



BenQ LCD Monitors

Ideas that Bring Life to your Digital World

With the goal of making BenQ's display technology more responsive to the full potential of the human eye, our research and development teams created a proprietary digital-enhancement technology called "Senseye."

Senseye automatically and dynamically improves image quality, adjusts brightness and darkness levels, performs color-mapping procedures, and reduces jagged edges on images. Users select a preset mode of operation that corresponds to the content that they are viewing (e.g., Movie, Photo, Standard, etc.), and Senseye adjusts contrast, color and sharpness settings, which significantly enhances the display of graphics-intensive applications such as gaming, digital photos, entertainment/videos and professional multimedia presentations.

In the never-ending pursuit of realizing the true power of the digital world, Senseye delivers higher definition visuals that are deeper, richer, and clearer than other display technologies on the market.

Deeper, Richer, Clearer Digital Photo and Gaming Experience.



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BenQ
Enjoyment Matters





Revealing the power of life in a digital world

In developing our Senseye technology, we began with this simple truth: Despite our industry's giant technological advances, the human eye can see far more than regular displays can show.

So, instead of pulling the wool over your eyes with clever-sounding gadgets and complicated theories, we disciplined our research and development teams to obsessively explore the more important question of how to make our display technology more responsive to the full potential of the human eye.

The result is Senseye technology.

A pure digital image enhancement technology that automatically and dynamically improves image quality. And a simple promise of higher definitions that are deeper, richer and clearer.

Experience Senseye technology today and come one step closer to the true power of the human eye.

Deeper, Richer, Clearer - Experience the Senseye world

Built into BenQ monitors is the Senseye IPU (Image Processing Unit). Featuring advanced image enhancement technology, it optimizes contrast and sharpness, giving ultimate clarity and depth.

Unlike conventional monitors, Senseye separates color signals and adjusts each one individually, thus avoiding distortion and delivering an all-round richer experience.



The Sharpness Enhancement Engine(SEE) Razor-Sharp Images in an Instant

The display quality is sharp, real, and 3-D—and all the zigzagged rims are gone!

Enhanced by the CEE and CME, the image is re-sampled and sharpened by the Senseye Sharpness Enhancement Engine. The sharpness of the image will then be improved to avoid blurred or zigzag-rimmed images. Until now, this could only be achieved by professional image processing software.

Blurred images



Reintegrated and sharpened images



Sharpness Enhancement Engine

Provides the clearest and sharpest quality

Even with blurred or out-of-focus images, Senseye's Sharpness Enhancement Engine can automatically detect and enhance the screen's sharpness to improve sub-standard images.

Zigzagged rims around the image



Automatically Fine-Tunes the zigzagged rims



Sharpness Enhancement Engine

Automatic adjustment for perfect curves and smoother lines

Once Senseye's Sharpness Enhancement Engine discovers zigzagged rims around the image, it will fine-tune the zigzagged rims of the image until it is perfect.

Enjoy the Best Viewing Experience through 4 Different Application Modes

Senseye's image enhancement technology offers four preset viewing modes for four different scenarios to provide you the best viewing experience at your fingertips.

Photo mode

This mode is ideal for viewing pictures and photos. With Senseye, the image sharpness can be adjusted to the desired level, while the problem of blurred pictures can also be solved. Senseye gives you the most saturated, fine, smooth and colorful photos.



Movie 1 mode

This mode is ideal for dark movie and video viewing since the screen is adjusted to display darker pictures better. The Contrast Enhancement Engine can better display the details in a dark scene as well as adjust sharpness and color saturation to make you feel like you are watching the film inside a theater.



Movie 2 mode

This mode is ideal for watching films with brighter pictures, such as nature documentaries or day-time sports games. The contrast control is perfectly set to emphasize the film's brightness and display the best color saturation.



Standard mode

This mode is ideal for extended browsing and document-reading since its image parameter is set to make the screen more toned-down and true-to-life. Because of this, you can view the screen with comfort for long periods of time.

