



**CUSTOM LCD DISPLAYS &  
TOUCHSCREEN SOLUTIONS**



**VISION**

**A RELIABLE DISPLAY  
& INTEGRATION PARTNER**

Vision provides a full range of custom services for LCD displays and touchscreen systems that require high-brightness, high-contrast LCD visibility and accurate touch performance. A reliable solution partner, Vision listens to its customers closely and provides fast and flexible touch panel designs, integration and manufacturing services. Utilising our engineering technology and experience, you can build up a high quality display solution tailored exactly to your requirements.





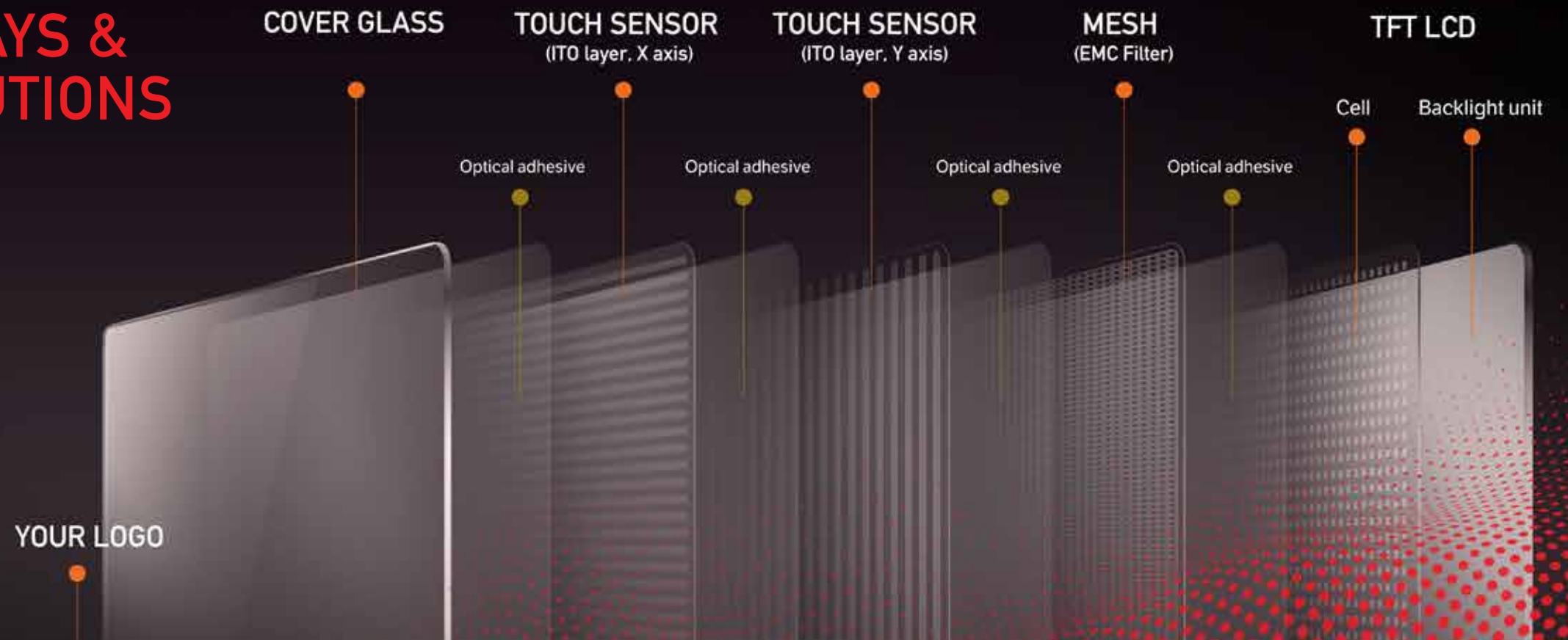
## CUSTOM LCD DISPLAYS & TOUCHSCREEN SOLUTIONS

Touchscreens are the primary user-interface for industrial applications that require easy, fast and accurate operation. To develop and optimize user experiences, Vision provides a variety of custom touch technologies and integration services to meet specific application needs.

