

Transflective 3-Type Mobile Phone Full Widescreen WQVGA TFT LCD
Features a Wide Viewing Angle and High Color Purity (NTSC Ratio: 74%)

ACX552BLP

The ACX552BLP is an LCD display that focuses on providing the picture quality required for the One Seg age. It supports 16:9 display with full widescreen resolution (240 × RGB × 432) and achieves both a wide 160-degree viewing angle and a high NTSC 74% color purity. It is a transflective mode display that can be easily viewed even in bright sunlight and, since it can be read easily outdoors, can support a wide range of mobile applications.

- 3-type full widescreen display (240 × RGB × 432)
- Viewing angle of over 160 degrees in the up/down and/or left/right directions
- High 360:1 contrast ratio
- Transflective mode display that can be seen even in sunlight
- Narrow frame system display
- High color purity: 74% (transmissive mode) and 15% (reflective mode)

■ 3-Type Full Widescreen Display that Emphasizes Picture Quality, High Color Purity, and Wide Viewing Angle

With the start of One-Seg digital TV broadcasts in Japan and the increasing performance of mobile phone cameras, there are now needs for high picture quality in the miniature displays used in mobile equipment. To respond to these needs, Sony's ACX552BLP aims for high picture quality in mobile applications. It features a display resolution of 240 × RGB × 432 and supports the 16:9 full widescreen display format. It features improved color filters and achieves an NTSC ratio of 74%. It additionally achieves a viewing angle of over 160 degrees in the up/down and/or left/right directions and thus can support applications in which the display is rotated.

■ Suppression of Color Shifting in Intermediate Gradations

Due to their characteristics, LCDs have differences in the relationship between voltage and transmittance for each RGB color. This means they have the problem that chromaticity of intermediate levels can be shifted. To resolve this issue, the ACX552BLP takes full advantage of the system on glass (SoG) technology in which circuits are formed on the glass (see figure 1) and includes both circuits that are optimal for the color filters used and independent gamma adjustments for each RGB color. This reduces color shifts in the intermediate gradations and achieves even more realistic images. (See figure 2.)

■ A Reflectivity of 3% to Achieve High Viewability Even Under Direct Sunlight

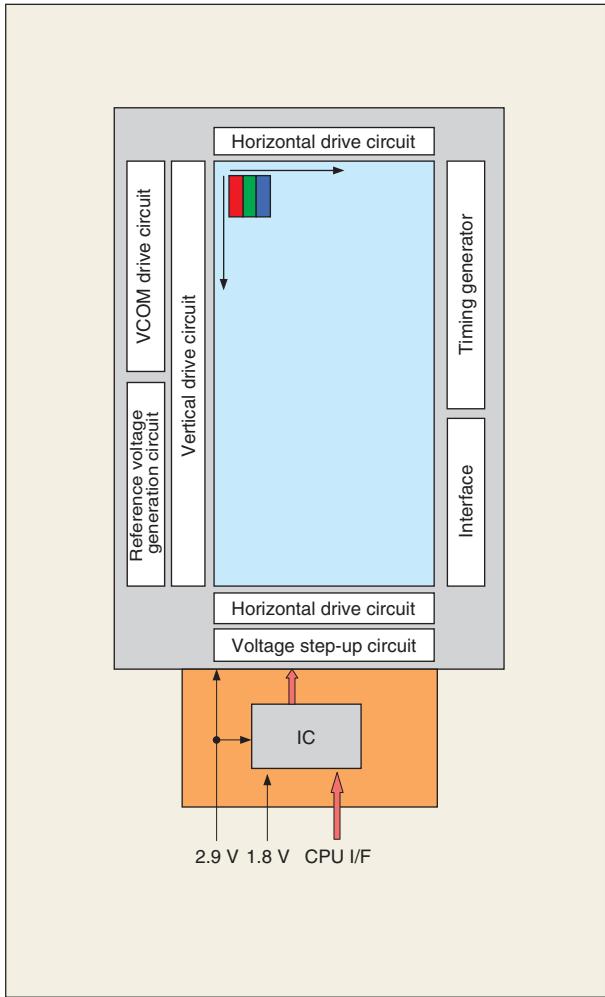
By building in a diffuse reflector that adopts a high-reflectivity silver electrode, the ACX552BLP maintains a high reflectivity of 3% allowing Sony to achieve a high transmittance in this panel. Although even bright transmissive panels are hard to see under direct sunlight, this panel assures adequate viewability even under outdoor conditions. Thus the ACX552BLP is optimal for product plans that aim at taking advantage of mobile characteristics.

