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## Rethinking The Importance Of Video Calibration

By: [Andrew Robinson](#), July 23, 2012

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Back in November of last year I wrote a news story entitled [Calibrating Your HDTV is a Problem You Shouldn't Have](#), which set off a bit of a firestorm, both in the consumer and calibrator communities. As you can imagine, many Joe Six-Pack consumers stood by my cries for calibrated displays out of the box, while calibrators did their best to remain polite while they proclaimed me an idiot. Well, it's been eight months since that article was published. In that time, I've learned a lot, both about calibration and its community, after which I can say, definitively, that I was wrong about many of my assertions, though I still wish [the topic of calibration](#) were better understood.



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Why the shift in thinking, you ask? Well, no one is perfect, least of all me, and I view my involvement in this hobby as one that is constantly evolving. My earlier views towards calibration were born out of experiences that I had in a) dealing with so-called professional calibrators and b) working in and around the professional post-production world. Beginning with my experience with professional calibrators, I was privileged enough to sit in on a number of calibration sessions with a few of the community's "top people" in order to witness masters in action. At the time, the approaches to calibrating a set appeared varied, with each individual having his own ideas and/or methods. Some were in line with standards and practices I use to this day, while others sadly were not. To compound the issue, I later spoke with founding members of the calibration community, only to discover that the very definition of what is or is not calibration seemed to be fluid, so long as the organization and/or calibrator was being compensated. This sincerely frustrated me and in many ways only strengthened my stance behind the views I had expressed in my earlier article. Additionally, having worked in and around post-production for the past several years, I've seen what passes as calibration, which isn't saying much, for too often the very displays charged with capturing "the filmmaker's intent" are adjusted by eye or not at all. In December of last year, I was about to write a follow-up to my first article, proclaiming myself right, when I received messages from a few calibrators who were responsible for developing [the THX](#) calibration standard/system.

It's not that one calibration method is right while the other is wrong. **Both ISF** and THX endeavor to achieve the same end goal: to bring your display, whatever it is, to the SMPTE (Society of Motion Picture and Television Engineers) standard. Where they differ is in how their students are taught,

which in the case of ISF is more lecture-based, whereas THX is more classroom or hands-on oriented. Obviously, this is a bit of an oversimplification, but still accurate. Keep in mind, just because an individual has sat through the lectures and/or classroom exercises does not mean he or she is going to be an A+ calibrator. Just as with plumbers or general contractors, some calibrators bound to be better than others. Despite what some may tell you, going with an ISF or THX calibrator isn't necessarily going to make up for any deficiencies in his or her tradecraft.

For me personally, after speaking with practitioners of the two systems, many of them adept at both, it was the THX methodology and two of its key calibrators that ultimately changed my outlook on calibration. The two gentlemen in question are [Michael Chen](#) and Ray Coronado. Mr. Coronado is someone many of you may recognize now, as his name has come up in several of my recent video reviews. The reason for this is that Mr. Coronado has graciously extended his knowledge and expertise to me (and subsequently to all of you) in order to insure that the figures and raw data expressed in any of HTR's future HDTV and projector reviews is as accurate as possible, though it should be noted that he plays no role in the subjective portion of any display review. I still believe that a well-balanced and useful review is one that possesses enough meat (aka facts) to satisfy tech-savvy readers, yet not be so analytical as to bore or confuse those who may just want to know how best to shop for their next product.

