



220 Huff Ave, Suite 400
Greensburg, PA 15601



PH: (724) 552-4904
F: (724) 552-4905



sales@agdisplays.com
agdisplays.com



Advanced LCD Solutions Specialist

LAW ENFORCEMENT SOLUTIONS



**RUGGED MOBILE DEVICES
TURNKEY & DESIGN
INDUSTRIAL REPAIRS**

About Us



For over a decade AGDisplays has been a leading provider of high quality LCD enhancement products and services for the industrial markets. We lead the way in offering an extensive range of custom panel solutions that improve standard display attributes while maximizing performance in any environment. The AGDisplays teams are experts in LCDs, from building simple or complex designs to integration work including ruggedization.

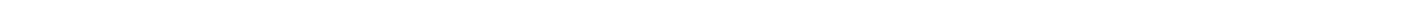
In our 124,000 sq. foot facility, we offer over 800 off the shelf products that include tablets, open and closed frame LCDs and much more. Our knowledge in innovative LCD technology and our high-quality control standards separate us from the rest. At AGDisplays, our teams have a true commitment to becoming your trusted partner.



OUR SERVICES

- Off The Shelf LCD Products
- NVIS Integration and Design
- OCA, Optical & Bonding Services
- Custom LED Integration & Design
- Touch Screen Integration & Design
- Custom Glass Supply Services
- Turnkey & Design Services
- EMI Shielding & Design

- Film Enhancements & Repolarization
- Certificated FAA Part 145 Repair Station
- Component Assembly & Integration
- LCD Controller, Cabling & Design
- Testing/Certification of EOL Panels
- Drop-in Replacement
- Industrial Repair Program
- Zero Dead Pixel Inspection



Industries Served



MILITARY



AVIONICS



HOTEL



MARINE



MARKETING



MEDICAL



RESTAURANT



RETAIL



TRANSPORTATION



Law Enforcement



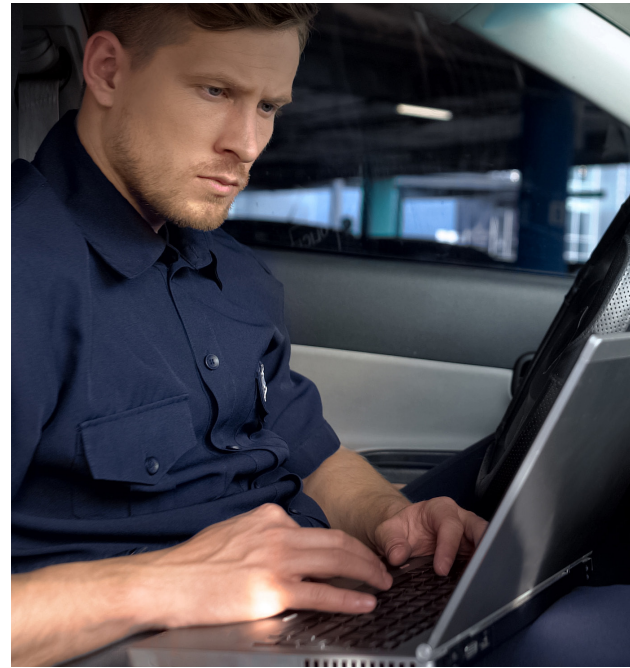
AGDisplays serves the Law Enforcement Industry by offering our unique line of rugged mobile devices that are built to resist damage from shock/vibration and moisture exposure.

We have expansive LCD solutions that can increase LCD longevity and enhance in-field performance. Our enhancements provide extra LCD protection where stock equipment falls short.

We help you choose the perfect design for your application needs. Popular film enhancements for this industry are antireflective and antiglare for protection and better LCD visibility.

AGDisplays' solutions help you sidestep the expense of complete unit replacement by offering ruggedization and repair services.

Our team can help you acquire new, EOL or refurbished LCDs, and can customize virtually any panel to meet your specific requirements. From a simple spec enhancement to full solution kitting, AGDisplays handles LCD sourcing, logistics, assembly and repair—all in one place.



RUGGED MOBILE

These devices meet military standards for shock & vibration, limited water submersion and dust ingress.

