

## ► The Rocky Mountain Audio Fest

By Jan Didden

### Perfect Sound forever?

The fifth edition of the annual Rocky Mountain Audio Fest (RMAF) took place in The Mile High City last October.

Success can be overwhelming. What started in 2004 as an audio get-together organized by Alan Stiefel, Marjorie Baumert, and Ron Welborne, supported by volunteers from the Colorado Audio Society, has, within five years, expanded to what is perhaps the largest consumer hi-end audio show in North America. After the first few years, a dedicated organization was set up, headed by Stiefel and Baumert. Al is well known as the owner of Red Rock Audio in Denver, manufacturing a wide range of audio electronics and speakers at the very highest fidelity level.

“Let me be clear,” Al said, “without many ‘audiophools’ behind the scene, we could not have pulled this off. We have a dedicated group from the Colorado Audio Society (including friends and family) who volunteer their time during the weekend starting on Thursday. We also have spouses of attendees who pitch in while their husbands attend the show. Because of the size the show has become and the extensive directory we publish, we hire part-time help just prior to the show to take some of the burden from us. There’s a myriad of things to take care of for a show with over 160 dealer demo rooms in two adjacent hotels and a whole floor of vendors offering things from rare LPs and CDs to cables, connectors, speakers, and speaker system compo-

nents.”

A show with over 160 demo rooms is too large to cover in detail, so you need to make a choice of which to visit. This year my interest was more in speakers than in electronics. Having just bought a pair of Emerald Physics CS2s, which were a hit at RMAF 2007, I auditioned the new CS1 and several other systems.

Clayton Shaw of Emerald Physics introduced his flagship design, the CS1 (Photo 1), which sports four large woofers per side (double the CS2), and a better high-frequency waveguide and driver. This is an important improvement; while the CS2 is a fine speaker, the rather high crossover frequency requires the woofers to reproduce the lower midrange. In the CS1, not only is the crossover frequency lower, but double the number of woofers means that they have only half the excursion (and half the distortion). The CS1 bass reproduction was strong, fast, balanced, and uncolored, and belied any concerns about low-frequency reproduction from open baffles. This is a very high-end speaker system for a very reasonable price.

I auditioned two more open baffle systems, Siegfried Linkwitz’ Orions and a two-way Lowther America DIY offering consisting of a PM6A with a 12” Tone Tubby. It is interesting to compare the philosophies behind these systems. The Emerald Physics and Orions are actively driven by two or three pairs of power amps.

Emerald Physics relies on DSP power

to cross over the drivers in the CS1 and CS2, and to add equalization (eq) where necessary. This capability even makes it possible to offer selectable eq curves depending on the room and speaker placement geometry. On the other hand, Linkwitz relies strictly on complex analog active crossover and eq filtering. The CS1 and the Orions are in the same price bracket. Listening to either system is a pleasure. For me, the CS1 had the edge in sheer low-frequency power and extension, with the Orions perhaps a bit smoother in the midrange. Both systems had a defined sweet spot, which makes them less dependent on the room and



PHOTO 1: Emerald Physics’ new flagship, the CS1 (company photo).

setup geometry.

In contrast, the Lowther assemblage uses traditional passive crossover filtering and can be driven by a single stereo power amp. This system didn't have the power and authority of the other two, but it did have a very pleasant tonal balance, and there was no obvious lack of bass extension. The combination with First Watt hardware sounded excellent. I stayed relatively long in the First Watt room because the reproduction of the music selected by Colin Pass was so enjoyable (**Photo 2**). The price for the Lowther system is much lower than the other two, especially if you consider the need for additional amplification for the CS1 and Orion. And you can DIY them.

There were some more speaker systems that caught my eye and ear. Bert Doppenberg from bd Design showed the Oris SWING Mk II horns (**Photo 3**) The "swing" refers to the fact that you can swing the top horn over to the right or left to fine-tune instrument placement and directivity. These are two-way systems with a very elaborate enclosure

construction (**Photo 4**).

