

SONY

Press Release

Sony Develops Next-Generation Display System with Proprietary Signal Processing Technology for Individual RGB Control of High-Density LED Backlights

Wider colour gamut and higher brightness enables richer colour reproduction and subtle shading across its entire brightness range

Hong Kong, March 14, 2025 – Sony announced today it has developed a new display system incorporating an independent drive RGB LED with a high-density LED backlight that can individually control three primary colours – R (red), G (green), and B (blue) [RGB], and suitable for large screens. This panel allows each RGB colour to emit light independently, resulting in high colour purity and the ability to reproduce images with a vibrant, wide colour gamut. Additionally, the display system is equipped with Sony's proprietary advanced backlight control technology, designed to maximise the panel's characteristics. This backlight control technology enables faithful reproduction of delicate hues and subtle gradations of light across every corner of the display, even on large screens. In cinematic works such as films, the ability to convey narrative expression relies significantly on the subtleties of colour and black representation, as well as the gradation of light. This system enhances these elements to provide image quality that faithfully reflects the creator's intent and is suitable for both film production and home viewing as well.

Sony has supported creators' activities for years through professional monitors used for colour grading in video production and BRAVIA utilised as reference monitors. The display system has been developed leveraging unique experience and technical expertise gained from this. This system is to begin mass production in 2025, aiming to expand its integration into consumer televisions and displays for content creation.

<Key Features of the Newly Developed Display System>

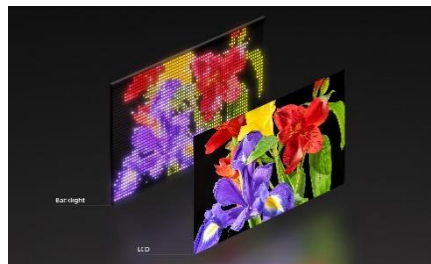
Sony developed the world's first LCD television with a full-array RGB LED backlight in 2004. Since then, Sony has continuously worked to improve the precision of backlight control, gaining a deep understanding of the characteristics of LED elements. In the development of this display system, Sony's unique backlight control technology contributes to maximising the panel's performance.

1. Wide Colour Gamut Performance Enabled by an Independent Drive RGB LED

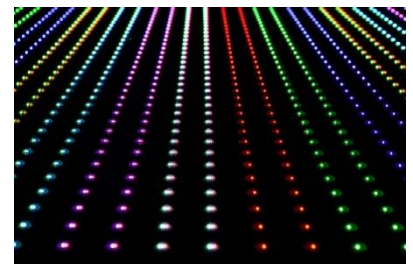
Independent colour emission ensures high colour purity, covering over 99% of the DCI-P3*¹ colour space and approximately 90% of the ITU-R BT.2020*² standard.



Conventional LED backlight system.



New independent drive RGB LED system



New RGB backlight lighting image

2. Unique High Picture Quality Achieved Through Newly Developed Backlight Control Technology

- **Expanded colour Volume for More Natural Image Representation**

By combining and independent drive RGB LED with proprietary backlight control technology, Sony has fully optimised the panel's wide colour gamut performance across the entire screen—delivering delicate, nuanced hues even on large displays.

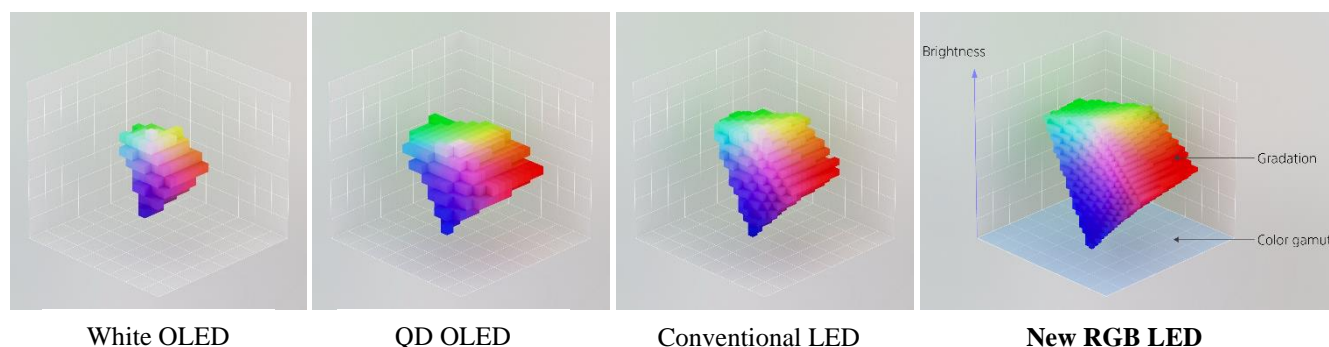
In addition, the system features a function that dynamically allocates optimal power to each RGB channel based on the specific scene. Unlike conventional high-brightness TVs that concentrate light on bright elements such as stars or the moon in night scenes to boost peak brightness, Sony's approach adjusts luminance in harmony with colour gradation. This ensures that even single-tone scenes—like a deep blue sky or vibrant red autumn foliage—are rendered with bright, vivid detail.

Furthermore, the system can achieve peak brightness^{*3} levels of over 4000 cd/m², a benchmark already realised in Sony's professional monitors, resulting in the highest colour volume in the history of Sony's display devices.

- **Wide Dynamic Range and Precise Gradation Representation**

The display system processes signal at a high speed and with high precision at a high bitrate of 96 bits. This not only allows the simultaneous expression of deep blacks and brilliant whites, but also enables the delicate representation of differences in brightness and darkness in scenes with many intermediate colours. This new system can achieve what is challenging for existing OLED panels: the expression of colours with moderate brightness and saturation. Moreover, high bit-rate signal processing helps deliver a wide viewing angle by precise gradation control, minimising colour shift and brightness variation when content is viewed at a slant on a large screen.

Colour Volume



- **Accurate Colour Reproduction by a Dedicated Control Processor**

By individually controlling the brightness of the densely packed RGB LEDs, it is possible to render bright areas vividly without white clipping and to delicately depict the nuances of light in dark areas without black crushing. Additionally, the display system equipped with approximately twice the processing power and pixel correction technology compared to conventional local dimming processing, allowing the reproduction of subtle colour differences and accurate colours without colour shifts.

Sony is cooperating on joint development of control processors with MediaTek Inc., its long-term strategic partner, and a company with a proven track record in developing and supplying SoCs (Pentonic) for smart TVs. Sony is also working on the development of the LED drive IC together with

ROHM Co., Ltd., and the LED together with Sanan Optoelectronics Co., Ltd. These partners support Sony's direction for next generation displays.

Sony will continue to expand the possibilities of visual expression through cutting-edge technology, building the future of entertainment together with creators.

For customer enquiries, please contact Sony hotline service at (852) 2833-5129.

About Hong Kong Marketing Company

Hong Kong Marketing Company (HKMC), a division of Sony Corporation of Hong Kong Limited, provides sales, marketing and after sales services for Sony's consumer electronics products as well as broadcast and professional products in Hong Kong and Macau. For more information on Sony's products and services, please visit our website at <http://www.sony.com.hk>.

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¹ DCI-P3 is one of the RGB colour space standards established by Digital Cinema Initiatives, a U.S. film industry organisation, specifically for digital cinema. This specification pertains to the display system itself and does not represent the specifications of any display products incorporating this system.

² ITU-R BT.2020 is a video format standard defined by the ITU-R. This specification pertains to the display system itself and does not represent the specifications of any display products incorporating this system.

³ The peak brightness values mentioned are specifications for the display system and do not represent the specifications of any display products incorporating this system.