TOUCH DISPLAYS

Our touch panels are eligible for performance upgrades like ruggedization, optical bonds and EMI protection.

PANEL MOUNT DISPLAYS

Panel mount displays are designed for industrial environments and can be outfitted to meet specific requirements.

BONDING DESIGNS

Full range of custom OCA, optical or tape bonding for rugged enhancements.

TOUCHSCREEN INTEGRATION

We offer popular technologies like projected capacitive, resistive, surface capacitive, IR, and SAW touch sensors.

TURNKEY & DESIGN

Work with our team to create turnkey solutions on new or existing designs.

EMI SHIELDING & DESIGN

Block electronic interference between LCDs & surrounding equipment with EMI solutions.

FILM ENHANCEMENTS

Increase LCD functionality, versatility & performance. Retrofits into any sized LCD.

INDUSTRIAL REPAIRS

Reduce costs by repairing LCD components with full outgoing diagnostic analyses on all units.

List of Products



RUGGED MOBILE

These devices meet military standards for shock & vibration, limited water submersion and dust ingress.



TABLETS

AGDisplays makes commercial off the shelf tablets easy to purchase with flexible spec options and easy purchasing.



TOUCH DISPLAYS

Our touch panels are eligible for performance upgrades like ruggedization, optical bonds and EMI protection.



LCD DISPLAYS

Our LCD design solutions maximize standard LCD performance in any environment.



MEDICAL DISPLAYS

Our LCDs support medical applications with long life cycles, high bright display readability and sharp contrast.



MARINE DISPLAYS

Marine displays can be IP rated and are designed specifically for use in all marine/boating applications.



DIGITAL SIGNAGE

Digital signage offers fast on-sight installation and easy access for maintenance & repairs.



PANEL MOUNT DISPLAYS

Panel mount displays are designed for industrial environments and can be outfitted to meet specific requirements.



TOUCH TABLES

Hold meetings and communicate business messages with superior and sensitive touch table technology.



MULTIMEDIA KIOSKS

AGDisplays offers a wide range of multimedia kiosks to effectively reach your customer.



SPECIALTY DISPLAYS

Bring interaction, creativity and technology together with 3D displays, all in ones and interactive whiteboards.

