emulated but has never been matched. Kubrick did his research; the details of nuclear strategy, SAC operations, and even the inside of a B-52 bomber are meticulously accurate. His genius was to hire Terry Southern, a wild-eyed comic novelist, to co-write the screenplay and turn what he'd initially planned as a straight thriller (like *Fail Safe*, which came out at about the same time) into a send-up of the entire Cold War culture—at the peak of that culture's domination. It's amazingly daring, and it holds up nearly two decades after the Cold War's end.

The other genius decision was to have Peter Sellers play three roles: President Muffley (a goof on Adlai Stevenson), Group Captain Mandrake (a David Niven-like officer), and Dr. Strangelove, the ex-Nazi, wheelchair-bound Pentagon scientist whose crippled hand takes on a life of its own and nearly chokes him to death (a metaphor for the out-of-control Domsday war machine). Muffley's phone conversation with Soviet Premier Dmitri Kissoff is priceless (even if it does borrow heavily from Bob Newhart's stand-up bits). George C. Scott is equally brilliant as a takeoff of Gen. Curtis LeMay. The extra features are fascinating, even if they are mostly from the 2004 Special-Edition DVD. The Blu-ray's unique pop-up commentaries—especially those by Daniel Ellsberg (who, long before he leaked the Pentagon Papers, was deeply immersed in nuclear-war planning)—make it very clear that the movie's nightmare scenario was plausible, at least at the time.

The black-and-white video quality is superior to the DVD. It has much more texture, depth, and detail, but there's a lot of digital noise, especially in the bomber scenes. It's not so objectionable, because Kubrick was aiming for the look of documentary realism; but still. Columbia's archivists searched for the finest available film elements (the original negative no longer exists!) and reportedly scanned them at 4k, but it doesn't look as clean as other transfers sourced from 4k scans I've seen. The sound quality, while very clear, lacks much ambience. But don't let any of this deter you. The material surpassed the presentation; and, again, the latter is by no means bad. ● **Fred Kaplan**



BLU-RAY

STUDIO: Sony Pictures, 1964
ASPECT RATIO: 1.66:1
AUDIO FORMAT: Dolby TrueHD 5.1
LENGTH: 95 mins.
DIRECTOR: Stanley Kubrick
STARRING: Peter Sellers, George C. Scott, Sterling Hayden

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★★★★
INTERACTIVITY ★★★★★





THE GRADUATE



WHITHER GOEST THOU, AMERICA, IN THY SHINY RED CAR IN THE NIGHT? (WITH THANKS TO KEROUAC)

MGM

The *Graduate* is one of the greatest films of the 1960s—and one of the greatest American films, period. It captures not just the era but the broad culture: the restless, nervous energy and the desire for escape. When it came out in 1967, some complained that a movie about youthful rebellion had no references to Vietnam. Well, the movie was made in '66, a bit before the campus revolts, and the novel on which it's based was written in '63. Even so, *The Graduate* is truer to its time than, say, *Easy Rider* or *Getting Straight* (besides being a much better movie). It's also more prophetic about the generation's fate: After Dustin Hoffman and Katharine Ross break away from their parents, the church wedding, plastics, and all the other trappings of authority, where *are* they going on that bus? The mixed expressions on their faces tell it all; Mike Nichols is clearly skeptical that they'll find a life that's all so different.

This was the breakout film for Hoffman, an unknown stage actor, and it's a rich portrait of emptiness and a subtle riot of comic timing. This was director Nichols' second film, and he brings the situational humor that he'd mastered in Chicago's Second City comedy troupe. (Several scenes between Hoffman's Benjamin Braddock and Anne Bancroft's Mrs. Robinson could have come out of the bits by Nichols and Elaine May.)

It's a visually beautiful film. Few American films until then used the widescreen frame to tell so much about character and time. The spare use of color is ravishing—the blue pool and red sports car and Hoffman's retreats blaze through. Too bad the Blu-ray isn't up to the usual standards. People and things in medium to long shots are blurred. In the end, when Hoffman is running toward the church, the trees and telephone poles in the background flicker with digital noise. Even in close-up shots, which are much clearer, colors, especially fleshtones, don't seem quite natural. When figures move through shadows, the difference between dark and light is too abrupt. It looks better than the DVD, but not by a lot.

