

HOME THEATER

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Test Bench

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PHOTOS Cordero Studios

Pioneer Elite SC-09TX A/V Receiver

PRICE: \$7,000 **AT A GLANCE:** Superb sound for both movies and music • 10 channels of powerful Class D amplification • Sets a steep learning curve but rewards with immense flexibility • Video processing has limitations, including no upconversion of HDMI sources

And the Kitchen Sink



Sometimes I get nostalgic for the early days of home theater. For example, I fondly remember the Proceed AVP processor I reviewed for *Stereophile Guide to Home Theater* in 1997. Conventional Dolby Digital and DTS were its most exotic operating modes, the

remote had fewer than a dozen buttons, and it didn't provide room equalization, extra surround modes, or onboard video processing. In fact, it didn't have any video switching beyond S-video. We didn't need no stinkin' component, and no one had even heard of HDMI. Laserdisc was the most established

source, DVD was brand new, and consumer high definition was still a mote in the FCC's eye.

But now we have A/V receivers like the Pioneer Elite SC-09TX, that have more features than the giddiest gadget guru or befuddled reviewer can get his hands around. I'll do my best to keep the review of this incredibly complex

product from turning into a mini-series.

Don't Toss That Manual

My first few weeks with the SC-09TX were relatively blissful. I did a manual setup and bypassed all of the automated and exotic features. I listened to music and movies with only the occasional



HIGH END PIONEER ELITE SC-09TX A/V RECEIVER

annoyance (“Where is that & front-panel dimmer control?!” and “Why is this & remote only partially backlit with dim, hard-to-read blue lighting?”).

You could do the same and use the receiver with increasing pleasure as you scope out its advanced features, one by one. Since this is a very complicated product, that will take time. The Pioneer is THX Ultra2 Plus certified and offers all the options and listening modes that heaven and THX allow. For this review, I stuck mostly to good old two-channel (with a subwoofer) for music, and unadorned 5.1-channel decoding for surround formats. I spent most of my movie time with HD material that had lossless or uncompressed audio (including Dolby TrueHD and DTS-HD Master Audio). The Pioneer decodes these formats from their bitstreams. It can also accept them as multichannel PCM if you choose to let your Blu-ray player decode them.

The receiver has 10 channels of amplification, each rated at 200 watts into 8 ohms (with seven channels driven). There’s only one practical way to squeeze so many powerful amp channels into a product like this. It would need to use the latest in highly efficient, Class D switching amplifiers, in this case from ICEpower. Pioneer calls its implementation of this technology Direct Energy High Fidelity Class D.

You can use the 10 amplifier channels in several ways, including biamping, using multiple zones, or placing up to 9.2 channels in the same room (with up to six surrounds). Oddly, Pioneer did not include a specific menu choice for a basic 5.1-channel setup. I simply selected the option for 5.2 channels, which is designed to biamp all five full-range channels. Then, I hooked up each speaker to just one of the two biamp outputs for each channel and used a single subwoofer. The SC-09TX was none the wiser.

The SC-09TX includes so many audio and video inputs and outputs that the specification page doesn’t give their numbers. The receiver will play vinyl LPs through its moving-magnet

phono input, Dolby Digital audio on Laserdisc through its RF input, and XM and SIRIUS satellite radio (with optional tuners). It will also play audio and video from an iPod and play back photos and video through the receiver’s Home Media Gallery from your iPod, USB flash drive, or other storage device. You can also link to a home network via the Pioneer’s Ethernet port. In short, if the Pioneer doesn’t have enough connections for your system, you need to get out more.

The receiver cross-converts (transcodes) analog component, composite, and S-video to one another and to HDMI. But it can’t convert HDMI to analog video.

The SC-09TX also features onboard Marvell video processing. (Go to www.marvell.com for more info, but don’t drop the last “l,” or you’ll be reading about Iron Man, Spider-Man, and the

Hulk.) Unfortunately, with HDMI sources, the video is passthrough only, with video processing active only with component and lower forms of analog video life. The upconversion is limited to a maximum of 1080i, analog-video-to-analog-video. But it will upconvert to 1080p if you transcode an analog video input to an HDMI output.