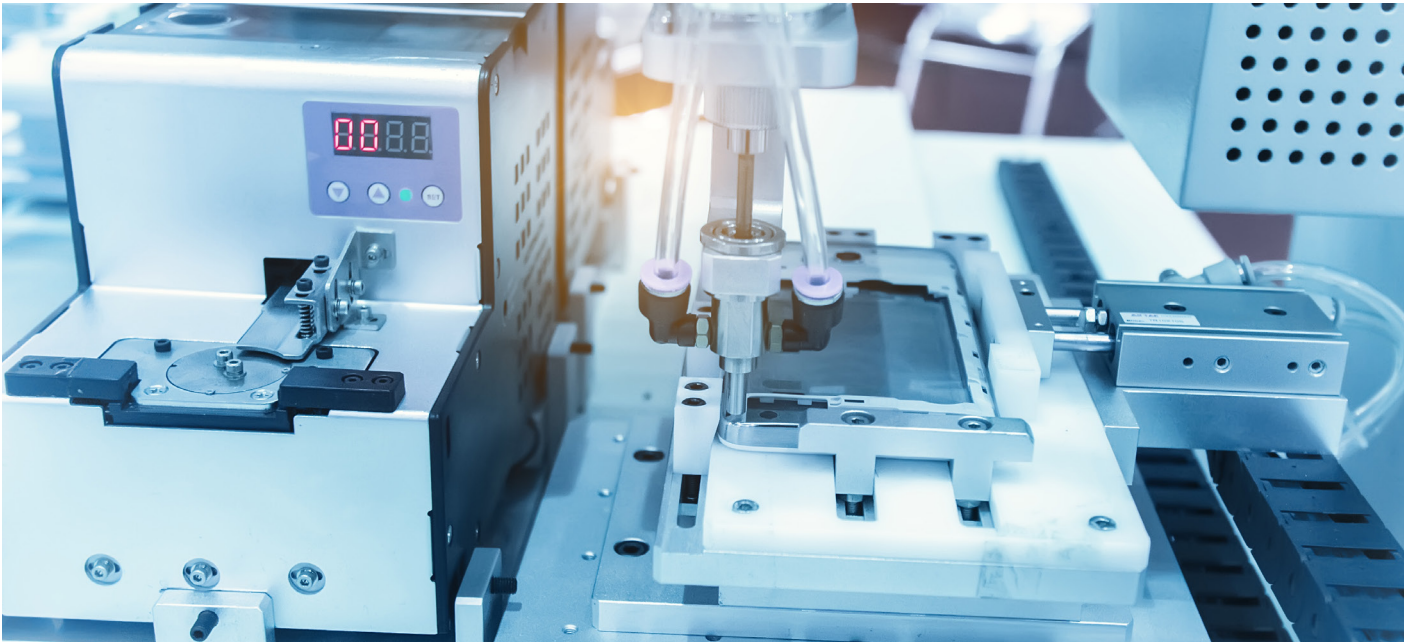


VIDEO WALLS

With narrow bezels for a seamless feel, users are captivated by the media displayed on our video walls.



Bonding



AGDisplays offers three different methods of bonding for your LCD to add strength and clarity, as well as using it as an integration method when incorporating one of our other value add services. In performing a bonding procedure on your LCD, your display will be more rugged and less prone to environmental vulnerabilities such as dust collection and moisture condensation.

Often, LCD designs that add hardware to the LCD, such as touchscreens or front cover glass, are constructed in such a fashion that air gaps are left in between the layers of its components. Internal reflections are created by these air gaps created between these layers. Gaps create internal reflections, and internal reflections decrease optical clarity as well as leave the LCD vulnerable to contamination.

Applying a bond solves much of the refraction and other vulnerabilities mentioned, depending on the application requirements.

Optical clarity and readability may also increase because of

the refractive layers being decreased. The lower the refractive surfaces, the increase in clarity and transmission.

Bonding methods are performed in one of AGDisplays' Class 1000 clean rooms. A clean room is used across various industries where tiny contamination particles may be susceptible for intrusion in the manufacturing process. A clean room is a controlled environment that is specifically designed to keep levels of air pollutants very low. AGDisplays performs all critical manufacturing processes in clean rooms, including our bonding services.

OCA Bonding



Displays and touch panels are at their best when they perform with highly transparent, low-haze, and UV resistant features. Adding an optically clear adhesive to your LCD's stack up promotes these features.

OCA bonding is considered a safe and effective alternative to costly liquid optical bonding. There are various advantages to choosing OCA bonding as your preferred integration method. Like liquid bond, OCA reduces the reflection layers in a panel. OCA bonding is clean, which eliminates the need to clean up residuals after the bonding process is complete. The process produces high yield and is repairable.

SUBSTRATES	OCA PRODUCT SIZE CAPABILITY
LCD	1"-12" (typ) diagonal max
Touch Screens	1"-12" (typ) diagonal max
Mobile Devices	Samsung Galaxy S4, S5, Note 3, Note 4, Apple iPhone 6,6+
Glass, Polycarbonate, Transparent Materials, Acrylic	9"x13" max/15" diagonal size
Optical Lenses	9" max diameter

BENEFITS

- Increased readability and brightness.
- Strengthened Durability
- High Adhesion
- UV Protection
- Bare ITO Compatible
- Whitening and Yellowing Resistant
- Removes moisture/condensation and debris to increase viewability
- OCA strengthens structural stability to outstand rough environments.
- OCA creates a single optical layer, reducing glare and increasing optical clarity.

Optical Bonding

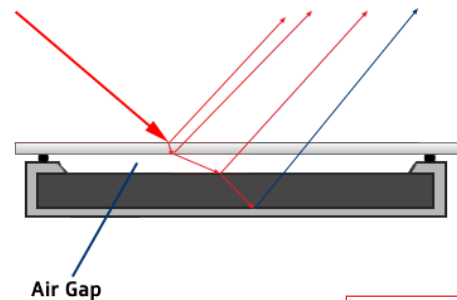


AGDisplays offers optical bonding for panel sizes as large as 21.5 inches. This robust solution may involve a full lamination, consisting of two outer substrates sandwiching layers of adhesives and other elements. The solution creates superior LCD strength, prevents a screen shatters and is less vulnerable to contamination & moisture. It also provides extended operational temperature range and increases touch response. Substrates available are glass, polycarbonate and acrylic. Laminated applications can include: EMI shielding, privacy filters, enhancement filters and security screens.

