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PART II

# HOME Theater

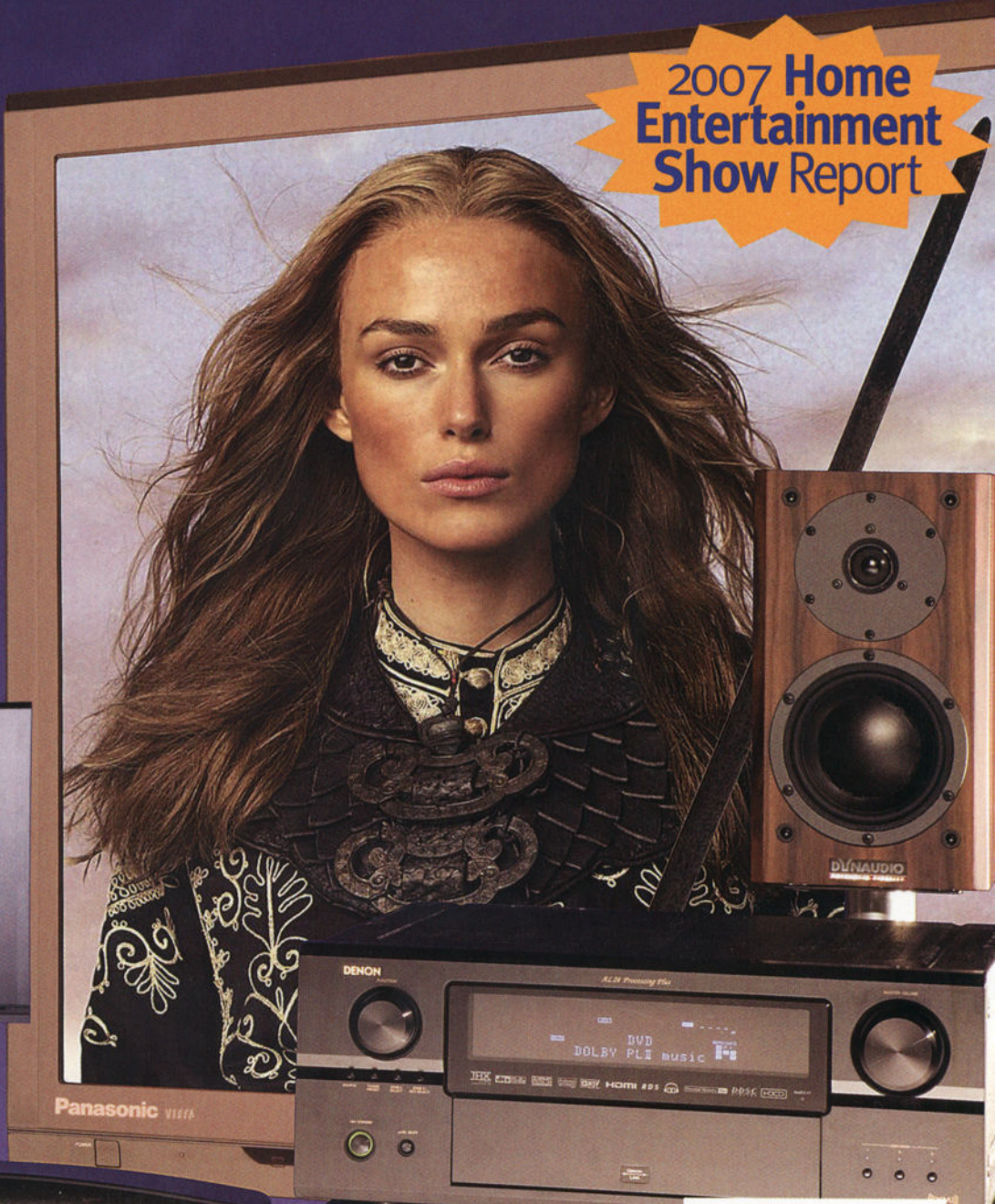


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## SPECIAL HDTV ISSUE

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# Dynaudio Focus 110 Speaker System & Denon AVR-4806CI A/V Receiver

Little big man.



BY MARK FLEISCHMANN

**Why do people who spend fortunes on their cars look askance at high-end audio equipment?** They wouldn't be seen dead backing a budget SUV out of their driveways. But, when they choose the gear that mediates their relationship with music and movies, they condemn themselves to poverty. Audio systems are shadows to them. They're all the same, so why pay more? These sad people drive their \$70,000 cars to Circuit City and pay three figures for a mediocre HTIB. I once wrote about portable audio for an outdoorsy men's magazine. When I suggested that high-end headphones are as valid as high-end hiking gear, the editor gave

me a perplexed and somewhat dirty look.