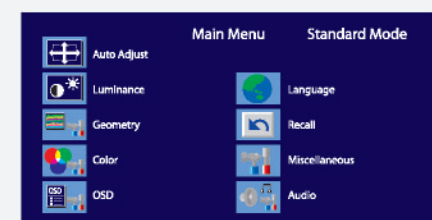


Seeing Is Believing—With Senseye, It's a Whole Different World

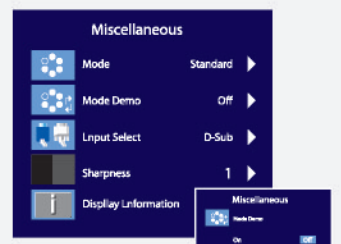
It's hard to explain Senseye's advanced technology in a few words. However, you'll be able to experience the Senseye advantage with just one look! Senseye's unique Demo Mode invites you to let your eyes be the judge. An image appears on both the left and right side of the screen. On the left is the image before using Senseye. On the right is the image after using Senseye. Please follow the instructions to divide your screen into "before and after" modes for comparison. You can even make the comparison on your favorite picture and let your eyes decide for themselves!



Step 1:
Press the "mode change" hot key to select one of the four viewing modes.



Step 2:
Open OSD manual (press "Enter" key) and select "miscellaneous".



Step 3:
Select "Mode Demo" and turn it on.



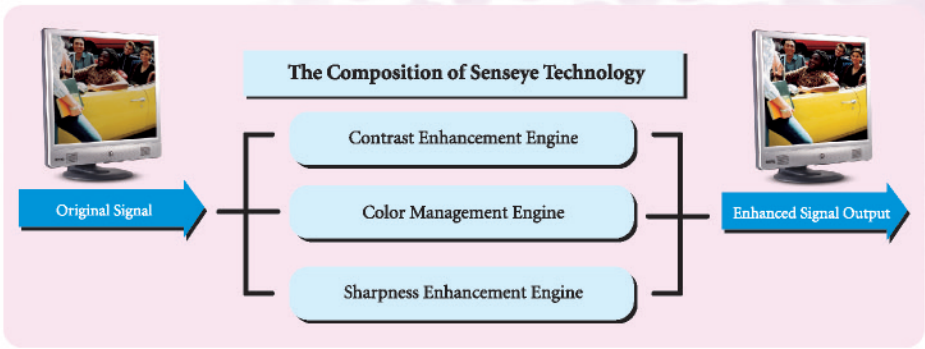
How Senseye Brings Life To Your Digital World

Three enhancement engines

The **Contrast Enhancement Engine (CEE)** is responsible for processing the contrast enhancement of the image signal.

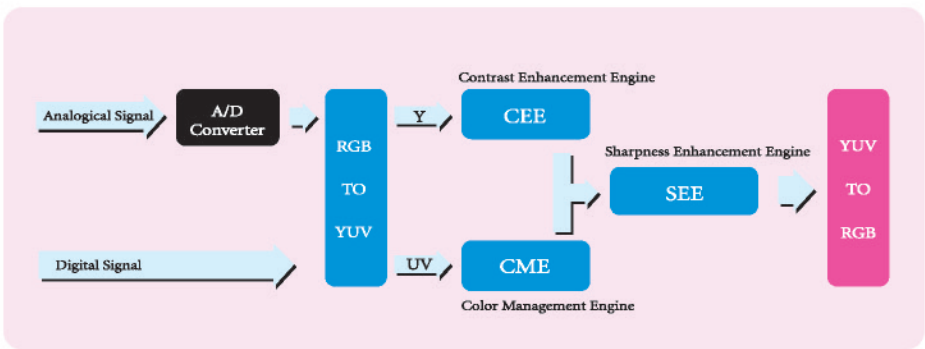
The **Color Management Engine (CME)** processes the color saturation enhancement of image signals.

The **Sharpness Enhancement Engine (SEE)** ensures the final sharpness enhancement and fine-tuning of the whole image.