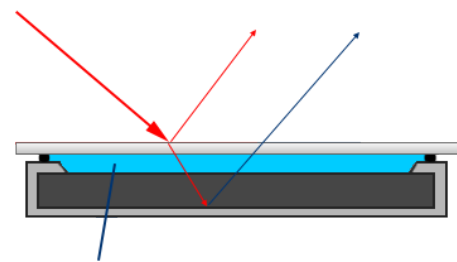
Optical bonding increases quality and lifespan of an LCD, keeping overall replacement costs low. Although our optical bonding service is the strongest bonding service we provide, the solution is reworkable through our production process. AGDisplays performs quality assurance measures and testing on each LCD to ensure specifications are met. Our facility is capable of performing low and high volume production.

BENEFITS

- Optical performance: increased luminance & contrast, reduced internal reflections
- Ruggedization: superior LCD strength and prevents shattered screens
- Reworkable through production process
- Halogen-free: low toxicity, environmentally-friendly materials
- Excellent UV resistance
- Extended operating temperature range

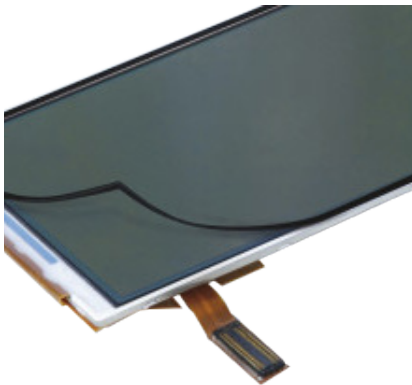


BEFORE



AFTER

Tape Bonding



When optical bonding is not practical for your LCD, AGDisplays offers tape, or perimeter, bonding. Perimeter bonding helps your company save on costs while still sufficiently ruggedizing your panels. Our tape bond services provide a secure bond that increases LCD flexibility, long-term durability and improved appearance. The adhesive offers a wide temperature specification, allowing a durable integration method in various environments.

Our technical experts manually perform each bond with precision inside a class 1000 clean room. AGDisplays supports virtually any manufacturer of LCD and touchscreen. For cover glass shield protection, AGDisplays can work with your requirements to offer products and glass materials to achieve your exact requirement. Consult AGDisplays today to speak with a representative about which option is best for your project.

BENEFITS

- Retrofitted to All LCDs
- Bond with High Adhesion
- Withstand Static or Dynamic Strength
- Continuous Bond Distributes Stress Over Entire Bond
- Viscoelastic
- Resistant to Extreme Weather
- Seal Against Environmental Conditions



Touch Integration



Touchscreen technologies are not all created equal. In fact, their structures and features differ widely from technology to technology. From the simple touchscreen on a home printer, to the quick touchscreen experience of the latest smartphone. With ACDisplays, you're not the end user, you are the creator. With so many sizes, technologies and specifications floating about, it's impossible to just select one from the masses without being informed first.

SURFACE ACOUSTIC WAVE

FEATURES

- High Transmission
- Durable glass construction
- Pressure sensitive
- Advanced technology

END USER BENEFITS

- High optical clarity
- Rugged in indoor environments
- Activated with stylus, glove or fingernail

INDUSTRIES

- Medical
- Touchscreen Kiosks
- Indoor Retail Environments

Touch Integration



RESISTIVE

FEATURES

- Low light transmission at 75%
- Activation with any object
- Protective substrate on top of glass layer
- Able to be assembled from component parts, screen and sensors

END USER BENEFITS

- No glass shattering
- Works in rain or other liquids
- Good functionality in hot or cold weather
- Input is acceptable with any stimulus: finger, pen, gloved fingers, stylus, and anything else