Our service ranges from custom TFT LCDs, touch sensor, cover glass, bonding assembly and display enhancement specific to application demands. Vision's stringent control ensures quality output throughout the manufacturing process

We help customers identify the right display components during the specification stage, integrating the correct display module into your product for rapid prototyping.

Vision also provide a custom integration service for touch LCD panels made of multiple layers of glass and optical lamination.



## EXPERT APPLICATIONS



### MEDICAL & HEALTHCARE

Touchscreen LCD's are ideal for medical and healthcare applications as they produce no radiation, offer ease of operation and provide instant response. Vision fulfills medical and patient-care applications including a wide selection of high performance cover glass, coatings and display enhancement technologies which offer fine colour/grey scale performance and infection prevention while maintaining fully operational displays.



### AVIATION & MILITARY

The LCD display is one of the most important instruments enabling pilots to receive instant safety and weather information. Vision is familiar with specific displays that offer good visibility, high contrast ratio and wide viewing angle in extreme cockpit conditions.



### AIR TRAFFIC NAVIGATION

Vision are experienced with air traffic control applications and navigation LCD solutions. Our engineering team provide exceptional coating and optical bonding options eliminating screen reflection and glare, to enhance clarity, contrast and visibility in either bright or dark ambient light conditions.



### TRANSPORTATION

Facing constantly changing light conditions, LCDs used in automotive and transportation applications must be bright enough to match the cockpit illumination at all times. Vision provides advanced anti-reflective technology enhancing the monitor readability and reducing glare while maintaining stable visibility in both low and bright light conditions.



### POINT OF INFORMATION /KIOSK

To increase durability and reliability of public point of information kiosks, Vision is adept at adding various coatings and surface treatments enabling a comfortable user experience, improving scratch and chemical resistance to enhance the monitor's durability and lifespan.





# CUSTOM TOUCH SENSOR

Touchscreens are not only a part of the display system but also the primary input device. Vision provides various capacitive and resistive technologies to formulate different types of touch panels as needed.

## RESISTIVE TOUCHSCREEN

A resistive touchscreen comprises two layers of conductive ITO (indium tin oxide) film and ITO glass separated by transparent dot spacers. The resistive touch panel features thin, light, and lower power consumption. Also, it is pressure sensitive to have highly accurate and quick response to any input device, including finger, glove, stylus or pen. The resistive touchscreen offers reliable and affordable solutions for restaurants, factories and hospitals due to high resistance to dust, oil, liquids and contaminants.

## CAPACITIVE TOUCHSCREEN

A capacitive type touchscreen consists of one layer of insulation glass, coated with transparent and conductive indium tin oxide (ITO) on both surfaces. Unlike a resistive touchscreen, a capacitive touch display relies on the electrical change caused by a light touch of a finger, capacitive stylus, or electric conductive glove.

## PROJECTED CAPACITIVE TOUCHSCREEN

Projected Capacitive Touchscreens (PCT) deliver highly accurate and multi-touch functionality with a matrix of conductive wires. The PCTs are widely installed in the most demanding devices like medical machines, smartphones, and tablet computers with pinpoint accuracy in tracking the motion of a finger over the screen.

# CUSTOM COVER GLASS

Adding extra layers on top of the touch screen can enhance the monitor durability, but also affect light reflection, transmittance and touch performance. Vision's custom cover glass service provides enhanced display clarity, touch responsiveness and surface protection against chemical, scratch damage or vandalism.

## COVER GLASS & COATING OPTIONS

**The anti-bacterial glass** kills 99.99% of common disease-causing bacteria and molds to prevent infection spreading through the touch operation.

**Both anti-glare (AG) and anti-reflection (AR)** coating are ideal for mobile and outdoor applications by filtering out reflection and cutting down glare when light bounces off the surface.