How the process of Senseye image enhancement technology works

- RGB signals are first transformed into YUV signals: YUV is a type of image signal which is closer to the image formed by the human eye. It displays richer and more complete colors.
- It deconstructs YUV signals into brightness (Y) and color (UV).
- The "Contrast Enhancement Engine" processes brightness (Y), while the "Color Management Engine" processes color (UV).
- It combines the processed brightness (Y) and color (UV) as YUV signals.
- Then the "Sharpness Enhancement Engine" processes the image's sharpness and fine-tunes the flaws.
- Eventually, the YUV signals are transformed back to RGB signals for image output.



The Contrast Enhancement Engine (CEE)

Makes blacks, whites, and grays richer for more perfect contrast

For example, even when there is a black dog in a dark room, you will still clearly see the details of the black; the layers of the gray; and the snow-white teeth in a smile

The theory of the Contrast Enhancement Engine(CEE)

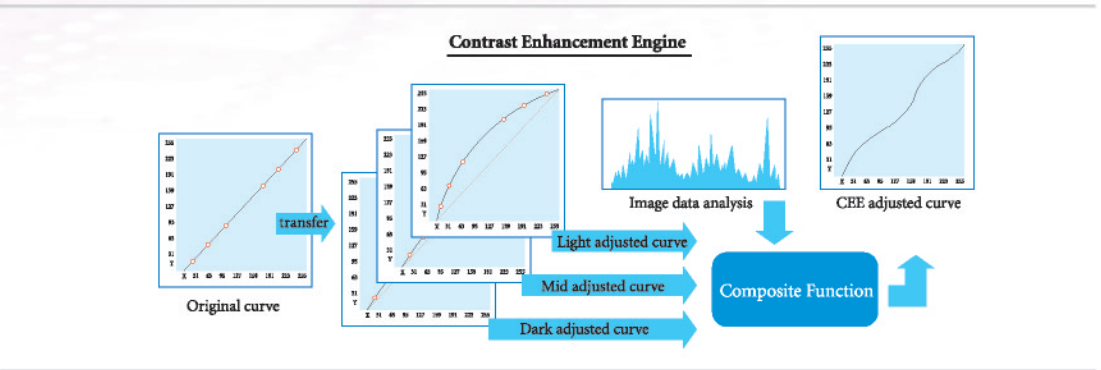
Does the darker part of your screen never seem dark enough? And, do you find the brighter part becomes darker after adjustment? Not anymore! Senseye's Contrast Enhancement Engine automatically analyzes image signals and adjusts the quality of bright and dark portions separately. It also deals with different areas of brightness separately without affecting the color saturation, so that image details requiring high contrast can be displayed with rich depth and vivid color separation.

The drawbacks of traditional image processing

When you adjust ordinary monitor settings, you might find that the whole screen is affected as you adjust the brightness or color. The color may be too pale when the brightness is increased. This is because ordinary LCD monitors use RGB color signals in their screen control, with a result that makes the image appear brighter, but the saturation of colors is also affected, creating different levels of aberration.

Advanced image technology adjusts brightness and color separately

By singling out brightness signals from RGB color signals to Y (brightness) and UV (color) Senseye technology does not affect color when adjusting brightness. Because of this, even when you darken hair color, it will not affect the rosy-pink skin tone.



Automatically adjusts image brightness

Brightness signals are automatically analyzed and deconstructed into three parts after being sent to the Senseye Contrast Enhancement Engine. These three parts consist of brighter images, darker images, and those in between, each of which are fine-tuned separately, and adjusted according to their different brightness. These three parts are then integrated to display a perfect and delicate contrast in the final image.

Adjust the contrast, the bright becomes brighter, the dark becomes brighter as well, The bright becomes brighter, the dark becomes darker



Make the dark darker, the bright brighter

Adjust the brightness, the colors become pale

Adjust the brightness, the colors remain saturated



Brighten the image without over-saturating

The dark part is unclear

The dark part is clear and detailed



Display the images in greater detail

Independent brightness adjustment preserves color

The RGB image signals are deconstructed into a brightness signal (Y) and a color signal (UV). The brightness adjustment does not affect color saturation.

High-contrast image details

Senseye technology enhances the contrast and allows you to see all the details of the bright and dark parts of the picture. Senseye technology presents you with the most delicately balanced images.