What struck me about those horns was the total absence of the all-too-familiar "horn sound." The Oris sounds pretty neutral, but had the properties you often hear with horns: very lively, clear, and high dynamic range. Bert had his own electronics (amplifier, DAC, main filtering) driving those speakers; electronics I saw in several other rooms as well, so I guess he is doing something right in that department too!

The other horn system I auditioned used an AH! 300 mid-bass horn from Oswaldsmill Audio. This is literally a limited edition product: Jonathan Weiss told me that he had laid his hands on about 50 vintage RCA 1428B compression drivers, so when they're gone, they're gone. This is a three-way system, complemented by a woofer and one of those excellent RAAL ribbon tweeters (**Photo 5**). Again this was a (partly) horn system that delivered smooth, clear, and clean sound with very high dynamics, although possibly a bit less neutral than the Oris. The placement of the top horn

was a bit too high for my taste, resulting in a somewhat elevated soundstage. But please take these comments in perspective: all of these systems will give you very rewarding sound reproduction, the differences often being of personal preference and taste.

In addition to the traditional exhibitions of familiar two-way stereo reproduction chains and systems, some very exciting undercurrents surfaced now and then. A prime example was the room where German Physics was playing 5.1 high-definition music supplied by iTrax. I have known German Physics' speakers with the Walsh-inspired (but greatly improved) Dicks Dipole Drivers for many years, but this time there was music that let them play at new heights. iTrax is one of those companies that is out in front, pioneering new business models to provide us listeners with the very best recordings, unmolested by extensive mixing and compression.

The iTrax recordings are all done in high-definition, 24-bit/96kHz format. You can download the file of such a re-



PHOTO 2: Colin Pass proudly presented the Lowther America dipoles, driven by First Watt hardware.



PHOTO 3: The Oris SWING top horn can be swung to optimize the soundstage.

recording master (more than 150MB!) directly to your hard disk for about \$1.99. Or, you can get the WMA lossless file for \$1.54. If you just need the MP3 for your workouts, you pay \$0.79. This is in stereo format, but you can also get the same recording versions in either 5.1 stage or 5.1 audience format, for a slightly higher price.

Not everybody is convinced that this is the business model of the future. It remains to be seen how many people are willing to pay for extra quality, and whether the rampant illegal copying we know from MP3 will not also happen with this type of material. But the public willing to pay \$2 or more for a music file is different from the MP3 public, and may not be so inclined to give away illegal copies of their purchases. At any rate, with such offerings, there's no longer a reason to lament dismal (CD) audio quality. You can now have what is essentially the master tape, playing at your home. A great initiative from Mark Waldrep at iTrax.

But the show was not just exhibitions. Kurt Baumer organized a range of panel meetings with several very well-known names in the industry, all related to digital audio issues, taking place in The Digital Pavilion at the neighboring Hyatt Regency. I selected two to attend. The panel "Digital Playback Equipment Design" was moderated by David Solomon from Signal Path International, who, among other products, produces hybrid integrated amps with an on-board DAC. Panel members included John Siau from

Benchmark and Andy McHarg from dCS. This discussion largely focused on jitter and digital filtering issues.

Jitter is variations of the clock timing that reads the audio samples in the DAC. As a result, the DAC receives the right sample but at the wrong time, and if you look at the analog signal coming out of the DAC, jitter produces non-harmonic tones for which the ear is very sensitive. Good jitter performance requires a clock signal that is stable to better than 20 picoseconds—2/100,000,000,000 seconds! It can be done but requires very good engineering of the combination of clock signal and DAC layout. If you do that well, everything before that point (transport, cable) will not have any influence. Another way of saying this is that if you hear differences between digital cables, there is something wrong with your clock/DAC combination.