The French Blu-ray, *Le Laureat*, released by StudioCanal, was mastered in MPEG-4. The digital noise is eradicated, and medium shots, though still a bit hazy, are more distinct. However, the problems with colors are more severe still.

In both discs, the soundtrack is very clean, though it could use more ambience.

The special features— from a previous DVD—are enlightening and enjoyable.

● Fred Kaplan



BLU-RAY

STUDIO: MGM, 1967
ASPECT RATIO: 2.35:1
AUDIO FORMAT: DTS-HD Master Audio 5.1, Dolby Digital
LENGTH: 106 mins.
DIRECTOR: Mike Nichols
STARRING: Dustin Hoffman, Anne Bancroft, Katharine Ross

| | |
|---------------|-------|
| PICTURE | ★★★★★ |
| SOUND | ★★★★★ |
| EXTRAS | ★★★★★ |
| INTERACTIVITY | ★★★★★ |



DO THE RIGHT THING: 20TH ANNIVERSARY EDITION

Universal

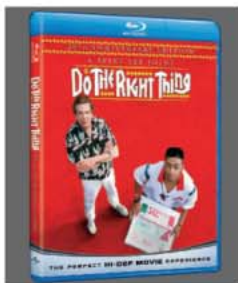


SPIKE LEE'S HEAT-WAVE MASTERPIECE

Spike Lee's *Do the Right Thing* not only holds up, but it comes off better after 20 years. It's removed from the context of late-'80s New York City and the racial paranoia that was induced by Ed Koch, the Howard Beach murders, and the Tawana Brawley hoax—all of which made many white columnists at the time fear that the film would incite young black men to riot. Now, in a very different era, Lee's creation, while still shocking, especially at its climax, can be viewed more clearly as a complex statement about race relations—and, more, as a vibrant work of art. Filmed on an actual block of Bedford-Stuyvesant, a black (and, at the time, crime- and drug-ridden) district of Brooklyn, it takes place over the course of one day—the hottest day of the year—and shows how tensions can overwhelm a community and explode in terrible violence. The film is far from social realism; it's highly stylized, with intense colors (bright red, orange, and earth tones, to convey the sense of heat). It uses Dutch camera angles, theatrical characters, and a lofty musical score. Still, it's never artsy for its own sake. The story stirs and compels, from the opening credits—with Rosie Perez's electrifying dance moves while Chuck D's "Fight the Power" blasts on the soundtrack—to the alarming riot scene and its ambiguous aftermath. This was only Lee's third film as a writer and director, and it remains by far his best. The acting is consistently strong, and Ernest R. Dickerson's cinematography is ravishing but not romanticized.

The Criterion Collection's 2001 DVD release looked great, but it's gaslight compared with Universal's Blu-ray. Colors glow and glitter, shadings are subtle and burnished, fleshtones and facial expressions are rich and detailed, and street scenes have a lifelike depth. The first

post-credit shot—a close-up of a ringing alarm clock, which pulls back to reveal Samuel L. Jackson's mouth, sunglasses, shirt, and the radio booth in which he's playing D.J.—is breathtaking, and so is every shot that follows. The DTS-HD Master Audio is clear and dynamic, although I could have used more ambience in the surround channels. The audio commentary track, from the original DVD, is entertaining and informative. It includes Lee, Dickerson, and a few others, but they were recorded separately then skillfully interwoven; it's not a bunch of guys yakking. Making-of featurettes and a new commentary track by Lee are interesting, but they add little. ● Fred Kaplan



BLU-RAY

STUDIO: Universal, 1989
ASPECT RATIO: 1.85:1
AUDIO FORMAT: DTS-HD Master Audio 5.1
LENGTH: 120 mins.
DIRECTOR: Spike Lee
STARRING: Spike Lee, Danny Aiello, Ossie Davis

| | |
|---------------|-------|
| PICTURE | ★★★★★ |
| SOUND | ★★★★★ |
| EXTRAS | ★★★★★ |
| INTERACTIVITY | ★★★★★ |



GHOSTBUSTERS

Sony Pictures



After 25 years and countless viewings, *Ghostbusters* is as fresh and funny as ever. The film was written with a real story, not just a string of jokes in search of a loose structure. The cast of talented comedians, all in their prime, draws the humor naturally from the situations, rather than the other way around. The movie has endearing characters and a fully formed mythology all its own. Even if the special effects show their age, the movie still works. It's a genuine classic.

