

8B, an embodiment of a resistive touch screen 611 integrated with a display 610 is shown. In a resistive touch screen 611, a suitable substrate 620, such as glass or a flexible material, is coated with a clear conductive material 618. Polyester spacer dots 616 are used to separate a polyester cover sheet 612 from the substrate 620 with the conductive material coating 618. An inner surface of the polyester cover sheet 612 in contact with the polyester spacer dots 616 is coated with a conductive metal coating 614. An outer surface of the polyester cover sheet may be covered with a scratch resistant coating (not shown). The substrate 620 and other layers may be integrated into a touch screen assembly that may be mounted over the display 610 using an adhesive epoxy or some other mounting means. In another embodiment, the sensor layers may be directly mounted to the display surface 610.

[0126] A touch screen controller (not shown) is used to apply a small voltage gradient across the x-axis 611 of the substrate 620 and across y-axis 613 of the cover sheet 612 which produces a small current in the panel and the cover sheet. With a voltage applied to the substrate 620 and cover sheet 612, the layers of the resistive touch screen may be used as a sensor. When a stylus or other implement is used to press the conductive layers, 614 and 618, together, the current flowing across the substrate 620 and the cover sheet is altered. Based on the change in current, the touch screen controller determines the x and y coordinates of the stylus contact.

[0127] In FIG. 8C, an embodiment of a capacitive touch screen 630 integrated with a light emitting surface 610 is shown. In a capacitive touch screen 630, a substrate 136, such as a glass panel or a flexible material, is coated on both sides with a clear conductive material, 634 and 638. The inner conductive layer 638 may be primarily used for shielding. The outer surface of the touch screen may be a scratch resistant coating 632. Electrodes 639 are uniformly distributed around the edge of the touch screen 630 to apply a low-voltage field uniformly across the outer conductive layer 634. When a finger or a conductive stylus contacts the screen 632, a capacitive coupling occurs with voltage field which causes a small current to be drawn into the finger or the stylus. The current flow from the corners of the touch screen electrodes 639 are measured. The measured current flow is used by the touch screen controller (not shown) to determine the location of the contact on the screen.

[0128] In FIG. 8D, an embodiment of a wave touch screen mounted to a light emitting surface 610 is shown. The screen 644 may be an uncoated glass panel or another suitable substrate material. In one type of wave touch screen, transducers 642 in the corners produce ultrasonic waves on the glass panel. The reflectors 645 are used to create a standing wave pattern on the glass panel 644. When a soft-tipped stylus is touched to the surface of the panel 644, the transducers detect the attenuation of the wave, which may be used by a touch screen controller to determine the coordinates of the stylus. In an infrared touch screen, light emitting diodes and photoresistors on the edge of the screen are used to create a grid of infrared beams. A stylus or finger may be used to obstruct the beams and the touch screen controller determines the coordinates of the obstruction.

[0129] For most embodiments of the present invention, a capacitive based touch screen is preferred but the present

invention is not limited to capacitive based touch screens. Capacitive touch screens are very clear, durable and have a high resolution. However, capacitive touch screen are generally more expensive than resistive touch screens. Further, when a finger is used as a stylus on a capacitive touch screen, a small amount of current is drawn into to the finger, which some game players may find annoying. Thus, in some embodiments, other touch screen types, such as a resistive touch screen or a wave touch screen, may be employed with the present invention.

[0130] The touch screen controller processes signals from the touch screen sensor and passes touch screen event data to one or more gaming devices that utilize the touch screen event data. For instance, the x and y coordinates of a contact point on the touch screen may be used by a processor on a player tracking unit, a master gaming controller or combinations thereof, to allow a user to navigate through a game service interface (see FIG. 5) and to enter gaming information. In general, a logic device in communication with the touch screen, such as the processor on the player tracking unit or the master gaming controller, uses a device driver to receive touch screen event data from the touch screen controller. The touch screen controller may be integrated into the sensor layers as another layer using thin-film circuit technology such as the thin film transistors described with respect to FIG. 7.

[0131] FIG. 9 is a block diagram of a player tracking system and a gaming machine with interface displays of the present invention. The player tracking unit 107 may be mounted to gaming machine 2 and may be connected to the player tracking server 120 in player tracking system 500. The player tracking unit includes a player tracking controller 501. The player tracking controller 501 may be a logic device, such as a microprocessor that controls the operation of the player tracking unit 107 and communicates with the player tracking server 120 and the master gaming controller 104.

[0132] The player tracking controller 501 may also communicate with other remote devices such as a terminal at a service bar used to receive drink orders. In response to player tracking events detected by the player tracking controller 501, such as a card inserted incorrectly or an invalid card, the player tracking controller 501 may send commands to an electro-luminescent lamp controller 502 to perform different functions, such as illuminate the "card invalid" lamp on the player tracking interface display 200 as described with the respect to FIGS. 3A and 3B.

[0133] The lamp controller 502 converts the command into voltages and signal patterns for one or more lamp elements 503 affected by the command. For example, the lamp controller 502 may provide a voltage level for the "card invalid" lamp that varies with time causing the "card invalid" lamp to light up and flash. As another in response to an "attract mode" command by the player tracking controller, the lamp controller may send phased voltage signals to a number of lamp elements 503 in the player tracking interface display causing the lamp elements to flash in sequence.

[0134] As described with respect to FIG. 7, the lamp controller 502 may control a matrix of electro-luminescent elements on a display screen. In this case, the lamp controller 502 may be used to generate signals as part of video