

- [0050] (FIG. 3) A partial enlargement of FIG. 2
- [0051] (FIG. 4) A control block diagram of the display device
- [0052] (FIG. 5) An illustration showing how an image is displayed
- [0053] (FIG. 6) An illustration showing how characters are displayed
- [0054] (FIG. 7) An illustration showing how a combined display is provided
- [0055] (FIG. 8) An illustration showing how characters are displayed in color
- [0056] (FIG. 9) A flowchart of the procedure of image drawing processing executed by the CPU
- [0057] (FIG. 10) The drawing operation at the first display module
- [0058] (FIG. 11) The drawing operation at the second display module
- [0059] (FIG. 12) The drawing operation at the first display module
- [0060] (FIG. 13) A PDA equipped with a display device
- [0061] (FIG. 14) A flow chart of the procedure of the drawing processing executed by the CPU
- [0062] (FIG. 15) A top view of a digital camera equipped with the display device
- [0063] (FIG. 16) A rear view of the digital camera
- [0064] (FIG. 17) A front view of the digital camera
- [0065] (FIG. 18) A control block diagram of the display device
- [0066] (FIG. 19) An example of a display indicating the date and time, which may be provided in the power OFF state
- [0067] (FIG. 20) Another-example of a display indicating the photographing history that may be provided in the power OFF state
- [0068] (FIG. 21) Another example of a display may be provided in the power OFF state indicating the photographing conditions and the like
- [0069] (FIG. 22) Another example of a display that may be provided in the power OFF state indicating the menu items
- [0070] (FIG. 23) Another example of a display that may be provided in the power OFF state showing a single image
- [0071] (FIG. 24) Another example of a display that may be provided in the power OFF state showing a plurality of thumbnail images
- [0072] (FIG. 25) Another example of a display that may be provided in the power OFF state simultaneously providing a plurality of types of displays
- [0073] (FIG. 26) A front view, a side elevation and a rear view of a portable telephone equipped with a display device
- [0074] (FIG. 27) A block diagram of the control system in the portable telephone
- [0075] (FIG. 28) A variation of the display device

- [0076] (FIG. 29) Another variation of the display device
- [0077] (FIG. 30) Yet another variation of the display device

BEST MODE FOR CARRYING OUT THE INVENTION

First Embodiment

[0078] The following is an explanation of the best mode for carrying out the invention, given in reference to the drawings. A display device **100** achieved in the first embodiment of the present invention is mounted at an electronic device (electronic instrument) such as a PDA **200** as shown in FIG. **13**, or a portable telephone, a digital camera or an Electronic Book viewer (none shown).

[0079] FIGS. **1** and **2** illustrate the structure adopted in the display device **100** respectively in a front view and a side elevation. As shown in FIG. **1**, the display device **100** includes an effective display area **100a** where an image, text or the like is displayed.

[0080] As shown in FIG. **2**, the display device **100** comprises a first display module **10** and a second display module **20** layered over the first display module. The two layered display modules **10** and **20** are illuminated by a backlight member from the side where the first display module **10** is present. The backlight member is constituted with a high-intensity white LED **141**, an LED substrate **142** at which the white LED **141** is mounted and a light guiding plate **14**. The light guiding plate **14** ranges over an area greater than at least the effective display area **100a**. Light having been emitted from the white LED **141** and having entered the light guiding plate **14** from a side surface (the right side in FIGS. **1** and **2**) of the light guiding plate **14** is converted to planar illuminating light achieving a uniform brightness within the effective display area **100a** and the first display module **10** is illuminated with this planar illuminating light. The user is able to observe the displayed image from above in FIG. **2**.

[0081] Display data, drive signals and the like are provided to the first display module **10** and the second display module **20** from the corresponding display control circuits to be detailed later respectively via flexible wiring substrates **150** and **151**.

[0082] FIG. **3** illustrates the internal structure adopted in the display device **100** in a partial enlargement of FIG. **2**. FIG. **3** shows the first display module **10** constituted with a liquid crystal panel of the known art adopting, for instance, a TFT method. A liquid crystal **11** is sealed between two glass substrates **12a** and **12b**, with a first polarizing plate **13a** and a second polarizing plate **13b** disposed so as to hold the glass substrates **12a** and **12b** between the polarizing plates. The direction along which light passing through the second polarizing plate **13b** is polarized and the direction along which light passing through the first polarizing plate **13a** is polarized are offset from each other by 90°. In addition, a color filter (not shown) is disposed between the glass substrate **12b** and the second polarizing plate **13b**.

[0083] When no voltage is applied from a transparent electrode (not shown) disposed on the inner side of the glass substrate **12**, the liquid crystal **11**, assuming a specific arrangement (orientation) for the liquid crystal molecules within the liquid crystal layer, rotates the polarizing direc-