Ghostbusters has never been a stunner on home video, and the Blu-ray doesn't turn that streak around. The color balance leans too blue, and both the contrast and gamma appear to be artificially tweaked. As a result, fleshtones look washed out, whites bloom, and grain is excessively emphasized. On the other hand, it has a fair amount of detail. At the very least, it looks better than both previous DVD editions. The Dolby TrueHD 5.1 soundtrack is all midtones and boomy bass. The proton packs deliver a nice kick, and there are a few sporadic directional effects, but the track's fidelity is hollow and lifeless.

The disc gets interactive with a new Slimer Mode picture-in-picture feature and BD-Live CineChat, in case you really feel the need to text

"Who you gonna call?" jokes to your buddies while you watch. An old commentary, deleted scenes, and a few featurettes are carried over from previous DVDs.

Unfortunately, the Blu-ray fails to bring much new life to this supernatural comedy.

● **Joshua Zyber**

BLU-RAY

STUDIO: Sony Pictures, 1984
ASPECT RATIO: 2.40:1
AUDIO FORMAT: Dolby TrueHD 5.1
LENGTH: 105 mins.
DIRECTOR: Ivan Reitman
STARRING: Bill Murray, Dan Aykroyd, Sigourney Weaver

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★★★★
INTERACTIVITY ★★★★★



SPACEBALLS

MGM



Produced at the tail end of the period during which Mel Brooks was still funny, *Spaceballs* tries to do for sci-fi what *Blazing Saddles* did for Westerns. The film is a loving tribute and zany spoof of the genre. Its scattershot humor is filled with silly sight gags, bad puns, and a surprising amount of swearing for a PG movie. The jokes are hit-or-miss. Fortunately, enough of them hit the mark that the movie can still bring a smile.

To be honest, the Blu-ray transfer is barely distinguishable from the Collector's Edition DVD released in 2004. The picture is very soft and hazy, with only fair detail and colors. DNR filtering appears to have taken a toll. The movie looks like it's about the quality of an average HD cable broadcast. On the other hand, the DTS-HD Master Audio soundtrack is crisp and clear. The track has little surround activity and can be a bit strident. However, the low end is nice and rumbley. The "pew pew" effects have never sounded so sharp.

Supplements are a replication of the Collector's Edition DVD. They include a dull commentary, an annoying documentary, and some other odds and ends. For no particular reason, MGM also threw in a copy of the original DVD that dates back to

2000. That disc has a non-anamorphic letterboxed transfer on one side and a full-screen transfer on the other. The studio must be trying to clear out its old stock.

● **Joshua Zyber**



BLU-RAY

STUDIO: MGM, 1987
ASPECT RATIO: 1.85:1
AUDIO FORMAT: DTS-HD Master Audio 5.1, Dolby Digital 2.0
LENGTH: 96 mins.
DIRECTOR: Mel Brooks
STARRING: Bill Pullman, John Candy, Rick Moranis

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★★★★
INTERACTIVITY ★★★★★



KNOWING

Summit Entertainment



Knowing is suspenseful, creepy, and exhilarating. The director is Alex Proyas of *Dark City* fame, and like that masterpiece, *Knowing*'s ending is more than necessary and the overall movie is lesser for it. Still, it's a film that asks interesting questions, and its disaster set pieces are masterfully directed. Cage is plausible as a dad shouldering the responsibility of knowing terrible things are going to happen and not knowing how to stop them.

The imagery here was shot digitally at 4k resolution (roughly 4000 x 2000), before being downconverted to 1080p HD (1920 x 1080) for this Blu-ray release. The picture has as much depth and dimensionality as you could hope for, with a wealth of impeccably rendered detail. It's a pretty-looking movie in an odd and almost artificial way, perhaps because of its artful blend of CGI and digital photography. Although skin textures sometimes lack detail, make sure to look at the forest and not just the trees. The totality of the image quality here is staggering.

