

ELECTRONICALLY REPRINTED FROM MAY 2007

# Oppo Digital DV-970HD

UNIVERSAL PLAYER

Wes Phillips



Oppo Digital DV-970HD universal player

**DESCRIPTION** Universal digital disc player with remote control and upconverting video output. Formats supported: DVD-Video, DVD-Audio, CD, HDCD, SACD, DVD+/-RW, CD-R/RW, Certified DivX, XviD, Kodak Picture CD, WMA. Frequency response: 20Hz–20kHz, ±1dB. Signal/noise ratio: >100dB. THD: <0.01%. Analog outputs: 8 unbalanced (RCA), mix-down L/R, Front L/C/R, Surround L/R, Subwoofer. Digital outputs: HDMI, TosLink, S/PDIF coaxial. Digital inputs: USB 1.1, flash-memory card reader. Video outputs: HDMI, component (YPbPr/YCbCr), S-video, composite.

**DIMENSIONS** 16.5" (420mm) W by 1.7" (41mm) H by 10" (255mm) D. Weight: 4.85 lbs (2.2kg).

**SERIAL NUMBER OF UNIT REVIEWED** 622405233.

**PRICE** \$149. Approximate number of dealers: sold direct. Warranty: 1 year, parts & labor; 30-day satisfaction or money-back purchase warranty.

**MANUFACTURER** Oppo Digital, Inc., 453 Ravendale Drive, Suite D, Mountain View, CA 94043. Tel: (650) 961-1118. Fax: (650) 961-1119. Web: [www.oppodigital.com](http://www.oppodigital.com).

**T**here's an old Spanish proverb: "If six people call you an ass, start braying." A contemporary corollary might be that if enough audiophiles insist a product is the best ever, it behooves the "experts" to check it out. At least, that was John Atkinson's thinking when he suggested I audition the Oppo Digital DV-970HD universal disc player (\$149).

"The DV-970 has created quite a buzz on the Internet as a budget competitor for expensive high-end *music* players, even though it's obviously aimed at the A/V market. I'm interested in discovering what an experienced listener thinks of it." That's JA all over—he was buttering me up, hoping I wouldn't notice the danger of reviewing a true budget product: At \$149, there's probably not one *Stereophile* reader who couldn't afford to snap up an Oppo just to see if it was really as good or as bad as I say it is. And *that's* when the game of Pin the Tail on the Reviewer would begin. JA will have a fat "Letters" section for months, as advocates and naysayers manage to agree on one thing: that I was horrendously wrong. I knew that JA knew that I knew. I took the assignment anyway. It's my job.

**Small opportunities are often the beginning of great enterprises**

Oppo Digital is probably a new name for most audiophiles. The company was

founded in 2004. The first product sold under the Oppo brand was the DV-971H upconverting DVD player (\$199), which became an instant hit with folks with hi-rez video displays. It was affordable, it was stylish, and it wowed videophiles with its superb video performance with both analog and digital displays.

The DV-970HD doesn't have the DV-971H's Faroudja DCDi deinterlacing chip, but it does play SACDs, which is probably more important than its video performance to *Stereophile* readers looking for a two-channel uni-

versal player. That means the DV-970HD can play "Red Book" CD, HDCD, DVD-V, DVD-A, DivX, Kodak Picture CD, WMA, and, to quote Oppo's press release, "other digital audio and video formats." It does not, of course, play Blu-ray or HD DVD. For the record, the DV-970HD supports both the PAL and NTSC television systems.

The DV-970HD seems solidly constructed. It's sleek (16.5" W by 10" D by 1.7" H) and strikingly designed. The front panel has only four buttons (Power, Eject, Play/Pause, Stop), but it

does include a universal flash-memory card reader (MS/SD/MMC/SM) and a USB input. The LED display supplies only the most basic information, which necessitates the use of a video display for setup—all setup options are displayed through the onscreen display (OSD) trees. The DV-970HD's disc drawer is very slender and is overhung by the faceplate, which means the only way to extract a disc is by hooking your finger through its spindle hole and tilting the disc up toward you—no more awkward than with some \$16,000 players I've encountered.

