

# multi media manufacturer

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## Manager's Guide to AV Design and Development

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## CEDIA 2007 Report

By David J. Weinberg



Convention season started with CEDIA Expo 2007 ([www.CEDIA.net](http://www.CEDIA.net)), which boasted around 30,000 attendees from about 100 countries, hundreds of exhibitors, almost 300 business and technical courses, plus around 200 manufacturers' training sessions. Whew!

The theme seemed to be whole house networking and integrated control plus audio/video distribution, using conventional wired (power line, CAT5) and wireless technologies. There is a big push for Internet connectivity throughout the home, with apparently no regard for security beyond "there is a password." Mobile connectivity, including wireless downloads from home servers to car systems (is there any security?) is becoming a more

substantial part of the mix.

Home automation company Life|Ware ([www.exceptionalinnovation.com](http://www.exceptionalinnovation.com)) has expanded its whole-house management system to include wireless control of almost everything. They built two houses side-by-side, one Life|Ware-wired, the other Life|Ware-wireless, with the same functionality in each. Their system's hub is the Microsoft media center. They also have developed systems for multi-unit dwellings. I received incomplete answers to: what happens when the power fails in mid-operation (does it reset or remember precisely where it left off?); how does the system help the user when the system doesn't do what the user expected (is there a help routine, as in the Harmony uni-

versal remote?); can all the user's remotes be programmed to disable unnecessary buttons so inadvertently pressing them doesn't mess up the system's setup; what security features are included in the wireless system to prevent outside network sniffing; what security backup is designed and built-in to handle power outage situations? LifeWare's systems depend entirely on custom installers doing a great job; the system's ease-of-use depends on it.

Netstreams (www.Netstreams.com) claims to have developed a channel sequence (Center-Left-Right-Left-Surround-Right-Surround) for IP multi-room audio distribution that mostly compensates for inter-channel delays when multi-channel audio is sent across the network; this will not be perfect and should not be used if the listener considers sonic imaging critical. Their spokespersons talked about ease-of-use, and there seems to have been some limited progress.

Speakercraft (www.Speakercraft.com) is among a group of companies supporting DIGI5™, a technology introduced by the Linear Home Technology Group (www.LinearCorp.com) that distributes and amplifies digital audio over CAT5 cable. They offer centralized switch-mode amps, driving speakers over CAT5 wire. This will limit the power transmitted, limiting clean levels below rock-and-roll or home-theater explosion levels, but should be more than adequate for lower levels. They claim to put a lot of thought, effort, and design into physical and visual interfaces that are easy to understand and comfortable for the more mature user.

That less-costly HDMI cables are available from no-name manufacturers has led to cable testing and rating by two independent labs (Simplay

Labs [www.SimplayHD.com] and InVisions Technology [www.InVisionsTech.com]) and at least one cable manufacturer—Monster (www.MonsterCable.com). Noel Lee (the Chief Monster) introduced us to Monster's "The Need for Speed" cable rating system and testing lab, temporarily located next to their booth. We were shown how they test HDMI cables for performance using the eye test. From this (and perhaps other factors) they rank each cable series' audio/video data-rate capabilities (and set prices).

There are up to seven icons that can appear on a Monster HDMI-cable label—for example: Ultra-High Speed, 1080p+, x.v.color, 12-bit color, HDMI-CEC, 120Hz refresh rate, 5.1/2.1 lossless surround. There is no question that digital video requires transmission of radio frequencies over HDMI cables, and that cable designers must take this into account as the data rates increase from that of SD-video's 480i30 up through HD-video's 1080i30 or 1080p24, toward the soon-to-be-reached goal of 1080p60. I am investigating whether the eye test is sufficient, or whether other performance characteristics are equally critical.

I am sure Monster wouldn't have developed this test/labeling program unless they believed it would increase their sales. Monster provides separate ratings for video and audio. With the lossless high-resolution multi-channel audio capabilities of certain media (20-bit/48ksps/5-channels generates about 5Mbps), whether the cable will support all of its ratings simultaneously remains unclear. In addition, while a cable in a lab might perform up to a certain level, how will the abuse of installation (tight turns, pinching, and so on) affect the resultant performance in your home?

