[0057] **FIG. 4** is a multipoint touch method **400** according to one embodiment of the invention. The method **400** generally begins at block **402** where multiple touches are received on the surface of the touch screen at the same time. This may, for example, be accomplished by placing multiple fingers on the surface of the touch screen. Following block **402**, the process flow proceeds to block **404** where each of the multiple touches is separately recognized by the touch screen. This may, for example, be accomplished by multi-point capacitance sensors located within the touch screen. Following block **404**, the process flow proceeds to block **406** where the touch data based on multiple touches is reported. The touch data may, for example, be reported to a host device such as a general purpose computer.

[0058] **FIG. 5** is a block diagram of a computer system **500** according to one embodiment of the invention. The computer system **500** may correspond to personal computer systems such as desktops, laptops, tablets or handhelds. By way of example, the computer system **500** may correspond to any Apple or PC based computer system. The computer system may also correspond to public computer systems such as information kiosks, automated teller machines (ATM), point of sale machines (POS), industrial machines, gaming machines, arcade machines, vending machines, airline e-ticket terminals, restaurant reservation terminals, customer service stations, library terminals, learning devices, and the like.

[0059] As shown, the computer system **500** includes a processor **502** configured to execute instructions and to carry out operations associated with the computer system **500**. For example, using instructions retrieved from memory, the processor **502** may control the reception and manipulation of input and output data between components of the computing system **500**. The processor **502** can be a single-chip processor or can be implemented with multiple components.

[0060] In most cases, the processor **502** together with an operating system operates to execute computer code and produce and use data. The computer code and data may reside within a program storage block **504** that is operatively coupled to the processor **502**. Program storage block **504** generally provides a place to hold data that is being used by the computer system **500**. By way of example, the program storage block may include Read-Only Memory (ROM) **506**, Random-Access Memory (RAM) **508**, hard disk drive **510** and/or the like. The computer code and data could also reside on a removable storage medium and be loaded or installed onto the computer system when needed. Removable storage mediums include, for example, CD-ROM, PC-CARD, floppy disk, magnetic tape, and a network component.

[0061] The computer system **500** also includes an input/output (I/O) controller **512** that is operatively coupled to the processor **502**. The (I/O) controller **512** may be integrated with the processor **502** or it may be a separate component as shown. The I/O controller **512** is generally configured to control interactions with one or more I/O devices. The I/O controller **512** generally operates by exchanging data between the processor and the I/O devices that desire to communicate with the processor **502**. The I/O devices and the I/O controller **512** typically communicate through a data link **514**. The data link **514** may be a one way link or two way link. In some cases, the I/O devices may be connected to the I/O controller **512** through wired connections. In other cases, the I/O devices may be connected to the I/O controller **512** through wireless connections. By way of example, the data link **514** may correspond to PS/2, USB, FIREWIRE, IR, RF, Bluetooth or the like.

[0062] The computer system **500** also includes a display device **516** that is operatively coupled to the processor **502**. The processor **502** can drive the display device **516** or a separate display driver **525** can be used. The display device **516** may be a separate component (peripheral device) or it may be integrated with a base computer system to form a desktop computer (all in one machine), a laptop, handheld or tablet or the like. The display device **516** is configured to display a graphical user interface (GUI) including perhaps a pointer or cursor as well as other information to the user. By way of example, the display device **516** may be a monochrome display, color graphics adapter (CGA) display, enhanced graphics adapter (EGA) display, variable-graphics-array (VGA) display, super VGA display, liquid crystal display (e.g., active matrix, passive matrix and the like), cathode ray tube (CRT), plasma displays and the like.

[0063] The computer system **500** also includes a touch screen **518** that is operatively coupled to the processor **502**. The touch screen **518** is a transparent panel that is positioned in front of the display device **516**. The touch screen **518** may be integrated with the display device **516** or it may be a separate component. The touch screen **518** is configured to receive input from a user's touch and to send this information to the processor **502**. In most cases, the touch screen **518** recognizes touches and the position and magnitude of touches on its surface. The touch screen **518** reports the touches to the processor **502** and the processor **502** interprets the touches in accordance with its programming. For example, the processor **502** may initiate a task in accordance with a particular touch.

[0064] In accordance with one embodiment, the touch screen **518** is capable of tracking multiple objects, which rest on, tap on, or move across the touch sensitive surface of the touch screen at the same time. The multiple objects may for example correspond to fingers and palms. Because the touch screen is capable of tracking multiple objects, a user may perform several touch-initiated tasks at the same time. For example, the user may select an onscreen button with one finger, while moving a cursor with another finger. In addition, a user may move a scroll bar with one finger while selecting an item from a menu with another finger. Furthermore, a first object may be dragged with one finger while a second object may be dragged with another finger. Moreover, gesturing may be performed with more than one finger.

[0065] To elaborate, the touch screen **518** generally includes a sensing device **520** configured to detect an object in close proximity thereto and/or the pressure exerted thereon. The sensing device **520** may be widely varied. In one particular embodiment, the sensing device **520** is divided into several independent and spatially distinct sensing points, nodes or regions **522** that are positioned throughout the touch screen **518**. The sensing points **522**, which are typically hidden from view, are dispersed about the touch screen **518** with each sensing point **520** representing a different position on the surface of the touch screen **518** (or touch screen plane). The sensing points **522** may be positioned in a grid or a pixel array where each pixilated sensing