He'd probably have thrown me out of his office if I'd suggested anything like the Dynaudio Focus 110 speaker system and Denon AVR-4806CI receiver. The Dynaudios, at \$700 each, are modest monitor-sized speakers. If you just

glanced at the review samples, you might mistake them for something far less costly. The Denon, on the other hand, announces its high-end status with its sheer size. Second from the top of Denon's line, this \$4,000 receiver is the largest one I've ever lifted onto my equipment rack, and, at more than 52 pounds, it's also the heaviest. Together, the Dynaudios and Denon form an \$8,500 system. As you'll see, you get what you pay for.

## The Well-Stuffed Trapezoid

Dynaudio is located in the northern part of the Danish peninsula. The company is a big believer in the power of high-quality drivers to

animate a loudspeaker. Within three years of their birth in 1977, Dynaudio began designing and manufacturing drivers for both themselves and other brands. North American distribution of finished products started in 1995; products using Dynaudio drivers had snuck onto our shelves years earlier. The company's eight product lines include many highly regarded models in the two-channel sphere, as well as in-walls, IP-based speakers, and subwoofers.

The Focus 110 is the baby of the line. Other members, not reviewed here, include the Focus 140, a larger monitor; the Focus 220, a floor-standing speaker; and the Focus 200 C center-channel speaker. I deliberately avoided using the center in the system under review because I prefer to use identical speakers all around—that's the best way to produce a seamless soundfield.

Viewed from above, the enclosure looks like a trapezoid. The front and back surfaces are parallel, but the sides taper from front to back to reduce internal reflections. I pulled off the grilles to expose Dynaudio's pride and joy, along with more of the wood grain.

The silk dome tweeter is coated with a proprietary substance that Dynaudio would not divulge, adding that "its primary purpose is to offer increased thermal capacity, increased damping, and an

## HIGHLIGHTS

### Dynaudio Focus 110 Speaker System:

- Trapezoids with rich wood veneers
- Highly transparent and neutral
- Small but potent sub

extended high-frequency response free of distortion.” The crossover between the drivers is impedance-corrected so the load never drops below 4 ohms. These speakers are designed for use with a receiver, albeit a better-than-average one.

What appears to be a large dust cap on the 5.9-inch magnesium silicate polymer midwoofer is actually an integral part of the one-piece cone. The slotted outline of this outer part traces the outline of the voice coil beneath it. Dynaudio says this “geometrically optimized flat-membrane shape allows a direct voice coil attachment to the cone with fewer adhesive joints.” This is meant to achieve better transient and phase response, controlled dispersion, longer driver life, and stability under challenging temperatures and humidity.

The SUB 250 has a few unusual connectivity options. To allow daisy-chaining, you can switch it to operate as either a master or a slave. When you connect it between a receiver and speakers, the sub uses line-level (not speaker-level) connections with a high-pass filter that you can switch between three settings: 60 hertz, 80 Hz, or flat. I used it in the conventional way, using the receiver’s sub-out connection and bypassing the sub’s internal crossover.

Dynaudio packs foam plugs with the speakers in case you find the bass output from the rear ports to be too aggressive. I kept the speakers well out from the wall and didn’t need the plugs.

### Features Piñata

The Denon AVR-4806CI is a features piñata. No fewer than 25 logos festoon its Web listing. Its rated 140 watts times seven are THX Ultra2 certified, so this receiver will

play loud and proud in a room of up to 3,000 cubic feet with THX Ultra2—certified speakers (and then some, I suspect). Another feature worth mentioning is the Audyssey MultEQ auto-setup and calibration system. It is designed to improve over conventional room EQ systems by performing calculations on the time-domain response as well as the frequency response. (See the Hook Me Up column in our August issue for more on Audyssey.)

## AT A GLANCE DYNAUDIO FOCUS 110 SPEAKER SYSTEM



These listings are based on the manufacturer’s stated specs; the HT Labs box below indicates the gear’s performance on our test bench.