Accell (www.AccellCables.com) is

also speed-rating and price-tiering their HDMI cables. PPC (www.PPC-Online.com) enhanced its HDMI cable connector with a catch, so it doesn't pull (or fall) out of the standard HDMI socket as easily as other cables. The cables must feed a display, and there was no shortage of new models.



The JVC DLA-HD100

JVC (www.JVC.com) showed a pre-prototype 4k d-Cinema projector running part of a movie that was shot in 4k. The projected image looked great except for one anomaly: when David Carradine rotated his head, all the detail in his hair and face disappeared. I don't know whether this was from lossy data reduction or from image-processing limitations. JVC experts had no answers. However, their lower-priced three-chip D-ILA (direct-drive image light amplifier) projector—under two model numbers: the DLA-HD100 (consumer version) and DLA-RS2 (professional version)—looked great, and does *not* use an iris; each will sell for about \$8000. The difference between the versions is in connections and control. I was not able to find out whether the adjustable-parameter set is comprehensive.

Sony (www.Sony.com) showed its update from the Pearl—the VPL-VW60 (roughly \$6000srp)—with a dynamic iris that lets them claim much higher contrast numbers than otherwise. There is also a \$15,000 version—the VPL-VW200. The VPL-VW60's image did not impress me. They have added a gimmick that seems to have a ben-



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official effect, but I don't know why: between successive image frames, the projector inserts a dark-gray or a black frame, which appears to reduce motion smear and improve perceived contrast. A Sony representative said that they, too, don't fully understand how it works, but that this inter-frame seems to erase the vestige of the previous image frame from the display and from our visual memory in preparation for the next image frame. This is a selectable function, so it can be turned off. Even the dynamic iris can be turned off, which is good, because it will cause the stars to dim when viewing an image of a star-field from space, in order to make the rest of space appear closer to black. This is one reason contrast ratio claims cannot be trusted.

#### Sony's VPL-VW60



#### Sony's VPL-VW200



I've mostly given up pointing out that the CEDIA Expo is the one event where every display should be properly calibrated, but in talking with members of the press and others at the Expo this year, I find I'm not the only one who believes this is important for the benefit of the custom installer attendees, and ultimately their clients.

Joe Kane (Joe Kane Productions; [www.VideoEssentials.com](http://www.VideoEssentials.com)) showed his Samsung SP-A800 1920×1080 single-chip DLP projector, which provided reference image quality on his Stewart 9'-wide StudioTek130 screen. Samsung has not announced a price in the US, but did so in Europe (equivalent to about \$6800US). The projector was to become available in the US during

October.

Joe Kane Productions released *Digital Video Essentials—Professional Edition* (a six-disc set that includes NTSC, PAL, and WMV-HD test discs; \$100 from [www.DVDInternational.com](http://www.DVDInternational.com)), plus an HD DVD version of *Digital Video Essentials* (\$35), and is working on a Blu-ray version, which will be released as soon as they solve all the authoring problems.

Silicon Optix ([www.SiliconOptix.com](http://www.SiliconOptix.com)) held its HQV open house—several manufacturers using Silicon Optix processing in their products. Last year, I was not the only person who mentioned to their officials that the differences in setup between the without- and with-processing displays seriously detracted from the ability to determine whether the processing made the difference in image quality. This year they went to great lengths to ensure that the two displays in each exhibit were as closely matched as possible. Thus it was much easier to see the difference Silicon Optix processing made to the image quality.

One product that caught my eye was the Gateway 30" computer monitor, with 2560×1600 native resolution (\$1700srp). This is very similar to the Apple 30" cinema monitor, with more input connector types at \$100 lower price; Gateway *claims* a higher contrast ratio than Apple's. Silicon Optix released an HD DVD and a Blu-ray version of its *HQV Benchmark* image-quality-evaluation DVDs (\$20 each; [www.HQV.com](http://www.HQV.com)).

