

10 January 2005

Making Sense of the CES

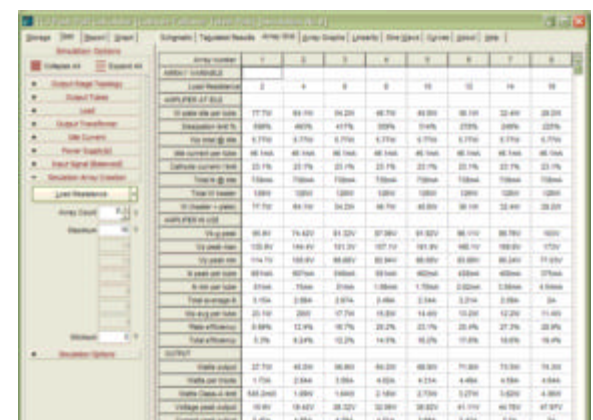
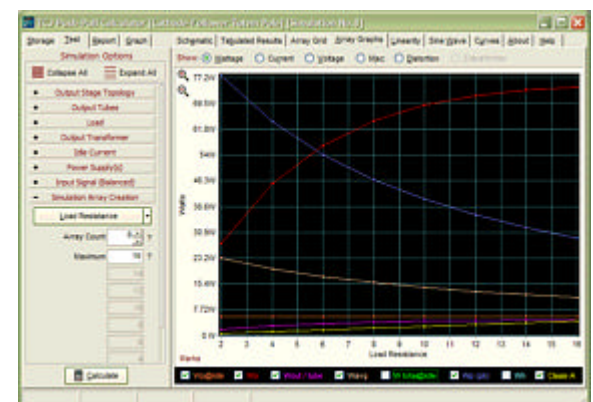
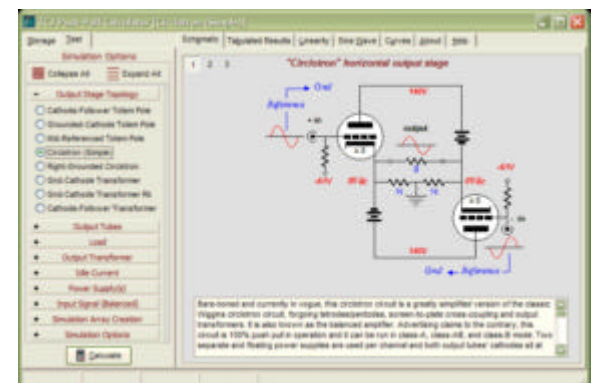
Consumer Electronics Show

I have just returned from Las Vegas and I still haven't fully digested what I have seen. Maybe I never will. Although on at least a half dozen occasions I have visited Reno, Nevada's smaller city to the north, this was my first trip to Vegas (locals drop the "Las") and John Atwood of [One Electron](#) was kind enough to lead me through the maze (if you haven't been to a CES show, you can't imagine how big it is; it was at least four times bigger than I expected).

When I looked out at Vegas from my window on the airplane, I thought to myself, "Mercy, this place is huge." Once on the ground, I am sure I only saw 0.01% of the city, in spite of getting lost several times. Still, I traveled through the heart of beast and I saw what Vegas itself wants everyone to see: the city painted with electricity and the wholesale abandonment of all shame and taste. Whoever said "Las Vegas is what you would get if you let the Mafia design Disneyland" was right. At night the sky never grew dark because the cloud cover reflected the lights below, almost as if the sun had not set in the horizon, but had fallen into the center of the city. Ironically enough for a place that claims to be courting the tourist dollars of families with young children, the backs of buses were routinely adorned with large ads displaying female posteriors, otherwise naked, but saved from indecency by the amazing concealing properties of G-strings. And of course, no mention of Las Vegas would be complete without the gambling, which the city fathers politely and exclusively refer to as "gaming." Slot machines were so ubiquitous that while I didn't intrude into the solemnity of a mortuary, I would have been shocked not to find one there too.

So where else would you hold the Consumer Electronics Show, but Vegas? Salt Lake City? Too tight. Detroit? Too scary. New York? Too expensive. San Francisco? Too small. LA? Too..just too obvious a choice, perhaps, due to the presence of Hollywood's movie machine. No, Las Vegas best suits the show, as it

TCJ Push-Pull Calculator Version 2



is the least real, most electric city in America, which perfectly suits the business of making the unreal—impalpable images and sounds incorporeal—believable through electricity.

