Mick Peaker is Managing Director of AVICAL Australia, and an ISF Level II Video Calibrator, capable of tuning your projector or television to perfection, and he's as clued-up a dude as you'll find on the differences between brands and the adjustments needed to get your display showing what the film-makers intended. We asked him about the benefits of calibration, and whether the move to 4K and HDR has changed things.

SOUND+IMAGE: *So why should our readers consider having a TV or projector calibrated?*
MICK PEAKER: In short, if you're spending multiple thousands of dollars on a projector or TV and you don't get it calibrated, you're simply not going to get what you paid for. Many people believe that their display is just fine out of the box, but they would be incorrect. While some picture presets might be closer to global standards than others, generally the presets are designed to produce what the manufacturer thinks might 'look good' and stand out to the customer in the showroom — not what is actually accurate colour representation. This goes right back to the early days of colour TV, when manufacturers and stores would really push the brightness and colour of their displays, because when people bought a colour TV, they wanted a *colour TV*! This method of selling TVs hasn't changed; in fact over the years most people have become subconsciously conditioned to see these overly bright and distorted colours as how a good TV should look.

But when directors, producers, colorists and so on are choosing the look of a movie or TV show, they do so using a display that is set to a certain standard. It's these choices that create the look and feel of the movie; and so the idea of getting a TV or projector calibrated is to bring different elements of colour and detail in line with that global standard. So you are seeing the content as it was originally intended to look.

Another contributing factor is the viewing environment, which obviously can't be taken into account at the factory level. This is particularly pertinent for home cinemas where varying throw distances, projection surfaces, even the colour of the walls and ceiling all have an effect on the final image.

Also every display is different, even when it's the same make and model! Think of it like cars coming off a factory line — same make, same model, same components, but each one still needs to be individually tuned.

S+I: *What are the most common errors you see on out-of-the-box TVs?*
MP: OK, firstly incorrect black/white level settings — I'll commonly see out-of-the-box settings with black levels set too low and white levels too high. This is meant to give the impression of more impressive blacks or a broader contrast ratio, but what it actually does is 'crush' or 'clip' detail, so you lose fine shadow detail in the near-black and near-white areas of the picture.

Also over-saturated colour is common, as I mentioned. This is to make the colour appear bright and poppy, but it just creates very unnatural images. Just ask yourself, have you ever been to a football game where the grass is that fluorescent a green!?

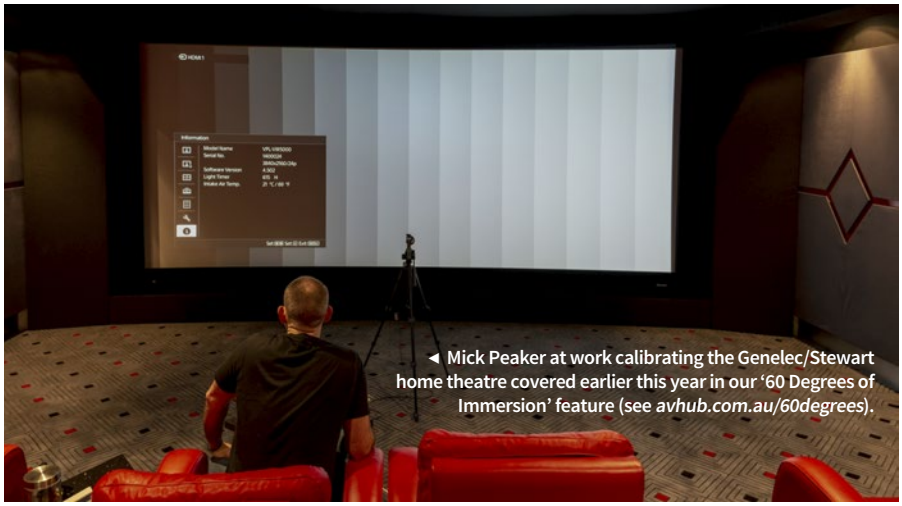
Another interesting one is a high excess of blue. The greyscale is the RGB balance that creates all the different shades of grey from black to peak white. But I'll often see an extreme level of blue in the greyscale that increases the closer it gets to peak white. The excess blue is intended to make the 'whites' brighter, and also add to the perceived increased contrast ratio. But essentially it just distorts the white balance, giving a blue tinge to the image. It can be especially noticeable in whiter parts of a picture, like snow and clouds.

S+I: *Has UHD and HDR changed anything in terms of calibration?*
MP: Yes, it's Betamax versus VHS all over again — we have HDR10, HDR10+, Dolby Vision, HLG, and now Technicolor Advanced HDR! Who will win the format war?... who knows.

The main thing to understand about all of them is that currently there aren't any TV or projector displays that can fully replicate the Rec.2020 colour space or HDR luminance.And generally speaking, the plug-and-play quality of HDR doesn't live up to the advertising hype. Often the image will be quite dark, under-saturated and quite lacklustre.

Different manufacturers have their own approaches to 'Tone Mapping' to make it work, and with some pretty good results. But any approach to HDR at this point in time is a compromise, because of the display limitations. However, if you know what to look for, depending on the capabilities of your display and video sources, and despite the limitations of current displays, you can get some impressive results that are still a big improvement on 1080 SDR content.

► *You can read more on the benefits of professional calibration at* ***www.avical.com.au***



◄ Mick Peaker at work calibrating the Genelec/Stewart home theatre covered earlier this year in our '60 Degrees of Immersion' feature (see *avhub.com.au/60degrees*).