## MEASUREMENTS

I tested the Oppo DV-970HD from its Front L and Front R output jacks, with spot checks on the others. I also had to update the player's firmware—an easy procedure—so that its front-panel display would correctly display SACD tracks numbered higher than 14. (Otherwise, the player's onscreen display, fed to a TV monitor, needed to be used to play SACDs.) The player's maximum output level was 2.2V RMS whether it was playing CDs, DVDs, or SACDs, and the player preserved absolute polarity (*ie*, was non-inverting) with all three media. The player's error correction was some of the best I've ever encountered: the DV-970HD produced audible glitches in its output and flagged its digital output stream as invalid only when the gaps in the data spiral on the Pierre Verany test CD reached an enormous 3mm in length! Its output impedance was a relatively high 965 ohms in the midrange and treble, easing slightly to 1150 ohms at 20Hz.

The Oppo's frequency response playing back CDs featured a rise at the very top of the audioband (fig.1, top pair of traces at 20kHz), but this is too high in frequency and too small in degree to be audible. The player's response did extend higher with both DVD-Audio and SACD, but unusually, the latter rolled off earlier than the former,

reaching -6dB at 33kHz (fig.1, bottom traces above 20kHz), compared with -6dB at 45kHz for 96kHz-sampled DVD data (fig.1, top traces above 20kHz). The CD playback response with a pre-emphasized CD was identical to that with a normal CD and is not shown. L-R and R-L channel separation were both excellent (fig.2), at >100dB below 1kHz, though the crosstalk rose in both directions above that frequency, due to the usual capacitive coupling.

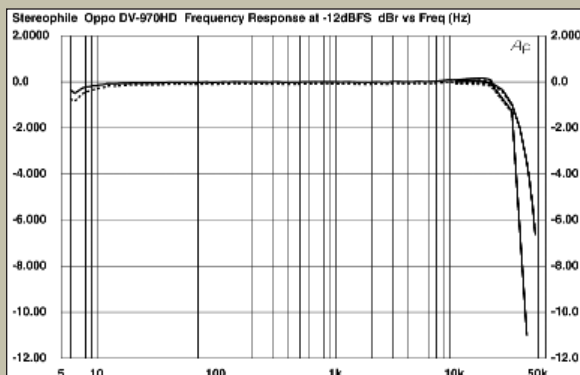


Fig.1 Oppo DV-970HD, frequency response at -12dBFS into 100k ohms (from top to bottom at 30kHz): 96kHz-sampled DVD data, SACD data. Top traces at 20kHz: CD data (right channel dashed), 0.5dB/vertical div.

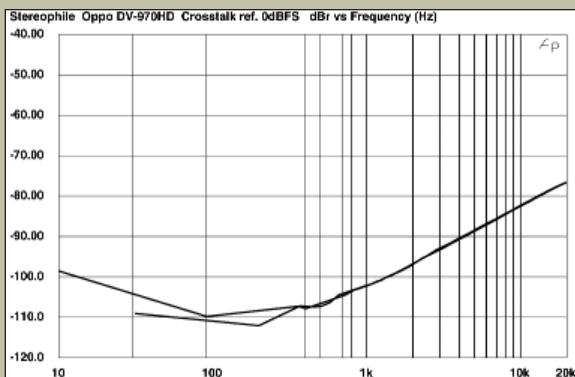


Fig.2 Oppo DV-970HD, channel separation (10dB/vertical div.)

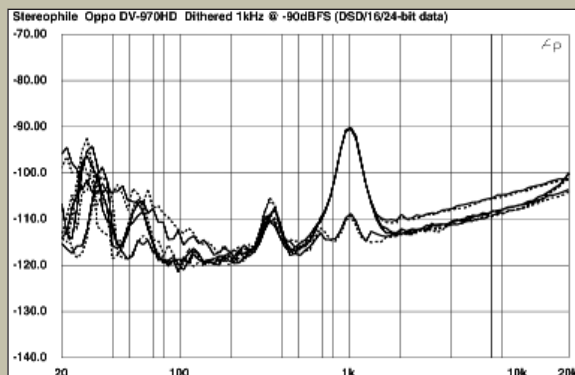


Fig.3 Oppo DV-970HD, 1/2-octave spectrum with noise and spurs of dithered 1kHz tone at -90dBFS (DSV16/24-bit data): 16-bit CD data, 24-bit DVD data, SACD data; dithered 1kHz tone at -110dBFS, SACD data (right channel dashed).