Blue and the Blues

My two-year-old son's favorite TV character is Blue, the blue dog that leaves blue paw-print clues across the screen. So too, the favorite colored light to adorn hi-fi gear at CES this year was blue. (Here's a tip: buy stock in blue LED companies.) Picasso would have felt at home amidst azure, cerulean, cobalt, indigo, navy, sapphire, and Windex glow. Gratuitous blue light shone from every possible corner. Blue power lights and blue back-lit knobs, front panels, and glass plates shone brightly. Single points, bars, circles, and triangles of blue light fought for my attention. In the dark listening room, one amplifier's blue power light so powerfully blinded we looked at the wall it faced to see if a burnt mark had developed.

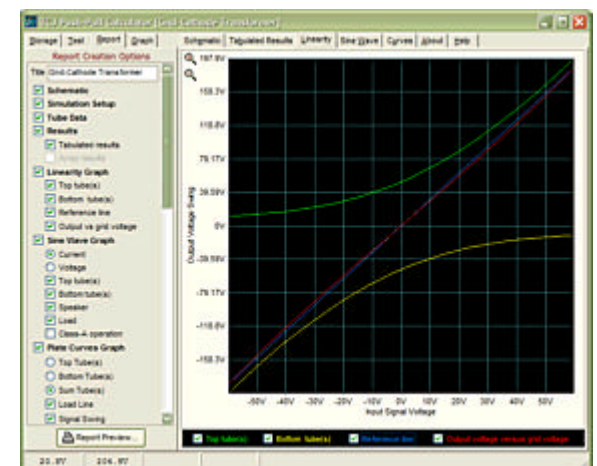
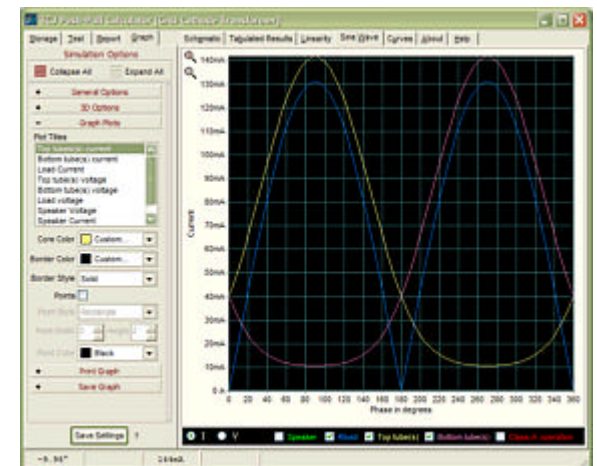
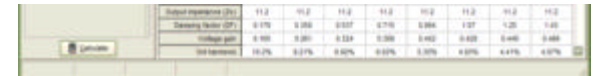
Now I know why many states prohibit the use of blue lights on cars other than police cars; the concern is not safety, but sanity. At first it was like the first sight of a new fashion in a magazine: perhaps charming, maybe striking, possibly alluring, but by the end of show—like at the end of a fad's run, when everyone has adopted the super-flared pants or ultra-wide lapels—it was just fatiguing. And it wasn't just high-end gear that glowed blue. At the big exhibit hall (the CES zoo proper), befitting a K-Mart special, many of the small cheesy companies tarted up their dreck with blue lights (several of which I'm sure were cheaply produced by blue light bulbs, rather than expensive blue LEDs). I was reminded of how the new fashion fad starts brilliantly with runway models in glossy ads and ends bleakly on runaways turned hookers standing on street corners. Basically, I got the blues after seeing so much icy blue, longing for some warm amber or cool wintergreen.

Speaking of the blues, the blues played through the hallways, as room after room spinned the same blues CDs. Moving through the hallways was like listening to a best-of-Stevie-Ray-Vaughn CD. Blues and more blues. Even the erstwhile popular "Famous Blue Raincoat" mournfully played in one room. At least the blues held a few acoustic instruments, whereas pure synthetic pop blared in too many rooms, the sort of music that no one would ever listen to had the demo disk not been invented. Occasionally classical music made an appearance, and I longed for more of it, or anything *purely* acoustic, really.

LPs & Tape

In spite of the SACD and the DVD-A, the record is anything but dead. Many turntables and dozens of phono preamps were on display and records were being sold in a few rooms. The venerable [Garrard](#) is back in a big way, with its model 501 (the turntable I most wanted to take home with me.)