### SUBWOOFER: SUB 250

Connections:	Line-level in/out, mono and stereo
Enclosure Type:	Sealed
Woofer (size in inches, type):	10, magnesium silicate polymer cone
Power Rating (watts):	200 RMS
Crossover Bypass:	Yes
Available Finishes:	Rosewood, Maple, Cherry, Black Ash Veneers
Dimensions (H x W x D, inches):	11.57 x 11.38 x 12.52
Weight (pounds):	22
Price:	\$1,000

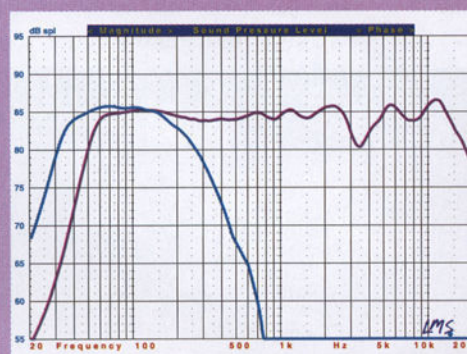
### SPEAKER:

Type:	
Tweeter (size in inches, type):	1.1, coated silk dome
Woofer (size in inches, type):	5.9, magnesium silicate polymer cone
Nominal Impedance (ohms):	4
Recommended Amp Power (watts):	30–150
Available Finishes:	Rosewood, Maple, Cherry, Black Ash Veneers
Dimensions (H x W x D, inches):	12.01 x 6.81 x 11.22
Weight (pounds):	16.1
Price:	\$700/each

### FOCUS 110

Type:	Two-way, monitor
Tweeter (size in inches, type):	1.1, coated silk dome
Woofer (size in inches, type):	5.9, magnesium silicate polymer cone
Nominal Impedance (ohms):	4
Recommended Amp Power (watts):	30–150
Available Finishes:	Rosewood, Maple, Cherry, Black Ash Veneers
Dimensions (H x W x D, inches):	12.01 x 6.81 x 11.22
Weight (pounds):	16.1
Price:	\$700/each

## HT Labs Measures: Dynaudio Focus 110 Speaker System



◆ Satellite Sensitivity:  
84.5 dB from 500 Hz to 2 kHz

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

the Focus 110 satellite (purple trace) and SUB 250 subwoofer (blue trace). The passive loudspeaker was measured with grille at a distance of 1 meter with a 2.83-volt input.

The Focus 110’s listening-window response (a five-point average of axial and  $\pm 15$ -degree horizontal and vertical responses) measures  $+1.37/-4.15$  decibels from 200 hertz to 10 kilohertz. An average of axial and  $\pm 15$ -degree horizontal responses measures  $+2.02/-3.85$  dB from 200 Hz to 10 kHz. The  $-3$ -dB point is at 52 Hz, and the  $-6$ -dB point is at 47 Hz. Impedance reaches a minimum of 4.33 ohms at 216 Hz and a phase angle of  $-34.92$  degrees at 111 Hz.

The SUB 250’s close-miked response, normalized to the level at 80 Hz, indicates that the lower  $-3$ -dB point is at 35 Hz and the  $-6$ -dB point is at 30 Hz. The upper  $-3$ -dB point is at 214 Hz with the Mode switch set to LFE. —MJP

**NEED A DISPLAY?**

We recommend the following displays for use with this Dynaudio/Denon system:

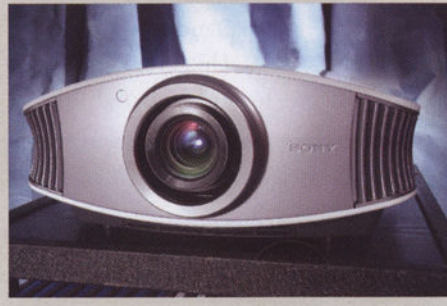
**JVC DLA-HD1 D-ILA Projector,**  
\$6,300

**Resolution:** 1,920 by 1,080  
**Best Video Connection:** HDMI (2)  
**Weight:** 25.5 pounds

**Sony VPL-VW50 SXR**  
**Projector, \$5,000**

**Resolution:** 1,920 by 1,080  
**Best Video Connection:** HDMI (2)  
**Weight:** 24.25 pounds

*\* Please remember that, if you decide to use a projector, you will also need to purchase a screen.*



With all sources upconverted to 1080p, this receiver can feed your bleeding-edge video display with one HDMI cable. It supports the HDMI 1.1 version. There are a couple of other high-quality interfaces here that precious few other receivers have. One of these is IEEE 1394, a.k.a. FireWire, which is my favorite way to connect a universal player. It accesses Super Audio CD, DVD-Audio, Dolby Digital, and DTS soundtracks. The Ethernet jack is compatible with Microsoft's PlaysForSure digital rights management. Whichever jack you use for digital audio, Denon's world-beating AL24 digital-to-analog conversion delivers superb audio quality by minimizing the audible effects of quantization noise, an

inherent weakness of digital formats. I vividly remember the demo at AL24's introduction years ago—to me, it's one of the best DACs built into any receiver.