INDUSTRIES/APPLICATIONS

- Marine
- Commercial
- Food and beverage

PROJECTIVE CAPACITIVE

FEATURES

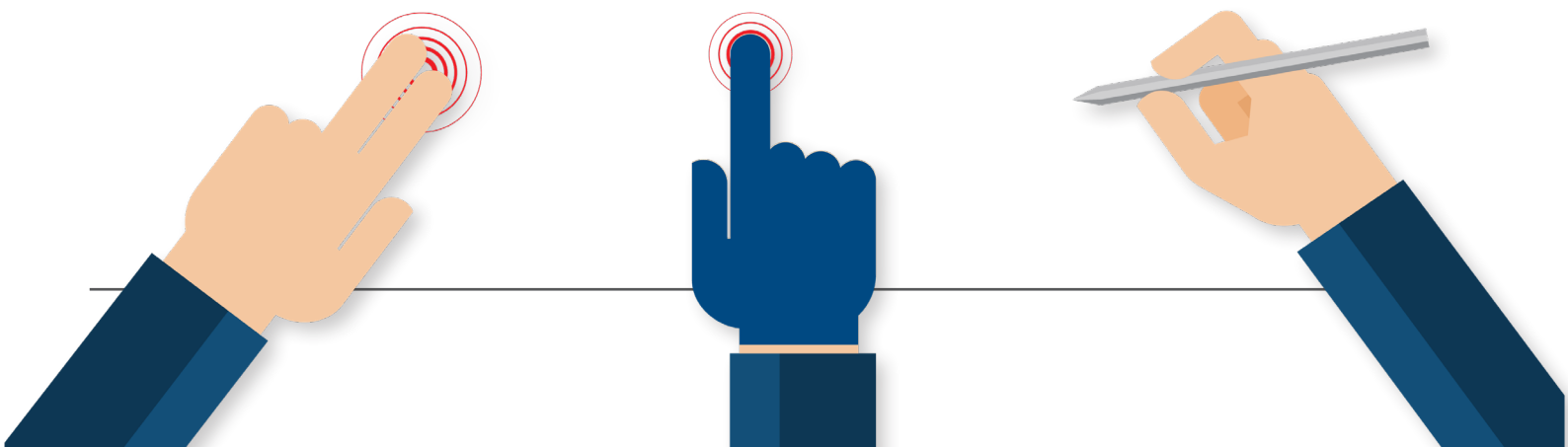
- Integration with various cover lens options: standard, tempered, chemically-strengthened glass
- Single, dual or multi-touch
- High light transmission, in excess of 90%

END USER BENEFITS

- Superior image clarity
- High durability in rough environments
- Flexible touch points
- High transmissivity
- Input triggered by bare hands, latex gloves and stylus

INDUSTRIES/APPLICATIONS

- Retail
- Gaming
- Digital Signage



Touch Integration



SURFACE CAPACITIVE

FEATURES

- Fast, sensitive touch response
- Glass layer for ruggedization
- Protective cover

END USER BENEFITS

- Good image clarity
- Highly scratch resistant
- Fingertip or stylus activation
- Durable in rough environments
- Resistance to contaminants and liquids

INDUSTRIES/APPLICATIONS

- Gaming
- Entertainment
- Point of Sale
- Kiosks

INFRARED

FEATURES

- High light transmission
- No glass substrate
- Light beam touch technology
- Scratch resistant

END USER BENEFITS

- Unlimited touch life
- Durable lifetime
- Superior image quality
- Finger and glove touch activation

INDUSTRIES/APPLICATIONS

- Retail
- Hospitality
- Large Display Applications



Turnkey Design



A turnkey LCD solution is a project built so that the end customer is sold a completed LCD product, ready for use. It is our specialty to take on the responsibility for designing and developing a product that is ready to be used upon completion.

We have a team of experts ready to take on any challenging turnkey LCD need you have. AGDisplays offers in-house assembly, testing and quality measures, packaging and drop ship capabilities. We are able to accommodate small and large volume production quantities.

LCD turnkey projects involve kitting LCD peripherals and components or just selling commercial off the shelf LCD products that are applicable across all industries.