How Mr. Coronado and Mr. Chen went about changing my perspective was simple - they sat me down and talked/walked me through a true calibration session. It was when Mr. Coronado pulled out multiple meters, signal generators, laptop computers and sanctioned test discs that I began to realize that what I had witnessed and/or thought to be true calibration in the past was in fact false. This made me angry, for one never likes to be misled or made to look like a fool, but it also made me even more determined to get the story right. A true THX-level calibration takes time, partially because it requires a lot of measurements (none of which are by eye) and also because the THX system calls for customer interaction. Believe it or not, the THX methodology calls for the customer to not only be present, but to also play an active role in understanding what is happening to the display. That was a huge 180-degree change from what I'd been told/shown previously, for getting permission to sit in on other calibrators' work sessions was like pulling one's own teeth, which explains a lot of the confusion, misinformation and secrecy surrounding the topic. The entire process took three hours. I'm told usually only takes about 90 minutes, but because I was asking question after question, it took a bit longer. At the end, we compared my reference [Anthem LTX 500 \(JVC\) projector](#)'s image against what I had done using methods imparted to me by so-called professionals, and then what had been achieved by Mr. Coronado and the THX method. The two weren't even close. Furthermore, Mr. Coronado managed to squeeze more light output out of my aging projector, yet kept contrast and black levels at reference levels, whereas I had sacrificed both via my methods in order to brighten up my image somewhat. Furthermore, my colors were wildly inaccurate, which isn't surprising, given that you can't calibrate color (or grey scale, for that matter) by eye, no matter what any person or filter pack says. In the end, after an entire evening spent calibrating both [my Panasonic plasma](#) and Anthem D-ILA projectors, the results were in: calibration is important, it makes a difference and, while people may still have a hard time understanding it, it's not something manufacturers can provide for you out of the box.

But true professional calibration needn't be scary. First you have to decide if you're a candidate for calibration. This is simple - not everyone needs calibration. Wait, what? It's true. Many casual viewers, for instance, my parents, aren't really going to benefit from full professional calibration because, well, they're not that interested in critical viewing. Chances are that when they watch, they're also doing other things, like glancing at a magazine or carrying on a side conversation. Sure, they watch their favorite programs in earnest, but even then they're more engrossed in the story as opposed to the visuals. For my parents, and viewers like them, getting them to switch their displays to a more acceptable preset such as Standard, Movie or, better still, THX is going to be enough. Those who fancy themselves savvy but not anal-retentive will be well-suited with a copy of Digital Video Essentials on DVD or Blu-ray, as it will help them set brightness, contrast and color (by eye), which will be an improvement, in conjunction with a preset picture mode such as Movie or THX. The two above methods represent image adjustment, not calibration. Make no mistake: image adjustment is better than no adjustment or simply relying on a factory preset, but don't mistakenly view it and/or call it

calibration, for it simply isn't. Why? Because our eyes constantly lie to us.

Calibration can only be carried out using calibrated measurement tools that take human error (provided your calibrator understands what he/she is doing) out of the equation. Calibration therefore is the last stop for those who want a) to extract the very best from their HDTV or projector investment and b) the peace of mind that comes from knowing they're seeing the image as it was intended to be seen by the filmmakers (again, provided the filmmakers took the care to have their displays/systems calibrated).

So how much does it cost? Well, calibration can cost anywhere from about \$300 to however much a calibrator feels he or she can charge. Generally, I've found rates to fall somewhere between \$250 and \$600, depending on the individual's skill level, equipment and experience. Do your homework, ask for references and don't rush to hire the first one you spot, for doing your due diligence will pay dividends down the road. Sadly, there is no Angie's List for calibrators (though I'm told one might be in the works), so it's important to ask around and educate yourself. One way that calibration can actually help save you money is if you haven't yet purchased your new or next HDTV. If you currently have an HDTV but are dead set on buying a new one, maybe you should have your old one calibrated first and see if that doesn't change your opinion on having to buy a new one. More importantly, speaking with a calibrator before making a purchase can save you money. You see, calibration endeavors to bring whatever display you have or are thinking of purchasing to SMPTE standards, which many modern displays can achieve regardless of price. That's right, an affordable display from, say, Costco can be made to look as good or as accurate as a multi-thousand-dollar reference display touted on sites and in magazines like HTR. Knowing this, you can then base your purchase on which features (non-picture related) you want in your new HDTV, which may save you money. Speaking with a calibrator beforehand can only help, for chances are that they've calibrated many of the displays you may be considering and therefore can help guide you in the right direction.

So there you have it, some 1,800 words later, a partial retraction, apology and reaffirmation on the importance of display calibration. Do I regret [my earlier comments](#)? No, but I'm not above admitting that I was wrong. I hope that all of you, like me, have learned a little more and are better prepared to take the next step in your journey towards display and/or home theater perfection.

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