The analog video processing offers its own video controls (Brightness, Contrast, Hue, Chroma Level, and Noise Reduction) and two optional aspect ratio settings. Unfortunately, these controls weren’t always accessible on my sample. Sometimes the controls were active, but other times they were inaccessible.

The Pioneer’s front-panel LCD screen displays the receiver’s menus or the actual source image (as a sort of preview monitor). It can also show the source image with the menus overlaid on top. But the front-panel screen cannot display an HDMI source.

The remote control is a sea of small buttons. Since it must perform a variety of operations, it’s designed well enough (apart from that dim blue backlighting). It also offers direct input selection. But I suspect that most SC-09TX installations will substitute a higher-end, user-friendly programmable touchscreen.

Setup: The Fun Begins

You can set up the Pioneer in several different ways. As I noted earlier, I spent most of my time with the Pioneer in a manual

setup, which made me a happy camper. However, the SC-09TX’s manual doesn’t explain a manual setup until page 56.

Alternately, you can set it up with Pioneer’s MCACC (Multi-Channel Acoustic Calibration) system, using the included microphone. According to Pioneer, MCACC “measures the acoustic characteristics of your listening area, taking into account ambient noise, speaker size, and distance, and tests for both channel delay and channel level.” It also performs equalization on each channel and can include your room’s reverberation in its calculations. It compensates for standing waves, tweaks phase, and can save up to six setups (at different listening positions, for example). You can even link a PC to the receiver to help with the setup (using a special downloadable program from Pioneer).

I’ll end the MCACC discussion here to cover the receiver’s actual performance.

Putting It Together

Except as noted, I made all of the following observations in a manual setup with no equalization. I used an HDMI link for the multichannel audio/video and a separate coaxial digital link for two-channel, music-only playback. The subwoofer was always in the system.

The Blu-ray release of the revival of the musical *Company* (DTS-HD Master Audio) opens with a startling, audio-only cacophony of street sounds that



• The SC-09TX’s LCD screen displays the menu, the actual source image, or a combination of the two.

Features

PIONEER ELITE SC-09TX A/V RECEIVER

AUDIO DECODING: Dolby: TrueHD, Digital 5.1, EX, Pro Logic IIx
DTS: DTS-HD Master Audio, DTS, ES, 96/24
OTHER: 14 proprietary DSP modes
THX CERTIFICATION: Ultra2 Plus
NUMBER OF AMP CHANNELS: 10
RATED POWER (WATTS PER CHANNEL): 140 into 8 ohms, 20Hz–20kHz, 0.05% THD, 10 channels driven; 200 into 8 ohms, 20Hz–20kHz, 0.05% THD, two channels driven; 200 into 8 ohms, 20Hz–20kHz, 0.05% THD, seven channels driven
SPECIFIED FREQUENCY RESPONSE: 5 Hz to 100 kHz, +0/–3 dB (Line)
DIMENSIONS (W X H X D, INCHES): 17.34 x 9.73 x 18.87
WEIGHT (POUNDS): 70.5
PRICE: \$7,000

HT Lab Measures

PIONEER ELITE SC-09TX A/V RECEIVER

Five channels driven continuously into 8-ohm loads:

- 0.1% distortion at 199.4 watts
- 1% distortion at 267.3 watts

Seven channels driven continuously into 8-ohm loads:

- 0.1% distortion at 198.6 watts
- 1% distortion N/A-Protection engaged

Analog frequency response in Pure Direct mode:

- 0.05 dB at 10 Hz
- 0.00 dB at 20 Hz
- +0.28 dB at 20 kHz
- 1.47 dB at 50 kHz

Analog frequency response with stereo signal processing:

- 1.44 dB at 10 Hz
- 0.40 dB at 20 Hz
- +0.12 dB at 20 kHz
- 1.92 dB at 50 kHz

This graph shows that the SC-09TX's left channel, from CD input to speaker output with two channels driving

8-ohm loads, reaches 0.1 percent distortion at 200.2 watts and 1 percent distortion at 268.7 watts. Into 4 ohms, the amplifier reaches 0.1 percent distortion at 390.1 watts and 1 percent distortion at 523.4 watts.