The AVR-4806CI can serve up to three zones in a connected home with three independent signal sources. Other relatively unsung pluses include Internet radio

capability, a huge source of free audio programming. There's also HDCD, which provides better-than-CD-quality sound with encoded CDs, and Dolby Headphone audio enhancement, including both processing and recording capabilities.

If Denon didn't show a little imagination with this \$4,000 receiver's remote, there'd be hell to pay. As it happens, the supplied remote has a sweet blue-on-black touchscreen. The touchscreen consumes about 40 percent of the remote's upper surface, making it easy for you to change sources or modes. Below the touchscreen is a minimal but well-laid-out set of hard buttons. If you pick up the remote by the middle, the navigation keys fall naturally under your

thumb. Grab the bottom, and the 0.75-inch-long volume and channel keys are similarly accessible.

**We Are All Audioslaves**

Not for the first time, my powers of description wilt in the face of this kind of virtuosity. What can I say about a system that does everything well? First, I can say there's nothing missing. The midrange is free of obvious coloration, and it's as varied as the source material. High frequencies are extended, when the information is available, but there's no painful treble emphasis, and wailing high-pitched stringed instruments like violins don't hurt a bit when they've been recorded sympathetically. The subwoofer delivers bass frequencies pretty objectively, not only their pitches but their tone color, as well.

Walls and ceilings seemed to move around as one recording space gave way to the next. As the system played through BBC recordings of Richter piano recitals, I found that I preferred those recorded in the close confines of a Suffolk church over those recorded in big, bland Royal Festival Hall. The church's short reverberation time, which cruder equipment can turn into a mere blur, became a more specific sensation. Knowing what the system was capable of, I added a fourth layer of scruple to my usual criteria when choosing

**DYNAUDIO FOCUS 110 SPEAKER SYSTEM**

**OVERALL RATING**

Build Quality	Value	Features	Performance	Ergonomics
→ Top-drawer drivers, homemade, not out-sourced	→ Costs more than most monitor-sized speakers	→ Trapezoid-shaped cabinet minimizes internal reflections	→ Chameleon-like midrange	→ Though modest looking, also attractive
→ Plastic-sheathed gold-plated binding posts	→ Spending more would bring gains many would consider modest	→ Sub has line-level inputs and outputs for daisy-chaining	→ Enjoyable, not strident, highs	→ Back port prevents wall mounting
→ Wood-veneer, not vinyl, cabinets	→ Strong high-end picks	→ Silk dome tweeter	→ Low-frequency confidence	→ Satellites do not bulk large
<b>95</b> EXCELLENT	<b>90</b> GOOD	<b>92</b> GOOD	<b>97</b> EXCELLENT	<b>89</b> AVERAGE

**93**  
GOOD

Dynaudio delivers one of the strongest high-end sub/sat systems in the Focus 110 and SUB 250. If you have a large music library, you'll be surprised what treasures these speakers will unearth. A strong performer by high-end (or any other) standards.

**General information**

Focus 110 Speaker System, \$4,500; Focus 110 Monitor Speaker, \$700/each; SUB 250 Subwoofer, \$1,000  
Dynaudio, (630) 238-4200, [dynaudiousa.com](http://dynaudiousa.com) → Dealer Locator Code DYN

**AT A GLANCE** DENON AVR-4806CI A/V RECEIVER**FEATURES**

Processing Modes:	Dolby: Digital 5.1, EX, Pro Logic IIx
DTS:	DTS, ES, 96/24, Neo:6
Other:	DSP (9), 7-channel stereo, direct stereo
THX Certification:	Yes, Ultra2
Audio D/A Converter:	24-bit/192-kilohertz
Number of Amp Channels:	7
Power Rating (watts per channel):	140, into 8 ohms
Frequency Response:	+0/-3 dB from 10 Hz to 100 kHz
Dimensions (H x W x D, inches):	7 x 17.09 x 20.5
Weight (pounds):	52.5
Price	\$4,000

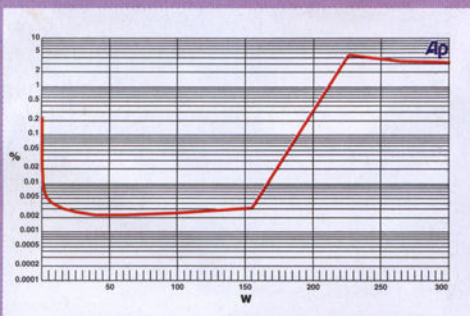
These listings are based on the manufacturer's stated specs; the HT Labs box below indicates the gear's performance on our test bench.

