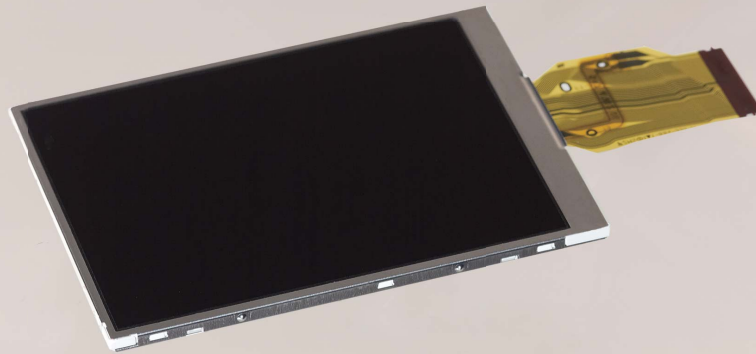


ACX432AKM

High-Resolution, Low-Temperature Polysilicon LCD Modules for Digital Cameras Using Newly Developed "RGBW Method" WhiteMagic™



Small LCD modules for mobile devices require high resolution, wide viewing angle, high picture quality, low power consumption and higher brightness for easy visibility outdoors.

Thanks to a newly developed "RGBW method" WhiteMagic™, the new ACX432AKM, an LCD module for digital cameras, has a low power mode that reduces power consumption in half*1 at regular brightness and an outdoors mode that doubles the brightness of the display for better visibility outdoors.

*1: Compared with the conventional RGB method (Sony's comparison)

- Newly developed "RGBW method" WhiteMagic™ technology
- Low power mode that reduces power consumption in half
- Outdoors mode that doubles brightness for better outdoors visibility
- Full VGA high-resolution LCD panel
- Vistarich™, an LCD mode providing wide viewing angle and high contrast ratio

WhiteMagic™

* WhiteMagic™ is the generic name attributed to the LCD technology of low power consumption and of enhanced outdoors visibility, which uses RGBW method, as well as the LCD panels and LCD modules that have been designed based on this technology.

WhiteMagic™ and "WhiteMagic™" is a trademark of Sony Corporation.

* Vistarich™ is a trademark of Sony Corporation.

Newly Developed "RGBW Method" WhiteMagic™ Technology

Adding an W (white) pixel to standard RGB pixels on an LCD panel improves the brightness of the display, but that alone will sacrifice color fidelity and image quality. Sony has developed a new "RGBW method" WhiteMagic™ technology that analyzes input picture data and performs optimum signal processing for RGBW displays. As the new LCD module employs both RGBW pixels and WhiteMagic™ technology, it is able to achieve higher brightness without any deterioration in image quality.

As a result, Sony has succeeded in equipping its LCD modules with a new "low power mode", which enables brightness equivalent to that of conventional RGB LCD modules and even reduces the power consumption of the backlight by about 50%. There is also an "outdoors mode", which successfully improves outdoor visibility of the display by enhancing the display brightness to roughly double, even without any additional power. Consequently, the "low power mode" extends device battery life, while the "outdoors mode" facilitates camera focusing and checking images even under strong sunlight. (See figure 1.)

Full VGA High-Resolution LCD Panel

The new ACX432AKM is a full VGA LCD module with 1.23M pixels (640 × RGBW × 480), a high-resolution display (271 ppi) capable of reproducing fine detail.

Vistarich™, an LCD Mode Providing Wide Viewing Angle and High Contrast Ratio

The new LCD module also employs Vistarich™, an LCD mode that provides wide viewing angle and high contrast ratio. Sony achieved a viewing angle of 160° (CR>100) and a contrast ratio of 1000:1. (See figure 2.)

V O I C E

Combining the new "RGBW method" and Sony's unique signal processing technology, we successfully eliminated the image quality degradation that is typical of an RGBW LCD panel. With the technology, we have developed a high quality LCD module that has higher brightness, less power consumption and higher resolution. Because all signal processing systems are embedded in the module, customers can use the module like a normal LCD module. We believe this new LCD module WhiteMagic™ is exactly what you have been looking for.

Figure 1 WhiteMagic™ Conceptual Diagram

Sony's unique signal processing technology converts RGB input signals to RGBW signals.
 → This doubles image brightness while halving backlight power consumption without impairing image quality.

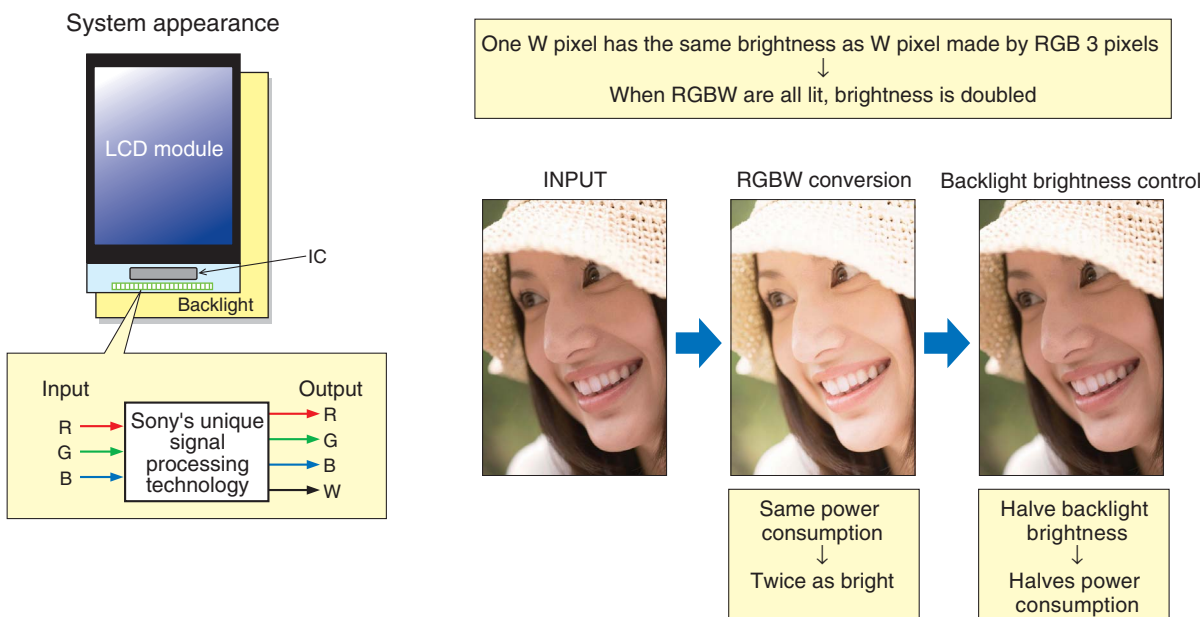


Table 1 Main Specifications

Item	ACX432AKM
Screen size	7.5 cm (3.0 type)
Display mode	Transmissive Vistarich™
Number of pixels	1.23M (640 × RGBW × 480)
Color gamut	NTSC 60%
Contrast ratio	1000:1
Viewing angle	Vertical/horizontal 160°

Mode	Surface brightness	Power consumption
Low power mode	470 cd/m ²	225 mW (Backlight 125 mW)
Outdoors mode	1000 cd/m ²	400 mW (Backlight 300 mW)

Figure 2 Viewing Angle Characteristics

