DarbeeVision Darblet

1080p 3D Digital Video Enhancement

Gary Reber

I reported on DarbeeVision, Inc. in Issue 164, February 2012. The company, a pioneer in the field of digital image enhancement, has released the Darblet, a small HDMI video processor mini-box device. The Darblet is an easy-to-use accessory for the consumer electronics market that will process any HDMI output in real time, adding Darbee Visual Presence depth and clarity. This is an AMAZING device!

About the size of an iPhone smartphone, the Darblet is designed as a plug-and-play HDMI 1.4 input/output video processor. The unit features three modes: HD, Gaming, and Full Pop—all operable from a card-type remote control with on-screen menu/display functions. Setup is a no brainer. Simply take the HDMI cable out of the HDTV or the video source and plug it into the Darblet's "In" socket. Connect another HDMI cable between its "Out" socket and the HDTV. Use the Darblet remote control to operate.

The Darblet has eight buttons on the remote. On/Off is a quick way to do A/B comparisons between the different modes, while the Demo button allows for split screen comparisons. There are "More Darbee" and "Less Darbee" buttons that allow for extremity adjustment in 5 percent increments using each different mode, colored by Green (HD), Yellow (Gaming), and Red (Full Pop) to increase or decrease the level of enhancement as desired. Lastly, there is a menu button that gives a different way of viewing the configuration.

According to DarbeeVision's founder and CEO, Paul Darbee, "Our images resonate with the viewer, because DarbeeVision takes into consideration how human vision evolved to perceive a 3D world." Darbee noted that his company's technology embeds 3D depth into 2D images, with perceptible enhancement of detail and depth separation. Darbee says that his team has discovered that pictures can be made even better than what the most perfect camera and display systems can produce.

DarbeeVision was awarded a patent in 2006 for its proprietary visual computing technology, known as Darbee Visual Presence™ (DVP). The real time digital logic-processing algorithm uses parallax disparity as the basis for local luminance modulation on a per-pixel basis to embed stereo depth information into monoscopic images. Using a patented defocus-and-subtract method, the process is selectively applied, based upon a fast and accurate saliency map called the Perceptor™. The real-time processing is done intra-frame so no large buffer memory or time delays are required.

Processing is solution independent, scaling linearly with the number of pixels in a frame. According to Darbee, the effect is a generalization of the "drop shadow" effect. Darbee says that the technology simulates cues that the human brain gets from interpreting depth through monocular elements, which include size (distant objects subtend smaller visual angles than near objects), texture gradient, lighting and shading, and "distance fog" (the foreground has high contrast; the background has low contrast).

As previously noted, the Darblet is a plug-and-play unit that does not require tuning or calibration and has simple controls, which are operated by a remote control. While at present the technology is embedded in a silicon chip housed in the Darblet, the intended application segment is image processing inside display devices. The image processing is 1080p, 60 frames per second, in real time.

Performance

Consistently, no matter what the content source, I perceived an impressive sense of enhanced clarity and resolution, resulting in a greater sense of depth and dimensionality, and thus, realism. This was true for every 2D and 3D image processed compared to the original image in side-by-side demonstrations on our reference JVC Professional DLA-RS65 projection system and dnp denmark Sigma Screen (Rear Projection) sourced from an OPPO BDP-95 3D Blu-ray Disc™ player and a Classé SSP-880 Controller. As would be expected, this display system is perfectly calibrated, as it is used to evaluate the picture quality of 2D and 3D Blu-ray titles.

Unequivocally, the benefit of the Darblet enhancement was quite apparent and beneficial, and definitely preferred to the original. Details were enhanced, while noise was suppressed, with no apparent edge enhancement or other unnatural artifacts experienced while viewing the enhanced images. The Darblet definitely improves the realism of both monoscopic and stereoscopic imagery, in which the 3D video stream consists of two monoscopic images.

On the screen, when paused, there is a visible Darbee logo with a percentage next to it. When you select Green, Yellow, or Red, the color of the percentage changes to match that mode. The Green (HD) mode gives a contrast punch and pulls details right out of the fog of film. No matter what the picture quality of the source, the image was significantly enhanced in terms of resolution and clarity, as well as depth. Contrary to some other image enhancing boxes we've tested, the edges didn't glow with enhancement and the scene wasn't changed so that it lost its meaning. It just pulled out the detail.

I ran the Darblet processing on both the calibration charts provided in Joe Kane Productions' *Digital Video Essentials* and the *Spears & Munsil* Calibration Blu-ray Disc. Amazingly, no artifacts could be seen, except for the slightest hint of edge enhancement in the case of the Full Pop Red mode. For all my viewing I selected the HD Green output at a 75 percent processing level. The picture quality was consistently superior to the non-processed picture.

In the full pop Red mode, contrast levels appear being bumped, which becomes very visible when you are looking at faces, with lines and shadows becoming darker as the detail is pulled out, similar to other edge enhancing technology. The sharpness is increased, allowing for engravings to become more prominent and object textures finely defined as they should. I remember the film *The Girl With The Dragon Tattoo*, in which I A/B'd one scene outside a gas station. In that scene you could see the light bulbs inside the sign instead of just a lit sign. Even the products inside the window of the gas station became a little more 3D as their shadows gained definition.

The Yellow (gaming) mode pushes details much sharper and is definitely more directed at games than for cinematic viewing. The Red (Full Pop) mode is aptly named and will push everything to an extreme, making everything become a little more saturated by pushing the sharpness and contrast way up, resulting in details getting really harsh. My recommendation is to stick with the Green HD mode if you are a videophile demanding absolute picture quality accuracy.

You will be able to easily judge for yourself in real time the resulting image enhancement. The remote provides up and down buttons to control the level of Darbee Visual Presence depth and clarity.

Is it the same as an edge enhancement, picture boost, or any other picture modification box? It's really a matter of taste. Do you like details available inside the movie at all time, with a compromise on seeing everything that perhaps you weren't meant to see?

I personally find the Darblet to be the most spectacular accessory box I have ever encountered and experienced. The performance claims are not exaggerated. No doubt you will often be mesmerized by the realism the Darblet creates in image fidelity. Never did it alter the calibrated state of the display system, except for the dramatic improvement in resolution and clarity of the imagery projected. It represents one of the best performance values ever offered at a suggested manufacturer's price of $249. It opens a new world of visual realism and lifelike imagery no matter what the source: 2D or 3D. WSR

SPECIFICATIONS

Manufactured By:
DarbeeVision, Inc.
401 North Cotsworlds Lane, Suite C
Orange, California 92869
714 931 5941
Web site: www.darbeevision.com