BENEFITS

- Project administration and management control
- Subcontracting
- Focus on the total integrated system
- Considerable experience and skill in panel selection
- Development team that provides options based on budgets
- Quality functionality testing
- Inventoried spare parts
- Focus on procurement efficiency and flexibility
- Experience and expertise in all major industries, applications, and environments
- Quick reaction time, less opportunity for miscommunication
- Hassle-free design changes
- Cost targets high priority
- Adherence to all US industry standards and specifications
- Regular shipments to destinations around the world
- Comprehensive technician training and familiarity of quality improvement methods
- Complete factory testing prior to shipment
- In-house assembly, testing and quality measures, packaging and drop ship capabilities

EMI Shielding

|||||

EMI film provides the “immunity” for electronic components that are susceptible to EMI (electromagnetic interference). Our solution options offer maximized optical performance and makes display/touch screen RFI compliant.

EMI film or mesh solutions integrate quick and easy, requiring no redesign and allowing for fast production. Our service installs new EMI shielding, or replaces existing EMI system. While our transparent film and mesh solutions are our most popular solutions, AGDisplays also offers other EMI options to meet your design requirements.

Transparent thin-film conductive coatings provide LCD technology with great optical and EMI shielding properties. Typically the frequency level ranges in 100 kHz - 20 GHz. Films may be offered with conductivity ranging from 1 to 100 Ω /sq.

Conductive grid mesh solutions provide panels with a high level of protection. A fine-conductive grid may be built of woven stainless-steel or copper mesh, or alternatively made with a patterned conductive metal coating on the substrate's surface.

EMI MESH SOLUTIONS

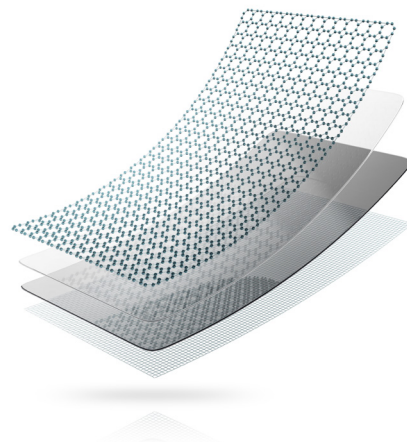
- Woven wire mesh
- Robust active enhancement, providing high level of protection
- Compatible for use with a touch sensor
- Photopic transmission at $\geq 85\%$
- Diffuse reflectance at 30° at $\leq 0.14\%$
- Specular reflectance at 30° at $\leq 1.2\%$
- $\leq 0.25 \Omega$ /sq. surface resistance
- Shielding effectiveness:
 - 50 Mhz (megahertz): ~ 75 dB
 - 100 Mhz: ~ 65 dB

EMI FILM SOLUTIONS

- For panels needing low attenuation (10-20 dB)
- Cost effective solution, passive enhancement
- Compatible for use with a touch sensor
- High visible transmission with low electrical resistance:
 - 10 ohms/sq.
 - 20 ohms/sq.
- Reduces problematic EMI and/or IR emissions from surface
- Superior to ITO films at low resistance for transparency & mechanical properties

BENEFITS

- Passive Integration Solution
- Compatible with Touch Sensors
- High Visible Transmission
- Reduces EMI/IR Surface Emissions
- Superior to ITO Films
- Several Custom Design Options

