

ness, also referred to herein as a display screen. For example, LCD video display devices often include a flat panel that includes a series of layers, one of which includes a layer of pixilated light transmission elements for selectively filtering red, green and blue data from a white light source. Each video display device is adapted to receive signals from a processor, video processor or controller included in the gaming machine and to generate and video graphics and images to a person near the gaming machine. The format of the signal will depend on the video device, as one of skill in the art will appreciate. In one embodiment, all the video display devices in a layered arrangement respond to digital signals. For example, the red, green and blue pixilated light transmission elements for an LCD device typically respond to digital control signals to generate colored light, as desired.

[0037] Referring primarily now to FIGS. 1A and 1B, a gaming machine 10 of a specific embodiment with layered displays includes a cabinet or housing 12 that houses exterior video display device 18a, intermediate video display device 18b (FIG. 1B only), interior video display device 18c and a touchscreen 16. While the layered displays of FIGS. 1A and 1B are shown set back from touchscreen 16, this is for illustrative purposes and the exterior display device 18a may be closer to touchscreen 16.

[0038] Referring to FIGS. 1A, 1B and 9, layered video display devices and their operation will be briefly described. Processor 332 controls the operation of components in gaming machine 10 to present one or more games, receive player inputs using the touchscreen 16, and control other gaming interactions between the gaming machine and a person 21. Under the control of processor 332, video display devices 18 generate visual graphics for game play by a person 21. FIG. 1A shows two layered video display devices 18: a first, exterior or frontmost video display device 18a, and a backmost display screen 18c. FIG. 1B shows three layered display devices 18: frontmost video display device 18a, a second or intermediate video display device 18b, and a backmost video display device 18c. The video display devices 18a, 18b and 18c are mounted and oriented within the cabinet 12 in such a manner that a straight and common line of sight 20 intersects the display screens of all three video display devices 18a, 18b and 18c. In addition, display devices 18a, 18b and 18c are all relatively flat and aligned about parallel to provide a plurality of common lines of sight that intersect screens for all three.

[0039] Gaming machine 10 may also include one or more light sources. In one embodiment, layered display devices 18 include LCD panels and at least one light source that provides light, such as white light, to the pixilated filter elements on each LCD panel. For example, a back lighting source (not shown) may be positioned behind display device 18c. The pixilated panel for each parallel display device 18a, 18b and 18c then filters white light from the backmost backlight to controllably output color images on each screen.

[0040] Other light sources may be used to illuminate a reflective or transmissive light filter. For example, each video display device 18 may be individually illuminated using a white light source attached near the sides (top, bottom, left, and/or right) of each pixelating panel; the side light source may include a mini-fluorescence source and light guide that transmits light from the side light source, down the flat panel, and to all the pixilated filter elements in the planar LCD panel for pixilated image production. Other suitable light sources may include cold cathode fluorescent light sources (CCFLs) and/or light emitting diodes, for example.

[0041] In another embodiment, a distal and emissive display device is arranged behind a proximate and non-emissive display device, and provides light to the proximate display device, which then filters the light to create an image. For example, a flat OLED, electroluminescent, or plasma display device 18c may be used to a) produce an image and b) to emit light that is filtered by LCD panels 18a and 18b. In this case, the distal and emissive display device emits at least some white light. For example, video output of one or more reels may include significant white light that is also used to illuminate one or more LCD panels for pixilated filtering. In another embodiment, the proximate LCD panels use reflective light where the light comes from in front of the gaming machine, e.g., from the ambient room.

[0042] The proximate video display devices 18a and 18b each have the capacity to be partially or completely transparent or translucent. In a specific embodiment, the relatively flat and thin video display devices 18a and 18b are liquid crystal display devices (LCDs). Other video display technologies are also suitable for use. Various companies have developed relatively flat video display devices that have the capacity to be transparent or translucent. One such company is Uni-Pixel Displays, Inc., Inc. of Houston Tex., which sells display screens that employ time multiplex optical shutter (TMOS) technology. This TMOS display technology includes: (a) selectively controlled pixels that shutter light out of a light guidance substrate by violating the light guidance conditions of the substrate and (b) a system for repeatedly causing such violation in a time multiplex fashion. The display screens that embody TMOS technology are inherently transparent and they can be switched to display colors in any pixel area. A transparent OLED may also be used. An electroluminescent display is also suitable for use with proximate display devices 18a and 18b. Also, Planar Systems Inc. of Beaverton Oreg. and Samsung of Korea, both produce several display devices that are suitable for use herein and that can be translucent or transparent. Kent Displays Inc. of Kent Ohio also produces Cholesteric LCD display devices that operate as a light valve and/or a monochrome LCD panel.

[0043] FIG. 1C shows another layered video display device arrangement in accordance with a specific embodiment. In this arrangement, a touchscreen 16 is arranged in front of an exterior LCD panel 18a, an intermediate light valve 18e and a curved display device 18d.

[0044] A common line of sight 20 passes through all four layered video display devices. As the term is used herein, a common line of sight refers to a straight line that intersects a portion of each display device. The line of sight is a geometric construct used herein for describing a spatial arrangement of display devices. If all the proximate video display devices are transparent along the line of sight, then a person should be able see through all the video display devices along the line of sight. Multiple lines of sight may also be present in many instances.

[0045] Light valve 18e selectively permits light to pass therethrough in response to a control signal. Various devices may be utilized for the light valve 18e, including, but not limited to, suspended particle devices (SPD), Cholesteric LCD devices, electrochromic devices, polymer dispersed liquid crystal (PDLC) devices, etc. Light valve 18e switches between being transparent, and being opaque (or translucent), depending on a received control signal. For example, SPDs and PDLC devices become transparent when a current is applied and become opaque or translucent when little or no