

Ultrathin 3.86 cm (1.5-Type) Transflective LCD Module for Digital Still Cameras that Features Low Power and a Digital Interface

ACX527AKM

Sony has now improved the basic performance of the transflective LCD, which is easy to see even outdoors and which is targeted at the rapidly growing digital still camera market. The ACX527AKM is based on the high reflectivity and high transmittance of the well-received ACX509AKM 1.5-type transflective LCD module, but was designed to achieve a significant reduction in power consumption and to feature a digital interface and a thin form factor.

The wide viewing angle is another major feature of Sony's transflective LCD technology. The ACX527AKM can contribute to reduced end product design resource usage since the same driver ICs used by Sony's extensive lineup of transparent type LCDs can be used. And, of course, the ACX527AKM supports 100% ratio viewing area.

*: While the model shown in the photograph includes a backlight, this product can also be provided without a backlight.

- Low-temperature polycrystalline silicon LCD
- High reflectivity and high transmittance
- Wide viewing angle
- Low power consumption
- Digital interface support
- Adjustment free (digital interface)
- Narrow frame and thin form factor
- Can be driven with existing drivers
- Up/down and/or right/left inversion functions
- Ratio viewing area: 100%

■ High Reflectivity and High Transmittance

While the reflectivity of most low-reflectivity LCDs is on the order of 1 to 2%, the ACX527AKM achieves both a high reflectivity (16.5%) and a high transmittance (4.6%*¹) at the same time by adopting a unique pixel structure. (See figure 1.)

*¹: Value when the brightness increasing film is not used.

■ Wide Viewing Angle

That they can be seen from a wide range of viewing angles is a major feature of Sony transflective LCD monitors. (See figure 2.) The monitors are easy to see, from whatever angle they are observed. Also, since wide viewing angle LCDs are

effective as store display products, they can increase the sales potential of digital still camera products.

■ Low Power Consumption

Sony succeeded in significantly reducing power consumption by changing from the conventional COMDC drive to the COMAC drive scheme. Furthermore, since the ACX527AKM has an extremely high reflectivity, the screen can be read even in the state where the backlight is completely off. This point contributes greatly to reduced power consumption. (See figure 3.)

■ Digital Interface

The merits of using a digital interface include the point that no A/D converters are required, low noise, and adjustment-free manufacturing of end products. The ACX527AKM, of course, also supports use of a conventional analog interface.

■ High Color Purity and High Picture Quality

In the area of color reproducibility as well, the ACX527AKM continues to use the highly regarded six color filters, and color evenness within the frame has also been improved by adopting pillar spacers. The color purity in reflective mode is high, and since the reflector is finely patterned (see figure 4), the reflected image is natural and no unnatural images occur on the boundary between reflective and transmissive operation.

■ Thin Form Factor

The ACX527AKM is extremely thin, with a module thickness of only 3.07 mm*² including the backlight, and can contribute to miniaturization and thinner form factors in end products.

*²: Not including the connector.

■ Can Use Existing Drivers

The CXM4006 (digital interface) and the CXM3005 (analog interface) drivers that are common to the other Sony low-power type LCDs can be used to drive the ACX527AKM.

■ Contributes to Eliminating OVF

Since it never becomes impossible to view the LCD image due to external light, an expensive OVF (optical viewfinder) is not required. Thus the ACX527AKM contributes to end product design both in the materials and the space aspects.

■ Up/Down and/or Right/Left Inversion Functions

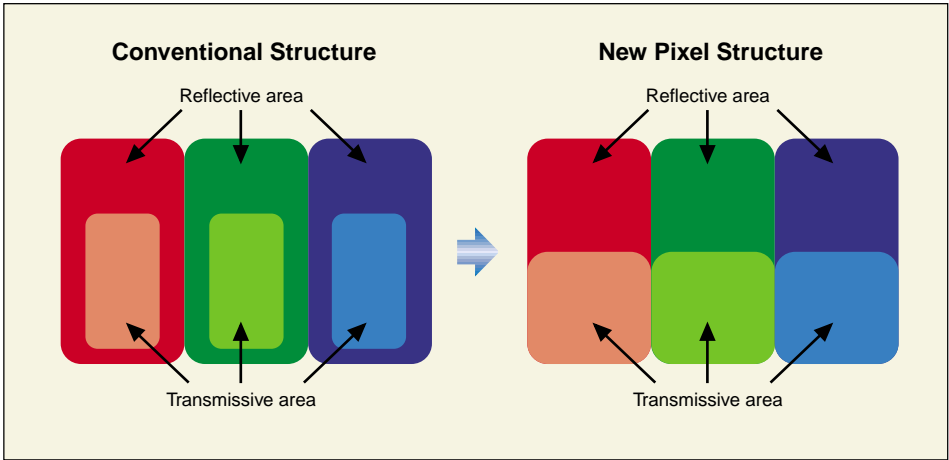
These functions increase the flexibility of LCD layout within the end product, and can also be used to simply provide a screen reversal function for rotating monitor end products.

■ Ratio Viewing Area: 100%

Since the ACX527AKM supports a ratio viewing area of 100%, it is possible to verify that none of the desired image was excluded from the image being taken, or in images already taken.

V O I C E

Have you ever thought your digital still camera LCD monitor was difficult to use outdoors? The ACX527AKM is the opposite: it gets easier to use the stronger the sunlight is. It is so good that you can check your images outdoors with the backlight turned off. We developed this product with the goal of achieving low power, excellent color reproduction, a wide viewing angle, and an ultrathin form factor at the same time. This beauty looks good however you look at it. I hope you will consider it for use in your end products.



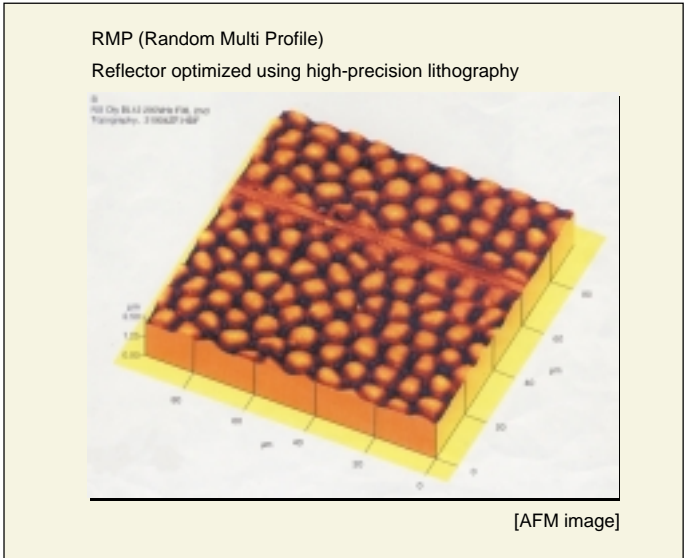
■ Figure 1 Reflector Sides Omitted Structure (Schematic)



■ Figure 2 Wide Viewing Angle



■ Figure 3 High Reflectivity



■ Figure 4 Optimized Reflector Configuration