The DV-970HD's rear panel is packed with connectors. This, combined with its thin chassis, means that you must use skinny RCA connectors—the only cables I had that worked were Kimber KCAGs. Analog connections: eight RCAs (six for 5.1-channel output, with a “mixdown” pair for two-channel use). Digital connections: HDMI, TosLink, and coaxial S/PDIF. Video: component, composite, and S-video. The DV-970HD doesn't have an IEC AC socket (wouldn't fit on the chassis), so you won't get a chance to employ a power cable costing many

times the player's price.

The DV-970HD outputs high-resolution multichannel digital audio through its HDMI connection, as well as 96kHz PCM through its S/PDIF. It converts DSD to 24-bit/88kHz PCM before outputting it through the HDMI jack, so, assuming you aren't bothered by the thought of that conversion, you can enjoy SACDs through your HDMI DAC of choice. (Should this bother you? I can't say, since I can't do an A/B and tell you, but many DV-970HD owners seem quite happy with the benefits of converted digital. Just as

many folks think it's a crime against nature.) (JA notes that no high-end DACs have HDMI inputs, and only a handful of A/V receivers, because of the HDMI standard's requirement for antipcopying handshaking.)

While Oppo does sell to select stores and installers, its products are primarily sold direct. I should note that the DV-970HD comes packaged securely in a double box, with sufficient foam padding and even a plush velour wrapper. Also included are a multi-function remote, the usual gimme audio cables, and a 6' HDMI cable.

The Oppo player produced some paradoxical results when I examined its resolution. The rather complicated-looking graph in fig.3 shows four separate spectral analyses, performed by sweeping a 1/2-octave-wide bandpass filter down from a center frequency of 20kHz to one of 20Hz. The test signal for three of the sweeps was a dithered 1kHz tone at -90dBFS, sourced from a CD, a DVD-A, and an SACD. The tone peaks at the -90dBFS level in all three cases, but the change to the higher-resolution media drops the high-frequency noise floor by around 3dB rather than the 12-18dB I have found with top-performing players and DACs. This is still sufficient for the Oppo to resolve a 1kHz tone at -110dBFS, played back from SACD (fig.3, bottom pair of traces at 1kHz), but at lower frequencies, the noise floor is no better than it is for CD. There is a 60Hz power-supply hum component evident, though this does lie 105dB down from full level, which is acceptably low. But peaks can also be seen at 20Hz and 350Hz, which might be due to spurious idle tones of some kind.

Linearity error, measured using a 500Hz tone on a test CD, was low to below -100dBFS (fig.4), but analog noise obscured the waveform of an undithered 16-bit tone at exactly -90.31dBFS (fig.5), which should reproduce with just three DC voltage levels. The downward slope of the wave in this graph also reveals the presence of low-frequency noise. Correlating with the spectral

plots shown in fig.3, increasing the bit depth to 24 produced a waveform (not shown) that looked very similar to the spectral plots shown in fig.3. The Oppo player really doesn't offer much more resolution from SACD and DVD-A than it does from CD.

The DV-970HD did produce very low levels of harmonic distortion, even into quite low impedances. Fig.6, for example, was taken with the player driving a full-scale 1kHz tone

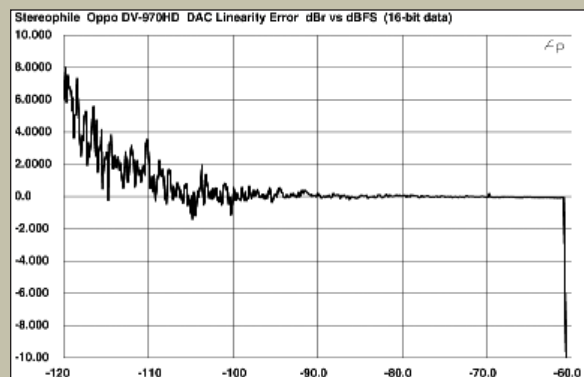


Fig.4 Oppo DV-970HD, right-channel departure from linearity, 16-bit data (2dB/vertical div.).