**CONNECTIONS**

<b>Inputs:</b>	
Video:	HDMI (3), DVI (1), 1394 (2), component video (3), S-video (7), composite video (7)
Audio:	Coaxial digital (3), optical digital (4), 7.1-channel analog (1), stereo analog (7), phono (1), XM (1), Denon Link (1), Ethernet (1)

<b>Outputs:</b>	
Video:	HDMI (1), component video (2), S-video (6), composite video (6)
Audio:	optical digital (3), stereo analog (5), 7.1-channel preamp (1)

**Additional:** RS-232 (1), 12-volt trigger (3), IR jack (2), Ethernet (1)

**HT Labs Measures: Denon AVR-4806CI A/V Receiver**

Five channels driven continuously into 8-ohm loads:

0.1% distortion at 137.1 watts  
1% distortion at 166.1 watts

All channels driven continuously into 8-ohm loads:

0.1% distortion at 65.7 watts  
1% distortion at 66.0 watts

Analog frequency response in Pure Direct mode:

-0.19 dB at 10 Hz; -0.05 dB at 20 Hz  
-0.08 dB at 20 kHz; -0.52 dB at 50 kHz

Analog frequency response with signal processing:

-0.52 dB at 10 Hz; -0.15 dB at 20 Hz  
-0.09 dB at 20 kHz; -24.58 dB at 50 kHz

This graph shows that the AVR-4806CI's left channel, from CD input to speaker output with two channels driving 8-ohm loads, reaches 0.1 percent distortion at 188.1 watts and 1 percent distortion at 210.3 watts. Into 4 ohms, the amplifier reaches 0.1 percent distortion at 277.6 watts and 1 percent distortion at 352.0 watts.

Response from the multichannel input to the speaker output measures -0.26 dB at 10 Hz, -0.09 dB at 20 Hz, -0.09 dB at 20 kHz, and -0.53 dB at 50 kHz. THD+N from the amplifier was less than 0.008 percent at 1 kHz when driving 2.83 volts into an 8-ohm load. Crosstalk at 1 kHz driving 2.83 volts into an 8-ohm load was -89.65 dB left to right and -87.92 dB right to left. The signal-to-noise ratio with 2.83 volts driving an 8-ohm load from 10 Hz to 24 kHz with "A" weighting was -103.18 dB.

From the Dolby Digital input to the loudspeaker output, the left channel measures -0.06 dB at 20 Hz and -0.14 dB at 20 kHz. The center channel measures -0.05 dB at 20 Hz and -0.07 dB at 20 kHz, and the left surround channel measures -0.06 dB at 20 Hz and -0.17 dB at 20 kHz. From the Dolby Digital input to the line-level output, the LFE channel is -0.00 dB at 20 Hz when referenced to the level at 40 Hz and reaches the upper 3-dB down point at 118 Hz and the upper 6-dB down point at 121 Hz.—*MJP*

**HIGHLIGHTS****Denon AVR-4806CI A/V Receiver:**

- Denon's second from top of the line
- State-of-the-art features set
- Power to spare

my late-night listening: composer, work, performer, and ambience.

Lately, I've been soothing myself with Haydn's string quartets. The Los Angeles String Quartet tenaciously recorded all of them over a five-year period and released a 21-disc boxed set—and won a Grammy for their effort. Of course, it took a few months to play my way through the whole thing, and, my listening life being what it is, several systems took part. The Dynaudio/Denon rig turned in the strongest performance, doing all at once what other gear could accomplish only in part: precisely outlining the instruments, filling in their timbre, fixing them in space, rendering the size of the space in what felt like the right proportions, and delivering all of the microdynamic subtleties, without losing focus, ignoring nuance, or overemphasizing the violins. Now I want to play the whole set over again.

