

HOW TO SELECT THE BEST TOUCH SCREEN LCD MONITOR



[Touch screen](#) monitors seem to be everywhere. The great thing about them is that they are extremely easy to use. A touch screen functions like an invisible keyboard, but it displays only as much data and button choices as users need to complete a task, or set of tasks. That explains their popularity in devices from cell phones to kiosks and industrial machinery.

The most important decision in selecting the best touch screen monitor for your application will be the type of touch screen technology to use. There are several types, each with its own advantages and disadvantages. We will cover the three most common types:

Resistive Technology

A resistive touch screen monitor is composed of a glass panel covered with thin conductive and resistive metallic layers, separated by a thin space. When a user touches the screen, the 2 layers touch at that point. The computer detects the change in the electrical field and calculates the touch point.

Resistive touch screens are generally the most affordable, but they only offer approximately 75-80% image clarity. The touch can be activated with nearly any type of object (stylus, gloved finger, etc.), but the outer surface can be damaged with sharp objects.

Capacitive Technology

In a capacitive touch screen monitor, a layer that stores a continuous electrical current is placed on top of the monitor's glass panel. When an exposed finger touches the monitor screen, some of the electrical charge transfers to the user. This decrease in capacitance is detected and located by circuits located at each corner. The computer then determines the touch point.

Capacitive touch screens are a durable technology that is often used in kiosks, point-of-sale systems and industrial machinery. Capacitive touch screens have a higher clarity than resistive-type (88-92%), and have greater endurance (up to 225 million touches) than a Resistive-type. However, capacitive screens can only be activated with an exposed finger (no gloves, pointers, etc.), and are slightly more expensive.

SAW Technology

SAW (Surface Acoustic Wave) touch screen monitors utilize a series of transducers and reflectors along the sides of the monitor's glass plate to create an invisible grid of ultrasonic waves on the surface. When the panel is touched, a portion of the wave is absorbed. The receiving transducer locates the touch point, and sends this data to the controller.

SAW touch screens have no layers on the screen, thus enabling over 90% image clarity, and can display high-detail graphics. They can be activated by a finger, gloved hand or soft-tip stylus. However, SAW panels are the most expensive of the three, and contaminants on the surface (moving liquids or condensation) can cause false-triggers; solid contaminants on the screen can create non-touch areas, until they are removed.

Other Technologies

Infrared and optical imaging are gaining popularity for larger (22"+) displays.

Other Considerations

Other factors to consider in your selection process include:

Interface: Touch screen panels must communicate with the computer. The most common interface types are RS-232 and USB. New HID-compliant touch screen monitors eliminate the need for drivers.

Mounting: Options include panel mount, rack mount and free-standing. If free-standing, be sure that it uses a heavy-duty stand designed for touch screen; standard table top bases will topple over.

Environment: Touch screen monitors are available in standard, stainless steel and waterproof enclosures for a variety of environments.

Screen Size: Touch screen monitors are available from 3.5" to 52". The most common sizes are 15"-19", and 32"-42" for large control rooms. The aspect ratio (4:3 or 16:9) should also be considered.

The type of touch screen monitor you select will be contingent upon many factors, including type of data to be displayed (video, graphics, text), the intended users, the operating environment and where/how it will be mounted. Chosen correctly, touch screen monitors will be an excellent addition to your system.