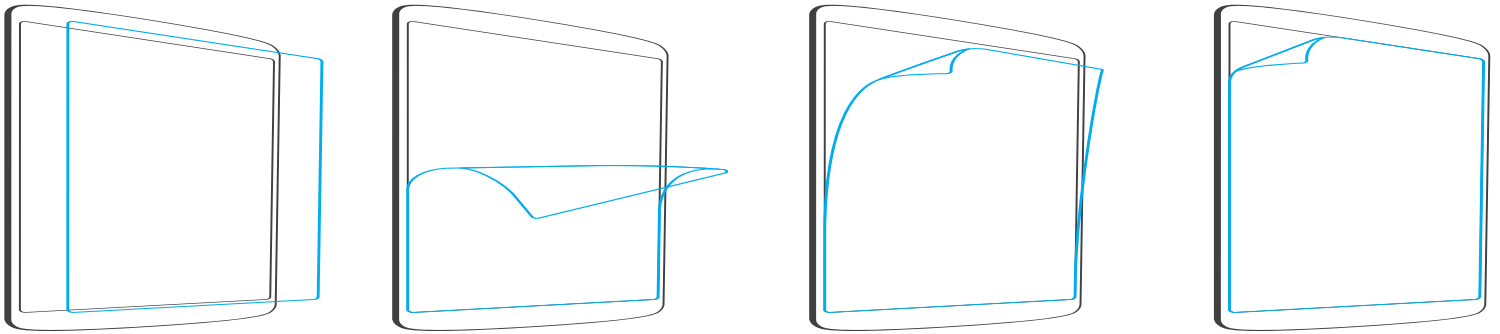


Film Solutions



Increase brightness, eliminate reflection and glare, prevent EMI interference, add privacy features and more, just by integrating a film enhancement to your LCD configuration. LCDs purchased off the shelf are likely not properly built for extreme and industrial conditions, so AGDisplays offers quick and easy LCD solutions to achieve readability and clarity levels without having to upgrade to new and expensive LCD technology.

Film enhancements working with LED backlight sources and ambient light to optimize light refraction for enhanced clarity and image quality. Our film products are easily integrated into your current LCD, and may be retrofitted into any sized solution. This service is a passive enhancement, meaning there is no change in neither electrical components nor additional wattage consumption.



Since film enhancement is non-evasive, power consumption remains the same, and there is no concern to readjust thermal management.

Our most popular high bright solution can increase brightness by 40-140% and intensify color contrast, optics, brightness and overall image quality. Brightness increase doesn't increase LCD power consumption. So, how does it work? While one film refracts light towards the viewer, a second film reflects the light back into the LCD, essentially recycling the light until it exits the LCD.

Due to the limitless variations in LCD specifications, AGDisplays builds film enhancement per customer project so that we can guarantee a optimized design specifically for your panel.

BENEFITS

- Up to 140% increase in brightness without increase in power consumption
- Increased display contrast and readability
- Enhanced optics and image clarity
- Increased side-viewability
- Front glass protection
- Resistance to scratches and contaminants
- Increased color sharpness
- Privacy of information

Film Solutions



ANTI-GLARE

Anti-glare (AG) treatments minimize reflections from ambient lighting, noticeably improving readability. AG applied to glass and other substrates reduces surface reflection. The textured film diffuses specular reflections, removing the external reflection a user may experience. This film also improves scratch resistance. AG gives a matte appearance on the front of the LCD.



ANTI-REFLECTIVE

Anti-reflective (AR) film improves the durability and life-time of your display surface. Anti-reflective properties increase the contrast and sharpness as well as decrease the reflection from your LCD screen without having to increase your LCD's power consumption. Anti-reflective film can be identified as having a slightly purple tint.



BEF

Brightness Enhancement Film or BEF film can increase the brightness of LCDs through utilizing refraction and reflection, increasing the efficiency of your backlight source. Light exits the LCD at a specific angle; light outside of this angle is reflected back into the LCD until it exits at the proper angle. Multiple BEF films used in unison can enhance light properties.

DBEF

Dual Brightness Enhancement Film (DBEF) is another thin film reflective polarizer that enhances LCD brightness. It uses light normally lost to absorption in the bottom LCD polarizer and redirects it until allowing it to exit the LCD backlight assembly. Using DBEF film in conjunction with BEF film can often offer the highest yield of light output.

Film Solutions



ESR

Enhanced Specular Reflector (ESR) is designed to maximize the usage and distribution of light from the LCD's light source. ESR film allows light distribution from the backlight to increase the LCD's viewing angle. This film used with other brightness enhancing films can obtain the highest light output. Good solution for LCDs used in direct sunlight light.

PRIVACY FILMS

ACDisplays' privacy film solution decreases viewing angles, allowing an increase in privacy by keeping information away from prying eyes. It works by controlling the distribution of light in relation to the viewing angle of the display. Light control films direct light only in the direction of the user; viewed from the front, the display is clear and bright. Viewed from either the left or right side, the display view is black.



