



How Does a Touchscreen Work?



A basic touch screen has three main components: a touch sensor, a controller, and a software driver. The touch screen is an input device, so it needs to be combined with a display and a PC or other device to make a complete touch input system.

1. Touch Sensor

A touch screen sensor is a clear glass panel with a touch responsive surface. The touch sensor/panel is placed over a display screen so that the responsive area of the panel covers the viewable area of the video screen. There are several different touch sensor technologies on the market today, each using a different method to detect touch input. The sensor generally has an electrical current or signal going through it and touching the screen causes a voltage or signal change. This voltage change is used to determine the location of the touch to the screen.

2. Controller

The controller is a small PC card that connects between the touch sensor and the PC. It takes information from the touch sensor and translates it into information that PC can understand. The controller is usually installed inside the monitor for integrated monitors or it is housed in a plastic case for external touch add-on/overlays. The controller determines what type of interface/connection you will need on the PC. Integrated touch monitors will have an extra cable connection on the back for the touch screen. Controllers are available that can connect to a Serial/COM port (PC) or to a USB port (PC or Macintosh). Specialized controllers are also available that work with DVD players and other devices.



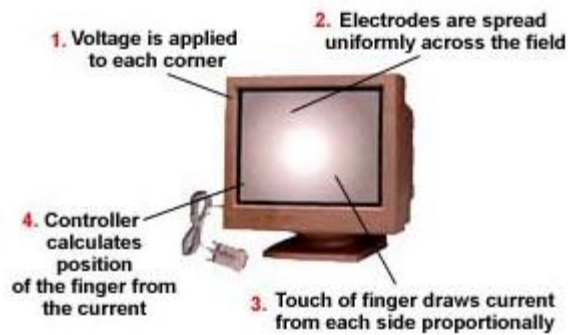
3. Software Driver

The driver is a software update for the PC system that allows the touch screen and computer to work together. It tells the computer's operating system how to interpret the touch event information that is sent from the controller. Most touch screen drivers today are a mouse-emulation type driver. This makes touching the screen the same as clicking your mouse at the same location on the screen. This allows the touch screen to work with existing software and allows new applications to be developed without the need for touch screen specific programming. Some equipment such as thin client terminals, DVD players, and specialized computer systems either do not use software drivers or they have their own built-in touch screen driver.



Capacitive Technology

- How it Works



A capacitive touch screen consists of a glass panel with a capacitive (charge storing) material coating its surface. Circuits located at corners of the screen measure the capacitance of a person touching the overlay. Frequency changes are measured to determine

the X and Y coordinates of the touch event.

Capacitive type touch screens are very durable, and have a high clarity. They are used in a wide range of applications, from restaurant and POS use to industrial controls and information kiosks.

Advantages

- High touch resolution
- High image clarity
- Not affected by dirt, grease, moisture.

Disadvantages

- Must be touched by finger, will not work with any non-conductive input