The Color Management Engine(CME)

Red, blue, and green color signals are all adjusted independently, so that the red flowers appear redder, green leaves greener, and blue sky bluer, which together constitutes an amazingly beautiful picture! Even the most delicate skin tones can be displayed naturally.

How traditional monitors have adjustment problems

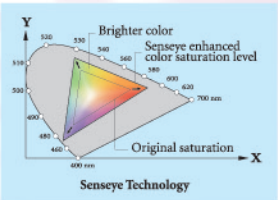
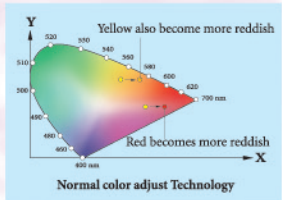
To increase an image's saturation, ordinary monitors adjust all their color controls at the same time in a fairly rough manner. In other words, once the saturation of a color is insufficient, the color signals will be automatically increased. In this case, the red would be increased when there is not enough red. As a result, the parts that appeared perfect in yellow will now also appear too reddish.

How the Color Management Engine(CME)works:

- It converts image signals for automatic color adjustment
- Colors are adjusted individually to avoid affecting the entire color performance
- It automatically adjusts the color to its best saturation level
- It adjusts the skin tone to its best color so that the skin color appears natural and beautiful

Automatically converts image signals and adjusts colors

After entering Senseye's Color Management Engine, every image signal is analyzed and divided into independent color signals for independent analysis processing.



Independent color adjustment that preserves overall color

Once a color's saturation is detected as too low or too high, Senseye's Color Management Engine adjusts that color independently without affecting the saturation of other colors. For instance, it can adjust the red color signal alone without affecting the saturation of yellow.

Automatically adjusts to the preferred color saturation

When several colors need to be adjusted in the image (i.e. red, yellow, and green), Senseye's Color Management Engine will adjust each color separately to achieve perfectly adjusted values and optimum quality in every color.

Adjust the saturation of the red

The whole image is not affected



Individually adjust the performance of the red

Adjust the saturation of the blue

The whole image is not affected



Individually adjust the performance of the blue

Adjust the saturation of the green

The whole image is not affected



Individually adjust the performance of the green

Displays the most natural skin tone

Via Senseye's independent Color Management Engine, even the most complicated layers of the human skin tone can be displayed flawlessly and as vividly as in real life.



Adjust to the most natural and florid skin tone



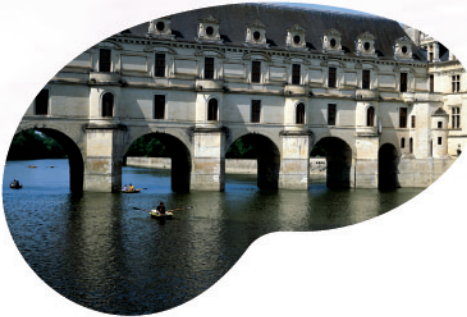
Vivid Images That Represent The True Power Of Life

Ultimate reality. Ultimate intensity. Senseye revolutionizes the gaming experience

Enter the digital world as our monitors reward your eyes with the ultimate in visual clarity, depth and richness. BenQ's Senseye technology offers you exceptionally clear images through unprecedented visual enhancement.

Pictures appear more vivid and colorful

Travel back in time to your favorite vacation, or to meet with family and friends! BenQ's Senseye technology will do that for you, because we can make the brightness, contrast, and color richness more balanced and delicate— your eyes won't believe the realism. Senseye technology automatically deals with blurred images that are out of focus and subtly fine-tunes the rims of the image. No matter whether you are simply browsing pictures, or editing graphics with professional software, you will be able to enjoy the clearest and sharpest images.



Movie-watching is now an incredibly real experience

Sit in the director's chair as you enter the magic, the drama, the horror, the joy, and the emotional world of movies. BenQ's Senseye technology will satisfy even the most discriminating eyes. It clearly displays every detail in the darker scenes as well as every slight alteration of light, so that you will never miss the full impact of a key moment. Moreover, its rich and sharp colors are exceptional. When the credits roll, you'll feel like you've just woken from a dream!