Digital filtering is necessary to remove signal components above the audio band from the DAC output. Although they are not audible directly, they may influence the amplifier equipment downstream and as a result generate audible artifacts, so they should be removed or at least greatly attenuated. These signal components are a result of the way the DAC converts digital samples to an analog signal. The unwanted components will be at frequencies around the digital sample frequency.

You can intuitively understand that if these components are just above 20kHz, it will be hard to filter them out without doing any harm to the audio. On the other hand, if the sampling frequency is 96kHz, and the unwanted frequencies are between 76kHz and 116kHz, it is much easier to filter them out and not impact the 20kHz band. Oversampling is



PHOTO 4: Very elaborate construction of the Oris SWING enclosure.



PHOTO 5: Oswaldsmill's limited-edition hand-made horns with RCA 1428B, RAAL ribbon tweeter, and vented woofer enclosure.

thus a straightforward way to help clean the audio from unwanted components without intruding on it in any way.

An interesting discussion centered on PC playback of high-resolution files. To avoid having the PC playback process change the audio in any way before it is sent out from USB or Firewire to your DAC, make sure that your Vista or XP software settings are optimized to “native mode,” and don’t use the PC volume control or any third-party drivers! There are many tips on this at [www.audioforums.com](http://www.audioforums.com) as well as on the Benchmark website.

The other panel I attended was moderated by *Stereophile*’s John Atkinson—“Adventures in Digital Formats, Upsampling and Dithering.” The panel was a mix of technical people such as Andy McHarg from dCS and mastering/recording personalities such as Keith “JJ” Johnson from Reference Recordings. The

panel members were not very optimistic about the future of SACD and DVD-A for audio distribution. They said that these formats were defined to producers’ requirements rather than for the consumers’ requirements, and therefore offer hardly better performance but at a higher price.

Technically, it is now possible to “decouple” the content from the carrier and deliver very high quality directly to the consumer. In other words, why physically bother with some sort of disk, when you can use broadband connections to deliver content directly to the home? This echoes what companies such as iTrax are attempting, but another option is to subscribe to a music service and just stream your favorite music to your system every time you want to listen to it. You wouldn’t even need to store it on your hard disk, if it is always online anyway.

Several panel members remarked that

the dawn of high-fidelity started in the 50s with consumers using pro equipment in an effort to improve playback quality. This now seems again to be the case. We see pro equipment in homes and pro equipment features and capabilities being implemented in consumer products. This can only lead to better music reproduction in general.

Just at close of business I passed a room with a couple of man-sized electrostatic speakers (**Photo 6**). The man who designed them turned out to be no other than Roger Sanders, who pioneered DIY electrostatic construction as long ago as the 1970s. His *Electrostatic Loudspeaker Design Cookbook*, published by Old Colony Sound Lab, is a must-have classic for the serious DIYer. I own electrostatics myself (Martin Logan), and I know how good they can sound. But Roger’s systems added something to the silky-smooth electrostatic sound: very high power levels. True, this was a hybrid system with a conventional woofer, but still it played louder—and completely controlled—than any other electrostatic I ever heard. Impressive.

I asked Roger whether he still used direct-drive high-voltage amps for the panels. “No,” he said. “They can sound excellent, and would allow you to forego the traditional step-up transformer. But it is very difficult and costly to build them as reliable and safe as a good solid-state amp. My own amplifiers are now as good-sounding as a direct-drive would be.”

What I took back from these presentations, and from some of the more out-in-front demos, is that we will see—or are already seeing—a paradigm shift in reproduced audio. Mastering engineers try to preserve the quality and dynamic range in the music they record as good as they can (or are allowed to), and the technology becomes available to deliver and reproduce these very high-quality signals in the home. Several new business models for content delivery are being pioneered as well: there are even plans to make master tapes available on ¼” 15ips open reel! To paraphrase a worn-out Philips ad from the 80s: we have been waiting for Perfect Sound Forever, and it may just be around the corner. *AK*



PHOTO 6: Roger Sanders’s system plays very loud while maintaining the silky-smooth sound of a good electrostatic.