Fig.5 Oppo DV-970HD, waveform of undithered 1kHz sinewave at -90.31dBFS, 16-bit data.

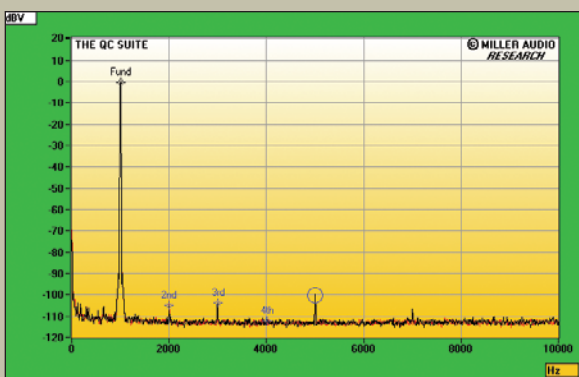


Fig.6 Oppo DV-970HD, spectrum of 1kHz sinewave at 0dBFS into 8k ohms (linear frequency scale).

### Problems are only opportunities with thorns on them

As noted earlier, the Oppo's display is basically incapable of saying much more than "NO DISC" and "PLAYING"—a video display is required for setup. If you want to make changes on the fly or really exploit different output options, you'll need to keep a monitor in your listening room. Neither of my listening rooms has such a critter, so I sneakernetted the DV-970HD into my home theater for setup.

Setup was fairly straightforward, except for one thing: If you want to take advantage of the hi-rez multi-channel digital output over HDMI, you need to set the player to 720p or 1080i. What does *video* output have to do with audio signals? In the HDMI protocol, the data pipe has a bandwidth of only 27MHz at the lower video settings—not nearly enough bandwidth for six or eight channels of hi-rez digital.

Another setup issue: The DV-970HD is a firmware-based product,

and Oppo Digital does frequent firmware updates. Fortunately, this is simple and painless. All you do is go to Oppo's website and navigate to the Support section. Download the update to your computer, burn it to a CD-R, insert the CD-R in your Oppo player. It will read the disc, then open the drawer. Remove the disc. When the player has finished updating itself, it will close the drawer and reboot.

Oppo gets high marks for its customer service, which has inspired a devoted following among its customers. The company responds to e-mail and phone inquiries quickly, and seems genuinely concerned about customer feedback, which tends to prompt what the company addresses in its firmware updates. My DV-970HD arrived without manuals, but minutes after discovering that, I had downloaded them from Oppo's website (once I'd thought of looking for them under "Support" rather than the nonexistent "Manuals").

### Opportunity is a bird that never perches

Once I'd set up the DV-970HD with my home theater's display, I installed it in my small listening room, and let it break in and settle down with David Russell's *Art of the Guitar* (CD, Telarc CD-80672). Krell's Evolution 202 pre-amplifier and Evolution 600 monoblocks drove a pair of stand-mounted Dynaudio Confidence C1 loudspeakers.

Any misgivings I had about pairing a \$149 disc player with a \$50,000 system were quickly laid to rest. Albéniz's *Malagueña*, Op.3, was full-bodied and smooth. The harmonic overtones of the strings were extended and decayed slowly—top-end extension was detailed, but not etched. Russell's melodic momentum was forceful, delivered with rhythmic ebb and flow that was convincingly dynamic.

Ida Haendel's recital DVD-V *Bach, Beethoven, Chausson* (VAI 4395) was an ear-opener. Haendel plays both a Stradivari and a Guarneri; I don't know

### measurements, continued

into 8k ohms, yet all the spurious harmonics lie at  $-100\text{dB}$  or below. Note, however, that the fifth harmonic (circled) is the highest in level, and the seventh also makes an appearance. The third harmonic lay at  $-104\text{dB}$ , but at low frequencies, this rose in level to  $-90\text{dB}$ .