Schneider Optics ([www.SchneiderOptics.com](http://www.SchneiderOptics.com)) is one of several companies offering an anamorphic lens attachment that, combined with special video processing, can stretch a front-projector's image horizontally and use the full height of the projector's imaging capability to fill a screen with an aspect ratio as wide as 2.35. There aren't that many movies with such a wide aspect ratio, and the attachments are costly. Marantz sells its VP-15S1 1920×1080 DLP front projector (\$10,000srp), and its LN9101M anamorphic lens kit for an *additional* \$12,500! While the larger image can be nice, there are issues of getting enough total light output from the projector to

fill that larger screen with sufficiently bright maximum white level, and the lens must be exceptional to prevent visible optical aberrations, particularly toward the sides of the image. In addition, the video processing also must be outstanding to prevent distortions now that the projector's pixels are horizontally stretched.



Marantz VP-15S1

A home theater experience is incomplete without audio. THX ([www.THX.com](http://www.THX.com)) has yet another feature they can certify: THX Loudness Plus. This function allows a home theater system to be calibrated to play back at movie-theater reference levels, yet when the volume is lowered to reasonability for a small room, variable loudness equalization comes into play that compensates for the normal human hearing's loss of bass and treble sensitivity at lower levels. First the Fletcher-Munson curves, and later the Stephens curves, were published to quantify this effect. Tomlinson Holman, who used the Stephens curves, was probably the first to incorporate this capability, way back around 1980, in his prototype Apt integrated amplifier. It is a useful function that has never caught on.

Marketing hype is everywhere. It would be nice to hear fewer absolute superlatives—such as best, ultimate, first, greatest, fastest—from company representatives, who seem to believe that their emphatic declarations beat out those of their competitors, who are making the same claims.


CEDIA's keynote speaker was Frank Abagnale, who became widely infamous from Stephen Spielberg's "Catch Me If You Can" starring Leonardo DiCaprio. He is still working for the FBI, even though his legal obligation to them ended more than two decades ago. Abagnale told us that the author of the book, on which the movie was based, never talked with him about

his exploits, and neither did Spielberg or anyone from the movie company. He then spun his tale from his own perspective, which was most informative. Clearly the book and movie took poetic license with the facts. He makes it very clear that he is not proud of that portion of his life.

Michael Heiss' "HDTV Improv" keeps us current on the near future dates and events that will affect our television viewing. He reminded us of that infamous date—February 17, 2009—at the end of which all analog over-the-air television broadcasting, except for some low power repeaters, must be shut down, and pointed out that stations are allowed to shut down analog broadcasting earlier! One year before that—February 17, 2008—cell phone service providers *may* (but are not *required* to) shut down their analog cell phone service, which might not affect many of our calls, but will affect a large number of home security systems that include analog cell phone calls to the police in the event of a security violation.

Fred Ampel's "Learn to Listen" emphasizes that after taking all the measurements and making the resultant adjustments, you need to listen to real source material to hear whether the sound is as good as it can be—how high is the Reality Creation Quotient®—and make final adjustments based on what is heard. We are a long way from being able to make measurements that fully correlate with what we hear. Ampel walks the students through this final system calibration process, presenting *before* and *after* examples and explaining what to listen for and what adjustments affected the change. This course is critical for any serious home theater custom installer.

As is the case every year, Jamie Antcliff and her staff provided the press with excellent support and assistance.

CEDIA Expo is expanding so fast they've outgrown the planned upgrade of the Indianapolis facility even before the Expo's scheduled 2009 return there. Thus after one more year in Denver (September 3-7, 2008), CEDIA Expo is migrating to Atlanta for three years (I'll miss the blue bear). CEDIA management is trying to stay away from large, overly expensive convention cities such as New York, and doesn't need a facility the size of the Las Vegas Convention Center. Since attendance costs come out of my own pocket, I wish them best of success. 

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