The DTS-HD Master Audio is hard sounding, but it's superb in creating the quiet, tense, and eerie atmosphere that keys the drama. It's especially adept at exploding into wide dynamic range when called for, with convincing effects. The dialogue is clear, but I would've liked a little more sweetness for Marco Beltrami's versatile score.

Extras are sparse, with the highlight a commentary with director Proyas. Nevertheless, if you miss *The X-Files*, you need to at least rent this one on Blu-ray.

● **Shane Buettner**



BLU-RAY

STUDIO: Summit Entertainment, 2009
ASPECT RATIO: 2.35:1
AUDIO FORMAT: DTS-HD Master Audio 5.1
LENGTH: 121 mins.
DIRECTOR: Alex Proyas
STARRING: Nicolas Cage, Rose Byrne, Chandler Canterbury

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★★★★
INTERACTIVITY ★★★★★

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HDTVS

ENTRY LEVEL

Panasonic VIERA TC-P42G10 Plasma HDTV, \$1,300
Reviewed September 2009

MIDRANGE

Panasonic TC-P46G10 Plasma HDTV, \$1,500
Reviewed July 2009

Sony BRAVIA KDL-40V5100 LCD HDTV, \$1,500
Reviewed September 2009

Panasonic TH-50PZ85 Plasma HDTV, \$2,200
Reviewed October 2008
Replaced with TC-P50G10 Plasma HDTV, \$1,800*

Samsung UN55B7000 LCD HDTV, \$3,699
Reviewed August 2009

Sony BRAVIA KDL-46XBR8 LCD HDTV, \$4,000
Reviewed January 2009

HIGH END

Pioneer Elite KURO PRO-111FD Plasma HDTV, \$4,500
Reviewed November 2008

Samsung LN55A950 LCD HDTV, \$4,799
Reviewed December 2008

Pioneer KURO PDP-6020FD Plasma HDTV, \$5,500
Reviewed September 2008

Sony BRAVIA KDL-55XBR8 LCD HDTV, \$5,500
Reviewed February 2009

Pioneer Elite KURO PRO-141FD Plasma HD Monitor, \$7,000
Reviewed May 2009



● Sony BRAVIA KDL-40V5100 LCD HDTV

Panasonic Premiere TH-65VX100U Plasma HD Monitor, \$9,995
Reviewed April 2009

PROJECTORS

ENTRY LEVEL

Optoma HD80 DLP Projector, \$2,699
Reviewed March 2008
Replaced with HD20 DLP Projector, \$1,000*

Sanyo PLV-Z3000 LCD Projector, \$2,795
Reviewed June 2009

Epson PowerLite Home Cinema 6500UB LCD Projector, \$2,999
Reviewed August 2009



● JVC DLA-HD350 D-ILA Projector

MIDRANGE

Panasonic PT-AE3000U LCD Projector, \$3,499
Reviewed March 2009

Mitsubishi HC7000 LCD Projector, \$3,495
Reviewed March 2009

Sony VPL-HW10 SXRD Projector, \$3,499
Reviewed March 2009

JVC DLA-HD350 D-ILA Projector, \$4,500
Reviewed June 2009

HIGH END

Sony BRAVIA VPL-VW70 SXRD Projector, \$7,000
Reviewed June 2009

JVC DLA-HD750 D-ILA Projector, \$7,500
Reviewed April 2009

Planar PD8150 DLP Projector, \$8,000
Reviewed July 2008

Marantz VP-15S1 DLP Projector, \$9,000
Shane Buettner reviewed this model for www.UltimateAVmag.com (Available through the end of 2009)



● OPPO BDP-83 Blu-ray Player

SOURCE COMPONENTS

ENTRY LEVEL

Panasonic DMP-BD60 Blu-ray Player, \$300
Reviewed July 2009

MIDRANGE

Panasonic DMP-BD55 Blu-ray Player, \$399
Reviewed December 2008
Replaced with DMP-BD80 Blu-ray Player, \$400*