The sound wasn't always pretty; but at its best, it was the best, although half-inch tape did make a strong showing at [deHavilland's](#) room. I have to admit that I know and like George Kielczynski, the owner of deHavilland, but I have no ethical qualms in saying that I was quite impressed with the sound coming out of the his deHavilland GM70 amplifiers, big and sure-footed. Of course, there was some hiss on the tape, but there was also something alive about the music playing that startled and deeply pleased me. (Remember when the CD didn't exist and master tapes were universally held in the highest regard. Well, that regard was well founded, as tape can sound just fabulous.)



TCJ PPC Version 2 Improvements

- Rebuilt simulation engine
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- Target idle current feature
- Redesigned array creation
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- RDC inclusion
- Save user-defined transformer definitions
- Enhanced result display
- Added array result grid

*User definable

TCJ Push-Pull Calculator has but a single purpose: to evaluate tube-based output stages by simulating eight topologies' (five OTL and three transformer-coupled) actual performance with a specified tube, power supply and bias voltage, and load impedance. The accuracy of the simulation depends on the accuracy of the tube models used and the tube math model is the same True Curves™ model used in GlassWare's SE Amp CAD and Live Curves

Tubes?

Yes, indeed, tubes. Vacuum-state electronics is alive and well...at least at the show; at the showrooms in your city, I'm not so sure.

At the high-end portion of the CES show, at least half the rooms sported tube gear. And at "T.H.E. (The Home Entertainment) Show" held next door to the CES's high-end audio venue, the ratio was probably higher. I was wowed by quite a few efforts; and even when the sound was pedestrian, it was pleasingly pedestrian. On the other hand, when the solid-state gear wowed, it still wasn't that pleasing, which in a nutshell explains my preference and prejudice.

(One thought that crossed my mind was that in spite of the bluster and optimism of the show's exhibitors, most of what I saw would fail, the new product dropped; the business, out of business. How many of companies were first-time exhibitors? How many held their last exhibit? A morbid thought. Yet, if I were to spend \$5,000 on something shiny and new, I would prefer knowing that if broke in three years, fixing it would be possible, that I, if no one else, could trace the circuit and make the repairs. Obviously, tube gear is much easier to repair than solid-state gear, particularly the surface-mount-laden solid-state gear, as I cannot imagine myself being able to fix a micro PCB. Of course, when the shiny new object only costs \$100, we throw it away when it breaks without remorse, but who wants to throw away a \$5,000 preamp. Long term, tubes make a lot of sense.)

Hybrid amplifiers

Speaking of prejudice, the first time I saw a hybrid amplifier that used a solid-state frontend to drive a tube output stage, I sniggered. The year was 1976 and *Wireless World* had published an article displaying a fistful of transistors driving a pair of KT88s. Why would someone willing forgo solid-state's undeniable virtue of being able to deliver gobs of current—amperes and amperes of electrons for pennies—and forsake the vacuum tube's ability to preserve the ear-pleasing sweetness of music by creating an amplifier that would lack both power and delicacy? It would be like driving tack with a 100-pound sledgehammer. Or, at least so I thought at the time. Since then, I have built several hybrid circuits that invert the common prejudice and do not sound the worse for it. But if you need some proof for your ears, take a listen to the [KR Kronzilla DM](#) amplifier, which weds a solid-state front end to a single-ended triode output stage that puts out 42W, which sound like 100 push-pull-tube watts in power, which in turn sounds like 200 solid-state-watts in power, but still sounds like an SE DHT amplifier.

FAL showed an impressive hybrid, the [final](#): a solid-state preamp and power amplifier that used tube rectifiers in the dedicated power supply. Not one tube rectifier or two, but sixteen of them!

Aurum Acoustics produced some of the most civilized, refined, and ear-pleasing sounds that I heard at the show. How did they do it? 300Bs, four in fact, one per amplifier. The [Integrus Active 300B](#) is a system of loudspeakers and an SE amplifier for each tweeter and midrange, with an internal high-quality solid-state amplifier sourced from Bryston for each woofer. In other words, no crossover within the speakers, as the crossover is built in the amplifier chassis. Because the tweeter amplifier will seldom be asked to clip, the sound from the SE 300B is greatly magnified, sounding more like 200W monoblocks. At \$30,000 CDN, this system is not cheap, but it was splendid.

programs, which is far more accurate than the usual SPICE tube model.

