TOUCH SCREEN TECHNOLOGIES

Behind the Screens | 6 Touch Technologies

1 RESISTIVE
(4, 5, 7, 8-wire)

Function: The top layer of the screen touches the lower layer when pressure is applied. This disturbance creates an electrical current identifying the area being touched.

Features: Resistive touch screens will respond to most objects. They are resistant to water and other minor debris making them a robust and cost effective solution.

Flaws: The screen scratches easily and reduces brightness and picture quality of the display. It is also less responsive.

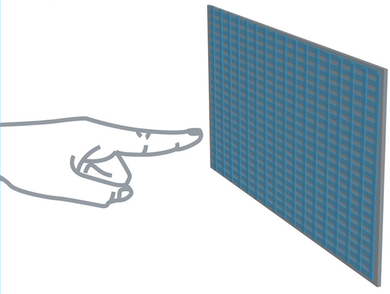
2 CAPACITIVE
(Surface & Projected)

Function: Capacitive screens contain an electrical field that must be interrupted to activate. The screen's electrical field is disturbed by the touch of a finger. The disturbance is measured to accurately determine or track the touch location.

Features: They are more responsive and robust than Resistive. In addition, Projected is more accurate than Surface Capacitive. Projected also enables multiple touch points.

Flaws: Surface Capacitive will only respond to conductive objects (no gloves) and will not work when wet.

3 INFRARED

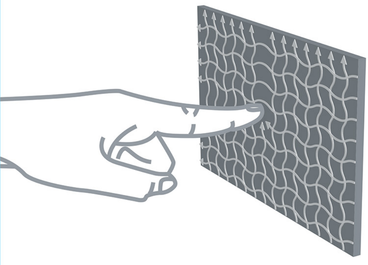


Function: Infrared touch screens rely on light interruption. An array of LEDs and photodetectors create invisible beams of light that when broken activate the touch point.

Features: Great for applications where bare-finger activation may not be possible. They have a high durability as well as multi-touch capability.

Flaws: The screens can have 'dead' zones and surface contaminants may cause false actuation.

4 SAW
(Surface Acoustic Wave)

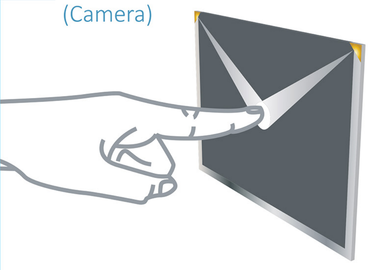


Function: SAW touch screens rely on transducers that emit and receive sound waves. The screen absorbs acoustic energy from the sound wave when it is touched and then records the touch point.

Features: They provide superior image clarity compared to resistive or capacitive touch screens. They are highly durable.

Flaws: They are adversely affected by moisture, surface contaminants and temperature changes.

5 OPTICAL
(Camera)

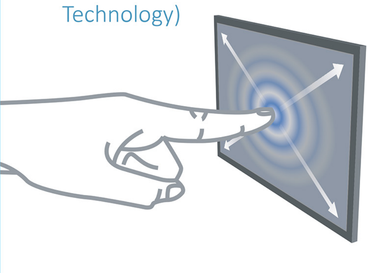


Function: Optical imaging uses sensor cameras that can detect whenever a touch point is made on the screen. This advanced technology allows touch points to be sensed before any physical contact is made.

Features: These screens can function with scratches or surface wear. Their calibration will never drift and they provide superior image clarity. They are also scalable for larger displays.

Flaws: Liquid or solid contaminants can make it non-functional until fully removed.

6 DST
(Dispersive Signal Technology)



Function: DST uses transducers to detect bending waves (mechanical energy) that are produced when an input device such as a finger or stylus makes contact with the touch surface.

Features: Surface contaminants do not affect its functionality. They provide high clarity and do not require bezel.

Flaws: There are only a few major suppliers of this screen (3M Patented Technology). They are limited to one resolvable touch point with gesture capability.