Samsung BD-P3600 Blu-ray Player, \$399
Reviewed July 2009

Sony PlayStation 3 Game Console/Blu-ray Player, \$399
Reviewed May 2008

OPPO BDP-83 Blu-ray Player, \$499
Reviewed September 2009

Digeo Moxi HD DVR, \$799
Reviewed June 2009

SPEAKERS

ENTRY LEVEL

DCM Cinema2 Speaker System, \$500
Reviewed November 2007

HSU Research HB-1 Speaker System, \$1,124 as reviewed
Reviewed March 2007
Replaced with HB-1 Mk 2 Speaker System, \$1,124*

PSB Alpha B1 Speaker System, \$1,336 as reviewed
Reviewed February 2007

Mordaunt-Short Alumni Speaker System, \$1,470 as reviewed
Reviewed March 2008

JBL ES20 Speaker System, \$1,746 as reviewed
Reviewed September 2008

MIDRANGE

JBL Control NOW AW Speaker System, \$2,034 as reviewed
Reviewed February 2009

Paradigm Reference Studio 20 v.4 Speaker System, \$2,495 as reviewed
Reviewed March 2007
Replaced with Reference Studio 20 v.5 Speaker System, \$2,495*

Boston Acoustics VS 240 Speaker System, \$3,700 as reviewed
Reviewed January 2009

Acoustic Energy Radiance 1 Speaker System, \$4,200
Reviewed September 2009

Definitive Technology Mythos STS SuperTower Speaker System, \$4,355 as reviewed
Reviewed March 2009



● Sonus faber Toy/REL T1 Speaker System

Infinity Classia C336 Speaker System, \$4,494 as reviewed
Reviewed April 2009

PSB G-Design Speaker System, \$4,696 as reviewed
Reviewed October 2007

PSB Imagine T Speaker System, \$4,749 as reviewed
Reviewed May 2009



● PSB Imagine T Speaker System

* This replacement product has not yet been reviewed in HT. Although we suggest it is worth a close look, this is not a specific recommendation.



● VIZIO VSB210WS High Definition Sound Bar Speaker System

Dynaudio Focus 110 Speaker System,
\$4,750 as reviewed
Reviewed September 2007

HIGH END

Sonus faber Toy/REL T1 Speaker System,
\$6,044 as reviewed
Reviewed May 2009

Usher Be-718 Speaker System,
\$6,988 as reviewed
Reviewed May 2008

Atlantic Technology 8200e Speaker System,
\$7,530 as reviewed
Reviewed July 2007

Thiel SCS4 Speaker System,
\$8,350 as reviewed
Reviewed April 2008

PSB Synchrony One Speaker System,
\$10,700 as reviewed
Reviewed December 2007

Paradigm Reference Signature S8 Speaker System,
\$15,195 as reviewed
Reviewed January 2009

Pioneer S-2EX Speaker System,
\$17,500 as reviewed
Reviewed February 2007

Revel Ultima2 Salon2 Speaker System,
\$45,993 as reviewed
Reviewed July 2009

IN-WALL/ON-WALL

Atlantic Technology IWCB-626 In-Wall Speakers,
\$875/each
Reviewed September 2007



● Sonance VP89 In-Wall Speaker

Sonance VP89 In-Wall Speakers,
\$2,850/pair
Reviewed September 2008

Paradigm Millenia Speaker System,
\$4,444 as reviewed
Reviewed November 2007

Pioneer Elite EX Series S-IW691L In-Wall Speaker System,
\$10,197 as reviewed
Reviewed June 2009

SOUNDBAR SPEAKERS

VIZIO VSB210WS High Definition Sound Bar Speaker System,
\$350
Reviewed July 2009

ZVOX Z-Base 550 Single-Cabinet Surround System,
\$500
Reviewed April 2009

ZVOX 425 Soundbar,
\$700
Reviewed July 2008

Definitive Technology Mythos SSA-50 Soundbar,
\$1,099
Reviewed August 2008

Denon DHT-FS3 Soundbar,
\$1,199
Reviewed April 2008

Polk SurroundBar 360 DVD Theater Soundbar,
\$1,200
Reviewed January 2009

Phase Technology Teatro PC-3.0 Speaker System,
\$2,400 as reviewed
Reviewed May 2009