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All-tube amplifiers

I would love to know just how many different tube amplifiers were on display; 100 or 200 or more? They were everywhere and the build quality was universally high—compared to what I had seen at previous hi-fi shows. Engraved and filled faceplates were common, as were show-car-quality paint jobs and polished chrome. The days when all that was needed was an EL34 or 300B or 2A3 to be sellable are past.

One interesting trend is the small-refrigerator-sized amplifiers. They stand between two to three feet tall and are about 18 inches wide and two feet deep—and cost as much as a nice sedan. Sometimes they hold a dozen 6550s, as in the [VTL Siegfried](#) amplifiers (\$40,000) or a pair of 845s, as in the [Zanden Audio Systems Model 9500](#) (\$39,970) or a single 833, as in the [AAP T833M](#) amplifier by Phil Jones.

At the other extreme, [PrimaLuna](#) won the best bang-per-buck contest, in my opinion. These are beautifully made tube amplifiers that sound great and cost little (\$1,095). Before building any amplifier pause and consider if it can do as much as these amps at a lower price.

The worst idea prize

My fingers tremble as type this. Imagine the worst audio idea made concrete, for example Martha Stewart designing a line of tube amplifiers, then multiply by ten. Well, that's what one company created by making a powered interconnect that takes our precious electrical signal and turns it into modulated light and then reconverts into electrical signal at the other end (rest assured, no tubes were used in the process). Yes, it does a great job of breaking ground loops and it might be the best solution when lengths of interconnect longer than a few miles are needed, but otherwise it is criminally stupid. A better idea might have been to feed our precious electrical signal into a earphone and then relay the sound down a taught string, terminating into a ceramic phono cartridge and low-level preamp. How did it sound? Just about bad as is the idea in the first place: just dreadful, congested, flat, and irritating.

Now, I do not like to pan any piece of audio gear that I hear sound bad at a show; there are too many variables at play to ever say that all the blame lies with one component. If a component sounds good, then it must be good; but if it sounds bad, it might not be. For example, one brand of speakers that I hold in the highest regard, sounded downright mediocre in the room the loudspeaker company had set up; but in another room that featured power amplifiers, they sounded, just as expected, fabulous.

But these cables are in a class by themselves and I cannot think of a better punishment for their creator than to force him to listen to exclusively for the rest of his life. Just dreadful.

Best surprise

I am tempted to write that the best surprise was how many people I met that read this journal. But that might be best only for me, whereas what is a best surprise for me and everyone else would have to be the [Celius Es](#) loudspeaker by Triangle from France.

The first listening of these tall, slender, well-made speakers could hardly been

worse for the loudspeakers, as defective equipment powered them. Nonetheless, in spite of gross distortion, there was something very right about these loudspeakers. My second encounter with them erased every sour note from my memory. These loudspeakers perform at level that I would expect to cost three times more. They image; they fill the room with tight bass and effortless highs; they just don't sound like an assemblage of woofers, midranges, and tweeters. Had a tall electrostatic-looking screen been placed in front of them, I would easily believe that they were electrostatic loudspeakers with a smooth top end.

What makes them special? My guess is clear thinking and careful engineering. The tweeter is horn loaded and time aligned with the midrange. A single spike into the floor works to ground the cabinet vibrations into a single point, like a star ground in an electrical circuit.

Best technical conversation

Having talked with too many clueless sales reps and tight-lipped engineers, it was a treat to talk to Michael Yee of [Michael Yee Audio](#). I will begin with the punch line: if I ever buy a solid-state amplifier, it will definitely be from him. He understands precisely what is good and bad about transistors: how perfectly imperfect they are, or rather, how consistent they are in their imperfection. Consistency has its advantages.

Here is an example of how valuable *consistent* imperfection can be: say you live on the 22nd floor of an apartment building and the elevator buttons are consistently off by five floors, so everyday you must press the button for floor 27 to get to floor 22. You quickly adapt and find no problem in it except when company comes and you need to remember to tell them the "trick." On the other hand, an elevator that was less imperfect, but less consistent, would be a much bigger headache—for example, say that its buttons were off by *either* one floor too high *or* on the money *or* one floor too low. Such an elevator would be maddening to operate, as you could not easily compensate for its imperfection, taking many tries to get to your floor.

Michael has cataloged and mapped the transistor's imperfections and he has devised techniques to compensate for them in an almost Aikido-like fashion. Most transistor-amplifier designers have a simple solution: more feedback; period. His approach requires a much greater understanding and skill, but the result is a sweet sounding, dual mono, 20W, class-A, power amplifier that only cost \$1,695. I was impressed.

//JRB

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