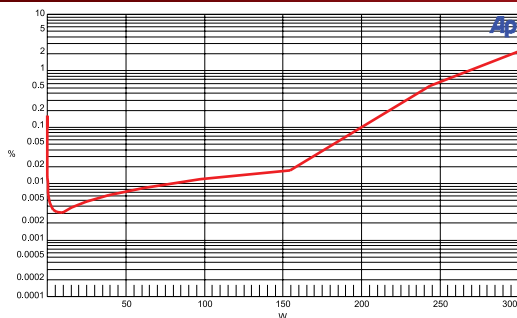
Response from the multichannel input to the speaker output measures -0.05 decibels at 10 hertz, -0.00 dB at 20 Hz, +0.23 dB at 20 kilohertz, and -1.54 dB at 50 kHz. THD+N from the CD input to the speaker output was less than 0.006 percent at 1 kHz when driving 2.83 volts into an 8-ohm load. Crosstalk at 1 kHz driving 2.83 volts into an 8-ohm load was -106.32 dB left to right and -107.00 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 -106.05 dBra.

From the Dolby Digital input to the loudspeaker output, the left channel measures -0.01 dB at 20 Hz and +0.17 dB at 20 kHz. The center channel measures -0.01 dB at 20 Hz and +0.19 dB at 20 kHz, and the left surround channel measures -0.01 dB at 20 Hz and +0.20 dB at 20 kHz. From the Dolby Digital input to the line-level output, the LFE channel is -0.01 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

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



PIONEER ELITE SC-09TX A/V RECEIVER



could only suggest New York City. But there's more to this disc than noise. The dialogue comes through clean and clear, perfectly balanced, and with no audible coloration. Ditto for the singing. In an interesting twist, the cast members actually supply the instrumental accompaniment in addition to singing and acting. You have to see this to believe it. The result makes for a fine demo disc. The Pioneer ate it all up, including the disc's equally luscious video.

Staying with music-related

audio/video sources, *Legends of Jazz: Showcase* (Blu-ray) brings together a wide variety of great performances from, well, jazz legends. It includes instrumentals and vocals from Al Jarreau, Lee Ritenour, Chick Corea, Clark Terry, Jane Monheit, Dave Brubeck, Ramsey Lewis, and more. The Pioneer didn't take a wrong step on this multichannel Dolby TrueHD recording. It's the best example I've heard of how high-resolution audio together with great video on great program material can up the ante

with conventional two-channel audio.

And the Pioneer didn't disappoint on some of the most challenging soundtracks. *Transformers* has a dynamite soundtrack, in more ways than one. The action, of course, is spectacular. Thanks to the Blu-ray re-release in Dolby TrueHD, the extended battle at the end came through with incredible clarity. No one would call this soundtrack laid-back, and the effects can get a bit bright. But it was never irritating through the Pioneer—at least not at any volume I can tolerate (and no one has ever accused me of listening to movie sound at wimpy levels).

For me, if an amp/speaker combination can't do justice to the music on a soundtrack (and not just the purely music-video material mentioned above), it's a no-go. The Pioneer never had the slightest problem with that challenge on any of the films I watched. It punched through the densest mixes like *Transformers* and did justice to the prominent and beautifully recorded score on *The Nightmare Before Christmas* (Blu-ray, Dolby TrueHD). Together with a good lossless soundtrack, the Pioneer will give you a new appreciation for how important movie music is.

The Pioneer kept me happy on two-channel music as well. Its highs are silky smooth, its midrange is clear and uncolored, and its bass is powerful. If I had any reservations, they involved a bit of excess warmth in the midbass. And I can partially blame this characteristic on my speakers and room.

For music lovers, the Pioneer's two iLink connections might be its most exciting feature. I paired the SC-09TX with a Pioneer DV-79AVi universal disc player (also iLink-equipped) and played standard CDs, SACD (two-channel and multichannel), DVD-Audio (multichannel), and two-channel 24/96 CDs through this connection. The Pioneer reproduced all of these sources with full bass management, and the receiver's front-panel display showed the disc's resolution (for DVD-Audio and 24/96 discs).

Pioneer also claims that the iLink connection uses advanced anti-jitter circuitry. Its sound was



Tom disliked the remote's dim backlighting but notes that many users will use a separate custom remote.

uniformly superb, although not all of the higher resolution audio recordings I tried sounded better than the best CDs. As always, the recording engineers' choices are more important than the format.