The picture looked less healthy with intermodulation distortion. With the DV-970HD driving a full-scale mix of 19 and 20kHz tones into 8k ohms (fig.7), the second-order component at 1kHz lay at a respectable  $-100\text{dB}$  (0.001%). The higher-order components were considerably higher in level, however, and probably of more subjective consequence, the noise floor can be seen to rise around the spectral lines representing the signal components.

This kind of behavior is generally associated with poor

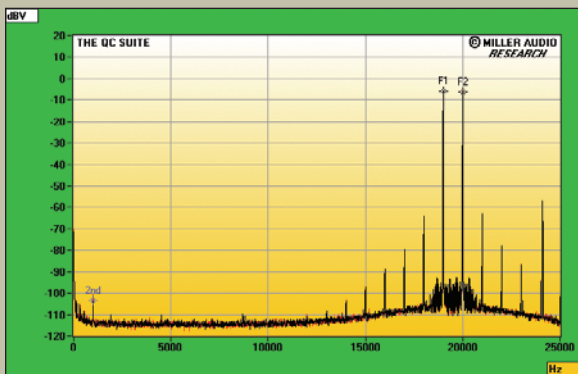


Fig.7 Oppo DV-970HD, HF intermodulation spectrum, 19+20kHz at 0dBFS peak into 8k ohms (linear frequency scale).

jitter rejection, and the Oppo fell short of what I would like to have seen in this area, even considering the player's very affordable price. Fig.8 is a narrowband spectral analysis of the DV-970HD's analog output while it played back a CD containing a high-level tone at exactly one-quarter the sample rate, over which had been laid the LSB toggling on and off at 1/192 the same rate. Not only does the same sort of noise-floor modulation seen in fig.7 make an appearance, but a very large number of sidebands can be seen surrounding the peak that represents the HF tone. Those indicated with red numeric markers are related to audio data, those marked in brown to the power supply

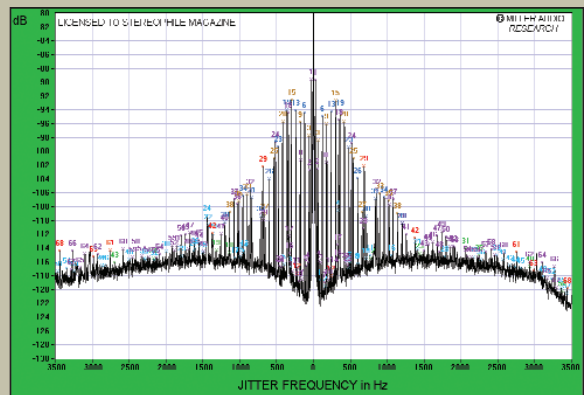


Fig.8 Oppo DV-970HD, high-resolution jitter spectrum of analog output signal (11.025kHz at  $-6\text{dBFS}$ , sampled at 44.1kHz with LSB toggled at 229Hz), 16-bit CD data. Center frequency of trace, 11.025kHz; frequency range,  $\pm 3.5\text{kHz}$ .

which she played on this recording, but in her hands it sounds like a cannon. Between her emphatic downstrokes and assertive double-stopping, the *Ciaccona* of Bach's Partita 2 in D Minor (BWV 1004) sounded huge. Once she'd essayed the first fugue, however, Haendel's tone was rich, warm, and round. I didn't need to know which fiddle she was playing; the Oppo let me hear that it was one in a million—and played by one of the great ones.

Hearing Haendel play Bach is to be reminded that, for all of the formal purity of his work, Bach père was a man of flesh and blood—and a passionate one at that. In the *Ciaccona*, Haendel invests Bach with the Beethovenian “shattering resignation of a man to his unavoidable tragic destiny,” as she has described it. That observation isn't a gratuitous aside, but rather my way of noting how much drama and emotion the \$149 Oppo was capable of delivering.