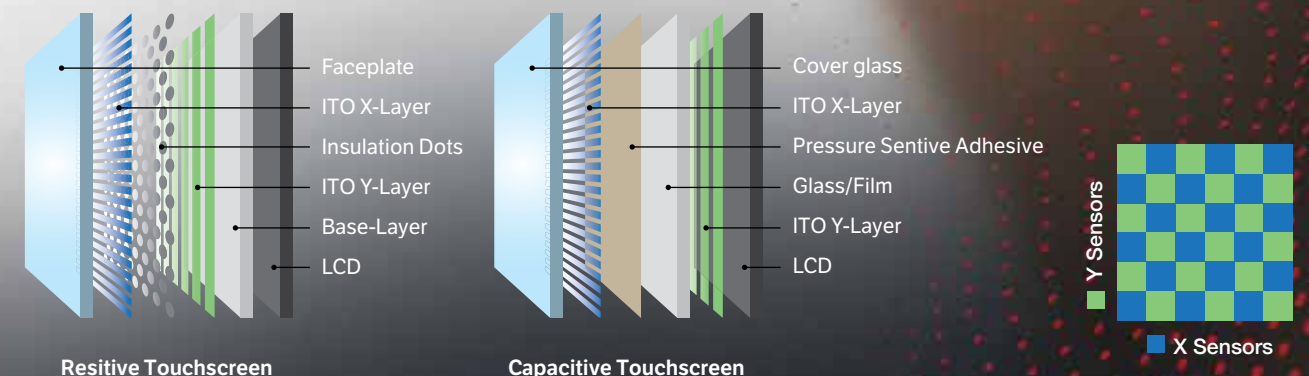
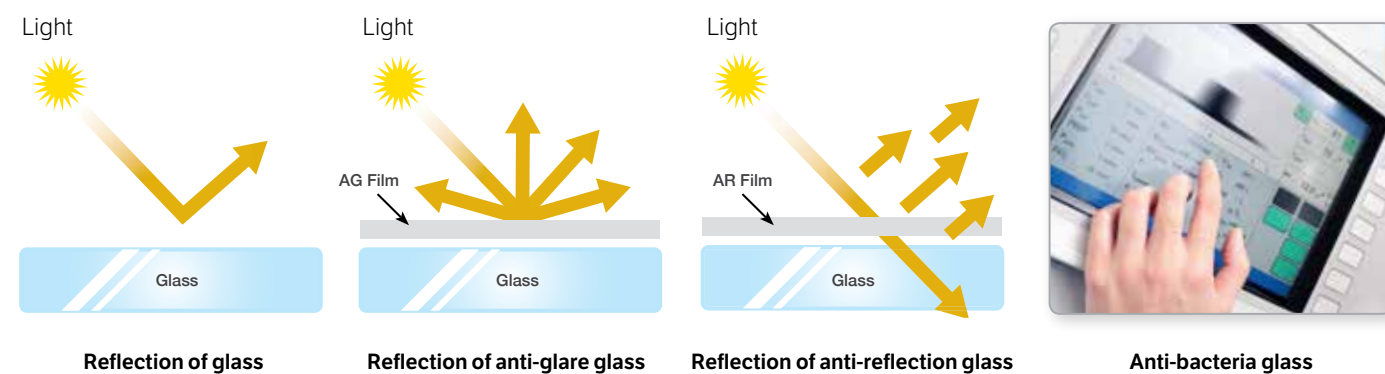
**The anti-bacterial anti-reflective glass** is perfect for medical applications with germ-free and anti-reflective features.

**The AG touchpad glass** features silky surface and the most natural back and forth touch motion for ultimate user experience.

**Corning antimicrobial gorilla glass** eliminates bacteria to ensure the highest levels of safety for medical and patient care applications. The thin and tough glass also reduces screen parallax and improves touch control accuracy for better visual quality.