■ Compact Despite the Large Screen Size

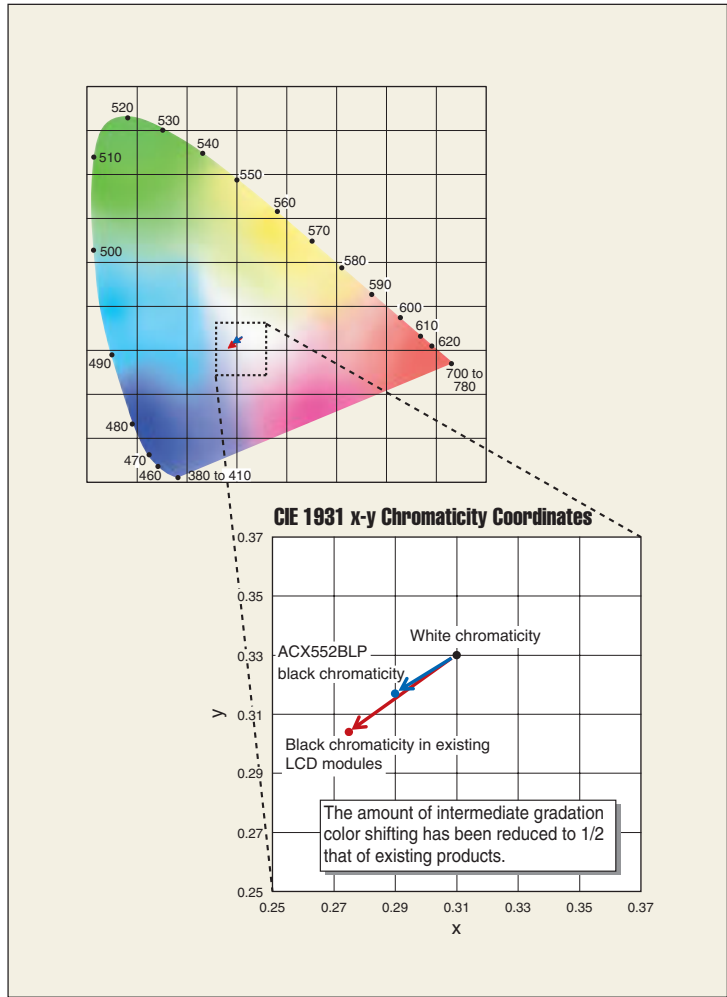
The ACX552BLP packages a 3-type screen in a 75.7 × 43 × 2 mm package by making the frame even narrower. (See figure 3.) The glass substrate is held to 0.4 mm assuring room for the backlight thickness and a 2 mm overall thickness is achieved while maintaining a stable screen brightness.

V O I C E

We implemented a display in the mobile phone large-screen 3-type size that emphasizes picture quality by taking full advantages of Sony's circuit technologies that are made possible by the SoG technology. This is a transflective panel that can be seen easily even outdoors. I strongly recommend that you look into this product for mobile applications that require high picture quality.



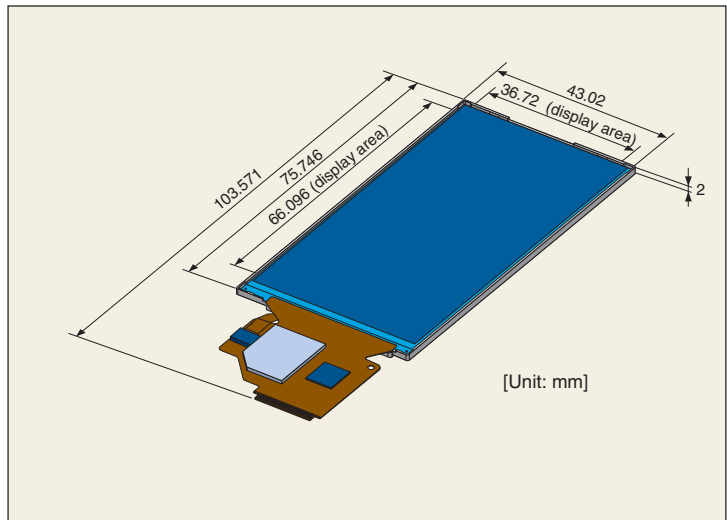
■ Figure 1 LCD Panel System Block Diagram



■ Figure 2 Intermediate Gradation Chromaticity Shifts

■ Table 1 Main Characteristics

Item	ACX552BLP
Number of dots	240 × RGB × 432 (WQVGA)
Diagonal size	7.57 cm (3 type)
Package dimensions	75.75 mm × 43.02 mm × 2 mm
Display mode	Transflective mode wide viewing angle LCD
Number of colors	262,144 colors
Viewing angle	160 degrees or more
Module surface brightness	320 cd/m ²
Interface	8, 9, 16, and 18-bit CPUs
Contrast (transmissive/reflective)	360:1/20:1
Reflectivity	3%
Power consumption	40 mW (excluding the backlight power consumption)



■ Figure 3 Module External Dimensions