Similarly, on Chesky's fabulous *Swing Live* (DVD-A, CHDVD222), which features Bucky Pizzarelli, Peter

Appleyard, Bernard Purdie, Allen Vache, and Michael Moore in 2-, 4-, and 6-channel 24-bit/96kHz, the Oppo's analog outputs delivered seriously swinging sound with depth, spread, and vigor. This live, minimally

I had any real complaint, it was that Michael Moore's acoustic bass sounded somewhat puddingy, which I initially thought might have been because of the room itself. (Chesky doesn't “fix it in the mix,” because that wouldn't be a

## ANY **MISGIVINGS** I HAD ABOUT PAIRING A \$149 DISC PLAYER WITH A \$50,000 **SYSTEM** WERE QUICKLY **LAI**D TO REST.

edited performance had more room acoustic than the Russell CD or the Haendel DVD, but the spatial detail didn't come at the price of the tonal information or the rhythmic drive. Pizzarelli's relaxed riffing on “Lime House Blues” proves that high-energy guitar playing is not the sole domain of the young and hormonally overloaded—the man can just flat-out play, and if you can't make the trip to hear him while you still can, you *need* to get this disc. If

true re-creation of the event.)

My current favorite SACD, Paavo Järvi and the Cincinnati Symphony's disc of works by Britten and Elgar (Telarc SACD-80660), also got its workout in the Oppo. *Four Sea Interludes from Peter Grimes* had weight and breadth, with a great amount of low-level detail. However, once again, I wasn't completely happy with the low-end sound, which was somewhat soft and overripe in the midbass. I'd also

### measurements, continued

(those marked in purple are of unknown origin). The jitter level was 4 nanoseconds peak-peak, around 20 times higher than the best playback systems I have measured.

Concerned that I was being misled by my test gear, I repeated the test with the same 16-bit signal on a DVD-A, then with a 24-bit version of the data. Both jitter level and spectra were the same. I then repeated the test using a different analyzer, but again with no change in the result. Performing a wideband spectral analysis of the Oppo's output while it played back a high-level tone at 11.025kHz from SACD gave the graph shown in fig.9. Not only are the jitter and noise-floor modulation still apparent, but the idle-tone spectral content at low frequencies seen in earlier graphs is still present. You can also see the rise in ultrasonic noise

due to SACD's DSD encoding, but this is low in level, correlating with the somewhat curtailed response above the audioband seen with SACD playback in fig.1.

It is hard to predict the subjective effect of such high jitter, but a flat, rather uninvolved presentation would be my suggestion. I do note that Wes Phillips found that the Oppo player sounded somewhat soft and overripe in the midbass, which is one consequence of high amounts of random jitter, in my experience. He concluded that the DV-970HD's “performance as a standalone player wasn't where I felt its true potential lies, but when connected to a good DAC it punched way outside its class.” I must admit that I had trouble checking the quality of the Oppo's digital output because, for a while, I couldn't get it to output audio data with a sample rate greater than 48kHz, even with DVDs that allow an in-the-clear hi-rez signal to be output. The trick, it transpired, was to turn off the HDMI output, which allowed the maximum sample rate of the S/PDIF jacks to be set to 96kHz or 192kHz. Even so, using RME's DIGICheck program, I found that the DV-970HD's digital output truncated the word length to 16 bits, even with true 24-bit audio (such as my own DVD-As, burned with Minnetonka Software's DiscWelder Bronze program).

Does this matter? Perhaps not, as Wes enthused over the Oppo used as a transport to feed 96kHz-sampled audio to the Slim Devices DAC. But I still would like to have seen all 24 bits active in the digital output words.

—John Atkinson

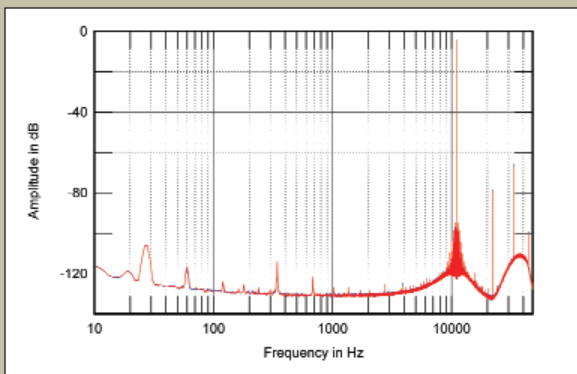


Fig.9 Oppo DV-970HD, spectrum of analog output signal, 11.025kHz at -3dBFS, SACD data (logarithmic frequency scale).

noticed this with *Swing Live*, so it's unlikely that it was caused by the conversion of DSD to PCM.