MCACC Me

Pioneer's MCACC setup and equalization system can be as complex or simple as you make it.



Or you can turn it off completely and set up the system manually. All of the automated equalization for the main speakers (which you can tweak manually later if desired) is basic nine-band graphic. There's additional automated three-band parametric equalization that helps dial in the bass to minimize standing waves.

If you want to read all the most intimate MCACC details, download Pioneer's manual to view a simple graphical depiction of MCACC at www.pioneer.no/files/eur/MCACC/index.html. Although its explanations look intimidating, when you use the menus, the actual procedure is a bit easier to do.

How effective was the MCACC? For me, it noticeably tightened the bottom end but leaned out the midbass and left the treble sounding brightened. The bass improvement was obvious and very welcome. The other changes, though more controversial, were also subtler. How much improvement you can expect depends on your system, setup, and personal reaction to the changes.

Adventures in Video Processing

In a simple video passthrough test, using a signal generator and 1080i resolution patterns (multibursts), the receiver was

essentially transparent in HDMI. However, in component, it showed a small loss in resolution on the highest-level HD burst pattern (37.1 megahertz) in the Pure (processor bypass) setting. It also showed a significant loss in the 1080i setting. The same was true for any resolution. I got a good result in the Pure processing setting and clearly compromised resolution in all other processing settings, even with the same input and output resolutions. For the best results with HD material, I recommend that you use this receiver with HDMI whenever possible and do any required upconversion elsewhere (such as in the display).

I also noticed significant resolution loss when the Pioneer cross-converted a component source to HDMI. (The Pure setting is inoperative in a cross-conversion. You can select it, but you get no picture.) Nevertheless, I had to use cross-conversion to run my usual video-processing tests. This was the only way the receiver would upconvert a 480i or 1080i input all the way to 1080p.

Despite the resolution limitations, the receiver's Marvell video processing passed most of my deinterlacing and scaling tests (480i-to-1080p and 1080i-to-1080p) with scores of good to (mostly) excellent. The only exception was 3:2 pulldown in

Connections ELITE SC-09TX A/V RECEIVER

INPUTS: VIDEO: HDMI 1.3a (6), component video (5), S-video (4), composite video (8)
AUDIO: iLink (2), coaxial digital (4), optical digital (4), 7.1-channel analog (1), stereo analog (12), RF (1, for laserdisc), MM phono (1), iPod **ADDITIONAL:** iPod (1), SIRIUS (1, tuner optional), XM Radio (1, tuner optional), Ethernet (1), USB (1) **OUTPUTS: VIDEO:** HDMI (2), component video (2), S-video (2), composite video (2)
AUDIO: Coaxial digital (1), optical digital (2), stereo analog (3), preamp (12), speaker terminals (10), headphones **ADDITIONAL:** RS-232 (1), 12-volt trigger (4), MCACC setup mic, multizone audio out (2, L/R analog; 2, optical digital; 1, coaxial digital), multizone composite video out (2), multizone component video out (1), control (1 in, 1 out), external remote control multizone sensors (4 in, 4 out)

HD, where the results were mixed.

The receiver passed above-white and below-black information on an HDMI passthrough. It passed above white but not below black with a component passthrough. And it passed neither when it cross-converted a component input to an HDMI output.


Conclusions

An electronics budget of \$7,000 opens your options to a wide selection of separate processors and amplifiers. So which way should you go? Not so long ago, the choice was an easy one, as audiophile dogma held that separates offered better sound. Today that line is hopelessly blurred; the best receivers can compete head to head with similarly priced separates.

Separates provide more flexibility. You can replace the processor to accommodate new formats or the amp to add more power. But receivers offer space savings, possibly greater

convenience, and fewer system connections. (You don't need to link the processor to the amp.) Also, separates aren't an option in some price ranges. However, once you get to this level, the choice becomes a very personal one. Either route can provide superb performance.

Whether you're listening to two-channel stereo or full multichannel sound, the Pioneer's ability to present a natural soundstage with depth and breadth, tangible and reliable instrumental timbre, full-bodied bass, and convincing all-around musicality, is first class.

This is a complex product, with more features than most users will ever need or use. Once you get past its relatively steep learning curve, you'll have no trouble sitting back and enjoying its outstanding performance. 

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