*Time Control* is the fourth album from Hiromi, the Japanese jazz pianist—and better yet, the fourth to be released by Telarc as a multichannel SACD. It's also the fourth one to keep the bandleader's piano out of the front center channel, although the rhythm section punches through strongly there and elsewhere. This time she bills her band as Hiromi's Sonicbloom, presumably to celebrate her first quartet,



**A** The AVR-4806CI's remote offers an intelligent layout that combines a touchscreen and easy-to-navigate hard buttons.

with David Fiuczynski on fretted and fretless guitar, joining her usual rhythm section of Tony Grey (bass) and Martin Valihora (drums). The Dynaudios conjured maximum tone color from the plummy Yamaha piano, recorded with minimum reverb, which gave the disc a pleasantly intimate quality.

*Out of Exile* is the second of three albums from Audioslave, now defunct with the withdrawal of lead singer Chris Cornell. The band's songwriting and playing have never been less than magnificent. However, all three of their CDs exhibit squashed-dynamic-range syndrome, turning their dramatic peaks and valleys into one extended plateau. Cornell's voice suffered the most. His many dynamic gradations averaged out to a single level, although his interesting modulations of vocal color remained intact. Only during the (artificially boosted) quiet moments did the bass punch through—for example, during the intro to "Be Yourself." Otherwise, I could have played this CD through a boom box. I hope Cornell finds himself a better producer and a smarter record company in the next stage of his career. If he made a true audiophile recording, he'd take no prisoners.

### The Narrator Is Going to Kill You

Our ears are tuned to hear the human voice. That was one of this

system's strong suits. The best example was Emma Thompson's omniscient voiceover in *Stranger Than Fiction*. That it sounded so natural, so right there, just made the movie's author-controls-character premise even more effective and comical.

Since I depend on potluck for movie effects, I didn't get the grand *aha* moment I sought every time. In *Man of the Year*, the system aced splashy crowd scenes with Robin Williams stoking an audience or playing the climactic scene on *Saturday Night Live's* Weekend Update. But the movie's most natural moments were its nothing moments: Williams in a parking lot alive with night traffic sounds or sitting in a plane on a runway.

*The Departed* got its second audition in this upscale system—this time *after* Martin Scorsese collected his Oscar. I watched it the first time through a system that cost a mere \$2,400. Quadrupling the price of the equipment didn't change my perception of the soundtrack, although the movie's fleeting use of surround panning effects came through slightly better, and I grew to appreciate the fact that Scorsese and his mixer didn't deafen the audience during car chases and shootings. The properly matched front center speaker did justice to numerous stellar performances from Jack Nicholson and company.

Returning to a few other old favorites, I checked one of the later

crowd scenes in Eminem's *8 Mile*—the "Rabbit Finds His Voice" chapter. For the first time, I noticed how simply (albeit effectively) the crowd noise was mixed, with the sound concentrated in the front channels and simply repeated at lower volume in the surrounds. There weren't many discrete crowd noises in the surrounds. The thunks of the rhythm machine were right on target.

*Master and Commander* set me adrift in choppy seas. In a pre-battle scene, I noticed how the whooshing of seas over the hull of the ship were differentiated, some coming from port and some from starboard, keeping the aquatic ambience whole. The onslaught of ship-to-ship battle was a feast of threatening (and interestingly varied) low-frequency effects.

### Solid Investment

The Dynaudio Focus 110 shows just how terrifyingly good a high-end sub/sat set can be. Likewise, the Denon AVR-4806CI is a hot-list surround receiver that balances a shrewdly chosen features set with effortlessly musical and reliable performance. Unless you have a very cavernous room, you won't be unhappy with these components. If you can afford the investment, it will pay dividends for a long time.

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

DENON AVR-4806CI A/V RECEIVER					OVERALL RATING
Build Quality	Value	Features	Performance	Ergonomics	92 GOOD
→ A weighty high-end surround receiver	→ Competes against lower-end separates	→ Audyssey MultEQ	→ Lots of power	→ Touchscreen remote a cut above the norm	
→ Large enclosure conceals serious power-modulating guts	→ Triple-zone prowess adds another feather to Denon's cap	→ 1080p upconversion → THX Ultra2 certified → Dolby Headphone	→ Tonally neutral → Handles any material well	→ Otherwise average interface	
90 GOOD	90 GOOD	92 GOOD	95 EXCELLENT	90 GOOD	It's second from the top in Denon's receiver line, but the AVR-4806CI will be the top choice for many home theater buffs. It delivers more power than all but a few receivers, with a features set that will appeal to both newbies (auto setup, room EQ) and sophisticates (THX Ultra2, 1080p upconversion).
<p><b>General information</b>                      AVR-4806CI A/V Receiver, \$4,000 → Denon Electronics (USA), (201) 762-6500, www.usa.denon.com                      Dealer Locator Code DEN</p>					