LIGHT DIFFUSION

Diffusion films improve LCD functionality by providing brightness uniformity throughout the active area. Light travelling through the stack up of an LCD will have no inherent direction and will be travelling in all directions. The function of the diffuser film is to redirect light in one direction, toward the next film. Employing diffuser films can provide up to 98% total light transmittance.

QUARTER WAVE RETARDER

This film offers uniform birefringence, increasing the wide angle view performance of the panel while keeping haziness low. Birefringence refers to the double refraction of light seen through a transparent material. This film works to provide a uniform view of the images on the LCD when being viewed from the left, right, top or bottom.

§ 145 Repair Station



AGDisplays, in compliance with the requirements of the Code of Federal Regulations Title 14 Part 145 Repair Station, holds a Part 145 Limited Airframe, Limited Accessories rating.



Replacing in-flight entertainment TFT-LCDs costs companies thousands of dollars. Even the smallest blemish or scratch can prompt an LCD replacement. With AGDisplays' services, you can bypass the expensive LCD unit replacement and take advantage of our TFT-LCD repairs. Repairing, instead of replacing, decreases extra expenses and increases panel longevity.

AGDisplays corrects scratches by providing top and bottom glass polarizer repair for in-flight entertainment LCDs. A polarizer is a thin film on the top or bottom surface of the TFT-LCD that can be replaced using AGDisplays' approved process specifications. Our experts perform LCD repolarization in one of the multiple Class 1000 clean rooms that are located in our facility.

We achieve low fallout percentages by training technicians to exceptional standard.

AGDisplays maintains a technical library with OEM specifications, traceability documents and other technical information. The repair station properly documents, controls, and stores all applicable paperwork that accompanies services performed on articles for return to service. All repair station personnel are required to be familiar with the requirements of the repair station manual and all applicable FAA regulations. Our repair station personnel must follow the repair station quality control system when performing maintenance on articles being returned to service. Our FAA Part 145 Repair Station performs multiple inspections throughout the various stages of the maintenance process.

The AGDisplays facility performs maintenance and repairs to in-flight LCD panels in our facility in accordance with contract requirements. We employ Part 65 certified repairmen trained to inspect, repair, and approve airworthy LCD panels within the Repair Station's rating. Each Repair Station position in the repair station is evaluated on a regular basis to determine that the position is in compliance with CFR parts 43, 65, 91, and 145. Employees are subject to initial, recurrent and specialized training for the benefit of quality, safety and standards.

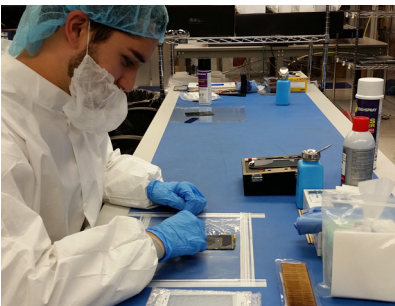
Thank You



COMMUNITY OF EXPERTS

Whether we are met with a new design or challenged with improving an existing design, AGDisplays supports your team by delivering unparalleled LCD expertise and technology. AGD partners benefit from our efficient design process and our dedication to creating quality design solutions.

We saw the need for off the shelf products, so we've added an expansive line of open/closed frame LCDs, digital signage, and all-in-one products. We offer unique LCD products like advanced touchscreen tabletops, high quality medical displays and rugged mobile devices. All of which are eligible for value add integration services. Our products are used across many industries including Military, Avionics, Marine, Industrial, Medical, Transportation and many more.



CERTIFICATIONS

AGDisplays values high-quality working and design standards. We support your teams with the knowledge & expertise needed to make the strategic design and manufacturing decisions.



CERTIFICATED PART 145
REPAIR STATION



AGDISPLAYS IS
ISO 14001, 45001 & R2
CERTIFIED

CONTACT US

HEADQUARTERS

AGDisplays, a dba of AssetGenie, Inc.
220 Huff Ave, Suite 400
Greensburg, PA 15601

CONTACT BY PHONE

Toll Free: 844-841-6851
Office: 724-552-4904
Fax: 724-552-4905

CONTACT BY EMAIL

sales@agdisplays.com
info@agdisplays.com
support@agdisplays.com

GET CONNECTED WITH AGDISPLAYS

Join our social community to stay in touch with all of our latest news, events and promotions.

