Touch Technology Comparison Guide

There are many interactive displays to choose from these days. Determining what is the best solution to meet your needs often requires an understanding of the differences in touch technologies.

Infrared (IR) and Projected Capacitive (P-Cap) are the most widely used in the industry. MultiTaction is the only interactive display manufacturer to offer a competitive alternative, called ClearSight Touch. To provide clarity on the differences, capabilities and limitations of these three touch technologies, use the table below.

Touch Technology	ClearSight Touch	Infrared Overlay	Projective Capacitive	Benefits of ClearSight
Interactive video wall size limitations	No limit	500"	Projective Capacitive requires larger bezels than modern video walls require.	With ClearSight, the touch sensor scales with the wall but with other technologies the scale impacts touch sensor.
Touch overlay bezel thickness	No overlay technology. Touch sensors are integrated inside of each display.	14mm	Varies by vendor. Unsuitable for modern video wall narrow bezel requirements.	No extra touch overlay makes for a much easier installation, no ongoing re-calibration, and a low profile design.
Front glass treatment	Anti-glare	Varies by vendor. Glass is preferred over raw LCD material.	Varies by vendor. Active Sensor.	Anti-glare treatment reduces the amount of both direct and ambient light that hits the screen. Plus, it reduces the amount of visible dust, grease, and dirt on your display, so you enjoy your media without dealing with light or grime.
Amount of simultaneous touches	Unlimited	6 to 32 (different versions available).	Limited	ClearSight is the only technology with no limitation on simultaneous users (or touch-shadows) on the video wall. This includes not just fingers but also pens, erasers, and Codice markers. Most technologies have an average limit of 10 simultaneous touches.
Hand and wrist detection	Yes	No	No	A computer vision algorithm is able to detect a hand and wrist, which allows for content to orientate in the direction of the user. This is especially useful in touch table applications where users can access the display from multiple sides.
Eraser recognition	Yes, via 2D codes.	No	Yes, via "gesture control" (reading when palm of hand is on the screen).	Similar importance as pen recognition on a video wall. For a true Multi-User Experience it is vital that the complete video wall recognizes touches, pens and erasers simultaneously. Without that option there is no Multi-User experience.
Touch Tracking frame rate	120Hz.	<60Hz.	<60Hz.	Higher tracking frame rate makes for a fast and natural-feeling touch-reaction on the screen.
Object and pen recognition	Yes	Limited	Limited	Supported using 2D markers via MultiTaction's proprietary Enriched Reality technology, Codice. ClearSight is the only platform that recognizes unlimited simultaneous pens.
Touch relative accuracy	Sub pixel (<0.63mm)	±1.5mm	Varies by vendor.	With sub pixel accuracy no "jumps" are visible on the LCD screen when interacting via touch.
User experience	Effortless	Less responsive. Does not recognize objects.	Less responsive.	ClearSight touch responds the way users expect a touch screen to respond - much like their hand held personal devices. With near-zero latency, users describe their touch experience as "instantaneous" and "snappy."
Curved wall configuration	Yes	No	No	ClearSight touch is the only technology that will properly operate in a curved wall installation.
Table configuration	Yes	No	Varies by vendor.	MultiTaction displays are structurally designed to be installed as a table as well as for traditional wall-mount.
Calibration	Set it and forget it.	Regular calibration required.	Set it and forget it.	Traditional overlay touchscreens require maintenance to ensure proper touch calibration and adjustments. Our display's revolutionary ClearSight touch does not require any servicing to keep touches accurate.
Ease of installation	No extra touch mounting or alignment needed.	Extra touch mounting and alignment required.	No extra touch mounting or alignment needed. Single displays only.	Simply install and go. Should your MultiTaction display ever need a service call, servicing can be done while the display is mounted which shortens downtime.
Serviceability	Easy to change one screen.	Touch frame needs removal to service any screen.	Single panels only.	If service is needed, the MultiTaction solution does not require any additional touch overlay removal so that much faster service is possible.

*MultiTaction does not claim this coating will prohibit the transmission of disease. **Varies by manufacturer

Information shared on IR & P-CAP technology was compiled from publicly available information. Content in this document is subject to change without notice.
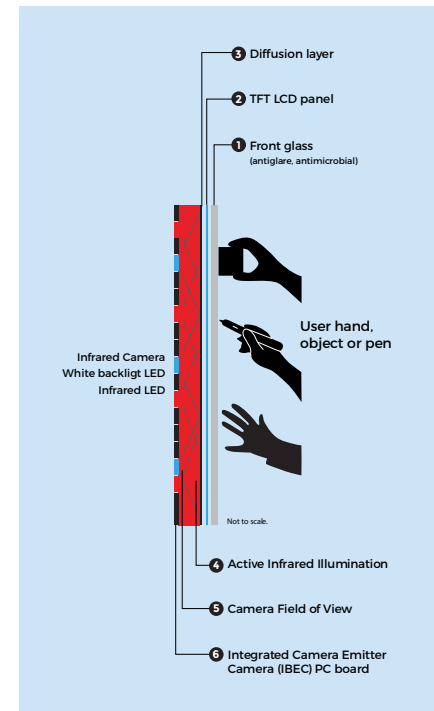
How They Work

ClearSight Touch	Infrared Overlay	Projective Capacitive
ClearSight Touch incorporates an array of machine-vision infrared cameras (32) within each display combined with advanced software which interprets and recognizes hands, pens, and objects interacting with the screen. It is ideal for tables and video arrays and scales infinitely.	An infrared overlay consists of a frame (which surrounds the entire display area) with embedded infrared emitters and detectors positioned to create an invisible grid directly in front of the display or videowall. By breaking the beams of light, software determines where interactions are taking place.	Uses a grid of conductors in an array behind the cover glass. This grid attaches to a touch controller which monitors for slight changes in the capacitive field as users interact with the display. This technology requires bezels and is commonly seen used with cell phones, tablets and stand-alone screens.

Benefits of ClearSight touch—only from MultiTaction

ClearSight Touch is one of the technologies MultiTaction is best known for. It is so responsive and intuitive to use, our video walls often get compared to scenes from science fiction!

Key Differentiators:

- **Engineering.** Built into each display is an array of high-speed cameras with the ability to recognize and track an unlimited number of objects on the screen simultaneously; making it the fastest, most responsive of any video wall display on the market.

- **Connection.** All touch data is communicated via a network connection, further enhancing the scalability of the system.

- **Flexibility.** Because the touch sensors are built directly into each screen, flatness of the array is not important giving you complete freedom to mount displays in curves, right-angles, or other creative orientations.

- **Accurate.** Engineered with pinpoint accuracy, which means no periodic re-calibration is needed. Install and go.

Diffusion layer

TFT LCD panel

Front glass
(antiglare, antimicrobial)

User hand,
object or pen

Infrared Camera
White backligt LED
Infrared LED

Not to scale.

Active Infrared Illumination

Camera Field of View

Integrated Camera Emitter
Camera (IBEC) PC board

Visit **MultiTaction.com**
or contact **sales@MultiTaction.com** for more information

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