

developed using this single plane spanning technique where the video or other visual image output of each section in the combined in-plane video space 425 may be used to drive a separate display.

[0062] Although first portion 430 and second portion 435 are arranged adjacent in a side-by-side orientation in FIG. 4A, other arrangements are suitable for use. For example, the first portion 430 may be positioned above the second portion 435 as illustrated in FIG. 4B. In other words, similar results may also be achieved using “vertical spanning” whereby the image could also wrap around from top to bottom with the appropriate resolution settings. In another example, first portion 430 may be positioned below second portion 435.

[0063] When displayed on the front and back display devices, the images may wrap around on the two separate screens, albeit without knowledge or perception by a person standing in front of the layered displays as illustrated in FIGS. 5A and 5B. In one embodiment, the images from the combined in-plane video space 425 may be transferred to a single display. This may allow a programmer, graphics artist, maintenance personnel, or the like to easily view the images and design or service the multi-layer display device.

[0064] FIG. 5A illustrates an exemplary video output of a display in a horizontal spanning mode onto a single display screen. Although illustrated on a single display screen, this embodiment is not intended to be limiting as the visual images may be displayed among several display screens as illustrated with reference to FIG. 5B. In another embodiment, the combined in-plane video space may be down-sampled to fit a single display device (e.g., an LCD panel).

[0065] FIG. 5A illustrates a combined in-plane video space having images resembling traditional mechanical reels. In one embodiment, first portion 430 may transfer images corresponding to front display screen 18a, which includes transparent window portions 15 that permit viewing of the virtual slot reels that are shown on the second portion 435 or back display screen 18c. Second portion 430 may transfer images corresponding to back display screen 18c which includes the video reel 125. In another embodiment, the combined image may be transmitted and displayed on the front display device. Should the image size exceed the resolution or size of the first display device, the remaining images may wrap around to the back display device.

[0066] FIG. 5B illustrates the images from FIG. 5A as would be seen by a user in a multi-layer display device. Front display screen 18a outputs video or other visual image data that resembles a silk-screened glass, while the back display screen 18c displays five video reels 125. Images on first portion 430 may correspond to images displayed on front screen 18a and images on second portion 435 may correspond to images displayed on back screen 18c.

[0067] Video data or other visual images provided to screen 18a and 18c is configured such that a common line of sight passes through each window portion 15 of front display screen 18a to a video reel 125 of the back display screen 18c. Single plane spanning of the images on the first portion 430 and second portion 435 allows a user to simultaneously view the images on the multiple screens of a multi-layer display device without requiring the images to be coordinated or synchronized, such as when the images are provided separately by multiple video cards, processors, or logic devices.

[0068] FIGS. 6A and 6B illustrate an exemplary pointer when images from the combined in-plane video space are viewed in a horizontal spanning mode, such as in FIGS. 5A

and 5B. When the combined in-plane video space is used with a touch screen, mouse, or any other input device, a difficulty with the software configuration may be that movement of input on the touch screen may no longer match dimensions of the combined in-plane video space. In other words, movement of a pointer 601 on the touch screen 600 occurs in the resolution of the touch screen, which usually matches the front display screen in a multi-layer display device. The term pointer used herein is intended to be any type of indicator on a display screen, such as a cursor. The input from the pointer may be received using any input device such as a touch screen, mouse, keyboard, or any other similar device.

[0069] However, the combined in-plane video space includes double the horizontal resolution of the front display 600. This mismatch distorts and ruins the touch screen input since the user's actions are not accurately reflected in the output image.

[0070] For example, as illustrated in FIG. 6A, a user 602 may want to move pointer 601a in the direction of arrow A to the new location of pointer 601b within first display portion 630. First display portion may correspond to images to be displayed on a front display screen of a multi-layer display device. For exemplary purposes only and not intended to be limiting, the resolution of the touch screen 600 may be 1680×840 and combined in-plane video space may have a resolution of 3360×840. Thus, the pointer 601a will move at twice its normal speed and the pointer location 600c will end up displayed on second display portion 635 as illustrated in FIG. 6B. Second display portion may correspond to images to be displayed on a back display screen of a multi-layer display device.

[0071] To correct for this mismatch, the pointer may be calibrated in order to reduce its speed and/or movement. In one embodiment, the gaming machine stores and uses a calibration routine that translates between the resolution differences of the front display 630 and the combined in-plane video space. In some cases, this may occur without altering the conventional operating system, such as Windows®. The calibration software may then functionally reside between the input and the input to the processor 332. More specifically, the calibration software may receive an input from the touch screen display, mouse, or any other input device, alter the input to match the combined in-plane video space resolution, and provide the new altered pointer location to the operating system.

[0072] For example, the pointer 601a may move from its original position to a first distance in a horizontal direction and a second distance in a vertical direction. As the pointer 601a moves, the first distance may be reduced by a ratio of the first display screen resolution and the resolution of the combined in-plane video space 425. In this example, the first distance may be reduced by a factor of two or reduced to half the distance since  $1680/3360=1/2$ . In other words, the first distance may be reduced by a ratio of the touch screen 600 resolution and the combined in-plane video space resolution. By reducing the distance, the pointer 601a will end up at pointer location 600b.

[0073] In a vertical spanning mode, the pointer may have a similar, but different calibration. In a vertical spanning mode, the second distance or vertical direction may be reduced by a factor of two. In other words, the second distance may be reduced by a ratio of a vertical component of the touch screen 600 resolution and a vertical component of the combined in-plane video space resolution.