### OUR TEAM ALSO HELPS CUSTOMERS IMPLEMENT THE FOLLOWING REQUIREMENTS:

- ✓ Specify glass dimensions, thickness and shape, including rounded corners.
- ✓ Add holes and cutouts for I/O interfaces
- ✓ Print logo and icons
- ✓ Use acrylic/polycarbonate film instead of glass
- ✓ A wide variety of glass and coating options



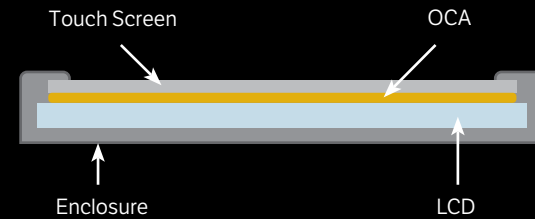


# BONDING & INTEGRATION

Bonding technology is a key factor that affects LCD display performance, durability and total cost of ownership. Vision helps evaluate the suitability of various technologies to meet your project requirements.

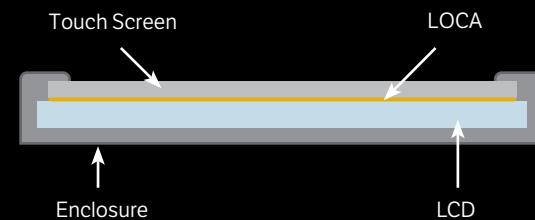
## OPTICALLY CLEAR ADHESIVE (OCA)

OCA is used to add a film-type of optically clear adhesive between the cover glass and LCD display for display panel assembly. Such an optical bonding is especially significant in sunlight conditions. OCA offers superior clarity and excellent adhesion to eliminate surface-to-surface air gap and reflections from the viewing area to achieve better clarity, colour contrast and wider viewing angles.



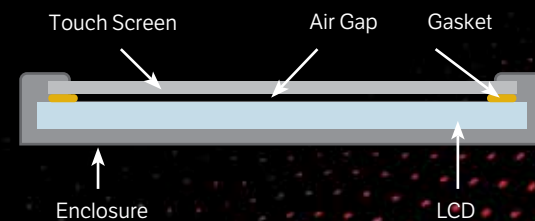
## LIQUID OPTICAL CLEAR ADHESIVE (LOCA)

LOCA is a type of optical bonding technology widely used for smartphones and tablet devices. The liquid type bonding adhesive is re-workable and suitable for use on curved or uneven surfaces. The technology allows thinner and lighter panel construction, it is especially advantageous in applications subject to high humidity and wide temperature variations.



## AIR GAP BONDING

Air gap bonding provides the most economical method for touch panel attachments with a yield rate up to 98%. The adhesive is applied to the inactive border around the viewing area between the display and touch panel.



## TFT LCD

Vision has established close partnerships with leading TFT LCD manufacturers providing all your needs for various display applications. Specific display features can be ordered, including high brightness, high contrast ratio, wide viewing angle, wide temperature operation, longer lamp life, and lower power consumption. We also adopt advanced technologies such as free-form, curved, and transparent LCD, to fulfill any of your display ideas.



# CUSTOM TOUCH CONTROLLER

The touch controller is usually a micro-processor used to send signals from the touch sensor to the embedded system or computer. It can be set on a controller board inside the system, or located on a flexible printed circuit (FPC) attached to the glass touch sensor.

## ANTI-INTERFERENCE

Electrical noise can cause system shutdowns relating to signal transmission problems in medical applications. To reinforce your operational reliability and security, Vision provides touch controllers with integrated noise resistance technology protecting your display panels against noise interference generated by electrical devices, peripherals, and the environment.

## GLOVE TOUCH

Glove touch technology offers significant benefits for medical applications. Vision provides superior high Signal and Noise Ratio (SNR) solutions that detect touch signals even when the user is wearing gloves.



## MILITARY CABLES

Vision provides a wide variety of military cable assemblies and wiring harnesses. The cable assemblies consist of flat ribbon cables, RF coaxial, smart cables, data com, hybrid communication cables, over-molded military cables or ruggedized military cable assemblies.

We also offer a service to integrate custom military cable assemblies and wiring harnesses into enclosures, boxes or chassis as needed. Custom service for enclosure modification is available upon request.