### Change is a challenge and an opportunity

John Atkinson had kindly lent me his Pioneer DV-578A DVD player, which he'd bought for \$160, as a "real-world" comparison. Did the Oppo better the Pioneer? Well, yes—but if you're only going to be using the players' analog outputs, it probably makes little sense to trade one for the other.

The Oppo was less smeared in the high end, which meant that Haendel's tone was more polished and Peter Appleyard's vibes had more clangy overtones. Both players were disappointing in the low end. No, that's too harsh—compared to the universal players to which I've been listening, the Ayre C-5xe and Krell Evolution 505, neither the Oppo nor the Pioneer was completely satisfying, especially in the bottom end. Yet both players were revelations to me: I'd had no idea how good sub-\$200 digital had become, much less sub-\$200 universal digital players.

Good as the Oppo is, when I switched into the system the Ayre K-5xe—the universal player I actually own—the differences weren't hard to hear. The room acoustic of *Swing Live* was bigger, deeper, more solid. Moore's bass sound was larger, louder, and far more tightly coupled to a discrete instrument, as opposed to just floating in the performance space.

Haendel's performance, which was far from small or lacking in nuance through the Oppo, became bolder and even more incisive through the K-5xe. The woody warmth of her instrument became richer and smokier; the subtle differences in string attack were more pronounced. And although you might think it a strange thing to mention, the elegance of her musical logic became more compelling.

As for the Britten, well, *wow*. It never ceases to amaze me how good SACD sounds when played back properly. I don't know whether the tremendous difference I heard between the

Oppo and the Ayre had anything to do with the DSD-to-PCM conversion, or if the Ayre's DSD-to-analog conversion is simply better designed, or if the Ayre's analog circuitry is just better, but on SACD the differences between the players were simply mind-boggling.

It wasn't simply the aching purity of the strings' harmonics or the solidity and extension of the deep bass, but

room's dimensions. Was the soundstage big as life? Heck no, but it was *huuuuuge*. And tastefully so.

### Ability is of little account without opportunity

When I re-read the long commentary strands about the DV-970HD on various audio bulletin boards, I noticed that its most vocal advocates were



The Oppo DV-970HD includes a full set of cables, including a HDMI cable for video and digital audio.

also the Ayre's presentation of soundstaging detail and perspective. The Oppo hung an image between the speakers and extending to my front wall, an accurate, although scaled-down, re-creation of Cincinatti's Music Hall. With the Ayre, especially in my Room Tunes—treated small listening room, the soundstage boundaries were not constrained by my

using it to drive DACs, primarily in systems using the HDMI connection. That particular digital pipe is more common in A/V systems than in music-only surround or stereo rigs, and besides, I didn't have any DACs or digital preamps that employed it. What I did have to hand, however, was the Slim Devices Transporter, which offers 24-bit resolution at 44.1kHz, 48kHz, or 96kHz—making it perfect for use with the Oppo's hi-rez digital output. It was time to take the DV-970HD upstairs to the big rig.

From this point on, comparisons were made in my larger listening room, using the Ayre C-5xe universal player, Ayre K-1xe preamplifier, and Ayre M-XR monoblock amplifiers driving Wilson Audio WATT/Puppy 8s. The DV-970HD was connected to the Transporter with Stereovox XV2 75-ohm coaxial cable.

I started with *Swing Live* and immediately hit a snag—actually, I'd hit the same snag in my small listening room, but there it didn't annoy me as much. The Chesky DVD-A offers you a choice of several audio mixes (2-, 4-, and 6-channel 24-bit/96kHz), but to choose a particular mix, you need a monitor. With DVD-Vs that first dump you into a menu screen, you can work around this by using the "direct play" hack: Insert the DVD, and as soon as it will let you, press Stop. Then press Menu, and the DV-970HD will

