

# Front Panel Integration and Bonding Technologies

User Interface  
Solutions for  
World-Class  
OEM Customers

Visualizing  
Excellence in  
Displays-Based  
Technology  
Integration



Medical Applications



Industrial Controls



Specialized Electronics

Displays-based touch panels — either standalone or integrated with other switching technologies — are quickly becoming the preferred HMI platform of choice among leading industrial designers and OEM's. And the reasons are clear: Control panels incorporating displays and touch sensors increase efficiency, reduce production costs, and simplify communications between the end user and host device.

Making the right choice for technology selection can be confusing, however, because of the number of unique, complex touch and display components available to address a specific application or market.

VIS can help. HMI technology integration is one of VIS's greatest strengths, and with our design and engineering teams we'll not only help you choose the right touch panel technologies, we'll also assist in integrating the complete package for your project. We have the expertise and experience to integrate display and touch applications to meet your product requirements, functionality, time-to-market, and cost expectations; and we can help guide you to the most suitable and appropriate solution for your end-use application and intended environment.

## Integration Options

Though applications and form-factors can vary greatly, integrated displays-based technologies are any form of user interface that relies on a touchscreen, a display, optical bonding, and a controller interface to a host (customer) system or computer.

- Optical Bonding and Integration
- Touch Panel and Display Selection and Sourcing
- Cover Glass and Lenses
- Controller and Interface Electronics
- Sealing and Gasketing
- Bezels, Enclosures and Brackets
- Value-added Assembly and Integration



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**CORE TECHNOLOGIES:**

**Touch Sensors**

Projective Capacitive  
Resistive  
Controllers

**Displays**

LCD  
OLED

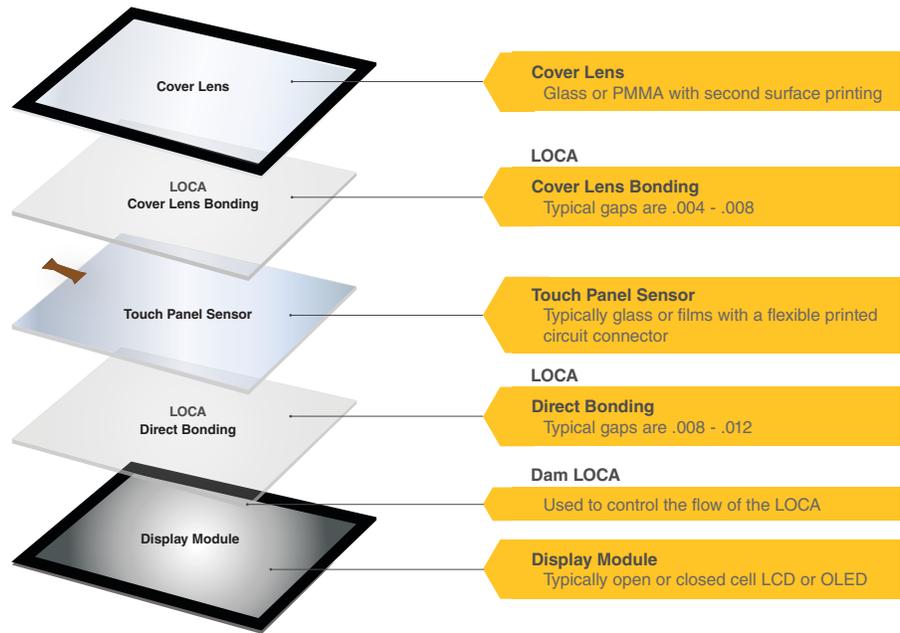
**Coverglass & Lens**

Glass  
PMMA

**Optical Bonding**

LOCA  
Dry Film  
Perimeter Bonding

# Liquid Optically Clear Adhesive (LOCA) Bonding Technologies



Liquid optically clear adhesive (LOCA) is a liquid-based bonding technology used in touch panels and display devices to bind the cover lens, plastic, or other optical materials to the main sensor unit or to each other.

VIS has partnered with Henkel, the manufacture of Loctite® adhesives, and VIS is the first North American user interface company to provide our customers with the latest in LOCA adhesives and application technologies. LOCA offers the highest performance

of any other bonding process and is ideal for applications and devices used in rugged and extreme environments where impact resistance and clarity is critical.

- Improve the viewing experience
- Increase front panel durability and ruggedness by up to 300%
- Extend the battery life
- Enable thinner designs
- Extend the front panel product life
- 3.0" to 12.1" display sizes

## Performance Comparison

Considerations	Air Gap	LOCA Tape	LOCA
Optical Quality	Good	Best	Best
Impact Resistance	Good	Better	Best
Reflectivity	Good	Better	Best
Reworkability	Better	Good	Best
Relative Cost	Best	Good	Good
Thickness	.005 - .040 ± 10% (0.13mm - 1.00mm)	.005 - .040 ± 10% (0.13mm - 1.00mm)	.004 - .012 ± 10% (0.10mm - 0.30mm)
Application Notes	Rigid to Flexible Materials Rigid to Rigid Materials Display to Flexible Materials Display to Rigid Materials Bonding	Rigid to Flexible Materials Rigid to Rigid Materials Frameless Display to Flexible Materials Frameless Display to Rigid Materials Bonding	Rigid to Rigid Materials Display (with Frame) to Rigid Materials

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