HTIBS

ENTRY LEVEL

Sony BRAVIA DAV-HDX500 HTIB,
\$499
Reviewed at
www.HomeTheaterMag.com
Replaced with DAV-HDX576WF HTIB, \$500*

Onkyo HT-SR800 HTIB,
\$599
Reviewed at
www.HomeTheaterMag.com
Replaced with HT-S5200 HTIB, \$599*

MIDRANGE

Panasonic SC-BT100 HTIB,
\$1,000
Reviewed October 2008



● Onkyo HT-S9100THX Integrated System



● Pioneer Elite SC-07 A/V Receiver

Onkyo HT-S9100THX Integrated System,
\$1,099
Reviewed April 2009

A/V RECEIVERS

ENTRY LEVEL

Pioneer VSX-918V A/V Receiver,
\$349
Reviewed August 2008
Replaced with VSX-919AH A/V Receiver, \$399*

Onkyo TX-SR607 A/V Receiver,
\$599
Reviewed August 2009

MIDRANGE

Onkyo TX-SR806 A/V Receiver,
\$1,099
Reviewed February 2009

Denon AVR-3808CI A/V Receiver,
\$1,699
Reviewed July 2008

Rotel RSX-1550 A/V Receiver,
\$1,999
Reviewed June 2009

Marantz SR8002 A/V Receiver,
\$2,000
Reviewed May 2008

Pioneer Elite SC-07 A/V Receiver,
\$2,200
Reviewed May 2009

HIGH END

Rotel RSX-1560 A/V Receiver,
\$2,599
Reviewed August 2009

Integra DTR-9.9 A/V Receiver,
\$2,600
Reviewed April 2009

Arcam AVR600 A/V Receiver,
\$4,995
Reviewed August 2009

Denon AVR-5308CI A/V Receiver,
\$5,500
Reviewed August 2008

Pioneer Elite SC-09TX A/V Receiver,
\$7,000
Reviewed November 2008



● Rotel RMB-1085 Amplifier

PROCESSORS

Integra DHC-9.9 Processor,
\$2,000
Reviewed July 2009

Marantz AV8003 Processor,
\$2,600
Reviewed October 2008



● Denon AVP-A1HDCI Processor

Anthem Statement D2 Processor,
\$7,499
Reviewed September 2008
Replaced with Statement D2v Processor with ARC, \$7,499, * review upcoming

Denon AVP-A1HDCI Processor,
\$7,500
Reviewed September 2009

AMPLIFIERS

Rotel RMB-1085 Amplifier,
\$1,199
Reviewed October 2008
Replaced with RMB-1565 Amplifier, \$1,299*

NAD Masters Series M25 Amplifier,
\$3,499
Reviewed January 2007

Sunfire Theater Grand TGA-5400 Amplifier,
\$3,899
Reviewed November 2006
Replaced with TGA-7401 Amplifier, \$4,450*

ADA PTM-8150 Amplifier,
\$4,999
Reviewed February 2007

Anthem Statement P5 Amplifier,
\$7,199
Reviewed December 2006

Denon POA-A1HDCI Amplifier,
\$7,500
Reviewed September 2009

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Curtain Call

BY Michael J. Nelson

Michael J. Nelson is the former host and head writer of *Mystery Science Theater 3000* and the proprietor of www.rifftrax.com, which offers his commentaries on A-list films, including *Star Wars: Episode I*, *The Fellowship of the Ring*, and *The Matrix*.



Answers, Man!

Despite the best efforts of our crack staff here at *Home Theater*, there's a lot of confusion, many misconceptions, and often deep shame out there that puts a barrier between a lot of people and the full enjoyment of their home theater. Sometimes it's best to take your questions straight to an expert. Or you can ask me. Here, I tackle a number of fascinating questions (submitted via my Twitter account).

Q: Is there any real advantage to sticking with one vendor for all of my equipment? Or is pick-and-choose a better way to go?