## ASSOCIATED EQUIPMENT

**DIGITAL SOURCES** Ayre C-5xe universal player, Krell Evolution 505 SACD/CD player.

**DIGITAL CONVERTER** Slim Devices Transporter.

**PREAMPLIFIERS** Ayre K-1xe, Krell Evolution 202.

**POWER AMPLIFIERS** Ayre M-XR monoblocks, Krell Evolution 600.

**LOUDSPEAKERS** Dynaudio Confidence C1, Wilson Audio Specialties WATT/Puppy 8.

**CABLES** Interconnect: Kimber KCAG, Krell CAST, Shunyata Research Aries & Antares. Speaker: Shunyata Research Lyra.

**ACCESSORIES** Ayre L-5xe line filter; Furutech eTP-609 distribution box, FP-20A(R) duplex outlets, RDP panels; OSAR Selway/Magruder equipment racks; Ayre Myrtle Wood Blocks.

—Wes Phillips

skip the warning and the promos and just start the feature. Because the DV-970HD is marketed as a universal player, it seems petty to complain that it requires a monitor for its OSD menu trees, but it's a pain in the keister for ardent audiophiles who don't want a screen in the listening room. This is one area where the Ayre just shines; its interface lets you navigate discs without an external monitor.

*Yowzah!* Using the Transporter to convert the Oppo's 96kHz digital output made me understand what all the fuss is about. Forget "good for the money"—now we're talking world-class. What's that you say? Using a \$2000 DAC makes no sense with a \$150 front end? *Au contraire, mon ami*, which is French for *in a pig's eye*. Many audiophiles, prosumers, and folks with music servers already have hi-rez DACs in our systems—the DV-970HD gives us an affordable means of feeding them high-octane digital.

Bloated bass and congested highs—*all gone*. The soundstage became bigger, and Pizzarelli swung even harder—if such a thing is possible. The combo of Oppo and Slim Devices now offered the K-5xe far more serious competition. In fact, the DV-970HD with Transporter had more incisive focus, which I somewhat preferred to the airier, er, Ayre. That is to say, *sometimes* I did, taking it to be greater detail; at other times I thought the Ayre's slightly more atmospheric sound was less hyped, and therefore more relaxing, than the Oppo-Slim Devices. They were close, though; close enough that the differ-

ences fell pretty far into personal-preference territory.

The specificity and verismo of the DV-970HD-Transporter duo definitely impressed me with the Ida Haendel disc, where I was reminded of the difference between video and film. Video always looks realer, whereas film always looks better. Haendel's Bach is so strong and aggressive that the Oppo-Slim Devices' slightly greater acerbity seemed better suited to it than the Ayre's softer, more film-like focus. Again, your mileage may vary; that was *my* take.

is aimed at A/V enthusiasts, who generally use their players' digital outputs and perform the D/A conversion off-board. If you have a hi-rez DAC that can utilize 96kHz signals, you can benefit from that increased bandwidth, as I did. If you have HDMI-compatible gear, you can benefit from 24-bit word length as well, although I did not audition the DV-970HD that way, since none of my A/V gear supports that standard (I'm hi-fi proud, but HT poor).

I was impressed by the Oppo DV-970HD. It looks good, it feels solid and

## THE OPPO **DV-970HD'S** PERFORMANCE AS A STANDALONE PLAYER WASN'T WHERE I FELT ITS TRUE POTENTIAL LIES, BUT WHEN **CONNECTED** TO A GOOD DAC IT PUNCHED WAY OUTSIDE ITS **CLASS**.

### **All great work is preparing yourself for the accident to happen**

So how good can a \$149 player be? The Oppo DV-970HD is *very* good. Using its internal D/A converters, the Oppo produces listenable, detailed, extremely satisfying sound from pretty much every optical-disc format currently available. However, as a standalone universal player, it won't cause Krell's Dan D'Agostino or Ayre's Charlie Hansen any sleepless nights.

On the other hand, the DV-970HD

reassuringly well-built, and I was impressed by the company's service ethic. I see why it has become a favorite among consumers. Its performance as a standalone player wasn't where I felt its true potential lies, but when connected to a good DAC it punched way outside its class.

Here's the part that may truly mark me as an ass: After I'd done everything I've written about here, I finally installed the DV-970HD in my home theater, where I discovered that it's also an extremely impressive DVD player. If you like that sort of thing. ■