A: Hmm, I don't know if there's an advantage, but I certainly hope not. My own system is like Frankenstein's monster, patched together from parts I've collected over many years. I'm never quite satisfied and so, to stick with the metaphor, every now and then I like to saw a perfectly serviceable leg off my creation and put a new one in its place. As I survey the vast array of remote controls before me (I had a universal remote control, but then I got bored and sold it), I see seven different brands. Buying all one brand gives you an aesthetic advantage, but if I cared about that, I suppose I could always load my stuff into a cabinet and paint a trompe l'oeil of sleek, expensive gear on the outside of it.

Q: What's your opinion of tactile transducers, or bass shakers? Are they worth the cash?

A: I've never owned one, but I've experienced them a number of times and like them. I'd like to try linear actuators, which move your couch, well, linearly on rails. These are said to be more involving and require less power. Plus, if you buy them big enough, you can slide the entire couch right up to the TV if you ever misplace the remote.

Q: What's the best way to emulate the "I am going to kill all of you loud-mouthed bastards!" experience in my home theater?

A: It's unlikely that one person would be able to round up the dozens of obnoxious jackasses that are necessary to fully simulate the modern theatergoing experience, but you can certainly get close. If you have one friend with a predilection to push entire fistfuls of golden topping-lubricated popcorn into his maw and masticate it at alarming volumes and at a continuous pace for more than two hours, seat him in a chair just behind your right shoulder. Next, find someone who thinks "theater" means "place one goes to tell one's friend long, mind-bendingly uninteresting stories about picking up one's aunt at the airport while also checking one's iPhone for text messages every 45 seconds," and seat him directly in front of you. If you happen to be watching an emotionally wrenching R-rated film, invite someone who thinks it's fine to bring his eight- and ten-year-old kids along, so that half your attention will be focused on an internal debate about whether

or not to phone Child Protective Services. Then, simply buy your ticket from a listless punk with grommets in his earlobes the size of mini doughnuts and you should be all set.

Q: Why does my home theater play better movies than my local multiplex, which is more commonly referred to as my away theater?

A: There are two multiplexes in my area. One has a robust and competently implemented sound system and a beautiful screen. The other, and unfortunately, closer one sounds as though a small child ran from speaker to speaker and punctured the cones with a Tinkertoy. (And yes, my choice of toy makes me sound like the cantankerous old guy who waters his lawn with a hose, by hand, while wearing huge white sneakers, black socks, and no shirt. But since that's what I plan on becoming, I may as well get ahead of it.) During bass-heavy scenes, the subwoofer clatters and scrapes, sounding like a cat trying to escape from a refrigerator box filled with pan lids. The picture quality is far from perfect, and I wonder if perhaps someone tried to clear a piece of detritus off the lens without washing his hands after he just mixed up a meat loaf. This is my away theater in that I stay the hell away from it after having gone there twice. (It was so bad the first time, I thought I must have hallucinated the experience. I hadn't.)

Q: I have a Pioneer Elite KUHO PRO-111FD HDTV, Denon AVR-3808CI A/V receiver, and Aperion Intimus 4T loudspeakers. Little girl trapped in TV. Help?

A: Well, I'll see what I can do. What I think is that you have very nice equipment, and it turns out that's not an actual little girl. Your tuner is stuck on the Icelandic kids' show *LazyTown*. It's a bit hallucinatory, but it's entertaining, so unless you want me to send a guy around, I'd just leave it.

Q: Have you ever had a movie so loud that your wife (or significant other) gave you the look of doom? Which film?

A: This is a very sensitive subject in my home, where there are two distinct and passionate opinions about the optimum volume for films and music. I listen to classical music almost exclusively and feel it's served best by keeping the volume close to but not quite as loud as you typically hear in a concert hall, i.e., approximately 90 decibels during crescendos. I feel that films are much more involving and immersive when you listen to at a volume loud enough to overwhelm room noise, e.g., the sounds of passing cars, and the weed whacker a few yards away. However, my wife feels that the optimum volume for both music and films is off. Occasionally, when she's in a feisty mood, she enjoys reading to my music, say, the Chicago Symphony Orchestra, at the same volume we get here at my home in San Diego from the actual orchestra as they play live in Chicago. The point is, every film receives the look of doom. 🙄

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